Office of Prevention, Pesticides, and Toxic Substances

Risks of Carbaryl Use to the Federally Listed Endangered Barton Springs Salamander *(Eurycea sosorum)*

Pesticide Effects Determination

Environmental Fate and Effects Division
Office of Pesticide Programs
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1. Executive Summary

The purpose of this assessment is to make an "effects determination" for the Barton Springs salamander (*Eurycea sosorum*) by evaluating the potential direct and indirect effects of currently registered uses of the insecticide carbaryl within the Barton Springs area (action area) on the survival, growth, and reproduction of this federally-listed endangered species. This assessment was completed in accordance with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) *Endangered Species Consultation Handbook* (USFWS/NMFS, 1998 and procedures outlined in the Agency's Overview Document (U.S. EPA, 2004).

The range of the Barton Springs salamander is restricted to four spring outlets that comprise the Barton Springs complex, which is located near downtown Austin, Texas. Subsurface flow from the Barton Springs segment of the Edwards Aquifer and its contributing zone supply all of the water in the springs that make up the Barton Springs complex. Therefore, the carbaryl action area as it relates to the Barton Springs salamander is defined by those areas within the hydrogeologic watershed that discharge to the Barton Springs.

Based on use estimates provided from the Biological and Economic Assessment Division, carbaryl is registered for use on many agricultural, professional turf management and ornamental production, and residential sites. Crops with the greatest annual use of carbaryl include apples, pecans, grapes, alfalfa, oranges, cherries, and asparagus. Based on discussions with U.S. Department of Agriculture extension agents in the Austin, TX, area, carbaryl has limited use on agricultural sites in the Barton Springs area, totaling 70 acres of orchards and vineyards. Carbaryl is also used by homeowners in residential settings for lawn care, gardening (vegetables and ornamentals), and pet care (pet collars, powders, dips, in kennels, and pet sleeping quarters). The compound is used by nursery, landscape, and golf course industries on turf, annuals, perennials, and shrubs. Carbaryl may also be used to treat pastures, rangeland, and rights-of-way.

Environmental fate and transport models were used to estimate high-end exposure values that could occur in water in the Barton Springs action area as a result of potential carbaryl use in accordance with label directions. Modeled concentrations in the Barton Springs provide estimates of exposure that are intended to represent possible carbaryl concentrations originating from all potential use sites. Transport of water containing carbaryl could occur in surface water in the contributing zone and in the recharge zone and is transported to the Springs predominantly from subsurface flow through the fractured karst limestone of the Edwards Aquifer. Estimated 1-in-10-year peak and annual average exposure values for the Barton Springs were aggregated from all potential use sites and used in risk estimation. Accurate data are not available on applications of carbaryl to turf, in particular, and necessitated assumptions regarding the number of times it is applied and the percentage of lawns treated at one time. On the conservative end, estimated 1-in-10-year annual average exposure values were up to two orders of magnitude higher than maximum concentrations reported in monitoring data taken in the springs, mostly due to the unlikely assumptions that carbaryl is used at maximum application rates (and numbers of treatments, arbitrarily limited at 25 applications per year) and simultaneously applied to all lawns in the action area. 1-in-10-year annual average estimates are consistent with concentrations observed in the monitoring data when uses are modeled once per year across all use areas, or when uses are modeled at multiple times per year on a fraction of the possible use areas.

The highest potential exposure was predicted to occur from use of carbaryl on residential lawns due to the prevalence of home lawns in the action area (residential lawns are estimated to make up 45% of the action area). Also, some labels do not limit the number of applications allowed on parks, home lawns, and flower beds (*e.g.*, EPA Reg. No. 9198-146). In the absence of limits, maximum use patterns for these uses were assumed to involve 25 applications at the maximum rate, occurring every 3 days; the impact of fewer applications was also assessed.

The assessment endpoints for the Barton Springs salamander include direct toxic effects on the survival, reproduction, and growth of the salamander itself, as well as indirect effects, such as reduction of the prey base and/or modification of its habitat. Direct effects to the Barton Springs salamander are based on toxicity information for freshwater fish, which are generally used as a surrogate for amphibians, as well as available aquatic-phase amphibian data from the open literature. Given that the salamander's prey items and habitat requirements are dependant on the availability of freshwater aquatic invertebrates and aquatic plants, respectively, toxicity information for these taxonomic groups is also discussed.

Degradates of carbaryl include 1-naphthol. Comparison of available toxicity information for 1-naphthol indicates roughly equivalent aquatic toxicity to that of the parent for the species tested; however, 1-naphthol degrades more rapidly and is less mobile than the parent. Therefore, for this assessment, carbaryl parent is the residue of concern.

Risk quotients (RQs) are derived as quantitative estimates of potential high-end risk. Acute and chronic RQs are compared to the Agency's levels of concern (LOCs) for Federally-listed endangered species to identify if carbaryl use within the action area has any direct or indirect effect on the Barton Springs salamander. Based on estimated environmental concentrations for the currently registered uses of carbaryl, RQ values exceed the Agency's LOCs for direct acute and chronic effects on the Barton Springs salamander; this represents a likely to adversely affect determination. This determination is based primarily on the use of carbaryl on residential lawns in the BSSEA. Reduction in the number of applications allowed on the labels to only one per year does not reduce exposure estimates sufficiently to get below the acute risk to listed species LOC unless less than 5% of the lawns in the BSSEA are treated. Reductions in the maximum number of applications to lawn to 3 would, however, reduce exposure estimates enough to support a no effct determination for chronic risk.

There is a potential to indirectly adversely affect the Barton Springs salmander through reductions in its invertebrate forage base. However, based on this assessment, carbaryl use in the BSSEA has no effect on the critical habitat of the Barton Springs salamander. A summary of the risk conclusions and effects determination for the Barton Springs salamander is presented in **Table 1**.

Table 1. Carbaryl Effects Determination Summary for the Barton Springs Salamander.

Assessment Endpoint	Effects Determination	Basis for Determination
Acute mortality Chronic survival, growth, and reproduction effects on Barton Springs salamander individuals via direct effects	May affect and likely to adversely affect May affect and likely to adversely affect	Acute risk LOC is exceeded based on the most sensitive surrogate freshwater vertebrate data and a variety of assumptions about numbers of applications and the percentage of area treated. Chronic risk LOC is exceeded based on the most sensitive surrogate freshwater vertebrate data. If the maximum number of applications was reduced to three, then the determination would be "no effect'.
Indirect effects to Barton Springs salamander via reduction of prey (*i.e.*, freshwater invertebrates)	May affect and likely to adversely affect	Acute LOC is exceeded based on the most sensitive surrogate freshwater invertebrate data. Even using less conservative assumptions regarding application rates and the percentage of areas simultaneously treated in the BSSEA, the likelihood of acute mortality of prey items is considered high. Additionally, the species sensitivity distribution for freshwater invertebrates indicates that the toxicity endpoint used for evaluating effects to invertebrates is not conservative eventhough it is the most sensitive species.
Indirect effects to Barton Springs salamander via reduction of habitat and/or primary productivity (*i.e.*, aquatic plants)	No effect	Carbaryl use does not directly affect individual non-vascular aquatic plants in Barton Springs. Estimated peak EECs for all modeled carbaryl use scenarios within the action area are well below the threshold concentration for aquatic, non-vascular plants.

2. Problem Formulation

Problem formulation provides a strategic framework for the risk assessment. By identifying the important components of the problem, it focuses the assessment on the most relevant life history stages, habitat components, chemical properties, exposure routes, and endpoints. The structure of this risk assessment is based on guidance contained in EPA's *Guidance for Ecological Risk Assessment* (U.S. EPA, 1998), the Services' *Endangered Species Consultation Handbook* (USFWS/NMFS, 1998) and procedures outlined in the Overview Document (U.S. EPA, 2004).

2.1 Purpose

This ecological risk assessment is conducted consistent with settlement of the court case "*Center for Biological Diversity and Save Our Springs Alliance v. Leavitt, No. 1:04CV00126-CKK*" filed January 26, 2004. The purpose of this ecological risk assessment is to make an "effects determination," under Section 7(a) (2) of the Endangered Species Act, for the Barton Springs salamander *(Eurycea sosorum),* by evaluating the potential direct and indirect effects resulting from use of the insecticide carbaryl (1-naphthyl methylcarbamate) on the survival, growth, and/or reproduction of this federally listed endangered species. The Barton Springs salamander was federally listed as an endangered species on May 30, 1997 (62 FR 23377-23392) by the U.S. Fish and Wildlife Service (USFWS or the Service). No critical habitat has been designated for this species.

In this endangered species assessment, direct and indirect effects to the Barton Springs salamander are evaluated in accordance with the screening-level methodology described in the Agency's Overview Document (U.S. EPA, 2004).

As part of the "effects determination", the Agency will reach one of the following three conclusions regarding the potential for carbaryl to affect the Barton Springs salamander:

- "No effect";
- "May affect, but not likely to adversely affect"; or
- "Likely to adversely affect".

If the results of the screening-level assessment show no indirect effects and LOCs for the Barton Springs salamander are not exceeded for direct effects, a "no effect" determination is made, based on carbaryl's use within the action area. If, however, indirect effects are anticipated and/or estimated exposure exceeds the LOCs for direct effects, the Agency concludes a preliminary "may affect" determination for the Barton Springs salamander.

If a determination is made that use of carbaryl within the action area "may affect" the Barton Springs salamander, additional information is considered to refine the potential for exposure at the predicted levels based on the life history characteristics (*i.e.*, habitat range, feeding preferences, *etc.*) of the Barton Springs salamander and potential community-level effects to aquatic organisms. The Agency will use the best available information to distinguish those actions that "may affect, but are not likely to adversely affect" from those actions that are "likely to adversely affect" the Barton Springs salamander. This information is presented as part of the Risk Characterization in **Section 5**.

2.2 Scope

Carbaryl is a carbamate insecticide registered for control of a wide range of insect and other arthropod pests on over 100 agricultural and non-crop use sites, including home and garden uses. The chemical is also used to thin fruit in orchards.

The end result of the EPA pesticide registration process (the FIFRA regulatory action) is an approved product label. The label is a legal document that stipulates how and where a given pesticide may be used. Product labels (also known as end-use labels) describe the formulation type (*e.g.*, liquid or granular), acceptable methods of application, approved use sites, and any restrictions on how applications may be conducted. Thus, the use or potential use of carbaryl in accordance with the approved product labels for Texas is "the action" being assessed.

This ecological risk assessment is for currently registered uses of carbaryl in portions of the action area that are reasonably assumed to be biologically relevant to the Barton Springs salamander (BSS) and its designated critical habitat. Further discussion of the action area for the BSS and its critical habitat is provided in Section 2.6.

This assessment quantitatively considers effects of exposures of carbaryl only. Carbaryl degrades into one notable degradate, 1-naphthol. Toxicity data indicate that 1-naphthol is roughly equal to or less toxic than the parent compound depending on the species tested. However, available environmental fate data indicate that 1-naphthol degrades more rapidly and is less mobile than the parent, limiting its exposure. Therefore, the risk assessment is considered protective for non-target species, as the toxicity endpoints are the most sensitive measured.

This assessment considers only the single active ingredient of carbaryl. However, the assessed species and their environments may be exposed to multiple pesticides simultaneously. Interactions of other toxic agents with carbaryl could result in additive effects, synergistic effects or antagonistic effects. Evaluation of pesticide mixtures is beyond the scope of this assessment because of the myriad factors that cannot be quantified based on the available data. Those factors include identification of other possible co-contaminants and their concentrations, differences in the pattern and duration of exposure among contaminants, and the differential effects of other physical/chemical characteristics of the receiving waters (*e.g.* organic matter present in sediment and suspended water). Evaluation of factors that could influence additivity/synergism is beyond the scope of this assessment and is beyond the capabilities of the available data to allow for an evaluation. However, it is acknowledged that not considering mixtures could over- or under-estimate risks depending on the type of interaction and factors discussed above. This assessment has however, analyzed the toxicity of formulated products (including formulations involving more than one active ingredient) an determined that none of the formulated producted evaluated were more toxic than the technical grade active ingredient data used for assessing both direct and indirect risks.

2.3 Previous Assessments

2.3.1 Carbaryl

In March 2003, a revised environmental fate and ecological risk assessment was published in support of the interim reregistration eligibility decision on carbaryl (U.S. EPA, 2004b). The chapter was revised to include additional ecological effect studies and to address comments received during the public comment phase of the reregistration process. The screening-level risk assessment concluded that for many of the registered uses of carbaryl, acute and chronic risk levels of concern were exceeded for mammals and chronic risk levels of concern were exceeded for birds. Citrus was the only use that exceeded the acute risk LOC for fish; however, most of the uses exceeded the acute and chronic risk LOCs for aquatic invertebrates. Based on a single acceptable study of green algae, none of the uses evaluated exceeded the acute risk LOC for aquatic plants. No data were available to assess the risk of carbaryl to terrestrial plants; however according to some labels, it may cause injury to tender foliage if applied to wet foliage or during periods of high humidity and incident data suggested that both ornamental and agricultural crops could be adversely affected by carbaryl. Beneficial insects were sensitive to carbaryl and incident data submitted subsequent to the publication of the ecological risk assessment indicate that a number of bee kills have been associated with the use of carbaryl.

Although freshwater fish are typically used as surrogates for assessing the sensitivity of aquatic-phase amphibians to chemicals, carbaryl has a relatively large amount of data available on the effects of carbaryl on larval amphibians. These data were captured qualitatively in the screening-level assessment and the data indicate that across the species tested, amphibians are less sensitive to carbaryl than fish. However, studies examining the interaction of carbaryl with aquatic communities indicated that in some cases, carbaryl exposure could enhance the growth of larval amphibians (tadpoles) through the elimination of zooplankton that compete with tadpoles for food.

Because the Agency determined that carbaryl shares a common mechanism of toxicity with the structurally-related N-methyl carbamate insecticides, a cumulative human health risk assessment for the N-methyl carbamate insecticides was necessary before the Agency could make a final determination of reregistration eligibility of carbaryl. At this time, a cumulative ecological risk assessment for the N-methyl carbamate insecticides has not been completed.

As noted in the interim Reregistration Eligibility Decision (IRED) on carbaryl (U.S. EPA, 2004b), EPA consulted with the U.S. Fish and Wildlife Service in 1988 regarding carbaryl impacts on endangered species associated with specific registered uses. As a result, the U.S. Fish and Wildlife Service (USFWS) issued a formal Biological Opinion (USFWS 1989) which identified reasonable and prudent measures and alternatives to mitigate effects of carbaryl use on endangered species. EPA also consulted with the National Marine Fisheries Service concerning carbaryl effects on endangered salmon and steelhead to determine the best processes to assess pesticide impacts on endangered species.

In April 2003, EPA submitted to the National Marine Fisheries Service, an effects determination for uses of carbaryl which have a potential to affect 26 listed Pacific Salmon and Steelhead (www.epa.gov/espp). The assessment concluded that uses of carbaryl in the action area for these species, were likely to adversely affect 20 and not likely to adversely affect 2 of the environmentally significant units (ESUs) of fish. The determination also concluded that uses of carbaryl in the action area of these species would have no effect on 4 of the ESUs. The determinations were based on use of carbaryl on crops within the habitats and migration corridors of the ESUs, acute risk to endangered fish and the potential for indirect effects due to actue and chronic risks to their aquatic invertebrate food supply.

2.3.2. Barton Springs Salamander

The Agency has completed (U.S. EPA, 2006) an ecological risk assessment evaluating the potential effects of the herbicide atrazine on the Barton Springs salamander. The atrazine assessment was another component of the settlement of the court case "*Center for Biological Diversity and Save Our Springs Alliance v. Leavitt, No. 1:04CV00126-CKK"*. Conclusions regarding atrazine use in its action area were that it would have no direct effect on the Barton Springs salamander's growth, reproduction or survival; furthermore, atrazine was not likely to indirectly affect the salamander through adverse effects on the salamander's prey or through adverse effects on aquatic plants.

In 2007, the Agency also completed (U.S. EPA, 2007a) an ecological risk assessment evaluating the potential effects of the insecticide diazinon on the Barton Springs salamander. Conclusions regarding diazinon use in the action area were a "no effect" determination for direct acute effects on the Barton Springs salamander and a may affect but "not likely to adversely affect" through direct chronic effects on the Barton Springs salamander and through indirect effects to its invertebrate forage base.

Additionally, the Agency has completed (US. EPA 2007b) an ecological risk assessment evaluating the potential effects of the herbicide metaolachlor on the Barton Springs salamander. Conclusions regarding metolachlor use in the action area were a "may affect" but are "not likely to adversely affect" determination for both direct and indirect effects on the Barton Springs salamander.

2.4 Stressor Source and Distribution

2.4.1 Environmental Fate and Transport Assessment

The following fate and transport description for carbaryl is consistent with the information contained in the initial 2004 IRED (U.S. EPA, 2004b). Carbaryl dissipates in the soil environment by abiotic and microbially-mediated degradation. The major degradation product is 1-naphthol, which is further degraded to carbon dioxide. Abiotic routes of degradation include relatively rapid hydrolysis under alkaline conditions and photolysis in water. Under aerobic conditions, the compound degrades rapidly by microbial metabolism with half-lives of 4 to 5 days in soil and aquatic environments. Carbaryl dissipates rapidly from foliage and is mobile in the environment; however, the compound will increasingly partition to sediment as organic carbon content increases. Based on its octanol-water partition coefficient and bioconcentration factors, carbaryl is not expected to bioaccumulate (**Table 2**).

Table 2. Summary of Environmental Chemistry and Fate Parameters for Carbaryl (See Text for Analysis).

Parameter	Value	Reference
Selected Physical/Chemical Parameters		
Molecular Weight	201.22 g/mol	--
Water Solubility	32 mg/L (20^o C)	Suntio, *et al.*, 1988
Vapor Pressure	1.36 10^{-7} torr (25^o C)	Ferrira and Seiber, 1981
Henry's Law Constant	1.28×10^{-8} atm m^3/mol	Suntio, *et al.*, 1988
Octanol/Water Partition Coefficient (K_{ow})	229	Windholz *et al.*, 1976
Persistence		
Hydrolysis $t_{1/2}$ pH 5 pH 7 pH 9	Stable 12 days 3.2 hours	MRID 00163847, 44759301
Aqueous Photolysis $t_{1/2}$	21 days	MRID 41982603
Soil Photolysis $t_{1/2}$	Assumed stable	No valid data submitted
Aerobic Soil Metabolism $t_{1/2}$	4 days in one sandy loam soil	MRID 42785101
Anaerobic Soil Metabolism $t_{1/2}$	72 days	MRID 42785102
Aerobic Aquatic Metabolism $t_{1/2}$	4.9 days	MRID 43143401
Anaerobic Aquatic Metabolism $t_{1/2}$	72 days	MRID 42785102
Mobility		
Batch Equilibrium	K_F (K_{OC}) = 1.74 (207) - sandy loam 2.04 (249) - clay loam sediment 3.00 (211) - silt loam 3.52 (177) - silty clay loam 1/n values ranged from 0.78-0.84	MRID 43259301
Column Leaching	Slightly mobile in columns (30-cm length) of sandy loam, silty clay loam, silt loam, and loamy sand soils	MRID 43320701
Bioconcentration Factor (BCF)	14x (edible), 75x (viscera), 45x (whole fish)	MRID 00159342
Field Dissipation		
Forestry Dissipation	Foliar $t_{1/2}$ = 21 days Leaf Litter $t_{1/2}$ = 75 days Soil $t_{1/2}$ = 65 days	MRID 43439801

In available laboratory fate studies, 1-naphthol has been identified as the major degradate of carbaryl. In addition, several minor degradates of carbaryl were identified, including: 5-hydroxy-l-naphthyl methylcarbamate (aerobic soil metabolism, anaerobic aquatic studies), 1-naphthyl(hydroxymethyl)carbamate (aerobic soil metabolism, anaerobic aquatic studies), 1,4-naphthoquinone (aerobic aquatic metabolism, anaerobic aquatic studies), 4-hydroxy-1-naphthyl methylcarbamate (anaerobic aquatic study), 1,5-naphthalenediol (anaerobic aquatic study), and 1,4-naphthalenediol (anaerobic aquatic study); (hydroxy)naphthoquinone has been identified as a degradate of 1-naphthol.

Fate and transport data on the primary degradate, 1-naphthol, are limited; however, available data in the open literature indicate that its mobility is highly variable and less than the mobility of carbaryl on average (K_{OC} range = 56-15,600 L/kg_{OC}; U.S. EPA, 1980; Burgos *et al.*, 1996). 1-Naphthol is not likely to persist due to fairly rapid degradation. In the open literature, the degradate has been observed to rapidly photooxidize (Lamberton, and Claeys, 1970) to below levels of detection in 2 hours under artificial light (Armburst and Crosby, 1991). Mihelcic and Luthy observed complete degradation of 1-naphthol in dark soil-water systems to below detection limits in 3 days under aerobic conditions and in 15-16 days under anaerobic conditions (1988). Since 1-naphthol can occur from a variety of natural and anthropogenic processes, its presence in the environment is not necessarily related to carbaryl use.

The mode of action of 1-naphthol is likely different than that of the parent. In fish, the mode of action of 1-naphthol has been described as narcosis (type II) (Russom *et al.*, 1997). In plants, 1-naphthol can act as an auxin, which is a plant hormone essential to coordination of plant growth. Excessive amounts of auxins can result in inhibition of growth, leaf drop and plant death.

Carbaryl has been detected in surface water, ground water, air, and precipitation. Carbaryl has been detected frequently in surface water monitoring studies throughout the U.S., and infrequently in ground water monitoring studies. Surface water monitoring studies indicate that residential use of carbaryl is more frequently associated with surface water contamination. Carbaryl detections in air were observed more frequently and generally at higher concentrations at sampling locations in urban areas compared to agricultural areas (Foreman *et al.*, 2000). Pesticide concentrations in fog formed in the vicinity of applications are often higher than those observed in rain water or surface water. Schomburg *et al.* (1991) reported carbaryl concentrations in fog ranging from 0.069 to 4.0 μg/L.

Potential transport mechanisms of carbaryl include pesticide surface water runoff, spray drift, and secondary drift of volatilized or soil-bound residues leading to deposition onto nearby or more distant ecosystems. The magnitude of pesticide transport via secondary drift depends on the pesticide's ability to be mobilized into air and its eventual removal through wet and dry deposition of gases/particles and photochemical reactions in the atmosphere. A number of studies have documented atmospheric transport and redeposition of pesticides from the Central Valley to the Sierra Nevada Mountains (Fellers *et al.*, 2004, Sparling *et al.*, 2001, LeNoir *et al.*, 1999, and McConnell *et al.*, 1998). Prevailing winds blow across the Central Valley eastward to the Sierra Nevada Mountains, transporting airborne industrial and agricultural pollutants into Sierra Nevada ecosystems (Fellers *et al.*, 2004, LeNoir *et al.*, 1999, and McConnell *et al.*, 1998). Therefore, physicochemical properties of the pesticide that describe its potential to enter the air from water or soil (*e.g.*, Henry's Law constant and vapor pressure), pesticide use, modeled estimated concentrations in water and air, and available air monitoring data from the Central Valley and the Sierra Nevada Mountains are considered in evaluating the potential for atmospheric transport of carbaryl to habitat for the BSS.

Carbaryl has been shown to be transported and deposited by atmospheric processes (Waite, *et al.*, 1995; Foreman, *et al.*, 2000; Sanusi *et al.*, 2000). As with all chemicals applied by aerial or ground spray, spray drift can cause exposure to non-target organisms downwind. Vapor-phase transport and particulate transport may carry a compound far from the area of application. In the atmosphere, partitioning between particulate and gas phase is a function of temperature. Therefore, atmospheric transport distance and deposition are functions of temperature. In general, given carbaryl's relatively rapid degradation and low vapor pressure, its potential for short-range and long-range atmospheric transport is very limited.

At this time, an approved model is not available for estimating atmospheric transport of pesticides and resulting exposure to aquatic organisms in areas receiving pesticide deposition from the atmosphere. Potential mechanisms of transport to the atmosphere, such as volatilization, wind erosion of soil, and spray drift, can only be discussed qualitatively for carbaryl. The extent to which carbaryl will be deposited from the air to the action area is not quantitatively known, but expected to be minimal due to carbaryl's relatively rapid degradation and low vapor pressure.

2.4.2 Mechanism of Action

Carbaryl is an insecticide belonging to the N-methyl carbamate class of pesticides. Carbaryl is a cholinesterase inhibitor that acts on animals upon contact and upon ingestion by competing for binding sites on the enzyme acetyl cholinesterase, thus preventing the breakdown of the neurotransmitter acetylcholine. The primary degradate, 1-naphthol does not inhibit acetyl cholinesterase.

2.4.3 Use Characterization

According to the IRED (U.S. EPA, 2004b), carbaryl is nationally registered for over 400 uses in agriculture, professional turf management, ornamental production, and residential settings. Carbaryl also is registered for use as a mosquito adulticide. Agricultural uses include fruit and nut tree, fruit and vegetable, and grain crops. Carbaryl is used by homeowners in residential settings for lawn care, gardening (vegetables and ornamentals), and pet care (pet collars, powders, and dips, in kennels, and on pet sleeping quarters). Carbaryl also is used by nursery, landscape, and golf course industries on turf, annuals, perennials, and shrubs.

According to the IRED (U.S. EPA, 2004b), a total of approximately 3.9 million pounds of carbaryl active ingredient are sold annually in the U.S.; with about half used in agriculture and half in non-agricultural settings (per 1998 data). The amount of carbaryl usage in agriculture has declined form an average of 1.9 million pounds of active ingredient per year from 1992 through 2001, to 1 to 1.5 million pounds of active ingredient in 2001. **Figure 1** depicts the extent of estimated annual agricultural carbaryl use nationally as of 2002, indicating that a total of 2,440,288 pounds of carbaryl were applied annually (USGS, 2007). The highest usage by weight (646,072 lbs) occurred on hay. Pecans (373,494 lbs) and apples (342,293 lbs) represented the second and third highest usage of carbaryl by weight.

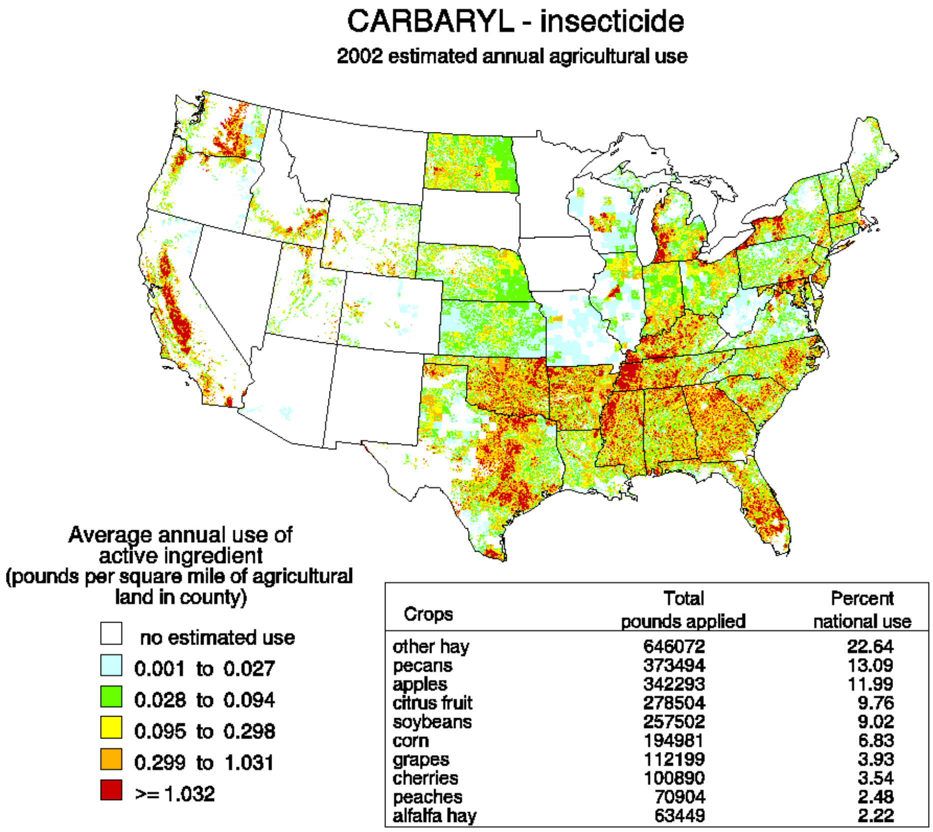

Figure 1. Historical Extent (2002) of carbaryl usage (USGS, 2007).

Data regarding non-agricultural usage are limited. Data were not found that indicate how much carbaryl is usually applied in non-agricultural areas, when it is applied, and at what interval.

Analysis of labeled use information is the critical first step in evaluating the federal action. The current label for carbaryl represents the FIFRA regulatory action; therefore, labeled use and application rates specified on the label form the basis of this assessment. The assessment of use information is critical to the development of the action area and selection of appropriate modeling scenarios and inputs.

Based on a quantitative usage analysis based on survey data from 1992 – 2001, the crops with the largest number of acres treated and pounds of carbaryl active ingredient (a.i.) applied in Texas are: cantaloupe, cotton, grapefruit, oats/rye, pasture, peaches, pecans, rice, sorghum, squash, sugar beets, tomatoes, watermelon and wheat. This analysis does not reflect the decline in the usage of carbaryl reported by the registrant[1] since 2002 because of the availability of alternative pesticides in the market nor does the analysis reflect mitigation imposed by the 2004 Interim Reregistration Eligibility Decision (IRED). Mitigation included the cancellation of pet uses except flea collars, cancellation of aerial applications of granular and bait formulations to corn, grain sorghum, alfalfa, rice and sunflowers; cancellation of use on succulent, shelled beans

[1] Bayer CropScience. 2005. Carbaryl: The Potential Risk to Amphibians. The Barton Springs Case. Unpublished report submitted to the U.S. Environmental Protection Agency 10/28/2005.

and peas (subgroup 6B); reduction in the maximum application rate from 7.5 to 5 lbs a.i./A to the citrus crop grouping; cancellation of the use on wheat; cancellation of the use on proso millet, and cancellation of the direct application of carbaryl to poultry and treatment of poultry houses.

2.5 Assessed Species

A brief introduction to the Barton Springs salamander, including a summary of habitat, diet, and reproduction data relevant to this endangered species risk assessment is provided below. Further information on the status and life history of the Barton Springs salamander is provided in **Appendix D**.

The Barton Springs salamander, shown in **Figure D.1** of **Appendix D**, is aquatic throughout its entire life cycle. As members of the Plethodontidae family (lungless salamanders), they retain their gills when sexually mature and eventually reproduce in freshwater aquatic ecosystems. The available information indicates that the Barton Springs salamander is restricted to the immediate vicinity of the four spring outlets that make up the Barton Springs complex (**Figure 2**), located in Zilker Park near downtown Austin, Texas. Based on salamander survey results conducted by the City of Austin, Barton Springs salamanders appear to prefer areas near the spring outflows, with clean, loose substrate for cover, but may also be found in aquatic plants, such as moss. In addition to providing cover, moss and other aquatic plants harbor a variety and abundance of the freshwater invertebrates that salamanders eat. This species has one of the smallest ranges of any vertebrate species in North America (Chippindale, 1993). The Barton Springs segment of the Edwards Aquifer (BSSEA) and its contributing zone supply all of the water in the springs that make up the Barton Springs complex. Flows of clean spring water are essential to maintaining well-oxygenated water necessary for salamander respiration and survival.

The subterranean component of the Barton Spring salamander's habitat may provide a location for reproduction (USFWS, 2005); however, little is known about the reproductive biology of the Barton Springs salamander in the wild. It appears that salamanders can reproduce year-round, based on observations of gravid females, eggs, and larvae throughout the year in Barton Springs (USFWS, 2005). Survey results indicate that Barton Springs salamanders prefer areas near the spring outflows, with clean, loose substrates for cover, but the salamanders may also be associated with aquatic plants (especially moss). In addition to providing cover, moss and other aquatic plants harbor a variety and abundance of the salamander's prey, *i.e.*, freshwater invertebrates.

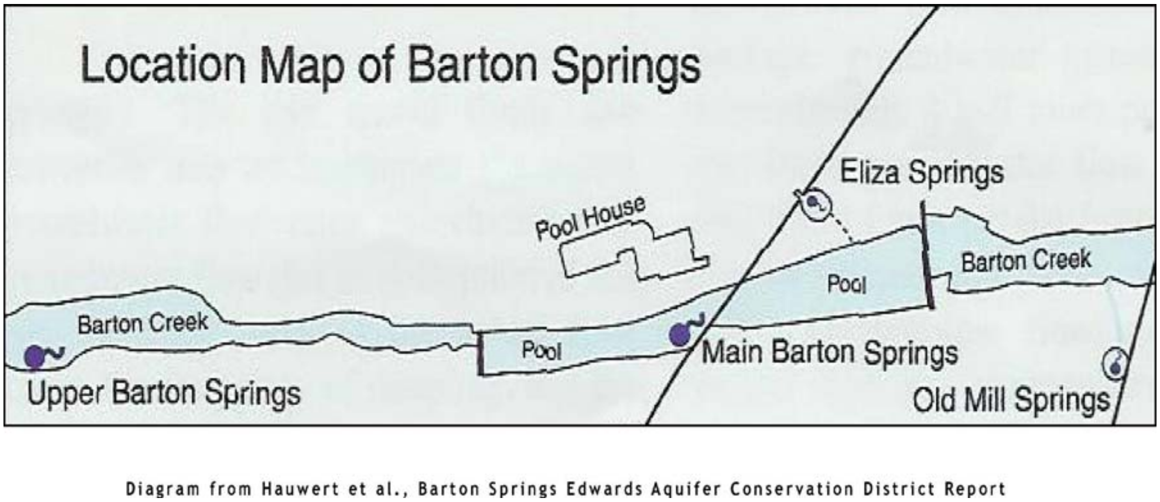

Figure 2. Barton Springs Complex (from Hauwert *et al.*, 2004). Circles represent spring locations.

2.6 Action Area

It is recognized that the overall action area for the national registration of carbaryl uses is likely to encompass considerable portions of the United States based on the large array of uses. However, the scope of this assessment limits consideration of the overall action area to those portions that may be applicable to the protection of the Barton Springs salamander from potential direct and indirect toxic effects of carbaryl and from potential adverse effects on its habitat, as they occur within the hydrogeologic framework of Barton Springs. Deriving the geographical extent of this portion of the action area is the product of consideration of the types of effects carbaryl may be expected to have on the environment, the carbaryl exposure levels that are associated with those effects, and the best available information concerning the use of carbaryl and its fate and transport within Barton Springs.

Unlike exposure pathways for most aquatic organisms, where pesticides are potentially transported via surface water to the receptor within a defined watershed, the Barton Springs salamander resides in a somewhat unique environment in which the water and the carbaryl reaches the salamander via subsurface flow. The Barton Springs salamander is known to inhabit only four springs and associated pools and subterranean areas in the aquifer itself (USFWS, 2005). Thus, the fate and transport of carbaryl is an important factor in defining the action area for the Barton Springs salamander. The fate profile (see **Section 2.4.1**) indicates why runoff from treated fields, transported in ground water that flows through the fractured limestone of the Edwards Aquifer, is considered the principal route of exposure for the salamander. Thus, the action area for this assessment is primarily defined by those areas within the hydrogeologic "watershed" that discharge to the springs. **Figure 3** depicts the extent of the action area based on this hydrogeologic framework.

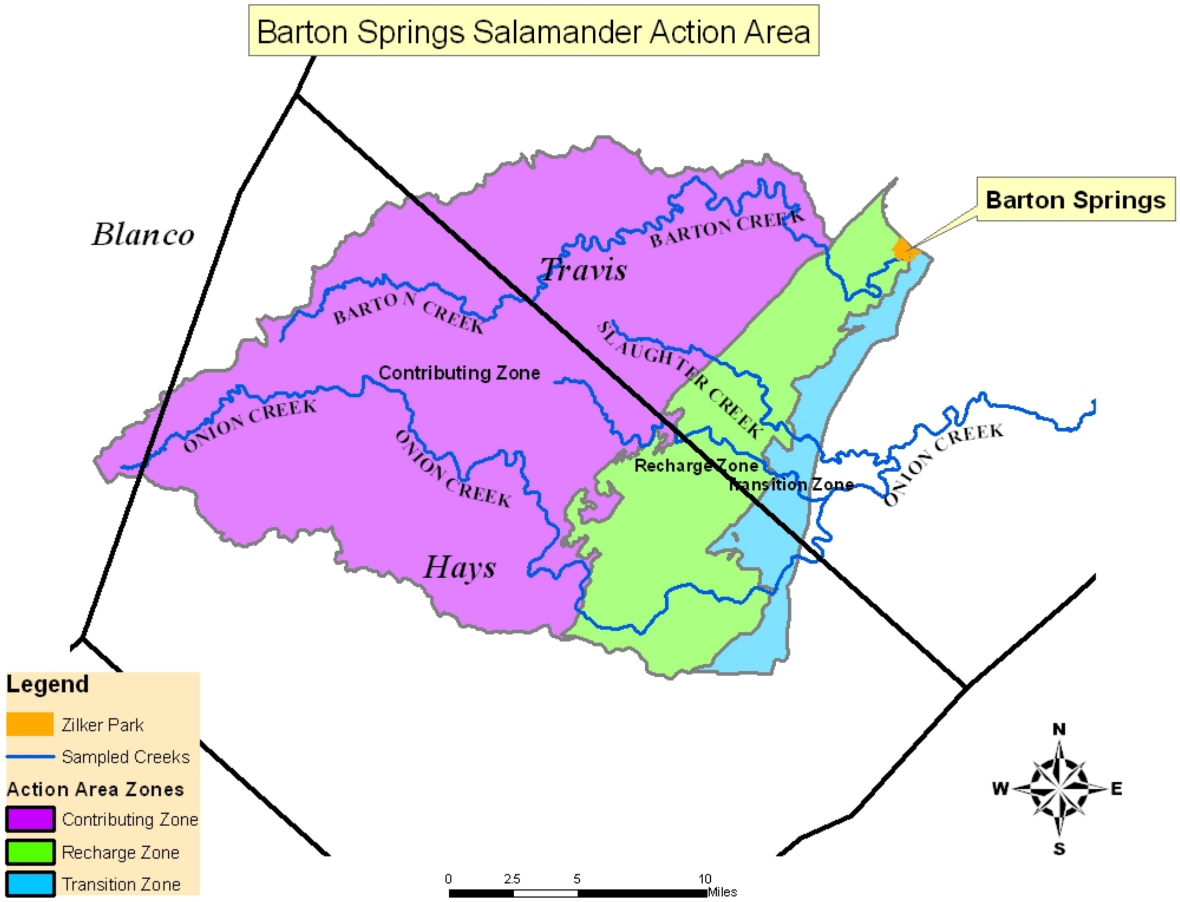

Figure 3. Action Area for Carbaryl as it Relates to the Barton Springs Salamander.

Barton Springs, located in Zilker Park near downtown Austin, Texas is an aquifer-fed system consisting of four hydrologically connected springs: (1) Main Springs (also known as Parthenia Springs or Barton Springs Pool); (2) Eliza Springs (also known as the Elks Pit); (3) Old Mill Springs (also known as Sunken Garden or Walsh Springs); and (4) Upper Barton Springs (Pipkin and Frech, 1993) (See **Figure 2**). Collective flow from this group of springs represents the fourth largest spring system in Texas (Brune, 1981). The springs are fed by the Barton Springs Segment of the Edwards Aquifer (BSSEA). During high flow conditions, the surface water flow from Barton Creek may enter the Barton Springs Pool, if it overtops the dam at the upper end of the pool. However, because surface water flow from Barton Creek into the pool system is diverted via a bypass channel upstream from the main pool to limit the input of surface water from Barton Creek, this is not expected to be a significant source of water in the areas where the salamander resides. Thus, ground water quality is the primary determinant of exposure for the salamander.

Flow to the Barton Springs is controlled by the geology and hydrogeology of the Barton Springs Watershed, which is divided into three hydrogeologic zones. These are, from west to east, the Contributing Zone (683 km^2), the Recharge Zone (233 km^2), and the Artesian Zone. Some have sub-divided the Recharge Zone further into the Recharge and Transition Zones (**Figure 3**). The BSSEA is comprised of the Recharge and Artesian zones (401 km^2). Of these zones, the Contributing and Recharge Zones have the greatest and most direct influence on Barton Springs. The Artesian Zone does not contribute subsurface flow to the springs (Slade *et al*., 1986, Hauwert *et al*., 2004). Therefore, the Contributing Zone and Recharge Zone (including the Transition Zone) comprise the action area for carbaryl as it relates to the Barton Springs salamander. A more detailed description of the geology and hydrogeology of these zones is provided in **Section 3.2.2.**

Numerous geological and ground water studies (Slade *et al.*, 1986, Hauwert *et al.*, 2004, Lindgren *et al.*, 2004)) have been conducted that define the extent of the area contributing water to the Barton Springs. The Contributing Zone includes six creeks (Barton, Williamson, Slaughter, Bear, Little Bear, and Onion Creeks) that drain the watersheds and are maintained by spring flow from the Trinity aquifer. These creeks flow toward the Recharge Zone across the boundary of the Edwards aquifer. In the Recharge Zone, the creeks flow over the surface of the highly fractured and weathered limestone of the Edwards aquifer and rapidly infiltrate through the faults, caves, and sinkholes characteristic of a karst aquifer system. The Trinity aquifer is juxtaposed at depth against the Edwards aquifer and likely discharges into the Edwards aquifer, but this represents a minor portion of overall recharge (Lindgren *et al.,* 2004).

Within the Recharge Zone of the BSSEA ground water is rapidly transported toward the Barton Springs with velocities along the dominant flow path of 1-5 miles/day, depending on ground water flow conditions (USFWS, 2005). Based on dye tracer studies, pesticides present within the recharge zone could potentially be transported to the springs on a time scale of hours to weeks (Hauwert *et al*., 2004).

An evaluation of usage information was completed to determine whether any or all of the area defined by the Barton Springs Watershed should be included in the Action Area. Current labels and local use information were reviewed to determine which carbaryl uses could possibly be present within the defined area. These data suggest that limited agricultural and ornamental uses are present within the defined area. Finally, local land cover data (City of Austin, 2003a and b; USGS, 2003) were analyzed and interviews with the local agricultural sector (Davis, 2006; Garcia, 2006; Perez, 2006; see **Appendix B** for more detail) were conducted to refine the characterization of potential carbaryl use in the areas defined by Hays, Travis, and Blanco counties.

In addition to carbaryl exposures from contaminated surface and ground water, there is potential that transport of carbaryl through spray drift and/or long-range atmospheric transport could contribute to concentrations in the aquatic habitat used by the salamander. The environmental fate profile of carbaryl suggests that long range transport of volatilized carbaryl is very limited (see **Section 2.4.1**). However, the available monitoring data suggest that long range transport of volatilized carbaryl cannot be precluded as a possible route of exposure to non-target organisms. The Agency does not currently have quantitative models to address the long range transport of pesticides from application sites. Therefore, the extent of the Action Area that could hypothetically be influenced by this route of exposure is uncertain but expected to be minimal.

Based on the available information on potential carbaryl use sites, none of the streams in the watersheds that are within the range of the Barton Spring salamander could be excluded from the action area. Therefore, the portion of the carbaryl action area assessed here includes the area within the boundaries of the watersheds that contain the Barton Springs salamander. **Figure 3** depicts the action area graphically.

2.7 Assessment Endpoints and Measures of Ecological Effect

Assessment endpoints are defined as "explicit expressions of the actual environmental value that is to be protected" (U.S. EPA 1992). Selection of the assessment endpoints is based on valued entities (*e.g.*, Barton Springs salamander), the ecosystems potentially at risk (*e.g*, Barton Springs), the migration pathways of carbaryl (*e.g.*, runoff), and the routes by which ecological receptors are exposed to carbaryl-related contamination (*e.g.*, direct contact).

Assessment endpoints for the Barton Springs salamander include direct toxic effects on the survival, reproduction, and growth of the salamander itself, as well as indirect effects, such as reduction of the prey base and/or modification of its habitat. Each assessment endpoint requires one or more "measures of ecological effect," which are defined as changes in the attributes of an assessment endpoint itself or changes in a surrogate entity or attribute in response to exposure to a pesticide. Specific measures of ecological effect are evaluated based on acute and chronic toxicity information from registrant-submitted guideline tests that are performed on a limited number of organisms. Given that registrant-submitted amphibian toxicity tests are not available for this assessment, it is assumed that fish and aquatic-phase amphibian toxicities are similar. Birds are generally considered as surrogates for terrestrial-phase amphibians; however, Barton Springs salamanders are neotenic (*i.e.*, retain gills throughout their lives) and are aquatic-phase amphibians. Consequently, fish are used as a surrogate for amphibian/salamanders, in accordance with guidance specified in the Agency's Overview Document (U.S. EPA, 2004). Specific assessment endpoints and measures of ecological effects considered in this assessment are defined in **Table 3**. Additional ecological effects data from the open literature, as identified by ECOTOX, were also considered.

Table 3. Summary of Assessment Endpoints and Measures of Ecological Effect.

Assessment Endpoint	Measures of Ecological Effect
1. Survival, growth, and reproduction of Barton Springs salamander individuals via direct effects	1a. Rainbow trout acute LC_{50} 1b. Brook trout chronic NOAEC
2. Survival, growth, and reproduction of Barton Springs salamander individuals via indirect effects on prey (*i.e.*, freshwater invertebrates)	2a. Waterflea acute EC_{50} 2b. Waterflea chronic NOAEC 2c. Acute EC/LC_{50} data for freshwater invertebrates that are potential food items for the Barton Spring salamander
3. Survival, growth, and reproduction of Barton Springs salamander individuals via indirect effects on habitat and/or primary productivity (*i.e.*, aquatic plant community)	3a. Non-vascular plant (freshwater algae) acute EC_{05}

2.8 Conceptual Model

2.8.1 Risk Hypotheses

Risk hypotheses are specific assumptions about potential adverse effects (*i.e.*, changes in assessment endpoints) and may be based on theory and logic, empirical data, mathematical models, or probability models (U.S. EPA, 1998). For this assessment, the risk is stressor-linked, where the stressor is the release of carbaryl to the environment. Based on the results of the 2004 carbaryl IRED (U.S. EPA, 2004), and considering the possibility that carbaryl has the potential for long-range transport, the following risk hypotheses are presumed for this endangered species assessment:

- Carbaryl in ground water, runoff, spray drift and/or atmospheric deposition from treated areas may directly affect Barton Springs salamanders by causing mortality or adversely affecting growth or fecundity;
- Carbaryl in ground water, runoff, spray drift and/or atmospheric deposition from treated areas may indirectly affect Barton Springs salamanders by reducing or changing the composition of prey populations; and
- Carbaryl in ground water, runoff, spray drift and/or atmospheric deposition from treated areas may indirectly affect Barton Springs salamanders by reducing or changing the composition of the plant community in the springs, thus affecting primary productivity and/or cover.

2.8.2 Diagram

The conceptual model is a graphic representation of the structure of the risk assessment. It specifies the stressor, release mechanisms, abiotic receiving media, biological receptor types, and effects endpoints of potential concern. The conceptual model for the potential effects of carbaryl on the Barton Springs salamander is shown in **Figure 4**.

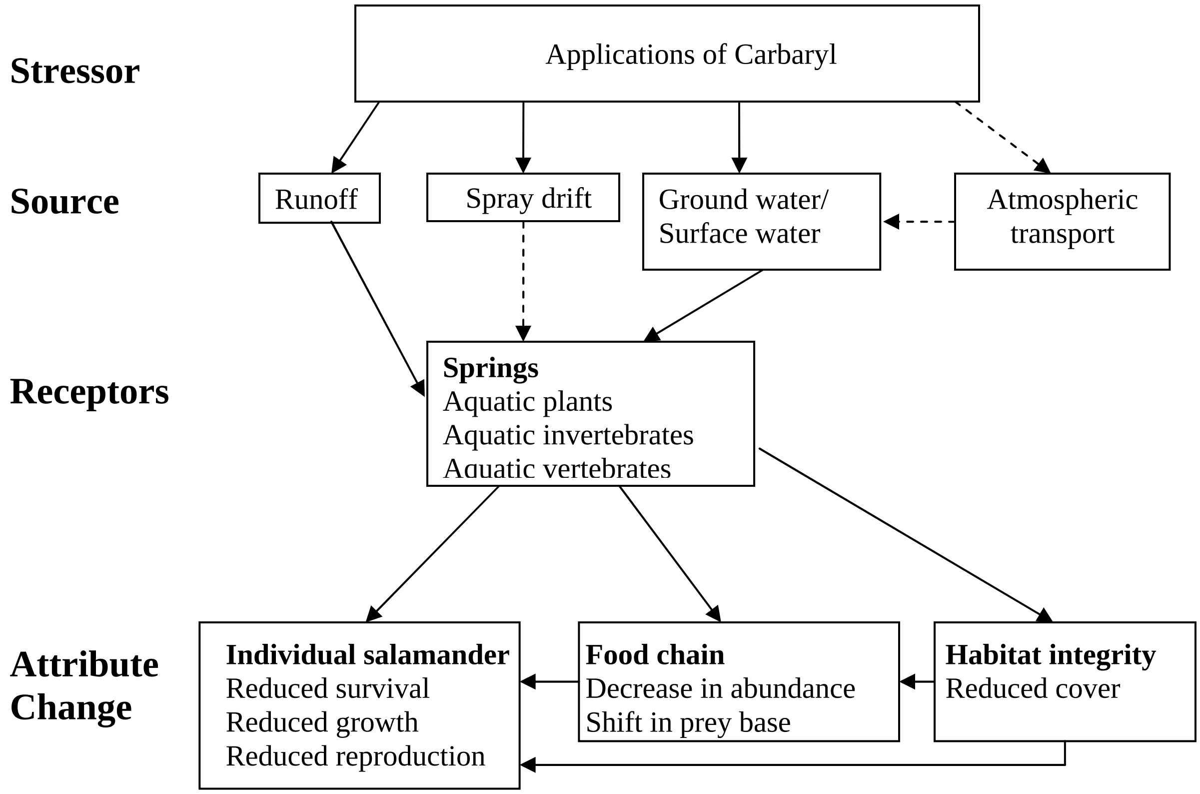

Figure 4. Conceptual Model Depicting Potential Risk from Carbaryl Use to the Barton Springs Salamander.

The conceptual model provides an overview of the expected exposure routes for Barton Springs salamander within the action area. In addition to freshwater aquatic vertebrates including Barton Springs salamanders, other aquatic receptors of concern that may be potentially exposed to carbaryl include freshwater invertebrates and aquatic plants. For freshwater vertebrate and invertebrate species, the major routes of exposure are considered to be via the respiratory surface (gills) or the integument. Direct uptake and adsorption are the major routes of exposure for aquatic plants. Direct effects to freshwater invertebrates and aquatic plants resulting from exposure to carbaryl could indirectly affect the Barton Springs salamander via reduction in food and habitat availability. The available data indicate that carbaryl is not likely to bioconcentrate in aquatic food items, with fish bioconcentration factors (BCFs) of 14x in edible tissue, 75x in visceral tissue and 45x in whole fish (MRID 00159342). Therefore, bioconcentration of carbaryl in salamanders via the diet is not anticipated to be a concern.

Individual Barton Springs salamanders with the greatest potential to experience direct adverse effects from carbaryl use are those that occur in surface water and/or ground water with the highest concentrations of carbaryl. Water passing into, and through Barton Springs comes from ground water in the BSSEA. When Barton Creek floods, some of the surface flow enters Barton Springs Pool; however, during normal flow, the water from Barton Creek enters a bypass channel upstream from the main pool and does not enter the pool itself.

The source and mechanism of release of carbaryl into surface and ground water are ground applications via foliar spray to agricultural sites and on ornamentals. Surface water runoff from the areas of carbaryl application is assumed to follow topography, resulting in direct runoff to Barton Creek and/or runoff to the recharge area of the BSSEA, where it becomes ground water that discharges to the Barton Springs. Additional potential exposure routes include spray drift and atmospheric transport as a result of volatilization; however, these are not considered to be significant routes of exposure. Spray drift is not a relevant transport pathway because the source area for carbaryl is generally removed from the spring system where the salamander resides, and the carbaryl exposures that reach the springs do so via subsurface flow. Volatilization of carbaryl from treated areas resulting in atmospheric transport and eventual deposition is not expected to be a significant route of exposure due to the low vapor pressure of carbaryl (1.36×10^{-7} torr at 25° C).

At this time, EFED does not have an approved model for estimating atmospheric transport of pesticides and resulting exposure to aquatic organisms in areas receiving pesticide deposition from the atmosphere. Potential mechanisms of transport of carbaryl to the atmosphere, such as volatilization, wind erosion of soil, and spray drift, can only be discussed qualitatively. Given the presence of carbaryl in air and precipitation reported in monitoring data, it is possible that carbaryl is present in air and precipitation in the Barton Springs area. However, the majority of monitoring data for carbaryl relate to areas with significantly different use patterns than those found in Southern Texas. In particular, available monitoring data are generally relevant to California, which has greater use of carbaryl than Texas. Given a lack of appropriate modeling and relevant monitoring data, contributions of atmospheric transport and subsequent deposition of carbaryl to the exposure of the salamander are not considered quantitatively in this assessment. Qualitative discussions involving transport mechanisms and national monitoring data for carbaryl concentrations in air and precipitation are discussed in the uncertainty section of this document.

3. Exposure Assessment

3.1 Label Application Rates and Intervals

The only labeled carbaryl uses that are expected to potentially result in exposures from runoff to the Barton Springs Salamander are uses on peaches, grapes, pasture, parks, home lawns, and flowers in nurseries and along structural perimeters as these are the only reported uses of carbaryl in the BSSEA. **Table 4** lists the pertinent label application information for these uses.

Table 4. Maximum Labeled Use Patterns of Carbaryl in the Action Area of the Barton Springs Salamander Endangered Species Assessment.

Use Site	Method of Application	Maximum Number of Applications per Year	Maximum Application Rate (lbs a.i./acre)	Minimum Interval Between Applications (days)
Home lawns[1]	Ground	2	9.1	7
Home lawns[1], parks, flowers beds around buildings	Ground	Not stated	8.4	Not stated
Ornamentals	Ground	4	7.8	7
Peaches	Aerial	2 (plus 1 dormant)	4 (5 dormant)	15
Grapes	Aerial	5	2	7
Pasture	Aerial	2	1.5	14

[1] Use on home lawns is limited both to 2 applications at 9.1 lbs a.i./acre and to an unlimited number of applications at 8.4 lbs a.i./acre.

3.2 Aquatic Exposure Assessment

This exposure assessment represents an application of the standard approach outlined in the Overview Document (U.S. EPA, 2004) for the hydrogeologic conditions of the springs, using a combination of simulation modeling and monitoring data collected in the BSSEA action area. The Agency's Pesticide Root Zone Model (PRZM, v3.12beta, May 24, 2001) was used to provide estimates of exposure in the Barton Springs resulting from direct transport in runoff water to streams in the contributing zone and resultant recharge and subsurface flow through the fractured limestone of the Edwards Aquifer. Regionally-specific PRZM scenarios representing both agricultural and non-agricultural use sites were developed following standard methodology (U.S. EPA, 2005) to capture the upper bounds of exposure.

Available historical monitoring data from the spring systems and ground water wells in the action area were evaluated. While of high quality, targeted to the Barton Springs system, and in selected instances targeted to pesticide use and single runoff events, the historical monitoring data are likely to miss peak concentrations due to insufficient sample frequency. Therefore, the monitoring data are useful for long duration (annual average) estimates of exposure, but they are not considered robust in terms of estimating acute or intermediate duration (14-day, 21-day, 30-day, 60-day, or 90-day average) exposures.

The highest potential exposure was predicted to occur from use of carbaryl on lawns within the recharge zone. The exposure assessment yields modeled 1-in-10-year annual average aggregate exposure estimates that are one and two orders of magnitude higher than concentrations seen in the monitoring data from creeks in the action area and the Barton Springs, respectively, due to the unlikely assumptions of simultaneous treatment of all lawns in the action area and of use at maximum application rates (arbitrarily limited at 25 applications per year). 1-in-10-year annual average estimates are consistent with concentrations observed in the monitoring data when uses are modeled once per year across all use areas, or when uses are modeled at multiple times per year on a fraction of the possible use areas.

3.2.1 Background

The Barton Springs salamander resides in a geographically limited area defined by a set of spring-fed pools within the City of Austin, Texas. These pools represent the total areal extent of the salamander, as defined in **Sections 2.5** and **D.4** of **Appendix D**. The pools are a unique system in that they are fed via two sources of water. Surface water has historically reached the pool system via overland flow through Barton Creek. However, water from Barton Creek is currently diverted near the inflow to the pool system and provides only limited input to the pool system during high flow (flood) events. The bulk of the water reaching the pool system is fed via a series of springs. The springs consist of the Main Spring, Upper Spring, Old Mill Spring, and Eliza Spring; approximately 80% of the flow originates from the Main Spring. All of the springs are fed via subsurface flow originating in the fractured limestone of the Edwards Aquifer, which trends south-southwest away from the pool system. Ground water from the fractured limestone (karst) is derived from perennial ground water flow and via recharge that originates from both surface streams and infiltration of rainfall in the Barton Springs Watershed. Therefore, the basic conceptual model of exposure for this assessment focuses on the subsurface pathway delivering ground water to the pools via the karst system.

The hydrogeology of the Barton Springs Watershed defines the action area (see **Section 2.6)** of carbaryl use for the Barton Springs salamander. Several hydrogeologic zones define the watershed. From west to east, these are the Contributing Zone, the Recharge Zone (which some divide further into Transition and Recharge zones), and the Artesian Zone. The relevance and route of exposure relative to the Barton Springs system is different for each zone and is defined by the hydrogeology of the system. The Contributing Zone and the Recharge Zone contribute the majority of the water to the Barton Springs pool systems. Therefore, land use patterns within these zones were considered to determine the potential for carbaryl exposure to the Barton Springs salamander. **Figure 5** shows the extent of the Barton Springs Watershed.

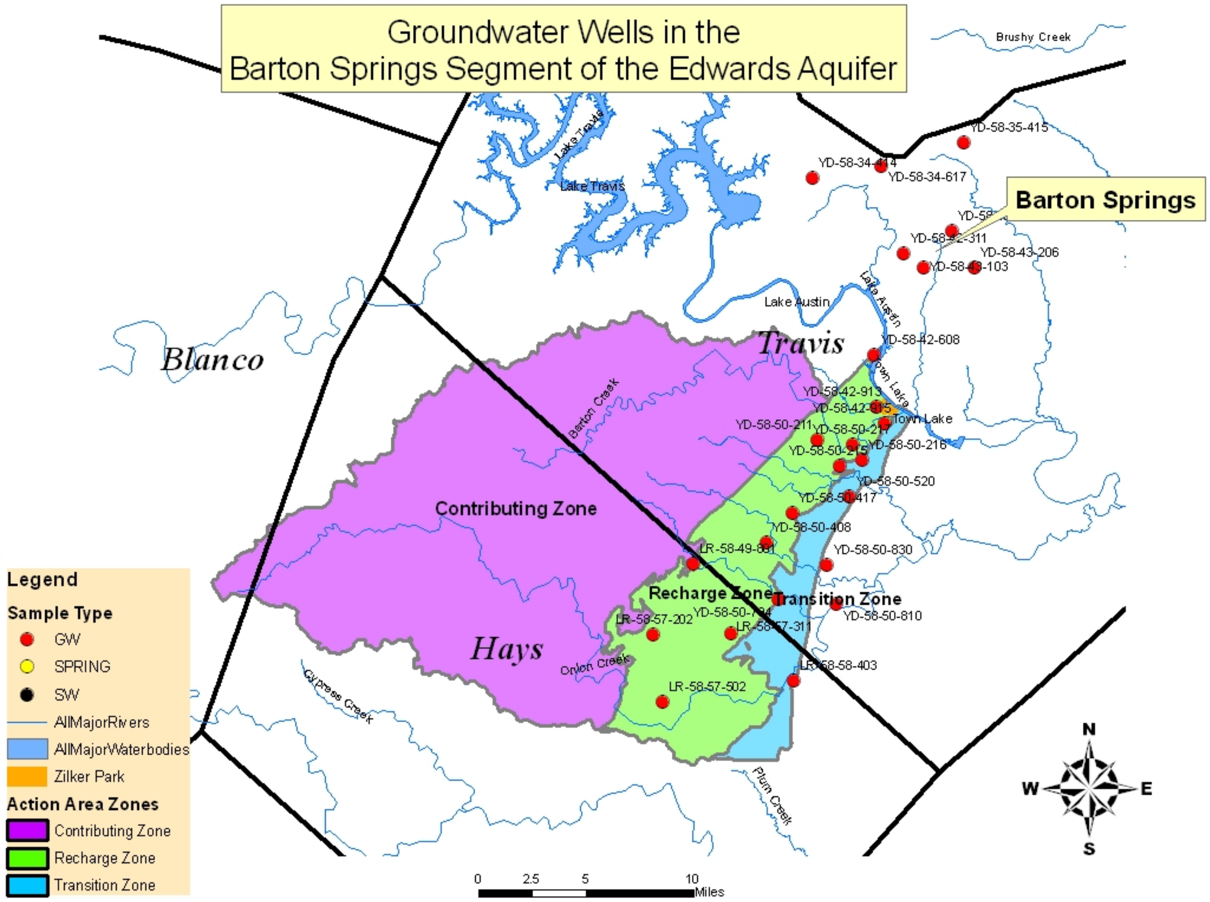

Figure 5. Hydrologic zones of the Barton Springs Watershed.

Ground water flow within the Recharge Zone is dominated by subsurface flow through fractures and solution features of a portion of the limestone Edwards aquifer known as the BSSEA. Numerous studies have been conducted that document the nature of the subsurface geology and the nature and extent of ground water flow (Slade *et al*., 1986; Hauwert *et al*., 2004; Mahler, 2005, Lindgren *et al*., 2004). Ground water flow moves rapidly from various locations within the recharge zone to discharge at the springs, with transit times, measured in dye tracer studies, of hours to weeks following individual precipitation events. The sources of the ground water in the Edwards aquifer that contribute to the Barton Springs are primarily infiltration from streams and creeks that originate in the Contributing Zone, and recharge resulting from precipitation directly in the Recharge Zone. Slade *et al.* (1986) estimated that the streams contribute roughly 85% and direct precipitation roughly 15% of ground water to the Barton Springs.

The Contributing Zone lies due west of the Recharge Zone. In this zone, runoff from sites treated with carbaryl may be transported via overland flow to surface water streams and ponds. These streams also derive some component of their total flow, estimated at 30%, from the Trinity aquifer as baseflow (Kuriansky, 1990). Carbaryl may then be transported via surface water streams to the Recharge Zone, where it rapidly infiltrates into the network of karst fractures that ultimately feed the Barton Springs system. Unlike pesticides originating within the Recharge

Zone, some dilution and degradation is expected during this transport process. Ground water flow across the Trinity-Edwards aquifer boundary is negligible (Lindgren *et al*., 2004).

Historically, surface water flow through Barton Creek has contributed to the loading of water, sediment, and contaminants to the Barton Springs pools. However, in the current configuration of Barton Creek relative to the Barton Springs pools, the creek has been artificially routed past the pools to ensure that the springs are providing the bulk of the recharge to the pools. Occasionally, large precipitation events may result in a bypass of this configuration overflowing of the pool system. In general, however, the pools are typically fed by ground water flow through the Recharge Zone of the BSSEA.

The Barton Springs system consists of a series of connected pools located within the city limits of Austin, Texas. The Barton Springs salamander has been found within the fractures (springs) feeding the pool system and within the pools themselves. Each salamander location is somewhat unique from the other in how exposures are expected to interact with the salamander.

Potential exposures to pesticides for salamanders residing within the fracture system are due to a combination of sources of ground water: base flow from the Edwards aquifer and ground water recharge from precipitation events. Thus, salamanders residing within the fracture system of the springs are likely to be exposed to longer-term base flow concentrations of carbaryl with occasional shorter duration pulses correlated with precipitation-derived runoff events transported through the fractures.

Figures 6 and 7 present the conceptual models of both of these potential exposure pathways. More details on the geology and hydrogeology may be found in the following section. Finally, a more complete description of the Barton Springs pool system in which the salamander resides is provided in **Section D.4** of **Appendix D**.

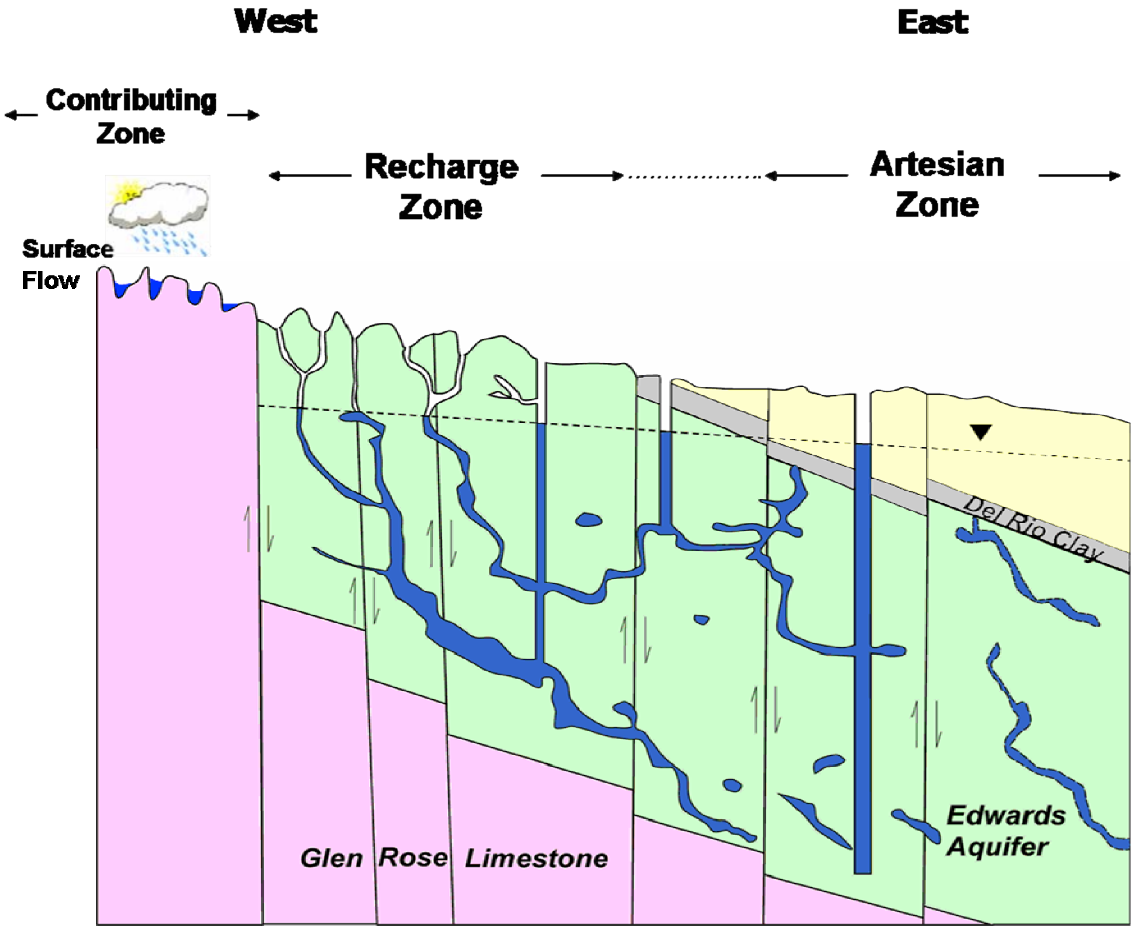

Figure 6. Hydrogeologic Cross Section of the Barton Springs Segment of the Edwards Aquifer and the Contributing Zone Showing Dominant Flow Pathways within Each Hydrozone (Taken from Mahler, 2005).

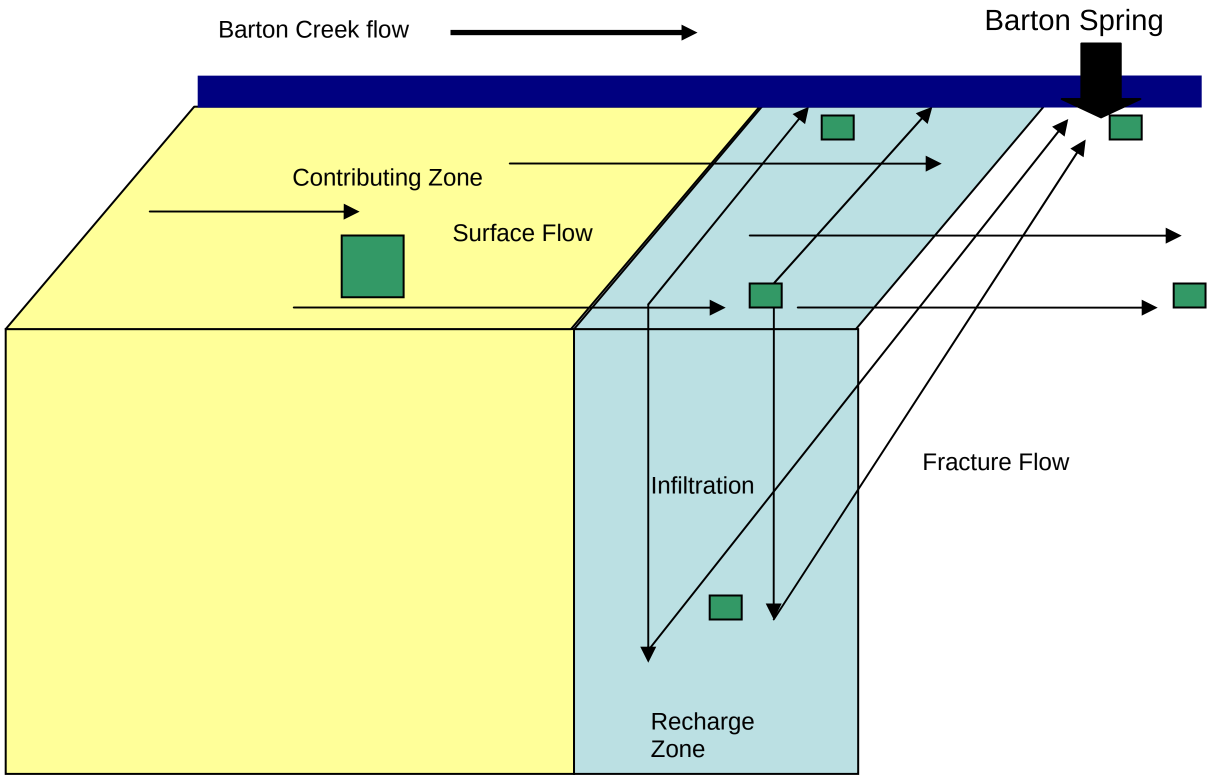

Figure 7. Conceptual Model of Surface and Subsurface Flow within the Barton Springs Watershed. Green Boxes Represent Movement of Dissolved Carbaryl Mass.

3.2.2 Geology/Hydrogeology

The Barton Springs pool system lies at the extreme northern end of the BSSEA, which is a portion of a larger fractured limestone aquifer system known as the Edwards Aquifer. The Edwards Aquifer is a major source of ground water used for drinking water and represents a critical source of water necessary to replenish surface water resources for both recreational and ecological uses throughout the eastern half of Texas.

The Edwards Aquifer is a karst system of limestone and dolomite of Cretaceous age (Slade *et al.*, 1986). The aquifer covers roughly 6,000 square kilometers and stretches from north of Austin to an area southwest of San Antonio. In general, the physical trend of the Edwards Aquifer (and Barton Springs Segment) is south to north, and the carbonate rocks within the aquifer dip to the east except where broken by fractures within the Recharge Zone (Slade *et al.*, 1986). The thickness of the aquifer generally increases from north to south and is typically 400 to 450 feet thick (Slade *et al.*, 1986).

The Barton Springs Segment of the Edwards aquifer extends from the Colorado River of Texas south roughly 20 miles into Hays County and covers 401 square kilometers. The Barton Springs Segment is separated from the rest of the Edwards Aquifer by a hydrogeologic divide with ground water north of the divide flowing north-northeast towards the Colorado River of Texas and south of the divide flowing south-southwest. In general, the BSSEA is unconfined in the Recharge Zone and confined (by the Del Rio clay) in the Artesian Zone. It discharges at a number of springs along the Colorado River and Barton Creek. Discharge into Barton Springs is predominantly through the Recharge Zone, and, based on hydrograph data, is typically around 35 cubic feet per second (cfs) during low flow periods (the median annual minimum flow), but can reach above 120 cfs during high flow conditions; the average flow is reported to range between 53 cfs (Hauwert *et al.*, 2004) and 56 cfs (Mahler, 2005). Hydrograph data for Barton Springs from the USGS (**Figure 8**) yields an average flow of 62 cfs. Slade *et al.* (1986) estimated that up to 85% of the recharge reaching the BSSEA was derived from infiltration of the main creeks crossing the Recharge Zone. The remaining recharge is derived from water in inter-stream areas of the Recharge Zone, including from minor tributaries and direct infiltration of precipitation.

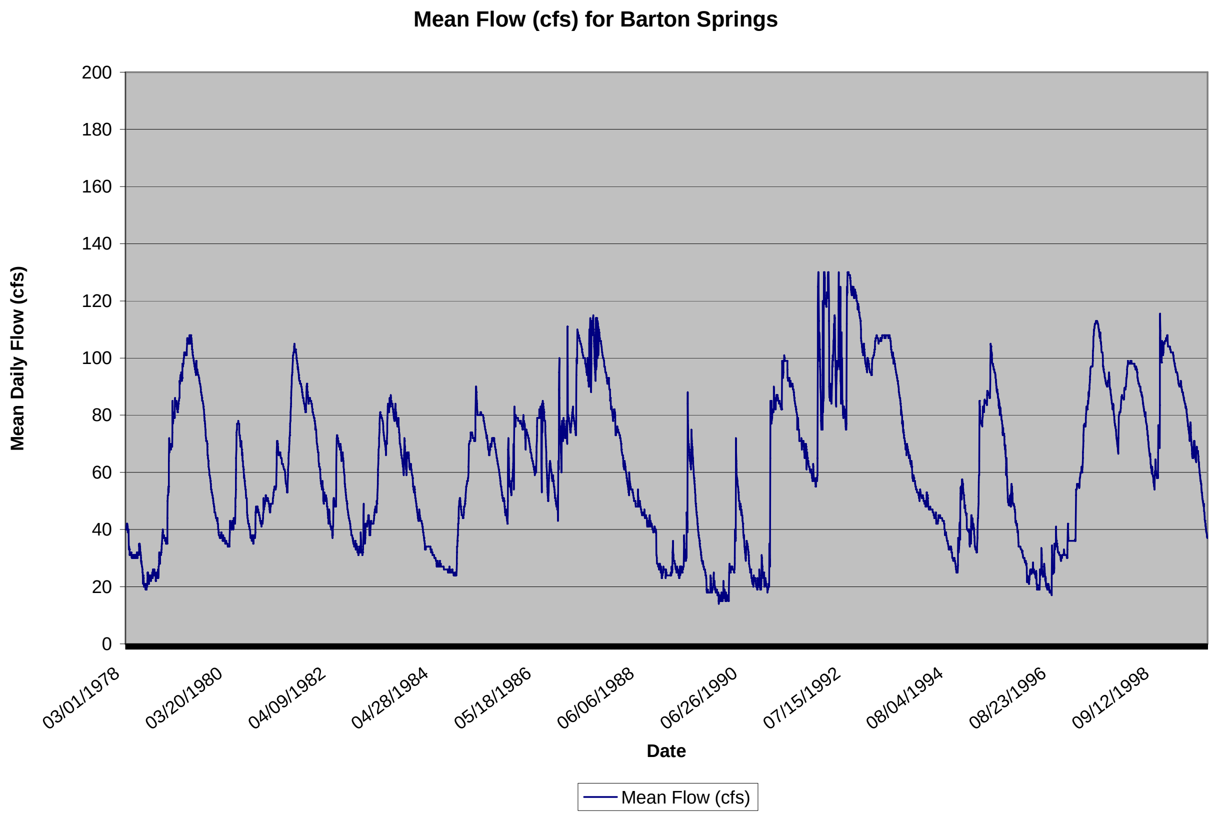

Figure 8. Flow Hydrograph Data for Barton Springs.

Hauwert *et al.* (2004) conducted dye trace studies of the flow systems in the BSSEA between 1996 and 2002. In these studies, the authors attempted to discern specific flow patterns within the Recharge Zone using dye tracing, mapping of the potentiometric table, water chemistry, local knowledge of geology, and cave mapping. Non-toxic dye injection into caves, sinkholes, and wells was used to define the route of ground water flow, estimate flow velocities, and approximate travel times. The important finding of this study relative to this assessment is that travel times within the Recharge Zone range from hours up to one week for locations in close proximity to the springs (defined by Travis County), while farther south and west in the recharge zone, travel times can increase to approximately 4 weeks. **Figure 9** presents a summary of the flow paths defined by this study (Hauwert *et al.*, 2004).

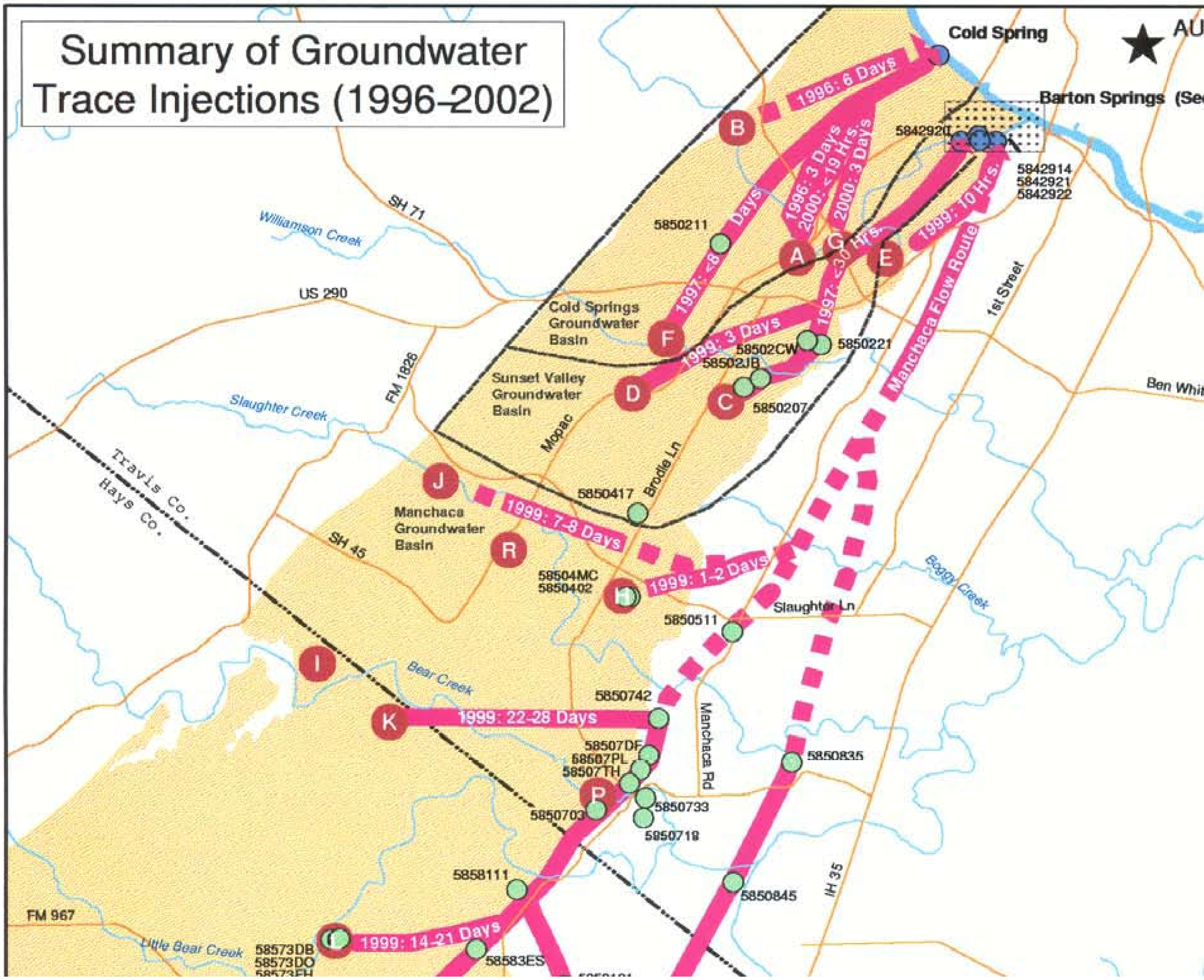

Figure 9. Flow paths within Recharge Zone of the Barton Springs Segment of the Edwards Aquifer (Taken from Mahler, 2005; originally published in Hauwert et al., 2004). Water generally flows from south west to north east.

3.2.3 Conceptual Model of Exposure

Given the understanding of the geology and hydrogeology described above, a combination of modeling and monitoring data is needed to assess the potential exposures from carbaryl to the Barton Springs salamander. Routes of exposure are dependent on the location of registered use sites for carbaryl within the action area (defined in **Section 2.6** as the Contributing and Recharge Zones), and locations within the pool system (fractures versus pools) where the salamander resides. For instance, uses which are predominantly within the Recharge Zone of the BSSEA result in concentrations in water that are likely to reach the springs via direct transport through the fractures within the karst zone. Uses in the Contributing Zone result in concentrations in water that are transported over longer flow paths and are subject to both surface and sub-surface transport processes. The interconnected nature of the subsurface network in the BSSEA recharge Zone can have a significant influence on mixing, dilution, storage and degradation of flow (Field, 2004).

Because of the limited nature of the available monitoring data both within the spring network and in the surrounding ground water and surface water, an analysis of potential use sites within the action area is needed. Available agricultural statistics, land cover data, usage information, and soils data were evaluated relative to the hydrogeologic framework described above. This information was used to determine the presense and extent of use sites in the Recharge Zone and the Contributing Zone.

In order to address the potential for carbaryl exposure from use on these sites, a suite of PRZM modeling scenarios was developed for the specific agronomic, soil, and climatic data available. As noted above, the action area for the development of the Barton Springs scenarios is comprised of two primary hydrologic zones (in order of importance): 1) the Recharge Zone and 2) the Contributing Zone. Spatial data containing the hydrozone boundaries were obtained from the Barton Springs/Edwards Aquifer Conservation district (ftp://www.bseacd.org/from/HCP Shape Files/). The areas to the east of the Recharge Zone are not considered relevant to the assessment because ground water flow to the Barton Springs system comes either directly from transport through the Recharge Zone, which occurs generally south to north, or indirectly via the Contributing Zone/Recharge Zone interaction, where flow is dominantly west to east.

Runoff from the recharge zone is assumed to enter the karst environment directly, whereas runoff from the contributing zone is assumed to mix with stream water prior to entering the karst environment of the recharge zone. The long-term average flow volume in the streams in the contributing zone was assumed to be 30% due to aquifer discharge and 70% to runoff, as is consistent with Kuniansky (1989).

As carbaryl residue travel times in ground water may be on the order of hours to days, they were assumed short enough in the surface runoff and ground water of the karst environment to neglect degradation in the assessment. Under this assumption, carbaryl residues and runoff estimated by PRZM for all possible use areas were directly combined with a background flow and concentration in the aquifer discharge to produce estimated environmental concentrations (EEC) in the Barton Springs to which Barton Springs salamanders might be exposed. Spray drift and the farm pond EXAMS scenario, both of which are modeled in standard risk assessments, were not modeled in this exposure assessment due to the assumptions that the use sites in the action area are not adjacent to the springs and that residues in both ground water and surface runoff quickly flow to the Barton Springs without degrading.

3.2.4 Existing Water Monitoring Data

EFED finalized the Environmental Fate and Ecological Risk assessment for carbaryl in 2003 (U.S. EPA, 2003). The Carbaryl Interim Reregistration Eligibility Decision (IRED) was published for comment in 2004, and EFED completed a response to those comments in 2005 (U.S. EPA, 2005). Since that time, EFED has obtained the additional carbaryl monitoring data that is summarized below. Data specific to Texas, as well as the Barton Springs area are described. These data include United States Geological Survey's (USGS) National Water Quality Assessment (NAWQA) and targeted monitoring by USGS of the Barton Springs Watershed. In addition, observed trends in carbaryl concentrations in national surface waters are discussed.

3.2.4.1 USGS Data Set from Barton Springs Area

3.2.4.1.1 Data from Springs

The most relevant sampling data for this assessment are those collected from the springs (reported in **Appendix C**). Four springs were included in the USGS analysis, including Main Spring, Eliza Spring, Upper Spring, and the Old Mill Spring (see **Figure 2**). All four springs represent the main source of inflow into the Barton Springs pool system with the Main Spring providing roughly 80% of overall flow. These sampling locations are consistent with the reported locations of the Barton Springs salamander.

Carbaryl was detected in samples collected from Main Barton Springs and Upper Barton Springs. Carbaryl was not detected in samples collected from Old Mill Springs or Eliza Springs. The highest detection of carbaryl in any of the springs was 0.0657 µg/L, which was observed in Upper Barton Springs. A summary of the available data is located in **Table 5**. None of the samples collected from the 4 springs locations contained levels of carbaryl sufficient to exceed the LOCs for the salamander or for invertebrates (>12.5 and >0.255 µg/L, respectively).

Table 5. Detections of carbaryl in 4 spring sampling locations.

Spring Site	# Samples	Detection Rate	Sampling Dates	Maximum Concentration (µg/L)
Main Barton	65	10.8%	2000-2005	0.0347
Upper Barton	43	11.6%	2001-2005	0.0657
Old Mill	12	Not detected	2001-2005	<LOD[1]
Eliza	15	Not detected	2000-2005	<LOD[1]
Total	135	8.9%	2000-2005	0.0657

[1] <LOD means less than the level of detection (0.041 µg/L).

3.2.4.1.2 Data from Creeks

There are a total of 8 sites in and near the action area where creeks were sampled from 2000-2005 and analyzed for carbaryl (**Table 6**; **Figure 13**). The highest measured concentration of carbaryl was 0.472 µg/L. Samples taken from Barton Creek above Barton Springs and the Williamson Creek at Manchaca were at levels sufficient to exceeded the acute LOCs for invertebrates (*e.g.,* >0.255 µg/L).

Table 6. Detections of carbaryl in 8 creek sampling locations from 2000 to 2005.

Creek Site	# Samples	Detection Rate	Sampling Dates	Maximum Concentration (µg/L)
Barton 71	8	50.0%	2002-2004	0.23
Barton Creek above Barton Springs	13	46.2%	2000-2004	0.302
Bear Creek near Brodie	1	Not detected	2004	<LOD[1]
Onion Creek at Driftwood	5	Not detected	2003-2005	<LOD[1]
Onion Creek at Twin Creeks Road	3	33.3%	2004-2005	0.0929
Slaughter Creek at 2304	3	100.0%	2004-2005	0.301
Williamson Creek at Oak Hill	3	Not detected	2004-2005	<LOD[1]
Williamson Creek at Manchaca	9	100.0%	2000-2005	0.472
Total	**45**	**51.1%**	**2000-2005**	**0.472**

[1] <LOD means less than the level of detection (0.041 µg/L).

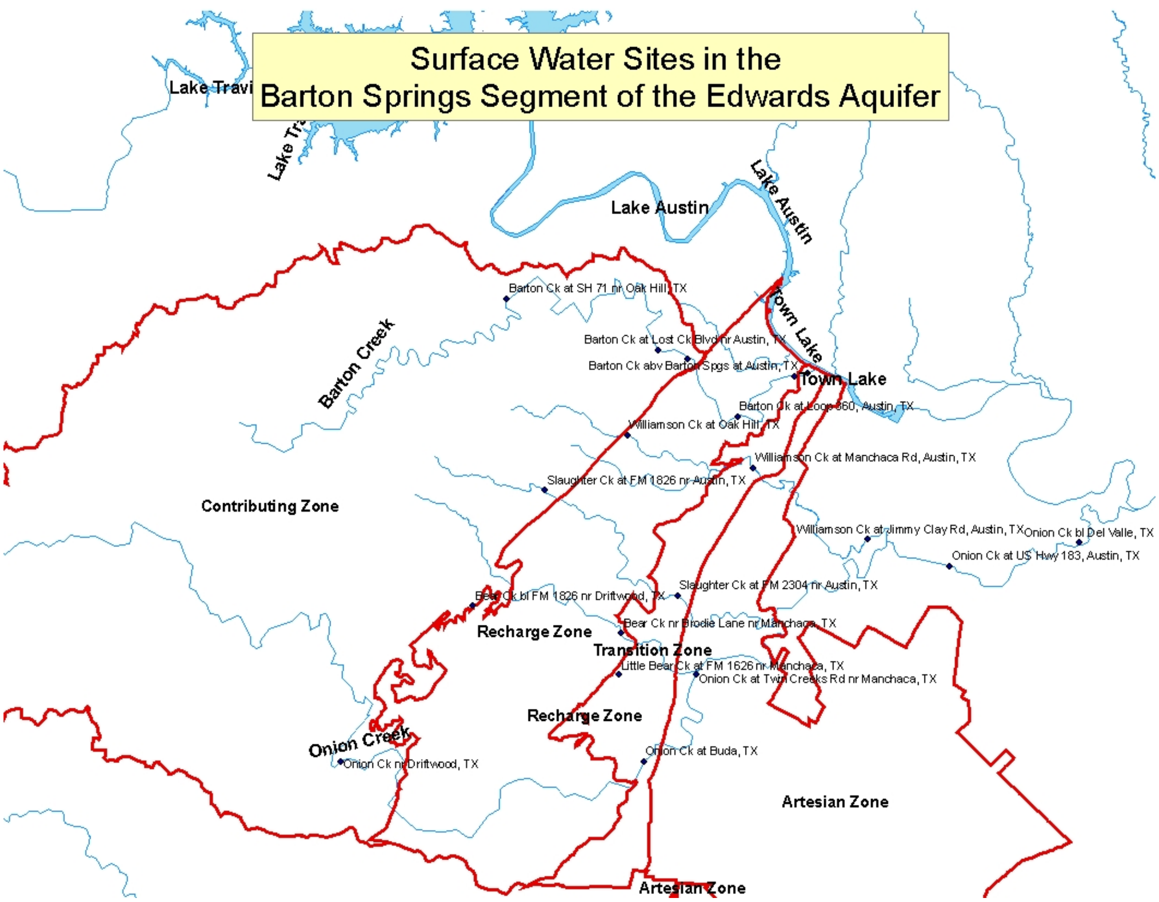

Figure 10. Location of Surface Water Monitoring Sites within the Barton Springs Watershed.

3.2.4.1.3 Data from ground water wells

There are a total of 16 sites in and near the action area where wells were sampled for carbaryl (**Figure 14**). Of a total of 71 samples taken during 2001-2005 from 16 wells, 1 contained a detectable level of carbaryl (estimated at 0.008 µg/L).

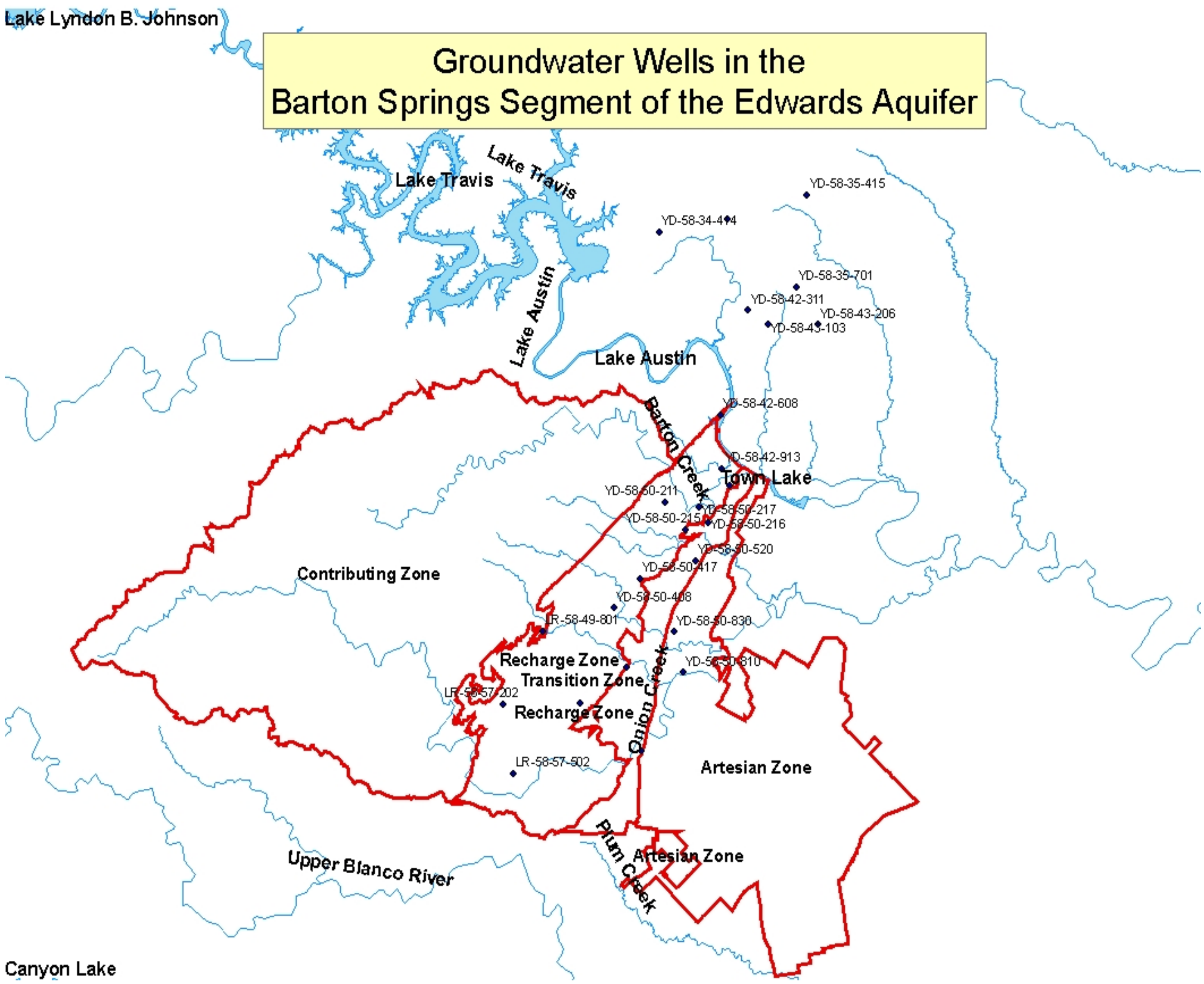

Figure 11. Location of Ground water Monitoring Sites within the Barton Springs Segment.

3.2.4.2 NAWQA data

This section discusses trends that have been observed in carbaryl concentrations in urban areas since the announcement of the phase-out of two other insecticides widely used in urban area, *i.e.*, diazinon and chlorpyrifos. There was speculation that with diazinon and chlorpyrifos no longer available, homeowners would use more carbaryl, and that carbaryl concentrations in streams in urban areas would increase. The residential use of liquid broadcast formulations of carbaryl on turf was restricted in 2005 to areas of less than 1000 ft^2. Risk managers concluded that this restriction may help reduce potential runoff of carbaryl in urban environments; however the labels for granular formulations were not modified. How the carbaryl label changes impact the extent of the area treated and how that would affect carbaryl concentrations in urban streams is unclear.

The timing of the phase-out decisions is important in understanding trends in pesticide concentrations in the environment. On one hand, the date of the announcement of a phase out initiates a multi-year process stipulating a "stop sale" date and some additional time for pesticide applicators to use products they have purchased. On the other hand, the market and pesticide applicators may react quickly to such an announcement. EPA announced the agreement to phase out and eliminate all residential uses of the insecticide diazinon on December 5, 2000. The terms of the four-year phase-out stipulated that technical registrants reduce the amount of diazinon produced by 50% or more by 2003. As of December 31, 2004, it was unlawful to sell diazinon outdoor, non-agricultural products in the United States (the "stop sale" date for all outdoor diazinon home, lawn, and garden products). According to existing stocks provisions, it remained legal for consumers to use products bearing labeling that allowed these uses after that date. On June 8, 2000, EPA announced an agreement with pesticide registrants to phase-out and cancel nearly all indoor and outdoor residential uses of chlorpyrifos within 18 months, effectively eliminating use by homeowners. Residential uses were restricted to certified. Those uses that posed the most immediate potential risks to children (home lawn, indoor crack and crevice treatments, uses in schools, parks) were canceled first, ending as of 12/31/2001. The last remaining residential use, products used for pre-construction termite control, was cancelled as of December 31, 2005.

Based on the studies described below, the longer term impact of the phase-out on carbaryl concentrations in urban areas is not clear and may vary by region due to differences in pest pressure and perhaps marketing of different products. Unlike the clear downward trend in concentrations observed within a few years for the phased-out compounds (diazinon and chlorpyrifos), the environmental outcome of this registration decision may take longer to discern. However, based on these available data, there does not appear to be a steady upward trend to carbaryl concentrations in urban areas following the phase-out of diazinon and chlorpyrifos.

In a poster, Embrey and Moran (2006) summarized data collected by the NAWQA program over a decade in the Puget Sound Basin and included data on diazinon and carbaryl collected in Thornton Creek (King County, WA). During the first cycle, the insecticide diazinon was often detected in samples from Thornton Creek; some samples were at concentrations greater than 0.1 μg/L. **Figure 12**, which was taken from the poster, shows a decrease in diazinon detections and concentrations following the announcement of the phase out in 2000. There is also an increase in carbaryl detection frequency and concentrations in the years following the announcement of the phase out of diazinon. The data also appear to show that carbaryl concentrations began to decline toward the end of the study period in 2005, rarely exceeding 0.1 μg/L.

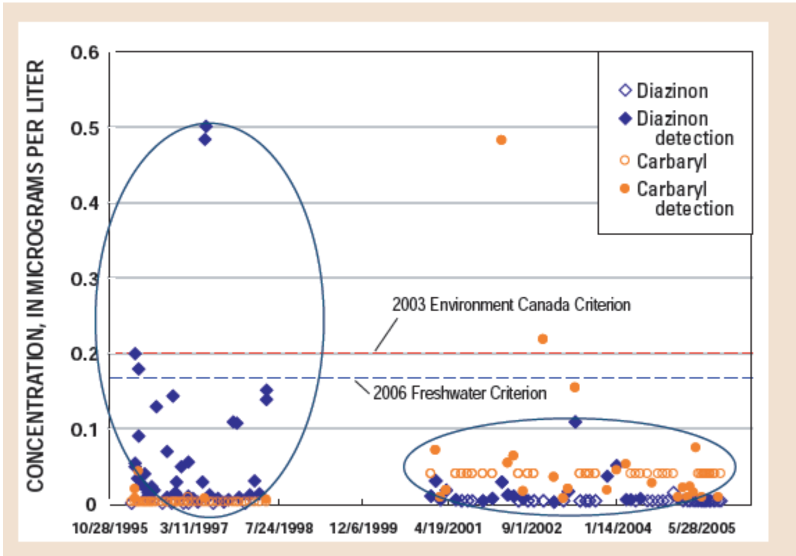

Figure 12. Temporal Changes in Surface-water Insecticide Concentrations after the Phase-Out of Diazinon and Chlorpyrifos (Embrey and Moran, 2006).

A recently published paper by USGS scientists evaluated trends in concentrations of carbaryl in the Northeast and Mid-West after the phase out of diazinon and chlorpyrifos, insecticides in urban environments (Phillips *et al*., 2007). They compared concentrations of these pesticides in samples collected from 20 streams by the USGS between 1992 and 2004 and determined that 16 of these streams met criteria established for assessing trends of carbaryl in urban streams. Sample collection and analysis followed standard NAWQA procedures for collection and analysis. Using seasonal step trend analysis they evaluated the data to identify trends in summer, fall/winter, and winter/spring. Results showed a decrease in diazinon and chlorpyrifos concentrations following the announcement of the phase out in 2000. In contrast, trends were not observed in carbaryl concentrations in these regions during the same time period.

3.2.5 Modeling Approach

Standard Approach for Water Body Modeling. OPP's standard approach for conducting modeling in support of ecological risk assessment assumes that 100% of a 10-hectare field is covered by the relevant use and that a standard water body adjacent to the field receives the edge-of-field runoff and spray drift. The standard water body is of fixed geometry and includes processes of degradation and sorption expected to occur in ponds, canals, and low order streams (*e.g.* first and second order streams), but with no flow through the system. Modeling scenarios for the 10-hectare field are linked with meteorological data to represent use sites in areas that are highly vulnerable to runoff, erosion, or spray drift. Runoff and spray drift estimates predicted by PRZM (v3.12beta, May 24, 2001) are linked to the Exposure Analysis Modeling System (EXAMS v2.98.04, Jul. 18, 2002) using a graphical user interface or shell (PE4v01.pl, Aug. 13, 2003) to yield 1-in-10-year estimated environmental concentrations (EEC).

The Approach for Barton Springs Modeling. Because of the unique geology and location-specific focus of the Barton Springs assessment, an approach was taken that incorporated the specific hydrology of the area in an effort to make the modeling approach more relevant than the standard modeling approach that the Agency uses for more generic nationwide assessments. A brief description of the Spring's salient features are given here.

The Barton Springs are supplied predominantly with water discharging from fractures and conduits formed in the Barton Springs Segment of the Edwards Aquifer (BSSEA) as a result of dissolution of the fractured limestone aquifer over time. Approximately 85% of the water that recharges this aquifer infiltrates through the beds of six creeks that cross the recharge zone (Slade *et al*., 1986; Barrett and Charbeneau, 1996), with the remaining approximately 15% of the recharge derived from precipitation and recharge in interbed areas in the recharge zone. In the BSSEA, natural ground water discharge occurs primarily at Barton Springs (Lindgren *et al*., 2004). Recharge features in creek bottoms overlying the recharge zone allow only a limited flow of water during a storm event; therefore, water that is in excess of the flow capacities of recharge features leaves the recharge zone as creek flow. The contributing zone encompasses the watersheds of the upstream portions of the six major creeks that cross the Recharge Zone, and therefore provides the source for most of the water that will enter the BSSEA as recharge. These streams gain water, as they flow across the land surface in the contributing zone, from the lower-permeability Glen Rose limestone of the Trinity aquifer (Lindgren *et al*., 2004). Kuniansky (1989) estimated baseflow discharge from the Trinity aquifer to streams and creeks in this area ranging from 25% to 90% of total flow. In the portion of the Trinity aquifer nearest the contributing zone this was loosely estimated at 30%. The remainder of water in creeks in the contributing zone is derived from precipitation and runoff.

The conceptual model attempts to capture the most important aspects of this unique hydrology. In this regard, the nature of the contributing zone and the recharge zone are distinguished and treated separately. Runoff from the recharge zone is assumed to enter the karst environment directly, whereas runoff from the contributing zone is assumed to mix with stream water prior to entering the karst environment of the recharge zone. The long-term average flow volume in the streams in the contributing zone was assumed to be 30% due to aquifer discharge and 70% to runoff, as is consistent with Kuniansky (1989).

Chemical masses (loading) and volumes of runoff were produced in daily time series for each zone of the action area in this assessment using the model PRZM and input scenarios that were developed specifically for the orchards, nurseries, rangeland, residential areas, parks, and other areas found in the Barton Springs Salamander action area (see **Section 3.2.6** and **Appendix B**). Rangeland and pasture uses were modeled with the rangeland scenario. Uses on peaches and grapes were modeled with the orchard scenario. Use on parks was modeled with the turf scenario. Uses on home lawns and perimeter flower beds were modeled with the residential scenario. And ornamental flower uses were modeled with the nursery scenario. Daily chemical loadings in runoff in the contributing zone were diluted with aquifer discharge and combined with the loadings in runoff in the recharge zone to estimate daily exposure in the Barton Springs. Similar to the Agency's standard ecological risk assessment methodology described above, 30 years of meteorological data for the Austin area were used in these specific scenarios to estimate 1-in-10-year exposure from the daily concentration values in the Barton Springs.

A summary of the potential carbaryl use areas is presented in **Table 7**. The area of nurseries (3.25 acres) in the action area was investigated using a variety of sources (see p. 11 of **Appendix B**). The total area of rangeland, vineyards, and orchards may be up to 34,200 acres, 56.7 acres, and 7 acres, respectively (USGS, 2003). The total area of parks, residential areas, and commercial areas may be as much as 5,680 acres, 105,000 acres, and 4,150 acres, respectively (COA, 2003). Home lawns and perimeter flower beds in residential and commercial areas were assumed to account for only 70% and 4.4% of land cover, respectively. The area where no use occurs (non-use area), accounts for the remainder of the action area.

Table 7. Extent of Potential Carbaryl Use Areas in the Action Area of the Barton Springs Segment of the Edwards Aquifer (BSSEA), expressed in acres (percentage of BSSEA action area) (USGS, 2003; COA, 2003).

Use Pattern	PRZM Scenario	Area (acres)	Area in Contributing Zone (acres)	Area in Recharge Zone (acres)
Ornamentals	Nursery	3.25 (0.00144%)	0.5 (0.0003%)	2.75 (0.00477%)
Peaches	Orchard	7 (0.00297%)	7 (0.00297%)	0
Vineyards	Orchard	56.7 (0.0241%)	48.2 (0.0205%)	8.51 (0.00361%)
Rangeland and pasture	Rangeland	34,200 (14.5%)	26,200 (11.1%)	7980 (3.39%)
Parks	Turf	5680 (2.37%)	2110 (0.876%)	3580 (1.49%)
Home lawns and flower beds[1]	Residential, Impervious	105,000 (43.5%)	80,300 (33.4%)	24,200 (10.1%)
Commercial flower beds[1]	Residential, Impervious	4150 (1.73%)	2340 (0.975%)	1810 (0.752%)
Non-use area	Rangeland	90,400 (38.4%)	68,100 (28.9%)	22,400 (9.50%)
(BSSEA Totals)	--	235,000 (100%)	179,000 (76.0%)	56,400 (24.0%)

1. Areas reflect residential and commercial areas, of which only a fraction accounts for the use patterns. Model outputs were refined to reflect the actual use areas, as described in **Appendix E**.

Determination of Runoff Concentrations and Volume. As described previously, the contributing zone and the recharge zone are treated differently. Calculations for the contributing zone are described first and these are followed by calculations for the recharge zone.

Contributing Zone. This assessment uses the long-term average stream flow information to calculate an approximate average daily stream flow in the contributing zone. Because the ratio of runoff flow to base stream flow was estimated to be 70:30, estimating the long-term (30 years simulated) runoff flow enables an estimate of the long-term average stream flow. The long-term runoff volume was calculated for each of the scenarios in **Table 7** using PRZM and the respective areas within the contributing zone. The cumulative runoff volume for the contributing zone was calculated according to

$$V_{CZ} = \sum_{t=1}^{n} \sum_{i} \left(V_{CZi,t} \right) \qquad \textbf{(3.1)}$$

where V_{CZ} = 30-year simulated cumulative runoff volume [volume]
$V_{CZi,t}$ = the runoff volume for scenario i on day t in the contributing zone [volume]
n = number of days in simulation

The estimated daily aquifer-driven base flow in the streams within the contributing zone was calculated from the 70:30 ratio as given by Kuniansky (1989):

$$V_{base} = \frac{V_{CZ}}{n}\left(\frac{0.30}{0.70}\right) \quad \textbf{(3.2)}$$

where V_{base} = the long-term average daily aquifer-driven stream volume [volume]

Daily runoff volume was calculated by adding the daily runoff flows as follows:

$$V_{CZ,t} = \sum_{i}\left(V_{CZi,t}\right) \quad \textbf{(3.3)}$$

where $V_{CZ,t}$ = the total runoff volume on day t in the contributing zone [volume]

Daily stream volume was calculated by adding the base stream flow to the daily runoff volume as follows:

$$V_{stream,t} = V_{CZ,t} + V_{base} \quad \textbf{(3.4)}$$

where $V_{stream,t}$ = the total stream volume on day t in the contributing zone [volume]

Because PRZM calculates mass per unit area, the concentration in runoff in the contributing zone was calculated directly from the PRZM output and the area of the scenarios (see **Table 7** for areas) as follows:

$$C_{CZ,t} = \frac{\sum_{i}\left(M_{CZi,t}\right)}{\left(V_{CZ,t}\right)} \quad \textbf{(3.5)}$$

where $C_{CZ,t}$ = the concentration in runoff across the contributing zone on any day t [mass/volume]
$M_{CZi,t}$ = the mass of carbaryl in runoff in the contributing zone for scenario i on any day t [mass]

Daily stream concentrations were calculated from the PRZM output, the area of the scenario, the stream base flow, and the average base flow concentration as follows:

$$C_{stream,t} = \frac{\left(C_{CZ,t} \times V_{CZ,t} + C_{base} \times V_{base}\right)}{V_{stream,t}} \quad \textbf{(3.6)}$$

where $C_{stream,t}$ = the concentration in contributing zone streams on any day t [mass/volume]
C_{base} = the average concentration monitored in base flow [mass/volume]

Note that the background concentration in base flow was assumed to be 0.008 µg/L. This is a conservative estimate from the non-targeted monitoring data, in which carbaryl was detected (at this concentration) in 1 of 71 ground water samples in this region. Also, carbaryl is expected to hydrolyze readily in matrix flow under karst conditions (half-life of 3.2 hours at pH 9), which underlines the conservatism of this estimate.

The above calculated stream volume ($V_{stream,t}$) in **Eqn. 3.4** along with its associated concentration ($C_{stream,t}$) in **Eqn. 3.6** are assumed to be delivered to the recharge zone where they will mix with recharge zone runoff as described next.

Recharge Zone. Runoff originating in the recharge zone was determined in a similar manner as for the contributing zone:

$$V_{RZ,t} = \sum_i \left(V_{RZi,t} \right) \qquad \textbf{(3.7)}$$

where V_{RZ} = runoff volume on day t in the recharge zone [volume]
$V_{RZi,t}$ = the runoff volume for scenario i on day t in the recharge zone [volume]

The concentration of runoff in the recharge zone was determined from the PRZM mass output (output as mass/area), the area represented by the scenario, and the volume of runoff in the recharge zone as follows:

$$C_{RZ,t} = \frac{\sum_i \left(M_{RZi,t} \right)}{V_{RZ,t}} \qquad \textbf{(3.8)}$$

where $C_{RZ,t}$ = the concentration in runoff across the recharge zone on any day t [mass/volume]
$M_{RZi,t}$ = the mass of carbaryl in runoff in the recharge zone for scenario i on any day t [mass]

Barton Springs Daily Concentrations. It is assumed that the stream flow from the contributing area and the runoff from the recharge area mix and flow through the karst and into the Barton Springs. Stream flow that does not ultimately pass through the Barton Springs is assumed not important because of the assumption of instant mixing of carbaryl residues in flow volumes prior to potential diversion. The discharge in streams that leave the action area as a result of large precipitation events is assumed negligible. Therefore, the total discharge produced is determined as:

$$V_{Springs,t} = V_{stream,t} + V_{RZ,t} \qquad \textbf{(3.9)}$$

where $V_{Springs,t}$ = the total flow through the Barton Springs on day t [volume]

Using these calculations, runoff from the recharge zone provides 11% of discharge through the Barton Springs, on average. This is similar to the approximation by Slade *et al.* (1986) and Barrett and Charbeneau (1996) that 15% of recharge to the Barton Springs originates in the recharge zone and 85% originates in the contributing zone.

Finally, the concentration in the Barton Springs is determined from:

$$C_{Springs,t} = \frac{C_{RZ,t}V_{RZ,t} + C_{stream,t}V_{stream,t}}{V_{Springs,t}} \qquad \textbf{(3.10)}$$

where $C_{Springs,t}$ = the daily concentration in Barton Springs [mass/volume]

Daily EECs in the Barton Springs were post-processed (see **Appendix E** for details) in order to provide durations of exposure. Peak, 14-day, 21-day, 30-day, 60-day, and 90-day average concentrations were calculated across 30 years of daily EEC values. In order to match the standard PRZM/EXAMS output, the maximum values for each of the 30 years of daily and rolling averages were ranked and the 90th percentiles from the rankings were selected as the final 1-in-10-year EECs for use in risk estimation.

3.2.5.1 Model Inputs

The appropriate PRZM input parameters were selected from the current labels for carbaryl and the environmental fate data submitted by the registrant, in accordance with EFED water model input parameter selection guidance (U.S. EPA, 2002). The use patterns that may result in aquatic exposure, as summarized in **Table 4**, are listed below in **Table 8**.

Table 8. Use patterns for the assessment of aquatic exposure from carbaryl to the Barton Springs Salamander.

Use Pattern	Scenario	Date of Initial Application	Max. App. Rate (lbs a.i./acre)	Max. No. of Apps.	Application Intervals (days)	Application Method	IPSCND[1]
Home lawns, flower beds	Residential, Impervious	Apr. 28th	8.3	25 assumed	3 assumed	Ground	1
Parks	Turf	Apr. 28th	8.3	25 assumed	3 assumed	Ground	3
Pasture	Rangeland	Apr. 28th	1.5	2	14	Aerial	3
Ornamentals	Nursery	Apr. 28th	7.8	4	7	Ground	2
Peaches	Orchard	Sep. 25th	4	2 + 1 dormant	15	Aerial	1
Vineyards	Orchard	Apr. 28th	2	5	7	Aerial	1

1: IPSCND: condition for disposition of foliar pesticide after harvest. 1 = surface applied, 2 = complete removal, 3 = left alone.

The deposition of carbaryl in the post-season (termed "IPSCND" for PRZM modeling) was modeled as completely removed during harvest for ornamentals. For parks and pastures, this parameter was modeled as partially removed, with the remaining surface residue undergoing decay on plant surfaces. Foliar residues were modeled as surface applied in the post-season for peaches, vineyards, home lawns, and flower beds.

The environmental fate input parameters selected are similar to those used in the 2002 carbaryl IRED (U.S. EPA, 2006); no new environmental fate data were incorporated into this assessment (**Table 9**). Input parameters relating to the EXAMS model were unnecessary for this modeling approach. Model input reports and the stepwise approach for processing model output are provided in **Appendix E**.

Table 9. PRZM Input Parameters. Source Data are in Table 2.

Input Parameter	Value	Source
Date of Initial Application	Peaches: Sep 25th Other use patterns: Apr. 28th	Current labels and USDA Crop Profiles[1]
Application Efficiency[2]	95% for aerial 99 % for ground	Input Parameter Guidance[3]
CAM Input	2	Active labels
Aerobic Soil Metabolism Half-life (days)	12	MRID 42785101
Koc (L/kg$_{OC}$)	198	MRID 43259301
Foliar Degradation Rate	0.187 d^{-1}	MRID 45860501
Foliar Wash off Coefficient	3.70 cm^{-1}	U.S. EPA, 2003

1 – USDA Crop Profiles information is located at: http://pestdata.ncsu.edu/cropprofiles.
2 – Spray drift not included in final EEC due to proximity of use areas to Barton Springs.
3 – Inputs determined in accordance with EFED water model input parameter selection guidance (U.S. EPA, 2002).

Spray drift is not considered to be a significant route of exposure because the source area for carbaryl is generally removed from the spring system where the salamander resides, and the carbaryl exposures that reach the springs do so via subsurface flow. Therefore, spray drift is assumed to be negligible.

The single available aerobic soil metabolism half-life of 4 days was multiplied by 3 to account for potential environmental variability, following current EFED guidance for selecting water model input parameters (U.S. EPA, 2002). Because carbaryl partitions well to organic carbon, the average K_{OC} of three soils (198 L/kg$_{OC}$) was used to represent binding to soil and sediment.

Registrant-submitted data indicate that carbaryl degrades on foliage at a substantially faster rate than the OPP default half-life of 35 d (MRID 45860501). The submitted data were reviewed and analyzed (U.S. EPA, 2003; DP 288376), resulting in a foliar degradation half-life of 3.71 days, which represents an upper 90% confidence bound on the mean from 30 foliar dissipation studies. Data were also submitted that support a revised estimate of the foliar wash off coefficient, which represents the fraction of chemical that washes off with each 1 cm of rainfall. An analysis of two relevant studies indicates that a wash off coefficient of 3.70 cm^{-1} is appropriate (U.S. EPA, 2003; DP 288376).

3.2.5.2 PRZM Scenarios

Six PRZM scenarios developed for assessment of the Barton Springs Salamander were used to model applications of carbaryl: nursery, orchard, rangeland, turf, impervious, and residential. The rangeland scenario was used both as a use scenario and to provide runoff estimates representative of the action area where no carbaryl use is expected, as it is the scenario that appears to be most representative of undeveloped areas. Each scenario used meteorological data from a weather station located in Austin, Texas. No weather station closer to the action area provides the data required for exposure modeling. A discussion of each assessed exposure scenario is provided below.

3.2.5.2.1 Nursery

NASS data for 2002 indicate that *outside* acreage for reported ornamental crops in Hays and Travis Counties is negligible relative to indoor acreage (outside being < 0.1% of the total indoor and outdoor acreage combined). The majority of acreage for nursery, greenhouse, floriculture, mushrooms, sod, and vegetable seeds in both years and both counties was grown under glass or other protection. Three confirmed outdoor nursery operations reside within the BSSEA (Kathy Shay, personal communication; Andrea DeLong-Amaya, personal communication); all three are within the Travis county portion of the BSSEA. Total outside wholesale nursery production in the BSSEA is approximately three acres.

For the purposes of modeling a nursery operation in the BSSEA, one of the nurseries was used to conceptualize a facility that is representative of one located within the BSSEA. This nursery was chosen because it had the largest acreage of the three identified nurseries in the action area. Communications with a staff member were used to parameterize the model. The nursery of interest has indoor and outdoor areas for growing and maintaining plants. Outdoor plants include cacti, annuals, perennials, shrubs, and trees. Outdoor plants are maintained on either weed control mats or on gravel. Plants are kept in pots of various sizes, ranging from 4” to multiple gallons, depending upon the type of plant kept within. Irrigation is carried out daily with either hose or sprinkler systems. Plants are maintained outside year-round, with some becoming dormant in the winter and some remaining green. Spring and fall represent the busiest times for plant production and sales for this nursery (personal communication with nursery employee).

3.2.5.2.2 Orchard

This scenario is intended to represent an orchard that may include cultivation of peaches, nectarines or pecans. USDA data for Hays and Travis counties do not include harvest data for these crops from 1990-2007 (USDA, 2007); however, the 2002 agricultural census for the two counties includes over 2000 acres of land in orchards (USDA, 2002). Discussions with extension agents in Hays and Travis counties indicated that some cultivation of peaches and nectarines occurs in the BSSEA specifically in Hays County (Bryan Davis, personal communication). Crop parameters for this scenario were chosen to be reflective of a peach orchard in this area.

3.2.5.2.3 Turf

This scenario is intended to represent turf areas (golf courses, parks, sod farms, and recreational fields) in the BSSEA. Brackett soil was chosen to represent turf areas in the BSSEA because it is a benchmark soil, is highly representative of golf course areas in the BSSEA, and it approximately represents the 90th percentile of vulnerability in drainage, erodibility, and slope. The Brackett series is in Hydrologic Group C and is found in both the contributing and recharge zones of the Edwards Aquifer. Bracket soil is the most common soil found in golf course areas (USDA, 2006; COA, 2003) and the second most common within the entire turf land cover class (golf courses, cemeteries, parks, and greenways). The top of the soil profile in the scenario was modified to represent a 2-cm deep layer of thatch.

3.2.5.2.4 Rangeland

This scenario is intended to represent pesticide application on pastures, grassland, and rangeland in the BSSEA. Vegetation is generally dominated by grasses, forbs and shrubs. In the BSSEA, rangeland vegetation is a heterogeneous mixture of trees and grasses. Common tree species include: ash juniper (a nuisance species), oaks, hackberry and elms. Grass species including little blue stem, side oats gramma, indian grass, switch grass, king ranch bluestem (introduced) and kline grass (introduced) are typical. These areas are composed of approximately 60-65% trees and 30-35% grasses (Perez, 2006). Although these landcovers contain a significant amount of tree cover, this "crop" was modeled as a field crop rather than an orchard. This was believed to be a conservative approach; however, the orchard scenario that maintains 60% tree cover yields higher exposure estimates than this scenario. The Brackett series was selected for this scenario because it is both highly representative of rangeland/pastureland areas in the BSSEA and because it represents the 90th percentile of vulnerability, drainage, erodibility, and slope.

3.2.5.2.5 Residential

This scenario is intended to represent pervious urban/suburban home and residential areas in the Barton Springs watershed. Brackett soils were chosen to represent residential areas, as they are found in both the contributing and recharge zones and are the most common soil on which residential dwellings are located, accounting for 35% of all soils in residential areas (USDA, 2006; USGS, 2003). Brackett is a Hydrologic Group C soil, which accounts for approximately 47% of residential soils in drainage.

3.2.5.2.6 Impervious

This scenario is intended to be used to mimic hydrology of impervious portions of residential areas in the BSSEA. It relies on the Brackett soil series that was chosen to represent the residential scenario in order to supply the soil parameters required by PRZM. However, the upper horizon is adjusted to a non-soil nature.

3.2.6 Aquatic Modeling Results

Table 10 presents the 1-in-10-year exposure estimates in the Barton Springs from all relevant use scenarios, both individually and aggregated. The aggregate estimates are not totals of the 1-in-10-year exposure estimates for individual use scenarios, as they are 1-in-10-year estimates as well.

Table 10. 1-in-10-year Barton Springs EECs for Modeled PRZM Scenarios.

Use Pattern	Peak EEC (µg/L)	14-day EEC (µg/L)	21-day EEC (µg/L)	30-day EEC (µg/L)	60-day EEC (µg/L)	90-day EEC (µg/L)	Annual Avg. EEC (µg/L)
Lawns	534	94.8	70.4	55.8	38.1	25.4	6.28
Pasture	23.0	2.49	2.17	1.65	0.835	0.559	0.143
Parks	19	2.38	1.63	1.32	0.853	0.571	0.147
Flower beds	1.33	0.241	0.182	0.145	0.101	0.0702	0.0230
Vineyards	0.0511	0.0119	0.0110	0.0101	0.00884	0.00844	0.00754
Nurseries	0.0295	0.0108	0.00971	0.00928	0.00850	0.00817	0.00750
Peaches	0.00800	0.00800	0.00800	0.00800	0.00795	0.00780	0.00738
Aggregate[1]	**555**	**97.4**	**72.3**	**57.2**	**39.2**	**26.1**	**6.46**

[1] Aggregate estimates are 1-in-10-year values that do not sum the above 1-in-10-year estimates for individual use patterns.

The modeled 1-in-10-year aggregate annual average exposure estimates are two orders of magnitude higher than concentrations monitored in the Barton Springs (up to 0.06 µg/L). Due to the conservative assumptions made in the conceptual model (*e.g.*, no degradation after runoff) and the modeling of maximum application practices and simultaneous application, these values overestimate exposure. Use on home lawns accounts for the majority of aggregate exposure because of the assumptions of application to 70% of all residential areas (30% of the BSSEA) and of 25 applications made per year (due to no label limit on the number of applications). If applications to lawns were limited to once per year, exposure estimates would be reduced by approximately one order of magnitude (**Table 11**).

Table 11. 1-in-10-year Barton Springs EECs for Reduced Numbers of Applications to Lawns.

Number of Applications per Year	Peak EEC (µg/L)	14-day EEC (µg/L)	21-day EEC (µg/L)	30-day EEC (µg/L)	60-day EEC (µg/L)	90-day EEC (µg/L)	Annual Avg. EEC (µg/L)
2	183	21.4	15.9	11.4	5.71	3.81	0.943
1	97.4	12.8	8.88	6.44	3.23	2.15	0.536

The 1-in-10-year annual average EEC (0.536 µg/L) from one application of carbaryl to all home lawns in the action area is consistent with concentrations observed in the monitoring data for creeks in the BSSEA (0.47 µg/L) and within an order of magnitude of concentrations observed in the Barton Springs (0.06 µg/L). Multiple applications of carbaryl (25 applications with a 3-day reapplication interval) on approximately 10% of home lawns in the action area would, likewise, reduce exposure estimates (0.652 µg/L) to those consistent with monitored concentrations (**Table 12**). **Table 13** lists EEC based on single applications to lawns and two applications to pastures with reduced spatial fractions.

Table 12. 1-in-10-year Barton Springs EECs for Reduced Spatial Fractions of Use Areas Treated based on 25 applications with a 3-day Reapplication Interval.

Spatial Fraction of Use Areas Treated	Peak EEC (µg/L)	14-day EEC (µg/L)	21-day EEC (µg/L)	30-day EEC (µg/L)	60-day EEC (µg/L)	90-day EEC (µg/L)	Annual Avg. EEC (µg/L)
50%	277	48.7	36.2	28.6	19.6	13.1	3.23
25%	139	24.4	18.1	14.3	9.80	6.54	1.62
10%	55.5	9.75	7.24	5.72	3.92	2.62	0.652

Table 13. 1-in-10-year Barton Springs EECs for Reduced Spatial Fractions of Use Areas Treated based on Single applications to lawns and two applications to Pastures.

1-in-10 yr EECs	Peak (µg/L)	21-day (µg/L)	60-day (µg/L)	Annual Avg (µg/L)	No. of Apps	Interval (d)	% treated
lawns	244	20.6	7.33	1.21	1	n/a	100
lawns	122	10.3	3.67	0.61	1	n/a	50
lawns	12.2	1.03	0.37	0.067	1	n/a	5
lawns	9.74	0.83	0.30	0.055	1	n/a	4
Pasture	23.0	2.17	0.84	0.14	2	14	100
Pasture	11.5	1.09	0.42	0.075	2	14	50
Pasture	5.75	0.55	0.21	0.041	2	14	25
Pasture	2.3	0.22	0.089	0.021	2	14	10
Pasture	13.6	1.05	0.37	0.067	1	n/a	100
Pasture	10.2	0.79	0.28	0.052	1	n/a	75
Pasture	6.81	0.53	0.19	0.037	1	n/a	50
Pasture	3.41	0.27	0.098	0.022	1	n/a	25
Pasture	1.36	0.11	0.043	0.013	1	n/a	10

4. Effects Assessment

This assessment evaluates the potential for carbaryl to adversely affect the Barton Springs salamander. As previously discussed in **Section 2.7**, assessment endpoints for the Barton Springs salamander include direct toxic effects on the survival, reproduction, and growth of the salamander itself, as well as indirect effects, such as reduction of the prey base and/or modification of its habitat. Direct effects to the Barton Springs salamander are based on toxicity information for freshwater vertebrates, including fish, which are generally used as a surrogate for amphibians, as well as available amphibian toxicity data from the open literature. Given that the salamander's prey items and habitat requirements are dependent on the availability of freshwater aquatic invertebrates and aquatic plants, toxicity information for various freshwater aquatic invertebrates and plants is also discussed. Acute (short-term) and chronic (long-term) toxicity information is characterized based on registrant-submitted studies and a comprehensive review of the open literature on carbaryl.

The available information also indicates that aquatic organisms are more sensitive to the technical grade (TGAI) than the formulated products of carbaryl; therefore, the focus of this assessment is on the TGAI of carbaryl.

Toxicity endpoints are established based on data generated from guideline studies submitted by the registrant, and from open literature studies that meet the criteria for inclusion into the ECOTOX database maintained by EPA/Office of Research and Development (ORD) (U.S. EPA, 2004). Open literature data presented in this assessment were obtained from the 2003 carbaryl IRED (U.S. EPA, 2004b) as well as information obtained from ECOTOX on December 14, 2006. The December 2006 ECOTOX search included all open literature data for carbaryl and 1-naphthol (*i.e.*, pre- and post-IRED). In order to be included in the ECOTOX database, papers must meet the following minimum criteria:

- the toxic effects are related to single chemical exposure;
- the toxic effects are on an aquatic or terrestrial plant or animal species;
- there is a biological effect on live, whole organisms;
- a concurrent environmental chemical concentration/dose or application rate is reported; and
- there is an explicit duration of exposure.

Data that pass the ECOTOX screen are evaluated along with the registrant-submitted data, and may be incorporated qualitatively or quantitatively into this endangered species assessment. In general, effects data in the open literature that are more conservative than the registrant-submitted data are considered.

Toxicity testing reported in this section is based on studies using only a few surrogate species for freshwater. The assessment of risk or hazard makes the assumption that fish and aquatic-phase amphibian sensitivities to carbaryl are similar.

4.1. Evaluation of Aquatic Ecotoxicity Studies for Carbaryl

As described in the Agency's Overview Document (U.S. EPA, 2004), the most sensitive endpoint for each taxa is evaluated. For this assessment, evaluated taxa relevant to the aquatic habitat of the BSS include freshwater fish, freshwater aquatic invertebrates, and freshwater aquatic plants. Currently, no guideline tests exist for frogs. Therefore, surrogate species are used as described in the Overview Document (U.S. EPA, 2004). In addition, aquatic-phase amphibian ecotoxicity data from the open literature are qualitatively discussed. **Table 14** summarizes the most sensitive ecological toxicity endpoints for the BSS, its prey and its habitat, based on an evaluation of both the submitted studies and the open literature, as previously discussed. A brief summary of submitted and open literature data considered relevant to this ecological risk assessment for the BSS is presented below. Additional information is provided in **Appendix A.**

Table 14. Summary of acute and chronic toxicity estimates for freshwater aquatic organisms using technical grade carbaryl.

Species	Acute Toxicity			Chronic Toxicity	
	96-hr LC_{50} (mg/L)	48-hr EC_{50} (mg/L)	Acute Toxicity (MRID)	NOEC / LOEC (mg/L)	Affected Endpoints (MRID)
Atlantic Salmon *Salmo salar*	0.220	--	highly toxic (40098001)	0.0068[1]	--
Fathead Minnow *Pimephales promelas*	7.7	--	--	0.21 / 0.68	reduced growth (TOUCAR05)
Stonefly *Isoroperla grammatica*	0.0017		very highly toxic (400980-01)	0.0005[2]	
Water flea *Daphnia magna*	0.0056	--	--	0.0015 / 0.0033	reproduction (00150901)
Freshwater diatom *Navicula spp*.	14-day EC_{50} 0.66		--	--	--
Duckweed Lemna gibba	!4-day EC_{50}=1.5				

[1] Estimated NOEC using acute to chronic ratio for fathead minnow.
[2] Estimated NOEC using acute to chronic ratio for *Daphnia magna*

Acute toxicity to aquatic fish and invertebrates is categorized using the system shown in **Table 15** (U.S. EPA, 2004). Toxicity categories for aquatic plants have not been defined. Based on these categories, at most, carbaryl is classified very highly toxic to freshwater fish and invertebrates on an acute exposure basis.

Table 15. Categories of Acute Toxicity for Aquatic Organisms.

LC_{50} (mg/L)	Toxicity Category
< 0.100	Very highly toxic
> 0.10 – 1.00	Highly toxic
> 1.00 – 10.0	Moderately toxic
> 10.0 – 100	Slightly toxic
> 100	Practically nontoxic

4.1.1. Toxicity to Freshwater Fish

As previously discussed, no guideline toxicity tests currently exist for frogs; therefore, freshwater fish are used as surrogate species for amphibians including frogs (U.S. EPA, 2004). The available open literature information on carbaryl toxicity to aquatic-phase amphibians, which is provided in **Section 4.1.2**, shows that acute and chronic ecotoxicity endpoints for amphibians are generally less sensitive than fish. Therefore, endpoints based on freshwater fish ecotoxicity data are assumed to be protective of potential direct effects to aquatic-phase amphibians, including the BSS. A summary of acute and chronic freshwater fish data, including sublethal effects, is provided below.

4.1.1.1. Freshwater Fish: Acute Exposure (Mortality) Studies

On an acute exposure basis, technical grade (purity > 90%) carbaryl ranged in toxicity from highly to slightly toxic (LC_{50} = 0.22 - 20 mg/L) to freshwater fish and to fish that spend a portion of their life cycle in fresh water, such as the Atlantic salmon (*Salmo salar*). Although the carbaryl IRED (U.S. EPA 2004b) listed the most sensitive fish (Atlantic salmon) as having an 96-hr LC_{50} value of 0.25 mg/L, a reanalysis of the raw data using the PROC Probit procedure of SAS® (SAS® Institute, Release 9.1.3, Cary, NC) indicated that the 96-hr LC_{50} is 0.22 mg/L. **Figure 12** shows a cumulative percent frequency distribution of 96-hour LC_{50} values for freshwater fish and demonstrates that for the majority (78%) of fish tested, carbaryl was moderately toxic (LC_{50} range: 1 - 10 mg/L). In general, coldwater species (*e.g.*, salmonids) appear to be more sensitive to carbaryl than warm water species (*e.g.*, centrarchid sunfish and bass). Although Atlantic salmon (*Salmo salar*) are used as the most sensitive species (96-hr LC_{50} = 0.220 mg/L), they represent an extreme in the range of sensitivities among freshwater fish; assuming a log-normal distribution for the LC_{50} values, the mean is 1.28 mg/L and the lower 5% confidence interval is 1.23 mg/L. LC_{50} values for the typical end use products (purity range: 5 to 82%) from 1.4 to 290 mg/L, falling in the moderately to practically nontoxic categories. Toxicity testing of carbaryl's hydrolysis degradate 1-naphthol in fish shows that the compound ranged from being highly toxic to rainbow trout (LC_{50} = 0.75 mg/L) to moderately toxic to bluegill sunfish (LC_{50} =1.6 mg/L) on an acute exposure basis (U.S. EPA, 2004b).

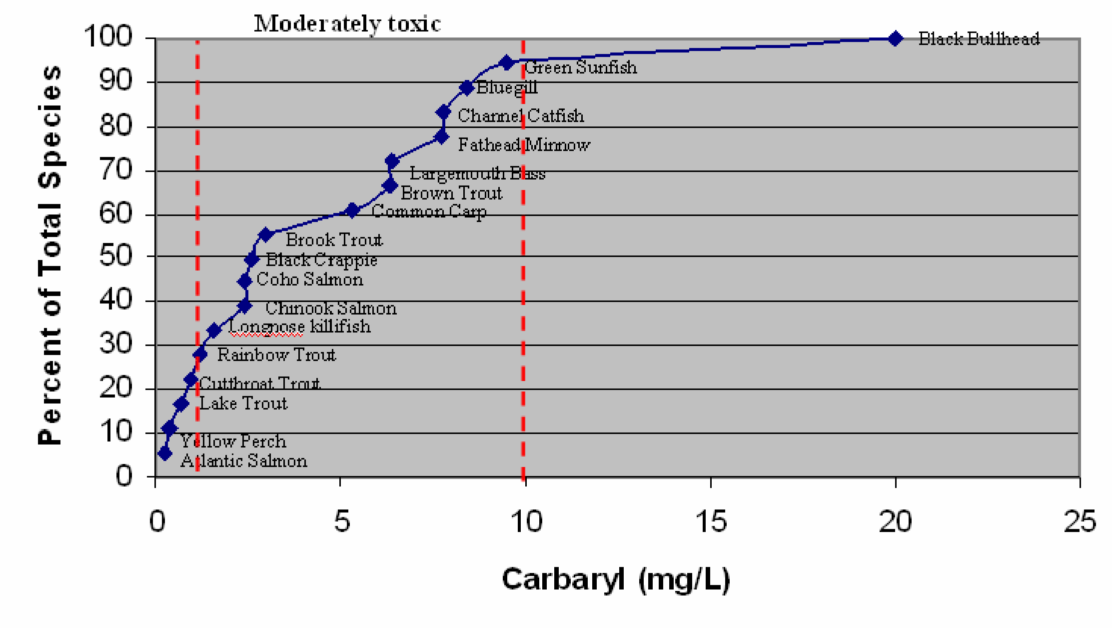

Figure 12. Freshwater fish species sensitivity distribution (LC_{50} values).

4.1.1.2. Freshwater Fish: Chronic Exposure (Growth/Reproduction) Studies

Similar to the acute data, chronic freshwater fish toxicity studies are used to assess potential direct effects to the BSS because direct chronic toxicity guideline data for frogs do not exist. Chronic exposure of fathead minnows (*Pimephales promelas*) to carbaryl resulted in reduced survival and reproductive effects (NOEC = 0.210 mg/L) including reduced number of eggs per female and reduced number of eggs spawned. Chronic exposure of fathead minnows to 1-naphthol reduced larval growth and survival (NOEC = 0.1 mg/L). However, since Atlantic salmon are the most sensitive species on an acute exposure basis and no chronic toxicity data are available, an acute to chronic ratio was used to estimate the chronic toxicity of carbaryl to Atlantic salmon. Based on the information contained in the carbaryl IRED (U.S. EPA, 2004b), the 96-hr acute LC_{50} value for fathead minnows is 7.7 mg/L. With an acute LC_{50} of 7.7 mg/L and a chronic NOEC of 0.21, the acute to chronic ratio (ACR) for fathead minnow is 36.7 (7.7÷0.21). When the ACR is applied to the Atlantic salmon data, the resulting estimated NOAEC is 0.0068 mg/L.

4.1.2. Toxicity to Aquatic-phase Amphibians

Available toxicity information on potential carbaryl-related mortality and sublethal effects to aquatic-phase amphibians from the open literature is summarized below in **Sections 4.1.2.1 and 4.1.2.2**, respectively. Guideline ecotoxicity studies for amphibians are not available.

The majority of data available on amphibians focused on the aquatic-phase larval (tadpole) stage of frogs. Carbaryl ranged from moderately toxic (96-hr LC_{50} = 8.4 mg/L) to Southern leopard frogs (*Rana sphenocephalia*) to slightly toxic (96-hr LC_{50} = 12.2 mg/L) to boreal toads (*Bufo boreas*) on an acute exposure basis (**Appendix A**). In toxicity testing with formulated product (purity = 50% carbaryl was practically nontoxic to bullfrogs (*Rana catesbeiana*) with an LD_{50}

greater than 4,000 mg/kg (MRID 00160000). The sensitivity of tadpoles to carbaryl exhibited considerable intra- and interspecies variability. Depending on the stage of development, the conditions of exposure, and which frog populations were sampled, frog susceptibility to carbaryl varied. For example, the 96-hr LC_{50} for green frogs (*Rana clamitans*) roughly doubled when temperature dropped from 27°C (LC_{50} = 11.3 mg/L) to 17°C (LC_{50} = 22 mg/L).

The U.S. Geological Survey Biological Resource Division's Columbia Environmental Research Center has examined the effects of carbaryl on amphibians (**Appendix A**). These studies have shown that frogs can exhibit considerable intraspecies (Boone and Bridges, 1998) and interspecies (Boone and Semlitsch, 2002) variability in their response to carbaryl exposure. Genetic factors and stage of development during which exposure took place can impact the vulnerability of frogs. For example, frogs exposed during egg stage had lower weights than corresponding control animals and nearly 18% of leopard frogs exposed to carbaryl during development exhibited some type of developmental deformity (including visceral and limb malformations). Additionally, environmental conditions such as temperature appear to impact the sensitivity of frogs to carbaryl. In a 96-hr acute toxicity study, green frogs (*Rana climitans*) had an LC_{50} of 22.0 mg/L at 17°C but at 27 °C the LC_{50} was roughly half (96-hr LC_{50} = 11.32 mg/L) (Boone and Bridges, 1998).

Furthermore, in studies comparing the direct toxicity of carbaryl to Southern leopard frogs (*Lithobates sphenocephala* formerly *Rana sphenocephala*) and fish, tadpoles were relatively tolerant (96-hr LC_{50} = 8.4 mg/L) to carbaryl compared to bluegill sunfish (96-hr LC_{50} = 6.2 mg/L), fathead minnow (96-hr LC_{50} = 5.21 mg/L) and rainbow trout (LC_{50} = 1.88 mg/L). The study also reports the 96-hr LC_{50} (12.31 mg/L) for the boreal toad (*Bufo boreas*); these data suggest that the surrogate fish species used to evaluate the toxicity to carbaryl are protective for amphibians (Bridges *et al.,* 2002).

Several studies have suggested that carbaryl exposure impairs predator avoidance behavior in frogs (Bridges, 1997; Bridges, 1999), affects the length of time required for tadpoles to complete metamorphosis into adults (Boone and Semlitsch, 2002), and affected the weight of animals undergoing metamorphosis. Carbaryl concentrations greater than 3.5 mg/L significantly affected the time tadpoles spent being active where control animals exhibited greater sprint speeds and were able to swim greater distances (Bridges, 1997). Slower swimming speeds, altered activity patterns and prolonged juvenile stages have been suggested as increasing the vulnerability of frogs to predation (Bridges, 1997; Bridges, 1999; Relyea and Mills, 2001) and/or that the threat of predation renders the animals more susceptible to the direct toxicity of carbaryl (Relyea and Mills 2001). While the Relyea and Mills paper indicates that carbaryl was 2 to 4 times more lethal to gray treefrogs (*Hyla versicolor*) in the presence of a predator, the study is confounded by the potential effects of water quality on mortality (**Appendix A**).

Additionally, increased vulnerability to predation assumes that only the prey are incapacitated by carbaryl. The Bridges (1999) study indicates however, the predators may also be impacted and that gray treefrogs actually spent less time being active, but that the active times were primarily spent foraging. However, in some cases, it is unclear whether the effects of carbaryl on amphibians have been entirely adverse. For example, Southern leopard frogs exposed to carbaryl at 5 mg/L exhibited a 20% increase in weight at metamorphosis (Bridges and Boone,

2003) and that at concentrations as high as 7 mg/L, Woodhouse's toad (*Bufo woodhousii*) survival was roughly 30% higher than controls (Boone and Semlitsch, 2002). The increase in weight of leopard frogs was attributed to the indirect effect of carbaryl in reducing zooplankton that would normally have competed with tadpoles for phytoplankton. With zooplankton numbers reduced by carbaryl treatments, phytoplankton increased thereby increasing the amount of food available to tadpoles. However, aquatic-phase amphibians such as the Barton Springs salamander that forage on zooplankton would not likely benefit since their food source would be diminished.

Additionally, open literature suggests that the toxicity of carbaryl to amphibians is enhanced in the presence of light (Zaga *et al.*, 1998); the study reports that in the absense of simulated sunlight, the 96-hr LC_{50} for larval African clawed frogs (*Xenopus laevis*) and gray treefrogs (*Hyla versiocolor*) are 1.73 and 2.47 mg/L, respectively (**Appendix A**). In the presence of simulated light, the number of mortalities was higher; however, the study did not provide revised 96-hr LC_{50} estimates for the combination of carbaryl plus simulated sunlight. The extent to which sunlight can increase the sensitvity of aquatic-phase amphibians to carbaryl is uncertain.

On a chronic exposure basis, carbaryl has been shown to have the potential to adversely affect amphibians. Southern leopard frog tadpoles exposed to carbaryl during development exhibited developmental deformities, including both visceral and limb malformations, compared to less than 1% in control tadpoles (Bridges, 2000). Although the length of the larval period was the same for all experimental groups, tadpoles exposed throughout the egg stage were smaller than their corresponding controls. However, in some cases, it is unclear whether the effects of carbaryl on amphibians have been entirely adverse. For example, Southern leopard frogs exposed to carbaryl at 5 mg/L exhibited a 20% increase in weight at metamorphosis (Bridges and Boone, 2003) and that at concentrations as high as 7 mg/L, Woodhouse's toad (*Bufo woodhousii*) survival was roughly 30% higher than controls (Boone and Semlitsch, 2002).

None of the amphibian toxicity data reviewed in the open literature were considered sufficiently robust to use quantitatively for risk assessment purposes. The available lines of evidence suggest however, that both aquatic and terrestrial-phase amphibians are less sensitive to carbayl than the most sensitive fish discussed in the preceding sections. The open literature is useful though in characterizing potential indirect effects of carbaryl that may impact aquatic-phase amphibians, particularly as they relate to reductions in zooplankton (Bridges and Boone 2003).

No data are available on the acute or chronic toxicity of 1-naphthol to amphibians.

4.1.3. Toxicity to Freshwater Invertebrates

Barton Springs salamanders feed on a wide range of freshwater aquatic invertebrates including ostracods, copepods, chironomids, snails, amphipods, mayfly larvae, leeches, and adult riffle beetles. Based on analysis of the stomach and fecal samples from a limited number of adult and juvenile Barton Springs salamanders, the most prevalent organisms found were ostracods, amphipods, and chironomids (USFWS, 2005). However, data on the relative percentage of each type of aquatic invertebrate in the salamander's diet are not available.

A summary of acute and chronic freshwater invertebrate data, including published data in the open literature since completion of the IRED (U.S. EPA, 2004b), is provided below in **Sections 4.1.3.1 through 4.1.3.3**.

4.1.3.1. Freshwater Invertebrates: Acute Exposure Studies

Technical grade carbaryl is very highly toxic to aquatic invertebrates with EC_{50} values ranging from 0.0017 - 0.026 mg/L on an acute exposure basis. Stoneflies (*Isoroperla grammatica*) are the most sensitive freshwater invertebrate in an acute toxicity study (96-hr LC_{50}=0.0017 mg/L). **Figure 13** shows a cumulative percent distribution of 96-hr EC_{50} values for freshwater invertebrates; roughly 80% of the species tested had EC_{50} values between 0.002 and 0.006 mg/L. In general, freshwater invertebrates exhibited the same sensitivity (EC_{50} range: 0.007 - 0.013 mg/L) to formulated end products (purity range: 44 - 81%). In studies examining the toxicity of carbaryl to aquatic invertebrates in the presence of sediment, toxicity values were more widely distributed (EC_{50} range 0.005 to > 2.5 mg/L) suggesting that a tendency of carbaryl and its hydrolysis degradate 1-naphthol to partition to sediment may limit their bioavailability and hence reduce toxicity under more natural exposure conditions.

Studies have indicated that acute exposure to carbaryl impacts predator avoidance mechanisms in invertebrates (Hanazato, 1995), reduces overall zooplankton abundance (Havens, 1995; Hanazato, 1989), and may actually promote phytoplankton growth through reduced predation by zooplankton (Bridges and Boone, 2003). As discussed previously, though, while decreases in zooplankton can benefit aquatic-phase amphibians that depend on phytoplankton, decreased zooplankton can reduce growth and survival of those aquatic animals, such as the Barton Springs salamander, that forage on zooplankton.

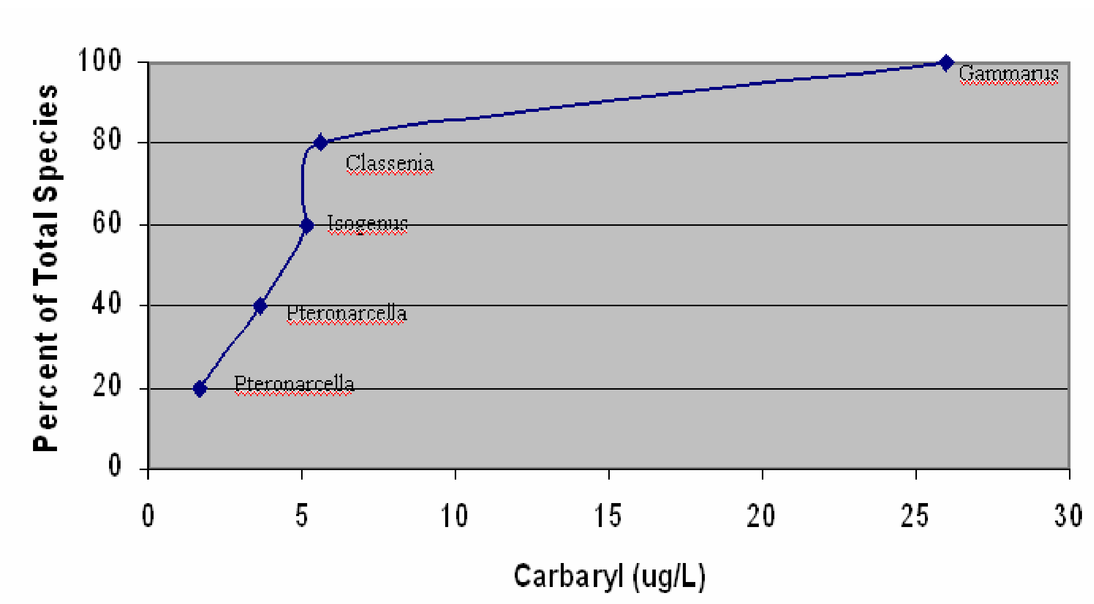

Figure 13. Cumulative freshwater invertebrate sensitivity distribution (LC_{50} values).

Exposure of freshwater invertebrates to 1-naphthol indicated the degradate ranged from being moderately to highly toxic (EC_{50} range: 0.2 - 3.3 mg/L) to *D. magna* (U.S. EPA, 2004b) to aquatic invertebrates on an acute exposure basis.

4.1.3.2. Freshwater Invertebrates: Chronic Exposure Studies

On a chronic exposure basis, carbaryl affected reproduction (NOEC = 0.0015 mg/L) in water fleas (*Daphnia magna).* However, since stoneflies are the most sensitive invertebrate species on an acute exposure basis and no chronic toxicity data are available, an acute to chronic ratio was used to estimate the chronic toxicity of carbaryl to stoneflies. Based on the information contained in the carbaryl IRED (U.S. EPA, 2004b), the 48-hr acute LC_{50} value for *Daphnia magna* is 0.0056 mg/L. With an acute LC_{50} of 0.0056 mg/L and a chronic NOEC of 0.0015, the acute to chronic ratio (ACR) for fathead minnow is 3.73 (0.0056÷0.0015). When the ACR is applied to the stonefly data, the resulting estimated NOAEC is 0.0005 mg/L.

Chronic toxicity data for 1-naphthool using *D. magna* (NOAEC=0.0095 mg/L indicates that the degradate is less toxic to aquatic invertebrates than the parent compound.

4.1.4. Toxicity to Aquatic Plants

Aquatic plant toxicity studies are used as one of the measures of effect to evaluate whether carbaryl may affect primary production. Primary productivity is essential for indirectly supporting the growth and abundance of the BSS. In addition to providing cover, aquatic plants harbor a variety of aquatic invertebrates that aquatic-phase BSS eat.

Two types of studies are used to evaluate the potential of carbaryl to affect primary productivity. Laboratory studies are used to determine whether carbaryl may cause direct effects to aquatic plants. In addition, the threshold concentrations, described in **Section 4.1**, are used to further characterize potential community level effects to BSS resulting from potential effects to aquatic plants. A summary of the laboratory data for aquatic plants is provided in **Section 4.1.4.1**.

4.1.4.1. Toxicity to Freshwater Non-vascular Plants

Only two studies of the filamentous green algae *Pseudokirchneriella subcaptitata* were available to assess the toxicity of carbaryl to aquatic plants. With technical grade carbaryl the concentration inhibiting plant growth (in terms of number of algal cells) by 50% (IC_{50}) is 1.27 mg/L). The most sensitive freshwater aquatic plant is the freshwater diatom *Navicula* with an EC_{50} of 0.66 mg/L.

Carbaryl was roughly similar to the endpoint for formulated product (IC_{50} = 3.2 mg/L). In neither study were abnormalities in cell morphology or signs of phytotoxic effects observed. As reported earlier, carbaryl use has been associated with increases in phytoplankton numbers. Whether this is due to reduced predation by zooplankton as a result of their greater susceptibility to carbaryl and/or a response to 1-naphthol being a plant auxin is unclear.

4.1.4.1. Toxicity to Freshwater Vascular Plants

In a supplemental study (MRID 423721-02) with duckweed (*Lemna gibba*), the 14-day EC_{50} was 1.5 mg/L based on reduced number of fronds. ECOTOX provided limited information on the toxicity of carbaryl to aquatic plants. In a study by Peterson *et al*. 1994, a single concentration of carbaryl (3.67 mg/L) resulted in 33% inhibition of *L. gibba* growth after 7-days static exposure (**Appendix A**). Although the study suggests that carbaryl has an effect on vascular aquatic plant growth, the study does not provide any information on dose response given that only a single concentration was tested.

4.1.5. Freshwater Field Studies

Mesocosm studies with carbaryl provide measurements of primary productivity that incorporate the aggregate responses of multiple species in aquatic communities. Because various aquatic species vary widely in their sensitivity to carbaryl, the overall response of the aquatic community may be different from the responses of the individual species measured in laboratory toxicity tests. Mesocosm studies allow observation of population and community recovery from carbaryl effects and of indirect effects on higher trophic levels. In addition, mesocosm studies, especially those conducted in outdoor systems, incorporate partitioning, degradation, and dissipation, factors that are not usually accounted for in laboratory toxicity studies, but that may influence the magnitude of ecological effects.

The screening-level risk assessment reviewed several mesocosm studies of carbaryl and demonstrated that overall the results of these studies are highly variable. Studying natural plankton communities in enclosed mesocosms, Havens (1995) reports a decline in total zooplankton biomass and individuals across the range of carbaryl treatments (0 - 100 µg/L). Furthermore, at carbaryl concentrations greater than 20 µg/L *Daphnia* was no longer found and that at concentrations above 50 ug/L all cladocerans were eliminated, resulting in an increase in algal biomass, representing a repartitioning of biomass from zooplankton to phytoplankton. Hanazato (1995) exposed *Daphnia ambigua* to carbaryl and a kairomone released by the predator *Chaoborus* (phantom midge) simultaneously. *Daphnia* developed helmets in response to the kairomone, but not in response to carbaryl at 1-3 µg/L. However, carbaryl enhanced the development of high helmets and prolonged the maintenance period of the helmets in the presence of the kairomone, suggesting that at low concentrations carbaryl can alter predator-prey interactions by inducing helmet formation and vulnerability to predation in *Daphnia*. In related mesocosms studies, exposure to carbaryl at 1 ppm killed all plankton species, including *Chaoborus* larvae (Hanazato, 1989). However, this concentration is well above the maximum EECs modeled for carbaryl, and is unlikely that such high levels of this chemical would be found under field conditions.

In some cases, mesocosms exposed to carbaryl exhibited transitory effects. In a study by Boone *et al.,* 2003 (**Appendix A**), carbaryl exposure significantly reduced chlorophyll concentrations 12-days after exposure; however, by the end of the study, there was no difference between carbaryl treated and control. While these studies demonstrate that a range of factors (e.g., hyrdroperiod and larval density) can influence the effects of carbaryl alone or in combination with other pesticides (*e.g.*, atrazine) the sensitivity of the amphibians in these studies is less than the surrogate fish species reported earlier.

4.1.5. Carbaryl Formulated Product Toxicity

As discussed previously, toxicity testing of carbaryl formulated product with aquatic animals has indicated that none of the formulations tested were more toxic than the technical grade active ingredient (**Table 16**). A review of formulated product testing conducted with rats indicates that none of the formulated products (including those involving a second active ingredient, *i.e.*, metaldehyde, were more toxic than the technical grade (Sevin® Technical LD_{50}=614 mg/kg body weight). Further analysis of the toxicity of formulated products is included in **Appendix K**

Table 16. Rat acute 96-hr oral toxicity test data for formulated products of carbaryl.

Formulated Product	Percent Active Ingredient	Rat Acute Oral LD_{50} (mg/kg body weight)
Sevin® Brand 85 Sprayable Insecticide	85% Carbaryl	>50
Sevin® Technical	99.45%	614
Sevin® XLR Plus Carbaryl Insecticide	44.1%	698.5
Sevin® Brand Granular Insecticide	7%	3240
Sevin® 5 Bait	5%	3129
Sevin® 10% Granules	10%	3620
Turf Pride Fertilizer with 2% Sevin®	2%	3129
Corry's Slug, Snail and Insect Killer	5% carbaryl 2% metaldehyde	>5000
Anderson's 8% Granular	8%	1750
GrubTo®x Lawn Grub and Insect Killer	4.6%	3129
Bonide® Slug, Snail and Sowbug Bait	5% carbaryl 2% metaldehyde	>5000
Sevin® 4% Plus Fertilizer	4%	5000
Sevin® Brand Granular Insecticide	6.3%	>5000

5. Risk Characterization

Risk characterization is the integration of the exposure and effects characterizations to determine the potential ecological risk from varying carbaryl use scenarios within the action area and likelihood of direct and indirect effects on the Barton Springs salamander. The risk characterization provides an estimation and a description of the likelihood of adverse effects; articulates risk assessment assumptions, limitations, and uncertainties; and synthesizes an overall conclusion regarding the effects determination (*i.e.*, "no effect," "likely to adversely affect," or "may affect, but not likely to adversely affect") for the Barton Springs salamander.

5.1 Risk Estimation

Risk is estimated by calculating the ratio of exposure to toxicity using 1-in-10-year estimated environmental concentrations (EECs; **Table 10**) and the appropriate toxicity endpoint (see **Table 14**). This ratio is the risk quotient (RQ), which is then compared to pre-established acute and chronic levels of concern (LOCs) for each category evaluated (**Appendix G**). For acute exposures to the salamander and invertebrates, the LOC is 0.05. The LOC for chronic exposures to fish and invertebrates, as well as acute exposures to aquatic plants is 1.0.

RQs were based on the most sensitive endpoints and modeled surface water concentrations from the following scenarios for carbaryl:

- outdoor ornamental use @ 7.8 lbs a.i./A; 4 applications with 7 days between applications
- peach use @ 4 lbs a.i./A; 3 applications, twice in-season with 15 days between applications and once at dormancy
- grape use @ 2 lbs a.i./A; 5 applications with 7 days between applications
- pasture use @ 1.5 lbs a.i./A; 2 applications with 14 days between applications
- home lawns, parks, flower beds around building use @ 8.4 lbs a.i./A; 25 applications with 3 days between applications (number of applications and reapplication interval assumed in the lack of label statements)
- home lawns @ 9.1 lbs a.i./A; 2 applications with 7 days between applications.

In addition, RQs were derived based on the aggregate exposure of the six uses listed above.

5.1.1 Direct Effects

For assessing risks of direct effects to the salamander, 1-in-10 year peak EECs are used with the lowest acute toxicity value for fish in order to derive acute risk quotients for the salamander. For chronic risks, 1-in-10 year peak 60-day EECs and the lowest chronic toxicity value for fish are used to derive RQ values for the salamander.

Based on RQ values calculated using individual 1-in-10 year EECs for waters within the Barton Springs proper, for acute exposures, the acute risk to listed species LOC (RQ≥0.05) is exceeded for carbaryl use on lawns (RQ=2.4), and pasture (RQ=0.10. Additionally, acute exposure of the salamander to carbaryl from all uses (aggregate) exceeds (RQ=2.5) the acute risk LOC for listed species. For chronic exposures, the LOC is exceeded for lawn uses (RQ=5.6) (**Table 17**) and for the aggregate of all uses (RQ=5.8).

Table 17. Direct Effect RQs for the Barton Springs Salamander based on refined EECs.

Duration of Exposure	Toxicity Value (µg/L)	Use	EEC (µg/L)[3]	RQ	LOC Exceedance? [4]
Acute	220	Lawns	534	2.43	Yes
		Pasture	23.0	0.10	Yes
		Park	19	0.09	Yes
		Flower Beds	1.33	0.01	No
		Vineyard	0.0511	<0.01	No
		Nusery	0.0295	<0.01	No
		Peach	0.008	<0.01	No
		Aggregate	555	2.52	Yes
Chronic	6.8	Lawns	38.1	5.60	Yes
		Pasture	0.835	0.12	No
		Park	0.853	0.13	No
		Flower Beds	0.101	0.01	No
		Vineyard	0.00884	<0.01	No
		Nusery	0.00850	<0.01	No
		Peach	0.00795	<0.01	No
		Aggregate	39.2	5.8	Yes

[1] 96-h LC_{50} value (220 µg/L) from toxicity study with Atlantic salmon (MRID 400980-01).
[2]NOAEC (6.8 µg/L) based on acute to chronic ratio.
[3]EECs are from **Table 10**. RQs for acute exposures utilize peak EECs, while RQs for chronic exposures utilize 60-day EECs.
[4]For acute exposures, the LOC is 0.05. For chronic exposures, the LOC is 1.0.
[5]Aggregate use represents the sum of carbaryl from all uses.
[6] Potentially exceeds chronic risk level of concern (RQ≥1.0)

5.1.2 Indirect Effects

5.1.2.1 Evaluation of Potential Indirect Effects via Reduction in Food Items (Freshwater Invertebrates)

For assessing risks of indirect effects to the salamander due to effects to its prey, RQs were derived for freshwater invertebrates based on EECs representative of concentrations of carbaryl in the springs. Peak 1-in-10 year EECs for the Barton Springs are used with the lowest acute toxicity value for invertebrates in order to derive acute risk quotients for invertebrates. For chronic risks, 1-in-10 year peak EECs over a 21-day period and the lowest chronic toxicity value for freshwater invertebrates are used to derive RQ values.

For acute exposures, the acute risk to listed species LOC (RQ≥0.05) is exceeded for use on lawns (RQ=314), pasture (RQ=14), parks (RQ=11), flower around buildings beds (RQ=0.78) and for aggregated uses (RQ=326). Chronic exposures of invertebrates to carbaryl from lawns (RQ=141), pasture (RQ=4.3), park (RQ=3.3) and aggregated uses (RQ=145) exceed the chronic risk LOC (**Table 18**).

Table 18. Invertebrate RQs relevant to indirect effects to the Barton Springs Salamander.

Duration of Exposure	Toxicity Value (µg/L)	Use	EEC (µg/L)[3]	RQ	LOC Exceedance? [4]
Acute	1.7	Lawns	534	314	Yes
		Pasture	23.0	13.5	Yes
		Park	19	112	Yes
		Flower Beds	1.33	0.78	Yes
		Vineyard	0.0511	0.03	No
		Nursery	0.0295	0.02	No
		Peach	0.008	<0.01	No
		Aggregate	555	326	Yes
Chronic	0.5	Lawns	70.4	141	Yes
		Pasture	2.17	4.3	Yes
		Park	1.63	3.3	Yes
		Flower Beds	0.182	0.36	No
		Vineyard	0.0110	0.02	No
		Nursery	0.00971	0.02	No
		Peach	0.0080	0.02	No
		Aggregate	72.3	145	Yes

[1] 48-h EC_{50} value (1.7 µg/L) from toxicity study with *Isoroperla grammatica*.
[2]NOAEC value based on acute to chronic ratio (3.73) estimation (NOEC=0.5 µg/L).
[3]EECs are from **Table 10**. RQs for acute exposures utilize peak EECs, while RQs for chronic exposures utilize 21-day EECs.
[4]For acute exposures, the LOC is 0.05. For chronic exposures, the LOC is 1.0.
[5]Aggregate use represents the sum of carbaryl from all uses.
[6]Exceeds the acute risk to endangered species LOC (RQ>0.05)

5.1.2.2 Evaluation of Potential Indirect Effects via Reduction in Habitat and/or Primary Productivity (Freshwater Aquatic Plants)

For assessing risks of indirect effects to the salamander due to effects to its habitat, RQs were derived for aquatic plants based on EECs representative of concentrations of carbaryl in the springs. Peak 1-in-10 year EECs are used with the lowest acute toxicity value for aquatic plants in order to derive acute risk quotients for plants.

For all exposures, including the aggregate of all exposures, the acute risk to listed species LOC (RQ≥1.0) is not exceeded by RQs for aquatic plants (**Table 19**). Additionally, there are no reported field incidents involving plants related to the use of carbaryl. Therefore, at the application rates modeled and based on the available data, the use of carbaryl in the action area is not likely to indirectly affect the Barton Springs salamander based on reductions in aquatic plants.

Table 19. Aquatic plant RQs relevant to indirect effects to the Barton Springs Salamander.

Plant Type	Toxicity Value (µg/L)	Use	EEC (µg/L)[2]	RQ	LOC Exceedance?[3]
Nonvascular	660[1]	Lawns	534	0.81	No
		Pasture	23.0	0.03	No
		Park	19	0.03	No
		Flower Beds	1.33	<0.01	No
		Vineyard	0.0511	<0.01	No
		Nursery	0.0295	<0.01	No
		Peach	0.008	<0.01	No
		Aggregate	555	0.84	No
Vascular	1500[1b]	Lawns	534	0.36	No
		Pasture	23.0	0.02	No
		Park	19	0.01	No
		Flower Beds	1.33	0.01	No
		Vineyard	0.0511	<0.01	No
		Nursery	0.0295	<0.01	No
		Peach	0.008	<0.01	No
		Aggregate	555	0.37	No

[1] EC_{05} value from toxicity study with freshwater diatom (MRID 424316-01).
[1b] EC_{05} value from toxicity study with duckweed (MRID 423721-02)
[2]EECs are from **Table 10**. RQs utilize peak EECs.
[3]For exposures to plants, the LOC is 1.0.
[4]Aggregate use represents the sum of carbaryl from all uses.

5.2 Risk Description

The risk description synthesizes an overall conclusion regarding the likelihood of adverse impacts leading to an effects determination (*i.e.*, "no effect," "may affect, but not likely to adversely affect," or "likely to adversely affect") for the Barton Springs salamander.

If the RQs presented in the Risk Estimation (**Section 5.1**) show no indirect effects and LOCs for the Barton Springs salamander are not exceeded for direct effects, a "no effect" determination is made, based on carbaryl's use within the action area. If, however, indirect effects are anticipated and/or exposure exceeds the LOCs for direct effects, the Agency concludes a preliminary "may affect" determination for the Barton Springs salamander.

Following a "may affect" determination, additional information is considered to refine the potential for exposure at the predicted levels based on the life history characteristics (*i.e.*, habitat range, feeding preferences, etc) of the Barton Spring salamander and potential community-level effects to aquatic plants. Based on the best available information, the Agency uses the refined evaluation to distinguish those actions that "may affect, but are not likely to adversely affect" from those actions that are "likely to adversely affect" the Barton Springs salamander.

The criteria used to make determinations that the effects of an action are "not likely to adversely affect" the Barton Springs salamander include the following:

- Significance of Effect: Insignificant effects are those that cannot be meaningfully measured, detected, or evaluated in the context of a level of effect where "take" occurs for even a single individual. “Take” in this context means to harass or harm, defined as the following:

- Harm includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering.

- Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

- Likelihood of the Effect Occurring: Discountable effects are those that are extremely unlikely to occur. For example, use of dose-response information to estimate the likelihood of effects can inform the evaluation of some discountable effects.

- Adverse Nature of Effect: Effects that are wholly beneficial without any adverse effects are not considered adverse.

A description of the risk and effects determination for each of the established assessment endpoints for the Barton Springs salamander is provided in **Sections 5.2.1 through 5.2.3**.

5.2.1 Direct Effects to the Barton Springs Salamander

Based on exposure estimates for use of carbaryl on individual (lawns and pasture) uses alone and for the aggregate exposure within the action area, the acute risk to endangered species LOC is exceeded for direct effects to the salamander. Risk from the use of carbaryl on lawns is based on a spectrum of assumptions. The conservative assumptions include that there are 25 applications at a rate of 8.3 lbs a.i./A and that 100% of lawns are treated on the same day. A lower labeled use pattern on lawns (2 applications of 9.1 lbs a.i./A) provides a less conservative, more realistic use estimate in which peak exposure estimates decline to 183 µg/L and the resulting risk quotient is 0.83. Thus, estimates based on realistic assumptions about use still exceed the acute risk to listed species LOC. Even from a single application at the maximum rate, assuming 5% of lawns are treated on the same day (EEC=12.2 µg/L; **Table 13**)) results in an RQ (RQ=0.06) that exceeds the acute listed species LOC. Thus, carbaryl applications to lawns would have to be restricted to a single application to less than 5% of the lawns in the BSSEA to result in a no effect .

With respect to carbaryl use on pastures, two applications to 50% of the rangeland (EEC=12 µg/L; **Table 13**)) in the BSSEA would exceed (RQ=0.05) the acute risk to listed species LOC. A single application of carbaryl to more than 75% of the rangeland (EEC=10 µg/L) would also exceed the acute risk to listed species LOC (RQ=0.05).

The chronic risk RQ value for use of carbaryl on lawns and for the aggregated risk for direct effects to the Barton Springs salamander exceed the chronic risk LOC by a factor of 5X. Similar to what was done for evaluating acute risk, if the maximum number of applications to lawns was three times per year rather than 25, the 60-day average exposure value would be 6.64 µg/L and the resulting RQ value (0.98) would fall just below the chronic risk LOC. After a single application the 60-day average concentration would be 2.15 µg/L and the RQ value (0.32) would be well below the chronic risk LOC.

An analysis of the likelihood of individual direct mortality (**Appendix I**) indicates that based on the highest RQ value (aggregate RQ= 2.52) for direct effects on the Barton Springs salamander and with a dose-response slope of 4.62, the likelihood is 1 in 1. At the endangered species LOC, *i.e*., RQ=0.05, the likelihood of individual mortality is 1 in 2.4 x 10^{16}. At the RQ value (RQ=0.44) for single applications to lawns, the likelihood of individual effect is 1 in 88 and at the RQ value (RQ=0.83) for three applications to lawn, the likelihood of an individual effect is 1 in 3.

Therefore, carbaryl use in the action area is likely to affect the Barton Springs salamander through direct acute and chronic effects on the salamander. As discussed previously, though, there is uncertainty regarding what can reasonably be assumed to be the maximum number of applications per year to residential lawns. Additionally, there is uncertainty in the extent to which residential lawn are treated at a single time. The modeling assumes that 45% of the BSSEA is made up of residential lawns and assessed exposure assuming a range of percentages of that area (4%, 5%, 10%, 25%, 50%, 100%) were treated at.the same time. With respect to acute mortality, if applications were limited to a single application per year and limitations were in place to ensure that a mazimum of 4% of the lawns were treated in the BSSEA, RQ values would fall below the LOC and result in a no effect determination.

Similarly, if the maximum number of applications were reduced to 3 and even if 100% of the lawns were treated simultaneously, the determination for direct chronic effects would be no effect.

5.2.2 Indirect Effects via Reduction in Food Items (Freshwater Invertebrates)

Consistent with the toxicity data indicating that carbaryl is highly toxic to freshwater invertebrates, exposure estimates for each of the evaluated uses exceed the acute risk to endangered species LOC by factors as high as 6280X. Based on an estimated probit dose-response slope of 4.3 and an RQ value of 314, the likelihood of acute mortality for individual invertebrates following use of carbaryl on lawns in the action area is 1 out of 1 (100%) (**Appendix I**). Use on lawns, pasture, parks and flower beds around buildings and aggregated uses are expected to result in carbaryl concentrations in runoff that will result in acute mortality of aquatic invertebrates. Even a single application of carbaryl to lawns would result in an exceedance (RQ~14) of the acute risk to listed species LOC although the likelihood of an individual invertebrate mortality would again be 100%. Even using less sensitive estimates of acute toxicity, e.g., LC_{50}=5.1 mg/L, the RQ value (RQ=19) would exceed the acute risk to endangered species LOC by a factor of 382X following a single application of carbaryl to lawns.

The data on waterfleas represent information on the sensitivity of zooplankton to carbaryl as the remaining taxa for which there are data are more representative of macroinvertebrates. The zooplankton serve as prey for aquatic macroinvertebrates and the apparent sensitivity of zooplankton to carbaryl suggests that macroinvertebrates could be affected through reduction in their forage base.

As discussed in greater detail in **Appendix D**, although the Barton Springs salamander is considered an opportunistic feeder, the most prevalent invertebrates found in stomach content analyses were macroinvertebrates consisting of ostracods, amphipods, and chironomids (USFWS, 2005). These are relatively large invertebrates (macroinvertebrates) and it is not clear as to the extent that smaller invertebrates (zooplankton) like cladocerans make up the diet of the salamander. Additionally, it is uncertain as to the extent that the most sensitive species used in this assessment reflect the sensitivities of the larger prey items; however, the sensitivity distribution depicted in **Figure 13** suggests that larger invertebrates tend to be less sensitive than smaller invertebrates. To the extent that larger invertebrates are less sensitive and to the extent that Barton Springs salamanders preferentially feed on the less sensitive taxa would markedly affect risk estimates for indirect effects to the salamander.

Based on the likelihood of individual effect analysis where 100% of the most sensitive species are expected to experience acute mortality at the estimated environmental concentrations for carbaryl in the BSSEA, the likelihood of indirect effects on the Barton Springs salamander from the use of carbaryl is viewed as a may affect and likely to adversely affect.

5.2.3 Indirect Effects via Reduction in Habitat and/or Primary Productivity (Freshwater Aquatic Plants)

With an EC_{50} of 1,270 μg/L, aquatic plants were some of the least sensitive aquatic organism tested with carbaryl. Based on the available data for freshwater nonvascular plants, estimated carbaryl concentrations have no affect on aquatic [nonvascular] plants.

There is uncertainty regarding the potential effect of carbaryl on aquatic vascular plants since the habitat of the salamander is composed of moss and vascular plants (See **Appendix D**). However, the risk of carbaryl to the salamander through reduction of habitat is considered to be low based on the data available for aquatic nonvascular plants, vascular terrestrial plants and the lack of any reported field incidents involving plants.

5.2.4. Incident reports

Although a total of three fish-kill incidents were reported for carbaryl, only one report (#B0000-501-92) could be credibly associated with a specific carbaryl use *(i.e.*, to control gypsy moth in New Jersey). Relative to other carbamate pesticides, the number of aquatic (fish kill) incidents associated with carbaryl has been low.

A total of 5 incidents related to carbaryl's effects on terrestrial invertebrates are reported in the EIIS database. Two of the reports (I005855-001 and B0000-300-03) do not contain any data but rather reflect general concerns expressed by the American Beekeeper Federation and the Honey Industry Council on the role pesticides in bee kills. The Honey Industry Council sited the specific use of carbaryl on alfalfa during the day. In North Carolina (incident #I003826-021), a bee mortality was associated with 0.8 ppm carbaryl residues; however, in a second incident (#I003826-0090 in North Carolina, bee mortality was more likely attributed to methyl parathion than carbaryl. Only in one incident (I001611-002) though, was the use of carbaryl on a specific crop, *i.e.*, asparagus in Washington, clearly associated with carbaryl residues in dead bees. Subsequent to the publication of the IRED, a number (48) of bee kill incidents were associated in Washington State along with several from Minnesota.

5.2.5 Description of Assumptions, Limitations, Uncertainties, Strengths and Data Gaps

5.2.5.1. Exposure Assessment

5.2.5.1.1 Aquatic exposure modeling of carbaryl

Exposure modeling is characterized by the use of simplifying assumptions that allow complex systems to be described in manageable terms. The complexity of the karst hydrology of the BSSEA increases the number of assumptions and uncertainties that usually characterize exposure modeling. For this assessment, all precipitation and applied carbaryl in the contributing zone are assumed to have an equal chance of arriving at the recharge zone and all precipitation, applied carbaryl, and discharge from the contributing zone are assumed to have an equal chance of arriving at the Barton Springs. All runoff and baseflow in the action area is assumed to recharge the Barton Springs and be available to dilute all carbaryl concentrations in runoff. All four Barton Springs are assumed to receive recharge from the same sources.

Ground water baseflow from the Trinity aquifer is assumed to contribute 30% of the average flow from the contributing zone, although baseflow is likely to vary over time. All transit times across zones are assumed equal and instantaneous with negligible degradation between the edge-of-field and the Barton Springs. Losses from evaporation, transpiration, aquifer storage, stream flow that doesn't pass through the Springs, and withdrawal for drinking water are neglected.

Contributions from eroded sediment containing bound carbaryl are assumed negligible. Contributions from overflow of Barton Creek during large stormflow are also assumed negligible. Spray drift contributions for applications in the action area are assumed negligible as well because of the conceptual model that assumes all runoff from treated areas that occurs in the recharge zone is instantaneously recharged and that applications are at sufficient distances from the Barton springs such that the exposed water in the springs is not directly impacted by spray drift.

The modeled use scenarios are assumed to represent actual use sites in the action area. The rangeland scenario is assumed to represent the entire action area where use does not occur. Modeled exposure estimates were generated to reflect the maximum application practices allowed on current labels. Because actual carbaryl usage may be less than that allowed on current labels, both in application practices and in percent of the action area where applied at any time, modeled EECs may over-estimate exposure.

Estimated 1-in-10-year annual average exposure values were up to two orders of magnitude higher than maximum concentrations reported in monitoring data taken in the springs, mostly due to the assumptions that carbaryl is used at maximum application rates (arbitrarily limited at 25 applications per year) and simultaneously applied to all lawns in the action area. 1-in-10-year annual average estimates are consistent with concentrations observed in the monitoring data when uses are modeled once per year across all use areas, or when uses are modeled at multiple times per year on a fraction of the possible use areas.

In this assessment, exposures are estimated for salamanders residing within the fractures (springs) feeding the pool system and within the pools themselves of the BSSEA. Thus, salamanders residing within the fracture/pool system of the springs are likely to be exposed to longer-term base flow concentrations of carbaryl with occasional shorter-duration pulses correlated with precipitation-derived runoff events transported through the fractures. Salamanders have also been found to reside within the pools themselves. In general, the organisms residing in the pools will be exposed to the same sources of exposure. However, it is expected that the magnitude and duration of exposure will be somewhat different given the tendency of water to move through the pools (except in the most extreme climatic events) more slowly. This suggests that exposures in the pools will be generally lower in magnitude than in the springs, but will also tend to have a longer duration of exposure than in the springs.

5.2.5.1.2 Mixture Effects

This assessment considered only the single active ingredient of carbaryl. However, the assessed species and their environments may be exposed to multiple pesticides simultaneously. Evaluation of pesticide mixtures is beyond the scope of this assessment because of the myriad factors that cannot be quantified based on the available data. Those factors include identification of other possible co-contaminants and their concentrations, differences in the pattern and duration of exposure among contaminants, and the differential effects of other physical/chemical characteristics of the receiving waters (*e.g.* organic matter present in sediment and suspended water). Evaluation of factors that could influence additivity/synergism is beyond the scope of this assessment and is beyond the capabilities of the available data to allow for an evaluation. However, it is acknowledged that not considering mixtures could over- or under-estimate risks depending on the type of interaction and factors discussed above. This assessment has however, analyzed the toxicity of carbaryl formulated product mixtures (including carbaryl formulations involving more than one active ingredient) and has determined that none of the formulated products evaluated were more toxic than the technical grade active ingredient data used for assessing both direct and indirect risks in this document.

5.2.5.2 Effects Assessment

5.2.5.2.1 Direct Effects

As previously discussed, direct effects to the Barton Springs salamander were based on freshwater fish data, which are used as a surrogate for aquatic-phase amphibians. While a limited amount of amphibian data are available, these studies either failed to establish an LC_{50} value or did not report measured concentration values. The available data suggest that amphibians are considerably less sensitive to carbaryl than fish. To the extent to which amphibians are less sensitive than the surrogate species used in this assessment, the assessment is conservative.

5.2.5.2.2 Sublethal Effects

Open literature is useful in identifying sublethal effects associated with exposure to carbaryl. However, no data are available to link the sublethal measurement endpoints to direct mortality or diminished reproduction, growth and survival that are used by OPP as assessment endpoints. OPP acknowledges that a number of sublethal effects have been associated with carbaryl exposure; however, at this point there are insufficient data to definitively link the measurement endpoints to assessment endpoints. To the extent to which sublethal effects are not considered in this assessment, the potential direct and indirect effects of carbaryl on CRLF may be underestimated.

5.2.5.2.3 Indirect Effects

Indirect effects on the Barton Springs salamander are estimated based on the most sensitive invertebrate tested, *i.e.*, *Chloroperla grammatica*. While this is a relatively common invertebrate, stoneflies do not appear to be a major food source for Barton springs salamanders based on stomach content analyses where ostracod exoskeletons have been identified. Thus, the extent to which the most sensitive species used in this analysis is representative of the diet of Barton Springs salamanders is uncertain. However, it should be noted that the toxicity endpoints for surrogate organisms are not intended to represent specific taxa but rather they serve as indicators of the potential sensitivity of invertebrates as a whole.

5.2.5.2.4. Sensitivity Distributions

In order to characterize the conservativeness of the endpoints selected to represent direct effects to the Barton Springs Salamander (*e.g.*, Atlantic salmon LC_{50} = 220 µg/L) and indirect effects to the Barton Springs Salamander through direct effects to its aquatic prey (*e.g*. Stonefly EC_{50} = 1.7 µg/L) genus sensitivity distributions are derived using the available acute toxicity data for freshwater fish and invertebrates, respectively.

A quantitative distribution is established for each set of data; including studies classified acceptable or supplemental. Once a data set is assembled, the average of the Log10 values of the EC_{50} values for a species is calculated. Then, the average of the Log10 values of the genera is estimated. A semi-lognormal distribution is used to estimate the sensitivity distribution by considering the mean and standard deviation of all genus mean values. A full description of the data and results used to derive these distributions is included in **Appendix F**. The number of data points, species and genera incorporated into each of the sensitivity distributions is identified in **Table 20**. The curves of the sensitivity distributions are represented by **Figures 14-15**. In the figures, each point represents the genus mean value for the respective genus and the solid line represents the sensitivity distribution based on these data.

Table 20. Numbers of data points, species and geneses incorporated into each of the sensitivity distributions. The lower 95th percentile estimates of EC50 values relevant to the distributions are also included.

Taxa	Number of Data Values	Number of Species	Number of Genuses	Toxicity endpoint for assessment	Lower 95th Percentile
Fish	19	17	10	220 µg/L	499 µg/L
Invertebrates	12	9	7	1.7 µg/L	0.7 µg/L

The lower 95th percentile of the fish distribution (499 µg/L) indicates that the use of the lowest available toxicity value (220 µg/L) is likely a conservative estimate of the toxicity of carbaryl to freshwater vertebrates. When considering estimated aquatic exposure concentrations (peak), aggregate use of carbaryl in the Barton Springs area, as well as on lawns is sufficient to exceed the LOC for approximately 85% of the fish sensitivity distribution. Estimated aquatic concentrations resulting from uses on pasture are at levels sufficient to exceed the LOC for 5% of fish species. Uses of carbaryl on parks, flowerbeds, vineyards, nurseries and peaches are at levels that would exceed the LOC for <5% of fish species.

The lower 95th percentile of the invertebrate distribution (0.7 µg/L) indicates that the use of the lowest available toxicity value (1.7 µg/L) is not as conservative as the value used for invertebrates. When considering estimated aquatic exposure concentrations (peak), aggregate use of carbaryl in the Barton Springs area, as well as on lawns, pastures and parks are sufficient to exceed the LOC for greater than 95% of the invertebrate sensitivity distribution. Estimated aquatic concentrations resulting from uses on flower beds are at levels sufficient to exceed the LOC for approximately 73% of invertebrate species. Currently registered maximum use rates for carbaryl on vineyards and nurseries yield estimated environmental concentrations that result in RQ values which exceed the acute risk to endangered species LOC for approximately 7% and 5% of invertebrate species, respectively. At maximum label rates for use of carbaryl on peaches, EECs result in RQ values which exceed the acute risk to endangered species LOC for <5% of invertebrate species.

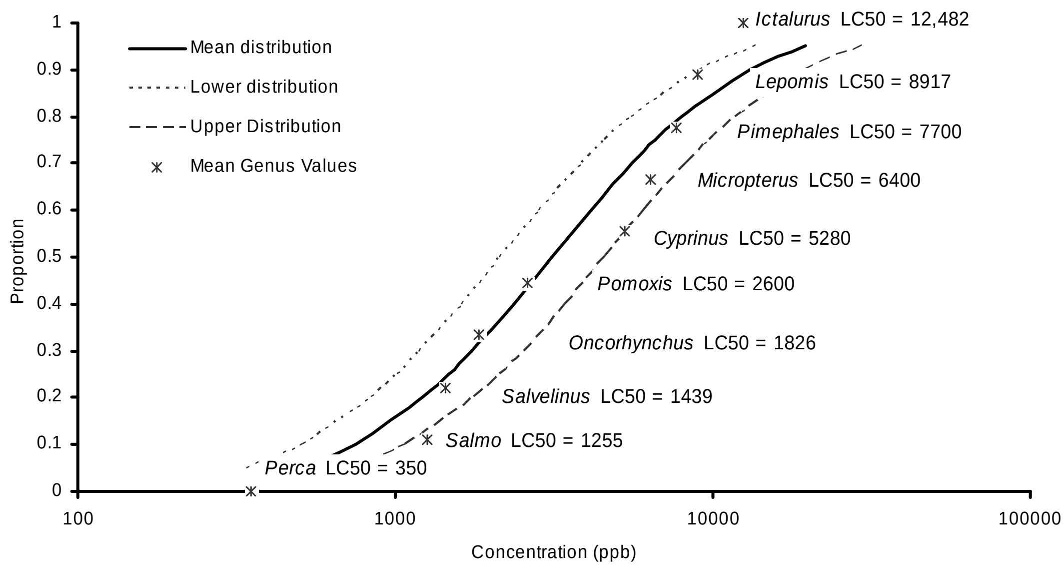

Figure14. Fish sensitivity distribution based 96-h LC_{50} values from acute exposures of fish to carbaryl.

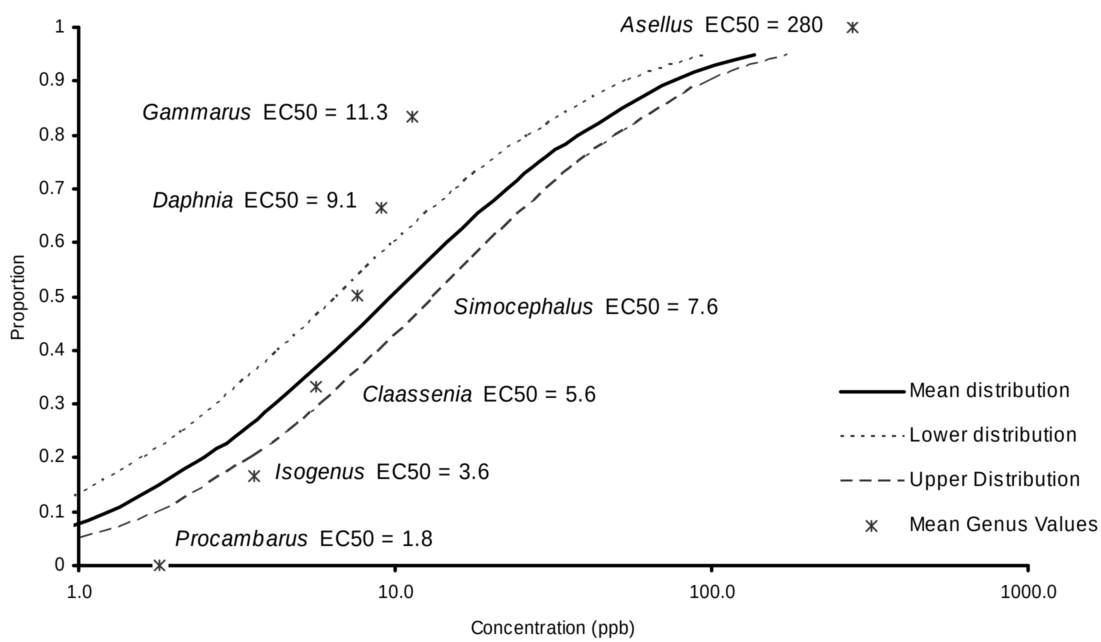

Figure15. Invertebrate sensitivity distribution based 48-h and 96-h LC_{50} values from acute exposures of invertebrates to carbaryl.

5.3. Conclusions

The conceptual model for potential risks of carbaryl use to Barton Springs salamanders (**Figure 4**) depicts direct and indirect changes in receptor attributes. Biological receptors included the Barton Springs salamander, aquatic invertebrates that serve as the salamanders' forage base for the salamander, and aquatic plants that serve as habitat/cover for the species and its prey. Potential attribute changes for these receptors included decreased survival, reproduction and growth. An assessment of potential sources (routes of exposure) for carbaryl estimates peak aggregate exposure concentrations in the Barton Springs at 555 μg/L and chronic 1-in-10 year average 60-day chronic aggregate exposure is estimated at 39 μg/L. These exposure estimates combined with acute (220 μg/L) and chronic (6.8 μg/L) toxicity estimates for the most sensitive species result in a likely to adversely affect determination for direct acute effects on the salamander and a likely to adversely affect determination for chronic effects to the salamander (**Table 21**). Even if less conservative assumptions were made regarding application rates and the percentage of areas treated, this assessment indicates that the use of carbaryl on lawns would be likely to adversely affect the Barton Springs salamander. A single application of carbaryl to as little as 5% of the lawns in the BSSEA results in risk estimates that exceed the acute risk to listed species LOC.

With respect to direct chronic risk to Barton Springs salamander, if the number of applications could be restricted to a maximum of 3, then risk estimates would drop below the chronic risk LOC and result in an no effect determination.

For indirect effects on the salamander's forage base, the estimated peak concentration (555 μg/L) was compared to the most sensitive invertebrate toxicity estimate (1.7 μg/L). The resulting risk quotients for the use of carbaryl on lawns, pasture, parks, and flower beds around buildings exceed the endangered species level of concern and the likelihood of individual effects is 100%. Therefore, the use of carbaryl in the BSSE results in a likely to adversely affect determination (**Table 21**) for indirect effects to the Barton Springs salamander through potential reductions in its invertebrate forage base.

For indirect effects to habitat, the peak estimated environmental concentration (555 μg/L) was compared to the most sensitive aquatic plant species (3700 μg/L) and the resulting risk quotient was below the acute risk LOC. The result is a no effect determination for habitat (**Table 21**).

Although there are a number of uncertainties in this assessment, the approaches used to estimate potential exposure and effects are considered relatively conservative and protective for the species.

Table 21. Carbaryl Effects Determination Summary for the Barton Springs Salamander.

Assessment Endpoint	Effects Determination	Basis for Determination
Acute mortality	May affect and likely to adversely affect	Acute risk LOC is exceeded based on the most sensitive surrogate freshwater vertebrate data and a variety of assumptions about numbers of applications and the percentage of area treated.
Chronic survival, growth, and reproduction effects on Barton Springs salamander individuals via direct effects	May affect and likely to adversely affect	Chronic risk LOC is exceeded based on the most sensitive surrogate freshwater vertebrate data. If the maximum number of applications was reduced to three, then the determination would be "no effect'.
Indirect effects to Barton Springs salamander via reduction of prey (*i.e.*, freshwater invertebrates)	May affect and likely to adversely affect	Acute risk LOC is exceeded based on the most sensitive surrogate freshwater invertebrate data. Even using less conservative assumptions regarding application rates and the percentage of areas simultaneously treated in the BSSEA, the likelihood of acute mortality of prey items is considered high. Additionally, the species sensitivity distribution for freshwater invertebrates indicates that the toxicity endpoint used for evaluating effects to invertebrates is not conservative even though it is the most sensitive species.
Indirect effects to Barton Springs salamander via reduction of habitat and/or primary productivity (*i.e.*, aquatic plants)	No effect	Carbaryl use does not directly affect individual non-vascular aquatic plants in Barton Springs. Estimated peak EECs for all modeled carbaryl use scenarios within the action area are well below the threshold concentration for aquatic, non-vascular plants.

6. Literature Cited

Armburst, K. and D. Crosby. 1991. Fate of Carbaryl, 1-Naphthol, and Atrazine in Seawater. *Pac. Sci.*, **45**: 314-20.

Barrett, M. and R. Charbeneau. 1996. A parsimonious model for simulation of flow and transport in a karst aquifer. Center for Research in Water Resources, Technical Report 269, p. 149.

Brune, G. 1981. Springs of Texas, Volume I. Branch-Smith, Inc., Fort Worth, Texas.

Burgos, W., J. Novak, and D. Berry. 1996. *Environ. Sci. Technol.*, **30**:1205-11.

Chippindale, P.T. 1993. Evolution, phylogeny, biogeography, and taxonomy of Central Texas spring and cave salamanders, *Eurycea* and *Typhlomolge* (Plethodontidae: Hemidactyliini). Dissertation, University of Texas at Austin, Austin, Texas.

City of Austin (COA). 2003a. Unpublished Land Use Data. http://www.ci.austin.tx.us/landuse/. Accessed February 15, 2005.

City of Austin. 2003b. Land Use Data (ftp://coageoid01.ci.austin.tx.us/GIS-Data/Regional/coa_gis.html).

Davis, B. 2006. County Extension Agent, Texas Cooperative Extension (Hays County) Personal Communication.

DeLong-Amaya, A. 2006. Ladybird Johnson Wildflower Center, Personal Communication.

Embrey, S. and P. Moran. 2006. Quality of Streamwater in the Puget Sound Basin—A Decade of Study and Beyond. U.S. Geological Survey, National Water-Quality Assessment Program, Washington Water Science Center, Tacoma, WA. Poster online at: http://wa.water.usgs.gov/projects/pugt/data/4-2006-poster.pdf.

Fellers, G.M., McConnell, L.L, Pratt, D. and S. Datta. 2004. Pesticides in mountain yellow-legged frogs (*Rana mucosa*) from the Sierra Nevada Mountains of California, USA. Environmental Toxicology and Chemistry, **23**(9): 2170-2177.

Ferreira, G.A. and J.N. Seiber. 1981. *J. Agric. Food Chem.*, **29**:93-99.

Field, M. 2004. Forecasting Versus Predicting Solute Transport in Solution Conduits for Estimating Drinking-Water Risks. Acta Carsologica, XXXIII/II, pp 115-150.

Foreman, W., M. Majewski, D. Goolsby, F. Wiebe, and R. Coupe. 2000. Pesticides in the Atmosphere of the Mississippi River Valley, Part II – Air. *Sci. Total Environ.*, **248**:213-266.

Garcia, E. 2006. Natural Resources Conservation Service – District Conservationist (Travis County), Personal Communication.

Glotfelty, D.E., Majewski, M.S. and J.N. Seiber. 1990. Distribution of several organophosphorus insecticides and their oxygen analogues in a foggy atmosphere. Environemental Science and Technology, **24**(3): 353-357.

Harman-Fetcho, J.A., McConnell, L.L., Rice. C.P., and J.E. Baker. 2000. Wet deposition and air-water gas exchange of currently used pesticides to a subestuary of the Chesapeake Bay. Environmental Science & Technology, **34**(8): 1462-1468.

Hauwert, N., Johns, D. Hunt, B., Beery, J., Smith, B., and Sharp, J.M., Jr. 2004. Flow Systems of the Edwards Aquifer Barton Springs segment Interpreted from tracing and associated field studies.: So. Texas Geol. Soc. /Austin Geol. Soc. Symposium on the Edwards Aquifer, San Antonio, TX, in press.

Kuniansky, E. 1989. Precipitation, Streamflow, and Base Flow in West-central Texas, December 1974 through March 1977. USGS Water-Resources Investigations Report # 88-4218. 4 maps on 2 sheets.

Kuniansky, E.L. 1990. Potentiometric surface of the Edwards-Trinity aquifer system and contiguous hydraulically connected units, west-central Texas, winter 1974-75: U.S. Geological Survey Water-Resources Investigations Report 89-4208, map, scale 1:750,000, 2 sheets.

Lamberton, J. and R. Claeys. 1970. Degradation of 1-Naphthol in Sea Water. *J. Agr. Food Chem.*, **18**: 92-6.

LeNoir, J.S., McConnell, L.L., Fellers, G.M., Cahill, T.M., and J.N. Seiber. 1999. Summertime transport of current-use pesticides from Califorina's Central Valley to the Sierra Nevada Mountain Range, USA. Environmental Toxicology and Chemistry, **18**(12): 2715-2722.

Lindgren, R., A. Dutton, S. Hovorka, S. Worthington, and S. Painter. 2004. Conceptualization and Simulation of the Edwards Aquifer, San Antonio Region, Texas. U.S. Geological Survey Scientific Investigations Report 2004–5277, 143 p.

Mahler, B. 2005. The Case of the Anomalous Springs. Using all the clues to solve a karst mystery. USGS presentation to the ESI France-UT Karst Workshop; February 8, 2005.

Maher, B. 2005a. Research Hydrologist, U.S. Geological Survey, Texas District. Personal Communication.

Majewski, M.S. Glotfelty, D.E., Paw U, K.T. and J.N. Seiber. 1990. A field comparison of several methods for measuring pesticide evaporation rates from soil. Environmental Science and Technology, **24**: 1490-1497.

Majewski , M.S. and P.D. Capel. 1995. Pesticides in the atmosphere: distribution, trends, and governing factors. Ann Arbor Press, Inc. Chelsea, MI.

Majewski, M.S., Foreman, W.T., Goolsby, D.A. and N. Nakagaki. 1998. Airborne pesticide residues along the Mississippi River. Environmental Science and Technology, **32**: 3689-3698.

Majewski, M.S. and D.S. Baston. 2002. Atmospheric transport of pesticides in the Sacramento, California, metropolitan area, 1996-1997. United States Geological Survey, Water Resources Investigations Report 02-4100.

Majewski, M.S., Zamora, C., Foreman, W.T., and C.R. Kratzer. 2006. Contribution of atmospheric deposition to pesticide loads in surface water runoff. USGS report: 2005-1307 (http://pubs.usgs.gov/of/2005/1307/).

McConnell, L.L., LeNoir, J.S., Datta, S., and J.N. Seiber. 1998. Wet deposition of current-use pesticides in the Sierra Nevada Mountain Range, California, USA. Environmental Toxicology and Chemistry, **17**(10): 1908-1916.

Mihelcic J. and R. Luthy. 1988. Degradation of Polycyclic Aromatic Hydrocarbon Compounds under Various Redox Conditions in Soil-Water Systems. *Appl. Environ. Microbiol.*, **54**: 1182-7.

Muir, D.C.G., Teixeira, C., and F. Wania. 2004. Empirical and modeling evidence of regional atmospheric transport of current-use pesticides. Environmental Toxicology and Chemistry, **23**(10): 2421-2432.

NOAA. 1998. National Oceanic and Atmospheric Administration. Climatic wind data for the United States. Accessed December 20, 2006 (http://www.ncdc.noaa.gov).

Peck, A.M., and K.C. Hornbuckle. 2005. Gas-Phase Concentrations of current-use pesticides in Iowa. Environmental Science and Technology, **39**: 2952-2959.

Perez, C. 2006. District Conservationist (Hays County), Personal Communication.

Phillips, P., S. Ator, and E. Nystrom. 2007. Temporal Changes in Surface-Water Insecticide Concentrations after the Phaseout of Diazinon and Chlorpyrifos. Environmental Science and Technology, **41**(12), 4246 -4251.

Pipkin, T. and M. Frech, editors. 1993. Barton Springs eternal. Softshoe Publishing, Austin, Texas.

Russom, C., S. Bradbury, S. Broderius, D. Hammermeister, and R. Drummond. 1997. Predicting modes of toxic action from chemical structure: acute toxicity in the fathead minnow (*Pimephales promelas*). Environmental Toxicology and Chemistry, **16** (5): 948-967.

Sanusi, Astrid, M. Millet, P. Mirabel, and H. Wortham. 2000. Comparison of Atmospheric Pesticide Concentrations at Three Sampling Sites: Local, Regional and Long-Range Transport. *Sci. Total. Environ.* **263**:263-277.

Schomburg, C.J., Glotfelty, D.E., and J.N. Selber. 1991. Pesticide occurrence and distribution in fog collected near Monterey, California. Environmental Science and Technology, **25**, 155-160.

Shay, K. 2006. Water Quality Education Manager, City of Austin Watershed Protection and Development Review Board, Personal Communication.

Slade, R. J., Jr., Dorsey, M. E., Stewart, S. L. 1986. Hydrology and Water Quality of the Edwards Aquifer Associated with Barton Springs in the Austin Area, Texas, U.S. Geological Survey Water Resources Investigations Report 86-4036.

Sparling, D., G. Fellers, and L. McConnell. 2001. Pesticides and amphibian population declines in California, USA. Environmental Toxicology & Chemistry **20**(7): 1591-1595.

Suntio, L.R., *et al.* 1988. *Rev. Environ. Contam. Toxicol.,* **103**:1-59.

Unsworth, J.B., Wauchope, R.D., Klein, A.W., Dorn, E., Zeeh, B., Yeh, S.M., Akerblom, M., Racke, K.D. and b. Rubin. 1999. Significance of the long range transport of pesticides in the atmosphere (technical report). Pure Appl. Chem. **71**(7): 1359-1383.

U.S. EPA. 1980. Hassett, J., J. Means, W. Banwart, and S. Wood. Sorption Properties of Sediments and Energy-Related Pollutants. Athens: Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency; Springfield, VA.

U.S. EPA. 1992. Framework for Ecological Risk Assessment. EPA/630/R-92/001.

U.S. EPA. 1998. Guidance for Ecological Risk Assessment. Risk Assessment Forum. EPA/630/R-95/002F, April 1998.

U.S. EPA. 2003. Review of “Estimation of the Foliar Dissipation Half-life of Carbaryl” and Re-analysis of the Foliar Degradation Rate. EPA Internal Memorandum from R. David Jones to Tony Britten. DP Barcode 288376.

U.S. EPA. 2004. Overview of the Ecological Risk Assessment Process in the Office of Pesticide Programs. Office of Prevention, Pesticides, and Toxic Substances. Office of Pesticide Programs. Washington, D.C. January 23, 2004.

U.S. EPA. 2004b. Interim Reregistration Eligibility Decision for Carbaryl, List A, Case 0080. Oct. 22, 2004 (http://www.epa.gov/oppsrrd1/REDs/carbaryl_ired.pdf).

U.S. EPA. 2005. Pesticide Root Zone Model (PRZM) Field and Orchard Crop Scenarios: Guidance for Selecting Field Crop and Orchard Scenario Input Parameters, Version II. Water Quality Tech Team, Environmental Fate and Effects Division, Office of Pesticide Programs, U.S. Environmental Protection Agency. Washington, D.C. 20460. April, 2005.

U.S. EPA. 2006. Risks of Atrazine Use to Federally Listed Endangered Barton Springs Salamanders (*Eurycea sosorum*): Pesticide Effects Determination. Environmental Fate and Effects Division, Office of Pesticide Programs, U.S. Environmental Protection Agency. Washington, D.C. 20460. Aug. 22, 2006 (http://www.epa.gov/oppfead1/endanger/effects/atrazine/atrazine_salamander_analysis.pdf).

U.S. EPA. 2007a. Risks of Diazinon Use to Federally Listed Endangered Barton Springs Salamanders (*Eurycea sosorum*): Pesticide Effects Determination. Environmental Fate and Effects Division, Office of Pesticide Programs, U.S. Environmental Protection Agency. Washington, D.C. 20460. May 9, 2007 (http://www.epa.gov/oppfead1/endanger/effects/bss-diazinon-assessment.pdf).

U.S. EPA 2007b. Risks of Metolachlor Use to Federally Listed Endangered Barton Springs Salamander (*Eurycea sosorum*). . Environmental Fate and Effects Division, Office of Pesticide Programs, U.S. Environmental Protection Agency. Washington, D.C. 20460. May 2007. http://www.epa.gov/oppfead1/endanger/litstatus/effects/bss-metolachlor-analysis.pdf

U. S. Fish and Wildlife Service (USFWS). 1989. Final Biological Opinion (EHC/BFA/9-89-1) in Response to U.S. Environmental Protection Agency's September 30, 1988, Request for Consultation on Their Pesticide Labeling Program.

U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). 1998. Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act. Final Draft. March 1998.

U.S. Fish and Wildlife Service (USFWS). 2005. Barton Springs Salamander (*Eurycea sosorum*) Recovery Plan. Southwest Region, USFWS, Albuquerque, New Mexico.

USDA. 2006. Soil Survey Areas of Hays Counties, Texas. U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), Soil Data Mart. March 1, 2006 (http://soildatamart.nrcs.usda.gov).

USDA. 2007. Texas Livestock Inventory and Production by County. U.S. Department of Agriculture, National Agricultural Statistics Service.

http://www.nass.usda.gov/Statistics_by_State/Texas/Publications/County_Estimates/ce_lp.htm. Accessed on March 22, 2007.

USGS. 1997. Pesticides in the atmosphere. United States Geological Survey, National Water-Quality Assessment. Fact Sheet FS-152-95. Last modified 14 February 1997 (http://ca.water.usgs.gov/pnsp/atmos/index.html).

USGS. 2003. U.S. Geological Survey, National Mapping Division, Rocky Mountain Mapping Center. Edwards Aquifer Land Use / Land Cover. Denver, Colorado (http://www.tceq.state.tx.us/gis/lulc.html).

USGS. 2006. National Water Quality Assessment (NAWQA) Program (http://water.usgs.gov/nawqa/).

USGS. 2007. 2002 Pesticide use maps: Carbaryl-insecticide-2002 estimated annual agricultural use. U.S. Geological Survey, Pesticide National Synthesis Project. http://ca.water.usgs.gov/pnsp/pesticide_use_maps/show_map.php?year=02&map=m6006. Accessed 25 July 2007

Waite, D.T., R. Grover, N.D. Westcott, D.G. Irvine, L.A. Kerr and H. Sommerstad. 1995. Atmospheric Deposition of Pesticides in a Small Southern Saskatchewan Watershed. *Environ. Toxicol. and Chem.*, **14**:1171-1175.

Windholz M., S. Budavari, R. Blumetti, and E. Otterbein. 1976. The Merck Index: an encyclopedia of Chemicals, Drugs and Biologicals, 9th edn. Rahway, NJ, USA.

Woodrow, J.E., Seiber, J.N. and L.W. Baker. 1997. Correlation techniques for estimating pesticide volatilization flux and downwind concentrations. Environmental Science and Technology, **31**: 523-529.

6.1. Submitted studies

MRID 00159342. Chib, J. 1986. Sevin Brand Carbaryl Insecticide: Bioconcentration and Fate of Carbaryl in Bluegill Sunfish (Lepomis macrochirus): Project No. 801R10: File No. 34540. Unpublished study prepared by Union Carbide Agricultural Products Co., Inc. and Analytical Biochemistry Laboratory, Inc. 46 p.

MRID 00163847. Khasawinah, A. 1977. Hydrolysis of Carbaryl in Aqueous Buffer Solutions: Project No. 111A12. Unpublished study prepared by Union Carbide Corp. in cooperation with International Research and Development Corp. 23 p.

MRID 41982603. Das, Y. 1990. Photodegradation of 1-Naphthyl-^{14}C-Carbaryl in Aqueous Solution Buffered at pH 5 Under Artificial Sunlight: Lab Project Number: 90060. Unpublished study prepared by Innovative Scientific Services, Inc. 101 p.

MRID 42372102. Lintott, d. R. 1992. Carbaryl Technical: Acute Toxicity to Duckweed, *Lemna gibba* G3, Under Static Test Conditions. Laboratory Project ID No. J9112004g. Conducted by Toxikon Environmental Sciences, Jupiter, FL. Submitted by Rhone-Poulenc Ag Company, Research Triangle Park, NC.

MRID 42785101. Miller, N. 1993. Metabolism of ^{14}C-Carbaryl under Aerobic Soil Conditions: Lab Project Number: EC-90-124. Unpublished study prepared by Rhone-Poulenc Ag Co. in cooperation with Cook College, Center for Advanced Food Tech. 186 p.

MRID 42785102. Miller, N. 1993. Metabolism of ^{14}C-Carbaryl under Anaerobic Aquatic Soil Conditions: Lab Project Number: EC-90-125. Unpublished study prepared by Rhone-Poulenc Ag Co. in cooperation with Cook College, Center for Advanced Food Tech. 260 p.

MRID 43143401. Misra, B. 1994. Aerobic Aquatic Metabolism of ^{14}C-Carbaryl: Final Report: Lab Project Number: ME/9200153: EC/92/227. Unpublished study prepared by Pittsburgh Environmental Research Lab., Inc. 125 p.

MRID 43259301. Skinner, W. 1994. Soil Adsorption/Desorption of ^{14}C-Carbaryl by the Batch Equilibrium Method: Lab Project Number: 446W: 446W-1. Unpublished study prepared by PTRL West Inc. 113 p.

MRID 43320701. Skinner, W. 1994. Aged Leaching of ^{14}C-Carbaryl in Four Soils: Lab Project Number: 447W: 447W/1: EC/93/251. Unpublished study prepared by PTRL West, Inc. 147 p.

MRID 43439801. Norris, F. 1994. A Forestry Dissipation Study with Carbaryl: Lab Project Number: 44555: US93S01R. Unpublished study prepared by Rhone-Poulenc Ag Co.; Collins Agricultural Consultants, Inc.; and Colorado Analytical Research & Development Corp. 976 p.

MRID 44759301. Carpenter, M. 1990. Hydrolysis of ^{14}C-Carbaryl in Aqueous Solutions Buffered at pH 5, 7, and 9: Carbaryl Insecticide: Lab Project Number: 38380. Unpublished study prepared by Analytical Bio-Chemistry Laboratories, Inc. 83 p.

Appendix A. ECOTOX Open Literature Reviews.

Open Literature Review Summary

Chemical Name: Carbaryl

CAS No: 63-25-2

ECOTOX Record Number and Citation: 15745 Boone, M. D. and C. M. Bridges. 1999. *The Effect of Temperature on the Potency of Carbaryl for Survival of Tadpoles of the Green Frog (Rana clamitans).* Environmental Toxicology and Chemistry 18(7): 1482 – 1484.

Purpose of Review (DP Barcode or Litigation): Endangered species assessment

Date of Review: May 27, 2007

Summary of Study Findings:

Green frog (*Rana clamitans*) tadpoles weighing an average of 80 mg (± 15 mg) (Gosner Stage 25) were exposed to one of nine chemical treatments, *i.e.*, water control, solvent (acetone 0.5 mL/L), 3.5, 5.0, 7.2, 10.3, 14.7, 21.0 and 30.0 mg carbaryl/L, and to one of three temperature treatments, *i.e.*, 17, 22, or 27^{o}C, in a 96-hr static test. The tests were conducted in 3.8-L glass jars containing 2 L of well water (ph 7.8, hardness 286 mg/L as $CaCO_3$). Each treatment was replicated three times. Ten tadpoles were randomly assigned to each glass jar and the percent mortality was determined at 12, 24, 48, and 96 hours. Tadpoles were not fed during the exposure.

Average survival was significantly different at each temperature treatment. At 24 hours survival was significantly lower at 27^{o}C without exposure to other chemicals. Lower concentrations (3.5, 5.0, 7.2 and 10.3 mg/L) were not significantly different from controls (survival > 96%). The two greatest concentrations (21 and 30 mg/L) were significantly different from controls at all times and had an average survival below 42%, with no tadpoles surviving in the 30 mg/L group for 96 hours.. Tadpoles at 17 and 22^{o}C had greater survival at higher concentrations than tadpoles at 27^{o}C. At 48 hours, the LC_{50} at 27^{o}C was 16.17 mg/L and at 17^{o}C the LC_{50} was 26.01 mg/L. By 96 hours, the LC_{50} at 27^{o}C (11.32 mg/L) was twice as large as at 17^{o}C (22.02 mg/L); that is, a smaller amount of carbaryl was needed to induce mortality at a high temperature (**Table 22**) The authors conclude that temperature, chemical concentration, and the interaction of temperature and chemical significantly affected survival; generally, increased temperature resulted in lower survival. According to the authors, the study suggests a range of temperatures realistic for a species should be used in toxicity tests.

Table 22. Median lethal concentrations (LC_{50}) in mg/L (ppm) for aquatic-phase green frogs (*R. clamitans*) exposed to carbaryl for various lengths of exposure and temperatures. Values in parentheses represent 95% confidence interval).

Time (hrs)	Temperature ^{o}C		
	17^{o}	22^{o}	27^{o}
24	<30	22.55 (20.96 – 24.27)	17.57 (16.29 – 18.95)
48	26.01 (24.74 - 27.35)	21.76 (20.30 – 23.33)	16.17 (15.14 – 17.26)
72	24.80 (23.57 – 26.10)	20.02 (18.56 – 21.60)	14.88 (13.83 – 16.02)
96	22.02 (20.62 – 23.52)	17.36 (16.24 – 18.56)	11.32 (10.42 – 12.29)

Description of Use in Document (QUAL, QUAN, INV): Qualitative

Rationale for Use: Study provides useful information on the median lethal concentration of carbaryl at varying lengths of exposures and temperatures. The study is useful for qualitatively characterizing the effect of temperature on the toxicity of carbaryl to aquatic-phase amphibians.

Limitations of Study: Egg masses were collected in the wild (pond at the Baskett Wildlife Research Area, Ashland, Missouri. Loading rate (10 tadpoles/2 L) exceeds the EPA recommended rate of 1 tadpole/L. Individual treatment concentrations were not verified; only the stock solution was analytically measured. Concentration (0.5 ml/L) of co-solvent (acetone) exceeded EPA recommended maximum of 0.1 mL/L

Primary Reviewer: Thomas Steeger, Ph.D., Senior Biologist

Chemical Name: Carbaryl

CAS No: 63-25-2

ECOTOX Record Number and Citation: 72411 Bridges, C. M., F. J. Dwyer, D. k. Hardesty and D. Whites. 2002. Comparative Contaminant Toxicity: Are Amphibian Larvae More Sensitive than Fish? Environmental Toxicology and Chemistry 69(4): 562 – 569.

Purpose of Review (DP Barcode or Litigation): Endangered species assessment in response to litigation.

Date of Review: May 27, 2007

Summary of Study Findings: Egg masses of southern leopard frogs collected from Wilson County, TN, reared in lab. Animals (3-wks post-hatch) were at relativley uniform size (0.05 mg) and development stage (Gosner Stage 25) were fasted 24 hours prior to study initiation.

Study was conducted at 22^{o}C; alkalinity 115 mg/L as $CaCO_3$; hardness 171 mg/L as $CaCO_3$; pH 8.32.

Five chemicals were selected based on their differing modes of action. Chemicals included 4-nonylphenol (narcotic/oxidative stressor), carbaryl (acetylcholinesterase inhibitor), copper (osmoregulatory obstructor), permethrin (neurotoxin) and pentachlorophenol (oxidative phosphorylation inhibitor); all stock solutions except copper were dissolved in technical grade acetone; copper prepared in deionized water. Concentrations in each of the organic stock solutions was confirmed using liquid chromatography; copper concentration of stock solution confirmed using atomic absorption. Toxicity tests were conducted in triplicate using 19.6-L jars containing 15 L of ATSM hard water. Each chemical tested used 6 concentrations. Ten tadpoles were tested per replicate. Mortality was recorded at 6, 12, 24, 48, 72 and 96 hrs. Dissolved oxygen was measured at 0, 48 and 96 hrs and pH was measured at 0 and 96 hrs. Dissolved oxygen did not fall below EPA-recommended standards and mortality in the controls did not exceed 10%. Tadpoles were fasted during the study.

The study concludes that based on the 96-hr LC_{50} values (**Table 23**), tadpoles were, in general, of equal or greater tolerance to organic chemical compounds than were reported fish (**Table 24**); fish toxicity data were pulled from other sources. However, southern leopard frogs were more sensitive to copper than were the fish. According to the study authors, southern leopard frog tadpoles were significantly more tolerant to both carbaryl and permethrin when compared to other species. Based on 96-hr LC_{50}, the rank order of toxicity of compounds to southern leopard frogs, from greatest to least toxic was: permethrin>copper>pentachlorophenol>4-nonylphenol>carbaryl. Since tadpoles were always of equal or greater tolerance than published

24 and 96-hr LC_{50}s for rainbow trout, rainbow trout [according to the authors] may be conservative for many chemicals and therefore protective of amphibians. However, the authors also conclude that since the southern leopard frog was more sensitive to one of the chemicals, more of an effort should be expended to include amphibians in aquatic toxicity testing.

Table 23. Median lethal concentration (96-hr) in mg/L to aquatic-phase southern leopard frog for 5 chemicals. Values in parentheses represent 95% confidence interval.

Endpoint	Chemical				
	4-nonylphenol µg/L	Carbaryl mg/L	Copper mg/L	Pentachlorophenol mg/L	Permethrin µg/L
96 hr LC_{50}	0.34 (0.31 – 0.37)	8.4 (7.4 – 9.6)	0.23 (0.21 – 0.25)	0.14 (0.12 – 0.17)	18.2

Table 24. Comparison of 96-hr LC_{50} values across species for 5 chemicals. Values in parentheses are 95% confidence intervals. Only southern leopard frogs were tested in the current study.

Test Animals	Chemical				
	4-nonylphenol µg/L	Carbaryl mg/L	Copper mg/L	Pentachlorophenol mg/L	Permethrin µg/L
Boreal toad tadpoles	0.12 (0.09 – 0.15)	12.31 (10.3 – 14.7)	0.12 (0.07 – 0.18)	0.37 (0.25 – 0.42)	>10
Bluegill sunfish	NA	6.2	7.3	0.19	6.2
Fathead minnow	0.27	5.21	0.47	0.25	9.38
Rainbow trout	0.19	1.88	0.88	0.016	3.31
Southern leopard frog tadpoles	0.34 (0.31 – 0.37)	8.4 (7.4 – 9.6)	0.23 (0.21 – 0.25)	0.14 (0.12 – 0.17)	18.2

Description of Use in Document (QUAL, QUAN, INV): Qualitative

Rationale for Use: Study provides useful information on the toxicity of carbaryl to aquatic-phase amphibians and on the sensitivity of amphibians to pesticides relative to other test species.

Limitations of Study: Test animals were collected from the field where there previous exposure history is unknown. Verification of test concentrations was conducted on the organic stock solutions and not on the diluted test solutions. Loading rate (10 tadpoles/15 L) was higher than EPA recommeded rate of 1 tadpole/L. Concentration of acetone in solvent control not reported.

Primary Reviewer: Thomas Steeger, Ph.D, Senior Biologist.

Chemical Name: Carbaryl

CAS No: 63-25-2

ECOTOX Record Number and Citation: 13800 Peterson, H. G., C. Boutin, P. Martin, K. E. Fremark, N. J. Ruecker, and M. J. Moody. 1994. Aquatic phyto-toxicity of 23 pesticides applied at expected environmental concentrations. Aquatic Toxicology 28(314): 275 – 292.

Purpose of Review (DP Barcode or Litigation): Endangered species assessment in response to litigation.

Date of Review: May 27, 2007

Summary of Study Findings: All species of algae and cyanobacteria tested were from established laboratory cultures, maintained as chemostat cultures (steady-state populations of nutrient-limited cells using defined media and set dilution rates). Species included: diatom (*Cyclotella meneghiana*), green algae (*Scenedesmus quadricauda* and *Pseudokirchneriella subcapitata*), unicellular cyanobacteria (*Microcystus aeruginosa* (PPC7820 and U2063), filamentous cyanobacteria (*Pseudoanabaena* sp. and *Oscillatoria* sp.), and filamentous cyanobacteria (nitrogen-fixing) (*Aphanizomenon flos-aquae* and *Anabaena inaequalis*). Duckweed (*Lemna gibba*) was obtained from a pond near Saskatoon, Saskatchewan (CN).

For algae, each treatment unit consisted of a 7 ml vial filled with 2 ml of media and innoculated with 0.2 ml of pesticide solution (total volume 2.2 ml). Mixtures were incubated for 6 hours, then 0.01 µCi of $NaH^{14}CO_3$ were added and then further inclubated for 16 hours while undergoing constant agitation. Afterward 200 µL of 12.5% HCl was added to terminate the incubations and to convert any "inorganic" (unfixed by the algae) ^{14}C to the gas phase, which was then exhausted. Tests were replicated in triplicate.

Duckweed was incubated in 6-well 12 ml microplate containing 10-ml fill volume containing 3 mature duckweed leaves per well with 4 replicates. Leaves were counted after 7 days. Growth inhibition was expressed as a portion of of controls.

Pesticide exposure was based on the estimated environmental concentration resulting from maximum registered application label rate for agriculture use in Canada

Results of the single concentration toxicity tests are presented in **Tables 25 – 28.** Inhibition exeeded 75% for each of the triazines in all species except the nitrogen-fixing cyanobacterium Anabaena inaequalis, for which inhibition ranged from 58 to 65% (**Table 25**). Triazines caused $\geq$95% growth inhibition of duckweed. The four sulfonylurea herbicides had little to no inhibition of algal species at the concentrations tested but did cause significant stimulation of growth in some of the species tested (**Table 26**). For three of the four sulfonylurea herbicides, growth was inhibited $\geq$63% in duckweed. The phenoxyaldane and pyridine herbicides tested had low toxicity to algal species at the concentrations tested and caused less than 50% inhibition of growth in duckweed (**Table 27**). Picloram had not significant impact on any of the test species while triclopyr cause significant stimulation of growth in green algae and nitrogen-fixing cyanobacteria. Triclopyr significantly reduced plant growth in *Pseudoanabaena* and duckweed but stimulated growth of Nitzchia by 40% (**Table 28**). Acrolein and tebuthiuron inhibited growth by >70% in almost all of the species tested. Glyphosate significantly inhibited growth

$\geq$73% in only 3 of the species tested (**Table 27**). The two forms (formulated and technical) of the fungicide propioconazole had <20% inhibition in all species tested and stimulated growth in cyanobacteria and diatoms. Carbaryl caused >50% inhibition in 9 of the 10 algal species tested; diatoms were less sensitive (33% inhibition) (**Table 28**); however, carbofuran had relativley low inhibition in the plants tested. Carbofuran though significantly inhibited Scendesmus, Microcystis and duckweed by 21 – 31%.

The authors proceed to rank the pesticides based on the known EEC/EC_{50} (EC_{50} values were not determined in this study) ratios based on the results of this study. The following categories were developed: very high EEC/EC_{50}>1 since the EEC tested caused >50% difference in growth; high where 25 – 50% differences in growth; moderate where 5 – 25% differences in growth; potentially low where<5% differences in growth. Based on these rankings, the authors concluded that the triazine herbicides, diquat, acrolein, tebuthiuron and carbaryl were classified as high hazards to almost all of the plant species tested and only picloram presented a low hazard.

The authors noted the high algal toxicity of carbaryl at its estimated environmenal concentration and speculated that because carbaryl is not as acutely toxic to insects or vertebrates as carbofuran, it is registered for insect control at much higher rates and that while it may not have a greater intrinsic toxicity to algae, its higher rate of use and hence 5-fold higher EEC makes it a greater hazard to the aquatic environment.

Table 25. Percent inhibition of plant growth across herbicides; values in parentheses represent standard deviation. Exposure based on maximum label rates. Simazine is tested as formulated endproduct while other herbicides are technical grade.

Family	Species	Triazine					Sulfonylurea			
		Atrazine 2.67 mg/L	Cyanazine 2.67 mg/L	Hexazione 2.87 mg/L	Metribuzine 2.67 mg/L	Simazine 2.67 mg/L	Chlorsulfuron 0.020 mg/L	Ethametsulfuron 0.015 mg/L	Metsulfuron 0.003 mg/L	Trisulfuron 0.018 mg/L
Algae	*C. meneghiana*	97* (1)	98* (0)	98* (1)	98* (0)	83* (5)	-8 (6)	-4 (3)	-16 (9)	13 (14)
	Nitzschia	99* (0)	99* (0)	99* (0)	99* (0)	82* (5)	-6 (10)	-10 (12)	-9 (8)	-39* (9)
	S. quadricauda	96* (1)	95* (2)	96* (1)	96* (1)	93* (2)	-3 (10)	0 (5)	-6 (11)	-8 (13)
	P. subcapitat	99* (0)	100* (0)	100* (0)	100* (0)	99* (0)	-13 (12)	-11 (8)	27* (3)	-3 (10)
Cyano-bacteria	*M.* (PCC7820)	96* (1)	98* (0)	96* (0)	97* (1)	96* (1)	-1 (17)	0 (6)	1 (9)	-15 (4)
	M. (U2063)	84* (0)	97* (0)	95* (0)	94* (0)	92* (0)	-23* (3)	16 (3)	14* (4)	-10 (4)
	Oscilatoria	87* (0)	87* (0)	76* (2)	87* (1)	86* (3)	-17 (14)	-12* (3)	2 (7)	8 (3)
	Pseudoanabaena	91* (0)	97* (1)	96* (1)	97* (0)	96* (0)	-2 (7)	13 (9)	-7 (12)	1 (2)
	Anabaena	65* (2)	92* (3)	58* (8)	94* (2)	63* (2)	-4 (6)	0 (3)	-9 (8)	15 (4)
	Aphanisomenon	97* (1)	98* (1)	96* (1)	97* (1)	88* (5)	4 (14)	-9 (12)	-36* (5)	-13 (13)
Duck-weed	*Lemna*	95* (5)	100* (0)	100* (0)	100* (0)	100* (0)	86* (5)	33* (6)	63* (0)	91* (0)

*statistically siginificant at 95%

Table 26. Percent inhibition of plant growth across herbicides; values in parentheses represent standard deviation. Exposure based on maximum label rates. Herbicides tested are technical grade.

Family	Species	Phenoxyalkanes		Pyridines		Brominated Herbicides	
		2,4-D 2.92 mg/L	MCPA 1.4 mg/L	Picloram 1.76 mg/L	Triclopyr 2.56 mg/L	Bromoxoil 0.28 mg/L	Diquat 0.73 mg/L
Algae	*C. meneghiana*	0 (5)	-3 (8)	-12 (5)	-15 (12)	6 (3)	99* (1)
	Nitzschia	1 (10)	-18* (5)	-7 (21)	-4 (3)	-40* (11)	100* (0)
	S. quadricauda	-1 (12)	1 (3)	-7 (12)	13 (9)	-11 (8)	53* (13)
	P. subcapitat	-2 (9)	-18* (8)	-2 (8)	-24* (6)	14 (2)	69* (8)
Cyano-bacteria	*M.* (PCC7820)	9 (8)	0 (24)	3 (8)	-10 (8)	0 (7)	100* (0)
	M. (U2063)	11 (13)	8 (5)	-27 (6)	-2 (12)	-6 (20)	100* (0)
	Oscilatoria	4 (9)	-7 (16)	8 (1)	-9 (3)	-11 (20)	100* (0)
	Pseudoanabaena	-7 (6)	19* (2)	15 (10)	13* (3)	24 (12)	100* (0)
	Anabaena	-14 (8)	-15 (11)	14 (8)	-4 (13)	-12 (8)	100* (0)
	Aphanisomenon	0 (1)	11 (7)	0 (17)	-34* (16)	5 (2)	100* (0)
Duck-weed	*Lemna*	34* (5)	42* (3)	10 (5)	23* (4)	-4 (2)	100* (0)

Table 27. Percent inhibition of plant growth across herbicides; values in parentheses represent standard deviation. Exposure based on maximum label rates. Glyphosate is tested as formulated endproduct while other herbicides are technical grade.

Family	Species	Acrolein 1.0 mg/L	Glyphosate 2.85 mg/L	Imazethapyr 0.067 mg/L	Metolachlor 3.0 mg/L	Tebuthiuron 5.87 mg/L
Algae	*C. meneghiana*	97* (1)	73* (3)	-5 (5)	-5 (1)	98* (1)
	Nitzschia	99* (0)	77* (5)	-11 (8)	0 (4)	99* (0)
	S. quadricauda	99* (0)	3 (1)	10 (5)	15 (6)	90 (4)
	P. subcapitat	97* (2)	18 (15)	7 (5)	24* (12)	100* (0)
Cyano-bacteria	*M.* (PCC7820)	100* (0)	-41 (5)	29* (3)	3 (11)	90* (1)
	M. (U2063)	96* (1)	16 (5)	16 (5)	6 (4)	88* (2)
	Oscilatoria	95* (1)	-12 (4)	-2 (7)	12 (1)	76* (0)
	Pseudoanabaena	100* (0)	12 (6)	3 (5)	19* (8)	93* (1)
	Anabaena	100* (0)	11 (11)	-16 (3)	0 (4)	26* (3)
	Aphanisomenon	100* (0)	74* (1)	10 (9)	-15 (17)	89* (3)
Duck-weed	*Lemna*	73* (2)	0 (4)	46* (0)	81* (0)	100* (0)

Table 28. Percent inhibition of plant growth across pesticides; values in parentheses represent standard deviation. Exposure based on maximum label rates. Propiconazolee is tested as formulated endproduct and technical grade while other pesticides are technical grade alone.

Family	Species	Carbaryl 3.67 mg/L	Carbofuran 0.67 mg/L	Propiconazole (tech) 0.083 mg/L	Propiconazol (form) 0.083 mg/L
Algae	*C. meneghiana*	35* (8)	4 (4)	3 (5)	-28* (11)
	Nitzschia	58* (7)	-6 (23)	32 (3)	-36* (4)
	S. quadricauda	67* (12)	31* (5)	0 (6)	13* (8)
	P. subcapitat	68* (2)	1 (3)	13 (3)	-10 (8)
Cyano-bacteria	*M.* (PCC7820)	76* (5)	24* (3)	3 (6)	-4 (10)
	M. (U2063)	70* (3)	8 (6)	-13 (5)	8 (7)
	Oscilatoria	56* (4)	3 (15)	-6 (8)	-15* (4)
	Pseudoanabaena	86* (2)	8 (12)	-10 (5)	-13 (3)
	Anabaena	86* (6)	5 (21)	-14 (18)	-1 (22)
	Aphanisomenon	73* (1)	-2 (7)	-16 (1)	-25 (12)
Duck-weed	*Lemna*	33* (9)	21* (8)	32* (6)	10 (4)

Description of Use in Document (QUAL, QUAN, INV): Qaulitative

Rationale for Use: Even though only a single concentration is tested, the study provides useful information on the potential effects of pesticides on aquatic plants at concentrations that may be considered environmentally relevant.

Limitations of Study: Duckweek was collected from the wild and prior exposure history is uncertain. Only a single concentration is tested at each. Test concentrations are nominal and were not measured. Light source and intensity during the study were not reported.

Primary Reviewer: Thomas Steeger, Ph.D., Senior Biologist.

Chemical Name: Carbaryl

CAS No: 63-25-2

ECOTOX Record Number and Citation: 15683. Zaga, A., E. E. Little, C. F. Rabeni and M. R. Ellersieck. 1998. Photoenhanced toxicity of a carbamate insecticide to early life stage anuran amphibians. Environmental Toxicology and Chemistry 17 (12): 2543 – 2553.

Purpose of Review (DP Barcode or Litigation): Endangered species assessment in response to litigation.

Date of Review: May 28, 2007

Summary of Study Findings: The purpose of this study was to determine the effects of UV-B radiation and the insecticide carbaryl, both alone and in combination, on African clawed frogs (*Xenopus laevis*) and the gray tree frog (*Hyla versicolor*). Adult gray tree frogs were collected form the Thomas S. Baskett Wildlife Center, Ashland, MO, and bred in lab. Tadpoles (approximately 7 days post-hatch) were used in the study. African clawed frog adults were obtained from Xenopus 1 and bred in lab.

Acute LC_{50} toxicity studies were performed using the ASTM guidelines for amphibians. Technical grade carbaryl was dissolved in acetone. Static renewal tests consisteed of 2 replicates with 10 tadpoles per treatment. Carbaryl concentrations were 0.24, 0.81, 2.7, 9 and 30 mg/L.

Experiments were performed in solar simulators having a light-cap fixture containing four 160-W UV-B lamps with peak emission at 313 nm, eight UV-A lamps, 10 cool-white flourescent lamps and three halide lamps. The cool white and UV-A lamps operated for 12 hrs each day while the UV-B lamps operated for 5 hours each day which began 2.5 hr after the onset of the UVA-cool white light photoperiod. The UV-A cool white operated for 4.5 hours after the UV-B exposure to ensure sufficient irradiance for photorepair. The exposure chambers were constructed of glass (14 x 14 x 14 cm^2).

Ultraviolet-B LD_{50} with *X. laevis* embryos were static, nonrenewal tests consisting of two replicates with 10 organisms per treatment. The test chamber consisted of 14 x 14 cm glass containing 1 l of well water maintianed between 22 – 24^{o}C. Test treatments included 0.88, 3.3, 148, 166 and 293 $\mu W/cm^3$ of UV-B. Similar treatments were conducted with Xenopus tadpoles using 3.86, 24.48, 54.95 and 64.39 $\mu W/cm^3$ of UV-B and with gray tree frog tadpoles using 4.79, 46.15, 63.95 and 78.7 $\mu W/cm^3$ of UV-B.

Studies (96-hr) with UV-B and carbaryl combined were performed for each species and life stage under static conditions. UV-B consisted of two doses, 6 and 65 $\mu W/cm^3$ as well as a control for UV-B. Treatment concentrations for carbaryl consisted of three carbaryl concentrations and a solvent (acetone) control. Each exposure chamber consisted of three replicates with 10 organisms/replicate at a temperature of 23 $\pm$ 1^{o}C. Hatching success was measured in experiments with embryos of both species. Post exposure growth inhibition and mortality were evaluated for gray tree frog embryos only when the survivors of the 96-hr tadpole study were then transferred to clean water for a 2-wk recovery period.

Photoactivation of carbaryl was evaluated by irradiating the carbaryl chamber containing 7.5 mg/L of carbl at 4 $\mu W/cm^3$ UV-B for 5 hrs before tadpoles were introduced. Photosensitizaition studies involved exposure to nonirradiated carbaryl for 4 days. The exposed embryos were then placed in chambers with no UV radiation in clean water to determine whether delayed mortality would occur. Embryos were also placed in chambers and subjected to low UV-B (4 $\mu W/cm^3$) to determine whether carbaryl was a photosensitizing compound. These studies used three replicates in 14x14x14 cm3 glass chambers. Carbaryl concentrations of 7.5 mg/L was used and was below the measured LC50 (15.25 mg/L). The irradiation (4 $\mu W/cm^3$) was well below the LD50 (112 $\mu W/cm^3$) for UV-B.

The UV-B levels used in the study were consistently lower than those measured in outdoor ponds.

The UV-B LD_{50} for *X. laevis* and *H. versicolor* tadpoles were 4.66 (95% CI: 3.28 – 6.05) and 80.43 (60.15 – 100.7) $\mu W/cm^3$, respectively. The LD_{50} for *Xenopus* embryos was 112.28 (74.13 – 150.43) $\mu W/cm^3$

The 96-hr acute LC_{50} value for *X. laevis* and *H. versicolor* tadpoles were 1.73 (95% CI: 1.31 – 2.16) and 2.47 (1.76 – 3.19) mg/L, respectivley. For *X. laevis* embryos the 96-hr LC_{50} value was 15.25 (10.89 – 19.59) mg/L.

UV-B induced significant tadpole mortality in all combination treatments for both X. laevis and H. versicolor; however, revised LC50 values were not calculated.

There were no significant differences in growth of H. versicolor among treatment groups 2 weeks after exposure; however, there were significant differences for delayed mortality among carbaryl treatments.

Behavior studies of *X. laevis* showed that 1 day of exposure to carbaryl in the absense of UV-B, tadpoles significantly increased swimming actively compared to controls. Under UV-B exposure, the swimming activity was significantly lower that that of controls. For H. versicolor, swimming behavior was significantly reduced for tadpoles exposed to UB-B alone, carbaryl alone, or UV-B in combination with carbaryl compared to controls.

Irradiated carbaryl treatment (7.5 mg/L) induced 100% mortality in *X. laevis* embryos whereas the nonirradiated carbaryl treatment did not cause any mortality.

The mortality of *X. laevis* embyros (43%) previously exposed to carbaryl and subsequently exposed to UV-B was not significantly different from previously exposed embryos (33%) that did not receive subsequent UV-B exposure.

Description of Use in Document (QUAL, QUAN, INV): Qualitative

Rationale for Use: Study provides useful information on carbaryl 96-hr LC50 values for X. laevis and H. versicolor and demonstrates that sunlight can influence the toxicity of carbaryl to both embryonic and larval amphibians.

Limitations of Study: Gray tree frogs were collected from the wild and their previous exposure history is unknown. Reported concentrations are nominal and were not verified. Concentration of acetone (solvent) in the treatments is not reported.

Primary Reviewer: Thomas Steeger, Ph.D., Senior Biologist.

Chemical Name: Carbaryl

CAS No: 63-25-2

ECOTOX Record Number and Citation: 17138 Brooke, L. T. 1991. Results of freshwater exposures with the chemicals atrazine, biphenyl, butachlor, carbaryl, carbazole, dibenzofuran, 3, 3'-dichlorobenzidine, diclorovos, 1, 2-epoxyethylbenzene (styrene oxide), isophorone, isopropalin, oxychlordane, pentachloroanisole, propoxur (baygon), tetrabromobisphenol A, 1, 2, 4, 5-tetrachlorobenzene, and 1, 2, 3-trichloropropane to selected freshwater organisms. Center for Lake Superior Environmental Studies, Environmental Health Laboratory, Cooperative Research Unit, The University of Wisconsin – Superior.

Purpose of Review (DP Barcode or Litigation): Endangered species assessment in response to litigation.

Date of Review: May 31, 2007

Summary of Study Findings: In-lab cultures of fathead minnows (*Pimephales promelas*), waterfleas (*Daphnia magna* and *Ceriodaphnia dubia*), annelids (Lubriculus variegatus), freshwater hydra (*Hydra americana*), snails (*Physella virgata*), and amphipods (Hyalella azteca) and stoneflies (*Acroneuria* sp.) collected from the Eau Claire River (Gordon, WI) were used in acute (48 – 96 hr)) and chronic (21-day) toxicity tests. Chemical concentrations for tests with daphnids were measured at 0, 24 and 48 hours for acute tests and were measured at solution renewal days (Mondays, Wednesday, Friday). Flow-through studies with fathead minnows, annelids, amphipods and stoneflies and static tests with fathead minnows were samples at 0, 48 and 96 hrs. For newel tests with annelids, snails and hydras, samples were collected at 24-hr intervals. For the 21-day chronic studies with dichlorovos using D. magna, the only concentration measured was the new solution from the high exposure. All other exposure concentrations, including the old high solutions after 24 hours or more, were below the detection limit of 70 μg/L.

Flow-through acute toxicity studies with fathead minnows (30 $\pm$ 5 days old) were conducted in a modified Benoit mini-diluter using 5.8-L glass aquaria contain 2.4 L. Static studies with fathead minnows were conducted in 6.4-L or 4-L glass beakers with a 4-L volume. Temperature ranged from 21.1 – 23.3^{o}C; hardness and alkalinity ranged between 36 – 75.8 and 38 – 70.9 mg/L as $CaCO_3$, respectively. Early life stage studies were conducted with fathead minnow embryos <24 hrs post-fertilization placed in glass incubation cups with cup bottoms consisting of nylon mesh; on hatch, 15 fry were transferred to 3.4-L tanks containing 2.4 L of fill volume; young fish were fed 3 X daily with live brine shrimp and fish were exposed for 28 days.

Toxicity studies with *D. magna* ($\leq$24-hr neonates) were conducted in 118-mL plastic Solo® cups containing 50 mL except for studies with isopropalin which were conducted in 100-mL glass beakers containing 50 mL fill. Studies with *C. dubia* (<24-hr neonates) were conducted in 30-mL plastic Solo® cups containing 50 mL fill. Acute exposures were renewed at 24 hrs and chronic exposures on a MWF regime. Temperature maintained at 22 $\pm$ 2^{o}C with dissolved oxygen >75% in both acute and chronic studies.

Flow-through studies with adult annelids (mean weight: 0.003 g) were conducted in 250-mL glass beakers with screened holes on the sides suspended in 3.4-L containing 200 mL fill volume. Static renewal studies were conducted in 250-mL glass beakers containing 200 mL of solution. Temperatures were maintained at 21 ± 2°C and dissolved oxygen >60%; hardness and alkalinity ranged from 51.9 – 73.8 and 44.0 – 58.0 mg/L as $CaCO_3$, respectively.

Static-renewal studies with hydras were conducted in 250-mL glass beakers containing 200 mL of test solution. Temperature was maintained at 21.1 ± 0.3°C and dissolved oxygen of 90.1 ± 3.7%; hardness and alkalinity means were 48.9±3.8 and 45.0 ± 3.8 mg/L as $CaCO_3$, respectively.

Toxicity tests with snails (mean weight 0.052 ± 0.022 g) were conducted in 250 mL glass beakers containing 200 mL exposure solution. Snails were placed in 3x12 cm screen cage within beaker. Temperature was maintained at 22 ± 1°C with dissolved oxygen > 67%. Hardness and alkalinity ranged from 43.9 – 79.8 and 40.0 – 52.0 mg/L as $CaCO_3$, respectively.

Adult amphipod (mean weight: 0.002 g) flow-through studies were conducted in 250 mL glass beakers with screened holes on the sides and suspended in 3.4_L glass aquaria. Temperature ranged between 19.0 – 21.0°C and dissolved oxygen was >73%; hardness and alkalinity ranged from 47.9 – 89.8 and 36.0 – 64.0 mg/L as $CaCO_3$, respectively.

Flow-through studies with the stonefly nymphs (mean wt: 0.145 ± 0.076 g) were conducted in 3.4-L glass aquaria with 2.4 L of exposure solution containing a 10 cm (3.5 cm diameter) PVC pipe for cover. Temperature was 19.7 ± 0.4°C and dissolved oxygen was >73%; mean hardness and alkalinity were 67.4 ± 19.0 and 50.0 ± 14.0 mg/L as $CaCO_3$, respectively.

Table 28 provides a summary of the toxicity test results.

TABLE 28. Summary of Toxicity.

Compound	Test Organism	Stage or Age	Type of Test	96-H LC50
Atrazine	Jitonefly (Acroneuria sp.)	nymphs	Flow-thru acute	6700 (5
Atrazine	Hvallela azteca	adults	Flow-thru acute	14700 (1
Atrazine	Annelid (Lumbriculus variegatus)	adults	Flow-thru acute	>
Atrazine	Snail (Physella virqata	adults	Static renewal 96-hr acute	>
Atrazine	Hydra americana	adults	Static renewal 96-hr acute	3
Biphenyl	Fathead minnow	30 + 5 day	Flow-thru acute	1950 (1
Biphenyl	Fathead minnow	30 + 5 day	Static acute[1]	3500 (2
Biphenyl	Tathead minnow	30 + 5 day	Static acute[2]	2940 (2
Biphenyl	Fathead minnow	30 + 5 day	Static acute[3]	1450 (1
Butachlor	fathead minnow	30 + 2 day	Flow-thru acute	280 (
Butachlor	Fathead minnow	30 + 2 day	Static acute[1]	750 (
Butachlor	Fathead minnow	30 + 2 day	Static acute[2]	750 (
Butachlor	fathead minnow	30 + 2 day	Static acute[3]	640 (
Butachlor	[3. maqna	<24-hr	Static renewal	1050 (
Carbaryl	C. dubia	<24-hr	Static renewal 48-hr acute	3.06" (

Compound	Test	Organism	Stage or Age	Type of Test	96-H LC50 (95% CI) ug/L
Carbaryl	D. magna		<24-hr	Static renewal 48-hr acute	10.1[b] (7.95-12.8) d
Carbaryl	D. magna		<24-hr	21-day chronic	
Carbazole	Fathead	minnow	30 ±5 day	Flow-thru acute	930'
Carbazole	Fathead	minnow	30 ±4 day	Static acute[1]	<1500
Carbazole	Fathead	minnow	30 ±4 day	Static acute[2]	<1490
Carbazole	Fathead	minnow	30 ±4 day	Static acute[3]	<1140
Carbazole	D. magna		<24-hr	Static renewal 48-hr acute	3350" (2300-4880)
Dibenzofuran	Fathead	minnow	30 ±5 day	Flow-thru acute	1050 (840-1310)
Dibenzofuran	Fathead	minnow	30 ±5 day	Static acute[1]	3620 (3200-4100)
Dibenzofuran	Fathead	minnow	30 ±2 day	Static acute[2]	750 (2670-3430)
Dibenzofuran	Fathead	minnow	30 ±5 day	Static acute[3]	1140 (1040-1250)
3,3'-Dichloro-benzene	Fathead	minnow	30 ±4 day	Static acute[1] #1	3240'
3,3'-Dichloro-benzene	Fathead	minnow	30 ±4 day	Static acute[2] #1	2770'
3,3'-Dichloro-benzene	Fathead	minnow	30 ±4 day	Static acute[3] #1	2080'
3,3'-Dichloro- benzene	D. magna		<24-hr	Static renewal 48-hr acute	1050 (810-1360)

Compound	Test Organism	Stage or Age	Type of Test	96-H LC50 (95% CD uq/L
3,3'-Dichloro-benzene	Fathead minnow	3 0 + 2 day	Flow-thru acute	1770 (1640-1920)
3,3'-Dichloro-benzidine	Fathead minnow	3 0 + 2 day	Static acute[1] #2	2150 (1840-2500)
3,3'-Dichloro-benzidine	Fathead minnow	3 0 + 2 day	Static acute[2] #2	1880 (1610-2200)
3,3'-Dichloro-benzidine	Fathead minnow	3 0 + 2 day	Static acute[3] #2	1050 (820-1340)
Dichlorovos	Annelids (L umbriculus varieqatus)	adults	Static renewal 96-hr acute	2180 (1960-2440)
Dichlorovos	Snail (Chysella virgata)	adults	Static renewal 96-hr acute	170 (140-200)
Dichlorovos	C. dubia	<24-hr	Static renewal 48-hr acute	0.149'' (0.127-0.175)
Dichlorovos	D. maqna	<24-hr	Static renewal 48-hr acute	0.266'' (0.244-0.286)
Dichlorovos	D. magna	<24-hr	21-day chronic	>0.109[d]
Dichlorovos	Fathead minnow	3 0 + 4 day	Flow-thru acute	3090 (2570-3730)
Dichlorovos	Fathead minnow #1	<24-hr	28-day post hatch chronic flow-thru	d
Dichlorovos 28-day post hatch chronic	Fatheed minnow #2	<24-hr flow-thru		

TABLE 28 Cont. Summary o-[r] Toxicity.

Compound	Test Organism	Stage or Age	Type of Test	96-H LC50 (95% CI) ug/L
1,2-Epoxyethyl-benzene (Styrene Oxide)	Fathead minnow	3 0 + 5 day	Flow-thru acute	4540'
1,2-Epoxyethyl-benzene	Fathead minnow	3 0 + 5 day	Static acute[1]	13800'
1,2-Epoxyethyl-benzene	Fathead minnow	3 0 + 5 day	Static acute[2]	26330'
1,2-Epoxyethyl-benzene	Fathead minnow	3 0 + 5 day	Static acute[3]	10700'
1,2-Epoxyethyl-benzene	D. maqna	<24-hr	Static renewal 48-hr acute	11600" (10200-13100)
Isophorone	Fathead minnow	3 0 + 5 day	Flow-thru acute	253000 (228000-280000)
Isophorone	Fathead minnow	3 0 + 5 day	Static acute[1]	319000 (285000-356000)
Isophorone	Fathead minnow	3 0 + 5 day	Static acute[2]	275000 (246000-308000)
Isophorone	Fathead minnow	3 0 + 2 day	Static acute[3]	240000 (213000-271000)
Isophorone	Fathead minnow	3 0 + 2 day	Flow-thru acute	270 (220-3350)
Isopropalin	Fathead minnow	3 0 + 2 day	Static acute[1]	610 (510-730)
Isopropalin	Fathead minnow	3 0 + 2 day	Static acute[2]	670 (560-790)
Isopropalin	Fathead minnow	3 0 + 2 day	Static acute[3]	310 (280-360)
Isopropalin	D. maqna	<24-hr	Acute renewal 48-hr acute	30[b] (22-40)

TABLE 6 Cont. Summary of Toxicity.

Compound	Test Organism	Stage or Age	Type of Test	96-H LC50 (95% CD uq/L
Oxychlordane	Fathead minnow	3 0 + 2 day	Flow-thru acute	24.5
Oxychlordane	Fathead minnow	3 0 + 2 day	Static acute[1]	4.31 (3.81-4.88)
Oxychlordane	Fathead minnow	3 0 + 2 day	Static acute[2]	6.32 (5.55-7.19)
Oxychlordane	Fathead minnow	3 0 + 2 day	Static acute[3]	2.63 (2.23-3.10)
Oxychlordane	D. magna	<24-hr	Static renewal 48-hr acute	1300 (860-1960)
Pentachloroanisole	Fathead minnow	3 0 + 4 day	Flow-thru acute	650 (500-840)
Pentachloroanisole	Fathead minnow	3 0 + 4 day	Static acute	>1190
Pentachloroanisole	D. maqna	<24-hr	Static renewal 48-hr acute	180" (170-200)
Propoxur (baygon)	Annelid	Adults	Static renewal 96-hr acute	146000'
Propoxur	D. maqna	<24-hr	Static renewal 48-hr acute	27.2" (20.9-36.5)
Propoxur	D. maqna	<24-hr	21-day chronic	>17.2[d]
Tetrabromobis-phenol A	Fathead minnow	2 6 + 2 day	Flow-thru acute	1040 (999-1100)
Tetrabromobis-phenol A	Fathead minnow	30 + 2 day	Static acute[1]	710*
Tetrabromobis-phenol A	Fathead minnow	3 0 + 2 day	Static acute[2]	890*

TABLE 6 Cont. Summary of Toxicity.

Compound	Test Organism	Stage or Age	Type of Test		96-H LC50 (95% CI) ug/L
Tetrabromobis-phenol A	Fathead minnow	30 ± 2 day	Static acute[3]	60'	
Tetrabromobis-phenol A	0. magna	<24 hr	Static renewal 48-hr acute	7900[b]	(6800-200)
1,2,4,5-Tetra-chlorobenzene	Tathead minnow	3 0 + 5 day	Flow-thru acute	320'	
1,2,4,5-Tetra-chlorobenzene	Fathead minnow	3 0 + 5 day	Static acute[1]	>460	
1,2,4,5-Tetra-chlorobenzene	Fathead minnow	3 0 + 5 day	Static acute[2]	>320	
1,2,4,5-Tetra-chlorobenzene	Fathead minnow	3 0 + 5 day	Static acute	>89	
1,2,3-Trichloro-propane	Fathead minnow	3 0 + 4 day	Flow-thru acute		50800"
1,2,3-Trichloro-propane	Fathead minnow	3 0 + 4 day	Static acute[1]	69900	(67100-72900)
1,2,3-Trichloro-propane	Fathead minnow	3 0 + 4 day	Static acute[2]	57600	(55400-59900)
1,2,3-Trichloro-propane	Fathead minnow	3 0 + 4 day	Static acute[3]	27400	(25900-28900)
1,2,3-Trichloro-propane	[). magna	<24-hr	Static renewal 48-hr acute	33800	[b] (27800-41100)

' Due to no partial mortalities, the 95% confidence intervals could not be determined.

[b] 48-hr EC50.

[c] 96-hr EC50.

[d] NOEC.

[1] LC50 based on nominal concentrations.

[2] LC50 based on 0-hr concentrations.[3] LC50 based on all concentrations.

Description of Use in Document (QUAL, QUAN, INV): Qualitative

Rationale for Use: Study provides useful information to characterize toxicity of carbayl to aquatic invertebrates.

Limitations of Study: Raw data are not available to verify EC50 values

Primary Reviewer: Thomas Steeger, Ph.D., Senior Biologist

Chemical Name: Carbaryl and atrazine

CAS No: 63-25-2 (Carbaryl); 1912-24-9

ECOTOX Record Number and Citation: 81455; Boone, M. D. and S. M. James. 2003. Interactions of an insecticide, herbicide, and natural stressors in amphibian community meoscosms. Ecological Applications 13(3): 829 – 841.

Purpose of Review (DP Barcode or Litigation): Endangered species assessment in response to litigation.

Date of Review: 05/28/2007

Summary of Study Findings:

Three egg masses of southern leopard frogs (*Rana sphenocephala*) and 21 egg masses of spotted salamanders (*Ambystoma maculatum*) were collected from Basket Wildlife Area (Boone County, MI). Egg masses of American toads (*Bufo americanus*) were collected from the Forum Nature Area (Boone County, MI) and approximately 30 egg masses of small-mouth salamanders (*Ambystoma texanum*) were collected from Basket Wildlife area. All eggs were hatched in the laboratory.

Polyethylene cattle tanks (1.85 m diameter) contained 1,000 L of tapwater, 1 kg of leaf litter from deciduous forests and plankton from natural ponds. Each tank was covered with screen mesh lids.

Experiment 1 Effects of Competition, Atrazine, and Carbaryl on Larval Amphibians.

The purpose of this study was to manipulate 3 factors in a fully crossed design with three replicates (36 ponds) (1) competition using low initial anuran density (20 tadpoles/1000L) or high (60 tadpoles/1000 L); carbaryl concentration (0, 3.5 and 7 mg/L) and atrazine concentration (0 and 200 μg/L). Controls (each species alone with 2 densities for anurans and one density for caudates) were replicated 3 times (9 ponds). Twelve spotted salamanders were added to each pond on March 28; spotted leopard frogs were added on April 4 (Day 0). Liquid Sevin (Ortho; 21.3% carbaryl) added to achieve a nominal concentration of 3.5 mg carbaryl/L; liquid Astrex (Syngenta formerly Novartis; 40.8% atrazine) added to achieve a nominal concentration of 200 μg/L. Chlorophyll determinations were made: prior to chemical addition, Day 15, Day 22, Day 29 and Day 42. Water quality reported as pH 7.9 $\pm$ 0.01 and a temperature of 14.6 $\pm$ 0.06^{o}C. Three 2-L water samples taken from the 7 mg/L carbaryl (no atrazine) treatment at 1, 24, 48 and 96 hr; the three samples were composited. Samples were also taken from the atrazine 200 μg/L treatment at 1, 15 and 57 days. Based on these samples, the half-lives of carbaryl and atrazine were determined to be 4.5 days and 34 days, respectively. Exposures were terminated between 56 to 58 days and preceding the point where most larvae reached metamorphosis. Mean body mass, developmental (Gosner) stage, snout-vent length (SVL) and pond survival for each species were determined. To normalize the data, all proportion data (*e.g.*, survival) were angularly transformed while length and weight data were log transformed.

Spotted salamander survival has significantly (p=0.0077) reduced by carbaryl exposure.

Experiment II: Effects of Hydroperiod, Atrazine, and Carbaryl on Amphibians Reared through Metamorphosis.

Three factors were manipulated in a fully crossed design with 4 replicates (32 ponds): hydroperiod (constant or drying), exposure to carbaryl (0 or 5 mg/L), and exposure to atrazine (0 or 200 μg/L). Twelve small-mouthed salamander larvae and 45 American toad tadpoles were added to each pond on Day 0. Water pH and temperature averaged 7.7 $\pm$ 0.03 and 13.3 $\pm$ 0.04^{o}C, respectively. Water samples from the carbaryl treatment were taken at 1 and 48 hrs and from the atrazine treatment after 1 day; based on these analyses, carbaryl was determined to have half-lifeof approximately 3 day. Measured concentrations for carbaryl after 1 hour were 76% of nominial and measured concentrations of atrazine after 1 day were 99% of nominal. After 88 days of exposure, ponds were drained and amphibians were weighed and measured; time to metamorphosis was also determined along with survival estimates. Chlorophyll determinations were made: prior to chemical addition, Day 8 and Day 50.

Description of Use in Document (QUAL, QUAN, INV): Qualitative

Rationale for Use: Study provides useful information on the effects of formulated carbaryl on salamanders; however, control salamander survival was relatively low in the study.

Limitations of Study:

Animals used in study were wild-caught and their previous exposure history is unknown. It is not clear from the study whether the amphibian loading rates were representative of what may be typically encountered in nature. Concentration were only measured in the carbaryl 7 mg/L and the atrazine 200 μg/L treatments and were apparently only used to determine the half-life of the compound; however, after 1 hour the concentration of carbaryl (7 mg/L) was equivalent to the nominal concentration. Similarly, after 1 day, the concentration of atrazine (207 μg/L) was 104% of nominal. In the second study carbaryl and atrazine were 76% and 99% of nominal around the initiation of the study.

Although spotted salamander survival was significantly reduced by carbaryl exposure the report figures suggest that larval survival was relatively low in controls as well and averaged roughly 55%; survival appears to have averaged 10% and 0% in the 3.5 mg/L and 7 mg/L carbaryl treatments. Figure 3 indicates that carbaryl significantly (p<0.05) mass, SVL, developmental stage and survival of spotted salamanders; atrazie and carbaryl combined significantly (p=0.02) SVL. For southern leopard frog (Figure 3), carbaryl significantly (p=0.0001) weight; atrazine significantly (p=0.0052) affected mass. Carbaryl plus density significantly (p=0.0273) affected SVL; however, density alone also affected SVL (p=0.0001).

Table 1. Summary of univariate analyses of covariance (ANCOVA) of body mass, snout–vent length (SVL; for salamanders only), developmental stage (Gosner for anurans, Donavan for caudates), and larval survival for spotted salamanders (*Ambystoma maculatum*) and southern leopard frogs (*Rana sphenocephala*) from Experiment I.

Response variable	Source of variation	Sum of squares	df	F	P
Spotted salamander					
Mass	Carbaryl	1.8713	1	9.91	0.0084
	Carbaryl × atrazine	0.8290	1	4.39	0.0580
	Error	2.2648	12		
SVL	Carbaryl	0.2685	1	13.70	0.0030
	Carbaryl × atrazine	0.1446	1	6.87	0.0224
	Error	0.2526	12		
Developmental stage	Carbaryl	131.1140	1	5.91	0.0316
	Carbaryl × atrazine	102.1678	1	4.61	0.0530
	Error	266.0944	12		
Survival	Carbaryl	2.9923	2	5.86	0.0077
	Atrazine	0.0162	1	0.06	0.8029 (1)
	Carbaryl × atrazine	0.0053	2	0.01	0.9897
	Error	6.8981	27		
Southern leopard frog					
Mass	Carbaryl	0.5088	2	19.79	0.0001
	Atrazine	0.1303	1	10.13	0.0052 (2)
	Density	2.1677	1	168.51	0.0001
	Density × carbaryl	0.0139	2	0.54	0.5928
	Error	0.2315	18		
Developmental stage	Carbaryl	32.1010	2	0.45	0.6462
	Atrazine	60.9289	1	1.70	0.2089 (3)
	Density	2018.9690	1	56.29	0.0001
	Density × carbaryl	317.7967	2	4.43	0.0273
	Error	645.6355	18		
Survival	Carbaryl	0.1477	2	0.98	0.3947
	Atrazine	0.2249	1	2.97	0.1009 (4)
	Density	0.2492	1	3.29	0.0853
	Carbaryl × atrazine	0.1120	2	0.74	0.4901
	Density × carbaryl	0.1686	2	1.11	0.3485
	Density × atrazine	0.4591	1	6.07	0.0235
	Density × carbaryl × atrazine	0.0152	2	0.10	0.9050
	Error	1.4372	19		

Note: Statistics for sources of variation that were significant according to the MANCOVA for mass, SVL, and developmental stage are reported.

Figure 14. Analysis of Covariance of mass, time, and survival to metamorphosis for small-mouthed salamanders and American toads. Reproduced from Table 3 of Boone and James 2003.

Multivariate analysis on salamander data indicated carbaryl exposure and the interaction of carbaryl by atrazine negatively affected weights, SVL and delayed developmental stage for larvae exposed to 3.5 mg/L compared to controls; however, the presence of atrazine ameliorated the effect.

Survival of leopard frogs was not significantly impacted by either chemical alone, but atrazine x density did impact (reduce) survival in the highest density group. Multivariate responses of leopard frogs were significantly affected by carbaryl exposure, atrazine exposure and initial density (Table 2); mass significantly increased with carbaryl exposure and decreased with atarzine exposure compared to controls.

In Study II, small-mouthed salamander survival to metamorphosis was significantly reduced by carbaryl exposure. Multivariate analysis indicated that atrzine exposure, hydroperiod and the interaction of atrazine and hydroperiod significantly affected mass and time to metamorphosis resulting in longer larval periods in constant hydroperiods and smaller mass at metamorphosis in drying hydroperiods.

Carbaryl exposure significantly reduced survival of American toads by approximately 20%. Multivariate responses were significantly affected by carbaryl exposure, atrazine exposure, and carbaryl x hydroperiod interaction with carbaryl significantly extending larval period. Atrazine exposure reduced total weight at metamorphosis.

In Study I density, atrazine exposure, carbaryl exposure and carbaryl x atrazine interaction significantly affected chlorophyll over time. Atrazine decreased chlorophyll 12-day after exposure although there was no difference by the end of the study. Carbaryl exposure reduced chlorophyll 12-day after exposure although there was no difference by the end of the study.

Low density increased chlorophyll concentrations.

In Study II, hydroperiod x carbaryl significantly affected chlorophyll; however, this may have been an artifact from the sampling procedure.

Primary Reviewer: Thomas Steeger, Ph.D., Senior Biologist

Appendix B. Supporting Information for PRZM Scenario Development.

INTRODUCTION

EFED initiated an effort to develop a suite of new PRZM/EXAMS scenarios useful for all six chemicals in the Barton Springs endangered species lawsuit including atrazine, simazine, prometon, metolachlor, diazinon, and carbaryl. EFED initiated an evaluation of the potential use sites relevant to all six chemicals for development as possible modeling scenarios. The evaluation consisted of an investigation of geology, hydrogeology, land cover data, use information, soils information, and conversations with local experts knowledgeable in all of the above.

Initial investigation indicated that the geology and hydrogeology are the defining issues surrounding how the action area for each chemical would be defined. As noted in the atrazine assessment, the action area for the development of the Barton Springs Scenarios was comprised of three hydrologic zones (in order of importance) of the Barton Springs Segment of the Edwards Aquifer: 1) the recharge zone which consists of a fractured karstic geology, 2) the contributing zone where surface runoff may flow to the recharge zone, and 3) the transition zone which has a remote potential to contribute to the recharge zone (http://www.edwardsaquifer.net/intro.html). Although the transition zone was considered in this assessment, primary emphasis was given to the recharge zone with secondary emphasis on the contributing zone.

Investigation indicated that areas to the east of the Recharge Zone might not be relevant to the assessment (ground water flow to the Barton Spring system comes either directly from transport through the Recharge Zone, which occurs generally south to north, or indirectly via the Contributing Zone/Recharge Zone interaction where flow is dominantly west to east). For example, agricultural uses lying east of the Recharge Zone (roughly defined by the Interstate 35 corridor) can be considered outside the area of interest and no scenario need be developed for this use. However, if any of the uses are present west of this area within either Recharge or Contributing Zones, then these scenarios should be developed as described below.

Given these facts it was quickly decided that any new scenarios developed needed to be based on the extent of the potential action area for each chemical. In general, this action area consists of three zones identified above including the Contributing Zone, the Recharge Zone, and the Transition Zone. Primary emphasis for scenario development was placed on use sites (both agricultural and non-agricultural) within the Contributing and Recharge Zones. No scenarios were parameterized based solely on the transition zone. Spatial data containing the Hydrozone boundaries were obtained from the Barton Springs/Edwards Aquifer Conservation district (ftp://www.bseacd.org/from/HCP Shape Files/).

These new scenarios were developed under contract with specific guidelines on how to evaluate the need for a scenario and how to parameterize the scenarios that were developed. The process involved numerous interactions between the contractor and EFED and ultimately all decisions on which scenarios to develop were the responsibility of EFED. If the contractor determined that a particular use site is likely to be outside the area of interest and not likely to contribute to the exposures in Barton Springs a written description of the steps taken to determine this and rational for the exclusion was documented and is discussed in the sections that follow.

The following sections discuss the various data sources used in this assessment and ultimately provide a rational for the development of each scenario. Note that not all scenarios were used in each assessment but were selected based on specific analysis of each chemical labeled uses and an understanding of which uses are actually present in the action area for each chemical. In the case of atrazine, the scenarios ultimately used in the assessment were one agricultural site (fallow/idle land using the meadow scenario) and three non-agricultural uses including residential, turf and rights-of-way.

SOURCES OF DATA

Land use data

The contractor obtained two land use coverage's from the City of Austin (COA) and the Texas Commission on Environmental Quality (TCEQ). The land use data were important for quantifying the extent of a particular land use and for identifying representative, yet vulnerable soils. The data set from Austin includes land use by tax parcels and was particularly important for the turf (golf courses) and right-of-way scenarios. The TCEQ dataset developed by the USGS (2003) provided agricultural land cover data, including areas representative of meadows and rangelands, and residential areas. Based on a review of the data, residential areas appeared better classified in the USGS (2003) data set; the COA data set tended to include all lots zoned for residential and often included areas well outside of where pesticides would presumably be applied. Abstracts from the metadata of the two land cover data sets are included below.

<u>COA land use data set:</u> "From October 2003 until December 2004, the City of Austin Watershed Protection and Development Review Department (WPDR) and the Transportation Planning and Sustainability Department (TPSD) produced this land use and tax parcel inventory. The extent of the data includes the watersheds of Travis, Hays, Williamson, and Blanco County that drain into Austin city limits. This includes the City of Austin extra-territorial jurisdiction. The layer is used in watershed, land use, and transportation modeling. More specifically, the information will be used to estimate and forecast impervious cover, population and housing density, and land use change. Parcels were created to reflect 2003 tax maps by either updating year 2000 parcel polygons, or converting and attributing lot lines from the City base map or county appraisal district CAD files. After completing parcel polygons, appraisal district land use data was joined to the layer using the parcel identification number. In addition, historical land use data was joined through GIS overlays. We then coded land use by comparing appraisal district data to the historical data where possible. The land use coding system used in year 2000 data was expanded to reflect the needs of both the planning and watershed management disciplines and the availability of new data. Infrared and color aerial photos were used to confirm or make determinations, especially where data was unavailable or questionable. Other GIS layers such as buildings and parks were used in this verification process." (COA 2003)

<u>USGS (TCEQ) land use data set:</u> "This layer delineates the land use/land cover (LULC) polygons for the Edwards Aquifer Project in Texas from the years 1995 and 1996. Attribution of the polygons is based on a modified Anderson classification schema. LULC classification was done to Level 3 of the classification schema and a new category of Mixed Forest/Shrub was added to better represent the land cover of the area. Fieldwork was performed prior to compilation to gather local data and relate aerial photo images to corresponding ground

features. Because of the stunted or lower tree growth common in this region it was difficult at times to differentiate between Forest, Mixed Forest/Shrub, and Shrub. It should be noted that much of the Planted/cultivated land is highly managed pastureland. A detailed description of the schema can be found in the Supplemental Information Section. All the LULC data was collected from color infrared DOQQs and high-resolution (1:40,000-scale) aerial photography. The minimum mapping unit used for delineating a polygon is 5 acres and the minimum polygon width is 125 feet." (USGS 2003)

Soils data

Data for Hays and Travis counties were downloaded from Soil Data Mart (USDA 2006) and clipped to the hydrozones of the BSS AOI (ftp://www.bseacd.org/from/HCP_Shape_Files/). EFED indicated that scenarios should be parameterized based on representative soils that will yield high-end runoff and sediment values. Specifically, this focused on Hydrological Group C and D soils with high erodibility and slope. Quantitative descriptions of the soil selection process are provided in the metadata for each scenario with additional detail provided in later sections of this report.

Official soil series descriptions (OSD) of the selected soils were used to characterize the soils of interest for the scenarios (Soil Survey Staff 2006a, b). Soil parameters were obtained from USDA Soil Data Mart (USDA 2006).

Additional Data Sources

When exploring the extent of agricultural areas in the AOI, areas of crops grown in Hays and Travis counties were obtained from NASS (USDA 1997, 2002). This was used as a preliminary attempt to understand the types of crops grown in the AOI and their respective magnitudes.

City and County officials and extension agents were contacted to understand and verify correct parameters to represent each of the scenarios that were developed.

In cases where similar PRZM scenarios were available, parameters were reviewed for consistency. Specifically, the BS turf scenario was compared to the PA turf and FL turf scenarios.

For determination of USLEC and Manning's N values, the RUSLE EPA Pesticide project (2000) was used. Existing files were considered according to current U.S. EPA guidance (U.S. EPA 1998). The Barton Springs area is located in Land Resource Region (LRR) I. The San Antonio climate station is located within this LRR and is an appropriate location for which to select appropriate RUSLE data files. Available crops for this climate station include: 1) Range, 2) Pasture, warm season, 3) peanut, Spanish, 4) Sorghum, grain, and 5) Wheat, winter. For scenarios where appropriate files did not exist (i.e. impervious surfaces), appropriate values were selected to represent USLEC and Manning's N values. Curve numbers were derived based on USDA TR-55: Urban Hydrology for Small Watersheds document (USDA 1986) or from the GLEAMS (USDA 2000) manual when appropriate. Further details are provided in the metadata for each scenario.

CONCEPTUAL MODELS OF DEVELOPED SCENARIOS

Residential

This scenario intended to be used as a surrogate for all urban/suburban home and residential uses in the Barton Springs Segment (BSS) of the Edwards Aquifer. The intention is to couple the edge of field concentrations from this scenario with the edge of field concentrations from the impervious surface scenario for Barton Springs to generate weighted concentrations for areas of varying impervious cover. Crop parameters have been chosen to reflect residential turf areas, primarily lawns, within the BSS.

For this scenario estimates of typical impervious fractions in suburban watersheds were obtained from a City of Austin COA (2002) report for the COA jurisdictional section of the Barton Springs Segment (BSS) and from local runoff studies obtained from the COA. Within the City of Austin Jurisdiction of the Barton Springs Zone approximately 7.5% or 5098 acres consists of impervious surfaces. Within the recharge zone, the City of Austin restricts impervious cover for new development to 15% of the net site area and 20% of the site area in the Barton Creek contributing zone (COA, 2002). However, based on unpublished data obtained from the City of Austin some residential watersheds in the area may be as high as 40% (Rich Robinson, COA, personal communication).

The analysis of land cover information is provided in Figure 1. A conceptual model of this approach is provided in the assessment

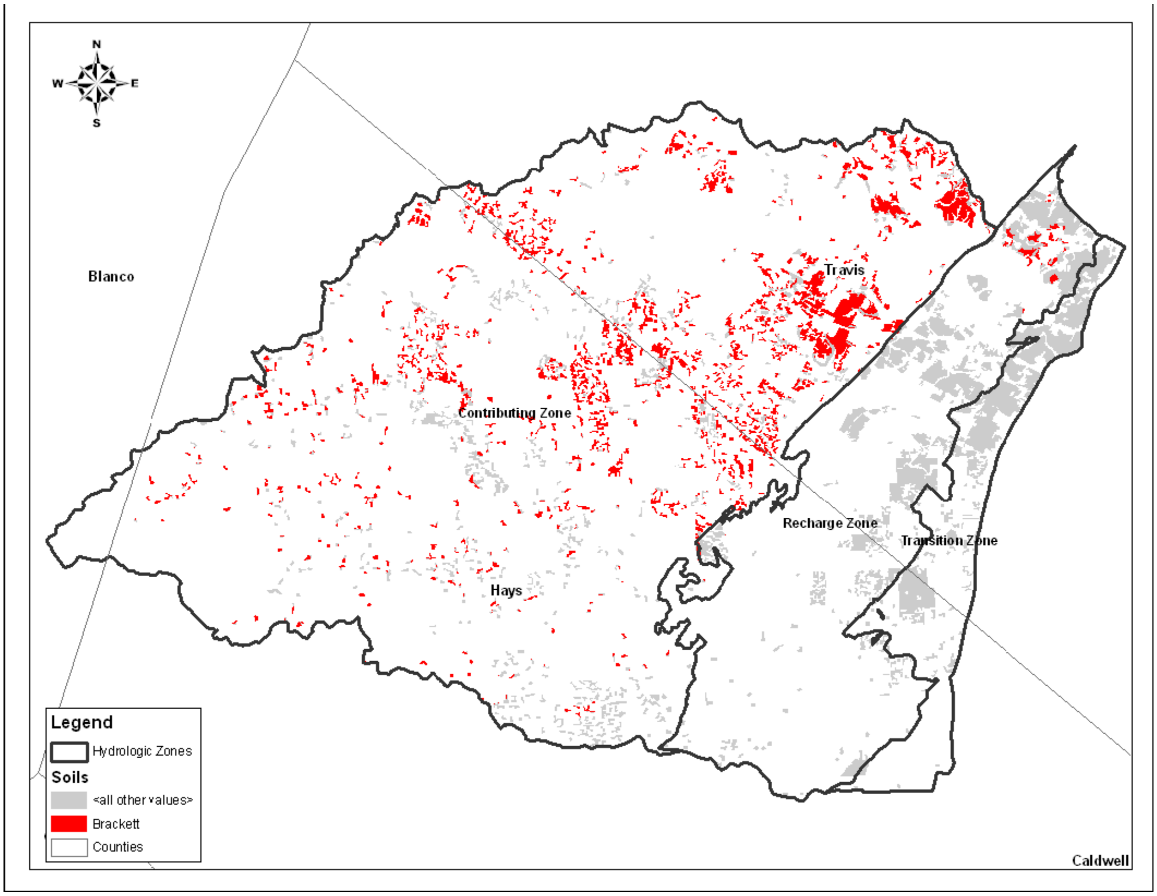

Figure 1. Location of Brackett Soils in single- and multi-family residential areas of the Barton Springs Segment of the Edwards Aquifer, Hays and Travis Counties, Texas.

Impervious

This scenario is intended to be used to mimic hydrology of untreated portions of the Barton Springs Segment (BSS) of the Edwards Aquifer. The intention is to couple the edge of field concentrations from this scenario with the edge of field concentrations from the residential scenario for Barton Springs to generate weighted concentrations for areas of varying impervious cover. Therefore, this scenario relies on a similar soil series as the residential scenario; however the upper horizon has been adjusted to a non-soil nature. As noted above, data indicate that impervious fractions of residential areas in the BSS range from less than 10% (COA 2002) to as high as approximately 40% (Rich Robinson, COA, personal communication). The analysis of land cover information is provided in Figure 2.

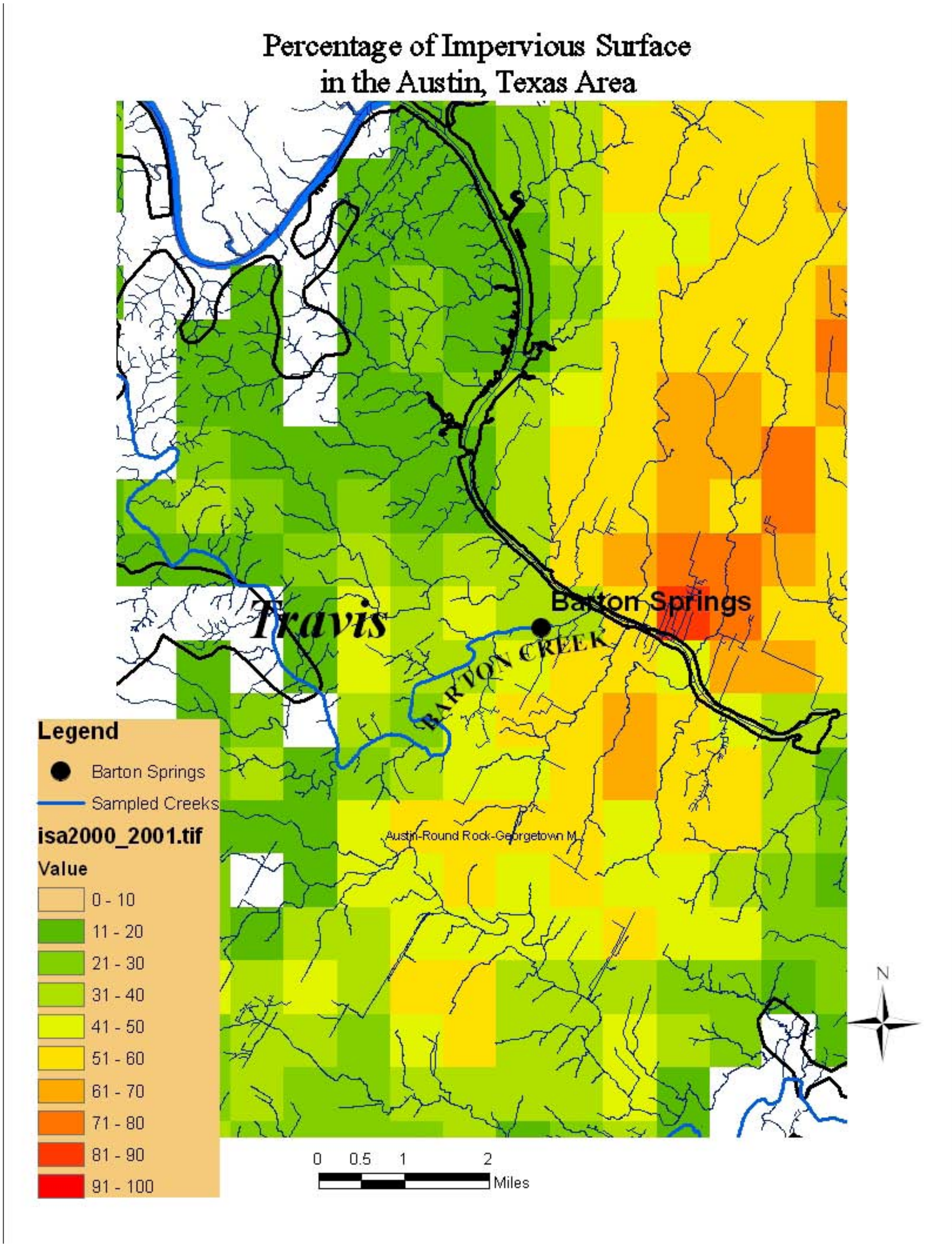

Figure 2. Percentage of Impervious Surfaces near Barton Springs.

Turf

This scenario is intended to represent turf areas (golf courses, parks, sod farms, and recreational fields) in the Barton Springs Segment (BSS) of the Edwards Aquifer. Because golf courses are expected to be the most likely turf areas where pesticides may be applied, much of this scenario has been parameterized to be reflective of golf course turf. NASS data for 1997 and 2002 (USDA 1997, 2002) contained no record of sod harvest in either Hays or Travis counties. Since there are several golf courses located within the BSS (COA 2003), this scenario was parameterized to represent turf on golf courses and may be generally representative of other potential turf areas. Crop parameters are based primarily on bermudagrass (*Cynodon* spp.) since it is a primary turf grass for golf courses and athletic fields. The analysis of land cover information is provided in Figure 3.

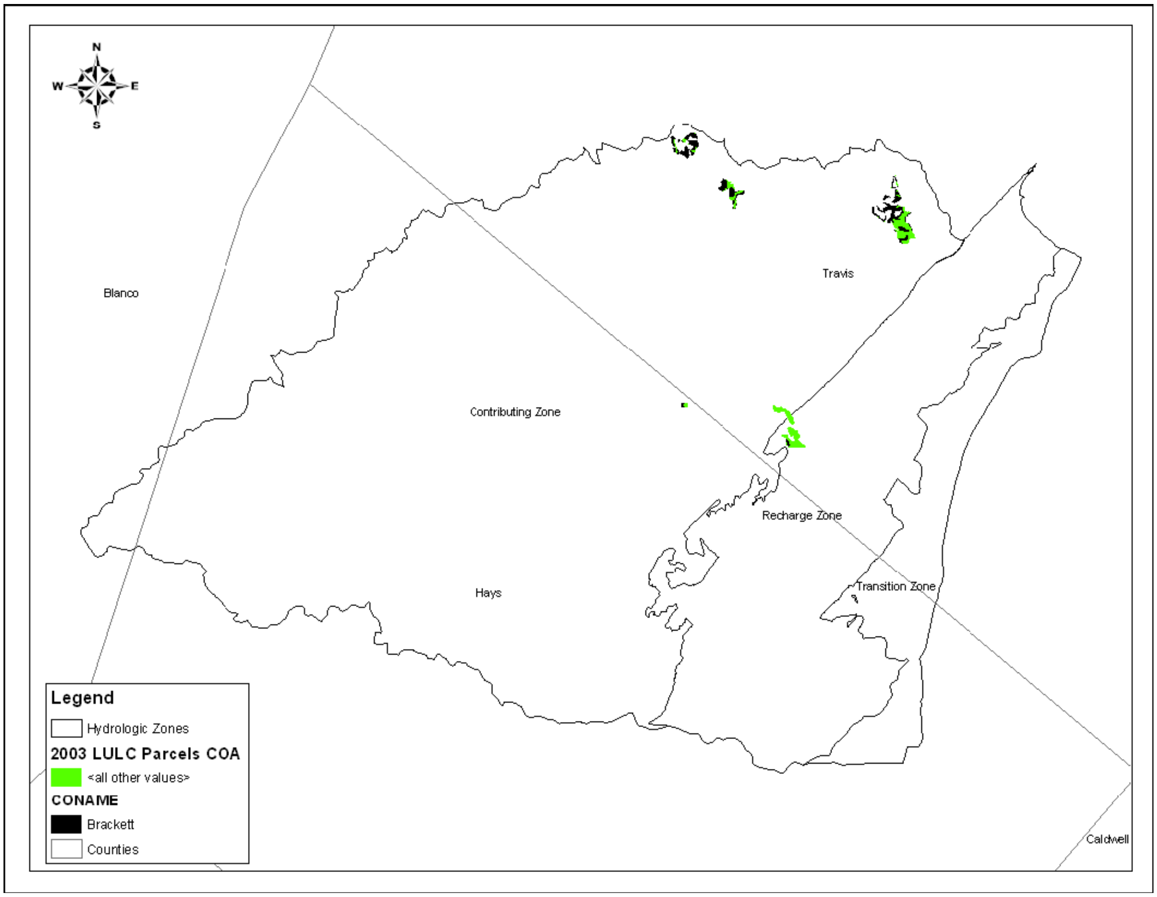

Figure 3. Location of Brackett Soils in golf course areas of the Barton Springs Segment of the Edwards Aquifer, Hays and Travis Counties, Texas.

Right-of-Way

This scenario is intended to represent right-of-way areas including roads, fence lines, power lines, and railroads in the Barton Springs Segment (BSS) of the Edwards Aquifer. Unlike most of EFED existing scenarios, the scenario is conceptually different in that it represents a linear surface that drains into an adjacent water body (drainage ditch). However, for this exercise, EFED assumes that while conceptually different, the scenario is for practicality purposes developed in a similar manner as a standard scenario that assumes a 10-hectare field draining into a 1-hectare static pond.

Crop cover parameters for this scenario were based on typical plants found adjacent to state maintained highway right-of ways. State-maintained highways include farm-to-market (FM) roads, state highways, interstates, and US highways. Bermuda grass is typically found in right-of-way areas in urban areas, while rural areas are dominated by native species such as little bluestem, side-oats grama, and hairy grama (John Mason, Vegetation Management Specialist, Texas DOT, Maintenance Div., personal communication).

The contractor attempted to determine where pesticides may or may not be applied to Right-Of-Ways (including highway/railroad/utility segments). COA was not aware of a source for this information (Nancy McClintock, personal communication). According to Texas Department of Transportation (TX DOT), Vegetation Manager Dennis Markwardt, the TX DOT applies herbicides only (no insecticides) to all of its state roadways. They only apply herbicide to a one-foot wide area along the roadway, not the entire right-of-way. They also limit the use of herbicides within the BSZ to mainly Round-Up, and to a more limited extent, Oust, OutRider and Escort. Occasionally they will need to apply spot treatment to noxious weeds.

According to Travis County Transportation and Natural Resources, Road and Bridge Division Maintenance Manager, Don Ward, Travis County applies herbicide only to their rural roads where there is no curbing gutter. They apply only Round-Up and apply it to a four foot wide area along the roadway approximately two times per year. Scott Lambert provided us with a GIS layer of the Travis County roads where herbicide may be applied. The analysis of land cover information is provided in Figure 4.

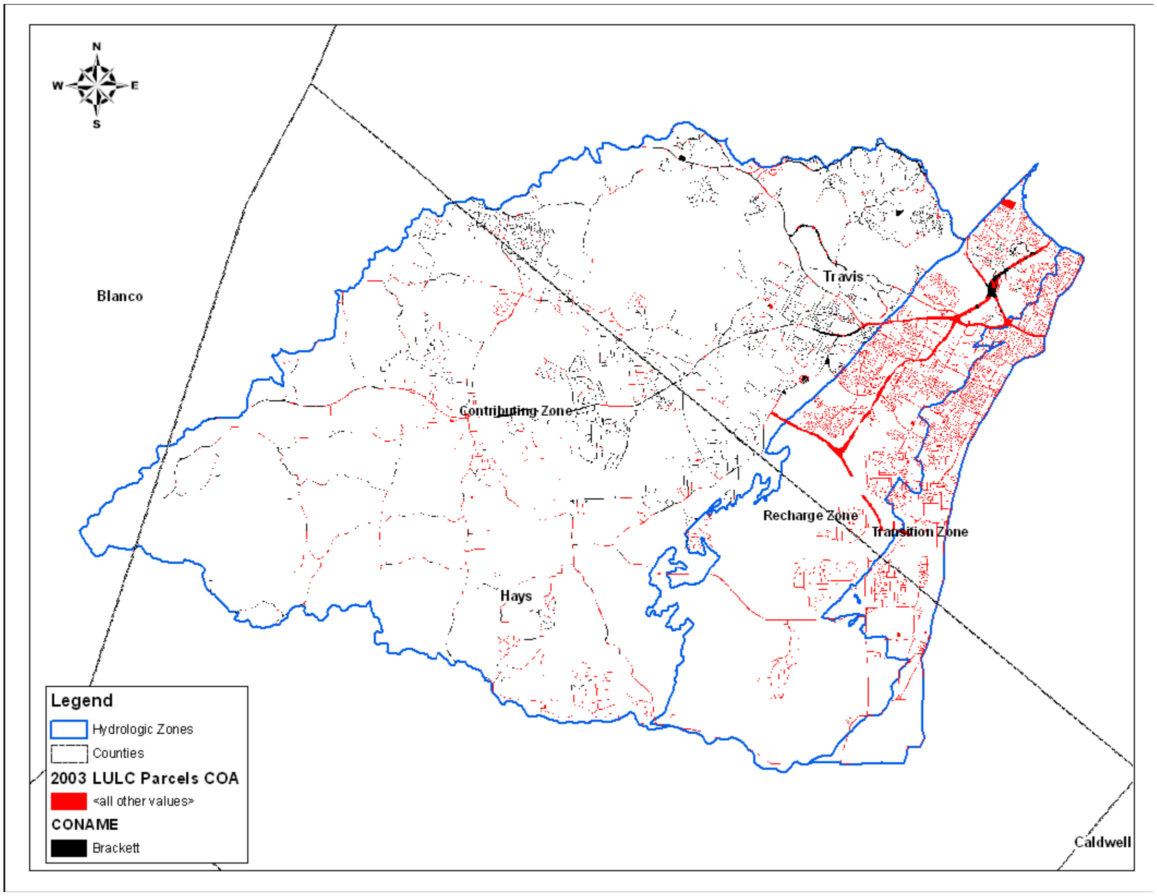

Figure 4. Location of Brackett soils in right-of-way areas (streets/roads/railroads/utilities) of the Barton Springs Segment of the Edwards Aquifer, Hays and Travis Counties, Texas.

Right-of-Way

This scenario is intended to represent right-of-way areas including roads, fence lines, power lines, and railroads in the Barton Springs Segment (BSS) of the Edwards Aquifer. Unlike most of EFED existing scenarios, the scenario is conceptually different in that it represents a linear surface that drains into an adjacent water body (drainage ditch). However, for this exercise, EFED assumes that while conceptually different, the scenario is for practicality purposes developed in a similar manner as a standard scenario that assumes a 10-hectare field draining into a 1-hectare static pond.

Crop cover parameters for this scenario were based on typical plants found adjacent to state maintained highway right-of ways. State-maintained highways include farm-to-market (FM) roads, state highways, interstates, and US highways. Bermuda grass is typically found in right-of-way areas in urban areas, while rural areas are dominated by native species such as little bluestem, side-oats grama, and hairy grama (John Mason, Vegetation Management Specialist, Texas DOT, Maintenance Div., personal communication).

The contractor attempted to determine where pesticides may or may not be applied to Right-Of-Ways (including highway/railroad/utility segments). COA was not aware of a source for this information (Nancy McClintock, personal communication). According to Texas Department of Transportation (TX DOT), Vegetation Manager Dennis Markwardt, the TX DOT applies herbicides only (no insecticides) to all of its state roadways. They only apply herbicide to a one-foot wide area along the roadway, not the entire right-of-way. They also limit the use of herbicides within the BSZ to mainly Round-Up, and to a more limited extent, Oust, OutRider and Escort. Occasionally they will need to apply spot treatment to noxious weeds.

According to Travis County Transportation and Natural Resources, Road and Bridge Division Maintenance Manager, Don Ward, Travis County applies herbicide only to their rural roads where there is no curbing gutter. They apply only Round-Up and apply it to a four foot wide area along the roadway approximately two times per year. Scott Lambert provided us with a GIS layer of the Travis County roads where herbicide may be applied.

Rangeland/Pastureland

In the BSS, rangeland vegetation is a heterogeneous mixture of trees and grasses. Common tree species include: ash juniper (a nuisance species), oaks, hackberry and elms. Grass species including little blue stem, side oats gramma, Indian grass, switch grass, king ranch bluestem (introduced) and kline grass (introduced) are typical. These areas are composed of approximately 60-65% trees and 30-35% grasses (Perez 2006). Although this land cover contains a significant amount of tree cover, this “crop” was modeled as a field crop rather than an orchard in order to model a more conservative field. The analysis of land cover information is provided in Figure 5.

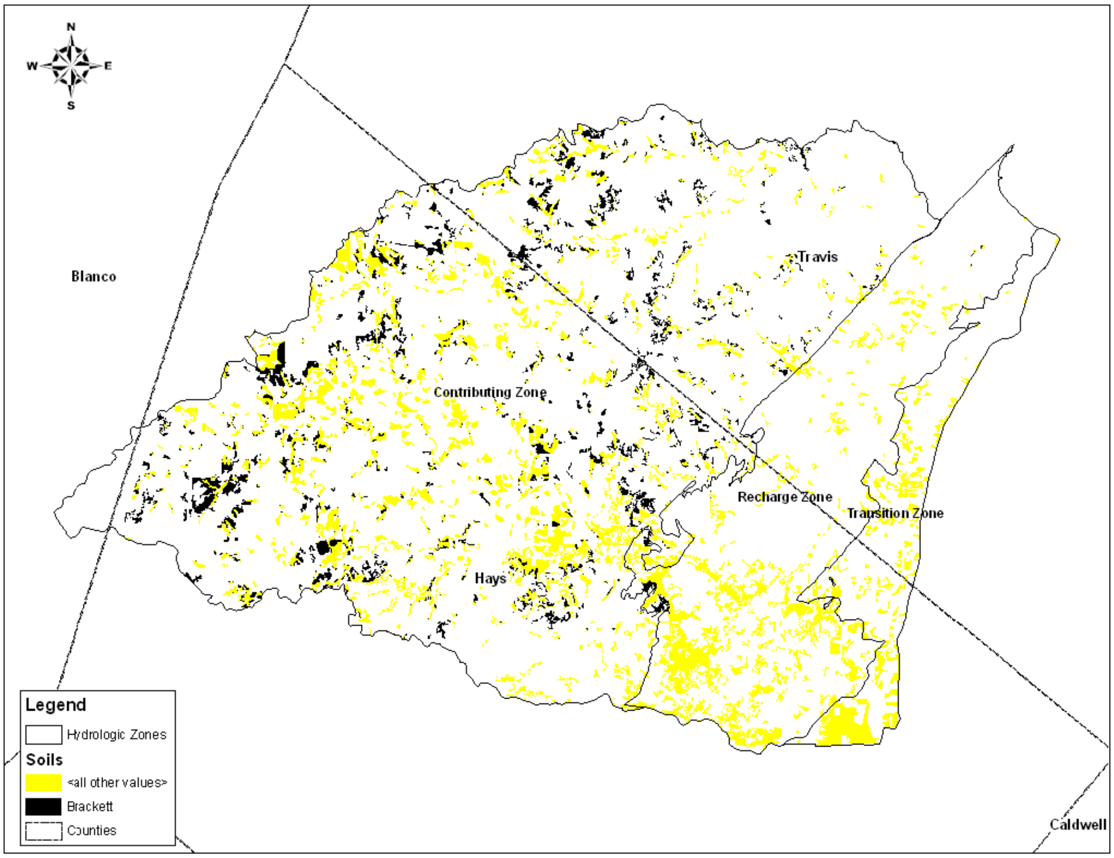

Figure 5. Location of Brackett Soils in natural herbaceous areas of the Barton Springs segment of the Edwards Aquifer, Hays and Travis Counties, Texas.

Meadow

This scenario is intended to represent a meadow that may include cultivation of herbaceous, non-grass animal feeds (forage, fodder, straw, and hay) (IR4 generalized crop group #18). The USDA census of agriculture (USDA 1997, 2002) indicates that hay of varying types is grown extensively in Travis and Hays Counties (Table 6). Discussions with extension agents in Hays and Travis counties indicated that some cultivation of sorghum hay, and hay grazer, or sweet sorghum does occur in the Barton Springs Segment. Bermuda grass is also planted but is primarily for grazing and not harvested (Perez 2006). Most of this type of crop is for livestock grazing (Davis, 2006). The analysis of land cover information is provided in Figure 6.

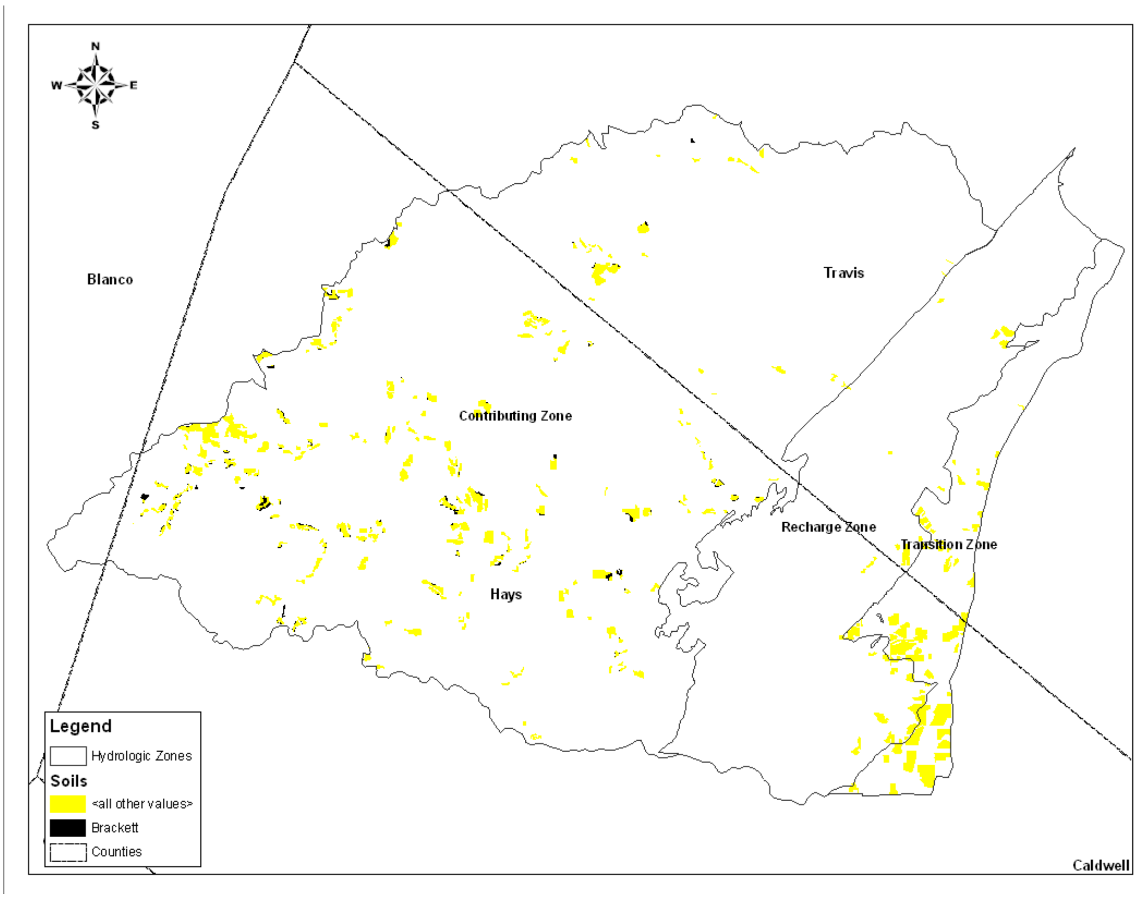

Figure 6. Location of Brackett soils in planted/cultivated areas of the Barton Springs segment of the Edwards Aquifer, Hays and Travis Counties, Texas.

Outdoor Nursery

The contractor conducted an investigation of wholesale nurseries in the BSZ using a variety of data sources to determine the extent of nurseries in the BSZ and the potential for *outside* pesticide use. NASS data for 2002 (**Table 1**) indicate that *outside* acreage for reported ornamental crops in all of Hays and Travis Counties is negligible relative to indoor acreage (< 0.1% total indoor and outdoor acreage). The majority of acreage for nursery, greenhouse, floriculture, mushrooms, sod, and vegetable seeds in both years and both counties was grown under glass or other protection. The contractor conducted a refined investigation to determine if this trend was similar in the BSZ.

Table 1. NASS 1997/2002 census of agriculture for ornamental production for open areas versus under glass in Hays and Travis Counties, Texas.

Crop	**HAYS** 1997 **Total Acres**	**HAYS** 2002 **Total Acres**	**TRAVIS** 1997 **Total Acres**	**TRAVIS** 2002 **Total Acres**
Nursery, greenhouse, floriculture, aquatic plants, mushrooms, flower seeds, vegetable seeds, sod harvested, total **In open**	x	65	x	111
Nursery, greenhouse, floriculture, aquatic plants, mushrooms, flower seeds, vegetable seeds, sod harvested, total **Under glass (not applicable for modeling)**	x	407,925	x	115,274
Nursery, floriculture, vegetable and flower seed crops, sod harvested, etc., grown in the open, irrigated	26	36	99	106
Floriculture crops – bedding/garden plants, cut flowers and cut florist greens, foliage plants, and potted flowering plants, total , in open	x	14	23	x
Bedding/garden plants, in open	4	x	6	4
Nursery stock, in open	2	27	73	90
Other nursery and greenhouse crops, in open	x	25	x	X

X = data not available, not applicable or withheld

Initially, nurseries in BSZ were identified through the Texas Nursery and Landscape Association Growers List, “Austin at a Glance Local Business Search”, and Google Local Maps. Five potential wholesale nurseries in the BSZ were identified. The contractor confirmed the existence of these nurseries and the potential for other through sources in the City of Austin Watershed Protection and Development Review Board (Kathy Shay, personal communication) and the Ladybird Johnson Wildflower Center (Andrea DeLong-Amaya, personal communication). Both sources confirmed these nurseries and neither source was aware of additional nurseries in the BSZ that would have outdoor wholesale nursery production. The contractor then contacted each of the five nurseries identified to determine the extent of outside production acreage and the potential for pesticide application. Total outside wholesale nursery production the entire Barton Spring Zone is approximately three acres. Only three of the five nurseries had outdoor wholesale production (Figure 1). Of these three, two had less than 0.5 acres outdoor production. The remaining site, Barton Springs Nursery, has approximately 2.5 acres of outdoor production. The Barton Springs Nursery has a reputation for being “environmentally conscious” (Kathy Shay, personal communication). When the nursery was contacted it indicated that it does use pesticides “when called for”.

For the purposes of modeling a nursery/ornamental operation in the BSS, one of the nurseries (Barton Springs Nursery) was used to conceptualize a facility that is representative of one located within the BSS. Communications with a staff member were used to parameterize the model. The nursery of interest has indoor and outdoor areas for growing and maintaining plants. Outdoor plants include cacti, annuals, perennials, shrubs, and trees. Outdoor plants are maintained on either weed control mat or on gravel. Plants are kept in pots of various sizes, ranging from 4” to multiple gallons, depending upon the type of plant kept within. Irrigation is carried out daily with either hose or sprinkler systems. Plants are maintained outside year-round, with some becoming dormant in the winter and some remaining green. Spring and fall represent the busiest times for plant production and sales for this nursery (personal communication with nursery employee). Several assumptions were made to parameterize the model. First, it was assumed that the area that would yield the greatest runoff potential would be from a bare surface that would be represented by the walkways between the potted plants. These areas could potentially receive direct applications of pesticides sprayed on potted plants. Therefore, the surface of the soil was conceptualized as being gravel or dirt (area under weed mats). This was an assumption that affected selection of curve numbers, USLE C and Manning’s N. Second, it was assumed that pesticide runoff of potted soil would not degrade or adsorb and would therefore, be applied directly to the soil.

The contractor also researched regulations for pesticide runoff from nurseries. Cindy Hooper of the TX Commission on Environmental Quality (TCEQ) Stormwater Team, which regulates the State TPDES for the federal NPDES, stated that the Nursery SIC code is 0181 which is an Agricultural type SIC code. Therefore nurseries are not required to have a TPDES Multi-Sector General Permit. Nancy McClintock, Assistant Director of the City of Austin Watershed Protection and Development Review Board indicated that a recent ordinance requires Integrated Pest Management (IPM) plans for new development; however the plan does not have specific pesticide runoff control requirements. It is important to note that this ordinance applies only to those areas of the BSZ under the jurisdiction of the City of Austin (approximately one-quarter of the BSZ). The analysis of land cover information is provided in Figure 7.

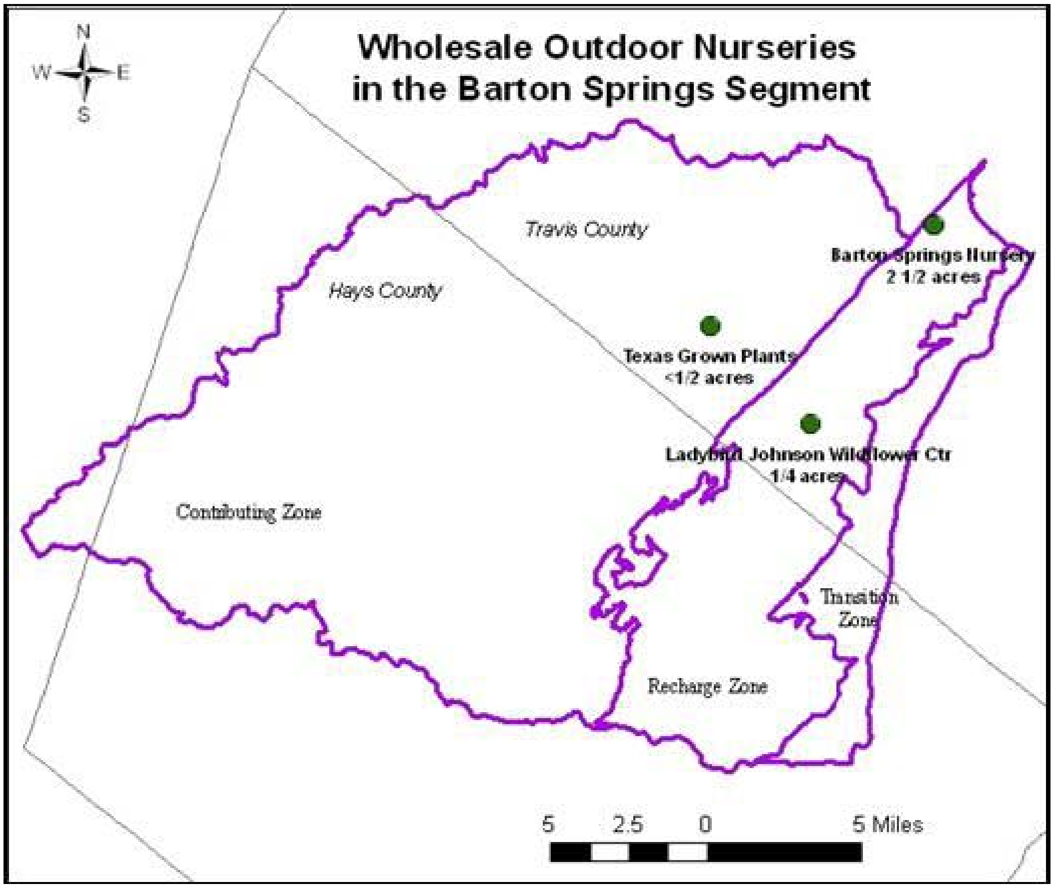

Figure 7. Location of outdoor wholesale nurseries in the Barton Springs segment of the Edwards Aquifer

LAND USE / LAND COVER ANALYSIS

Percent of each land use was computed for each of the land use / land cover datasets used in scenario development. Table 2 presents the percent of each land use as classified by USGS (2003) for the Barton Springs Segment in Hays and Travis counties, TX. Table 3 presents the percent of each land use as classified by COA (2003). Datasets were spatially "clipped" in ArcGIS to the area of interest as defined in the SOW for this assessment, specifically the Barton Springs Contributing, Recharge, and Transition zones in Hays and Travis Counties, TX.

Table 2. Percent of each land use in the Barton Springs Segment of Hays and Travis Counties, TX computed from USGS (2003) dataset. Based on the table " edw_lulc_BSS_AOI_UTM_SOIL " in the BartonSpringsAOI.mdb geodatabase

Land Use / Land Cover	Area (acres)	%	Related Scenario
Forested	138,670	54.60%	NA
Natural Herbaceous	37,700	14.84%	Rangeland
Single-Family Residential	28,352	11.16%	Residential
Mixed Forest/Shrub	26,068	10.26%	NA
Planted/Cultivated Herbaceous	8,098	3.19%	Meadow
Shrubland	5,989	2.36%	NA
Transportation	2,278	0.90%	NA
Commercial/Light Industry	1,537	0.61%	NA
Mixed Urban	1,339	0.53%	NA
Entertainment and Recreational	1,174	0.46%	NA
Institutional	854	0.34%	NA
Quarries/Strip Mines/Gravel Pits	720	0.28%	NA
Multi-Family Residential	546	0.22%	Residential
Reservoir	141	0.06%	NA
Agricultural Business	113	0.04%	NA
Communications And Utilities	90	0.04%	NA
Planted/Cultivated Woody (Orchards/Vineyards/Groves)	75	0.03%	Orchard
Transitional Bare	65	0.03%	NA
Heavy Industry	64	0.03%	NA
Stream/River	31	0.01%	NA
Bare Rock/Sand	22	0.01%	NA
Emergent Herbaceous Wetlands	20	0.01%	NA
Bare	16	0.01%	NA
Woody Wetland	12	0.00%	NA
Total*	253,974	100%	

* Note: Total area does not match exactly between the COA and USGS data sets due to differences in boundary delineations by each organization. USGS did not include Blanco

county and several fringe areas that were included in the COA dataset. Both datasets were clipped to the area of interest as defined in the SOW for this assessment, specifically the Barton Springs Contributing, Recharge, and Transition zones in Hays and Travis Counties, TX.

Table 3. Percent of each land use in the Barton Springs Segment of Hays and Travis Counties, TX computed from COA (2003) dataset. Based on the table "landuse2003_AOI_UTM_SOIL" in the BartonSpringsAOI.mdb geodatabase.

Land Use / Land Cover	Area (acres)	%	Related Scenario
Large-lot Single Family	71,669	28.2%	NA
Undeveloped	59,320	23.3%	NA
Agricultural	38,166	15.0%	NA
Single Family Residential	33,502	13.2%	NA
Preserves	20,020	7.9%	NA
Streets and Roads	10,684	4.2%	Right-of-way
Parks/Greenbelts	6,136	2.4%	NA
Mobile Homes	2,923	1.1%	NA
Commercial	2,353	0.9%	NA
Resource Extraction	1,713	0.7%	NA
Apartment/Condo	1,494	0.6%	NA
Educational	1,184	0.5%	NA
Golf Courses	1,152	0.5%	Turf
Warehousing	1,136	0.4%	NA
Office	792	0.3%	NA
Meeting and Assembly	752	0.3%	NA
Duplexes	505	0.2%	NA
Utilities	249	0.1%	Right-of-way
Three/Fourplex	157	0.1%	NA
Miscellaneous Industrial	154	0.1%	NA
Government Services	114	0.0%	NA
Aviation facilities	59	0.0%	NA
Hospitals	58	0.0%	NA
Water	52	0.0%	NA
Railroad Facilities	45	0.0%	Right-of-way
Cemeteries	39	0.0%	NA
Retirement Housing	26	0.0%	NA
Manufacturing	22	0.0%	NA
Parking	9	0.0%	NA
Marinas	3	0.0%	NA
Group Quarters	2	0.0%	NA
Semi-institutional Housing	0	0.0%	NA
Total*	254,490	100.0%	

* Note: Total area does not match exactly between the COA and USGS data sets due to differences in boundary delineations by each organization. USGS did not include Blanco county and several fringe areas that were included in the COA dataset. Both datasets were clipped to the area of interest as defined in the SOW for this assessment, specifically the Barton Springs Contributing, Recharge, and Transition zones in Hays and Travis Counties, TX.

CLIMATE AND TIME PARAMETERS

Geographic parameters located in table 1 of the metadata files were determined based on the AOI. The meteorological station selected for the scenarios was located in Austin, Texas (W13958). This station was the closest available weather station that included data required for PRZM. PFAC and ANETD values were determined for the location of the AOI as it corresponded to PRZM manual figures 5.1 and 5.2, respectively (U.S. EPA 1998). It was assumed that snowfall could occur and persist based on meteorological data for Austin, which indicated that from 1971-2001, the average snowfall for the winter season was 0.6 inches (NOAA 2006); therefore, the SFAC value was set to correspond to the value representative of open areas (Table 5.1, U.S. EPA 1998).

SOIL SELECTION/PARAMETERIZATION

Soil series were selected for the Barton Springs scenarios based on geospatial analysis and discussions with local experts. Percent of each soil type within a particular LULC of interest in the Barton Springs Segment (BSS) was determined by intersecting the LULC data sets (USGS 2003, COA 2003) with soils data (USDA 2006). Soils were then selected based on various factors, including: extent, representativeness, benchmark soil, and/or high vulnerability of soil to erosion.

The Brackett soil series was selected for six of the seven scenarios, including: residential, impervious, right-of-way, turf, meadow and rangeland/pastureland. The Tarrant soil series was selected for the nursery scenario. Data for these soils was obtained from Soil Data Mart (USDA 2006) for the county with the most extensive amount of the relevant LULC (Table 4). Values for thickness, bulk density, initial water content, field capacity, and wilting point were taken from soil data mart for the horizons of interest. Organic carbon was determined for each horizon with organic matter data that were adjusted using the relationship % OC = % Organic Matter/1.724 (Doucette 2000). In all scenarios, Soil Data Mart included information for an additional soil horizon. Since this horizon was bedrock, the horizon was not added to the soil profiles.

Table 4. Soil types and county locations of soil data for each of the Barton Springs scenarios.

Scenario	Soil	Soil Confirmed?	County
Meadow	Brackett-Rock Outcrop-Comfort Complex	yes	Hays
Rangeland/Pastureland	Brackett-Rock Outcrop-Comfort Complex	yes	Hays
Residential	Brackett-Rock Outcrop-Complex	yes	Travis
Impervious	Brackett-Rock Outcrop-Complex	yes	Travis
Turf	Brackett-Rock Outcrop-Complex	yes	Travis
Right-of-Way	Brackett-Rock Outcrop-Complex	yes	Travis
Nursery	Tarrant soils and urban land	No*	Travis

* See nursery soil selection information below.

The Brackett series approximates the 90th percentile of vulnerability, drainage, erodibility, and slope. The relatively low organic matter content is also expected to result in lower microbial activity and thus reduced potential for pesticide degradation. Brackett soils have a USLE K factor of 0.37 which includes the 90th percentile of these soils in erodibility. Brackett is a benchmark soil as well as a Hydrologic Group C. Slopes can range from 1 to 60 percent (Soil Survey Staff, 2006a); however the most typical range for the Brackett series in residential areas is either 1-8 percent (Hays County) or 1-12 percent (Travis County) (USDA 2006).

Tarrant is a Hydrologic Group D soil, with a USLE K factor of 0.32 (USDA 2006). Slopes range from 1 to 8 percent for this series (USDA 1997), but for the portion that overlaps with the nursery, the slope range is 0 to 2 percent. Since all three outdoor nursery operations in the BSS are located within Travis County, soil parameters were obtained soil data mart information pertaining to Travis County (USDA 2006).

Residential and Impervious

Soils were selected based on vulnerability and the extent within single- and multi-family residential areas in BSS. Based on a geospatial analysis of soils (USDA 2006) and land use data (USGS 2003) for residential areas as well as conversations with local soil experts, Brackett soils were chosen to represent residential areas in the BSS. Brackett soils are in Hydrologic Group C, are found in both the contributing and recharge zones of the Edwards Aquifer (Figure 1), and are the most common soil on which residential dwellings are located, accounting for 35% of all soils in residential areas (**Table** 5). Brackett soils are often undulating (Soil Survey Staff 2006a) making them desirable for development due to their scenic nature (Volente 2004). The location of Brackett soils was also cross-checked with aerial photography (TWDB 2004) to ensure that the soil chosen coincided with residential areas where pesticides would reasonably be applied. A local soil expert also confirmed that Brackett soil is a common soil type in residential areas of the BSS (Perez, 2006). A thatch layer was added to the top of the soil layer according to U.S. EPA guidance on modeling turf, as provided with the SOW.

The impervious scenario is intended to be coupled to the residential scenario to mimic hydrology of untreated portions of the Barton Springs Segment (BSS) of the Edwards Aquifer. The intention is to couple the edge of field concentrations from this scenario with the edge of field concentrations from the residential scenario for Barton Springs to generate weighted concentrations for areas of varying impervious cover. Therefore, this scenario relies on a similar soil series as the residential scenario (Brackett); however the upper horizon has been adjusted to a non-soil nature. This included setting a high curve number, high bulk density, low curve number, and setting organic carbon to zero.

Percent area of soils in each Hydrologic Group within single/multi-family residential land use type (USGS 2003) in Barton Springs Segment of the Edwards Aquifer.	
Hydrologic Group	**Percent**
water/cut & fill /etc.	0.06%
A	0.37%
B	1.35%
C	47.14%
D	51.09%
	100.00%

Table 5. Analysis of Residential Soils Types.
Types of D soils in single- and multi-family residential land use type in the Barton Springs Segment of The Edwards Aquifer (percent of LULC in parenthesis).
Speck stony clay loam 16.9% (8.64%)
Comfort-Rock outcrop complex 12.6% (6.47%)
Real-Comfort-Doss complex 12.0% (6.13%)
Tarrant and Speck soils 8.55% (4.37%)
Tarrant soils and Urban land 7.11% (3.63%)
Tarrant soils 6.09% (3.11%)
Doss silty clay 5.55% (2.83%)
Denton silty clay 3.68% (1.88%)
Urban land and Brackett soils 2.61% (1.33%)
Urban land and Austin soils 2.57% (1.31%)
Crawford clay 2.42% (1.23%)
Urban land, Austin, and Whitewright soils 2.40% (1.23%)
Purves silty clay 2.13% (1.09%)
Krum clay 2.13% (1.09%)
Houston Black soils and Urban land 1.97% (1.01%)
Heiden clay 1.27% (0.65%)
San Saba soils and Urban land 1.12% (0.57%)
Medlin-Eckrant association 1.07% (0.54%)
Tarpley clay 1.01% (0.51%)
San Saba clay 0.95% (0.49%)
Purves clay 0.90% (0.46%)
Real gravelly loam 0.80% (0.41%)
Tarrant-Rock outcrop complex 0.75% (0.38%)
Speck clay loam 0.65% (0.33%)
Anhalt clay 0.63% (0.32%)
Urban land and Ferris soils 0.58% (0.29%)
Urban land 0.41% (0.21%)
Gruene clay 0.39% (0.20%)

Eckrant-Rock outcrop complex 0.19% (0.09%)
Ferris-Heiden complex 0.17% (0.09%)
Houston Black clay 0.10% (0.05%)
Tinn clay 0.03% (0.01%)
Types of C soils in single- and multi-family residential land use type in the Barton Springs Segment of The Edwards Aquifer (percent of LULC in parenthesis).
Brackett-Rock outcrop (Comfort or Real) complex 73.6% (34.7%)
Rumple-Comfort association 8.22% (3.88%)
Eddy soils and Urban land 4.88% (2.30%)
Volente silty clay loam 4.87% (2.29%)
Eddy gravelly loam 2.15% (1.01%)
Austin silty clay 2.09% (0.98%)
Bolar clay loam 1.26% (0.59%)
Volente soils and Urban land 1.23% (0.58%)
Castephen silty clay loam 0.94% (0.44%)
Austin-Castephen complex 0.42% (0.19%)
Altoga soils and Urban land 0.07% (0.03%)
Altoga silty clay 0.04% (0.02%)
Travis soils and urban land 0.02% (0.01%)
Whitewright clay loam 0.01% (0.00%)
Castephen clay loam 0.00% (0.00%)
Types of B soils in single- and multi-family residential land use type in the Barton Springs Segment of the Edwards Aquifer (percent of LULC in parenthesis).
Sunev clay loam 39.0% (0.52%)
Lewisville silty clay 19.7% (0.26%)
Patrick soils 14.9% (0.20%)
Lewisville soils and Urban land 10.4% (0.14%)
Patrick soils and urban land 6.90% (0.09%)
Sunev silty clay loam 2.82% (0.03%)
Seawillow clay loam 2.36% (0.03%)
Oakalla soils 2.08% (0.02%)
Hardeman soils and Urban land 0.80% (0.01%)
Oakalla silty clay loam 0.41% (0.00%)
Bergstrom soils and Urban land 0.33% (0.00%)
Boerne fine sandy loam 0.12% (0.00%)
Types of A soils in single- and multi-family residential land use type in the Barton Springs Segment of the Edwards Aquifer (percent of LULC in parenthesis).
Mixed alluvial land 82.4% (0.30%)
Orif soils 15.7% (0.05%)
Gaddy soils and Urban land 1.76% (0.00%)

Turf

Soil parameters were determined using data from Soil Data Mart (USDA 2006) for Travis County and land use data from the City of Austin (COA, 2003). This county data set was used since the majority of golf courses in the AOI reside within Travis County. The specific soil chosen was Brackett-Rock Outcrop-Complex, with 1-12% slopes, which is the most common soil located within golf course areas of BSS (Figure 3). A thatch layer was added to the top of the soil layer according to U.S. EPA guidance on modeling turf, as provided with the SOW. The properties of the thatch layer are consistent with existing turf scenarios: PA turf and FL turf.

The Brackett series was chosen to represent turf areas in the BSS (Table 5) because it is a benchmark soil, is highly representative of golf course areas in the BSS, and it approximates the 90^{th} percentile of vulnerability in drainage, erodibility, and slope. Brackett soils are in Hydrologic Group C soils and are found in both the contributing and recharge zones of the Edwards Aquifer. Bracket soils are the most common soil type found in golf course areas of the BSS (Table 6).

Table 6. Analysis of Golf Course Soil Types.
Types of D soils in golf course land use type in the Barton Springs Segment of Edwards Aquifer (percent of LULC in parenthesis).
Tarrant 38.0% (12.5%)
Speck 28.6% (9.45%)
San Saba 19.3% (6.39%)
Crawford 11.4% (3.76%)
Doss 2.52% (0.83%)
Types of C soils in golf course land use type in the Barton Springs Segment of Edwards Aquifer (percent of LULC in parenthesis).
Brackett 77.6% (50.5%)
Volente 22.3% (14.5%)
Types of A soils in golf course land use type in the Barton Springs Segment of Edwards Aquifer (percent of LULC in parenthesis).
Alluvial land 100% (1.91%)

Right-of-way

Soils were chosen based on co-location with right-of-way areas based on land use coverage developed by the City of Austin (City of Austin 2003). The land use data set include streets, roads, utilities, and railroads, but does not include fence lines. Based on a geospatial analysis of right-of-way land uses (City of Austin 2003) and USDA soils data (USDA 2006), Brackett soils were chosen to represent right-of-way areas in the BSS. Brackett soils are found in both the contributing and recharge zones of the Edwards Aquifer and are the most common soil on which right-of-way areas are located (Figure 4), accounting for 32% of soils in right-of-way areas

(Table 7). The soil data for Travis County, Brackett-Rock Outcrop-Complex soil with slopes 112% was used to parameterize the soil component of this scenario (USDA 2006).

Table 7. Analysis of Right-of-way Soil Types.
Types of D soils in right-of-way (streets/roads/utilities/railroads) land use type in the Barton Springs Segment of Edwards Aquifer (percent of AOI in parenthesis).
Speck stony clay loam 23.5% (12.8%)
Tarrant and Speck soils 10.2% (5.54%)
Tarrant soils 7.05% (3.83%)
Real-Comfort-Doss complex 6.85% (3.72%)
Crawford clay 6.85% (3.72%)
Comfort-Rock outcrop complex 6.50% (3.53%)
Tarrant soils and Urban land 5.75% (3.12%)
Doss silty clay 4.07% (2.21%)
Denton silty clay 3.55% (1.93%)
Urban land and Austin soils 2.28% (1.23%)
San Saba clay 2.24% (1.21%)
Krum clay 2.22% (1.20%)
Heiden clay 2.08% (1.13%)
Purves silty clay 1.83% (0.99%)
Urban land Austin and Whitewright soils 1.59% (0.86%)
Houston Black soils and Urban land 1.54% (0.83%)
San Saba soils and Urban land 1.53% (0.83%)
Urban land and Brackett soils 1.38% (0.75%)
Urban land 1.18% (0.64%)
Tarpley clay 1.01% (0.55%)
Gruene clay 0.96% (0.52%)
Purves clay 0.84% (0.45%)
Medlin-Eckrant association 0.80% (0.43%)
Tarrant-Rock outcrop complex 0.77% (0.41%)
Speck clay loam 0.66% (0.36%)
Ferris-Heiden complex 0.59% (0.32%)
Anhalt clay 0.42% (0.23%)
Branyon clay 0.41% (0.22%)
Real gravelly loam 0.36% (0.19%)
Houston Black clay 0.32% (0.17%)
Urban land and Ferris soils 0.23% (0.12%)
Eckrant-Rock outcrop complex 0.15% (0.08%)
Tinn clay 0.07% (0.03%)
Types of C soils in right-of-way (streets/roads/utilities/railroads) land use type in the Barton Springs Segment of Edwards Aquifer (percent of AOI in parenthesis).

Brackett-Rock outcrop (Comfort or Real) complex 73.8% (32.2%)
Rumple-Comfort association 7.41% (3.23%)
Volente silty clay loam 6.52% (2.84%)
Eddy soils and Urban land 3.14% (1.37%)
Austin silty clay 2.56% (1.11%)
Bolar clay loam 1.95% (0.85%)
Eddy gravelly loam 1.68% (0.73%)
Castephen silty clay loam 1.06% (0.46%)
Volente soils and Urban land 0.89% (0.39%)
Austin-Castephen complex 0.60% (0.26%)
Castephen clay loam 0.18% (0.07%)
Travis soils and urban land 0.05% (0.02%)
Altoga soils and Urban land 0.03% (0.01%)
Whitewright clay loam 0.03% (0.01%)
Altoga silty clay 0.01% (0.00%)
Types of B soils in right-of-way (streets/roads/utilities/railroads) land use type in the Barton Springs Segment of Edwards Aquifer (percent of AOI in parenthesis).
Sunev clay loam 40.7% (0.60%)
Lewisville silty clay 21.5% (0.32%)
Patrick soils 10.9% (0.16%)
Lewisville soils and Urban land 5.63% (0.08%)
Hardeman soils and Urban land 5.36% (0.07%)
Patrick soils and urban land 4.93% (0.07%)
Oakalla silty clay loam 3.01% (0.04%)
Oakalla soils 2.92% (0.04%)
Bergstrom soils and Urban land 2.64% (0.03%)
Sunev silty clay loam 1.43% (0.02%)
Seawillow clay loam 0.77% (0.01%)
Types of A soils in right-of-way (streets/roads/utilities/railroads) land use type in the Barton Springs Segment of Edwards Aquifer (percent of AOI in parenthesis).
Mixed alluvial land 80.3% (0.46%)
Orif soils 19.2% (0.11%)
Gaddy soils and Urban land 0.30% (0.00%)

Rangeland/pastureland

Rangeland and pastureland were identified based on the natural herbaceous land cover classification in the BSS (USGS 2003). Based on the analysis of land use and soils data, Brackett soils were chosen to represent rangelands and pasturelands in the BSS (Table 5). Brackett soils are found in both the contributing and recharge zones of the Edwards Aquifer and are the most common soil on which rangeland is located (**Table** 8). This soil type was confirmed by an extension agent (Perez, 2006).

Percent area of soils in each Hydrologic Group within the natural herbaceous land use type (USGS 2003) in Barton Springs Segment of Edwards Aquifer.	
Hydrologic Group	**Percent**
water/cut & fill /etc.	0.25%
A	0.68%
B	6.67%
C	49.95%
D	42.45%
	100.00%

Table 8. Analysis of Rangeland Soil Types.
Types of D soils in natural herbaceous land use type in the Barton Springs Segment of Edwards Aquifer (percent of LULC in parenthesis).
Doss silty clay 25.1% (10.6%)
Real-Comfort-Doss complex 15.4% (6.54%)
Comfort-Rock outcrop complex 10.3% (4.40%)
Krum clay 6.58% (2.79%)
Tarpley clay 4.83% (2.04%)
Denton silty clay 4.74% (2.01%)
Purves clay 4.44% (1.88%)
Speck stony clay loam 3.14% (1.33%)
Crawford clay 2.86% (1.21%)
Houston Black clay 2.43% (1.03%)
Anhalt clay 2.22% (0.94%)
Gruene clay 2.14% (0.90%)
Tarrant soils 2.12% (0.89%)
Krum clay 1.99% (0.84%)
Purves silty clay 1.59% (0.67%)
Tarrant and Speck soils 1.51% (0.64%)
San Saba clay 1.10% (0.46%)
Branyon clay 0.98% (0.41%)

Heiden clay 0.87% (0.37%)
Denton silty clay 0.68% (0.28%)
Tinn clay 0.62% (0.26%)
Heiden clay 0.54% (0.22%)
Speck clay loam 0.43% (0.18%)
Real gravelly loam 0.39% (0.16%)
Eckrant-Rock outcrop complex 0.35% (0.15%)
Heiden clay 0.33% (0.14%)
Medlin-Eckrant association 0.32% (0.13%)
Denton silty clay 0.27% (0.11%)
Medlin-Eckrant association 0.27% (0.11%)
Krum clay 0.24% (0.10%)
Urban land and Austin soils 0.21% (0.09%)
Crawford clay 0.18% (0.07%)
Heiden clay 0.10% (0.04%)
Houston Black clay 0.10% (0.04%)
Tarrant soils and Urban land 0.08% (0.03%)
San Saba soils and Urban land 0.07% (0.03%)
Urban land, Austin and Whitewright soils 0.06% (0.02%)
Urban land 0.03% (0.01%)
Tarrant-Rock outcrop complex 0.02% (0.01%)
Branyon clay 0.02% (0.00%)
Houston Black clay 0.00% (0.00%)
Houston Black soils and Urban land 0.00% (0.00%)
Ferris-Heiden complex 0.00% (0.00%)
Tarrant soils and Urban land 0.00% (0.00%)
Tarrant soils and Urban land 1.48% (6.31%)
Types of C soils in natural herbaceous land use type in the Barton Springs
Segment of Edwards Aquifer (percent of LULC in parenthesis).
Brackett-Rock outcrop (Comfort or Real) complex 82.9% (22.7%)
Rumple-Comfort association 57.7% (15.8%)
Bolar clay loam 15.4% (4.24%)
Volente silty clay loam 14.3% (3.93%)
Austin-Castephen complex 4.78% (1.31%)
Austin silty clay 1.73% (0.47%)
Austin-Castephen complex 1.63% (0.44%)
Volente silty clay loam 1.44% (0.39%)
Castephen silty clay loam 1.27% (0.34%)
Castephen silty clay loam 0.40% (0.11%)
Altoga silty clay 0.33% (0.09%)

Castephen clay loam 0.33% (0.09%)
Austin silty clay 0.26% (0.07%)
Altoga silty clay 0.11% (0.03%)
Eddy gravelly loam 0.08% (0.02%)
Eddy gravelly loam 0.03% (0.00%)
Eddy soils and Urban land 0.02% (0.00%)
Travis soils and urban land 0.00% (0.00%)
Types of B soils in natural herbaceous land use type in the Barton Springs Segment of Edwards Aquifer (percent of LULC in parenthesis).
Sunev clay loam 54.1% (3.62%)
Lewisville silty clay 25.0% (1.67%)
Seawillow clay loam 3.10% (0.20%)
Boerne fine sandy loam 2.89% (0.19%)
Seawillow clay loam 2.49% (0.16%)
Lewisville silty clay 2.26% (0.15%)
Oakalla silty clay loam 2.05% (0.13%)
Sunev silty clay loam 2.05% (0.13%)
Lewisville silty clay 1.49% (0.09%)
Oakalla soils 1.27% (0.08%)
Patrick soils 1.21% (0.08%)
Lewisville silty clay 1.16% (0.07%)
Patrick soils 0.43% (0.02%)
Oakalla soils 0.17% (0.01%)
Patrick soils and urban land 0.12% (0.00%)
Hardeman soils and Urban land 0.06% (0.00%)
Lewisville soils and Urban land 0.04% (0.00%)
Types of A soils in natural herbaceous land use type in the Barton Springs Segment of Edwards Aquifer (percent of LULC in parenthesis).
Mixed alluvial land 76.3% (0.52%)
Orif soils 23.6% (0.16%)
Gaddy soils and Urban land 0.02% (0.00%)

Meadow

Soils were selected based on the extent within herbaceous planted areas in BSS and the potential to yield high-end runoff and erosion. Based on a geospatial analysis of soils (USDA 2006) and land use data (USGS 2003) for herbaceous planted areas as well as conversations with local soil experts, Brackett soils were chosen to represent meadow areas in the BSS (Table 5). Location of the Brackett soils was also cross-checked with aerial photography (TWDB 2004) to ensure that the soil chosen coincided with herbaceous planted areas where pesticides would reasonably be applied. A local soil expert also confirmed that Brackett soils are extensive soil types of meadows in the BSS (Perez 2006). Brackett soils while not the most extensive soil in this land use; it is the second most extensive *benchmark soil* in the herbaceous planted land use. One benchmark soil is more extensive (Denton), however Brackett was chosen over this soil since Brackett soils have a higher erodibility potential. Data from Hays County were selected since the majority of this LULC is located in this county.

Planted/Cultivated herbaceous land use type in USGS (2003) data set	
Hydrologic Group	**Percent**
water	0.03%
A	0.15%
B	16.27%
C	17.76%
D	65.79%
	100.00%

Table 9. Analysis of Meadow Soil Types.
Types of D soils in herbaceous planted land use type in the Barton Springs Segment of Edwards Aquifer (percent in LULC in parenthesis).
Doss silty clay 28.2% (18.5%)
Krum clay 21.4% (14.0%)
Denton silty clay 7.91% (5.20%)
Heiden clay 6.61% (4.35%)
Houston Black clay 5.84% (3.84%)
Tarpley clay 4.05% (2.66%)
Anhalt clay 3.73% (2.45%)
Purves clay 3.64% (2.39%)
Crawford clay 3.48% (2.29%)
Gruene clay 3.10% (2.04%)
Branyon clay 2.24% (1.47%)
Purves silty clay 2.19% (1.44%)
Speck clay loam 1.95% (1.28%)
Real-Comfort-Doss complex 1.94% (1.28%)
San Saba clay 1.28% (0.84%)
Comfort-Rock outcrop complex 0.84% (0.55%)
Medlin-Eckrant association 0.59% (0.39%)
Real gravelly loam 0.22% (0.14%)
Speck stony clay loam 0.20% (0.13%)
Tarrant and Speck soils 0.13% (0.09%)
Tinn clay 0.12% (0.08%)
Tarrant soils 0.10% (0.07%)
Urban land and Austin soils 0.07% (0.04%)
Urban land, Austin, and Whitewright soils 0.02% (0.01%)
Eckrant-Rock outcrop complex 0.00% (0.00%)

Types of C soils in herbaceous planted land use type in the Barton Springs Segment of Edwards Aquifer (percent in LULC in parenthesis).
Brackett-Rock outcrop (Comfort or Real) complex 25.5% (4.54%)
Bolar clay loam 23.8% (4.24%)
Austin-Castephen complex 23.6% (4.20%)
Volente silty clay loam 13.4% (2.38%)
Rumple-Comfort association 6.66% (1.18%)
Castephen clay loam 3.84% (0.68%)
Austin silty clay 1.91% (0.33%)
Castephen silty clay loam 0.93% (0.16%)
Eddy soils and Urban land 0.12% (0.02%)
Volente soils and Urban land 0.03% (0.00%)
Eddy gravelly loam 0.03% (0.00%)
Types of B soils in herbaceous planted land use type in the Barton Springs
Segment of Edwards Aquifer (percent in LULC in parenthesis).
Sunev clay loam 55.6% (9.06%)
Lewisville silty clay 30.1% (3.98%)
Seawillow clay loam 16.7% (2.22%)
Sunev silty clay loam 3.89% (0.51%)
Oakalla silty clay loam 1.97% (0.26%)
Boerne fine sandy loam 0.66% (0.08%)
Patrick soils 0.66% (0.08%)
Oakalla soils 0.51% (0.06%)
Types of A soils in herbaceous planted land use type in the Barton Springs
Segment of Edwards Aquifer (percent in LULC in parenthesis).
Orif soils 81.1% (0.12%)
Mixed alluvial land 18.8% (0.02%)

Outdoor nursery

The soil selected for the nursery scenario was selected based on the overlap between the nursery of interest (Barton Springs Nursery) and soil extents (USDA 2006). Aerial photography (TWDB 2004) was used to identify the location of the nursery operation and the locations of the outdoor areas of production. Only one soil type overlapped with the nursery operation: Tarrant soils and urban land. Therefore, it was determined that this soil type was a representative soil that an outdoor nursery operation in the BSS would reside upon. Since all three outdoor nursery operations in the BSS are located within Travis County, soil parameters were obtained soil data mart information pertaining to Travis County (USDA 2006).

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REFERENCES

City of Austin (COA). 2003. Unpublished Land Use Data. http://www.ci.austin.tx.us/landuse/. Accessed 15 February 2005.

City of Austin Land Use data 2003 (ftp://coageoid01.ci.austin.tx.us/GIS-Data/Regional/coa_gis.html)

City of Austin. 2002. Barton Springs Zone Scientific Inventory. City of Austin Watershed Protection Department. Environmental Resources Management Division. Available on-line at http://www.cityofaustin.org/.

Dunne, T., and L. Leopold. 1978. Water in Environmental Planning. W.H. Freeman an Company, New York. 818 pp.

Martinez, R. 2006. NRCS officer for Travis County. Personal Communication, March 22, 2006.

NOAA. 2006. National Weather Service Forecast Office. Climatological data for Austin, Texas. data. http://www.weather.gov/climate/xmacis.php?wfo=ewx

Smithamn, N. Superintendent, City of Austin Municipal Golf Courses. Personal Communication, March 16, 2006.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. 2006b. Official Soil Series Description [Online WWW] for Tarrant Series. Available URL: " http://ortho.ftw.nrcs.usda.gov/osd/dat/T/TARRANT.html" [Accessed 6 March 2006].

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. 2006a. Official Soil Series Description [Online WWW] for Brackett Series. Available URL: "http://ortho.ftw.nrcs.usda.gov/osd/dat/B/BRACKETT.html" [Accessed 6 March 2006].

Stewart, K. Senior Water Conservation Specialist, City of Austin Water Utility. Personal Communication, March 23, 2006.

Texas Water Development Board (TWDB), Texas Natural Resource Information System (http://www.tnris.state.tx.us/digital.htm). 2004. 1-Meter Aerial Photography for Travis and Hays Counties. Accessed March 3, 2006.

USDA Soil Conservation Service. 1986. Urban Hydrology for Small Watersheds. Technical Release 55, 2nd edition, June 1986.

USDA. 1997. 1997 Census of Agriculture. U.S. Department of Agriculture, National Agricultural Statistics Service. Accessed March 2006. Online at: http://www.nass.usda.gov/index.asp.

USDA. 2002. 2002 Census of Agriculture. U.S. Department of Agriculture, National Agricultural Statistics Service. Accessed March 2006. Online at: http://www.nass.usda.gov/index.asp.

USDA. 2006. Soil Survey Areas of Hays Counties, Texas. U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), Soil Data Mart. March 1, 2005. Online at: http://soildatamart.nrcs.usda.gov.

USDA. 2000. Knisel, W.G., and Davis, F.M., 2000, GLEAMS: Ground water Loading Effects of Agricultural Management Systems, Version 3.0: Agricultural Research Service, U.S. Department of Agriculture, Publication No. SEWRL-WGK/FMD-050199, 191 p.

U.S. EPA. 1998. Carsel, R.F., J.C. Imhoff, P.R. Hummel, J.M. Cheplick, and A.S. Donigian, Jr. PRZM-3, A Model for Predicting Pesticide and Nitrogen Fate in the Crop Root and Unsaturated Soil Zones: Users Manual for Release 3.0. National Exposure Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens, GA.

U.S. EPA. 2004. Pesticide Root Zone Model (PRZM) Field and Orchard Crop Scenarios: Guidance for Selecting Field Crop and Orchard Scenario Input Parameters. November 15, 2001; Revisions July 2004.

U.S. EPA. 2005. Irrigation Guidance for developing PRZM Scenario. June 15, 2005.

USGS, National Mapping Division, Rocky Mountain Mapping Center. 2003. Edwards Aquifer Land Use / Land Cover. Denver, Colorado. Accessed online at http://www.tceq.state.tx.us/gis/lulc.html

Volente, Village of. 2004. Comprehensive Plan, village of Volente, Texas. Draft Report.

RESEARCH AND DOCUMENTATION FOR AGRICULTURAL SCENARIOS EVALUATED FOR THE BARTON SPRINGS SALAMANDER ASSESSMENT

Overview

This appendix is intended to supplement the summary report submitted by the contractor under technical direction (TD) No. 3 (GSA Contract No. GS-00F-0019L, Order Number. EP06H000149). The SOW for TD3 indicated that seven optional scenarios may be required, depending on the existence of potential uses in the Barton Springs Segment. The scenarios included:

1 Forestry;
2 Row crops (Table 2-2b of USDA TR55);
3 Small grains (Table 2-2b of USDA TR55);
4 Close seeded legumes (Table 2-2b of USDA TR55);
5 Woods-grass combination (orchard or tree farm) (Table 2-2c of USDA TR55);
6 Meadow (Table 2-2c of USDA TR55); and
7 Cotton

For the seven optional generic scenarios, the contractor conducted preliminary background research on each of the suggested uses to determine the presence of the use site in the area of interest the level of significance of the use. The contractor provided an interim deliverable report documenting the preliminary research on 6 March 2006. The Agency directed the contractor to proceed based on the recommendations, but to also further investigate the need for the orchard scenario. The Agency indicated if the contractor can confirm these are in the contributing zone but not the recharge zone then document as such and do not develop these scenarios. If the crop is possibly in the recharge zone then the scenario may need to developed, even with a limited acreage. The contractor determined that the one (1) orchard located in the recharge zone based on land use (USGS 2003) is no longer active; the land has been converted to a Lowes home center.

According to GIS land use coverage from the Texas Commission on Environmental Quality and the City of Austin, agricultural land uses do exist extensively throughout the in the Barton Springs Recharge and Contributing Zones (hereafter referred to as the AOI or “Area of Interest”), However, most of this agricultural land is used for range land, livestock grazing, and pasture, according to the extension agents from Hays and Travis Counties. All extension agents indicated the prevailing trend of agricultural and range land being broken up and converted to residential and commercial development.

Eddie Garcia from Travis County indicated that there are no crops commercially grown and harvested in the AOI of Travis County. There may be some grazing but usually it’s not even enough pasture so that supplemental food must be purchased for the livestock. There is forested/wooded land but no forestry operations for planting and harvesting. The Nature Conservancy owns 4600 acres in the AOI and is managing it as a natural area. There are no agricultural producers registered with the Farm Service Agency (FSA) in the Barton Springs AOI.

Scenario Background Research

1. Forestry

NASS data indicates that a small amount of Christmas trees are grown in Travis County (Table 10), however the extension agents from Travis and Hays Counties indicated that these crops are not grown the AOI. There is some cedar and juniper removal. These are considered pests and are removed and not sold (Perez 2006). There is a chemical that can be used for removing cedar, but no one uses it in the BSS; most people cut nuisance trees down (Davis 2006). Based on the information from local extension agents, this use was deemed outside the area of interest and was not developed

Table 10. NASS 1997/2002 census of agriculture for Christmas trees in Hays and Travis Counties, Texas (USDA 1997, 2002).

	HAYS		TRAVIS	
Crop	**1997 Acres in Production**	**2002 Acres in Production**	**1997 Acres in Production**	**2002 Acres in Production**
Cut Christmas trees	X	X	X	9

X = data not available, not applicable or withheld

2. Row Crops

NASS data indicates that a small amount of vegetable crops are the only row crops that are grown in Travis and Hays Counties (Table 11), however the extension agents from Travis and Hays Counties indicated that these crops are not grown the AOI commercially, only in residential gardens. There is one certified organic farm near Wimberly but not within the AOI (Perez 2006). The only vegetables are in home gardens (Davis 2006). Based on the information from local extension agents, this use was deemed outside the area of interest and was not developed

Table 11. NASS 1997/2002 census of agriculture for vegetable crops in Hays and Travis Counties, Texas (USDA 1997, 2002).				
	HAYS		TRAVIS	
Crop	**1997 Harvested Acres**	**2002 Harvested Acres**	**1997 Harvested Acres**	**2002 Harvested Acres**
Land Used For Vegetables	13	11	19	17
Vegetables Harvested For Sale	24	39	52	37
Turnips	X	1	X	X
Herbs, Fresh Cut	10	4	X	X
Carrots	1	X	X	X
Dry Onions	X	1	X	2
Peppers, Bell	X	X	X	1
Peppers, Chile (All Peppers - Excluding Bell)	X	X	X	3
Tomatoes	2	4	2	9
Okra	X	3	1	3
Cantaloups	1	3	X	2
Watermelons	1	X	X	1
Cucumbers And Pickles	1	X	X	X
Squash	1	3	X	X
Beets	X	X	X	2

X = data not available, not applicable or withheld

3. Small Grains

NASS data indicate that corn, oats, sorghum, and wheat are grown extensively in Travis and Hays Counties (Table 12). According to Soil Data Mart, there are numerous soils in the BSS that are suitable for growing corn, grain sorghum, and wheat; however, Hays and Travis County extension agents from Travis and Hays Counties indicated that small grain crops are not cultivated in the BSS. In cases where small grains are planted such as winter wheat or oats they are used exclusively for harvesting from small plots from 5 to 15 acres (Davis 2006). All other grain crops like corn, sorghum, wheat, oats and milo are grown East of I-35 in the Blackland Prairie region (Perez 2006). Based on the information from local extension agents, this use was deemed outside the area of interest and was not developed

Table 12. NASS 1997/2002 census of agriculture for grain crops in Hays and Travis Counties, Texas (USDA 1997, 2002).				
	HAYS		TRAVIS	
Crop	1997 Harvested Acres	2002 Harvested Acres	1997 Harvested Acres	2002 Harvested Acres
Corn For Grain	5915	3084	12139	12378
Oats For Grain	836	X	215	206
Sorghum For Grain	5406	1435	21298	14684
Wheat For Grain, All	4674	3527	4849	3320
Winter Wheat For Grain	X	3527	X	3320
Sweet Corn	1	1	X	3

X = data not available, not applicable or withheld

4. Close-seeded legumes

NASS data indicates that a small amount of close-seeded legumes are grown in Travis and Hays Counties (Table 13), however the extension agents from Travis and Hays Counties indicated that these crops are not grown in the AOI (Perez 2006; Davis 2006). Based on the limited extent of legumes in Hays and Travis counties and information from local extension agents, this use was deemed outside the area of interest and was not developed

Table 13. NASS 1997/2002 census of agriculture for legumes in Hays and Travis Counties, Texas (USDA 1997, 2002).				
	HAYS		TRAVIS	
Crop	1997 Harvested Acres	2002 Harvested Acres	1997 Harvested Acres	2002 Harvested Acres
Peas, Green Southern (Cowpeas) - Blackeyed, Crowder, Etc.	X	1	X	X
Snap Beans	X	4	X	1

X = data not available, not applicable or withheld

5. Orchard or Tree Farms

NASS data indicates that orchard crops are grown in Travis and Hays Counties (Table 14); however the extension agent from Travis County indicated that there are no orchards in the BSS. The extension agent from Hays County indicated that there is one location in the BSS where orchard crops are grown: the orchard at the Barsana Dham-Isdl Temple (on FM1826) where they grow persimmons, peaches, pecans, etc. These are grown for Pick-Your-Own and they use low toxicity IPM (Integrated Pest Management) practices there (Davis 2006). All orchard crops like peaches and pecans are not in the AOI but near the San Marcos and Blanco Rivers (Perez 2006). EFED reviewed the initial recommendation and directed the contractor to further investigate the need for the orchard scenario. The Agency indicated that if there is minimal acreage in the recharge zone (e.g., nurseries) that could contribute to exposures, then the scenario may be developed. Based on USGS (2003) land use data, the contractor identified one (1) orchard located in the recharge zone (Figure 15). Conversations with personnel in the City of Austin GIS department indicated the orchard is no longer active and has been rezoned for a Lowes® home center (COA, personal communication). Based on this information it was deemed that this orchard will not contribute to potential exposures in the BSS and therefore has not been developed.

Table 14. NASS 1997/2002 census of agriculture for orchard crops in Hays and Travis Counties, Texas (USDA 1997, 2002).

Crop	**HAYS**		**TRAVIS**	
	1997 Total Acres	**2002 Total Acres**	**1997 Total Acres**	**2002 Total Acres**
Land In Orchards	260	290	1394	1793
Apples	X	10	X	X
Pears, All	X	9	X	7
Apricots	X	16	X	X
Peaches, All	X	76	X	22
Plums And Prunes	X	6	X	X
Pecans	X	143	X	1720
Grapes	X	31	X	38

X = data not available, not applicable or withheld

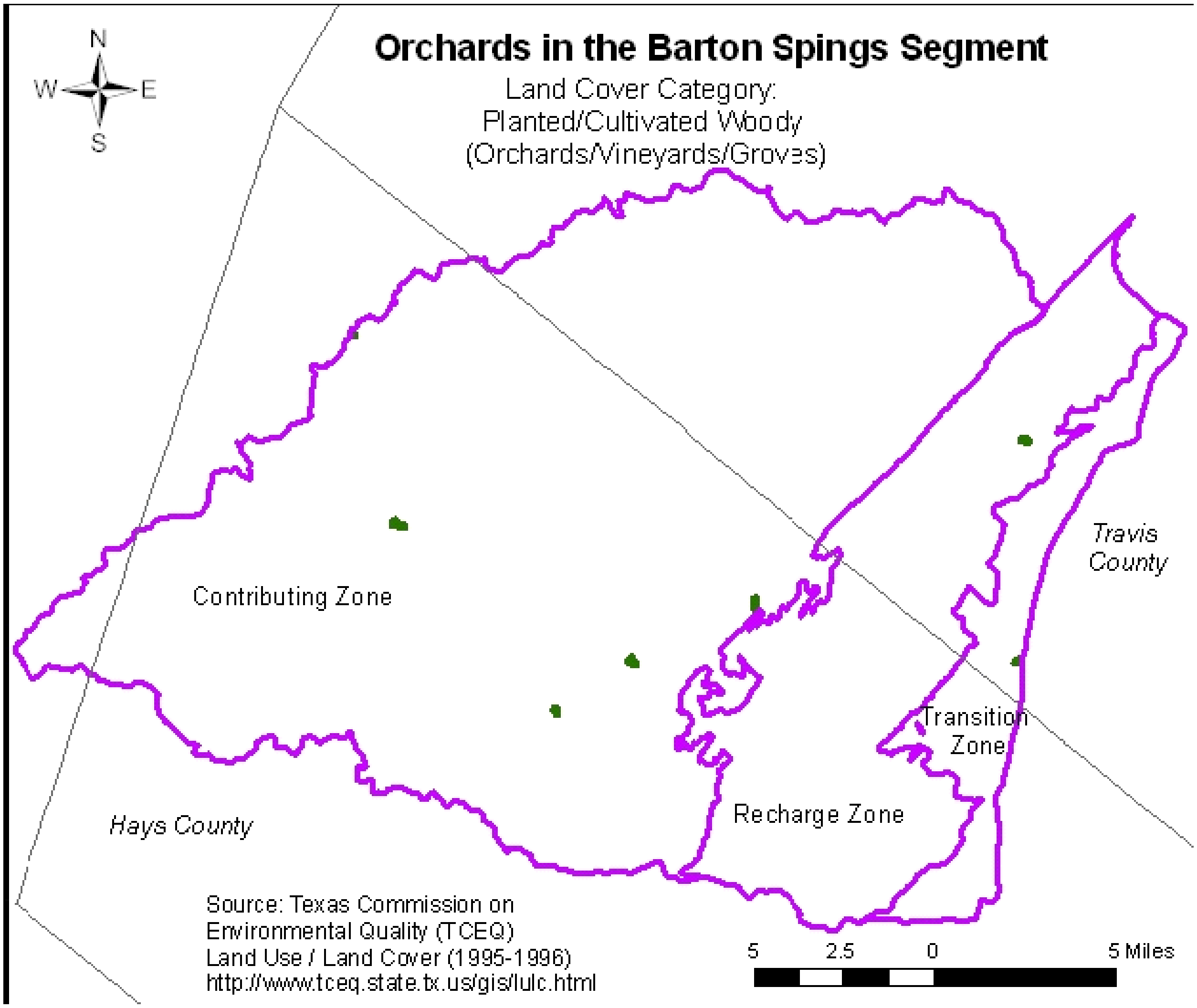

Figure 15. Location of woody planted areas in the BSS segment based on land use data. Local contacts indicated orchards are not present or not active in the BSS. See description for more information.

6. Meadow

NASS Data indicates that hay of varying types is grown extensively in Travis and Hays Counties (Table 15). According to Soil Data Mart, there are a number of soils in the BSS that are suitable for growing improved bermudagrass. In addition, extension agents indicated that some hay crops are cultivated in the BSS. There is some cultivation of sorghum hay, and hay grazer, or sweet sorghum in the BSS. There is also some bermuda grass planted but this is permanent for grazing and not harvested (Perez 2006). Most of this type of crop is for livestock grazing (Davis 2006). Based on this information, this scenario was developed.

Table 15. NASS 1997/2002 census of agriculture for hay crops in Hays and Travis Counties, Texas (USDA 1997, 2002).

	HAYS		TRAVIS	
Crop	**1997 Harvested Acres**	**2002 Harvested Acres**	**1997 Harvested Acres**	**2002 Harvested Acres**
Hay - All Hay Including Alfalfa, Other Tame, Small Grain, And Wild	X	7657	X	20471
All Haylage, Grass Silage, And Greenchop	140	229	769	357
Forage - Land Used For All Hay And All Haylage, Grass Silage, And Greenchop	X	7855	X	20367
Other Haylage, Grass Silage, And Greenchop	X	229	X	357
Other Tame Hay	8287	5358	14020	16737
Small Grain Hay	600	X	943	2219
Wild Hay	840	1228	X	1411
Alfalfa Hay	65	X	X	104

X = data not available, not applicable or withheld

7. Cotton

NASS data indicates that cotton is grown in Travis County (Table 16). According to Soil Data Mart, there are many soils in the AOI that are suitable for growing cotton. However, the extension agents from Travis and Hays Counties indicated that this crop is not grown in the AOI. All cotton is grown East of I-35 (Perez 2006 and Davis 2006). Based on the information from local extension agents, this use was deemed outside the area of interest and was not developed.

Table 16. NASS 1997/2002 census of agriculture for cotton in Hays and Travis Counties, Texas (USDA 1997, 2002).				
	HAYS		TRAVIS	
Crop	**1997 Harvested Acres**	**2002 Harvested Acres**	**1997 Harvested Acres**	**2002 Harvested Acres**
Cotton, All	X	X	5661	2151
Upland Cotton	X	X	X	2151

X = data not available, not applicable or withheld

References

City of Austin (COA). 2003. Unpublished Land Use Data. http://www.ci.austin.tx.us/landuse/. Accessed 15 February 2005.

USDA. 1997. 1997 Census of Agriculture. U.S. Department of Agriculture, National Agricultural Statistics Service. Accessed March 2006. Online at: http://www.nass.usda.gov/index.asp.

USDA. 2002. 2002 Census of Agriculture. U.S. Department of Agriculture, National Agricultural Statistics Service. Accessed March 2006. Online at: http://www.nass.usda.gov/index.asp.

USGS, National Mapping Division, Rocky Mountain Mapping Center. 2003. Edwards Aquifer Land Use / Land Cover. Denver, Colorado.

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Appendix C. USGS Monitoring Data for Barton Springs Area.

Samples were collected by USGS from the 4 springs, from surface waters in the action area (creeks) and from ground water wells in and around the action area. Samples were later measured for carbaryl. **Tables C.1, C.2, and C.3** contain detailed information of all samples collected and their measured concentrations of carbaryl in the springs, creeks and ground water wells. **Figures 10 and 11** in the risk assessment contain locations of surface water sites and ground water wells which correspond to the site nicknames cited in **Tables C.2 and C.3**, respectively.

Samples were collected from the four springs between 2000 and 2005. During August and September of 2003, samples were collected every two weeks. From Mid June to December, 2004, samples were collected every three weeks. Stormflow sampling was also conducted in 2000, 2001, 2004 and 2005.

Table C.1. USGS targeted monitoring data for Barton Springs.

pk_siteID	Site Nickname	SampleDate (year, month, date)	Symbol*	Carbaryl Conc. (ppb)	# of Samples
08155501	Eliza Spring	20000502	<	0.003	2
08155501	Eliza Spring	20010504	<	0.041	2
08155501	Eliza Spring	20010507	<	0.041	2
08155501	Eliza Spring	20010508	<	0.041	2
08155501	Eliza Spring	20010508	<	0.041	2
08155501	Eliza Spring	20010510	<	0.041	2
08155501	Eliza Spring	20010513	<	0.041	2
08155501	Eliza Spring	20030806	<	0.041	2
08155501	Eliza Spring	20030820	<	0.041	2
08155501	Eliza Spring	20030903	<	0.041	2
08155501	Eliza Spring	20030916	<	0.041	2
08155501	Eliza Spring	20030930	<	0.041	2
08155501	Eliza Spring	20040825	<	0.041	2
08155501	Eliza Spring	20041214	<	0.041	2
08155501	Eliza Spring	20050309	<	0.041	2
08155500	Main Barton Spring	20000501	<	0.003	2
08155500	Main Barton Spring	20000501	<	0.003	2
08155500	Main Barton Spring	20000501	E	0.00652	2
08155500	Main Barton Spring	20000502	E	0.00899	2
08155500	Main Barton Spring	20000502	E	0.0106	2
08155500	Main Barton Spring	20000502	E	0.0124	2
08155500	Main Barton Spring	20000503	E	0.0126	2
08155500	Main Barton Spring	20000504	E	0.00664	2
08155500	Main Barton Spring	20000508	<	0.003	2
08155500	Main Barton Spring	20000609	<	0.003	2
08155500	Main Barton Spring	20000609	<	0.003	2
08155500	Main Barton Spring	20000610	E	0.0374	2
08155500	Main Barton Spring	20000705	<	0.003	2
08155500	Main Barton Spring	20010503	<	0.041	2

Table C.1. USGS targeted monitoring data for Barton Springs.					
pk_siteID	Site Nickname	SampleDate (year, month, date)	Symbol*	Carbaryl Conc. (ppb)	# of Samples
08155500	Main Barton Spring	20010508	<	0.041	2
08155500	Main Barton Spring	20010510	<	0.041	2
08155500	Main Barton Spring	20010510	<	0.041	2
08155500	Main Barton Spring	20010513	<	0.041	2
08155500	Main Barton Spring	20010518	<	0.041	2
08155500	Main Barton Spring	20011116	<	0.041	2
08155500	Main Barton Spring	20021106	<	0.041	2
08155500	Main Barton Spring	20030220	<	0.041	2
08155500	Main Barton Spring	20030806	<	0.041	2
08155500	Main Barton Spring	20030820	<	0.041	2
08155500	Main Barton Spring	20030903	<	0.041	2
08155500	Main Barton Spring	20030916	<	0.041	2
08155500	Main Barton Spring	20030930	<	0.041	2
08155500	Main Barton Spring	20040117	<	0.041	2
08155500	Main Barton Spring	20040609	<	0.041	2
08155500	Main Barton Spring	20040621	<	0.041	2
08155500	Main Barton Spring	20040707	<	0.041	2
08155500	Main Barton Spring	20040721	<	0.041	2
08155500	Main Barton Spring	20040804	<	0.041	2
08155500	Main Barton Spring	20040825	<	0.041	2
08155500	Main Barton Spring	20040915	<	0.041	2
08155500	Main Barton Spring	20041004	<	0.041	2
08155500	Main Barton Spring	20041023	<	0.041	2
08155500	Main Barton Spring	20041023	<	0.041	2
08155500	Main Barton Spring	20041024	<	0.041	2
08155500	Main Barton Spring	20041024	<	0.041	2
08155500	Main Barton Spring	20041024	<	0.041	2
08155500	Main Barton Spring	20041025	<	0.041	2
08155500	Main Barton Spring	20041026	<	0.041	2
08155500	Main Barton Spring	20041027	<	0.041	2
08155500	Main Barton Spring	20041028	<	0.041	2
08155500	Main Barton Spring	20041030	<	0.041	2
08155500	Main Barton Spring	20041105	<	0.041	2
08155500	Main Barton Spring	20041124	<	0.041	2
08155500	Main Barton Spring	20041214	<	0.041	2
08155500	Main Barton Spring	20050103	<	0.041	2
08155500	Main Barton Spring	20050126	<	0.041	2
08155500	Main Barton Spring	20050216	<	0.041	2
08155500	Main Barton Spring	20050309	<	0.041	2
08155500	Main Barton Spring	20050330	<	0.041	2
08155500	Main Barton Spring	20050420	<	0.041	2
08155500	Main Barton Spring	20050511	<	0.041	2
08155500	Main Barton Spring	20050530	<	0.041	2
08155500	Main Barton Spring	20050530	<	0.041	2
08155500	Main Barton Spring	20050530	<	0.041	2

Table C.1. USGS targeted monitoring data for Barton Springs.

pk_siteID	Site Nickname	SampleDate (year, month, date)	Symbol*	Carbaryl Conc. (ppb)	# of Samples
08155500	Main Barton Spring	20050531	<	0.041	2
08155500	Main Barton Spring	20050601	<	0.041	2
08155500	Main Barton Spring	20050602	<	0.041	2
08155500	Main Barton Spring	20050604	<	0.041	2
08155500	Main Barton Spring	20050606	<	0.041	2
08155500	Main Barton Spring	20050609	<	0.041	2
08155503	Old Mill Spring	20010503	<	0.041	2
08155503	Old Mill Spring	20010507	<	0.041	2
08155503	Old Mill Spring	20010508	<	0.041	2
08155503	Old Mill Spring	20010513	<	0.041	2
08155503	Old Mill Spring	20030806	<	0.041	2
08155503	Old Mill Spring	20030820	<	0.041	2
08155503	Old Mill Spring	20030903	<	0.041	2
08155503	Old Mill Spring	20030916	<	0.041	2
08155503	Old Mill Spring	20030930	<	0.041	2
08155503	Old Mill Spring	20040825	<	0.041	2
08155503	Old Mill Spring	20041214	<	0.041	2
08155503	Old Mill Spring	20050309	<	0.041	2
08155395	Upper Barton Spring	20010508	E	0.0103	2
08155395	Upper Barton Spring	20010510	<	0.041	2
08155395	Upper Barton Spring	20010513	<	0.041	2
08155395	Upper Barton Spring	20020503	<	0.041	2
08155395	Upper Barton Spring	20030806	<	0.041	2
08155395	Upper Barton Spring	20030820	<	0.041	2
08155395	Upper Barton Spring	20030903	<	0.041	2
08155395	Upper Barton Spring	20030916	<	0.041	2
08155395	Upper Barton Spring	20030930	<	0.041	2
08155395	Upper Barton Spring	20040621	<	0.041	2
08155395	Upper Barton Spring	20040707	<	0.041	2
08155395	Upper Barton Spring	20040721	<	0.05	2
08155395	Upper Barton Spring	20040804	<	0.041	2
08155395	Upper Barton Spring	20040825	<	0.041	2
08155395	Upper Barton Spring	20040915	<	0.041	2
08155395	Upper Barton Spring	20041004	<	0.041	2
08155395	Upper Barton Spring	20041023	E	0.0339	2
08155395	Upper Barton Spring	20041024	<	0.041	2
08155395	Upper Barton Spring	20041024	E	0.0249	2
08155395	Upper Barton Spring	20041025	<	0.041	2
08155395	Upper Barton Spring	20041026	<	0.041	2
08155395	Upper Barton Spring	20041027	<	0.041	2
08155395	Upper Barton Spring	20041028	<	0.041	2
08155395	Upper Barton Spring	20041030	<	0.041	2
08155395	Upper Barton Spring	20041105	<	0.041	2
08155395	Upper Barton Spring	20041124	<	0.041	2
08155395	Upper Barton Spring	20041214	<	0.041	2

Table C.1. USGS targeted monitoring data for Barton Springs.					
pk_siteID	**Site Nickname**	**SampleDate (year, month, date)**	**Symbol***	**Carbaryl Conc. (ppb)**	**# of Samples**
08155395	Upper Barton Spring	20050103	<	0.041	2
08155395	Upper Barton Spring	20050126	<	0.041	2
08155395	Upper Barton Spring	20050216	<	0.041	2
08155395	Upper Barton Spring	20050309	<	0.041	2
08155395	Upper Barton Spring	20050330	<	0.041	2
08155395	Upper Barton Spring	20050420	<	0.041	2
08155395	Upper Barton Spring	20050511	<	0.041	2
08155395	Upper Barton Spring	20050530	<	0.041	2
08155395	Upper Barton Spring	20050530	E	0.0486	2
08155395	Upper Barton Spring	20050530	E	0.0657	2
08155395	Upper Barton Spring	20050531	<	0.041	2
08155395	Upper Barton Spring	20050601	<	0.041	2
08155395	Upper Barton Spring	20050602	<	0.041	2
08155395	Upper Barton Spring	20050604	<	0.041	2
08155395	Upper Barton Spring	20050606	<	0.041	2
08155395	Upper Barton Spring	20050609	<	0.041	2
* E means estimated; < means less than the reported amount (non-detection)					

Table C.2. USGS monitoring data for creeks in and near action area.					
pk_siteID	**Site Nickname**	**SampleDate (year, month, date)**	**Symbol***	**Carbaryl Conc. (ppb)**	**# of Samples**
08155200	Barton 71	20030909	<	0.041	2
08155200	Barton 71	20040229	E	0.0917	2
08155200	**Barton 71 ****	20020630	E	0.23	2
08155200	**Barton 71 ****	20020716	<	0.041	2
08155200	**Barton 71 ****	20021019	E	0.0158	2
08155200	**Barton 71 ****	20021209	<	0.041	2
08155200	**Barton 71 ****	20040406	E	0.192	2
08155200	**Barton 71 ****	20041023	<	0.041	2
08155400	Barton Above	20000502	E	0.302	2
08155400	Barton Above	20010503	<	0.041	2
08155400	Barton Above	20010506	E	0.0618	2
08155400	Barton Above	20010507	<	0.041	2
08155400	Barton Above	20010507	<	0.041	2
08155400	Barton Above	20010508	<	0.041	2
08155400	Barton Above	20010510	<	0.041	2
08155400	Barton Above	20021209	E	0.0043	2
08155400	**Barton Above ****	20020630	E	0.144	2
08155400	**Barton Above ****	20021019	E	0.0083	2
08155400	**Barton Above ****	20040117	<	0.041	2
08155400	**Barton Above ****	20040407	<	0.041	2
08155400	**Barton Above ****	20041023	E	0.0629	2
08158819	**Bear nr Brodie ****	20041023	<	0.041	2

Table C.2. USGS monitoring data for creeks in and near action area.					
pk_siteID	**Site Nickname**	**SampleDate (year, month, date)**	**Symbol***	**Carbaryl Conc. (ppb)**	**# of Samples**
08158700	Onion at Driftwood	20030909	<	0.041	2
08158700	Onion at Driftwood	20040721	<	0.041	2
08158700	Onion at Driftwood	20041110	<	0.041	2
08158700	Onion at Driftwood	20050311	<	0.041	2
08158700	**Onion at Driftwood ** **	20041023	<	0.041	2
08158827	Onion at Twin Cks	20041026	<	0.041	2
08158827	**Onion at Twin Cks ** **	20041023	<	0.041	2
08158827	**Onion at Twin Cks ** **	20050529	E	0.0929	2
08158860	**Slaughter at 2304 ** **	20041023	E	0.108	2
08158860	**Slaughter at 2304 ** **	20050529	E	0.228	2
08158860	**Slaughter at 2304 ** **	20050530	E	0.301	2
08158920	Williamson at Oak Hill	20040721	<	0.041	2
08158920	Williamson at Oak Hill	20041110	<	0.041	2
08158920	Williamson at Oak Hill	20050311	<	0.041	2
08158930	Williamson Manchaca	20000501	E	0.472	2
08158930	Williamson Manchaca	20031117	E	0.0418	2
08158930	Williamson Manchaca	20040429	E	0.0882	2
08158930	**Williamson Manchaca ** **	20020319	E	0.094	2
08158930	**Williamson Manchaca ** **	20020616	E	0.0483	2
08158930	**Williamson Manchaca ** **	20021008	E	0.0333	2
08158930	**Williamson Manchaca ** **	20030220	E	0.146	2
08158930	**Williamson Manchaca ** **	20041023	E	0.0628	2
08158930	**Williamson Manchaca ** **	20050529	E	0.085	2
* E means estimated; < means less than the reported amount (non-detection) ** Flow weighted storm composite samples					

Table C.3. USGS monitoring data for ground water wells in and near action area.				
pk_siteID	**Site Nickname**	**SampleDate (year, month, date)**	**Carbaryl Conc. of Sample 1 (ppb)***	**Carbaryl Conc. of Sample 2 (ppb)***
300646097533202	LR-58-57-311 (BDW)	20010605	< .0284	< .041
300646097533202	LR-58-57-311 (BDW)	20020605	< .0284	< .041
300646097533202	LR-58-57-311 (BDW)	20030520	< .0284	< .041
300646097533202	LR-58-57-311 (BDW)	20040713	< .0284	< .041
300646097533202	LR-58-57-311 (BDW)	20050524	< .018	< .041
300453097503301	LR-58-58-403 (BPS)	20010612	< .0284	< .041
300453097503301	LR-58-58-403 (BPS)	20020606	< .0284	< .041
300453097503301	LR-58-58-403 (BPS)	20030522	< .0284	< .041
300453097503301	LR-58-58-403 (BPS)	20040716	< .0284	< .041
300453097503301	LR-58-58-403 (BPS)	20050524	< .018	< .041
302554097494701	YD-58-34-414	20010621	< .0284	E .008
302554097494701	YD-58-34-414	20020520	< .0284	< .041
302554097494701	YD-58-34-414	20030513	< .0284	< .041

Table C.3. USGS monitoring data for ground water wells in and near action area.				
pk_siteID	**Site Nickname**	**SampleDate (year, month, date)**	**Carbaryl Conc. of Sample 1 (ppb)***	**Carbaryl Conc. of Sample 2 (ppb)***
302554097494701	YD-58-34-414	20040706	< .0284	< .041
302554097494701	YD-58-34-414	20050527	< .018	< .041
302551097465501	YD-58-34-617	20010621	< .0284	< .041
302551097465501	YD-58-34-617	20020516	< .0284	< .041
302551097465501	YD-58-34-617	20030515	< .0284	< .041
302551097465501	YD-58-34-617	20040706	< .0284	< .041
302551097465501	YD-58-34-617	20050616	--	< .041
302316097430401	YD-58-35-701	20010604	< .0284	< .041
302218097454901	YD-58-42-311	20020522	< .0284	< .041
302218097454901	YD-58-42-311	20030516	< .0284	< .041
302218097454901	YD-58-42-311	20040707	< .0284	< .041
302218097454901	YD-58-42-311	20050613	--	< .041
301526097463201	YD-58-42-915 (RAB)	20010607	< .0284	< .041
301526097463201	YD-58-42-915 (RAB)	20020603	< .0284	< .041
301526097463201	YD-58-42-915 (RAB)	20030530	< .0284	< .041
301526097463201	YD-58-42-915 (RAB)	20040707	< .0284	< .041
301526097463201	YD-58-42-915 (RAB)	20050523	< .018	< .041
302146097445101	YD-58-43-103	20010619	< .0284	< .041
301423097495901	YD-58-50-211 (SVW)	20010606	< .0284	< .041
301423097495901	YD-58-50-211 (SVW)	20020603	< .0284	< .041
301423097495901	YD-58-50-211 (SVW)	20030519	< .0284	< .041
301423097495901	YD-58-50-211 (SVW)	20040708	< .0284	< .041
301423097495901	YD-58-50-211 (SVW)	20050523	< .018	< .082
301339097483701	YD-58-50-215 (SVS)	20010618	< .0284	< .041
301339097483701	YD-58-50-215 (SVS)	20020606	< .0284	< .041
301339097483701	YD-58-50-215 (SVS)	20030519	< .0284	< .041
301339097483701	YD-58-50-215 (SVS)	20040716	< .0284	< .041
301339097483701	YD-58-50-215 (SVS)	20050525	< .018	< .041
301356097473301	YD-58-50-216 (SVE)	20010614	< .0284	< .041
301356097473301	YD-58-50-216 (SVE)	20020807	< .0284	< .041
301356097473301	YD-58-50-216 (SVE)	20030528	< .0284	< .041
301356097473301	YD-58-50-216 (SVE)	20040715	< .0284	< .041
301356097473301	YD-58-50-216 (SVE)	20050615	< .018	< .041
301432097480001	YD-58-50-217 (SVN)	20010615	< .0284	< .041
301432097480001	YD-58-50-217 (SVN)	20020807	< .0284	< .041
301432097480001	YD-58-50-217 (SVN)	20030528	< .0284	< .041
301432097480001	YD-58-50-217 (SVN)	20040715	< .0284	< .041
301432097480001	YD-58-50-217 (SVN)	20050614	< .018	< .041
301031097515801	YD-58-50-408 (FOW)	20010619	< .0284	< .041
301031097515801	YD-58-50-408 (FOW)	20020605	< .0284	< .041
301031097515801	YD-58-50-408 (FOW)	20030521	< .0284	< .041
301031097515801	YD-58-50-408 (FOW)	20040709	< .0284	< .041
301031097515801	YD-58-50-408 (FOW)	20050526	--	< .041
301142097504701	YD-58-50-417 (FON)	20010622	< .0284	< .041

Table C.3. USGS monitoring data for ground water wells in and near action area.				
pk_siteID	**Site Nickname**	**SampleDate (year, month, date)**	**Carbaryl Conc. of Sample 1 (ppb)***	**Carbaryl Conc. of Sample 2 (ppb)***
301142097504701	YD-58-50-417 (FON)	20020604	< .0284	< .041
301142097504701	YD-58-50-417 (FON)	20030728	< .0284	< .041
301142097504701	YD-58-50-417 (FON)	20040708	< .0284	< .041
301142097504701	YD-58-50-417 (FON)	20050526	--	< .041
301226097480701	YD-58-50-520 (PLS)	20010608	< .0284	< .041
301226097480701	YD-58-50-520 (PLS)	20020523	< .0284	< .041
301226097480701	YD-58-50-520 (PLS)	20030521	< .0284	< .041
301226097480701	YD-58-50-520 (PLS)	20040721	< .0284	< .041
301226097480701	YD-58-50-520 (PLS)	20050527	< .018	< .041
300813097512101	YD-58-50-704 (MCH)	20010620	< .0284	< .041
300813097512101	YD-58-50-704 (MCH)	20020604	< .0284	< .041
300813097512101	YD-58-50-704 (MCH)	20030520	< .0284	< .041
300813097512101	YD-58-50-704 (MCH)	20040712	< .0284	< .041
300813097512101	YD-58-50-704 (MCH)	20050525	--	< .041
* E means estimated; < means less than the reported amount (non-detection)				

Appendix D. Status and Life History of the Barton Springs Salamander.

D.1 Species Listing Status

The Barton Springs salamander was federally listed as an endangered species on May 30, 1997 (62 FR 23377-23392) by the U.S. Fish and Wildlife Service (USFWS or the Service) based on the following threats:

(1) degradation of the water quality in Barton Springs as a result of urban expansion,
(2) decreased quantity of water that feeds Barton Springs as a result of urban expansion,
(3) modification of the salamander's structural habitat,
(4) inadequacy of existing regulatory mechanisms to protect the salamander and lack of a comprehensive plan to protect the Barton Springs watershed from increasing threats to water quality and quantity, and
(5) the salamander's extreme vulnerability to environmental degradation because of its restricted range in an entirely aquatic environment.

USFWS is the branch of the Department of Interior responsible for listing endangered amphibians, such as the Barton Springs salamander. The extent to which any these threats is considered to predominate is unknown and presumably their cumulative effect may be of primary concern.

D.2 Description and Taxonomy

The Barton Springs salamander (Figure D.1) is a member of the Family Plethodontidae (lungless salamanders). Texas species within the genus *Eurycea* inhabit springs, spring-runs, and water-bearing karst formations of the Edwards Aquifer (Chippindale, 1993). These salamanders are aquatic and neotenic, meaning they retain a larval, gill-breathing morphology throughout their lives. Neotenic salamanders, including the Barton Springs salamander, do not metamorphose into a terrestrial form. Rather, they live their entire life cycle in water, where they become sexually mature and eventually reproduce.

Figure D.1. Barton Springs Salamander
(courtesy of Lisa O'Donnell; City of Austin Watershed Protection and Development Review Department)

The Barton Springs salamander was first collected from Barton Springs in 1946 (Brown, 1950; Texas Natural History Collection specimens 6317-6321). Adults grow to approximately 2.5 to 3 inches (63-76 mm) in total length. Adult body morphology includes reduced eyes and elongate, spindly limbs indicative of a semi-subterranean lifestyle. The head is relatively broad and deep in lateral view, and the snout appears somewhat truncate when viewed from above. Three bright red, feathery gills are present on either side of the base of the head. The coloration on the salamander's upper body varies from light to dark brown, purple, reddish brown, yellowish cream, or orange. The characteristic mottled salt-and-pepper color pattern on the upper body surface is due to brown or black melanophores (cells containing pigments called melanin) and silvery-white iridiophores (cells containing pigments containing guanine). The arrangement of these pigment cells is highly variable and can be widely dispersed in some Barton Springs salamanders, causing them to have an overall pale appearance. In other individuals, the melanophores may be dense, resulting in a dark brown appearance. The ventral side (underside) of the body is cream-colored and translucent, allowing some internal organs and developing eggs in females to be visible. The tail is relatively short with a well-developed dorsal (upper) fin and poorly developed ventral (lower) fin. The upper and lower mid-lines of the tail usually exhibit some degree of orange-yellow pigmentation. Juveniles closely resemble adults (Chippindale *et al.*, 1993). Newly hatched larvae are about 0.5 inches (12 mm) in total length and may lack fully developed limbs or pigment (Chamberlain and O'Donnell, 2003).

D.3 Population Status and Distribution

The Barton Spring salamander has been found only at the four spring outlets that make up Barton Springs complex (Figure D.2). This species is considered to have one of the smallest geographical ranges of any vertebrate species in North America (Chippindale *et al.*, 1993; Conant and Collins, 1998).

The salamander was first observed in Barton Springs Pool and Eliza Springs in the 1940s, Sunken Garden Springs in 1993 (Chippindale *et al.*, 1993), and the intermittent Upper Barton Springs in 1997 (City of Austin, 1998).

The extent of the Barton Spring salamander's range within the Barton Springs Segment of the Edwards Aquifer, and the degree of subsurface connection among these spring populations is unknown. However, observations of salamanders actively swimming into high flow areas from the spring openings, including Main Springs in Barton Springs Pool (USFWS, 2005), and the discovery of a more cave-adapted species (Austin blind salamander, *Eurycea waterlooensis*), suggest that the Barton Springs salamander is not entirely subterranean (triglobotic). The Barton Springs salamander appears to reproduce primarily in subterranean areas (*i.e.,* within the aquifer). Although salamander larvae are present in surface water year-round, very few eggs have been observed on the surface (Chamberlain and O'Donnell, 2003).

D.3.1 Survey Results

The City of Austin initiated salamander surveys in (1) Barton Springs Pool in 1993, (2) Old Mill Springs and Eliza Springs in 1995, and (3) Upper Barton Springs in 1997 (City of Austin, 1998, City of Austin, 1993-2003, unpublished data). Due to the inaccessibility of the aquifer and spring orifices, survey counts reflect the number of individuals observed in the spring pools and spring runs rather than total population census estimates (City of Austin, 2005a). Survey methods have varied to some degree, mainly in Barton Springs Pool, where the survey area gradually shifted from transects to the immediate area around the spring outlets where salamanders are most abundant (USFWS, 2005).

The results of the adult and juvenile salamander survey data are depicted in Figures D.3 and D.4, respectively. From 1997 to 2005 (years in which there are survey data for all four springs), the mean number of adult salamanders observed per year at all four springs combined ranged between 5 and 80. Further examination of the data shows a marked increase in the number of observed adults and juveniles in Eliza Spring, relative to the other springs, from mid-2003 to 2005. From 1997 until 2003, the largest mean number of adult and juvenile salamanders (15 and 14, respectively) were observed in Barton Springs Pool, followed by Old Mill Spring (13 and 8, respectively). However, in 2004 and 2005, the largest average number of adult and juvenile salamanders were observed in Eliza Springs (252 and 91, respectively), followed by Barton Springs Pool (35 and 21, respectively).

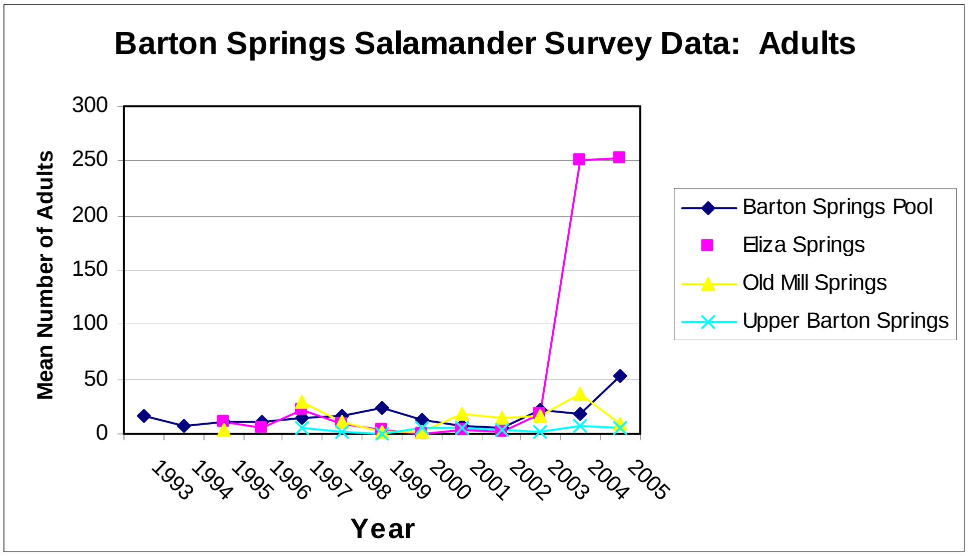

Figure D.3. Barton Springs Salamander Survey Data: Adults

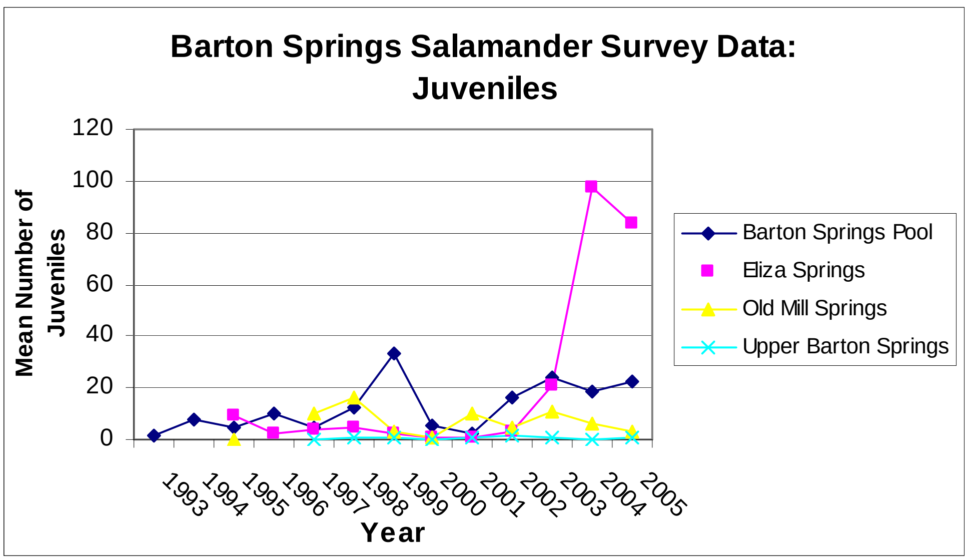

Figure D.4. Barton Springs Salamander Survey Data: Juveniles

Increased numbers of observed adult and juvenile salamanders in Eliza Springs from 2003 to 2005 are believed to be due to habitat restoration efforts, initiated in Eliza Springs by the City of Austin biologists in the fall of 2002 (City of Austin, 2003). Following habitat restoration, observed numbers of salamanders began to increase in July 2003. The habitat restoration efforts at Eliza Springs included removal of debris from the drainage infrastructure to increase flow across the bottom of the spring pool and allow for more natural flushing and draining of the spring ecosystem. Removal of fine sediment exposed a layer of gravel and cobble that had previously been obscured, making it available as habitat for the salamanders. Several species of native aquatic plants, including water primrose (*Ludwegia* sp.), rush (*Eleocharis* sp.), and water hyssop (*Bacopa* sp.) were also successfully transplanted from Barton Creek into Eliza Springs to serve as cover and promote invertebrate prey species. In addition, mosquitofish and crayfish, predators to the salamander, were removed from Eliza Springs. The net impact of the restoration efforts at Eliza Springs was the following: (1) to increase lateral water flow across the spring pool, thus reducing the amount of sediment and increasing the amount of loose rock substrate (habitat) available for the salamander and its forage base; and (2) to decrease the number of predators and other species that compete for available food. As a result of these efforts, mean numbers of adults and juveniles collected from Eliza Springs during 2004 increased by approximately 13-fold and 5-fold, respectively, as compared to total numbers collected during 2003. With the exception of an increase in the number of juvenile salamanders in Eliza Spring over the past two years, there does not appear to be any clear pattern in the number of young salamanders recorded by year or month over the past decade of survey results.

The majority of salamanders in Barton Springs Pool are found primarily in the immediate area of the spring outlets (USFWS, 2005). They have also been found to a lesser extent in the "beach" area, which includes an underwater concrete bench immediately adjacent to a pedestrian sidewalk on the north side of Barton Springs Pool. Salamanders are rarely seen in the deep end of the pool, which is often covered by sediment, or in the shallow end, which is almost entirely limestone and/or concrete, and thus not considered suitable habitat. Based on observations of salamanders in water depths ranging from <1 inch to >15 feet, it appears that water depth is not a determining factor in habitat selection. Although Barton Springs salamanders do not appear to have an obvious depth preference, constant water flow, stable temperatures, and rock substrates free of sediment are needed for suitable habitat. The survey area in Barton Springs Pool has gradually shifted from transects that included the beach and the deep end, to the intermediate area around the spring outlets where salamanders appear to be most abundant. Based on the comprehensive surveys conducted by the City of Austin and the Service, the number of estimated salamanders inhabiting the surface habitat in Barton Springs Pool may be negatively biased, with actual expected numbers of individuals that are three to five times greater than the number of individuals counted during the regular monthly surveys (City of Austin, 1998).

The Barton Springs Salamander Recovery Plan (USFWS, 2005) notes that numbers of salamanders at Old Mill Springs appear to be related to flow patterns and the presence of predatory fish. For example, a decrease in salamander numbers observed during the winter of 2002-2003 may have been due to the presence of Mexican tetras (*Asyanax mexicanus*), a non-native predatory fish (City of Austin, 2003). Review of the survey data also indicates a drop in numbers in Old Mill Springs in 2000, which is believed to be due to reduced water flow within the spring. According the City of Austin (2003), flow was extremely low in 2000; in fact, much of Old Mill Springs was dry in the spring/summer of 2000.

In 1997, biologists from the City of Austin and the USFWS discovered 14 adult salamanders at Upper Barton Springs, which flows intermittently. The number of salamanders found at this site in subsequent surveys has ranged from 0 to 14 (City of Austin, unpublished data). Given that salamanders are absent when this spring is dry, survey data indicate that salamander numbers are directly affected by surface flow. However, some monthly surveys at Upper Barton Springs have not found salamanders, even during periods when the spring was flowing (USFWS, 2005).

D.4 Habitat

All available information indicates that the Barton Springs salamander is restricted to the immediate vicinity of the four spring outlets of Barton Springs. Because the Barton Springs segment of the Edwards Aquifer and its contributing zone supply all of the water in the springs that make up the Barton Springs complex, the salamander may be affected by changes in water quality and quantity occurring in the Barton Springs watershed[2].

"Surface" habitat for the Barton Springs salamander refers to the spring pools and spring runs where the salamander is observed, as opposed to its potential subsurface aquifer habitat. The Barton Springs salamander experiences relatively stable aquatic environmental conditions. These conditions consist of perennially flowing spring water that is generally clear, has a neutral pH (~7), and cool average annual temperatures of 21 to 22 ºC (~70-72 ºF) (USFWS, 2005). As is typical of ground water dominated systems, the springs exhibit a narrow temperature range (stenothermal). Flows of clean spring water with a relatively constant, cool temperature are essential to maintaining well-oxygenated water necessary for salamander respiration and survival (USFWS, 2005). Dissolved oxygen (DO) concentrations in Barton Springs average approximately 6 mg/L (USFWS, 2005) and are directly related to springflow. Higher DO concentrations occur during periods of high spring discharge (USFWS, 2005).

The subterranean component of the Barton Springs salamander's habitat may provide a location for reproduction, serve as refugium during high flow events or high sediment loads from surface sources in the surface habitat, and/or provide a migration pathway between the surface habitat areas (USFWS, 2005).

Based on the survey results, Barton Springs salamanders appear to prefer clean, loose substrate for cover. They are found primarily under boulder, cobble, and gravel substrates, but may also be found in the vicinity of aquatic plants, leaf litter, and woody debris (USFWS, 2005). In the main pool, City of Austin surveys indicate that salamanders are found primarily near the spring outlets. To a lesser extent, Barton Springs salamanders are also found in aquatic moss (*Amblystegium riparium*) that grows on bare rocks and on the walls surrounding Barton Springs Pool, Eliza Springs, and Old Mill Springs (City of Austin, 2003).

Historical records indicate a diversity of macrophytes once resided in Barton Springs Pool, including arrowhead (*Sagittaria platyphylla*), water primrose (*Ludwigia* spp.), wild celery (*Vallisneria americana*), cabomba (*Cabomba caroliniana*), water stargrass (*Heteranthera sp.*), southern naiad (*Najas guadalupensis*), and pondweed (*Potamogeton* sp.) (Alan Plummer Associates Inc., 2000 in USFWS, 2005). In 1992, the dominant aquatic plant in the pool was the moss (*A. riparium*), an aquatic bryophyte ubiquitous in Central Texas springs. In addition to providing cover, moss and other aquatic plants harbor a variety and abundance of the aquatic invertebrates that salamanders eat.

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[2] The "Barton Springs watershed" includes the contributing zone and recharge zone of the Barton Springs segment of Edwards Aquifer.

During the 1980s and 1990s, the majority of aquatic macrophytes disappeared from the Barton Springs Pool (USFWS, 2005), leaving primarily unvegetated limestone substrate and sediment as habitat. The disappearance of the aquatic macrophytes in the deep end of the pool appears to have resulted from the combined effects of flooding, dredging, and the mechanical dragging of the deep end with chains for sediment removal (USFWS, 2005). However, it is unclear how these activities and the related disappearance of aquatic macrophytes in Barton Springs Pool may have affected the salamander numbers because they pre-dated the survey efforts, which were initiated in 1993.

In addition to restoration efforts for Eliza Springs (previously discussed in Section D.3.1), efforts to reintroduce endemic plant species in Barton Springs Pool were initiated by the City of Austin in 1993. At that time, aquatic vegetation in Barton Springs Pool was limited to two small patches of *Potamogeton*, one patch of *Sagittaria* in the far deep end of the pool, and areas of *Amblystegium* near the discharge points. *Sagittaria*, *Ludwigia*, and *Cabomba* have been introduced into Barton Springs Pool in June 1993 and again in the fall of 1994. It is not possible to gauge the effect of these activities on salamander numbers because there were no historical survey data. Aquatic macrophytes currently found in Barton Springs Pool are limited to *Sagittaria*. *Amblystegium* is also common on limestone surfaces in the general vicinity of the main springs and various side springs.

Salamanders are most frequently found around the main spring outflows, hidden within a 2-8 cm (0.8 – 3.1 inches) deep zone of gravel and small rocks overlying a coarse sandy or bare limestone substrate (USFWS, 2005). These areas are visibly clear of fine silt or decomposed organic debris and appear to be kept clean by flowing spring water during medium to high aquifer levels. Abundant prey species for the salamander also inhabit these areas. Piles of woody debris in the vicinity of the main springs provide habitat for the salamander, as well as its prey base, after floods, when normal habitat may be covered with sediment. Suitable habitat can increase or decrease depending on a number of factors including springflows, abundance of aquatic macrophytes, sedimentation rates, and frequency of floods.

In addition, pool cleanings may affect the salamander and its habitat. During the cleanings, full drawdowns of the pool (removal of 4-5 feet of water) are limited to four times/year, when spring discharge exceeds 53 cfs (cubic feet/second) and Barton Creek floods. For the past two years, the water level has been partially lowered (by 18-24”) once per month when the flow exceeds 53 cfs. During this time, biologists clean sediment and debris from salamander habitat with garden hoses. Salamander habitat in Barton Springs Pool that is exposed during full drawdowns includes the area of fissures on the bedrock above the main spring outlets. The main spring outlets, which are located 10-16 feet below the top of the bedrock fissures, are not exposed during drawdowns as spring water continues to flow.

When discharge from Barton Springs Pool is lower than 54 cfs, the water level in Eliza Springs has the potential to drop below the surface substrate during a full drawdown. This is partially due to the presence of a concrete slab at the bottom of Eliza Springs, beneath the gravel and cobble. Flowing spring water into Eliza Springs must have adequate pressure to discharge through holes in the concrete bottom. When discharge is low and Barton Springs Pool is drawn down, the water level in Eliza Springs drops to below the surface substrate and salamanders are stranded at the surface. The habitat beneath this concrete slab is dark and sediment laden, and thus considered as poor habitat. In general, the water level in Old Mill Springs does not drop below the surface substrate when the Pool is drawn down, unless there is very low discharge from the aquifer.

D.5 Life History and Ecology

Information on the life history and ecology of the Barton Springs salamander, including diet, respiration, reproduction, longevity, diseases, and predators is provided in Sections D.5.1 through D.5.6.

D.5.1 Diet

Barton Springs salamanders appear to be opportunistic predators of small, live aquatic invertebrates (USFWS, 2005). Chippindale *et al.* (1993) found amphipod remains in the stomachs of wild-caught salamanders. The gastro-intestinal tracts of 18 adult and juvenile Barton Springs salamanders and fecal pellets from 11 adult salamanders collected from Eliza Springs, Barton Springs Pool, and Sunken Garden Springs contained ostracods, copepods, chironomids, snails, amphipods, mayfly larvae, leeches, and adult riffle beetles. The most prevalent organisms found in these samples were ostracods, amphipods, and chironomids (USFWS, 2005). The types of invertebrates found in the pools at Barton Springs are documented in the City of Austin's Habitat Conservation Plan (1998).

D.5.2 Respiration

Primary respiration in neotenic salamanders is through the gills; however, a substantial amount of gas exchange occurs through the skin (Boutilier et al. 1992; Hillman and Withers 1979). They require moving water across their gills and bodies for respiration. Metabolic rates and oxygen consumption are highest in juveniles and decrease with increasing body size (Norris et al., 1963). Oxygenation of salamander eggs is critical to embryonic development since gas exchange and waste elimination occur through semipermeable membranes surrounding the embryo (Duellman and Trueb 1986).

D.5.3 Reproduction

Little is known about the reproductive biology of the Barton Springs salamander in the wild. The ability to view Barton Springs salamanders in their natural environment is limited because of the animal's propensity to inhabit interstitial spaces under rocks and subterranean environments. Therefore, information regarding the reproductive biology of the Barton Springs salamander is based primarily on captive breeding populations maintained by the City of Austin, and extrapolations from closely related species. Although some aspects of the reproductive biology may be affected by the artificial environment in which they are maintained, information collected on the captive breeding population represents the best available information. When field data are available, the differences and similarities between the wild and captive populations are compared.

Barton Springs salamanders are not sexually dimorphic; however, gravid females can sometimes be distinguished by the presence of eggs which are visible through the translucent skin of the underside. Recent studies with captive individuals indicate that salamander eggs are 1.5 to 2.0 mm (0.06 to 0.08 inches) in diameter when they are laid. Young larvae develop and hatch in approximately 16 to 39 days (USFWS, 2005). Captive raised female salamanders have developed eggs within 11 to 17 months after hatching. One male also displayed courtship behavior (tail undulation) at one year from hatching (Chamberlain and O'Donnell, 2003). At sexual maturity, salamanders are generally at least 50 mm in total length (Chamberlain and O'Donnell, 2003). No clear pattern of reproductive activity has been recorded in the field or in the laboratory. It appears that salamanders can reproduce year-round, based on observations of gravid females, eggs, and larvae throughout the year in Barton Springs (USFWS, 2005). No relationship between breeding activity and environmental factors has been established to date.

The captive breeding program has observed clutch sizes ranging from 5 to 39 eggs, with an average of 22 eggs based on 32 clutches; individual captive females have produced up to 6 clutches per year (Chamberlain and O'Donnell, 2003). Of the 34 egg-laying events at the Dallas Aquarium, clutch size ranged from 10 to 55 (Lynn Ables, Dallas Aquarium, pers. comm., 2000). Females may lay all or only a few of their eggs, and in some cases, females may reabsorb their unlaid eggs within a few weeks after egg-laying (Chamberlain and O'Donnell, 2003). Currently, specific cues and/or environmental factors associated with clutch size and timing of courtship and reproduction have not been identified (USFWS, 2005).

Data regarding development and hatching of eggs are based almost exclusively on observations of the captive populations. In spite of relatively intensive survey efforts, only four eggs have been located in the wild. In four separate instances, a single egg was found near a spring orifice (USFWS, 2005). These observations combined with the visibility of the eggs to predators due to their lack of pigment (eggs are white) suggest the eggs are laid in the subterranean portion of the salamander's habitat. Eggs are laid singly and receive no parental care (USFWS, 2005). Hatching of eggs in captivity has occurred within 16 to 39 days after eggs have been laid (Chamberlain and O'Donnell, 2003). Hatching success of a clutch is variable (10 - 100%), with means ranging from 26 to 57 percent (Chamberlain and O'Donnell, 2003). Based on information summarized in USFWS (2005), egg mortality in captivity has been attributed to (1) fungus (Chamberlain and O'Donnell, 2002 and 2003), (2) hydra (small invertebrates with stinging tentacles) (Lynn Ables, Dallas Aquarium, pers. comm., 2000), and (3) other factors, including infertility (Chamberlain and O'Donnell, 2003). Environmental conditions, water quality, adequate space, habitat heterogeneity, and food availability may also influence egg laying (Chamberlain and O'Donnell, 2003).

At hatch, juveniles measure 13 mm in total length (snout to tip of tail). After 4 months, juveniles ranged in total length from 13 to 38 mm (Chamberlain and O'Donnell, 2003). Growth rates in the wild, based on a limited mark-recapture dataset of 11 Barton Springs salamanders, ranged from 0.14 to 0.50 mm per day over a 30- to 57-day period (City of Austin, unpublished data). The available data suggest that Barton Springs salamanders could potentially reach full maturity within six months from hatching, although the sample size upon which these data are based is limited and additional research is warranted.

City of Austin biologists have generally found the first three months following hatching to be a critical period for juvenile survival (Chamberlain and O'Donnell, 2003). Of the 285 eggs laid in one breeding study, only 12 (4%) survived the first three months (Chamberlain and O'Donnell, 2003). Newly hatched larvae have sufficient yolk to sustain their nutritional needs for several days after hatch. Larvae feeding on prey items have been observed 11 to 15 days after hatching (Lynn Ables, Dallas Aquarium, pers. comm., 1999).

D.5.4 Longevity

The longevity of the Barton Springs salamander in the wild is unknown; however, salamanders in captivity have survived to at least 12 years (USFWS, 2005).

D.5.5 Diseases

A limited number of physiological infections have been reported in the wild for the Barton Springs salamanders. Adult Barton Springs salamanders have been infected with trematodes (*Clinostomum* sp.) that invaded tissue near the salamander's vent (Chamberlain and O'Donnell, 2002).

D.5.6 Predators

Predation on adult Barton Springs salamanders in the wild is expected to be minimal when adequate cover is available (USFWS, 2005). Most of the potential predators native to the Barton Springs ecosystem are opportunistic feeders, and predation is unlikely unless the salamanders become exposed. Crayfish (*Procambarus clarkii*) and other large predatory invertebrates may prey on salamanders or on their larvae and eggs (Gamradt and Kats, 1996). Crayfish have been reported to be extremely abundant at times, with an apparent "crayfish bloom" occurring in the spring of 1995, when thousands of crayfish were found throughout the pool (USFWS, 2006). Predatory fish found at Barton Springs include mosquitofish (*Gambusia affiinis*), longear sunfish (*Lepomis megalotis*), and largemouth bass (*Micropterus salmoides*). Mosquitofish have been known to prey on frog and salamander larvae in areas where the fish have been introduced (Gamradt and Kats, 1996; Goodsell and Kats, 1999; Lawler et al., 1999). Longear sunfish are known to prey on aquatic vertebrates, and largemouth bass are opportunistic predators that feed primarily on smaller fishes and crayfish. Mexican tetras are non-native fish and aggressive generalist predators that are occasionally found in Barton Creek, Barton Springs Pool, Upper Barton Springs, and Sunken Garden Springs (USFWS, 2005). In addition, green-throat darters (*Etheostoma lepidum*) have been known to prey upon small juvenile salamanders when no cover is available.

D.6 References

Alan Plummer Associates, Inc. 2000. Barton Springs Pool Preliminary Algae Control Plan for the City of Austin.

Arnold, S. 1977. The evolution of courtship behavior in New World salamanders with some comments on Old World salamandrids. Pages 141-183 *in* D. Taylor and S. Guttman, editors. The Reproductive Biology of Amphibians. Plenum Press. New York, New York.

Boutilier, R.G., Stiffler, D.F., and D.P. Toews. 1992. Exchange of respiratory gases, ions, and water in amphibious and aquatic amphibians. Pages 81-124 *in* Feder, M.E. and W.W. Burggren, editors. Environmental Physiology of the Amphibians. The University of Chicago Press, Chicago, Illinois.

Brown, B.C. 1950. An annotated checklist of the reptiles and amphibians of Texas. Baylor University Press, Waco, Texas.

Brune, G. 1981. Springs of Texas, Volume I. Branch-Smith, Inc., Fort Worth, Texas.

Chamberlain, D.A. and L. O'Donnell. 2002. City of Austin's captive breeding program for the Barton Springs and Austin blind salamanders (January 1 – December 31, 2001). City of Austin Watershed Protection and Development Review Department annual permit (PRT-839031) report.

Chamberlain, D.A. and L. O'Donnell. 2003. City of Austin's captive breeding program for the Barton Springs and Austin blind salamanders (January 1 – December 31, 2002). City of Austin Watershed Protection and Development Review Department annual permit (PRT-839031) report.

Chippindale, P.T. 1993. Evolution, phylogeny, biogeography, and taxonomy of Central Texas spring and cave salamanders, *Eurycea* and *Typhlomolge* (Plethodontidae: Hemidactyliini). Dissertation, University of Texas at Austin, Austin, Texas.

Chippindale, P.T., A.H. Price, and D.M. Hillis. 1993. A new species of perennibranchiate salamander (*Eurycea*: Plethodontidae) from Austin, Texas. Herpetologica 49:248-259.

City of Austin. 1997. The Barton Creek report. Water Quality Report Series COA-ERM/1997. Austin, Texas.

City of Austin. 1998. Final environmental assessment/habitat conservation plan for issuance of a section 10(a)(1)(B) permit for incidental take of the Barton Springs salamander (*Eurycea sosorum*) for the operation and maintenance of Barton Springs Pool and adjacent springs. Austin, Texas.

City of Austin. 2001. Jollyville Plateau water quality and salamander assessment. Water Quality Report Series COA-ERM 1999-01. Austin, Texas.

City of Austin. 2003. The operation and maintenance of Barton Springs Pool and adjacent springs (January 1 – December 31, 2002). City of Austin Watershed Protection and Development Review Department annual permit (PRT -839031) report.

City of Austin. 2005a. Update of Barton Springs water quality data analysis. Austin, Texas.

Contant, R. and J.T. Collins. 1998. A field guide to reptiles and amphibians of eastern and central North America. Third edition expanded. Houghton Miffin Company, New York, New York.

Duellman, W. and L. Treub. 1986. Biology of Amphibians. McGraw-Hill Book Company, New York, New York.

Gamradt, S.C. and L. B. Kats. 1996. Effect of introduced crayfish and mosquitofish on California newts. Conservation Biology 10:1155-1162.

Goodsell, J.A. and L.B. Kats. 1999. Effect of introduced mosquitofish on Pacific treefrogs and the role of alternative prey. Conservation Biology 13:921-924.

Hillman, S.S. and P.C. Withers. 1979. An analysis of respiratory surface area as a limit to activity metabolism in amphibians. Canadian Journal of Zoology. 57:2100-2105.

Houck, L.D., S.J. Arnold, and R.A. Thisted. 1985a. A statistical study of mate choice: sexual selection in a plethodontid salamander (*Desmognathus ochrophaeus*). Evolution 39:370-386.

Houck, L.D., S. Tilley, and S.J. Arnold. 1985b. Sperm competition in a plethodontid salamander: preliminary results. Journal of Herpetology 19:420-423.

Lawler, S.P., D. Dritz, T. Strange, and M. Holyoak. 1999. Effects of introduced mosquitofish and bullfrogs on the threatened California red-legged frog. Conservation Biology 13:613-622.

Norris, W.E., P.A. Grandy, and W.K. Davis. 1963. Comparative studies of the oxygen consumption of three species of neotenic salamanders as influenced by temperature, body size, and oxygen tension. Biological Bulletin 125:523-533.

Pipkin, T. and M. Frech, editors. 1993. Barton Springs eternal. Softshoe Publishing, Austin, Texas.

Sweet, S. 1978. The evolutionary development of the Texas *Eurycea* (Amphibia: Plethodonitidae). Dissertation, University of California, Berkeley, California.

U.S. Fish and Wildlife Service (USFWS). 2005. Barton Springs Salamander (*Eurycea sosorum*) Recovery Plan. Southwest Region, USFWS, Albuquerque, New Mexico.

Appendix E. Stepwise Modeling Approach for the Barton Springs Salamander Endangered Species Assessment for Carbaryl.

1. Modify the PE4v01.pl shell to indicate daily time series (TSER) instead of the standard cumulative (TCUM) output in Record 40 of przm3.inp files.

2. Remove irrigation parameters from the TX_BSSTurf, TX_BSSNursury, and TX_BSSResidential scenarios by setting the IRFLAG input in Record 20 to “0”.

3. Use the modified PE4 shell to run the TX_BSSTurf, TX_BSSNursury, TX_BSSOrchard, and TX_BSSRange scenarios with their respective maximum use pattern. Use the modified PE4 shell to run both the TX_BSSImpervious and the TX_BSSResidential scenarios for each of the maximum home lawn and flower bed use patterns.

4. Open the *.zts files with Microsoft Office Excel, fixing each column width to capture the appropriate data (allow eight character spaces beyond the decimal). Save the result as a Microsoft Office Excel Workbook (*.xls).

5. On a separate worksheet, list the values (expressed in hectares) for area of contributing and recharge zones (see cells B5 to B6 in **Figure E1**).

6. List the values (expressed in hectares) for area of each use scenario in the contributing zone and sum the values (see cells H2 to H8 and H10 in **Figure E1**).

7. List the values (expressed in hectares) for area of each use scenario in the recharge zone and sum the values (see cells N2 to N8 and N10 in **Figure E1**).

8. Calculate (imbedded in cell) the values (expressed in hectares) for non-cropped area in each zone (see cells B9 to B10 in **Figure E1**; formula *e.g.* B10=B6-N10).

9. Insert the value (expressed in µg/L) for the peak monitored base flow concentration (see cell B12 in **Figure E1**).

10. Insert the value for fraction of stream flow attributed to base flow (see cell B13 in **Figure E1**).

11. Copy the pesticide mass flux in runoff (RFLX; expressed as 10^{-5} g/cm^2 or kg/ha) outputs for each PE4 run from the respective *.xls files converted from *.zts and paste them on the worksheet (see columns F, I, L, O, R, U, X, AA, and AD in **Figures E1 and E2**).

12. Copy the runoff flux (RUNF; expressed as cm) outputs for each PE4 run from the respective *.xls files converted from *.zts and paste them on the worksheet (see columns E, H, K, N, Q, T, W, Z, and AC in **Figures E1 and E2**).

13. Calculate daily residue mass in runoff (µg) from nursery, orchard, vineyard, pasture, and park use areas in the contributing zone (CZ) in separate columns, one for each use (see columns AF to AJ in **Figure E2**) using the formula:

$$\text{Daily Mass in Runoff (µg)} = \text{RFLX (kg/ha)} \times \text{Use Area (ha)} \times 10^9 \text{ µg/kg}$$

(*e.g.* AF25=F25*$H$2*1000000000)

14. Calculate daily residue mass in runoff (µg) from residential areas in the contributing zone (CZ) assuming that 70% of residential areas are lawns (*i.e.*, use areas) (see column AK in **Figure E2**) using the formula:

$$\text{Daily Mass in Runoff (µg)} = \text{RFLX (kg/ha)} \times 70\% \times \text{Use Area (ha)} \times 10^9 \text{ µg/kg}$$

(*e.g.* AK25=U25*0.7*$H$7*1000000000)

15. Calculate daily residue mass in runoff (µg) from commercial areas in the contributing zone (CZ) assuming that 4.4% of commercial areas are flower beds (*i.e.*, use areas) (see column AL in **Figure E2**) using the formula:

$$\text{Daily Mass in Runoff (µg)} = \text{RFLX (kg/ha)} \times 4.4\% \times \text{Use Area (ha)} \times 10^9 \text{ µg/kg}$$

(*e.g.* AL25=AA25*0.044*$H$8*1000000000)

16. Calculate daily runoff mass (µg) from each use area in the recharge zone (RZ) in separate columns, one for each use (see columns AO to AU in **Figure E2**) using the three formulas in steps 13-15 above (first formula *e.g.* AO25=F25*$N$2*1000000000).

17. Calculate mass totals (µg) for each aquifer zone in separate columns (see columns AM and AV in **Figures E2 and E3**; formula *e.g.* AM25=SUM(AF25:AL25)).

18. Calculate daily runoff (L) from each use and non-use area in the CZ in separate columns, one for each PE4 run (see columns AX to BG in **Figure E3**) using the formula:

$$\text{Daily Runoff (L)} = \text{RUNF (cm)} \times \text{Use/Non-use Area (ha)} \times 10^8 \text{ cm}^2\text{/ha} \times 10^{-3} \text{ L/cm}^3$$

(*e.g.* AX25=E25*$H$2*100000000/1000)

19. Calculate daily runoff (L) from each use and non-use area in the RZ in separate columns, one for each PE4 run (see columns BJ to BS in **Figures E3 to E4**) using the formula above (formula *e.g.* BS25=N25*$B$10*100000000/1000).

20. Calculate runoff totals (L) for each aquifer zone in separate columns (see columns BH and BT in **Figures E3 and E4**; formula *e.g.* BH25=SUM(AX25:BG25)).

21. In order to estimate base stream flow in the contributing zone:

a. Calculate the sum of total runoff (L) in the CZ (see cell T3 in **Figure E1**; formula *e.g.* T3=SUM($BH$17:$BH$10973)).
b. Calculate the number of days modeled (see cell T4 in **Figure E1**; formula *e.g.* T4=COUNT($C$17:$C$10973)).
c. Calculate the average daily flow in runoff (L/d) from the contributing zone (see cell T5 in **Figure E1**; formula *e.g.* T5=T3/T4).
d. Calculate base stream flow (L/d) (see cell T6 in **Figure E1**) using the formula:

Base Stream Flow (L/d) = Base Stream Fraction x Mean CZ Runoff Flow (L/d) / CZ Runoff Fraction

[*e.g.* T6=$B$13*T5/(1-$B$13)]

22. Calculate daily runoff EECs (µg/L) for each aquifer zone in separate columns (see columns BV and CA in **Figure E4**) using the formula:

Daily Runoff EEC (µg/L) = Daily Total Mass in Zone Runoff (µg) / Daily Zone Runoff (L)

[*e.g.* CA25=IF(BT25=0, 0,AV25/BT25)]

23. Calculate the total daily CZ stream flow (L) in a separate column by summing the total daily runoff in the CZ (L) and the base stream flow (L) (see column BW in **Figure E4**; formula *e.g.* BW25 =$T$6+BH25).

24. Calculate the daily stream flow fraction from runoff (Stream Dilution Factor) in a separate column (see column BX in **Figure E4**; formula *e.g.* BX25=BH25/BW25).

25. Calculate daily stream EECs (µg/L) in the contributing zone (see column BY in **Figure E4**) using the formula:

Daily CZ Stream EEC (µg/L) = [Stream Dilution Factor x CZ Runoff EEC (µg/L)] + [Base Flow Dilution Factor x Mean Base Flow Concentration (µg/L)]

[*e.g.* BY25=BX25*BV25+(1-BX25)*$B$12]

26. Calculate the total daily flow into the Barton Springs (L) by summing the total daily CZ stream flow (L) and the total RZ runoff (L) (see column CC in **Figure E4**; formula *e.g.* CC25=BW25+BT25).

27. Calculate the fraction of flow in the Barton Springs from RZ runoff (RZ Flow Fraction; see column CD in **Figure E4**; formula *e.g.* CD25=BT25/CC25).

28. Calculate the fraction of flow in the Barton Springs from CZ stream flow (CZ Stream Flow Fraction; see column CE in **Figure E4**; formula *e.g.* CE25 =BW25/CC25).

29. Calculate daily EECs (µg/L) in the Barton Springs (see column CF in **Figure E4**) using the formula:

Daily Barton Springs EEC (µg/L) = [RZ Flow Fraction x Daily RZ Runoff EEC (µg/L)] + [CZ Stream Flow Fraction x Daily CZ Stream EEC (µg/L)]

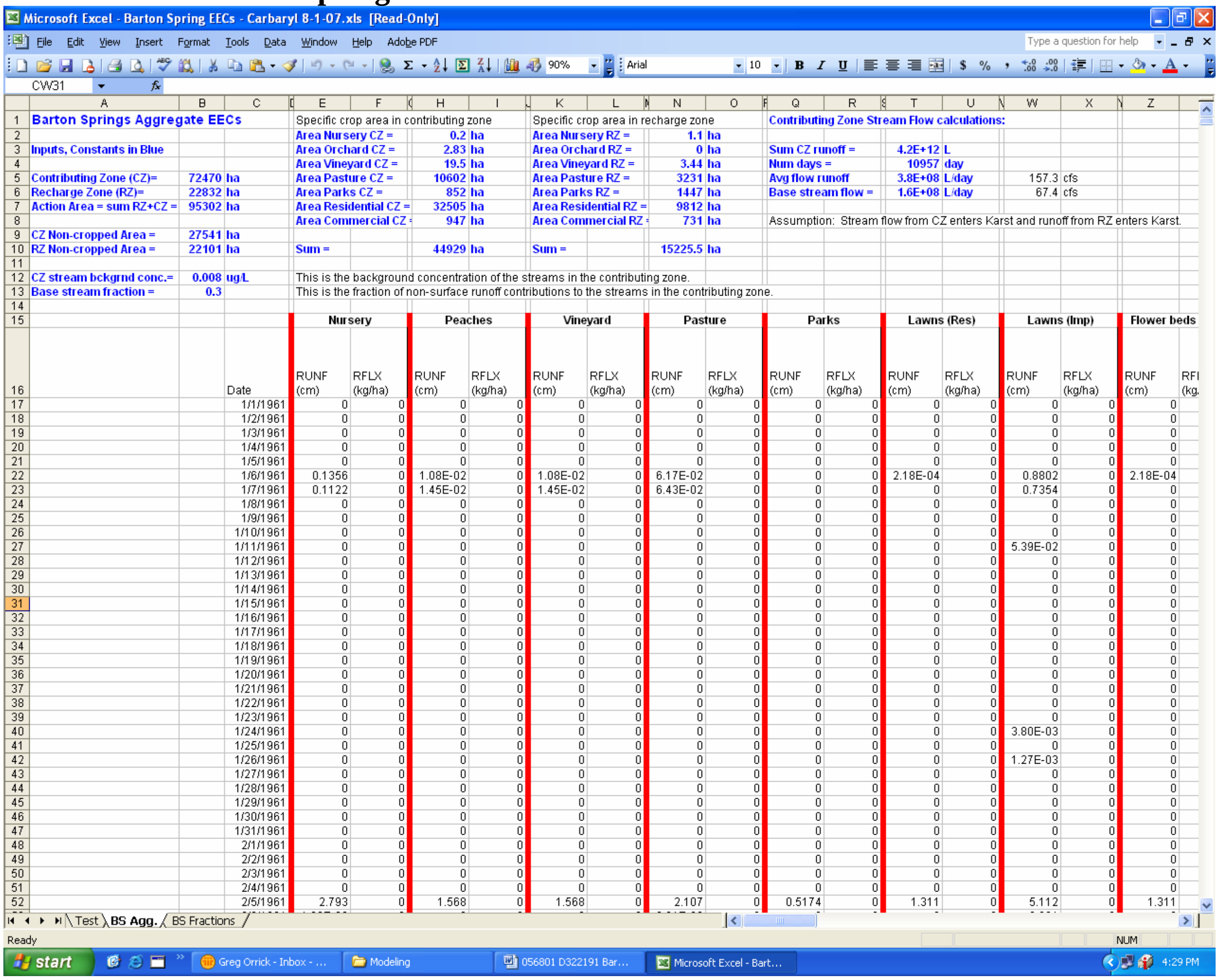
(*e.g.* CF25=CD25*CA25+CE25*BY25)

30. Calculate rolling time weighted averages for the appropriate durations including 14-day, 21-day (see columns CH and CI in **Figure E4**), 30-day, 60-day, and 90-day (see columns CJ, CK, and CL in **Figure E5**) durations. Time weighted averages are calculated using the daily values from half of the duration preceding the day of interest and half of the duration after the day of interest. For example, the 14-day average on January 14 is calculated by averaging the daily values from January 8 to January 21. This calculation is repeated for each day and for each duration for the entire 30 years of daily values.

31. List the peak EEC and rolling 14-day, 21-day, 30-day, 60-day, and 90-day average EEC for each year between 1961 and 1990 [see columns CO to CT in **Figure E5**; formula *e.g.* CO25 =MAX(CF2939:CF3303)].

32. Calculate the 1-in-10-year return frequency for each duration [see row 49, CO to CT in **Figure E5**; formula *e.g.* CO49=PERCENTILE(CO17:CO46,0.9)].

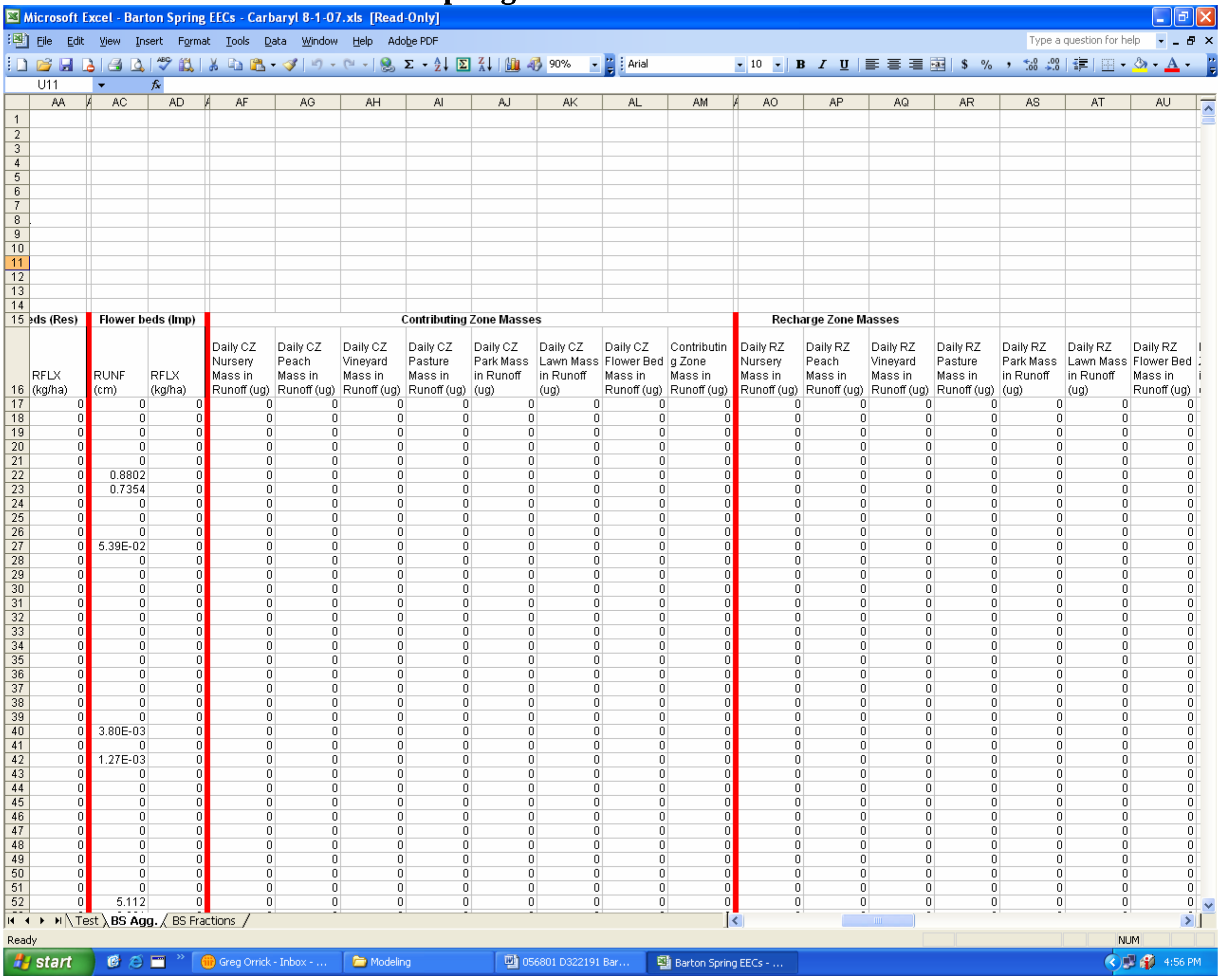
Figure E1. Screen Shot of Columns A to Z of an Example Excel Worksheet for Estimate Calculation in Barton Springs.



	A	B	C	E	H	I	K	N	O	Q	T	U	W	X
1	Barton Springs Aggregate EECs			Specific crop area in contributing zone			Specific crop area in recharge zone			Contributing Zone Stream Flow calculations:				
2				Area Nursery CZ =	0.2	ha	Area Nursery RZ =	1.1	ha					
3	Inputs, Constants in Blue			Area Orchard CZ =	2.83	ha	Area Orchard RZ =	0	ha	Sum CZ runoff =	4.2E+12	L		
4				Area Vineyard CZ =	19.5	ha	Area Vineyard RZ =	3.44	ha	Num days =	10957	day		
5	Contributing Zone (CZ)=	72470	ha	Area Pasture CZ =	10602	ha	Area Pasture RZ =	3231	ha	Avg flow runoff	3.8E+08	L/day	157.3	cfs
6	Recharge Zone (RZ)=	22832	ha	Area Parks CZ =	852	ha	Area Parks RZ =	1447	ha	Base stream flow =	1.6E+08	L/day	67.4	cfs
7	Action Area = sum RZ+CZ =	95302	ha	Area Residential CZ =	32505	ha	Area Residential RZ =	9812	ha					
8				Area Commercial CZ =	947	ha	Area Commercial RZ =	731	ha	Assumption: Stream flow from CZ enters Karst and runoff from RZ enters Karst.				
9	CZ Non-cropped Area =	27541	ha											
10	RZ Non-cropped Area =	22101	ha	Sum =	44929	ha	Sum =	15225.5	ha					
11														
12	CZ stream bckgrnd conc.=	0.008	ug/L	This is the background concentration of the streams in the contributing zone.										
13	Base stream fraction =	0.3		This is the fraction of non-surface runoff contributions to the streams in the contributing zone.										
14														

15		Nursery		Peaches		Vineyard		Pasture		Parks		Lawns (Res)		Lawns (Imp)		Flower beds
16	Date	RUNF (cm)	RFLX (kg/ha)	RUNF (cm)	RFLX (kg/ha)	RUNF (cm)	RFLX (kg/ha)	RUNF (cm)	RFLX (kg/ha)	RUNF (cm)	RFLX (kg/ha)	RUNF (cm)	RFLX (kg/ha)	RUNF (cm)	RFLX (kg/ha)	RUNF (cm)
17	1/1/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	1/2/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	1/3/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	1/4/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1/5/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	1/6/1961	0.1356	0	1.08E-02	0	1.08E-02	0	6.17E-02	0	0	0	2.18E-04	0	0.8802	0	2.18E-04
23	1/7/1961	0.1122	0	1.45E-02	0	1.45E-02	0	6.43E-02	0	0	0	0	0	0.7354	0	0
24	1/8/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	1/9/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	1/10/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	1/11/1961	0	0	0	0	0	0	0	0	0	0	0	0	5.39E-02	0	0
28	1/12/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	1/13/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	1/14/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	1/15/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	1/16/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	1/17/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	1/18/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	1/19/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	1/20/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	1/21/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	1/22/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	1/23/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	1/24/1961	0	0	0	0	0	0	0	0	0	0	0	0	3.80E-03	0	0
41	1/25/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	1/26/1961	0	0	0	0	0	0	0	0	0	0	0	0	1.27E-03	0	0
43	1/27/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	1/28/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	1/29/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	1/30/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	1/31/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	2/1/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	2/2/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	2/3/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	2/4/1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	2/5/1961	2.793	0	1.568	0	1.568	0	2.107	0	0.5174	0	1.311	0	5.112	0	1.311

Figure E2. Screen Shot of Columns AA to AU of an Example Excel Worksheet for Estimate Calculation in Barton Springs.

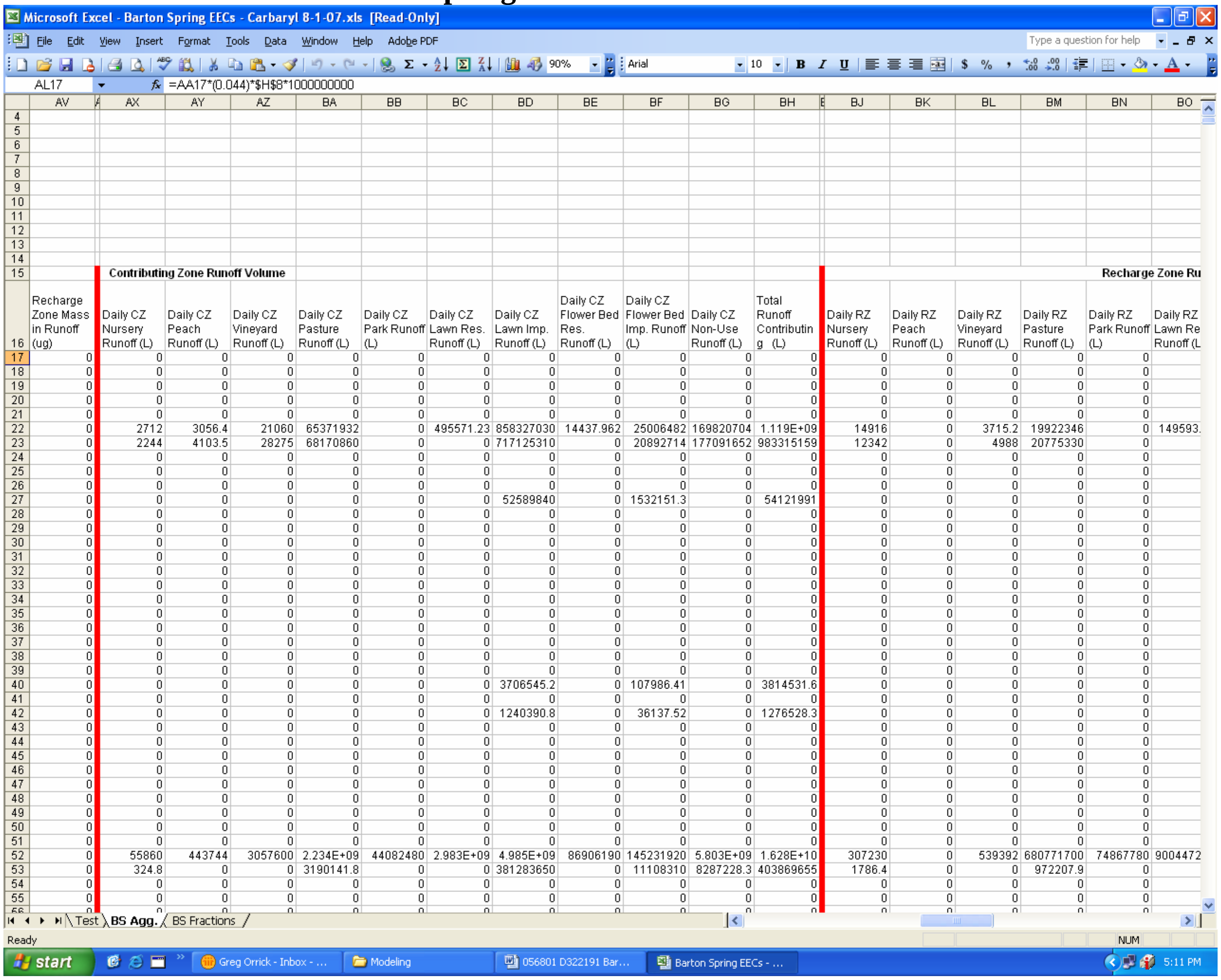


Microsoft Excel - Barton Spring EECs - Carbaryl 8-1-07.xls [Read-Only]

	AA	AC	AD	AF	AG	AH	AI	AJ	AK	AL	AM	AO	AP	AQ	AR	AS	AT	AU
15	eds (Res)	Flower beds (Imp)		Contributing Zone Masses								Recharge Zone Masses						
16	RFLX (kg/ha)	RUNF (cm)	RFLX (kg/ha)	Daily CZ Nursery Mass in Runoff (ug)	Daily CZ Peach Mass in Runoff (ug)	Daily CZ Vineyard Mass in Runoff (ug)	Daily CZ Pasture Mass in Runoff (ug)	Daily CZ Park Mass in Runoff (ug)	Daily CZ Lawn Mass in Runoff (ug)	Daily CZ Flower Bed Mass in Runoff (ug)	Contributing Zone Mass in Runoff (ug)	Daily RZ Nursery Mass in Runoff (ug)	Daily RZ Peach Mass in Runoff (ug)	Daily RZ Vineyard Mass in Runoff (ug)	Daily RZ Pasture Mass in Runoff (ug)	Daily RZ Park Mass in Runoff (ug)	Daily RZ Lawn Mass in Runoff (ug)	Daily RZ Flower Bed Mass in Runoff (ug)
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0.8802	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0.7354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	5.39E-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	3.80E-03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	1.27E-03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	0	5.112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

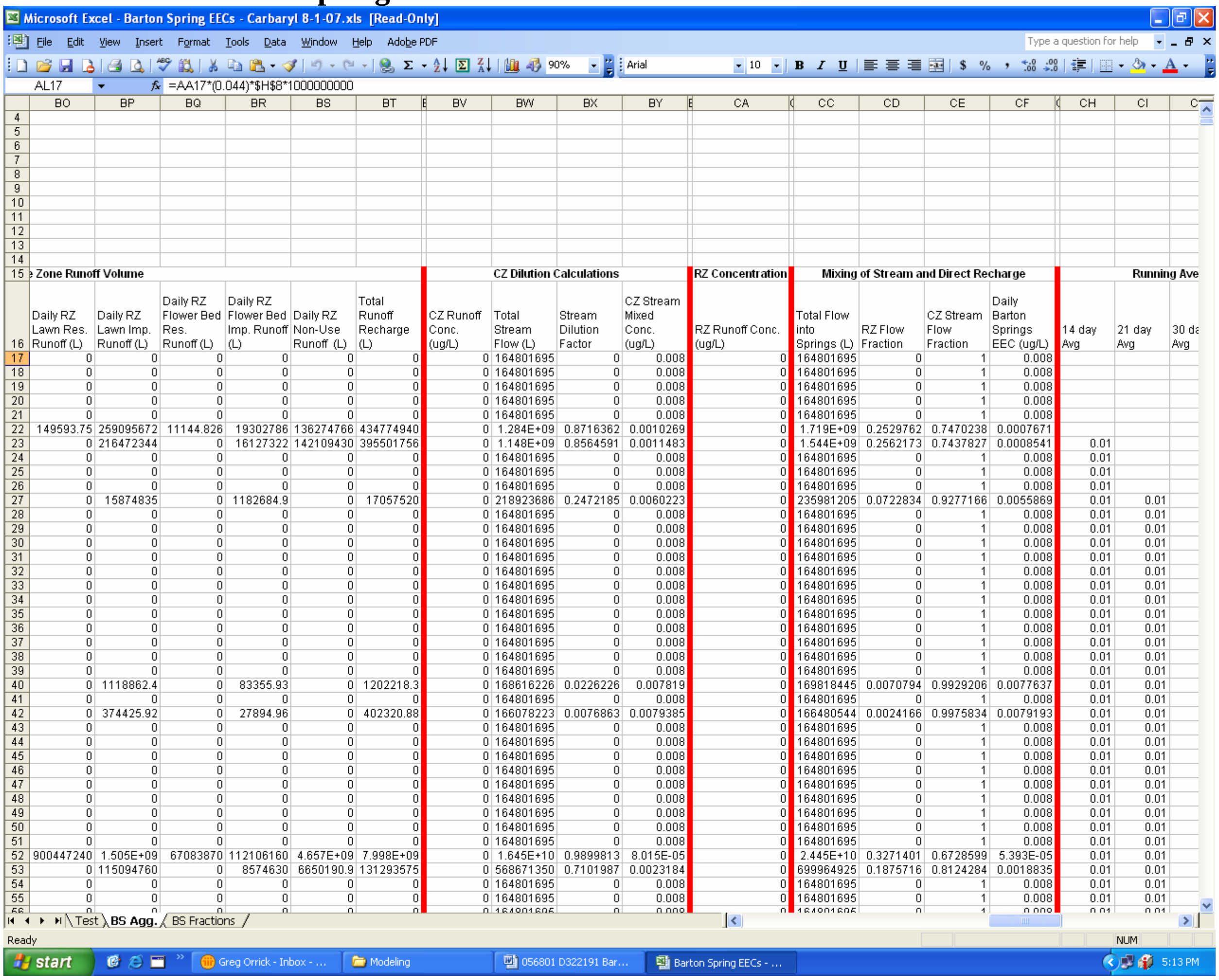
Test | BS Agg. | BS Fractions

Figure E3. Screen Shot of Columns AV to BN of an Example Excel Worksheet for Estimate Calculation in Barton Springs.



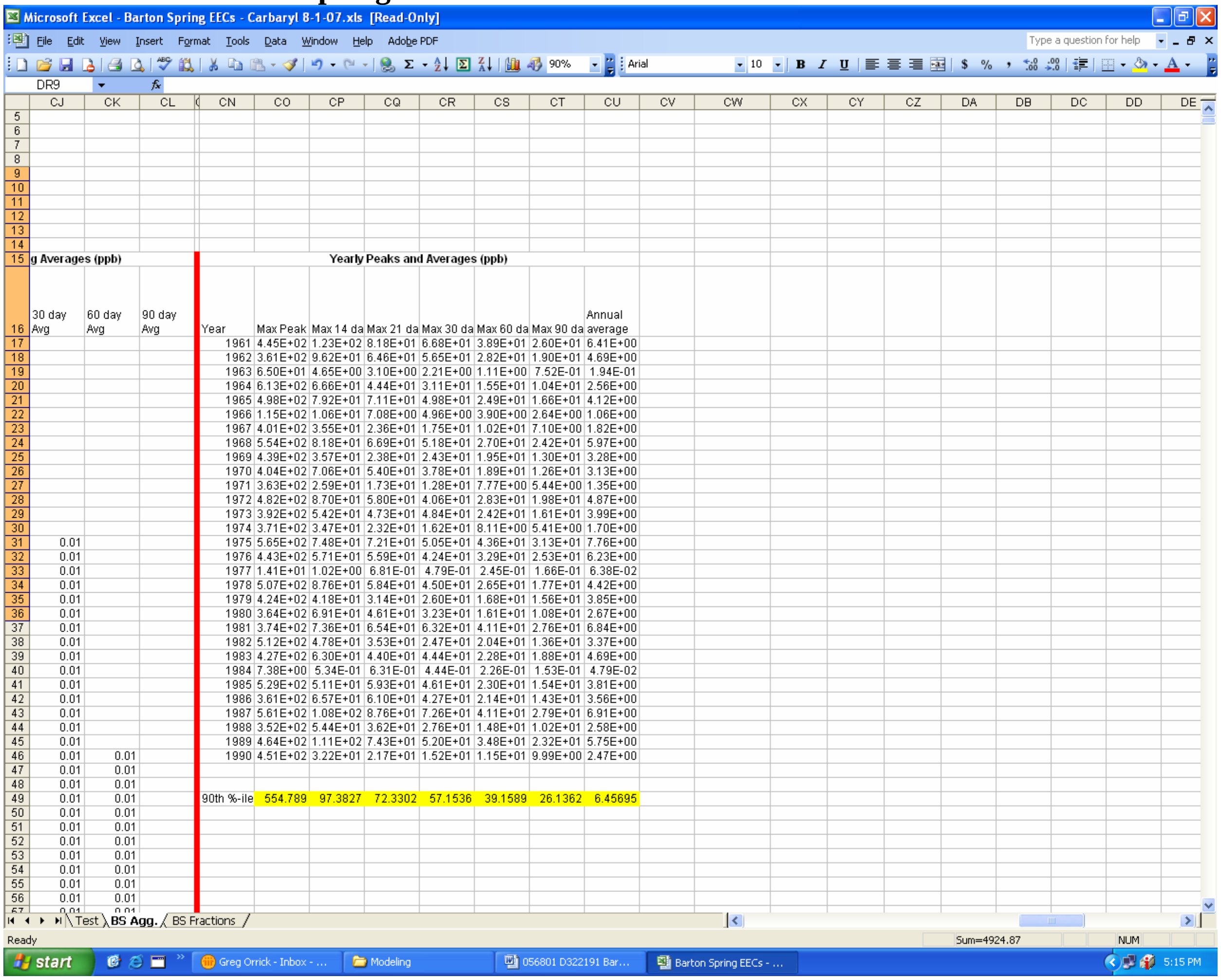
	AV	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BJ	BK	BL	BM	BN	BO
15		Contributing Zone Runoff Volume															Recharge Zone Ru	
16	Recharge Zone Mass in Runoff (ug)	Daily CZ Nursery Runoff (L)	Daily CZ Peach Runoff (L)	Daily CZ Vineyard Runoff (L)	Daily CZ Pasture Runoff (L)	Daily CZ Park Runoff (L)	Daily CZ Lawn Res. Runoff (L)	Daily CZ Lawn Imp. Runoff (L)	Daily CZ Flower Bed Res. Runoff (L)	Daily CZ Flower Bed Imp. Runoff (L)	Daily CZ Non-Use Runoff (L)	Total Runoff Contributing (L)	Daily RZ Nursery Runoff (L)	Daily RZ Peach Runoff (L)	Daily RZ Vineyard Runoff (L)	Daily RZ Pasture Runoff (L)	Daily RZ Park Runoff (L)	Daily RZ Lawn Re Runoff (L
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22	0	2712	3056.4	21060	65371932	0	495571.23	858327030	14437.962	25006482	169820704	1.119E+09	14916	0	3715.2	19922346	0	149593.
23	0	2244	4103.5	28275	68170860	0	0	717125310	0	20892714	177091652	983315159	12342	0	4988	20775330	0	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	52589840	0	1532151.3	0	54121991	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
40	0	0	0	0	0	0	0	3706545.2	0	107986.41	0	3814531.6	0	0	0	0	0	
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
42	0	0	0	0	0	0	0	1240390.8	0	36137.52	0	1276528.3	0	0	0	0	0	
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
52	0	55860	443744	3057600	2.234E+09	44082480	2.983E+09	4.985E+09	86906190	145231920	5.803E+09	1.628E+10	307230	0	539392	680771700	74867780	9004472
53	0	324.8	0	0	3190141.8	0	0	381283650	0	11108310	8287228.3	403869655	1786.4	0	0	972207.9	0	
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Figure E4. Screen Shot of Columns BO to CI of an Example Excel Worksheet for Estimate Calculation in Barton Springs.



	BO	BP	BQ	BR	BS	BT	BV	BW	BX	BY	CA	CC	CD	CE	CF	CH	CI	C
15	e Zone Runoff Volume							CZ Dilution Calculations			RZ Concentration	Mixing of Stream and Direct Recharge					Running Ave	
16	Daily RZ Lawn Res. Runoff (L)	Daily RZ Lawn Imp. Runoff (L)	Daily RZ Flower Bed Res. Runoff (L)	Daily RZ Flower Bed Imp. Runoff (L)	Daily RZ Non-Use Runoff (L)	Total Runoff Recharge (L)	CZ Runoff Conc. (ug/L)	Total Stream Flow (L)	Stream Dilution Factor	CZ Stream Mixed Conc. (ug/L)	RZ Runoff Conc. (ug/L)	Total Flow into Springs (L)	RZ Flow Fraction	CZ Stream Flow Fraction	Daily Barton Springs EEC (ug/L)	14 day Avg	21 day Avg	30 da Avg
17	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008			
18	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008			
19	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008			
20	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008			
21	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008			
22	149593.75	259095672	11144.826	19302786	136274766	434774940	0	1.284E+09	0.8716362	0.0010269	0	1.719E+09	0.2529762	0.7470238	0.0007671			
23	0	216472344	0	16127322	142109430	395501756	0	1.148E+09	0.8564591	0.0011483	0	1.544E+09	0.2562173	0.7437827	0.0008541	0.01		
24	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01		
25	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01		
26	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01		
27	0	15874835	0	1182684.9	0	17057520	0	218923686	0.2472185	0.0060223	0	235981205	0.0722834	0.9277166	0.0055869	0.01	0.01	
28	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
29	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
30	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
31	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
32	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
33	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
34	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
35	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
36	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
37	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
38	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
39	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
40	0	1118862.4	0	83355.93	0	1202218.3	0	168616226	0.0226226	0.007819	0	169818445	0.0070794	0.9929206	0.0077637	0.01	0.01	
41	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
42	0	374425.92	0	27894.96	0	402320.88	0	166078223	0.0076863	0.0079385	0	166480544	0.0024166	0.9975834	0.0079193	0.01	0.01	
43	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
44	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
45	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
46	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
47	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
48	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
49	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
50	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
51	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
52	900447240	1.505E+09	67083870	112106160	4.657E+09	7.998E+09	0	1.645E+10	0.9899813	8.015E-05	0	2.445E+10	0.3271401	0.6728599	5.393E-05	0.01	0.01	
53	0	115094760	0	8574630	6650190.9	131293575	0	568671350	0.7101987	0.0023184	0	699964925	0.1875716	0.8124284	0.0018835	0.01	0.01	
54	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	
55	0	0	0	0	0	0	0	164801695	0	0.008	0	164801695	0	1	0.008	0.01	0.01	

Figure E5. Screen Shot of Columns CJ to DD of an Example Excel Worksheet for Estimate Calculation in Barton Springs.



Row	CJ	CK	CL	CN	CO	CP	CQ	CR	CS	CT	CU
15	g Averages (ppb)						Yearly Peaks and Averages (ppb)				
16	30 day Avg	60 day Avg	90 day Avg	Year	Max Peak	Max 14 da	Max 21 da	Max 30 da	Max 60 da	Max 90 da	Annual average
17				1961	4.45E+02	1.23E+02	8.18E+01	6.68E+01	3.89E+01	2.60E+01	6.41E+00
18				1962	3.61E+02	9.62E+01	6.46E+01	5.65E+01	2.82E+01	1.90E+01	4.69E+00
19				1963	6.50E+01	4.65E+00	3.10E+00	2.21E+00	1.11E+00	7.52E-01	1.94E-01
20				1964	6.13E+02	6.66E+01	4.44E+01	3.11E+01	1.55E+01	1.04E+01	2.56E+00
21				1965	4.98E+02	7.92E+01	7.11E+01	4.98E+01	2.49E+01	1.66E+01	4.12E+00
22				1966	1.15E+02	1.06E+01	7.08E+00	4.96E+00	3.90E+00	2.64E+00	1.06E+00
23				1967	4.01E+02	3.55E+01	2.36E+01	1.75E+01	1.02E+01	7.10E+00	1.82E+00
24				1968	5.54E+02	8.18E+01	6.69E+01	5.18E+01	2.70E+01	2.42E+01	5.97E+00
25				1969	4.39E+02	3.57E+01	2.38E+01	2.43E+01	1.95E+01	1.30E+01	3.28E+00
26				1970	4.04E+02	7.06E+01	5.40E+01	3.78E+01	1.89E+01	1.26E+01	3.13E+00
27				1971	3.63E+02	2.59E+01	1.73E+01	1.28E+01	7.77E+00	5.44E+00	1.35E+00
28				1972	4.82E+02	8.70E+01	5.80E+01	4.06E+01	2.83E+01	1.98E+01	4.87E+00
29				1973	3.92E+02	5.42E+01	4.73E+01	4.84E+01	2.42E+01	1.61E+01	3.99E+00
30				1974	3.71E+02	3.47E+01	2.32E+01	1.62E+01	8.11E+00	5.41E+00	1.70E+00
31	0.01			1975	5.65E+02	7.48E+01	7.21E+01	5.05E+01	4.36E+01	3.13E+01	7.76E+00
32	0.01			1976	4.43E+02	5.71E+01	5.59E+01	4.24E+01	3.29E+01	2.53E+01	6.23E+00
33	0.01			1977	1.41E+01	1.02E+00	6.81E-01	4.79E-01	2.45E-01	1.66E-01	6.38E-02
34	0.01			1978	5.07E+02	8.76E+01	5.84E+01	4.50E+01	2.65E+01	1.77E+01	4.42E+00
35	0.01			1979	4.24E+02	4.18E+01	3.14E+01	2.60E+01	1.68E+01	1.56E+01	3.85E+00
36	0.01			1980	3.64E+02	6.91E+01	4.61E+01	3.23E+01	1.61E+01	1.08E+01	2.67E+00
37	0.01			1981	3.74E+02	7.36E+01	6.54E+01	6.32E+01	4.11E+01	2.76E+01	6.84E+00
38	0.01			1982	5.12E+02	4.78E+01	3.53E+01	2.47E+01	2.04E+01	1.36E+01	3.37E+00
39	0.01			1983	4.27E+02	6.30E+01	4.40E+01	4.44E+01	2.28E+01	1.88E+01	4.69E+00
40	0.01			1984	7.38E+00	5.34E-01	6.31E-01	4.44E-01	2.26E-01	1.53E-01	4.79E-02
41	0.01			1985	5.29E+02	5.11E+01	5.93E+01	4.61E+01	2.30E+01	1.54E+01	3.81E+00
42	0.01			1986	3.61E+02	6.57E+01	6.10E+01	4.27E+01	2.14E+01	1.43E+01	3.56E+00
43	0.01			1987	5.61E+02	1.08E+02	8.76E+01	7.26E+01	4.11E+01	2.79E+01	6.91E+00
44	0.01			1988	3.52E+02	5.44E+01	3.62E+01	2.76E+01	1.48E+01	1.02E+01	2.58E+00
45	0.01			1989	4.64E+02	1.11E+02	7.43E+01	5.20E+01	3.48E+01	2.32E+01	5.75E+00
46	0.01	0.01		1990	4.51E+02	3.22E+01	2.17E+01	1.52E+01	1.15E+01	9.99E+00	2.47E+00
47	0.01	0.01									
48	0.01	0.01									
49	0.01	0.01		90th %-ile	554.789	97.3827	72.3302	57.1536	39.1589	26.1362	6.45695
50	0.01	0.01									
51	0.01	0.01									
52	0.01	0.01									
53	0.01	0.01									
54	0.01	0.01									
55	0.01	0.01									
56	0.01	0.01									

PRZM Input Files for the Barton Springs Salamander Endangered Species Assessment of Carbaryl.

Ornamentals Input File

Output File: Car_nurs

Metfile:	w13958.dvf			
PRZM scenario:	TX_BSSNursery_NoIrrig.txt			
EXAMS environment file:	pond298.exv			
Chemical Name:	Carbaryl			
Description	Variable Name		Value	Units Comments
Molecular weight	mwt	201.22	g/mol	
Henry's Law Const.	henry	1.28e-8	atm-m^3/mol	
Vapor Pressure	vapr	1.36e-7	torr	
Solubility	sol	32	mg/L	
Kd	Kd		mg/L	
Koc	Koc	198	mg/L	
Photolysis half-life	kdp	21	days	Half-life
Aerobic Aquatic Metabolism	kbacw	124.2	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	216.6	days	Halfife
Aerobic Soil Metabolism	asm	12	days	Halfife
Hydrolysis:	pH 5	0	days	Half-life
Hydrolysis:	pH 7	12	days	Half-life
Hydrolysis:	pH 9	0.133	days	Half-life
Method:	CAM	2	integer	See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	8.744	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	28-04	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	7	days	Set to 0 or delete line for single app.
Interval 2	interval	7	days	Set to 0 or delete line for single app.
Interval 3	interval	7	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND	2		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT	0.187		
	FEXTRC	3.70		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

Peaches Input File

Output File: Car_orch2

Metfile:	w13958.dvf			
PRZM scenario:	TX_BSSOrchard.txt			
EXAMS environment file:	pond298.exv			
Chemical Name:	Carbaryl			
Description	Variable Name		Value	Units Comments
Molecular weight	mwt	201.22	g/mol	
Henry's Law Const.	henry	1.28e-8	atm-m^3/mol	
Vapor Pressure	vapr	1.36e-7	torr	
Solubility	sol	32	mg/L	
Kd	Kd		mg/L	
Koc	Koc	198	mg/L	
Photolysis half-life	kdp	21	days	Half-life

Aerobic Aquatic Metabolism	kbacw	124.2	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	216.6	days	Halfife
Aerobic Soil Metabolism	asm	12	days	Halfife
Hydrolysis:	pH 5	0	days	Half-life
Hydrolysis:	pH 7	12	days	Half-life
Hydrolysis:	pH 9	0.133	days	Half-life
Method:	CAM	2	integer	See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	4.484	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	25-09	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	15	days	Set to 0 or delete line for single app.
Interval 2	interval	60	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT	0.187		
	FEXTRC	3.70		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

Vineyard Input File

Output File: Car_orch				
Metfile:	w13958.dvf			
PRZM scenario:	TX_BSSOrchard.txt			
EXAMS environment file:	pond298.exv			
Chemical Name:	Carbaryl			
Description	Variable Name		Value	Units Comments
Molecular weight	mwt	201.22	g/mol	
Henry's Law Const.	henry	1.28e-8	atm-m^3/mol	
Vapor Pressure	vapr	1.36e-7	torr	
Solubility	sol	32	mg/L	
Kd	Kd		mg/L	
Koc	Koc	198	mg/L	
Photolysis half-life	kdp	21	days	Half-life
Aerobic Aquatic Metabolism	kbacw	124.2	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	216.6	days	Halfife
Aerobic Soil Metabolism	asm	12	days	Halfife
Hydrolysis:	pH 5	0	days	Half-life
Hydrolysis:	pH 7	12	days	Half-life
Hydrolysis:	pH 9	0.133	days	Half-life
Method:	CAM	2	integer	See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	2.242	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	28-04	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	7	days	Set to 0 or delete line for single app.
Interval 2	interval	7	days	Set to 0 or delete line for single app.
Interval 3	interval	7	days	Set to 0 or delete line for single app.
Interval 4	interval	7	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND	1		

	UPTKF				
Record 18:	PLVKRT				
	PLDKRT	0.187			
	FEXTRC	3.70			
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

Rangeland Input File

Output File: Car_past					
Metfile:	w13958.dvf				
PRZM scenario:	TX_BSSRange.txt				
EXAMS environment file:	pond298.exv				
Chemical Name:	Carbaryl				
Description	Variable Name		Value	Units	Comments
Molecular weight	mwt	201.22	g/mol		
Henry's Law Const.	henry	1.28e-8	atm-m^3/mol		
Vapor Pressure	vapr	1.36e-7	torr		
Solubility	sol	32	mg/L		
Kd	Kd		mg/L		
Koc	Koc	198	mg/L		
Photolysis half-life	kdp	21	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	124.2	days	Halfife	
Anaerobic Aquatic Metabolism	kbacs	216.6	days	Halfife	
Aerobic Soil Metabolism	asm	12	days	Halfife	
Hydrolysis:	pH 5	0	days	Half-life	
Hydrolysis:	pH 7	12	days	Half-life	
Hydrolysis:	pH 9	0.133	days	Half-life	
Method:	CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm		
Application Rate:	TAPP	1.6815	kg/ha		
Application Efficiency:	APPEFF	0.95	fraction		
Spray Drift	DRFT	0.05	fraction of application rate applied to pond		
Application Date	Date	28-04	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	14	days	Set to 0 or delete line for single app.	
Record 17:	FILTRA				
	IPSCND	3			
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT	0.187			
	FEXTRC	3.70			
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

Parks Input File

Output File: Car_turf					
Metfile:	w13958.dvf				
PRZM scenario:	TX_BSSTurf_NoIrrig.txt				
EXAMS environment file:	pond298.exv				
Chemical Name:	Carbaryl				
Description	Variable Name		Value	Units	Comments
Molecular weight	mwt	201.22	g/mol		
Henry's Law Const.	henry	1.28e-8	atm-m^3/mol		
Vapor Pressure	vapr	1.36e-7	torr		
Solubility	sol	32	mg/L		
Kd	Kd		mg/L		

Koc	Koc	198	mg/L	
Photolysis half-life	kdp	21	days	Half-life
Aerobic Aquatic Metabolism	kbacw	124.2	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	216.6	days	Halfife
Aerobic Soil Metabolism	asm	12	days	Halfife
Hydrolysis:	pH 5	0	days	Half-life
Hydrolysis:	pH 7	12	days	Half-life
Hydrolysis:	pH 9	0.133	days	Half-life
Method:	CAM	2	integer	See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	9.37	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	28-04	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	3	days	Set to 0 or delete line for single app.
Interval 2	interval	3	days	Set to 0 or delete line for single app.
Interval 3	interval	3	days	Set to 0 or delete line for single app.
Interval 4	interval	3	days	Set to 0 or delete line for single app.
Interval 5	interval	3	days	Set to 0 or delete line for single app.
Interval 6	interval	3	days	Set to 0 or delete line for single app.
Interval 7	interval	3	days	Set to 0 or delete line for single app.
Interval 8	interval	3	days	Set to 0 or delete line for single app.
Interval 9	interval	3	days	Set to 0 or delete line for single app.
Interval 10	interval	3	days	Set to 0 or delete line for single app.
Interval 11	interval	3	days	Set to 0 or delete line for single app.
Interval 12	interval	3	days	Set to 0 or delete line for single app.
Interval 13	interval	3	days	Set to 0 or delete line for single app.
Interval 14	interval	3	days	Set to 0 or delete line for single app.
Interval 15	interval	3	days	Set to 0 or delete line for single app.
Interval 16	interval	3	days	Set to 0 or delete line for single app.
Interval 17	interval	3	days	Set to 0 or delete line for single app.
Interval 18	interval	3	days	Set to 0 or delete line for single app.
Interval 19	interval	3	days	Set to 0 or delete line for single app.
Interval 20	interval	3	days	Set to 0 or delete line for single app.
Interval 21	interval	3	days	Set to 0 or delete line for single app.
Interval 22	interval	3	days	Set to 0 or delete line for single app.
Interval 23	interval	3	days	Set to 0 or delete line for single app.
Interval 24	interval	3	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND	3		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT	0.187		
	FEXTRC	3.70		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

Residential Input File

Output File: Car_res

Metfile:	w13958.dvf			
PRZM scenario:	TX_BSSResidential_NoIrrig.txt			
EXAMS environment file:	pond298.exv			
Chemical Name:	Carbaryl			
Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	201.22	g/mol	

Henry's Law Const.	henry	1.28e-8	atm-m^3/mol	
Vapor Pressure	vapr	1.36e-7	torr	
Solubility	sol	32	mg/L	
Kd	Kd		mg/L	
Koc	Koc	198	mg/L	
Photolysis half-life	kdp	21	days	Half-life
Aerobic Aquatic Metabolism	kbacw	124.2	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	216.6	days	Halfife
Aerobic Soil Metabolism	asm	12	days	Halfife
Hydrolysis:	pH 5	0	days	Half-life
Hydrolysis:	pH 7	12	days	Half-life
Hydrolysis:	pH 9	0.133	days	Half-life
Method:	CAM	2	integer	See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	9.37	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	28-04	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	3	days	Set to 0 or delete line for single app.
Interval 2	interval	3	days	Set to 0 or delete line for single app.
Interval 3	interval	3	days	Set to 0 or delete line for single app.
Interval 4	interval	3	days	Set to 0 or delete line for single app.
Interval 5	interval	3	days	Set to 0 or delete line for single app.
Interval 6	interval	3	days	Set to 0 or delete line for single app.
Interval 7	interval	3	days	Set to 0 or delete line for single app.
Interval 8	interval	3	days	Set to 0 or delete line for single app.
Interval 9	interval	3	days	Set to 0 or delete line for single app.
Interval 10	interval	3	days	Set to 0 or delete line for single app.
Interval 11	interval	3	days	Set to 0 or delete line for single app.
Interval 12	interval	3	days	Set to 0 or delete line for single app.
Interval 13	interval	3	days	Set to 0 or delete line for single app.
Interval 14	interval	3	days	Set to 0 or delete line for single app.
Interval 15	interval	3	days	Set to 0 or delete line for single app.
Interval 16	interval	3	days	Set to 0 or delete line for single app.
Interval 17	interval	3	days	Set to 0 or delete line for single app.
Interval 18	interval	3	days	Set to 0 or delete line for single app.
Interval 19	interval	3	days	Set to 0 or delete line for single app.
Interval 20	interval	3	days	Set to 0 or delete line for single app.
Interval 21	interval	3	days	Set to 0 or delete line for single app.
Interval 22	interval	3	days	Set to 0 or delete line for single app.
Interval 23	interval	3	days	Set to 0 or delete line for single app.
Interval 24	interval	3	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT	0.187		
	FEXTRC	3.70		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

Impervious Input File

Output File: Car_imp

Metfile:	w13958.dvf
PRZM scenario:	TX_BSSImpervious.txt

EXAMS environment file:	pond298.exv			
Chemical Name:	Carbaryl			
Description	Variable Name		Value	Units Comments
Molecular weight	mwt	201.22	g/mol	
Henry's Law Const.	henry	1.28e-8	atm-m^3/mol	
Vapor Pressure	vapr	1.36e-7	torr	
Solubility	sol	32	mg/L	
Kd	Kd		mg/L	
Koc	Koc	198	mg/L	
Photolysis half-life	kdp	21	days	Half-life
Aerobic Aquatic Metabolism	kbacw	124.2	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	216.6	days	Halfife
Aerobic Soil Metabolism	asm	12	days	Halfife
Hydrolysis:	pH 5	0	days	Half-life
Hydrolysis:	pH 7	12	days	Half-life
Hydrolysis:	pH 9	0.133	days	Half-life
Method:	CAM	2	integer	See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	9.37	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	28-04	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	3	days	Set to 0 or delete line for single app.
Interval 2	interval	3	days	Set to 0 or delete line for single app.
Interval 3	interval	3	days	Set to 0 or delete line for single app.
Interval 4	interval	3	days	Set to 0 or delete line for single app.
Interval 5	interval	3	days	Set to 0 or delete line for single app.
Interval 6	interval	3	days	Set to 0 or delete line for single app.
Interval 7	interval	3	days	Set to 0 or delete line for single app.
Interval 8	interval	3	days	Set to 0 or delete line for single app.
Interval 9	interval	3	days	Set to 0 or delete line for single app.
Interval 10	interval	3	days	Set to 0 or delete line for single app.
Interval 11	interval	3	days	Set to 0 or delete line for single app.
Interval 12	interval	3	days	Set to 0 or delete line for single app.
Interval 13	interval	3	days	Set to 0 or delete line for single app.
Interval 14	interval	3	days	Set to 0 or delete line for single app.
Interval 15	interval	3	days	Set to 0 or delete line for single app.
Interval 16	interval	3	days	Set to 0 or delete line for single app.
Interval 17	interval	3	days	Set to 0 or delete line for single app.
Interval 18	interval	3	days	Set to 0 or delete line for single app.
Interval 19	interval	3	days	Set to 0 or delete line for single app.
Interval 20	interval	3	days	Set to 0 or delete line for single app.
Interval 21	interval	3	days	Set to 0 or delete line for single app.
Interval 22	interval	3	days	Set to 0 or delete line for single app.
Interval 23	interval	3	days	Set to 0 or delete line for single app.
Interval 24	interval	3	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT	0.187		
	FEXTRC	3.70		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

Appendix F. Sensitivity Distribution Data.

Tables F.1-F.5 contain the 96-hour LC_{50} data for fish and associated calculations used to derive the sensitivity distribution shown in **Figure 14** of the risk assessment. **Tables F.6-F.10** contain the 48- to 96-hour EC_{50} data for invertebrates and associated calculations used to derive the sensitivity distribution shown in **Figure 15** of the risk assessment.

Table F.1. Summary of 96 hour LC50 data for effects of carbaryl on freshwater fish. Data are from EFED's database of ecotoxicity data.									
Common Name	Species Name	Mean LC50 (ppb)	Log 10 LC50	Lower Confidence (ppb)	Lower Log 10 LC50	Upper Confidence (ppb)	Upper Log 10 LC50	Test Substance (% a.i.)	MRID /Accession
Carp	*Cyprinus carpio*	5280	3.723	4600	3.663	6000	3.778	99.5	40098001
Black bullhead	*Ictalurus melas*	20000	4.301	18000	4.255	24000	4.380	99.5	40098001
Channel catfish	*Ictalurus punctatus*	7790	3.892	4700	3.672	12800	4.107	99.5	40098001
Green sunfish	*Lepomis cyanellus*	9460	3.976	7000	3.845	12800	4.107	99.5	40098001
Bluegill sunfish	*Lepomis macrochirus*	5047	3.703	4400	3.643	5800	3.763	99.5	40098001
Bluegill sunfish	*Lepomis macrochirus*	14000	4.146	7700	3.886	25200	4.401	99.9	TN 142, 0043115
Largemouth bass	*Micropterus salmoides*	6400	3.806	4400	3.643	9200	3.964	99.5	40094602
Cutthroat trout	*Oncorhynchus clarki*	970	2.987	770	2.886	1200	3.079	99.5	40098001
Coho salmon	*Oncorhynchus kisutch*	2400	3.380	1860	3.270	3000	3.477	99.5	40098001
Rainbow trout	*Oncorhynchus mykiss*	3300	3.519	2700	3.431	4000	3.602	81.5	42397901
Rainbow trout	*Oncorhynchus mykiss*	1200	3.079	800	2.903	1800	3.255	99.5	40098001
Chinook salmon	*Oncorhynchus tshawytscha*	2400	3.380	1600	3.204	3500	3.544	99.5	40098001
Yellow perch	*Perca flavescens*	350	2.544	280	2.447	430	2.633	99.5	40098001
Fathead minnow	*Pimephales promelas*	7700	3.886	4800	3.681	12000	4.079	99.5	40098001
Black crappie	*Pomoxis nigromaculatus*	2600	3.415	1200	3.079	5700	3.756	99.5	40094602
Atlantic salmon	*Salmo salar*	250	2.398	120	2.079	790	2.898	99.5	40098001
Brown trout	*Salmo trutta*	6300	3.799	5500	3.740	7200	3.857	99.5	40098001
Brook trout	*Salvelinus fontinalis*	3000	3.477	2000	3.301	4500	3.653	99.5	40098001
Lake trout	*Salvelinus namaycush*	690	2.839	500	2.699	900	2.954	99.5	40098001
NR = not reported, NA = not applicable									

Table F.2. Species values for LC50 (mean and upper and lower confidence intervals).				
Common Name	**Species Name**	**Log10 Mean**	**Log10 Lower**	**Log10 Upper**
Carp	*Cyprinus carpio*	3.723	3.663	3.778

Black bullhead	*Ictalurus melas*	4.301	4.255	4.380
Channel catfish	*Ictalurus punctatus*	3.892	3.672	4.107
Green sunfish	*Lepomis cyanellus*	3.976	3.845	4.107
Bluegill sunfish	*Lepomis macrochirus*	3.925	3.765	4.082
Largemouth bass	*Micropterus salmoides*	3.806	3.643	4.0
Cutthroat trout	*Oncorhynchus clarki*	2.987	2.886	3.1
Coho salmon	*Oncorhynchus kisutch*	3.380	3.270	3.5
Rainbow trout	*Oncorhynchus mykiss*	3.299	3.167	3.4
Chinook salmon	*Oncorhynchus tshawytscha*	3.380	3.204	3.5
Yellow perch	*Perca flavescens*	2.544	2.447	2.6
Fathead minnow	*Pimephales promelas*	3.886	3.681	4.1
Black crappie	*Pomoxis nigromaculatus*	3.415	3.079	3.8
Atlantic salmon	*Salmo salar*	2.398	2.079	2.9
Brown trout	*Salmo trutta*	3.799	3.740	3.9
Brook trout	*Salvelinus fontinalis*	3.477	3.301	3.7
Lake trout	*Salvelinus namaycush*	2.839	2.699	3.0

Table F.3. Genus values for LC50 (mean and upper and lower confidence intervals).

Common Name	Genus Name	Log10 Mean	Mean LC50 (ppb)	Log10 lower	lower LC50 (ppb)	Log 10 Upper	Upper LC50 (ppb)	Rank on curve
carp	*Cyprinus*	3.7226	5280.0	3.6628	4600.0	3.7782	6000.0	0.56
catfish	*Ictalurus*	4.0963	12482.0	3.9637	9197.8	4.2437	17527.1	1.00
sunfish	*Lepomis*	3.9502	8917.4	3.8050	6383.1	4.0948	12439.8	0.89
bass	*Micropterus*	3.8062	6400.0	3.6435	4400.0	3.9638	9200.0	0.67
trout/salmon	*Oncorhynchus*	3.2615	1826.0	3.1318	1354.7	3.3823	2411.3	0.33
perch	*Perca*	2.5441	350.0	2.4472	280.0	2.6335	430.0	0.00
fathead minnow	*Pimephales*	3.8865	7700.0	3.6812	4800.0	4.0792	12000.0	0.78
crappie	*Pomoxis*	3.4150	2600.0	3.0792	1200.0	3.7559	5700.0	0.44
salmon/trout	*Salmo*	3.0986	1255.0	2.9098	812.4	3.3775	2385.0	0.11
trout	*Salvelinus*	3.1580	1438.7	3.0000	1000.0	3.3037	2012.5	0.22
Genus Mean for All:		**3.4939**	**4825**	**3.3324**	**3403**	**3.6612**	**7011**	
Genus Standard Deviation for all:		**0.4838**	**4007**	**0.4861**	**2946**	**0.4897**	**5611**	

Table F.4. Calculation of sensitivity distribution curve for fish exposed to carbaryl.

		Mean LC50		Lower LC50	
Proportion	**Z_P**	**Log10 point**	**Point Estimate (ppb)**	**Log10 point**	**Point Estimate (ppb)**
0.05	-1.645	2.698	498.9	2.533	341.0
0.10	-1.282	2.874	747.6	2.709	512.0
0.20	-0.842	3.087	1220.5	2.923	837.8
0.25	-0.675	3.168	1470.9	3.005	1010.5
0.30	-0.524	3.240	1739.4	3.078	1195.9
0.40	-0.253	3.371	2352.3	3.209	1619.7
0.50	0	3.494	3118.2	3.332	2149.9
0.60	0.253	3.616	4133.3	3.455	2853.6
0.70	0.524	3.747	5590.0	3.587	3864.8

0.75	0.675	3.820	6614.0	3.661	4576.4
0.80	0.842	3.901	7966.4	3.742	5517.0
0.90	1.282	4.114	13005.6	3.956	9027.9
0.95	1.645	4.290	19487.2	4.132	13553.0

Z_P = (Log10 LC50 - fish mean GMAV)/(fish std GMAV)

Table F.5. Sensitivity distribution for fish exposed to carbaryl based on mean and confidence intervals of 96-h LC50 data. Ben for EECs which would result in LOC exceedances for LC50 data are also provided.

	Mean		Lower		U
Proportion	Point Estimate of LC50 (ppb)	Benchmark Concentration* (ppb)	Point Estimate of LC50 (ppb)	Benchmark Concentration* (ppb)	Point Estimate of LC50 (ppb)
0.05	499	25	341	17	717
0.10	748	37	512	26	1,080
0.20	1,221	61	838	42	1,774
0.25	1,471	74	1,010	51	2,142
0.30	1,739	87	1,196	60	2,539
0.40	2,352	118	1,620	81	3,446
0.50	3,118	156	2,150	107	4,584
0.60	4,133	207	2,854	143	6,097
0.70	5,590	279	3,865	193	8,277
0.75	6,614	331	4,576	229	9,813
0.80	7,966	398	5,517	276	11,847
0.90	13,006	650	9,028	451	19,457
0.95	19,487	974	13,553	678	29,300

*LC50 x acute listed LOC. Units in ug/L. Represents EEC required to exceed LOC.

Table F.6. Summary of 48-hour and 96 hour EC50 data for effects of carbaryl on freshwater invertebrates. Data are from EFED's database of ecotoxicity data.										
Common Name	**Species Name**	**Mean EC50 (ppb)**	**Mean Log 10 EC50**	**Lower Confidence EC50**	**Lower Log 10 EC50**	**Upper Confidence EC50**	**Upper Log 10 EC50**	**Test Substance (% a.i.)**	**Duration of exposure (h)**	**MRID /Accession**
Sowbug	*Asellus brevicaudus*	280	2.447	214	2.330	367	2.565	99.5	96	40098001
Stonefly	*Claassenia sabulosa*	5.6	0.748	3.9	0.591	8.7	0.940	99.5	96	40098001
Water flea	*Daphnia magna*	7.2	0.857	6.33	0.801	8.37	0.923	81.5	48	42397903
Water flea	*Daphnia magna*	5.6	0.748	2.7	0.431	12	1.079	99.5	48	40098001
Water flea	*Daphnia pulex*	6.4	0.806	NR	NA	NR	NA	99.5	48	40098001
Scud	*Gammarus fasciatus*	26	1.415	16	1.204	39	1.591	99.5	96	40098001
Scud	*Gammarus lacustris*	16	1.204	12	1.079	19	1.279	Tech	96	05009242
Scud	*Gammarus pseudolimnaeus*	8	0.903	4.9	0.690	13	1.114	99.5	48	40098001
Stonefly	*Isogenus sp.*	3.6	0.556	2.4	0.380	5.5	0.740	99.5	96	40098001
Crayfish	*Procambarus sp.*	1.9	0.279	1.1	0.041	3.1	0.491	99.5	96	40098001
Stonefly	*Pteronarcella badia*	1.7	0.230	1.4	0.146	2.4	0.380	99.5	96	40098001
Water flea	*Simocephalus serrulatus*	7.6	0.881	6.2	0.792	9.4	0.973	99.5	48	40098001
NR = not reported, NA = not applicable										

Table F.7. Species values for EC50 (mean and upper and lower confidence intervals).				
Common Name	**Species Name**	**Log10 Mean**	**Log10 Lower**	**Log10 Upper**
Sowbug	*Asellus brevicaudus*	2.447	2.330	2.565
Stonefly	*Claassenia sabulosa*	0.748	0.591	0.940
Water flea	*Daphnia magna*	0.803	0.616	1.001
Water flea	*Daphnia pulex*	1.111	NR	NR

Scud	*Gammarus lacustris*	1.204	1.079	1.3
Scud	*Gammarus pseudolimnaeus*	0.903	0.690	1.1
Stonefly	*Isogenus sp.*	0.556	0.380	0.7
Crayfish	*Procambarus sp.*	0.255	0.094	0.4
Water flea	*Simocephalus serrulatus*	0.881	0.792	1.0

Table F.8. Genus values for EC50 (mean and upper and lower confidence intervals).

Common Name	Genus Name	Log10 Mean	Mean EC50	Log10 lower	lower EC50	Log 10 Upper	Upper EC50	Rank on curve
sowbug	*Asellus*	2.4472	280.0	2.3304	214.0	2.5647	367.0	1.00
stonefly	*Claassenia*	0.7482	5.6	0.5911	3.9	0.9395	8.7	0.33
water flea	*Daphnia*	0.9567	9.1	0.6164	4.1	1.0010	10.0	0.67
scud	*Gammarus*	1.0536	11.3	0.8847	7.7	1.1963	15.7	0.83
stonefly	*Isogenus*	0.5563	3.6	0.3802	2.4	0.7404	5.5	0.17
crayfish	*Procambarus*	0.2546	1.8	0.0938	1.2	0.4358	2.7	0.00
water flea	*Simocephalus*	0.8808	7.6	0.7924	6.2	0.9731	9.4	0.50
Genus Mean for All:		**0.9853**	**46**	**0.8127**	**34**	**1.1215**	**60**	
Genus Standard Deviation for all:		**0.6985**	**103**	**0.7189**	**79**	**0.6799**	**135**	

Table F.9. Calculation of sensitivity distribution curve for invertebrates exposed to carbaryl.

		Mean EC50		Lower EC50		
Proportion	**Z_P**	**Log10 point**	**Point Estimate (ppb)**	**Log10 point**	**Point Estimate (ppb)**	**Log1**
0.05	-1.645	-0.164	0.7	-0.370	0.4	0.
0.10	-1.282	0.090	1.2	-0.109	0.8	0.
0.20	-0.842	0.397	2.5	0.207	1.6	0.
0.25	-0.675	0.514	3.3	0.328	2.1	0.
0.30	-0.524	0.619	4.2	0.436	2.7	0.
0.40	-0.253	0.809	6.4	0.631	4.3	0.
0.50	0	0.985	9.7	0.813	6.5	1.

0.60	0.253	1.162	14.5	0.995	9.9	1.
0.70	0.524	1.351	22.5	1.189	15.5	1.
0.75	0.675	1.457	28.6	1.298	19.9	1.
0.80	0.842	1.573	37.5	1.418	26.2	1.
0.90	1.282	1.881	76.0	1.734	54.2	1.
0.95	1.645	2.134	136.3	1.995	98.9	2.

Z_P = (Log10 LC50 - invertebrate mean GMAV)/(invertebrate std GMAV)

Table F.10. Sensitivity distribution for invertebrates exposed to carbaryl based on mean and confidence intervals of EC50 data. Benchmark concentrations for EECs which would result in LOC exceedances for EC50 data are also provided.

	Mean		Lower		Upper	
Proportion	**Point Estimate of EC50 (ppb)**	**Benchmark Concentration* (ppb)**	**Point Estimate of EC50 (ppb)**	**Benchmark Concentration* (ppb)**	**Point Estimate of EC50 (ppb)**	**Benchmark Concentration* (ppb)**
0.05	0.69	0.03	0.43	0.02	1.01	0.05
0.10	1.23	0.06	0.78	0.04	1.78	0.09
0.20	2.50	0.12	1.61	0.08	3.54	0.18
0.25	3.27	0.16	2.13	0.11	4.60	0.23
0.30	4.16	0.21	2.73	0.14	5.82	0.29
0.40	6.44	0.32	4.27	0.21	8.90	0.45
0.50	9.67	0.48	6.50	0.32	13.23	0.66
0.60	14.52	0.73	9.88	0.49	19.66	0.98
0.70	22.46	1.12	15.47	0.77	30.05	1.50
0.75	28.63	1.43	19.86	0.99	38.06	1.90
0.80	37.45	1.87	26.18	1.31	49.43	2.47

0.90	76.00	3.80	54.24	2.71	98.44	4.92
0.95	136.27	6.81	98.91	4.95	173.76	8.69

*EC50 x acute listed LOC. Units in ug/L. Represents EEC required to exceed LOC.

Appendix G. The Risk Quotient Method and Levels of Concern.

The Risk Quotient Method is the means used by EFED to integrate the results of exposure and ecotoxicity data. For this method, Risk Quotients (RQs) are calculated by dividing exposure estimates by the acute and chronic ecotoxicity values (i.e., RQ = EXPOSURE/TOXICITY). These RQs are then compared to OPP's levels of concern (LOCs). These LOCs are criteria used by OPP to indicate potential risk to non-target organisms and the need to consider regulatory action. EFED has defined LOCs for acute risk, potential restricted use classification, and for endangered species.

The criteria indicate that a pesticide used as directed has the potential to cause adverse effects on non-target organisms. LOCs currently address the following risk presumption categories:

(1) acute - there is a potential for acute risk; regulatory action may be warranted in addition to restricted use classification;

(2) acute restricted use - the potential for acute risk is high, but this may be mitigated through restricted use classification;

(3) acute endangered species - the potential for acute risk to endangered species is high, regulatory action may be warranted; and

(4) chronic risk - the potential for chronic risk is high, regulatory action may be warranted.

Currently, EFED does not perform assessments for chronic risk to plants, acute or chronic risks to non-target insects, or chronic risk from granular/bait formulations to mammalian or avian species.

The ecotoxicity test values (i.e., measurement endpoints) used in the acute and chronic RQs are derived from required studies. Examples of ecotoxicity values derived from short-term laboratory studies that assess acute effects are: (1) LC50 (fish and birds), (2) LD50 (birds and mammals), (3) EC50 (aquatic plants and aquatic invertebrates), and (4) EC25 (terrestrial plants). Examples of toxicity test effect levels derived from the results of long-term laboratory studies that assess chronic effects are: (1) the Lowest Observed Adverse Effect Concentration (LOAEC) (birds, fish, and aquatic invertebrates), and (2) the No Observed Adverse Effect Concentration (NOAEC) (birds, fish and aquatic invertebrates). The NOAEC is generally used as the ecotoxicity test value in assessing chronic effects. Risk presumptions, along with the corresponding RQs and LOCs are summarized in Table G-1.

Table G-1. Agency risk quotient (RQ) metrics and levels of concern (LOC) per risk class.			
Risk Class	**Risk Description**	**RQ**	**LOC**
Aquatic Animals (fish and invertebrates)			
Acute	Potential for effects to non-listed animals from acute exposures	Peak EEC/LC_{50}[1]	0.5
Acute Restricted Use	Potential for effects to animals from acute exposures Risks may be mitigated through restricted use classification	Peak EEC/LC_{50}[1]	0.1
Acute Listed Species	Listed species may be potentially affected by acute exposures	Peak EEC/LC_{50}[1]	0.05
Chronic	Potential for effects to non-listed and listed animals from chronic exposures	60-day EEC/NOEC (fish) 21-day EEC/NOEC (invertebrates)	1
Terrestrial Animals (mammals and birds)			
Acute	Potential for effects to non-listed animals from acute exposures	EEC[2]/LC_{50} (Dietary) EEC/LD_{50} (Dose)	0.5
Acute Restricted Use	Potential for effects to animals from acute exposures Risks may be mitigated through restricted use classification	EEC[2]/LC_{50} (Dietary) EEC/LD_{50} (Dose)	0.2
Acute Listed Species	Listed species may be potentially affected by acute exposures	EEC [2]/LC_{50} (Dietary) EEC/LD_{50} (Dose)	0.1
Chronic	Potential for effects to non-listed and listed animals from chronic exposures	EEC [2]/NOAEC	1
Plants			
Non-Listed	Potential for effects to non-target, non-listed plants from exposures	EEC/ EC_{25}	1
Listed Plant	Potential for effects to non-target, listed plants from exposures	EEC/ NOEC EEC/ EC_{05}	1

[1] LC_{50} or EC_{50}. [2] Based on upper bound Kenaga values.

Appendix H. List of citations accepted and rejected by ECOTOX criteria.

The citations in this appendix were accepted by ECOTOX. Citations include the ECOTOX Reference number. References in section H.1 those relevant to carbaryl which were acceptable in ECOTOX. References in section H.2 were those relevant to carbaryl which were not cited within the risk assessment. References in section H.3 those relevant to degredates of carbaryl which were cited within this risk assessment. References in section H.4 were those relevant to degredates of carbaryl which were not cited within the risk assessment. In order to be included in the ECOTOX database, papers must meet the following minimum criteria:

(1) the toxic effects are related to single chemical exposure;
(2) the toxic effects are on an aquatic or terrestrial plant or animal species;
(3) there is a biological effect on live, whole organisms;
(4) a concurrent environmental chemical concentration/dose or application rate is reported; and
(5) there is an explicit duration of exposure.

Section H.5 includes the list of exclusion terms and descriptions for citations not accepted by ECOTOX. For carbaryl, there were 2,116 references that were not accepted by ECOTOX for one or more of the reasons included in section H.5. A full list of the citations reviewed and rejected by the criteria for ECOTOX is listed in section H.6.

H.1. ECOTOX accepted references, relevant to carbaryl, contained more sensitive endpoints than those cited in the IRED

6797 Mayer FL Jr.;Ellersieck MR; (1986) Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals. "Resour Publ No 160, U S Dep Interior, Fish Wildl Serv , Washington, DC(): 505 p. (USGS Data File)-".

17138 Brooke LT; (1991) "Results of Freshwater Exposures with the Chemicals Atrazine, Biphenyl, Butachlor, Carbaryl, Carbazole, Dibenzofuran, 3,3'-Dichlorobenzidine, Dichlorvos, 1,2-Epoxyethylbenzene (Styrene Oxide), Isophor. "Ctr for Lake Superior Environ Stud

15683 Zaga A;Little EE;Rabeni CF;Ellersieck MR; (1998) Photoenhanced Toxicity of a Carbamate Insecticide to Early Life Stage Anuran Amphibians. Environ Toxicol Chem 17(12): 2543-2553.

11521 Khangarot BS;Sehgal A;Bhasin MK; (1985) 'Man and Biosphere' - Studies on the Sikkim Himalayas. Part 6: Toxicity of Selected Pesticides to Frog Tadpole Rana hexadactyla (Lesson). Acta Hydrochim Hydrobiol

47680 Boone MD;Bridges CM; (1999) The Effect of Temperature on the Potency of Carbaryl for Survival of Tadpoles of the Green Frog (Rana clamitans). Environ Toxicol Chem 18(7): 1482-1484.

72411 Bridges CM;Dwyer FJ;Hardesty DK;Whites DW; (2002) Comparative Contaminant Toxicity: Are Amphibian Larvae More Sensitive than Fish?. Bull Environ Contam Toxicol 69(4): 562-569.

81455 Boone MD;James SM; (2003) "Interactions of an Insecticide, Herbicide, and Natural Stressors in Amphibian
Community Mesocosms". Ecol Appl 13(3): 829-841.

13800 Peterson HG;Boutin C;Martin PA;Freemark KE;Ruecker NJ;Moody MJ; (1994) Aquatic Phyto-Toxicity of
23 Pesticides Applied at Expected Environmental Concentrations. Aquat Toxicol 28(3/4): 275-292.

H.2. ECOTOX accepted references, relevant to carbaryl, not utilized or cited within this risk assessment since endpoints were less sensitive than existing data.

1. Abbasi, S. A. and Soni, R. (1991). Studies on the Environmental Impact of Three Common Pesticides with Respect to Toxicity Towards a Larvivore (Channelfish N. denricus). *J.Inst.Public Health Eng.(India)* 2: 8-12.

   EcoReference No.: 13414
   Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: BEH,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ES).

2. Abdel-Rahman, M. S., Lechner, D. W., and Klein, K. M. (1985). Combination Effect of Carbaryl and Malathion in Rats. *Arch.Environ.Contam.Toxicol.* 14: 459-464.

   EcoReference No.: 35543
   Chemical of Concern: CBL,MLN; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(MLN,CBL).

3. Agnello, A. M., Spangler, S. M., Reissig, W. H., Lawson, D. S., and Weires, R. W. (1992). Seasonal Development and Management Strategies for Comstock Mealybug (Homoptera: Pseudococcidae) in New York Pear Orchards. *J.Econ.Entomol.* 85: 212-225.

   EcoReference No.: 73713
   Chemical of Concern: MOM,CPY,CBL,MP,AZ,ES,RSM,EFV,MVP; Habitat: T; Effect Codes: POP,MOR; Rejection Code: OK(MOM),TARGET(RSM).

4. Ahdaya, S. M., Shah, P. V., and Guthrie, F. E. (1976). Thermoregulation in Mice Treated with Parathion, Carbaryl, or DDT. *Toxicol.Appl.Pharmacol.* 35: 575-580.

   EcoReference No.: 35005
   Chemical of Concern: PRN,CBL,DDT; Habitat: T; Effect Codes: PHY,MOR,BCM; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

5. Ahmad, M., Hollingworth, R. M., and Wise, J. C. (2002). Broad-Spectrum Insecticide Resistance in Obliquebanded Leafroller _Choristoneura rosaceana_ (Lepidoptera: Tortricidae) from Michigan. *Pest Manag.Sci.* 58: 834-838.

   EcoReference No.: 70966
   Chemical of Concern: IDC,CFP,EMMB,MFZ,TUZ,BFT,ZCYP,AZ,CPY,PSM,CYP,DM,EFV,ES,TDC,MOM,CBL,SS; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(AZ,IDC,CFP,EMMB,MFZ,TUZ,BFT,ZCYP,CPY,PSM,CYP,DM,EFV,ES,TDC,MOM,CBL,SS).

6. Ahmad, M. and McCaffery, A. R. (1991). Elucidation of Detoxication Mechanisms Involved in Resistance to Insecticides in the Third Instar Larvae of a Field-Selected Strain of Helicoverpa

armigera with the Use of Synergists. *Pestic.Biochem.Physiol.* 41: 41-52.

EcoReference No.: 74894
Chemical of Concern: PPB,CYP,FNV,DDT,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO MIXTURE(PPB),TARGET(CYP).

7. Ahrens, W. H. (1990). Enhancement of Soybean (Glycine max) Injury and Weed Control by Thifensulfuron-Insecticide Mixtures. *Weed Technol.* 4: 524-528.

EcoReference No.: 68422
User Define 2: WASH,CALF,SENT
Chemical of Concern: CPY,CBL,MOM,MLN; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(MOM).

8. Akay, M. T., Ozmen, G., and Elcuman, E. A. (1999). Effects of Combinations of Endosulfan, Dimethoate and Carbaryl on Immune and Hematological Parameters of Rats. *Vet.Hum.Toxicol.* 41: 296-299.

EcoReference No.: 75053
Chemical of Concern: ES,DMT,CBL; Habitat: T; Effect Codes: CEL; Rejection Code: LITE EVAL CODED(CBL,DMT),OK(ES).

9. Akberali, H. B., Trueman, E. R., Black, J. E., and Hewitt, C. (1982). The Responses of the Estuarine Bivalve Mollusc Scrobicularia to the First Hydrolytic Product of the Insecticide Sevin. *Estuar.Coast.Shelf Sci.* 15: 415-421.

EcoReference No.: 12316
Chemical of Concern: CBL; Habitat: A; Effect Codes: BEH,MOR,PHY; Rejection Code: LITE EVAL CODED (CBL).

10. Almar, M. M., Ferrando, M. M. D., Alarcon, V., Soler, C., and Andreu, E. (1988). Influence of Temperature on Several Pesticides Toxicity to Melanopsis dufouri Under Laboratory Conditions. *J.Environ.Biol.* 9: 183-190.

EcoReference No.: 12863
Chemical of Concern: HCCH,TCF,TBC,ES,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

11. Anbu, R. B. and Ramaswamy, M. (1991). Adaptive Changes in Respiratory Movements of an Air-Breathing Fish, Channa striatus (Bleeker) Exposed to Carbamate Pesticide, Sevin. *J.Ecobiol.* 3: 11-16.

EcoReference No.: 7529
Chemical of Concern: CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

12. Andreu-Moliner, E. S., Almar, M. M., Legarra, I., and Nunez, A. (1986). Toxicity of Some Ricefield Pesticides to the Crayfish P. clarkii, Under Laboratory and Field Conditions in Lake Albufera (Spain). *J.Environ.Sci.Health Part B* 21: 529-537.

EcoReference No.: 12517
Chemical of Concern: CuS,CYF,MLT,CBF,FNT,MLN,TCF,CBL,ES,HCCH; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CBF,CYF),NO MIXTURE(MLT),NO ENDPOINT(CuS),OK(FNT,MLN,TCD,ES,HCCH).

13. Anger, W. K. and Wilson, S. M. (1980). Effects of Carbaryl on Variable Interval Response Rates in

Rats. *Neurobehav.Toxicol.* 2: 21-24.

EcoReference No.: 87855
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

14. Armstrong, D. A. and Millemann, R. E. (1974). Effects of the Insecticide Carbaryl on Clams and Some Other Intertidal Mud Flat Animals. *J.Fish.Res.Board Can.* 31: 466-470 (Author Communication Used).

EcoReference No.: 7901
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

15. Armstrong, D. A. and Millemann, R. E. (1974). Effects of the Insecticide Sevin and its First Hydrolytic Product, 1-Naphthol, on Some Early Developmental Stages of the Bay Mussel Mytilus edulis. *NOAA-75062408, Report No.ORESU-R-74-022: 5p (NTIS COM -75-10967, Reprinted from Mar.Biol.28(1):11-15* 28: 11, 15 (U.S. Ntis Com75-10967).

EcoReference No.: 5958
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED (CBL).

16. Armstrong, D. A. and Millemann, R. E. (1974). Pathology of Acute Poisoning with the Insecticide Sevin in the Bent-Nosed Clam, Macoma nasuta. *J.Invertebr.Pathol.* 24: 201-212.

EcoReference No.: 5670
Chemical of Concern: CBL; Habitat: A; Effect Codes: CEL,PHY; Rejection Code: LITE EVAL CODED(CBL).

17. Arunachalam, S., Jeyalakshmi, K., and Aboobucker, S. (1980). Toxic and Sublethal Effects of Carbaryl on a Freshwater Catfish, Mystus vittatus (Bloch). *Arch.Environ.Contam.Toxicol.* 9: 307-316.

EcoReference No.: 499
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO,BEH; Rejection Code: LITE EVAL CODED(CBL).

18. Arunachalam, S. and Palanichamy, S. (1982). Sublethal Effects of Carbaryl on Surfacing Behaviour and Food Utilization in the Air-Breathing Fish, Macropodus cupanus. *Physiol.Behav.* 29: 23-27.

EcoReference No.: 15589
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR,BEH; Rejection Code: LITE EVAL CODED(CBL).

19. Arunachalam, S., Palanichamy, S., and Balasubramanian, M. P. (1985). Sublethal Effects of Carbaryl on Food Utilization and Oxygen Consumption in the Air-Breathing Fish, Channa punctatus (Bloch). *J.Environ.Biol.* 6: 279-286.

EcoReference No.: 11126
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,BEH; Rejection Code: LITE EVAL CODED(CBL).

20. Atallah, Y. H. and Ishak, M. M. (1971). Toxicity of Some Commonly Used Insecticides to the Snail Biomphalaria alexandrina, Intermediate Host of Schistosoma mansoni in Egypt.

Z.Angew.Entomol. 69: 102-106.

EcoReference No.: 6332
Chemical of Concern: DDT,MP,CBL; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(DDT,MP).

21. Atiri, G. I., Ivbijaro, M. F., and Oladele, A. D. (1991). Effects of Natural and Synthetic Chemicals on the Incidence and Severity of Okra Mosaic Virus in Okra. *Trop.Agric.* 68: 178-180.

EcoReference No.: 75423
Chemical of Concern: DMT,AZD,CBL,LCYT,CYP; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(AZD),OK(CBL,LCYT),NO MIXTURE(DMT,CYP).

22. Attia, A. M., Reiter, R. J., Nonaka, K. O., Mostafa, M. H., Soliman, S. A., and El-Sebae, A. H. (1991). Carbaryl-Induced Changes in Indoleamine Synthesis in the Pineal Gland and Its Effects on Nighttime Serum Melatonin Concentrations. *Toxicology* 65: 305-314.

EcoReference No.: 87551
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY,BCM; Rejection Code: LITE EVAL CODED(CBL).

23. Attia, A. M., Reiter, R. J., Withyachumnarnkul, B., Mostafa, M. H., Soliman, S. A., and El-Sebae, A.-K. H. (1991). Chronic Administration of Sublethal Doses of Carbaryl Increases Pineal N-Acetyltransferase and Hydroxyindole-O-Methyltransferase Activities and Serum Melatonin Levels. *J.Pineal Res.* 10: 49-54.

EcoReference No.: 88396
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

24. Attia, F. I. and Frecker, T. (1984). Cross-Resistance Spectrum and Synergism Studies in Organophosphorus-Resistant Strains of Oryzaephilus surinamensis (L.) (Coleoptera: Cucugidae) in Australia . *J.Econ.Entomol.* 77: 1367-1370.

EcoReference No.: 71393
Chemical of Concern: RSM,CBL,DDT,HCCH; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(RSM).

25. Babcock, J. M. and Tanigoshi, L. K. (1988). Resistance Levels of Typhlodromus occidentalis (Acari: Phytoseiidae) from Washington Apple Orchards to Ten Pesticides. *Exp.Appl.Acarol.* 4: 151-157.

EcoReference No.: 74105
User Define 2: WASHT
Chemical of Concern: CHX,FTT,PPG,AZ,DZ,MOM,CBL,FNV,ES,MDT; Habitat: T; Effect Codes: MOR; Rejection Code: OK .

26. Bailey, H. C. and Liu, D. H. W. (1980). Lumbriculus variegatus, a Benthic Oligochaete, as a Bioassay Organism. *In: J.C.Eaton, P.R.Parrish, and A.C.Hendricks (Eds.), Aquatic Toxicology and Hazard Assessment, 3rd Symposium, ASTM STP 707, Philadelphia, PA* 205-215.

EcoReference No.: 6502
Chemical of Concern: DDT,24DXY,TNT,MLN,Hg,Zn,CuS,Cr,Pb,Cd,CHD,CBL,MXC; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CuS,OW-TRV-Cu),OK(ALL CHEMS).

27. Bansal, S. K., Verma, S. R., Gupta, A. K., and Dalela, R. C. (1980). Predicting Long-Term Toxicity by Subacute Screening of Pesticides with Larvae and Early Juveniles of Four Species of Freshwater Major Carp. *Ecotoxicol.Environ.Saf.* 4: 224-231.

EcoReference No.: 8293
Chemical of Concern: CBL,CHD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(CHD).

28. Bansal, S. K., Verma, S. R., Gupta, A. K., Rani, S., and Dalela, R. C. (1979). Pesticide-Induced Alterations in the Oxygen Uptake Rate of a Freshwater Major Carp Labeo rohita. *Ecotoxicol.Environ.Saf.* 3: 374-382.

EcoReference No.: 5362
Chemical of Concern: CHD,DEM,CBL; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL),OK(CHD,DEM),NO COC(OXD).

29. Barahona, M. V. and Sanchez-Fortun, S. (1999). Toxicity of Carbamates to the Brine Shrimp Artemia salina and the Effect of Atropine, BW284c51, iso-OMPA and 2-PAM on Carbaryl Toxicity. *Environ.Pollut.* 104: 469-476.

EcoReference No.: 20076
Chemical of Concern: ADC,CBL,OML,PPX; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,ADC),OK(OML,PPX).

30. Barlas, N. (1994). The Effects of Commercial and Microorganism-Degraded Solutions of Endosulfan and Carbaryl on Albino Mice. *Turk.J.Zool.* 18: 221-226 .

EcoReference No.: 87623
Chemical of Concern: ES,CBL; Habitat: T; Effect Codes: GRO,BCM; Rejection Code: LITE EVAL CODED(CBL),OK(ES).

31. Barry, M. J. (1999). The Effects of a Pesticide on Inducible Phenotypic Plasticity in Daphnia. *Environ.Pollut.* 104: 217-224.

EcoReference No.: 20074
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,REP,POP; Rejection Code: LITE EVAL CODED(CBL).

32. Bart, J. (1979). Effects of Acephate and Sevin on Forest Birds. *J.Wildl.Manag.* 43: 544-549.

EcoReference No.: 35750
Chemical of Concern: CBL,ACP; Habitat: T; Effect Codes: POP,GRO; Rejection Code: LITE EVAL CODED(ACP,CBL).

33. Basak, P. K. and Konar, S. K. (1976). Toxicity of Six Insecticides to Fish. *Geobios* 3: 209-210.

EcoReference No.: 5649
Chemical of Concern: CBL,DMT,HCCH,DDT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DMT),OK(HCCH,DDT).

34. Basha, S. M., Rao, K. S. P., Rao, K. R. S., and Rao, K. V. R. (1983). Differential Toxicity of Malathion, BHC, and Carbaryl to the Freshwater Fish, Tilapia mossambica (Peters). *Bull.Environ.Contam.Toxicol.* 31: 543-546.

EcoReference No.: 10055
Chemical of Concern: CBL,HCCH,MLN; Habitat: A; Effect Codes: MOR; Rejection Code:

LITE EVAL CODED(CBL),OK(ALL CHEMS).

35. Basha, S. M., Rao, K. S. P., Rao, K. R. S. S., and Rao, K. V. R. (1984). Respiratory Potentials of the Fish (Tilapia mossambica) Under Malathion, Carbaryl and Lindane Intoxication. *Bull.Environ.Contam.Toxicol.* 32: 570-574.

EcoReference No.: 10380
Chemical of Concern: CBL,HCCH,MLN; Habitat: A; Effect Codes: PHY,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(HCCH,MLN).

36. Baxendale, F. P., Shearman, R. C., and Wit, L. A. (1988). Annual White Grub Control in Kentucky Bluegrass, 1987. *Insectic.Acaric.Tests* 13: 330 (No. 7G).

EcoReference No.: 88813
Chemical of Concern: EP,DZ,CBL,CPY; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(EP,CPY).

37. Baxendale, F. P., Shearman, R. C., and Wit, L. A. (1988). Control of Annual White Grubs in Kentucky Bluegrass, 1987. *Insectic.Acaric.Tests* 13: 331 (NO. 8G).

EcoReference No.: 88814
Chemical of Concern: CBL,DZ; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL,DZ).

38. Beauvais, S. L., Jones, S. B., Parris, J. T., Brewer, S. K., and Little, E. E. (2001). Cholinergic and Behavioral Neurotoxicity of Carbaryl and Cadmium to Larval Rainbow Trout (Oncorhynchus mykiss). *Ecotoxicol.Environ.Saf.* 49: 84-90.

EcoReference No.: 62051
Chemical of Concern: CdCl,CBL; Habitat: A; Effect Codes: BEH,BCM; Rejection Code: LITE EVAL CODED(CBL),OK(CdCl).

39. Bellows, T. S. Jr. and Morse, J. G. (1993). Toxicity of Insecticides Used in Citrus to Aphytis Melinus debach (Hymenoptera: Aphelinidae) and Rhizobius lophanthae (Blaisd.) (Coleoptera: Coccinellidae). *Can.Entomol.* 125: 987-994.

EcoReference No.: 59334
Chemical of Concern: MOM,AZ,BFT,EFV,FPP,FVL,CBL,TDC,MVP,Naled,TCF; Habitat: T; Effect Codes: MOR; Rejection Code: OK(MOM),TARGET(FVL).

40. Benitez, E., Nogales, R., Elvira, C., Masciandaro, G., and Ceccanti, B. (1999). Enzyme and Earthworm Activities During Vermicomposting of Carbaryl-Treated Sewage Sludge. *J.Environ.Qual.* 28: 1099-1104.

EcoReference No.: 47469
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,REP,BEH,BCM; Rejection Code: LITE EVAL CODED(CBL).

41. Beyers, D. W., Farmer, M. S., and Sikoski, P. J. (1995). Effects of Rangeland Aerial Application of Sevin-4-Oil on Fish and Aquatic Invertebrate Drift in the Little Missouri River, North Dakota. *Arch.Environ.Contam.Toxicol.* 28: 27-34.

EcoReference No.: 14902
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM,POP; Rejection Code: LITE EVAL CODED(CBL).

42. Beyers, D. W., Keefe, T. J., and Carlson, C. A. (1994). Toxicity of Carbaryl and Malathion to Two Federally Endangered Fishes, as Estimated by Regression and ANOVA. *Environ.Toxicol.Chem.* 13: 101-107.

EcoReference No.: 13270
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(MLN).

43. Beyers, D. W. and Sikoski, P. J. (1994). Acetylcholinesterase Inhibition in Federally Endangered Colorado Squawfish Exposed to Carbaryl and Malathion. *Environ.Toxicol.Chem.* 13: 935-939.

EcoReference No.: 4444
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL),OK(MLN).

44. Bhatia, H. L. (1971). Toxicity of Some Pesticides to Puntius ticto (Hamilton). *Sci.Cult.* 37: 160-161.

EcoReference No.: 962
Chemical of Concern: CBL,HCCH,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

45. Bhattacharya, S. (1993). Target and Non-Target Effects of Anticholinesterase Pesticides in Fish. *Sci.Total Environ.* (Suppl.): 859-876.

EcoReference No.: 4311
Chemical of Concern: CBF,CBL; Habitat: A; Effect Codes: BCM,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(CBF).

46. Bhavan, P. S. and Geraldine, P. (2002). Carbaryl-Induced Alterations in Biochemical Metabolism of the Prawn, Macrobrachium malcolmsonii. *J.Environ.Biol.* 23: 157-162.

EcoReference No.: 66392
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

47. Bhunia, A. K., Marik, R., and Banerjee, S. K. (1994). Biochemical Effects of Carbaryl on Nitrogen Assimilating Enzymes of Cyanobacteria Nostoc muscorum. *Bull.Environ.Contam.Toxicol.* 52: 886-892.

EcoReference No.: 13691
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO,PHY; Rejection Code: LITE EVAL CODED(CBL).

48. Bhunya, S. P. and Sahoo, S. N. (2004). Genotoxic Potential of Carbaryl in the Peripheral Blood Erythrocytes of Anabas testudineus. *Indian J.Fish.* 51: 417-423.

EcoReference No.: 86582
Chemical of Concern: CBL; Habitat: A; Effect Codes: CEL; Rejection Code: LITE EVAL CODED(CBL).

49. Biediger, D. L., Baumann, P. A., Weaver, D. N., Chandler, J. M., and Merkle, M. G. (1992). Interactions Between Primisulfuron and Selected Soil-applied Insecticides in Corn (Zea mays). *Weed Technol.* 6: 807-812.

EcoReference No.: 83929

Chemical of Concern: CPY,DZ,TBO,CBL,CBF,DS,FNF; Habitat: T; Effect Codes: PHY,POP,GRO; Rejection Code: LITE EVAL CODED(DZ),OK(ALL CHEMS).

50. Bielecki, A. (1987). The Effect of Phoschlorine, Carbatox and Copper Sulphate on the Development of Eggs and Hatching of Miracidia in Fasciola hepatica L. *Zool.Pol.* 34: 209-220.

EcoReference No.: 87871
Chemical of Concern: CBL,CuS; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(CuS).

51. Bierkens, J., Maes, J., and Plaetse, F. V. (1998). Dose-Dependent Induction of Heat Shock Protein 70 Synthesis in Raphidocelis subcapitata Following Exposure to Different Classes of Environmental Pollutants. *Environ.Pollut.* 101: 91-97.

EcoReference No.: 19649
Chemical of Concern: CBL,HCCH,PCP,Se,Zn; Habitat: A; Effect Codes: PHY,POP; Rejection Code: LITE EVAL CODED(CBL,PCP),OK(Zn,HCCH,Se).

52. Bierkens, J., Maes, J., and Vander Plaetse, F. (1998). Dose-Dependent Induction of Heat Shock Protein 70 Synthesis in Raphidocelis subcapitata Following Exposure to Different Classes of Environmental. *Environ.Pollut.* 101: 91-97.

EcoReference No.: 19649
Chemical of Concern: CBL,HCCH,PCP,Se; Habitat: A; Effect Codes: PHY,POP; Rejection Code: LITE EVAL CODED(PCP),OK(ALL CHEMS).

53. Binelli, A., Ricciardi, F., Riva, C., and Provini, A. (2006). New Evidences for Old Biomarkers: Effects of Several Xenobiotics on EROD and AChE Activities in Zebra Mussel (Dreissena polymorpha). *Chemosphere* 62: 510-519.

EcoReference No.: 88372
Chemical of Concern: CBL,CPY,DDT; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL),OK(CPY,DDT).

54. Bishop, B., Grafius, E., Henry, P., Roragen, K., Maier, R., Stehr, M., and Linn, M. (1992). Colorado Potato Beetle Control, 1989. *Insectic.Acaric.Tests* 17: 122-124(No. 64E).

EcoReference No.: 79785
Chemical of Concern: CPY,CBL,CYH,EFV,ADC; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL,ADC,EFV),OK(ALL CHEMS).

55. Bogaerts, P., Bohatier, J., and Bonnemoy, F. (2001). Use of the Ciliated Protozoan Tetrahymena pyriformis for the Assessment of Toxicity and Quantitative Structure-Activity Relationships of Xenobiotics: Comparison with the Microtox Test. *Ecotoxicol.Environ.Saf.* 49: 293-301.

EcoReference No.: 62033
Chemical of Concern: Hg,Cd,CuS,Cr,Zn,Mn,Fe,Pb,Co,Ni,As,CBL,MLN,PRN,HCCH,DM,ATZ,DU,PCP,PL,NaPCP; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CuS),NO PUBL AS(PCP,NaPCP),OK(ALL CHEMS).

56. Bogaerts, P., Bohatier, J., and Bonnemoy, F. (2001). Use of the Ciliated Protozoan Tetrahymena pyriformis for the Assessment of Toxicity and Quantitative Structure-Activity Relationships of Xenobiotics: Comparison with the Microtox Test. *Ecotoxicol.Environ.Saf.* 49: 293-301.

EcoReference No.: 62033

Chemical of Concern: Hg,Cd,CuS,Zn,Mn,Fe,Pb,Co,Ni,As,CBL,CrAC,MLN,PRN,HCCH,DM,ATZ,Du,PL,MP; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(MLN,CBL,ATZ,CuS,CrAC),NO PUBL AS(PCP,NaPCP),OK(ALL CHEMS).

57. Boone, M. D. and Bridges, C. M. (1999). The Effect of Temperature on the Potency of Carbaryl for Survival of Tadpoles of the Green Frog (Rana clamitans). *Environ.Toxicol.Chem.* 18: 1482-1484.

EcoReference No.: 47680
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

58. Boone, M. D. and Bridges, C. M. (2003). Effects of Carbaryl on Green Frog (Rana clamitans) Tadpoles: Timing of Exposure Versus Multiple Exposures. *Environ.Toxicol.Chem.* 22: 2695-2702.

EcoReference No.: 71731
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL).

59. Boone, M. D., Bridges, C. M., Fairchild, J. F., and Little, E. E. (2005). Multiple Sublethal Chemicals Negatively Affect Tadpoles of the Green Frog, Rana clamitans. *Environ.Toxicol.Chem.* 24: 1267-1272.

EcoReference No.: 84844
Chemical of Concern: NHN,CBL; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(NHN).

60. Boone, M. D., Bridges, C. M., and Rothermel, B. B. (2001). Growth and Development of Larval Green Frogs (Rana clamitans) Exposed to Multiple Doses of an Insecticide. *Oecologia* 129: 518-524.

EcoReference No.: 82767
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR,POP; Rejection Code: LITE EVAL CODED(CBL).

61. Boone, M. D. and James, S. M. (2003). Interactions of an Insecticide, Herbicide, and Natural Stressors in Amphibian Community Mesocosms. *Ecol.Appl.* 13: 829-841.

EcoReference No.: 81455
Chemical of Concern: ATZ,CBL; Habitat: A; Effect Codes: GRO,MOR,POP; Rejection Code: LITE EVAL CODED(CBL,ATZ).

62. Boone, M. D. and Semlitsch, R. D. (2002). Interactions of an Insecticide with Competition and Pond Drying in Amphibian Communities. *Ecol.Appl.* 12: 307-316 .

EcoReference No.: 86020
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITED EVAL CODED(CBL).

63. Boone, M. D. and Semlitsch, R. D. (2001). Interactions of an Insecticide with Larval Density and Predation in Experimental Amphibian Communities. *Conserv.Biol.* 15: 228-238.

EcoReference No.: 86763
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,GRO,MOR; Rejection Code:

LITE EVAL CODED(CBL).

64. Boone, M. D. and Semlitsch, R. D. (2003). Interactions of Bullfrog Tadpole Predators and an Insecticide: Predation Release and Facilitation. *Oecologia* 137: 610-616.

EcoReference No.: 82263
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,GRO,MOR; Rejection Code: LITE EVAL CODED(CBL).

65. Boone, M. D., Semlitsch, R. D., Fairchild, J. F., and Rothermel, B. B. (2004). Effects of an Insecticide on Amphibians in Large-Scale Experimental Ponds. *Ecol.Appl.* 14: 685-691.

EcoReference No.: 86764
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO,POP,BCM; Rejection Code: LITE EVAL CODED(CBL).

66. Bossard, R. L., Dryden, M. W., and Broce, A. B. (2002). Insecticide Susceptibilities of Cat Fleas (Siphonaptera: Pulicidae) from Several Regions of the United States. *J.Med.Entomol.* 39: 742-746.

EcoReference No.: 68605
Chemical of Concern: PYT,PMR,CBL,MLN,PPB,CPY; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED (CBL,MLN),OK(PYT,PMR,CPY),NO MIXTURE(PPB).

67. Bowman, J. S. and Barry, D. W. (1992). Control on Late Season Sweet Corn with Foliar Sprays, 1990. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 101.

EcoReference No.: 79278
Chemical of Concern: CYH,FNV,PMR,CPY,MOM,EFV,CBL; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(EFV),OK(ALL CHEMS).

68. Brandenburg, R. L. (1985). The Effect of Field Applications of Insecticides for Variegated Cutworm, Peridroma saucia (Hubner) (Noctuidae: Lepidoptera) Control on Non-Target Arthropods in Alfalfa. *J.Kans.Entomol.Soc.* 58: 437-441 .

EcoReference No.: 63402
Chemical of Concern: CPY,CBL,MOM; Habitat: T; Effect Codes: POP; Rejection Code: OK.

69. Brandenburg, R. L. and Hertl, P. T. (1988). Control of Japanese Beetle Grubs on a Golf Course Fairway, 1987. *Insectic.Acaric.Tests* 13: 331 (No. 9G).

EcoReference No.: 88811
Chemical of Concern: EP,DZ,CBL; Habitat: T; Effect Codes: POP; Rejection Code: OK(EP),LITE EVAL CODED(DZ,CBL).

70. Brehmer, P. M. and Anderson, R. K. (1992). Effects of Urban Pesticide Applications on Nesting Success of Songbirds. *Bull.Environ.Contam.Toxicol.* 48: 352-359.

EcoReference No.: 68895
Chemical of Concern: ACP,CBL,DZ; Habitat: T; Effect Codes: BCM,REP; Rejection Code: LITE EVAL CODED(DZ,CBL),OK(ALL CHEMS).

71. Bridges, C. M. (1999). Effects of a Pesticide on Tadpole Activity and Predator Avoidance Behavior.

J.Herpetol. 33: 303-306.

EcoReference No.: 62240
Chemical of Concern: CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

72. Bridges, C. M. (2000). Long-Term Effects of Pesticide Exposure at Various Life Stages of the Southern Leopard Frog (Rana sphenocephala). *Arch.Environ.Contam.Toxicol.* 39: 91-96.

EcoReference No.: 47778
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

73. Bridges, C. M. (1999). Predator-Prey Interactions Between Two Amphibian Species: Effects of Insecticide Exposure . *Aquat.Ecol.* 33: 205-211.

EcoReference No.: 59759
Chemical of Concern: CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

74. Bridges, C. M. (1997). Tadpole Swimming Performance and Activity Affected by Acute Exposure to Sublethal Levels of Carbaryl. *Environ.Toxicol.Chem.* 16: 1935-1939.

EcoReference No.: 18158
Chemical of Concern: CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

75. Bridges, C. M. and Boone, M. D. (2003). The Interactive Effects of UV-B and Insecticide Exposure on Tadpole Survival, Growth and Development. *Biol.Conserv.* 113: 49-54.

EcoReference No.: 73007
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

76. Bridges, C. M., Dwyer, F. J., Hardesty, D. K., and Whites, D. W. (2002). Comparative Contaminant Toxicity: Are Amphibian Larvae More Sensitive than Fish? *Bull.Environ.Contam.Toxicol.* 69: 562-569.

EcoReference No.: 72411
Chemical of Concern: NPY,CBL,CuS,PCP,PMR; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CuS,PCP),OK(NPY,PMR).

77. Bridges, C. M. and Semlitsch, R. D. (2001). Genetic Variation in Insecticide Tolerance in a Population of Southern Leopard Frogs (Rana sphenocephala): Implications for Amphibian Conservation. *Copeia* 1: 7-13.

EcoReference No.: 87654
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

78. Bridges, C. M. and Semlitsch, R. D. (2000). Variation in Pesticide Tolerance of Tadpoles Among and Within Species of Ranidae and Patterns of Amphibian Decline. *Cons.Biol.* 14: 1490-1499.

EcoReference No.: 71881
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BEH,POP; Rejection Code: LITE EVAL CODED(CBL).

79. Broderius, S. J., Kahl, M. D., and Hoglund, M. D. (1995). Use of Joint Toxic Response to Define the Primary Mode of Toxic Action for Diverse Industrial Organic Chemicals. *Environ.Toxicol.Chem.* 14: 1591-1605 (Author Communication Used).

EcoReference No.: 15031
Chemical of Concern: ACR,DNT,PL,4NP,2CP,OPHP,PCP,C8OH,NP,RTN,CPH,NAPH,As,BMN,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,NAPH,RTN,PCP),OK(ACR,DNT,PL,4NP,2CP,DPHP,NP,CPH,AS,BMN),NO PUB AS(C8OH).

80. Brooke, L. T. (1991). Results of Freshwater Exposures with the Chemicals Atrazine, Biphenyl, Butachlor, Carbaryl, Carbazole, Dibenzofuran, 3,3'-Dichlorobenzidine, Dichlorvos, 1,2-Epoxyethylbenzene (Styrene Oxide), Isophorone, Isopropalin, Oxychlordane, Pentachloroanisole, Propoxur (Baygon), Tetrabromobisphenol A, 1,2,4,5-Tetrachlorobenzene, and 1,2,3-Trichloropropane to Selected Freshwater Organisms. *Ctr.for Lake Superior Environ.Stud., Univ.of Wisconsin-Superior, Superior, WI* 110 p.

EcoReference No.: 17138
Chemical of Concern: ATZ,PCB,BTC,CBL,FRN,DDVP,ISO,CHD,PPX,CBZ; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL,ATZ),OK(ALL CHEMS).

81. Brown, K. W., Anderson, D. C., Jones, S. G., Deuel, L. E., and Price, J. D. (1979). The Relative Toxicity of Four Pesticides in Tap Water and Water From Flooded Rice Paddies. *Int.J.Environ.Stud.* 14: 49-53.

EcoReference No.: 5722
Chemical of Concern: CBL,PPN,MLT,CBF; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(CBF,MLT,PPN).

82. Brunner, J. F., Dunley, J. E., Doerr, M. D., and Beers, E. H. (2001). Effect of Pesticides on Colpoclypeus florus (Hymenoptera: Eulophidae) and Trichogramma platneri (Hymenoptera: Trichogrammatidae), Parasitoids of Leafrollers in Washington. *J.Econ.Entomol.* 94: 1075-1084 .

EcoReference No.: 63713
Chemical of Concern: AZ,CYP,DZ,DMT,MP,MDT,PSM,OML,CBL,FTT,AMZ,PMR,ES,EFV,IMC,SS,PPG,DFZ,FYC,TUZ,MFZ,AZD; Habitat: T; Effect Codes: MOR,BEH,REP; Rejection Code: LITE EVAL CODED (AZ,DZ,CYP,DMT,MP,MDT,PSM,OML,CBL,FTT,AMZ,PMR,ES,EFV,IMC,SS,PPG,DFZ,FYC,TUZ,MFZ,AZD).

83. Buchanan, D. V., Millemann, R. E., and Stewart, N. E. (1970). Effects of the Insecticide Sevin on Various Stages of the Dungeness Crab, Cancer magister. *J.Fish.Res.Board Can.* 27: 93-104.

EcoReference No.: 9521
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR,BEH; Rejection Code: LITE EVAL CODED(CBL).

84. Buntin, G. D. (1999). Damage Loss Assessment and Control of the Cabbage Seedpod Weevil (Coleoptera: Curculionidae) in Winter Canola Using Insecticides. *J.Econ.Entomol.* 92: 220-227.

EcoReference No.: 63601

Chemical of Concern: BFT,EFV,AZD,CBL,MOM,ES,PMR; Habitat: T; Effect Codes: POP,CEL,PHY; Rejection Code: LITE EVAL CODED(BFT,EFV),OK(ALL CHEMS).

85. Buntin, G. D. (1998). Evaluation of Insecticides for Control of the Cabbage Seedpod Weevil in Canola. *In: G.D.Buntin (Ed.), Res.Bull.No.435, Assessment of Crop Protectants for Use in Canola, Univ.of Ga., Athens, GA* 25-29.

EcoReference No.: 73097
Chemical of Concern: EFV,MLN,ES,PMR,MOM,CBL,MP,PSM,AZD,PRN; Habitat: T; Effect Codes: POP,GRO,BCM; Rejection Code: LITE EVAL CODED(EFV,MOM,AZD),TARGET(MLN),OK(ALL CHEMS).

86. Burdick, G. E., Dean, H. J., Harris, E. J., Skea, J., and Colby, D. (1965). Toxicity of Sevin (Carbaryl) to Fingerling Brown Trout. *N.Y.Fish Game J.* 12: 127-146.

EcoReference No.: 4517
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO,ACC; Rejection Code: LITE EVAL CODED(CBL).

87. Bursian, S. J. and Edens, F. W. (1978). The Effect of Acute Carbaryl Administration on Various Neurochemical and Blood Chemical Parameters in the Japanese Quail. *Toxicol.Appl.Pharmacol.* 46: 463-473.

EcoReference No.: 35070
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY,BCM; Rejection Code: LITE EVAL CODED(CBL).

88. Bursian, S. J. and Edens, F. W. (1977). The Prolonged Exposure of Japanese Quail to Carbaryl and Its Effects on Growth and Reproductive Parameters. *Bull.Environ.Contam.Toxicol.* 17: 360-368.

EcoReference No.: 35069
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,REP; Rejection Code: LITE EVAL CODED (CBL).

89. Bursian, S. J. and Edens, F. W. (1979). The Prolonged Exposure of Japanese Quail to Carbaryl and Its Effects on Neurochemical and Blood Chemical Parameters. *Bull.Environ.Contam.Toxicol.* 21: 144-151.

EcoReference No.: 35068
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED (CBL).

90. Butler, J. A., Millemann, R. E., and Stewart, N. E. (1968). Effects of the Insecticide Sevin on Survival and Growth of the Cockle Clam Clinocardium nuttalli. *J.Fish.Res.Board Can.* 25: 1621-1635.

EcoReference No.: 17741
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,BEH,MOR,ACC; Rejection Code: LITE EVAL CODED(CBL).

91. Butler, P. A. (1964). Commercial Fishery Investigations. *In: Pesticide-Wildlife Studies, 1963, U.S.D.I., Fish and Wildl.Serv.,Circ.199* 28 p.(Author Communication Used).

EcoReference No.: 646
Chemical of Concern: AZ,DS,HCCH,MLN,MP,Naled,PRT,24DXY,CMPH,DMT,DU,PEB,PSM,NTP,TXP,CBL;

Habitat: A; Effect Codes: BEH,POP,MOR,GRO,ACC,SYS; Rejection Code: LITE EVAL CODED(AZ, PRT),NO ENDPOINT(DMT).

92. Butler, P. A., Wilson, A. J. Jr., and Rick, A. J. (1960). Effect of Pesticides on Oysters. *Proc.Natl.Shellfish Assoc.* 51: 23-32.

EcoReference No.: 3708
Chemical of Concern: DCB,DDT,EN,HPT,CBL,DLD,TXP,CHD,RTN; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(CBL,DCB,RTN),OK(ALL CHEMS).

93. Byrd, J. D. Jr. and York, A. C. (1988). Interactions of Carbaryl and Dimethoate with Sethoxydim. *Weed Technol.* 2: 433-436.

EcoReference No.: 75045
Chemical of Concern: SXD,DMT,CBL; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(DMT,SXD),OK(ALL CHEMS).

94. Cajaraville, M. P., Marigomez, J. A., and Angulo, E. (1990). Short-Term Toxic Effects of 1-Naphthol on the Digestive Gland-Gonad Complex of the Marine Prosobranch Littorina littorea (L): A Light Microscopic Study. *Arch.Environ.Contam.Toxicol.* 19: 17-24.

EcoReference No.: 2999
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,CEL; Rejection Code: LITE EVAL CODED(CBL).

95. Cajaraville, M. P., Marigomez, J. A., and Angulo, E. (1989). A Stereological Survey of Lysosomal Structure Alterations in Littorina littorea Exposed to 1-Naphthol. *Comp.Biochem.Physiol.C* 93: 231-237.

EcoReference No.: 947
Chemical of Concern: CBL; Habitat: A; Effect Codes: CEL,MOR; Rejection Code: LITE EVAL CODED(CBL).

96. Cajaraville, M. P., Recio, A., Saez, V., and Marigomez, J. A. (1989). Acute Toxicity of Two Hydroxylated Hydrocarbons to the Prosobranch Gastropod Littorina littorea. *In: J.Ros (Ed.), Topics in Mar.Biol., Proc.22nd European Mar.Biol.Symp., Barcelona, Spain; Scient.Mar.* 53: 745-748.

EcoReference No.: 16485
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

97. Calvin, D. and Sammons, C. (1987). Evaluation of Molluscicides for Slug Control, 1986. *Insectic.Acaric.Tests* 12: 192 (No. 225).

EcoReference No.: 88713
Chemical of Concern: CBL,MCB; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL),OK(MCB).

98. Cambon, C., Declume, C., and Derache, R. (1980). Foetal and Maternal Rat Brain Acetylcholinesterase: Isoenzymes Changes Following Insecticidal Carbamate Derivatives Poisoning. *Arch.Toxicol.* 45: 257-262.

EcoReference No.: 86664
Chemical of Concern: PIM,CBF,ADC,CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(ADC,CBL),OK(ALL CHEMS).

99. Campbell, J. R. and Penner, D. (1982). Enhanced Phytotoxicity of Bentazon with Organophosphate and Carbamate Insecticides. *Weed Sci.* 30: 324-326.

EcoReference No.: 61217
User Define 2: WASH,CALF,SENT
Chemical of Concern: BT,PRN,MLN,DZ,CBF,CBL
Endpoint: POP; Habitat : T; Rejection Code: LITE EVAL CODED(CBF).

100. Campbell, J. R. and Penner, D. (1982). Enhanced Phytotoxicity of Bentazon with Organophosphate and Carbamate Insecticides. *Weed Sci.* 30: 324-326.

EcoReference No.: 61217
Chemical of Concern: BT,PRN,MLN,DZ,CBF,CBL; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(DZ,CBF),OK(ALL CHEMS).

101. Capaldo, P. S. (1987). Effects of Carbaryl (Sevin) on the Stage I Zoeae of the Red-Jointed Fiddler Crab, Uca minax (LeConte). *Estuaries* 10: 132-135.

EcoReference No.: 4624
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL).

102. Carlson, A. R. (1971). Effects of Long-Term Exposure to Carbaryl (Sevin) on Survival, Growth, and Reproduction of the Fathead Minnow (Pimephales promelas). *J.Fish.Res.Board Can.* 29: 583-587.

EcoReference No.: 5073
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,REP,GRO; Rejection Code: LITE EVAL CODED (CBL).

103. Carlson, R. W. (1990). Ventilatory Patterns of Bluegill (Lepomis macrochirus) Exposed to Organic Chemicals with Different Mechanisms of Toxic Action. *Comp.Biochem.Physiol.C* 95: 181-196.

EcoReference No.: 3461
Chemical of Concern: CF,24DXY,C8OH,NP,CBL,ACC,PCP,RTN,MLN; Habitat: A; Effect Codes: PHY,MOR; Rejection Code: LITE EVAL CODED(CBL,C8OH,ACL),OK(ALL CHEMS).

104. Carlson, R. W., Bradbury, S. P., Drummond, R. A., and Hammermeister, D. E. (1998). Neurological Effects on Startle Response and Escape from Predation by Medaka Exposed to Organic Chemicals. *Aquat.Toxicol.* 43: 51-68.

EcoReference No.: 20097
Chemical of Concern: NP,ES,CBL,24DXY,STCH,PL,C8OH,CPY,FNV; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL,C8OH),OK(ALL CHEMS).

105. Carpenter, C. P., Weil, C. S., Palm, P. E., Woodside, M. W., Nair III, J. H., and Smyth, H. F. Jr. (1961). Mammalian Toxicity of 1-Naphthyl-N-Methylcarbamate (Sevin Insecticide). *Agric.Food Chem.* 9: 30-39.

EcoReference No.: 70337
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

106. Carter, F. L. (1971). In Vivo Studies of Brain Acetylcholinesterase Inhibition by Organophosphate and Carbamate Insecticides in Fish. *Ph.D.Thesis, Louisiana State Univ.and Agric.and Mechanical College:202 p.; Diss.Abstr.Int.B Sci.Eng.* 32: 2772-2773 (Publ in Part As 942).

EcoReference No.: 14034
Chemical of Concern: CPY,MOM,CBF,AZ,ADC,DCTP,MP,MLN,CBL; Habitat: A; Effect Codes: BCM,GRO,MOR; Rejection Code: LITE EVAL CODED(AZ,CBL,CBF,MOM,ADC,MLN),OK(CPY,DCTP,MP).

107. Cathey, B. (1982). Comparative Toxicities of Five Insecticides To The Earthworm, Lumbricus terrestris. *Agric.Environ.* 7: 73-81.

EcoReference No.: 40535
Chemical of Concern: PRN,EN,AND,DDT,CBL; Habitat: T; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

108. Cathey, B. (1973). Some Morphological and Physiological Studies on the Effects of Carbaryl on the Earthworm, Lumbricus terrestris. *Ph.D.Thesis, Michigan State Univ.,* 34: 64p.

EcoReference No.: 59374
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,PHY,BEH,CEL; Rejection Code: LITE EVAL CODED(CBL).

109. Cecil, H. C., Harris, S. J., and Bitman, J. (1974). Effects of Nonpersistent Pesticides on Liver Weight, Lipids and Vitamin A of Rats and Quail. *Bull.Environ.Contam.Toxicol.* 11: 496-499.

EcoReference No.: 35083
Chemical of Concern: MXC,MLN,CBL; Habitat: T; Effect Codes: BCM,GRO; Rejection Code: LITE EVAL CODED(CBL),OK(MXC,MLN).

110. Chakrawarti, J. B. and Chaurasia, R. C. (1981). Toxicity of Some Organophosphate, Chlorinated and Carbamate Pesticides to Some Fresh Water Fishes. *Indian J.Zool.* 9: 91-93.

EcoReference No.: 13614
Chemical of Concern: CBL,PPHD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(PPHD).

111. Chandra, K., Reddy, S., and Joshi, G. C. (1990). Effect of Insecticides and Plant Growth Regulators on Plant Growth, Incidence Yield in Brinjal (Solanum melongena L.). *J.Res.A.P.A.U.(Andhra Pradesh Agric.Univ.)* 18: 141-145.

EcoReference No.: 75125
Chemical of Concern: DMT,CBL,ES,PHSL; Habitat: T; Effect Codes: POP,GRO,PHY; Rejection Code: LITE EVAL CODED(DMT),OK(ALL CHEMS).

112. Chang, K. H., Sakamoto, M., and Hanazato, T. (2005). Impact of Pesticide Application on Zooplankton Communities with Different Densities of Invertebrate Predators: An Experimental Analysis Using Small-Scale Mesocosms. *Aquat.Toxicol.* 72: 373-382.

EcoReference No.: 80938
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

113. Chang, V. C. S. and Lange, W. H. (1967). Laboratory and Field Evaluation of Selected Pesticides for Control of the Red Crayfish in California Rice Fields. *J.Econ.Entomol.* 60:

473-477.

EcoReference No.: 4678
Chemical of Concern: FNTH,MP,CPY,PRN,DLD,CBL,Captan,THM; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS),NO ENDPOINT(Captan).

114. Chari, M. S. (1992). A Rapid Bioassay Procedure to Determine the Toxicity of Pesticides to Channa punctatus Bloch. *J.Inl.Fish.Soc.India* 24: 88-90.

EcoReference No.: 17200
Chemical of Concern: DDT,MLN,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(DDT,MLN).

115. Chary, M. S., Ramasubbaiah, K., and Bhushan, V. S. (1990). Effect of Certain Modern Insecticides on the Yield of Groundnut. *Indian J.Entomol.* 52: 478-481.

EcoReference No.: 77560
Chemical of Concern: ADC,CYP,PMR,FNV,CBL,DCM; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(ADC,CYP,CBL),OK(ALL CHEMS).

116. Cheah, M. L., Avault, J. W. Jr., and Graves, J. B. (1980). Acute Toxicity of Selected Rice Pesticides to Crayfish Procambarus clarkii. *Prog.Fish-Cult.* 42: 169-172.

EcoReference No.: 5245
Chemical of Concern: 24DXY,Captan,MLT,CuOH,BMY,THM,MP,CBL,MLN,DDN,CBF; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(MLT,CuOH),OK(ALL CHEMS).

117. Chernoff, N. and Kavlock, R. J. (1982). An In Vivo Teratology Screen Utilizing Pregnant Mice. *J.Toxicol.Environ.Health* 10: 541-550.

EcoReference No.: 58855
Chemical of Concern: Mirex,NiCL,MRX,CBL,TXP,CCA,EN,BMY,ETU,DCM,HCCP,CHD; Habitat: T; Effect Codes: MOR,GRO,REP; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

118. Chin, Y. N. and Sudderuddin, K. I. (1979). Effect of Methamidophos on the Growth Rate and Esterase Activity of the Common Carp Cyprinus carpio L. *Environ.Pollut.* 18: 213-220.

EcoReference No.: 5597
Chemical of Concern: MTM,CBL; Habitat: A; Effect Codes: BCM,MOR; Rejection Code: LITE EVAL CODED(MTM,CBL).

119. Chitra, S. and Pillai, M. K. K. (1984). Development of Organophosphorus and Carbamate-Resistance in Indian Strains of Anopheles stephensi Liston. *Proc.Indian Acad.Sci.Anim.Sci.* 93: 159-170.

EcoReference No.: 12464
Chemical of Concern: DDT,CBL,MLN,CBF,FNT,TMP,FNTH,CPY,DDPV,PPX; Habitat: A; Effect Codes: MOR,CEL; Rejection Code: LITE EVAL CODED(CBL,CBF),OK(ALL CHEMS).

120. Choudhury, C., Ray, A. K., Bhattacharya, S., and Bhattacharya, S. (1993). Non Lethal Concentrations of Pesticide Impair Ovarian Function in the Freshwater Perch, Anabas testudineus. *Environ.Biol.Fish.* 36: 319-324.

EcoReference No.: 4096
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM,GRO; Rejection Code: LITE EVAL CODED(CBL).

121. Cilgi, T. and Frampton, G. K. (1994). Arthropod Populations Under Current and Reduced-Input Pesticide Regimes: Results from the First Four Treatment Years of the Maff "Scarab" Project. *Brighton Crop Protection Conference: Pests And Diseases, British Crop Prot.Council, Nov.21-24, 1994, Brighton, England, UK* 1-3: 653-660.

EcoReference No.: 65262
Chemical of Concern: ADC,CBL,CYP; Habitat: T; Rejection Code: TARGET(CYP).

122. Coeurdassier, M., Saint-Denis, M., Gomot-De Vaufleury, A., Ribera, D., and Badot, P.-M. (2001). The Garden Snail (Helix aspersa) as a Bioindicator of Organophosphorus Exposure: Effects of Dimethoate on Survival, Growth, and Acetylcholinesterase Activity. *Environ.Toxicol.Chem.* 20: 1951-1957.

EcoReference No.: 63387
Chemical of Concern: AZ,CBL,MP,TCF,DMT,FNT; Habitat: T; Effect Codes: BEH,MOR,GRO,ACC,PHY; Rejection Code: LITE EVAL CODED(AZ,CBL,DMT),OK(MP,TCF,FNT).

123. Collins, P. J. and Wilson, D. (1987). Efficacy of Current and Potential Grain Protectant Insecticides Against a Fenitrothion-Resistant Strain of the Sawtoothed Grain Beetle, Oryzaephilus surinamensis L. *Pestic.Sci.* 20: 93-104.

EcoReference No.: 70193
Chemical of Concern: RSM,CBL,CYP; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(RSM,CYP).

124. Collins, P. J. and Wilson, D. (1986). Insecticide Resistance in the Major Coleopterous Pests of Stored Grain in Southern Queensland Australia. *Queensl.J.Agric.Anim.Sci.* 43: 107-114.

EcoReference No.: 70503
Chemical of Concern: RSM,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(RSM).

125. Collins, T. F. X., Hansen, W. H., and Keeler, H. V. (1971). The Effect of Carbaryl (Sevin) on Reproduction of the Rat and the Gerbil. *Toxicol.Appl.Pharmacol.* 19: 202-216.

EcoReference No.: 35102
Chemical of Concern: CBL; Habitat: T; Effect Codes: REP,MOR,GRO; Rejection Code: LITE EVAL CODED (CBL).

126. Conners, D. E. and Black, M. C. (2004). Evaluation of Lethality and Genotoxicity in the Freshwater Mussel Utterbackia imbecillis (Bivalvia: Unionidae) Exposed Singly and in Combination to Chemicals Used in Lawn Care. *Arch.Environ.Contam.Toxicol.* 46: 362-371.

EcoReference No.: 74236
Chemical of Concern: CuS,ATZ,GYP,DZ,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CuS),OK(ALL CHEMS).

127. Conners, D. E. and Black, M. C. (2004). Evaluation of Lethality and Genotoxicity in the Freshwater Mussel Utterbackia imbecillis (Bivalvia: Unionidae) Exposed Singly and in Combination to Chemicals Used in Lawn Care. *Arch.Environ.Contam.Toxicol.* 46: 362-371.

EcoReference No.: 74236
Chemical of Concern: ATZ,GYP,DZ,CBL,CuS; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,ATZ,CuS),OK(GYP).

128. Conti, E. (1987). Acute Toxicity of Three Detergents and Two Insecticides in the Lugworm, Arenicola marina (L.): A Histological and a Scanning Electron Microscopic Study. *Aquat.Toxicol.* 10: 325-334.

EcoReference No.: 2519
Chemical of Concern: NaDBS,CBL,EPRN; Habitat: A; Effect Codes: MOR,CEL; Rejection Code: LITE EVAL CODED(CBL),OK(EPRN,NaDBS).

129. Coppage, D. L. (1977). Anticholinesterase Action of Pesticidal Carbamates in the Central Nervous System of Poisoned Fishes. *In: J.F.Vernberg (Ed.), Symp.Physiological Responses of Marine Biota to Pollutants, Academic Press, New York, NY* 93-102.

EcoReference No.: 7669
Chemical of Concern: ADC,MOM,CBP,CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL,CBF,ADC,MOM).

130. Courtemanch, D. L. and Gibbs, K. E. (1980). The Effects of Sevin-4-Oil on Lentic Communities. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1979 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 215-223.

EcoReference No.: 16312
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

131. Courtemanch, D. L. and Gibbs, K. E. (1978). The Effects of Sevin-4-Oil on Lentic Communities. A Final Report to the Maine Forest Service Augusta, Maine. *In: K.G.Stratton (Ed.), Environ.Monit.of Cooperative Spruce Budworm Control Project, Maine 1976 and 1977, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 141-150.

EcoReference No.: 16308
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

132. Courtemanch, D. L. and Gibbs, K. E. (1980). Short- and Long-Term Effects of Forest Spraying of Carbaryl (Sevin-4-Oil) on Stream Invertebrates. *Can.Entomol.* 112: 271-276.

EcoReference No.: 6426
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,MOR; Rejection Code: LITE EVAL CODED(CBL).

133. Cress, C. R. and Strother, A. (1974). Effects on Drug Metabolism of Carbaryl and 1-Naphthol in the Mouse. *Life Sci.* 14: 861-872.

EcoReference No.: 35109
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,MOR,BEH,BCM; Rejection Code: LITE EVAL CODED(CBL).

134. Daglish, G. J., Hall, E. A., Zorzetto, M. J., Lambkin, T. M., and Erbacher, J. M. (1993). Evaluation of Protectants for Control of Acanthoscelides obtectus (Say) (Coleoptera: Bruchidae) in Navybeans (Phaseolus vulgaris (L.)). *J.Stored Prod.Res.* 29: 215-219.

EcoReference No.: 70523
Chemical of Concern: RSM,CBL,MLN,FNT,PIRM,PMR,DM,CPYM; Habitat: T; Effect Codes: MOR,REP; Rejection Code: LITE EVAL CODED(BRSM),OK(ALL CHEMS).

135. Das, M. K. and Adhikary, S. P. (1996). Toxicity of Three Pesticides to Several Rice-Field Cyanobacteria. *Trop.Agric.* 73: 155-157.

EcoReference No.: 75042
Chemical of Concern: DMT,CBL,ES; Habitat: A; Effect Codes: BCM,POP; Rejection Code: LITE EVAL CODED(DMT),OK(ALL CHEMS).

136. Das, M. K. and Adhikary, S. P. (1996). Toxicity of Three Pesticides to Several Rice-Field Cynobacteria. *Trop.Agric.* 73: 155-157.

EcoReference No.: 75042
Chemical of Concern: DMT,CBL,ES; Habitat: A; Effect Codes: BCM,POP; Rejection Code: LITE EVAL CODED(CBL,DMT),OK(ES).

137. Das, U. K. and Kumar, D. (1993). Toxicity of Carbaryl on alpha-Amylase of the Fish Colisa fasciatus. *J.Ecotoxicol.Environ.Monit.* 3: 143-146.

EcoReference No.: 16799
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

138. Davis, H. C. and Hidu, H. (1969). Effects of Pesticides on Embryonic Development of Clams and Oysters and on Survival and Growth of the Larvae. *Fish.Bull.* 67: 393-404.

EcoReference No.: 2400
Chemical of Concern: EDT,24DXY,AZ,CBL,CMPH,DS,DU,MLN,PCP,NaPCP,DBAC,HCCH,PRN,DDT,DZ,DCB; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,AZ,DCB,DZ,PCP,NaPCP,DBAC),OK(ALL CHEMS).

139. De Mel, G. W. J. L. M. V. T. M. and Pathiratne, A. (2005). Toxicity Assessment of Insecticides Commonly Used in Rice Pest Management to the Fry of Common Carp, Cyprinus carpio, a Food Fish Culturable in Rice Fields. *J.Appl.Ichthyol.* 21: 146-150.

EcoReference No.: 87858
Chemical of Concern: CBL,CPY,DMT; Habitat: A; Effect Codes: MOR,BCM,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(CPY,DMT).

140. De Oliveira, G. H., Saad, W. A., and Larini, L. (1991). Effects of Carbamates on the Hemodynamic Parameters of Rats Treated or not with alpha-Pyridylaldoxime Methylsulfomethylate (P2S). *Rev.Cienc.Farm.(Sao Paulo)* 13: 67-76.

EcoReference No.: 87862
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL).

141. Dela Cruz, C. R. and Cagauan, A. G. (1981). Preliminary Study on the Bioassay of Seven Pesticides and Five Weedicides with Tilapia, Carps, Clam and Shrimp as Test Species. *Fish.Res.J.Philipp.* 6: 11-18.

EcoReference No.: 3241

Chemical of Concern: AZ,BTC,MCPA,24DXY,CYP,PMR,MP,CBL; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL,CYP),OK(ALL CHEMS),NO COC(MTAS).

142. Derosa, C. T., Taylor, D. H., Farrell, M. P., and Seilkop, S. K. (1976). Effects of Sevin on the Reproductive Biology of the Coturnix. *Poult.Sci.* 55: 2133-2141.

EcoReference No.: 35124
Chemical of Concern: CBL; Habitat: T; Effect Codes: REP,MOR,ACC,BEH; Rejection Code: LITE EVAL CODED (CBL).

143. Deshmukh, P. B. and Keshavan, R. (1987). Activities of Amylase and Lipase in the Frog Exposed to DDT and Sevin. *J.Adv.Zool.* 8: 118-122.

EcoReference No.: 39897
Chemical of Concern: CBL,DDT; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL),OK(DDT).

144. Deshmukh, P. B. and Keshavan, R. (1984). Acute Toxicity of DDT and Sevin to the Bullfrog, Rana tigrina. *J.Curr.Biosci.* 1: 141-145.

EcoReference No.: 39964
Chemical of Concern: CBL,DDT; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(DDT).

145. Desi, I., Gonczi, L., Simon, G., Farkas, I., and Kneffel, Z. (1974). Neurotoxicologic Studies of Two Carbamate Pesticides in Subacute Animal Experiments. *Toxicol.Appl.Pharmacol.* 27: 465-476.

EcoReference No.: 35125
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH,GRO,BCM,CEL,PHY; Rejection Code: LITE EVAL CODED (CBL).

146. Desmarchelier, J., Bengston, M., Davies, R., Elder, B., Hart, R., Henning, R., Murray, W., Ridley, E., Ripp, E., Sierakowski, C., Sticka, R., Snelson, J., Wallbank, B., and Wilson, A. (1987). Assessment of the Grain Protectants Chlorpyrifos-Methyl plus Bioresmethrin, Fenitrothion plus (1R)-Phenothrin, Methacrifos and Pirimiphos-Methyl plus Carbaryl Under Practical Conditions in Australia. *Pestic.Sci.* 20: 271-288.

EcoReference No.: 70095
Chemical of Concern: BRSM,CBL,PIRM,CPYM,FNT; Habitat: T; Effect Codes: MOR,REP,ACC; Rejection Code: LITE EVAL CODED(BRSM),OK(ALL CHEMS).

147. DeWeese, L. R., Henny, C. J., Floyd, R. L., Bobal, K. A., and Shultz, A. W. (1979). Response of Breeding Birds to Aerial Sprays of Trichlorfon (Dylox) and Carbaryl (Sevin-4-Oil) in Montana Forests. *U.S.Dept.of the Interior.U.S.Fish and Wildlife Service, Special Scientific Report* 224: 1-29.

EcoReference No.: 35126
Chemical of Concern: CBL; Habitat: T; Effect Codes: REP,POP,MOR; Rejection Code: LITE EVAL CODED(CBL).

148. Dhanapakiam, P. and Premlatha, J. (1994). Histopathological Changes in the Kidney of Cyprinus carpio Exposed to Malathion and Sevin. *J.Environ.Biol.* 15: 283-287.

EcoReference No.: 13515

Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: MOR,CEL; Rejection Code: LITE EVAL CODED(CBL),OK(MLN).

149. Dodson, S. I., Hanazato, T., and Gorski, P. R. (1995). Behavioral Responses of Daphnia pulex Exposed to Carbaryl and Chaoborus Kairomone. *Environ.Toxicol.Chem.* 14: 43-50.

EcoReference No.: 13723
Chemical of Concern: CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

150. Doerr, M. D., Brunner, J. F., and Schrader, L. E. (2004). Integrated Pest Management Approach for a New Pest, Lacanobia subjuncta (Lepidoptera: Noctuidae), in Washington Apple Orchards. *Pest Manag.Sci.* 60: 1025-1034.

EcoReference No.: 82540
Chemical of Concern: EMMB,MFZ,TUZ,CBL,TDC,MOM,ES,TMX,ACT,TAP,SS,AZD,AZ,CPY,PSM,MLN,IDC,EFV,KLN; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(AZ,EMMB,MFZ,TUZ,CBL,TDC,MOM,ES,TMX,ACT,TAP,SS,AZD,CPY,PSM,MLN,IDC,EFV,KLN).

151. Dong, W., Gilmour, M. I., Lambert, A. L., and Selgrade, MJ. K. (1998). Enhanced Allergic Responses to House Dust Mite by Oral Exposure to Carbaryl in Rats. *Toxicol.Sci.* 44: 63-69.

EcoReference No.: 86850
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,CEL,PHY; Rejection Code: LITE EVAL CODED(CBL).

152. Donkin, P., Widdows, J., Evans, S. V., Staff, F. J., and Yan, T. (1997). Effect of Neurotoxic Pesticides on the Feeding Rate of Marine Mussels (Mytilus edulis). *Pestic.Sci.* 49: 196-209.

EcoReference No.: 20518
Chemical of Concern: FYT,CBL,PMR,DDVP,HCCH,ETHN,EN; Habitat: A; Effect Codes: ACC,BEH,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

153. Douglas, M. T., Chanter, D. O., Pell, I. B., and Burney, G. M. (1986). A Proposal for the Reduction of Animal Numbers Required for the Acute Toxicity to Fish Test (LC50 Determination). *Aquat.Toxicol.* 8: 243-249.

EcoReference No.: 12210
Chemical of Concern: CBL,MLN,TBT,PCP,DLD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,PCP),OK(ALL CHEMS).

154. Dumbauld, B. R., Armstrong, D. A., and Skalski, J. (1997). Efficacy of the Pesticide Carbaryl for Thalassinid Shrimp Control in Washington State Oyster (Crassostrea gigas, Thunberg, 1793) Aquaculture. *J.Shellfish Res.* 16: 503-518 .

EcoReference No.: 87650
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BEH,POP,GRO; Rejection Code: LITE EVAL CODED(CBL).

155. Dumbauld, B. R., Brooks, K. M., and Posey, M. H. (2001). Response of an Estuarine Benthic Community to Application of the Pesticide Carbaryl and Cultivation of Pacific Oysters (Crassostrea gigas) in Willapa Bay, Washington. *Mar.Pollut.Bull.* 42: 826-844.

EcoReference No.: 88367

Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

156. Duso, C., Camporese, P., and Van der Geest, L. P. S. (1992). Toxicity of a Number of Pesticides to Strains of Typhlodromus pyri and Amblyseius andersoni (Acari: Phytoseiidae). *Entomophaga* 37: 363-372.

EcoReference No.: 73088
User Define 2: NEW CSC,WASHT,CALFT
Chemical of Concern: PRN,CBL,ACP,AZ,CPY,MDT,MOM,DM,CPYM,FNT,TCF,CBL; Habitat: T; Effect Codes: MOR,REP; Rejection Code: OK.

157. Dwyer, F. J., Hardesty, D. K., Henke, C. E., Ingersoll, C. G., Whites, D. W., Mount, D. R., and Bridges, C. M. (1999). Assessing Contaminant Sensitivity of Endangered and Threatened Species: Toxicant Classes. *EPA 600/R-99/098, U.S.EPA, Washington, D.C.* 15 p.

EcoReference No.: 56161
Chemical of Concern: CBL,CuS,NYP,PCP,PRM; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(OW-TRV-Cu,PCP),OK(ALL CHEMS).

158. Dwyer, F. J., Hardesty, D. K., Henke, C. E., Ingersoll, C. G., Whites, D. W., Mount, D. R., and Bridges, C. M. (1999). Assessing Contaminant Sensitivity of Endangered and Threatened Species: Effluent Toxicity Tests. *EPA 600/R-99/099, U.S.EPA, Washington, DC* 9 p.

EcoReference No.: 56162
Chemical of Concern: CBL,CuS,NYP,PCP,PRM,NH; Habitat: A; Effect Codes: GRO,REP,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(NH),NO MIXTURE(CuS,PCP,NYP,PRM),NO COC(DZ).

159. Dwyer, F. J., Hardesty, D. K., Ingersoll, C. G., Kunz, J. L., and Whites, D. W. (2000). Assessing Contaminant Sensitivity of American Shad, Atlantic Sturgeon and Shortnose Strugeon, Final Report - February 2000. *Final Rep., U.S.Geol.Surv., Columbia Environ.Res.Ctr., Columbia, MO* 30 p.

EcoReference No.: 77827
Chemical of Concern: NYP,CBL,CuS,PCP,PMR; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

160. Dwyer, F. J., Sappington, L. C., Buckler, D. R., and Jones, S. B. (1995). Use of Surrogate Species in Assessing Contaminant Risk to Endangered and Threatened Species. *EPA/600/R-96/029, U.S.EPA, Washington, D.C.* 78 p.

EcoReference No.: 73668
Chemical of Concern: PCP,CBL,NYP,PMR,CuS; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(OW-TRV-Cu,PCP),OK(ALL CHEMS).

161. Dynamac Corporation (1988). Results of the Locust Pesticide Testing Trials in Sudan. Technical Report. *USAID Contract No.AFR-0517-C-00-7035-00,Dynamac Corp., Rockville, MD* 50 p.

EcoReference No.: 81907
Chemical of Concern: LCYT,TLM,CBL,BDC,CPY,DZ,FNT,MLN; Habitat: T; Effect Codes: MOR,ACC,POP; Rejection Code: LITE EVAL CODED (ADC,CBL),NO ENDPOINT(DZ),OK(MLN).

162. Edge, V. E. and Casimir, M. (1976). Toxicity of Insecticides to Adult Australian Plague

Locust, Chortoicetes terminifera (Orthoptera: Acrididae). *J.Aust.Entomol.Soc.* 14: 321-326.

EcoReference No.: 70906
Chemical of Concern: DZ,CPY,CBL,RSM; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(RSM).

163. Edmiston, C. E. J., Goheen, M., Malaney, G. W., and Mills, W. L. (1985). Evaluation of Carbamate Toxicity: Acute Toxicity in a Culture of Paramecium multimicronucleatum upon Exposure to Aldicarb, Carbaryl, and Mexacarbate as Measured by Warburg Respirometry and Acute Plate Assay. *Environ.Res.* 36: 338-350 .

EcoReference No.: 10812
User Define 2: TITLE MED,WASH,CALF
Chemical of Concern: ADC,CBL ; Habitat: A; Effect Codes: PHY,MOR; Rejection Code: LITE EVAL CODED(ADC).

164. Edmiston, C. E. Jr., Goheen, M., and Malaney, G. W. (1984). Environmental Assessment of Carbamate Toxicity: Utilization of the Coomassie Blue G Soluble Protein Assay as an Index of Environmental Toxicity. *Hazard.Waste* 1: 205-215.

EcoReference No.: 11588
Chemical of Concern: CBL,ADC; Habitat: A; Effect Codes: MOR,BCM,CEL; Rejection Code: LITE EVAL CODED(CBL,ADC).

165. Edmiston, C. E. Jr., Goheen, M., Malaney, G. W., and Mills, W. L. (1985). Evaluation of Carbamate Toxicity: Acute Toxicity in a Culture of Paramecium multimicronucleatum upon Exposure to Aldicarb, Carbaryl, and Mexacarbate as Measured by Warburg Respirometry and Acute Plate Assay. *Environ.Res.* 36: 338-350 .

EcoReference No.: 10812
Chemical of Concern: ADC,CBL; Habitat: A; Effect Codes: PHY,MOR; Rejection Code: LITE EVAL CODED(CBL,ADC).

166. Edwards, C. A. (1983). Development of a Standardized Laboratory Method for Assessing the Toxicity of Chemical Substances to Earthworms. *Rep.No.EUR-8714-EN, Commiss.Eur.Commun., Luxembourg* 141 p. (U.S.NTIS PB84-211713).

EcoReference No.: 40546
Chemical of Concern: PCP,CuS,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CuS,PCP,CBL), OK(ALL CHEMS).

167. Edwards, C. A. and Bater, J. E. (1992). The Use of Earthworms in Environmental Management. *Soil Biol.Biochem.* 24: 1683-1689.

EcoReference No.: 40404
Chemical of Concern: CuS,PCP,CBL,CHD; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CuS,PCP),OK(CHD).

168. Ehrich, M., Correll, L., Strait, J., McCain, W., and Wilcke, J. (1992). Toxicity and Toxicokinetics of Carbaryl in Chickens and Rats: A Comparative Study. *J.Toxicol.Environ.Health* 36: 411-423.

EcoReference No.: 87555
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL).

169. Ehrich, M., Jortner, B. S., and Padilla, S. (1995). Comparison of the Relative Inhibition of Acetylcholinesterase and Neuropathy Target Esterase in Rats and Hens Given Cholinesterase Inhibitors. *Fundam.Appl.Toxicol.* 24: 94-101.

EcoReference No.: 87553
Chemical of Concern: CBL,DDVP,MLN; Habitat: T; Effect Codes: PHY,MOR,CEL; Rejection Code: LITE EVAL CODED(MLN,CBL),OK(DDVP).

170. Ehrich, M., Shell, L., Rozum, M., and Jortner, B. S. (1993). Short-Term Clinical and Neuropathologic Effects of Cholinesterase Inhibitors in Rats. *J.Am.Coll.Toxicol.* 12: 55-68.

EcoReference No.: 87869
Chemical of Concern: CBL,MLN,DDVP; Habitat: T; Effect Codes: BCM,GRO,BEH,PHY,MOR; Rejection Code: LITE EVAL CODED(CBL,MLN),OK(DDVP).

171. El-Sharkawy, A. M., Abdel-Rahman, S. Z., Hassan, A. A., Gabr, M. H., El-Zoghby, S. M., and El-Sewedy, S. M. (1994). Biochemical Effects of Some Insecticides on the Metabolic Enzymes Regulating Glutathione Metabolism. *Bull.Environ.Contam.Toxicol.* 52: 505-510.

EcoReference No.: 74880
Chemical of Concern: DMT,PMR,CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL,DMT),OK(PMR).

172. El-Toukhy, M. A., Ebied, S. A., Hassan, A. A., and El-Sewedy, S. M. (1989). In Vivo Studies on the Effect of Some Insecticides on the Hepatic Activities of L-Tryptophan 2,3-Dioxygenase and Pyridoxal Phosphokinase of Male Mice. *J.Environ.Sci.Health Part B* 24: 265-276.

EcoReference No.: 75454
Chemical of Concern: DMT,CBL,PMR; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL),OK(DMT,PMR).

173. Elliott-Feeley, E. and Armstrong, J. B. (1982). Effects of Fenitrothion and Carbaryl on Xenopus laevis Development. *Toxicology* 22: 319-335.

EcoReference No.: 15592
Chemical of Concern: CBL,FNT; Habitat: A; Effect Codes: MOR,GRO,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(FNT).

174. EPA/OTS (1992). Initial Submission: Letter from Union Carbide Corp. to U.S.EPA Regarding Acute Toxicity Studies of alpha-Naphthol with Cover Letter Dated 090292. *EPA/OTS Doc.#88-920009299*.

EcoReference No.: 88960
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BEH,PHY,GRO; Rejection Code: LITE EVAL CODED(CBL).

175. EPA/OTS (1991). Letter to U.S.EPA Regarding Information on the Enclosed Health and Safety Studies on Alpha-Naphthol with Attachments (Sanitized). *EPA/OTS Doc.#86-920000269S*.

EcoReference No.: 88959
Chemical of Concern: CBL,VNL; Habitat: AT; Effect Codes: GRO,MOR,PHY,BEH,BCM; Rejection Code: LITE EVAL CODED(CBL).

176. Estenik, J. F. and Collins, W. J. (1979). In Vivo and In Vitro Studies of Mixed-Function Oxidase in an Aquatic Insect, Chironomus riparius. *In: M.A.Q.Khan, J.J.Lech, and J.J.Menn (Eds.), Pesticide and Xenobiotic Metabolism in Aquatic Organisms, ACS (Am.Chem.Soc.) Symp.Ser.99, Chapter 21* 349-370 (Author Communication Used).

EcoReference No.: 6830
Chemical of Concern: ATN,AND,MLN,PPX,CBL,DLD,HCCH,PRN,DDT; Habitat: A; Effect Codes: BCM,PHY; Rejection Code: LITE EVAL CODED(CBL,ATN),OK(ALL CHEMS).

177. Eulitz, E. G. (1986). Initial Experiments in the Control of False Wireworm (Tenebrionidae) on Tobacco Transplants. *Phytophylactica* 18: 115-119.

EcoReference No.: 74106
User Define 2: WASHT
Chemical of Concern: TLF,TVP,CBL,ACP,MOM,ES,DZ,CPY; Habitat: T; Effect Codes: MOR,POP,BEH; Rejection Code: OK.

178. Fair, J. M., Kennedy, P. L., and McEwen, L. C. (1995). Effects of Carbaryl Grasshopper Control on Nesting Killdeer in North Dakota. *Environ.Toxicol.Chem.* 14: 881-890.

EcoReference No.: 39974
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,BCM,ACC,BEH; Rejection Code: LITE EVAL CODED(CBL).

179. Falk-Petersen, I.-B., Kjorsvik, E., Lonning, S., Naley, A. M., and Sydnes, L. K. (1985). Toxic Effects of Hydroxylated Aromatic Hydrocarbons on Marine Embryos. *Sarsia* 70: 11-16.

EcoReference No.: 11059
Chemical of Concern: AMSV,PL,24DP,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,AMSV),OK(PL,24DP).

180. Farage-Elawar, M. (1990). Effects of In Ovo Injection of Carbamates on Chick Embryo Hatchability, Esterase Enzyme Activity and Locomotion of Chicks. *J.Appl.Toxicol.* 10: 197-201.

EcoReference No.: 74574
Chemical of Concern: ADC,CBL; Habitat: T; Effect Codes: BEH,BCM,MOR; Rejection Code: LITE EVAL CODED(CBL,ADC).

181. Farage-Elawar, M. (1989). Enzyme and Behavioral Changes in Young Chicks as a Result of Carbaryl Treatment. *J.Toxicol.Environ.Health* 26: 119-131.

EcoReference No.: 86765
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH,PHY,MOR,GRO,CEL; Rejection Code: LITE EVAL CODED(CBL).

182. Farage-Elawar, M. and Blaker, W. D. (1992). Chick Embryo Exposure to Carbamates Alters Neurochemical Parameters and Behavior. *J.Appl.Toxicol.* 12: 421-426.

EcoReference No.: 87098
Chemical of Concern: CBL,ADC; Habitat: T; Effect Codes: BCM,BEH,MOR,GRO; Rejection Code: LITE EVAL CODED (CBL,ADC).

183. Farage-Elawar, M., Ehrich, M. F., Jortner, B. S., and Misra, H. P. (1988). Effects of Multiple Oral Doses of Two Carbamate Insecticides on Esterase Levels in Young and Adult Chickens.

Pestic.Biochem.Physiol. 32: 262-268.

EcoReference No.: 87150
Chemical of Concern: CBL,ADC; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(ADC,CBL).

184. Fatima, R. A. and Ahmad, M. (2006). Allium Cepa Derived EROD as a Potential Biomarker for the Presence of Certain Pesticides in Water. *Chemosphere* 62: 527-537.

EcoReference No.: 88956
Chemical of Concern: MP,HCB,Zn,Pb,Cr,Cu,Cd,DMT,EN,DLD,AND,PAH,24DXY,MLN,HCB,DDT,ES,CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL,MLN),OK(ALL CHEMS).

185. Federle, P. F. and Collins, W. J. (1976). Insecticide Toxicity to Three Insects from Ohio Ponds. *Ohio J.Sci.* 76: 19-24.

EcoReference No.: 7775
Chemical of Concern: DDT,PRN,CBL,DDVP,PPX,MLN,DZ,AND,CPY,ATN,HCCH,DLD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,ATN),OK(ALL CHEMS).

186. Fernandez-Alba, A. R., Guil, L. H., Lopez, G. D., and Chisti, Y. (2001). Toxicity of Pesticides in Wastewater: A Comparative Assessment of Rapid Bioassays. *Anal.Chim.Acta* 426: 289-301.

EcoReference No.: 74540
Chemical of Concern: DZ,DDT,CBL,CBF,MLN,CYR,FMP,FTT,PPM,PAQT
Endpoint: MOR; Habitat: A; Rejection Code: LITE EVAL CODED(CBF).

187. Fisher, S. W. and Lohner, T. W. (1986). Studies on the Environmental Fate of Carbaryl as a Function of pH. *Arch.Environ.Contam.Toxicol.* 15: 661-667.

EcoReference No.: 12261
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,ACC; Rejection Code: LITE EVAL CODED (CBL).

188. Fisher, S. W., Lydy, M. J., Barger, J., and Landrum, P. F. (1993). Quantitative Structure-Activity Relationships for Predicting the Toxicity of Pesticides in Aquatic Systems with Sediment. *Environ.Toxicol.Chem.* 12: 1307-1318.

EcoReference No.: 7293
Chemical of Concern: ADC,PPX,PRN,MLN,ETN,DDVP,MP,CBF,CBL; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL,CBF,ADC),OK(ALL CHEMS).

189. Foster, G. D. and Tullis, R. E. (1984). A Quantitative Structure-Activity Relationship Between Partition Coefficients and the Acute Toxicity of Naphthalene Derivatives in Artemia salina Nauplii. *Aquat.Toxicol.* 5: 245-254.

EcoReference No.: 11322
Chemical of Concern: NAPH,PAH,CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL,NAPH).

190. Fournier, M., Bernier, J., Flipo, D., and Krzystyniak, K. (1986). Evaluation of Pesticide

Effects on Humoral Response to Sheep Erythrocytes and Mouse Hepatitis Virus 3 by Immunosorbent Analysis. *Pestic.Biochem.Physiol.* 26: 353-364 .

EcoReference No.: 75357
Chemical of Concern: DLD,MLN,CBF,MOM,CBL,AZ; Habitat: T; Effect Codes: CEL,PHY; Rejection Code: LITE EVAL CODED(CBL,AZ),OK(ALL CHEMS).

191. Frempong-Boadu, J. (1966). A Laboratory Study of the Effectiveness of Methoxychlor, Fenthion and Carbaryl Against Blackfly Larvae (Diptera: Simuliidae). *Mosq.News* 26: 562-564.

EcoReference No.: 2828
Chemical of Concern: MXC,FNTH,CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL),OK(MXC,FNTH).

192. Gaaboub, I. A., El-Gayar, F. M., and Helal, E. M. (1975). Comparative Bioassay Studies on Larvae of Culex pipiens and the Microcrustacean Daphnia magna. *Bull.Entomol.Soc.Egypt, Econ.Ser.* 9: 77-84.

EcoReference No.: 15291
Chemical of Concern: CBL,MLN,DDT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(DDT,MLN).

193. Gallo, D., Merendino, A., Keizer, J., and Vittozzi, L. (1995). Acute Toxicity of Two Carbamates to the Guppy (Poecilia reticulata) and the Zebrafish (Brachydanio rerio). *Sci.Total Environ.* 171: 131-136.

EcoReference No.: 18726
Chemical of Concern: CBL,ADC; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,ADC).

194. Geiger, D. L., Call, D. J., and Brooke, L. T. (1988). Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas). *Ctr.for Lake Superior Environ.Stud., Volume 4, Univ.of Wisconsin-Superior, Superior, WI* 355.

EcoReference No.: 12859
User Define 2: ECOTOX MED,WASH,CALF,CORE
Chemical of Concern: MOM,ACC,BMC,BMN,CBL,DS,DZ,MLN,PMR; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(MOM).

195. Geiger, D. L., Call, D. J., and Brooke, L. T. (1988). Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas). *Ctr.for Lake Superior Environ.Stud., Volume 4, Univ.of Wisconsin-Superior, Superior, WI* 355.

EcoReference No.: 12859
Chemical of Concern: MOM,ACC,BMC,BMN,CBL,DS,DZ,MLN,PMR,ACL,C8OH,DZ; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(DZ,C8OH,MOM,ACL),OK(ALL CHEMS).

196. Geiger, D. L., Call, D. J., and Brooke, L. T. (1988). Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas) Volume IV. *Ctr.for Lake Superior Environ.Stud., Volume 4, Univ.of Wisconsin-Superior, Superior, WI* 355.

EcoReference No.: 12859
Chemical of Concern: MOM,ACC,BMC,BMN,CBL,CPY,DS,DZ,MLN,PMR,C8OH,ACL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL

CODED(CBL,DZ,C8OH,MOM,ACL),OK(ALL CHEMS).

197. Geiger, D. L., Northcott, C. E., Call, D. J., and Brooke, L. T. (1985). Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas), Volume 2. *Ctr.for Lake Superior Environ.Stud., Univ.of Wisconsin-Superior, Superior, WI* 326 p.

EcoReference No.: 12447
Chemical of Concern: NYP,PCP,SLA,NAPH,C8OH,PL,BZO,PAH,CBL; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL,NAPH,C8OH,PCP).

198. Gencsoylu, I., Liu, W., Usmani, K. A., and Knowles, C. O. (1998). Toxicity of Acaricides to the Bulb Mite Rhizoglyphus echinopus (Acari: Acaridae). *Exp.Appl.Acarol.* 22: 343-351.

EcoReference No.: 64443
Chemical of Concern: TFY,FPP,CYP,DDT,IMC,CPY,DZ,DMT,CBL,RTN,PMR,FNV,BFT,CBF,DLD,EN,AND,FPN; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBF),TARGET(DMT,RTN,CYP),OK(ALL CHEMS).

199. George, T. L., McEwen, L. C., and Fowler, A. (1992). Effects of a Carbaryl Bait Treatment on Nontarget Wildlife. *Environ.Entomol.* 21: 1239-1247.

EcoReference No.: 36760
Chemical of Concern: CBL; Habitat: T; Effect Codes: POP,BCM; Rejection Code: LITE EVAL CODED(CBL).

200. Ghosh, P., Bhattacharya, S., and Bhattacharya, S. (1989). Impact of Nonlethal Levels of Metacid-50 and Carbaryl on Thyroid Function and Cholinergic System of Channa punctatus. *Biomed.Environ.Sci.* 2: 92-97.

EcoReference No.: 14305
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

201. Ghosh, P., Bhattacharya, S., and Bhattacharya, S. (1990). Impairment of the Regulation of Gonadal Function in Channa punctatus by Metacid-50 and Carbaryl Under Laboratory and Field Conditions. *Biomed.Environ.Sci.* 3: 106-112.

EcoReference No.: 14303
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

202. Ghosh, P., Ghosh, S., Bose, S., and Bhattacharya, S. (1993). Glutathione Depletion in the Liver and Kidney of Channa punctatus Exposed to Carbaryl and Metacid-50. *Sci.Total Environ.* 641-645.

EcoReference No.: 4345
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

203. Ghosh, S. and Bhattacharya, S. (1992). Elevation of C-Reactive Protein in Serum of Channa punctatus as an Indicator of Water Pollution. *Indian J.Exp.Biol.* 30: 736-737.

EcoReference No.: 2686
Chemical of Concern: PL,NH,CdCl,HgCl2,CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL),OK(PL,NH,CdCl,HgCl2).

204. Gibbs, K. E., Mingo, T. M., Courtemanch, D. L., and Stairs, D. J. (1981). The Effects on Pond Macroinvertebrates from Forest Spraying of Carbaryl (Sevin-4-Oil) and Its Persistence in Water and Sediment. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1980 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 121-147.

EcoReference No.: 14762
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR,POP; Rejection Code: LITE EVAL CODED(CBL).

205. Gibbs, K. E., Rabeni, C. F., Stanley, J. G., and Trial, J. G. (1979). The Effects of a Split Application of Sevin-4-Oil on Aquatic Organisms. *Report to the Maine Forest Service, Dep.Entomol., Maine Coop.Fish.Res.Unit, Univ.of Maine, Orono, ME* 50 p.

EcoReference No.: 4766
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,PHY,MOR,BCM,BEH; Rejection Code: LITE EVAL CODED(CBL).

206. Goats, G. C. and Edwards, C. A. (1988). The Prediction of Field Toxicity of Chemicals to Earthworms by Laboratory Methods. *In: C.A.Edwards and E.F.Neuhauser (Eds.), Earthworms in Waste and Environmental Management, SPB Acad.Publ., The Hague, Netherlands* 283-294.

EcoReference No.: 40416
Chemical of Concern: TPM,PCP,CHD,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(PCP,CBL),OK(ALL CHEMS).

207. Goel, H. C. and Srivastava, C. P. (1981). Laboratory Evaluation of Some Molluscicides Against Fresh Water Snails, Indoplanorbis and Lymnaea Species. *J.Commun.Dis.* 13: 121-127.

EcoReference No.: 8716
Chemical of Concern: NaPCP,CuS,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(ALL CHEMS).

208. Gordon, C. J., Herr, D. W., Gennings, C., Graff, J. E., McMurray, M., Stork, L., Coffey, T., Hamm, A., and Mack, C. M. (2006). Thermoregulatory Response to an Organophosphate and Carbamate Insecticide Mixture: Testing the Assumption of Dose-Additivity. *Toxicology* 217: 1-13.

EcoReference No.: 87642
Chemical of Concern: CBL,CPY; Habitat: T; Effect Codes: PHY,BCM,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(CPY).

209. Gordon, C. J. and Mack, C. M. (2001). Diurnal Variation in Thermoregulatory Response to Chlorpyrifos and Carbaryl in the Rat. *Toxicology* 169: 93-105.

EcoReference No.: 86768
Chemical of Concern: CPY,CBL; Habitat: T; Effect Codes: PHY,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(CPY).

210. Gouda, R. K., Tripathy, N. K., and Das, C. C. (1981). Toxicity of Dimecron, Sevin and Lindex to Anabas scandens and Heteropneustes fossilis. *Comp.Physiol.Ecol.* 6: 170-172.

EcoReference No.: 15652
Chemical of Concern: CBL,HCCH; Habitat: A; Effect Codes: MOR,GRO,PHY,BEH;

Rejection Code: LITE EVAL CODED(CBL),OK(HCCH).

211. Grafton-Cardwell, E. E. and Hoy, M. A. (1985). Intraspecific Variability in Response to Pesticides in the Common Green Lacewing, Chrysoperla carnea (Stephens) (Neuroptera: Chrysopidae). *Hilgardia* 53: 1-31.

EcoReference No.: 73696
User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,DZ,PMR,FNV,CBL,PSM; Habitat: T; Effect Codes: MOR,REP; Rejection Code: OK.

212. Gregory, D. A., Johnson, D. L., and Thompson, B. H. (1993). The Impact of Bran Baits Treated with the Insecticides Carbaryl, Chlorpyrifos and Dimethoate on the Survivorship and Reproductive Success of Non-Target Mouse Populations. *Agric.Ecosyst.Environ.* 45: 95-103.

EcoReference No.: 49731
Chemical of Concern: CBL,CPY,DMT; Habitat: T; Effect Codes: GRO,REP; Rejection Code: LITE EVAL CODED(DMT,CBL),OK(CPY).

213. Gregory, D. A., Johnson, D. L., and Thompson, B. H. (1994). The Toxicity of Bran Baits, Formulated with Carbaryl, Chlorpyrifos and Dimethoate, on Yellow Mealworms (Tenebrio molitor L.). *J.Agric.Entomol.* 11: 85-94.

EcoReference No.: 64549
User Define 2: WASHT,CALFT
Chemical of Concern: CBL,CPY,DMT; Habitat: T; Rejection Code: TARGET(DMT).

214. Gupta, M. and Amma, M. K. P. (1993). Alterations in Hepatic Biochemistry of Mice Intoxicated with MIC, Carbaryl and Thiram. *J.Appl.Toxicol.* 13: 33-37.

EcoReference No.: 87867
Chemical of Concern: CBL,THM; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL),OK(THM).

215. Gupta, S. K. and Sundararaman, V. (1988). Carbaryl and Endosulphan Induced Alterations in the Intestinal alpha-Amylase Activity of Pheretima posthuma. *Curr.Sci.* 57: 1116-1118.

EcoReference No.: 81473
Chemical of Concern: CBL,ES; Habitat: T; Effect Codes: PHY,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(ES).

216. Gupta, S. K. and Sundararaman, V. (1991). Correlation Between Burrowing Capability and AChE Activity in the Earthworm, Pheretima posthuma, on Exposure to Carbaryl. *Bull.Environ.Contam.Toxicol.* 46: 859-865.

EcoReference No.: 86759
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY,BEH,MOR; Rejection Code: LITE EVAL CODED(CBL).

217. Haile, F. J., Peterson, R. K. D., and Higley, L. G. (1999). Gas-Exchange Responses of Alfalfa and Soybean Treated with Insecticides. *J.Econ.Entomol.* 92: 954-959.

EcoReference No.: 64569
Chemical of Concern: CBF,CPY,PMR,SS,CYF,CBL; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CYF,CBF),OK(ALL CHEMS).

218. Haines, T. A. (1981). Effect of an Aerial Application of Carbaryl on Brook Trout (Salvelinus fontinalis). *Bull.Environ.Contam.Toxicol.* 27: 534-542.

EcoReference No.: 2948
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

219. Han, R., Shim, J. C., Hong, H. K., Lee, J. S., Cho, H. W., and Kim, C. L. (1981). Studies on Control Effects of Pesticide Applications Against the Vector Mosquito Larvae in Rice Fields in Korea. *Korean J.Entomol.* 11: 39-45.

EcoReference No.: 10440
Chemical of Concern: CBL,CPY,ABT,DZ,FNT,MLN, Habitat: A; Effect Codes: MOR,POP; Rejection Code: LITE EVAL CODED(DZ),OK(ALL CHEMS).

220. Hanazato, T. (1995). Combined Effect of the Insecticide Carbaryl and the Chaoborus Kairomone on Helmet Development in Daphnia ambigua. *Hydrobiologia* 310: 95-100.

EcoReference No.: 16374
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

221. Hanazato, T. (1991). Effect of Long- and Short-Term Exposure to Carbaryl on Survival, Growth and Reproduction of Daphnia ambigua. *Environ.Pollut.* 74: 139-148.

EcoReference No.: 3941
Chemical of Concern: CBL; Habitat: A; Effect Codes: REP,GRO,MOR; Rejection Code: LITE EVAL CODED(CBL).

222. Hanazato, T. (1991). Effects of Repeated Application of Carbaryl on Zooplankton Communities in Experimental Ponds With or Without the Predator Chaoborus. *Environ.Pollut.* 74: 309-324.

EcoReference No.: 3939
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

223. Hanazato, T. (1992). Insecticide Inducing Helmet Development in Daphnia ambigua. *Arch.Hydrobiol.* 123: 451-457.

EcoReference No.: 17178
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL).

224. Hanazato, T. (1991). Pesticides as Chemical Agents Inducing Helmet Formation in Daphnia ambigua. *Freshw.Biol.* 26 : 419-424.

EcoReference No.: 17470
Chemical of Concern: ODZ,CBL,TBC,DZ,FNTH,FNT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(ALL CHEMS).

225. Hanazato, T. and Dodson, S. I. (1992). Complex Effects of a Kairomone of Chaoborus and an Insecticide on Daphnia pulex. *J.Plankton Res.* 14: 1743-1755.

EcoReference No.: 4118
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR,REP; Rejection Code:

LITE EVAL CODED(CBL).

226. Hanazato, T. and Dodson, S. I. (1993). Morphological Responses of Four Species of Cyclomorphic Daphnia to a Short-Term Exposure to the Insecticide Carbaryl. *J.Plankton Res.* 15: 1087-1095.

EcoReference No.: 7128
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL).

227. Hanazato, T. and Hirokawa, H. (2004). Changes in Vulnerability of Daphnia to an Insecticide Application Depending on the Population Phase. *Freshw.Biol.* 49: 402-409.

EcoReference No.: 75186
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,GRO; Rejection Code: LITE EVAL CODED(CBL).

228. Hanny, B. and Harvey, J. (1982). Sevin Sprayable Versus Sevin XLR Applied to Field Corn (Zea mays L.) at Pine Bluffs, Wyoming - Effects on Honey Bees (Apis mellifera L.). *Am.Bee J.* 122: 506-508.

EcoReference No.: 35206
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,ACC,BEH,REP; Rejection Code: LITE EVAL CODED (CBL).

229. Hansen, C. R. Jr. and Kawatski, J. A. (1976). Application of 24-Hour Postexposure Observation to Acute Toxicity Studies with Invertebrates. *J.Fish.Res.Board Can.* 33: 1198-1201.

EcoReference No.: 7796
Chemical of Concern: CBL,MLN,EDT,DLD; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(MLN,EDT,DLD).

230. Hansen, D. J., Schimmel, S. C., and Keltner, J. M. Jr. (1973). Avoidance of Pesticides by Grass Shrimp (Palaemonetes pugio). *Bull.Environ.Contam.Toxicol.* 9: 129-133.

EcoReference No.: 5146
Chemical of Concern: 24DXY,CBL,CPY,MLN,DDT,EN; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

231. Hardersen, S. and Wratten, S. D. (1996). The Sensitivity of the Nymphs of Two New Zealand Damselfly Species (Odonata: Zygoptera) to Azinphos-Methyl and Carbaryl. *Aust.J.Ecotoxicol.* 2: 55-60.

EcoReference No.: 67674
Chemical of Concern: AZ,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED (AZ,CBL),OK(ALL CHEMS).

232. Hassan, A. A. M., El-Sewedy, S. M., Minatogawa, Y., and Kido, R. (1990). Effects of Some Insecticides on Several Enzymes of Tryptophan Metabolism in Rats. *J.Environ.Sci.Health Part B* 25: 333-346.

EcoReference No.: 75455
Chemical of Concern: DMT,CBL,FNV; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL),OK(DMT,FNV).

233. Hatakeyama, S. and Sugaya, Y. (1989). A Freshwater Shrimp (Paratya compressa improvisa) as a Sensitive Test Organism to Pesticides. *Environ.Pollut.* 59: 325-336.

EcoReference No.: 984
Chemical of Concern: CuS,CBL,DZ,TBC,FNTH,ZnS,BTC,TBC,CdCl,ODZ; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL,DZ,CuS),OK(ALL CHEMS).

234. Havens, K. E. (1994). An Experimental Comparison of the Effects of Two Chemical Stressors on a Freshwater Zooplankton Assemblage. *Environ.Pollut.* 84: 245-251.

EcoReference No.: 17295
Chemical of Concern: CBL,CuS; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL,CuS).

235. Havens, K. E. (1995). Insecticide (Carbaryl, 1-Napthyl-N-Methylcarbamate) Effects on a Freshwater Plankton Community: Zooplankton Size, Biomass, and Algal Abundance. *Water Air Soil Pollut.* 84: 1-10.

EcoReference No.: 16370
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

236. Haverty, M. I. and Wood, J. R. (1981). Residual Toxicity of Eleven Insecticide Formulations to the Mountain Pine Cone Beetle, Conophthorus monticolae Hopkins. *J.Ga.Entomol.Soc.* 16: 77-83.

EcoReference No.: 70899
Chemical of Concern: RSM,CBL,HCCH,CYP,DZ; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(CYP,RSM).

237. Heath, R. G., Spann, J. W., Hill, E. F., and Kreitzer, J. F. (1972). Comparative Dietary Toxicities of Pesticides to Birds. *U.S.Bureau of Sport Fisheries and Wildlife.Special Scientific Report-Wildlife No.152* 57 p.

EcoReference No.: 35214
Chemical of Concern: SZ,DDT,DZ,PCB,ALD,ATZ,CBL,DLD,EN,HCCH,PRN,PCP,TXP,DMT; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,ATZ,SZ,DMT),OK(ALL CHEMS).

238. Heise, G. A. and Hudson, J. D. (1985). Effects of Pesticides and Drugs on Working Memory in Rats: Continuous Non-Match. *Pharmacol.Biochem.Behav.* 23: 599-605.

EcoReference No.: 87852
Chemical of Concern: CBL,PPX,DM; Habitat: T; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL),OK(PPX,DM).

239. Heldal, M., Norland, S., Lien, T., Knutsen, G., Tjessem, K., and Aarberg, A. (1984). Toxic Responses of the Green Alga Dunaliella bioculata (Chlorophycea, Volvocales) to Selected Oxidised Hydrocarbons. *Environ.Pollut.Ser.A* 34: 119-132.

EcoReference No.: 11267
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,POP,MOR; Rejection Code: LITE EVAL CODED(CBL).

240. Heller, P. R. and Kellogg, S. (1988). Summer Control of Northern Masked Chafer Grubs on a Golf Course Rough in Snyder County, PA, 1987. *Insectic.Acaric.Tests* 13: 333 (No. 12G).

EcoReference No.: 88812
Chemical of Concern: EP,DZ,CBL; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL),OK(EP,DZ).

241. Hellman, J. L., Patton, T. W., and Hellman, E. L. (1988). Control of Green June Beetle Grubs on Golf Course Fairways, 1987. *Insectic.Acaric.Tests* 13: 329 (No. 5G).

EcoReference No.: 88815
Chemical of Concern: CBL,CYF,FPP,TCF,ACP,DZ,FVL,CPY,PPX,PMR; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(ALL CHEMS).

242. Hellman, J. L., Patton, T. W., Salvaggio, R. S., and Grove, J. (1988). Control of Green June Beetle Grubs on a Golf Course, 1985. *Insectic.Acaric.Tests* 13: 364 (No. 69G).

EcoReference No.: 88817
Chemical of Concern: CPY,DZ,IZF,CBL; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(CPY,IZF).

243. Hellman, J. L., Patton, T. W., Salvaggio, R. S., Vinis, L., and Grove, J. (1988). Control of Gray Garden Slugs in No-Tillage, 1985. *Insectic.Acaric.Tests* 13: 214 (No. 52F).

EcoReference No.: 88904
Chemical of Concern: MCB,FNF,MP,CBL,FNV,PMR; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

244. Hemingway, J. and Georghiou, G. P. (1983). Studies on the Acetylcholinesterase of Anopheles albimanus Resistant and Susceptible to Organophosphate and Carbamate Insecticides. *Pestic.Biochem.Physiol.* 19: 167-171.

EcoReference No.: 11596
Chemical of Concern: TMP,FNT,CBL,PRN,FNTH,PPX,MLN; Habitat: A; Effect Codes: PHY,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS) .

245. Herbert, D. A. Jr. (1992). Corn Earworm Control in Peanut in Virginia, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 249-250.

EcoReference No.: 79285
Chemical of Concern: FPP,CYH,BFT,CBL,EFV,ACP; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(BFT,EFV),OK(ALL CHEMS).

246. Hernandez, D. A., Lombardo, R. J., Ferrari, L., and Tortorelli, M. C. (1990). Toxicity of Ethyl-Parathion and Carbaryl on Early Development of Sea Urchin. *Bull.Environ.Contam.Toxicol.* 34: 734-741 (OECDG Data File).

EcoReference No.: 3490
Chemical of Concern: CBL,EPRN; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(CBL),OK(EPRN).

247. Herron, G. A. (1990). Resistance to Grain Protectants and Phosphine in Coleopterous Pests of Grain Stored on Farms in New South Wales. *J.Aust.Entomol.Soc.* 29: 183-189.

EcoReference No.: 70674

Chemical of Concern: RSM,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(RSM).

248. Hill, E. F. (1979). Cholinesterase Activity in Japanese Quail Dusted with Carbaryl. *Lab.Anim.Sci.* 29: 349-352.

EcoReference No.: 50180
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

249. Hill, E. F. and Camardese, M. B. (1986). Lethal Dietary Toxicities of Environmental Contaminants and Pesticides to Coturnix. *U.S.Fish Wildl.Serv., Fish Wildl.Tech.Rep.No.2* 147 p.

EcoReference No.: 50181
Chemical of Concern: PRT,ADC,PMR,PRN,PAQT,ACP,Naled,MLN,HCCH,HPT,FNF,EN,ES,TMP,MTAS,MTM,MOM,AND,ATZ,BMY,DCTP,CBL,Captan,CPY,TBO,DZ,DLD,DU,FNTH,AZ,SZ,MANEB; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(ADC,ACP,MLN,MTAS,MTM,MOM,CBL,Captan,DZ,SZ),OK(ALL CHEMS).

250. Hill, E. F. , Heath, R. G., Spann, J. W., and Williams, J. D. (1975). Lethal Dietary Toxicities of Environmental Pollutants to Birds. *U.S.Fish and Wildlife Service, Special Scientific Report-Wildlife* 191: 1-61.

EcoReference No.: 35243
Chemical of Concern: 24DXY,ABT,ADC,AMTL,AND,ATZ,Captan,CBF,CBL,Cd,Cr,DDT,DLD,DMT,DS,DU,DZ,ES,ETN,FNT,HCCH,Hg,HPT,MCPB,MLN,MP,MRX,MTAS,MXC,Naled,Pb,PCB,PCL,PCP,PQT,PRN,PRT,PYN,RSM,RTN,SZ,TFM,THM,TVP,TXP,Zn,ZnP,As,AZ,OXD; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED (MTAS,CBL,DZ,ATZ,CBF,ADC,MOM,DMT,SZ,ZnP,RTN,RSM,MCPB,PCP,PRT),OK(ALL CHEMS).

251. Hislop, R. G. and Prokopy, R. J. (1981). Integrated Management of Phytophagous Mites in Massachusetts (U.S.A.) Apple Orchards. 2. Influence of Pesticides on the Predator Amblyseius fallacis (Acarina: Phytoseiidae) Under Laboratory and Field Conditions. *Prot.Ecol.* 3: 157-172.

EcoReference No.: 70632
User Define 2: REPS,WASHT,CALFT,CORE,SENT
Chemical of Concern: SZ,CBL,DZ,PRN,ES,NH,MOM,DMT; Habitat: T; Effect Codes: MOR,REP,POP; Rejection Code: TARGET(DMT).

252. Hoffman, D. J. and Albers, P. H. (1984). Evaluation of Potential Embryotoxicity and Teratogenicity of 42 Herbicides, Insecticides, and Petroleum Contaminants to Mallard Eggs. *Arch.Environ.Contam.Toxicol.* 13: 15-27.

EcoReference No.: 35249
Chemical of Concern: ACP,CBL,DZ,DMT,EN,HCCH,MLN,MOM,Naled,PRN,PMR,PSM,SPS,TMP,TXP,AMTL,ATZ,BMN,MCPA,24DXY,DMB,GYP,PAQT,PCL,PRO,PPN,TFN,ALSV; Habitat: T; Effect Codes: MOR,GRO,DVP; Rejection Code: LITE EVAL CODED(MOM,DMT,DMB,ALSV),OK (ALL CHEMS except BMN,MCPA-MIXTURE).

253. Hoffman, D. J. and Albers, P. H. (1984). Evaluation of Potential Embryotoxicity and

Teratogenicity of 42 Herbicides, Insecticides, and Petroleum Contaminants to Mallard Eggs. *Arch.Environ.Contam.Toxicol.* 13: 15-27.

EcoReference No.: 35249
Chemical of Concern: ACP,CBL,DZ,DMT,EN,HCCH,MLN,MOM,Naled,PRN,PMR,PSM,SPS,TMP,TXP,AMTL, ATZ,BMN,MCPA,24DXY,DMB,GYP,PAQT,PCL,PRO,PPN,TFN,ALSV; Habitat: T; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL,ACP,PRO,DZ,ATZ,MOM,DMT,DMB,ALSV),OK(ALL CHEMS),NO MIXTURE(BMN,MCPA).

254. Holcombe, G. W., Phipps, G. L., Knuth, M. L., and Felhaber, T. (1984). The Acute Toxicity of Selected Substituted Phenols, Benzenes and Benzoic Acid Esters to Fathead Minnows Pimephales promelas. *Environ.Pollut.Ser.A* 35: 367-381 (OECDG Data File).

EcoReference No.: 10954
Chemical of Concern: NYP,NAPH,CBL; Habitat: A; Effect Codes: MOR,BEH,PHY,GRO; Rejection Code: LITE EVAL CODED(CBL,NAPH),OK(NYP).

255. Hopf, H. S. and Muller, R. L. (1962). Laboratory Breeding and Testing of Australorbis glabratus for Molluscicidal Screening. *Bull.W.H.O.* 27: 783-789 .

EcoReference No.: 14399
Chemical of Concern: ACL,CBL,Naled,TBT,CuS,NaPCP; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(NaPCP,PCP),NO CONTROL(CuS).

256. Hopkins, W. A., Winne, C. T., and DuRant, S. E. (2005). Differential Swimming Performance of Two Natricine Snakes Exposed to a Cholinesterase-Inhibiting Pesticide. *Environ.Pollut.* 133: 531-540.

EcoReference No.: 78022
Chemical of Concern: CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

257. Hunter, M. L. Jr., Witham, J. W., and Dow, H. (1984). Effects of a Carbaryl-Induced Depression in Invertebrate Abundance on the Growth and Behavior of American Black Duck and Mallard Ducklings. *Can.J.Zool.* 62: 452-456.

EcoReference No.: 37215
Chemical of Concern: CBL; Habitat: T; Effect Codes: POP,BEH; Rejection Code: LITE EVAL CODED(CBL).

258. Industrial Bio-Test Labs (1991). Summary Results Concerning an Acute Oral LD50, Acute Eye Irritation, Primary Skin & Eye Irritation Indexes & 28-Day Subacute Feeding Studies with Cover Sheet & Letter (Sanitized). *EPA/OTS Doc.#86-920000514S* 7 p. (OTS 0533803).

EcoReference No.: 88884
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,MOR,PHY,BEH; Rejection Code: LITE EVAL CODED(CBL).

259. Innes, J. R. M., Ulland, B. M., Valerio, M. G., Petrucelli, L., Fishbein, L., Hart, E. R., Pallotta, A. J., Bates, R. R., Falk, H. L., Gart, J. J., Klein, M., Mitchell, I., and Peters, J. (1969). Bioassay of Pesticides and Industrial Chemicals for Tumorigenicity in Mice: A Preliminary Note. *J.Natl.Cancer Inst.* 42: 1101-1114.

EcoReference No.: 71346

Chemical of Concern: PNB,DDT,SZ,ATZ,DU,RTN,FBM,MRX,PPZ,THM,CBL,24DXY,Maneb,Zineb,Captan,Nabam,Folpet; Habitat: T; Effect Codes: CEL; Rejection Code: LITE EVAL CODED(RTN),OK(ALL CHEMS)//NO TUMOR(PILOT)//.

260. Innes, J. R. M., Ulland, B. M., Valerio, M. G., Petrucelli, L., Fishbein, L., Hart, E. R., Pallotta, A. J., Bates, R. R., Falk, H. L., Gart, J. J., Klein, M., Mitchell, I., and Peters, J. (1969). Bioassay of Pesticides and Industrial Chemicals for Tumorigenicity in Mice: A Preliminary Note. *J.Natl.Cancer Inst.* 42: 1101-1114.

EcoReference No.: 71346
Chemical of Concern: DU,PNB,DDT,SZ,ATZ,RTN,FBM,MRX,PPZ,THM,CBL,24DXY,Maneb,Zineb,Captan,Nabam,Folpet; Habitat: T; Effect Codes: CEL; Rejection Code: LITE EVAL CODED(CBL,SZ,ATZ,RTN,PPZ),OK(ALL CHEMS).

261. Isaacs, R., Mason, K. S., and Maxwell, E. (2005). Stage-Specific Control of Grape Berry Moth, Endopiza viteana (Clemens) (Lepidoptera: Tortricidae), by Selective and Broad-Spectrum Insecticides. *J.Econ.Entomol.* 98: 415-422.

EcoReference No.: 82542
Chemical of Concern: MFZ,TUZ,CBL,FPP; Habitat: T; Effect Codes: REP,MOR; Rejection Code: LITE EVAL CODED(MFZ,TUZ,CBL,FPP).

262. Jacob, S. S., Nair, N. B., and Balasubramanian, N. K. (1982). Toxicity of Certain Pesticides Found in the Habitat to the Larvivorous Fishes Aplocheilus lineatus (Cuv. & Val.) and Macropodus cupanus (Cuv. & Val.). *Proc.Indian Acad.Sci.Anim.Sci.* 91: 323-328.

EcoReference No.: 11081
Chemical of Concern: DDT,MLN,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(DDT,MLN).

263. Jadhav, S., Sontakke, Y. B., and Lomte, V. S. (1996). Carbaryl Toxicity to Freshwater Bivalve Corbicula striatella. *Environ.Ecol.* 14: 863-865.

EcoReference No.: 18189
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

264. Jadhav, S., Sontakke, Y. B., and Lomte, V. S. (1995). Effect of Pesticides on Amylase Activity in Digestive Gland of Fresh Water Bivalve Corbicula striatella. *Indian J.Comp.Anim.Physiol.* 13: 27-29.

EcoReference No.: 76665
Chemical of Concern: CYP,ES,CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL,CYP),OK(ES).

265. James, D. G. and Rayner, M. (1995). Toxicity of Viticultural Pesticides to the Predatory Mites Amblyseius victoriensis and Typhlodromus doreenae. *Plant Prot.Q.* 10: 99-102.

EcoReference No.: 67984
Chemical of Concern: CaPS,BMY,CBD,CTN,MZB,FRM,IPD,MLX,Cu,PCZ,TDM,VCZ,Zineb,Ziram,CuOH,AZ,CBL,CPY,DZ,DMT,ES,MLN,MDT,DCF; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CaPS),OK(ALL CHEMS).

266. James, R. and Sampath, K. (1994). Combined Toxic Effects of Carbaryl and Methyl Parathion on Survival, Growth, and Respiratory Metabolism in Heteropneustes fossilis (Bloch). *Acta Hydrobiol.* 36: 399-408.

EcoReference No.: 87624
Chemical of Concern: CBL,MP; Habitat: A; Effect Codes: MOR,PHY,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(MP).

267. Jayaprada, P. and Rao, K. V. R. (1991). Carbaryl Toxicity on Tissue Acetylcholinesterase in the Penaeid Prawn, Metapenaeus monoceros (Fabricius) - A Monitoring Study. *Indian J.Comp.Anim.Physiol.* 9: 38-43.

EcoReference No.: 17176
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BCM,CEL; Rejection Code: LITE EVAL CODED(CBL).

268. Jeyasingam, D. N. T., Thayumanavan, B., and Krishnaswamy, S. (1978). The Relative Toxicities of Insecticides on Aquatic Insect Eretes sticticus (Linn.) (Coleoptera: Dytiscidae). *J.Madurai Univ.* 7: 85-87.

EcoReference No.: 5182
Chemical of Concern: DDT,ES,FNT,MLN,PMR,HCCH,DLD,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

269. John, P. J. and Prakash, A. (1998). Acute Toxicity of Metasystox and Sevin to Mystus vittatus. *J.Ecotoxicol.Environ.Monit.* 8: 169-177.

EcoReference No.: 87812
Chemical of Concern: DEM,CBL; Habitat: A; Effect Codes: BEH,PHY,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(DEM).

270. Johnson, I. C., Keller, A. E., and Zam, S. G. (1993). A Method for Conducting Acute Toxicity Tests with the Early Life Stages of Freshwater Mussels. *In: W.G.Landis, J.S.Hughes, and M.A.Lewis (Eds.), Environmental Toxicology and Risk Assessment, ASTM STP 1179, Philadelphia, PA* 381-396.

EcoReference No.: 50679
Chemical of Concern: ATZ,CBL,CYH; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,ATZ),OK(CYH).

271. Johnston, G., Walker, C. H., and Dawson, A. (1994). Potentiation of Carbaryl Toxicity to the Hybrid Red-Legged Partridge Following Exposure to Malathion. *Pestic.Biochem.Physiol.* 49: 198-208.

EcoReference No.: 88917
Chemical of Concern: CBL,MLN; Habitat: T; Effect Codes: MOR,PHY,BCM,ACC; Rejection Code: LITE EVAL CODED(CBL,MLN).

272. Jones, S. B., King, L. B., Sappington, L. C., Dwyer, F. J., Ellersieck, M., and Buckler, D. R. (1998). Effects of Carbaryl, Permethrin, 4-Nonylphenol, and Copper on Muscarinic Cholinergic Receptors in Brain of Surrogate and Listed Fish Species. *Comp.Biochem.Physiol.C* 120: 405-414.

EcoReference No.: 7174
Chemical of Concern: CBL,PMR,NYP,Cu; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL,Cu),OK(PMR,NYP).

273. Juchelka, C. M. and Snell, T. W. (1995). Rapid Toxicity Assessment Using Ingestion Rate of Cladocerans and Ciliates. *Arch.Environ.Contam.Toxicol.* 28: 508-512.

EcoReference No.: 14918
Chemical of Concern: Cd,HgCl2,PL,PCP,CuCl,CPY,CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL,CuCl,OW-TRV-,PCP),OK(CPY,HgCl2,Cd,PL).

274. Jyani, D. B., Patel, N. C., Jhala, R. C., and Patel, J. R. (1995). Bioefficacy of Neem and Synthetic Insecticides on Serpentine Leafminer (Liriomyza trifolii) (Diptera: Agromyzidae) Infesting Pea (Pisum sativum). *Indian J.Agric.Sci.* 65: 373-376.

EcoReference No.: 75351
Chemical of Concern: DMT,AZD,CBL,ES,CYF,FVL; Habitat: T; Effect Codes: POP,PHY; Rejection Code: LITE EVAL CODED(CYF,AZD,FVL),OK(ALL CHEMS).

275. Jyothi, B. and Narayan, G. (1999). Certain Pesticide-Induced Carbohydrate Metabolic Disorders in the Serum of Freshwater Fish Clarias batrachus (Linn.). *Food Chem.Toxicol.* 37: 417-421.

EcoReference No.: 59922
Chemical of Concern: CBL,PRT; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(PRT,CBL).

276. Jyothi, B. and Narayan, G. (2001). Effect of Pesticides Carbaryl and Phorate on Serum Cholesterol Level in Fish, Clarias batrachus (Linn.). *J.Environ.Biol.* 22: 233-235.

EcoReference No.: 66397
Chemical of Concern: CBL,PRT; Habitat: A; Effect Codes: BCM,MOR; Rejection Code: LITE EVAL CODED(CBL,PRT).

277. Jyothi, B. and Narayan, G. (2000). Pesticide Induced Alterations of Non-Protein Nitrogenous Constituents in the Serum of a Fresh Water Cat Fish, Clarias batrachus (Linn.). *Indian J.Exp.Biol.* 38: 1058-1061.

EcoReference No.: 68291
Chemical of Concern: CBL,PRT; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL,PRT).

278. Jyothi, B. and Narayan, G. (1999). Toxic Effects of Carbaryl on Gonads of Freshwater Fish, Clarias batrachus (Linnaeus). *J.Environ.Biol.* 20: 73-76.

EcoReference No.: 20373
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,CEL,GRO; Rejection Code: LITE EVAL CODED(CBL).

279. Kader, H. A., Thayumanavan, B., and Krishnaswamy, S. (1976). The Relative Toxicities of Ten Biocides on Spicodiaptomus chelospinus Rajendran (1973) [Copepoda: Calanoida]. *Comp.Physiol.Ecol.* 1 : 78-82.

EcoReference No.: 5264
Chemical of Concern: DDT,ES,HCCH,DLD,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

280. Kadir, H. A., Zakaria, M. B., Kechil, A. A., and Azirun, M. S. (1989). Toxicity and Electrophysiological Effects of Spilanthes acmella Murr. Extracts on Periplaneta americana L. *Pestic.Sci.* 25: 329-336.

EcoReference No.: 70266
Chemical of Concern: RSM,HCCH,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(RSM).

281. Kale, R. D. and Krishnamoorthy, R. V. (1979). Pesticidal Effects of Sevin (1-Naphthyl-N-Methyl Carbamate) on the Survivability and Abundance of Earthworm Pontoscolex corethrurus. *Proc.Indian Acad.Sci.* 88B Part I: 391-396.

EcoReference No.: 35291
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,MOR,BEH,REP,POP; Rejection Code: LITE EVAL CODED (CBL).

282. Kallander, D. B., Fisher, S. W., and Lydy, M. J. (1997). Recovery Following Pulsed Exposure to Organophosphorus and Carbamate Insecticides in the Midge, Chironomus riparius. *Arch.Environ.Contam.Toxicol.* 33: 29-33.

EcoReference No.: 18412
Chemical of Concern: PPX,CBL,AD,CCBF,MLN,PRN; Habitat: A; Effect Codes: BCM,CEL,MOR; Rejection Code: LITE EVAL CODED(CBL,CBF,ADC),OK(ALL CHEMS).

283. Kanazawa, J. (1975). Uptake and Excretion of Organophosphorus and Carbamate Insecticides by Fresh Water Fish, Motsugo, Pseudorasbora parva. *Bull.Environ.Contam.Toxicol.* 14: 346-352 (Author Communication Used).

EcoReference No.: 2164
Chemical of Concern: CBL,DZ,MLN,FNT; Habitat: A; Effect Codes: ACC; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(MLN,FNT).

284. Kanazawa, J., Isensee, A. R., and Kearney, P. C. (1975). Distribution of Carbaryl and 3,5-Xylyl Methylcarbamate in an Aquatic Model Ecosystem. *J.Agric.Food Chem.* 23: 760-763.

EcoReference No.: 15807
Chemical of Concern: CBL; Habitat: A; Effect Codes: ACC,MOR; Rejection Code: LITE EVAL CODED(CBL).

285. Kanga, L. H. B. and Plapp, F. W. Jr. (1995). Target-Site Insensitivity as the Mechanism of Resistance to Organophosphorus, Carbamate, and Cyclodiene Insecticides in Tobacco Budworm Adults . *J.Econ.Entomol.* 88: 1150-1157.

EcoReference No.: 74123
User Define 2: WASHT
Chemical of Concern: CBL,ES,PFF,DLD,MOM,TVP ; Habitat: T; Effect Codes: BCM,MOR; Rejection Code: OK.

286. Karnak, R. E. and Collins, W. J. (1974). The Susceptibility to Selected Insecticides and Acetylcholinesterase Activity in a Laboratory Colony of Midge Larvae, Chironomus tentans (Diptera: Chironomidae). *Bull.Environ.Contam.Toxicol.* 12: 62-69.

EcoReference No.: 6267
Chemical of Concern: CBL,DDT,PPX,MLN,ATN,DDVP,CPY,DLD,CBF; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL,CBF,ATN),OK(ALL CHEMS).

287. Kasai, S., Weerashinghe, I. S., and Shono, T. (1998). P450 Monooxygenases are an Important

Mechanism of Permethrin Resistance in Culex quinquefasciatus Say Larvae. *Arch.Insect Biochem.Physiol.* 37: 47-56.

EcoReference No.: 63336
Chemical of Concern: PYX,PFF,CBL,DDT,PMR,PRN; Habitat: A; Effect Codes: BCM,MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS) .

288. Katz, M. (1961). Acute Toxicity of some Organic Insecticides to Three Species of Salmonids and to the Threespine Stickleback. *Trans.Am.Fish.Soc.* 90: 264-268.

EcoReference No.: 522
Chemical of Concern: AZ,CBL,CMPH,HCCH,MLN,TXP,AND,DLD,DDT,MXC,HPT,CHD,EN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

289. Kaur, H. and Toor, H. S. (1995). Toxicity of Some Insecticides to the Fingerlings of Indian Major Carp Cirrhina mrigala (Hamilton). *Indian J.Ecol.* 22: 140-142.

EcoReference No.: 14166
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(MLN).

290. Kaur, K. and Dhawan, A. (1996). Effect of Carbaryl on Tissue Composition, Maturation, and Breeding Potential of Cirrhina mrigala (Ham.). *Bull.Environ.Contam.Toxicol.* 57: 480-486.

EcoReference No.: 17912
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM,REP,MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

291. Kaur, K. and Dhawan, A. (1993). Variable Sensitivity of Cyprinus carpio Eggs, Larvae, and Fry to Pesticides. *Bull.Environ.Contam.Toxicol.* 50: 593-599 (OECDG Data File).

EcoReference No.: 6999
Chemical of Concern: CBF,CBL,MLN,PPHD; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL,CBF)OK(MLN,PPHD).

292. Kaur, K. and Toor, H. S. (1980). Role of Abiotic Factors in the Embryonic Development of Scale Carp. *Proc.Indian Natl.Sci.Acad.Part B* 46: 136-148.

EcoReference No.: 67617
Chemical of Concern: DZ,PPHD,MLN,FNT,CBL; Habitat: A; Effect Codes: REP,GRO; Rejection Code: LITE EVAL CODED(MLN,DZ,CBL),OK(PPHD,FNT).

293. Kaur, K. and Toor, H. S. (1977). Toxicity of Pesticides to Embryonic Stages of Cyprinus carpio communis Linn. *Indian J.Exp.Biol.* 15: 193-196.

EcoReference No.: 9935
Chemical of Concern: PPHD,DZ,FNT,CBL,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(MLN,CBL,DZ),OK(PPHD,FNT).

294. Kaushik, N. and Kumar, S. (1998). Midgut Pathology of Aldrin, Monocrotophos, and Carbaryl in the Freshwater Crab, Paratelphusa masoniana (Henderson). *Bull.Environ.Contam.Toxicol.* 60: 480-486.

EcoReference No.: 18804
Chemical of Concern: AND,CBL; Habitat: A; Effect Codes: MOR,CEL; Rejection Code:

LITE EVAL CODED(CBL),OK(AND).

295. Kaushik, N. and Kumar, S. (1993). Susceptibility of the Freshwater Crab Paratelphusa masoniana (Henserson) to Three Pesticides, Singly and in Combination. *Environ.Ecol.* 11: 560-564.

EcoReference No.: 4450
Chemical of Concern: AND,CBL; Habitat: A; Effect Codes: MOR,BEH,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(AND).

296. Khangarot, B. S., Sehgal, A., and Bhasin, M. K. (1985). "Man and Biosphere" - Studies on the Sikkim Himalayas. Part 6: Toxicity of Selected Pesticides to Frog Tadpole Rana hexadactyla (Lesson). *Acta Hydrochim.Hydrobiol.* 13: 391-394.

EcoReference No.: 11521
Chemical of Concern: CBF,CBL,DMT,HCCH,MLN,PCB,EN,CBD,NaPCP; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL,CBF,DMT,NaPCP),OK(ALL CHEMS).

297. Khemani, S., Khemani, L. D., and Pant, M. C. (1987). Inhibition of Rat Brain Succinate Dehydrogenase by Carbamate and Organophosphate Pesticides. *Curr.Sci.* 56: 186-187.

EcoReference No.: 86943
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

298. Khera, K. S. and Lyon, D. A. (1968). Chick and Duck Embryos in the Evaluation of Pesticide Toxicity. *Toxicol.Appl.Pharmacol.* 13: 1-15.

EcoReference No.: 85496
Chemical of Concern: DDVP,ETN,CBL,DMT,MLN,DZ,PRN; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(MLN,CBL,DZ),OK(ALL CHEMS) .

299. Khillare, Y. K. and Wagh, S. B. (1988). Acute Toxicity of Pesticides in the Freshwater Fish Barbus stigma: Histopathology of the Stomach. *Uttar Pradesh J.Zool.* 8: 176-179.

EcoReference No.: 13301
Chemical of Concern: CBL,MLN,ES; Habitat: A; Effect Codes: MOR,CEL; Rejection Code: LITE EVAL CODED(CBL),OK(MLN,ES).

300. Kim, D. G. and Riggs, R. D. (1998). Effects of Some Pesticides on the Growth of ARF18 and Its Pathogenicity to Heterodera glycines. *J.Nematol.* 30: 201-205 .

EcoReference No.: 70527
Chemical of Concern: PNB,CBL,DCNA,SXD,FPP,MLN,KFAT,CHX,DZ,DCF,TPM,GYPI,MYC,PAQT,MZB,DMM,TFN,FML,ADC,DLN,CTN; Habitat: T; Effect Codes: POP,GRO; Rejection Code: LITE EVAL CODED(DZ,DCNA,SXD,CBL),OK(ALL CHEMS).

301. Klingeman, W. E., Buntin, G. D., Van Iersel, M. W., and Braman, S. K. (2000). Whole-Plant Gas Exchange, not Individual-Leaf Measurements, Accurately Assesses Azalea Response to Insecticides. *Crop Prot.* 19: 407-415.

EcoReference No.: 64755
Chemical of Concern: ACP,CBL,CPY,AZD,IMC; Habitat: T; Effect Codes: PHY,GRO; Rejection Code: LITE EVAL CODED(ACP),OK TARGET(CBL).

302. Konno, T. and Kajihara, O. (1985). Synergism of Pirimicarb and Organophosphorus Insecticides Against the Resistant Rice Stem Borer, Chilo suppressalis Walker (Lepidoptera: Pyralidae). *Appl.Entomol.Zool.* 20: 403-410.

EcoReference No.: 74137
User Define 2: WASHT
Chemical of Concern: CPYM,FNT,MP,FNTH,DZ,CPY,PRN,MLN,PSM,MDT,DDVP,TVP,CBL,BDC,PIRM,PIM,MOM; Habitat: T; Effect Codes: MOR; Rejection Code: OK.

303. Koundinya, P. R. and Murthi, R. R. (1979). Haematological Studies in Sarotherodon (Tilapia) mossambica (Peters) Exposed to Lethal (LC50/48 Hrs) Concentration of Sumithion and Sevin. *Curr.Sci.* 48: 877-879 (Used 7407 As Reference).

EcoReference No.: 5783
Chemical of Concern: CBL; Habitat: A; Effect Codes: CEL; Rejection Code: LITE EVAL CODED(CBL).

304. Koundinya, P. R. and Ramamurthi, R. (1979). Comparative Study of Inhibition of Acetylcholinesterase Activity in the Freshwater Teleost Sarotherodon (Tilapia) mossambica (Peters) by Sevin (Carbamate) and Sumithion (Organophosphate). *Curr.Sci.* 48: 832-833 (Used 7082 As Reference).

EcoReference No.: 6909
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

305. Koundinya, P. R. and Ramamurthi, R. (1980). Effect of Sub-Lethal Concentration of Sumithion and Sevin on Certain Haematological Values of Sarotherodon mossambicus (Peters). *Curr.Sci.* 49: 645-646.

EcoReference No.: 14108
Chemical of Concern: CBL; Habitat: A; Effect Codes: CEL,PHY; Rejection Code: LITE EVAL CODED(CBL).

306. Koundinya, P. R. and Ramamurthi, R. (1981). Tissue Respiration in Sarotherodon mossambicus (Peters) Exposed to Sub-Lethal Concentration of Sumithion and Sevin. *Curr.Sci.* 50: 968-969.

EcoReference No.: 45759
Chemical of Concern: CBL; Habitat: A; Effect Codes: ACC,PHY; Rejection Code: LITE EVAL CODED(CBL).

307. Koundinya, P. R. and Ramamurthi, R. (1979). Tissue Respiration in Tilapia mossambica Exposed to Lethal (LC50) Concentration of Sumithion and Sevin. *Indian J.Environ.Health* 20: 426-428.

EcoReference No.: 6091
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED (CBL).

308. Krechniak, J., Englot, B., Wrzesniowska, K., and Hac, E. (1994). Interaction of Lindane and Carbaryl on Hepatic Microsomal Enzymes in Rats. *Bull.Environ.Contam.Toxicol.* 52: 927-934.

EcoReference No.: 39605

Chemical of Concern: CBL,HCCH; Habitat: T; Effect Codes: BCM,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(HCCH).

309. Krishnan, M. and Chockalingam, S. (1989). Toxic and Sublethal Effects of Endosulfan and Carbaryl on Growth and Egg Production of Moina micrura Kurz (Cladocera: Moinidae). *Environ.Pollut.* 56: 319-326.

EcoReference No.: 87649
Chemical of Concern: CBL,ES; Habitat: A; Effect Codes: REP,BEH,MOR,GRO; Rejection Code: LITE EVAL CODED(CBL),OK(ES).

310. Krzystyniak, K., Trottier, B., Jolicoeur, P., and Fournier, M. (1987). Macrophage Functional Activities Versus Cellular Parameters upon Sublethal Pesticide Exposure in Mice. *Mol.Toxicol.* 1: 247-259.

EcoReference No.: 87655
Chemical of Concern: MOM,CBF,CBL,AZ,ES,DLD,MLN; Habitat: T; Effect Codes: MOR,GRO,CEL; Rejection Code: LITE EVAL CODED(CBL,MOM,MLN),OK(CBF,AZ,ES).

311. Kumar, B. and Banerjee, V. (1991). Effects of Lethal Toxicity of Sevin (Carbaryl) on the Blood Parameters in Clarias batrachus (L.). *Himalayan J.Environ.Zool.* 5: 13-17.

EcoReference No.: 13870
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,CEL; Rejection Code: LITE EVAL CODED(CBL).

312. Ladics, G. S., Smith, C., Heaps, K., and Loveless, S. E. (1994). Evaluation of the Humoral Immune Response of CD Rats Following a 2-Week Exposure to the Pesticide Carbaryl by the Oral, Dermal, or Inhalation Routes. *J.Toxicol.Environ.Health* 42: 143-156.

EcoReference No.: 87556
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,GRO,CEL; Rejection Code: LITE EVAL CODED(CBL).

313. Lakota, S., Raszka, A., and Kupczak, I. (1981). Toxic Effect of Cartap, Carbaryl, and Propoxur on Some Aquatic Organisms. *Acta Hydrobiol.* 23: 183-190 .

EcoReference No.: 4888
Chemical of Concern: PPX,CBL; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(PPX).

314. Landrum, P. F. and Dupuis, W. S. (1990). Toxicity and Toxicokinetics of Pentachlorophenol and Carbaryl to Pontoporeia hoyi and Mysis relicta. *In: W.G.Landis and W.H.Van der Schalie (Eds.), Aquatic Toxicology and Risk Assessment, 13th Volume, ASTM STP 1096, Philadelphia, PA* 278-289.

EcoReference No.: 18931
Chemical of Concern: CBL,PCP; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,PCP).

315. Lata, S., Gopal, K., and Singh, N. N. (2001). Toxicological Evaluations and Morphological Studies in a Catfish Clarias batrachus Exposed to Carbaryl and Carbofuran. *J.Ecophysiol.Occup.Health* 1: 121-130.

EcoReference No.: 82520

Chemical of Concern: CBF,CBL; Habitat: A; Effect Codes: GRO,MOR,PHY,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(CBF).

316. Le, D. P., Thirugnanam, M., Lidert, Z., Carlson, G. R., and Ryan, J. B. (1996). RH-2485: A New Selective Insecticide for Caterpillar Control. *In:Proc.Int.Conf.held at Farnham, Surrey: Br.Crop Prot.Conf.* 2: 481-486.

EcoReference No.: 82537
Chemical of Concern: MFZ,CBL,FNV,EFV,CPY,MP,AZ; Habitat: T; Effect Codes: MOR,POP,PHY; Rejection Code: LITE EVAL CODED(MFZ),OK(ALL CHEMS) .

317. Lechner, D. M. W. and Abdel-Rahman, M. S. (1984). A Teratology Study of Carbaryl and Malathion Mixtures in Rat. *J.Toxicol.Environ.Health* 14: 267-278.

EcoReference No.: 86940
Chemical of Concern: CBL,MLN; Habitat: T; Effect Codes: GRO,REP; Rejection Code: LITE EVAL CODED(MLN,CBL).

318. Lechner, D. W. and Abdel-Rahman, M. S. (1985). Alterations in Rat Liver Microsomal Enzymes Following Exposure to Carbaryl and Malathion in Combination. *Arch.Environ.Contam.Toxicol.* 14: 451-457.

EcoReference No.: 37664
Chemical of Concern: CBL,MLN; Habitat: T; Rejection Code: LITE EVAL CODED(CBL,MLN).

319. Lejczak, B. (1977). Effect of Insecticides: Chlorphenvinphos, Carbaryl and Propoxur on Aquatic Organisms. *Pol.Arch.Hydrobiol.* 24: 583-591.

EcoReference No.: 7558
Chemical of Concern: PPX,CBL; Habitat: A; Effect Codes: BCM,MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(PPX).

320. Lemke, L. A. and Kissam, J. B. (1987). Evaluation of Various Insecticides and Home Remedies for Control of Individual Red Imported Fire Ant Colonies. *J.Entomol.Sci.* 22: 275-281.

EcoReference No.: 78182
Chemical of Concern: ALSV,DZ,PYN,CBL,ACP,CPY; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(ALSV),OK(ALL CHEMS).

321. Lillie, R. J. (1973). Studies on the Reproductive Performance and Progeny Performance of Caged White Leghorns fed Malathion and Carbaryl. *Poult.Sci.* 52: 266-272.

EcoReference No.: 37706
Chemical of Concern: CBL,MLN; Habitat: T; Rejection Code: LITE EVAL CODED(MLN,CBL).

322. Lingaraja, T. and Venugopalan, V. K. (1978). Pesticide Induced Physiological and Behavioural Changes in an Estuarine Teleost Therapon jarbua (Forsk). *Fish.Technol.* 15: 115-119.

EcoReference No.: 6020
Chemical of Concern: CBL,DMT,DDT; Habitat: A; Effect Codes: MOR,PHY,GRO,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(DDT,DMT).

323. Liong, P. C., Hamzah, W. P., and Murugan, V. (1988). Toxicity of Some Pesticides Towards Freshwater Fishes. *Fish.Bull.Dep.Fish.(Malays.)* 57: 13 p.

EcoReference No.: 3296
Chemical of Concern: HXZ,GYPI,MZB,PAQT,ES,MLN,PPX,CBL,DLD,HCCH,FNTH,CBF,ACP; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,ACP,CBF),OK(ALL CHEMS), NO COC(EFV).

324. Little, E. E., Archeski, R. D., Flerov, B. A., and Kozlovskaya, V. I. (1990). Behavioral Indicators of Sublethal Toxicity in Rainbow Trout. *Arch.Environ.Contam.Toxicol.* 19: 380-385.

EcoReference No.: 3175
Chemical of Concern: PCP,MP,CHD,CBL,24DXY,TBF; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL,PCP),OK(ALL CHEMS).

325. Little, E. E., Calfee, R., Cleveland, L., Skinker, R., Zaga-Parkhurst, A., and Barron, M. G. (2000). Photo-Enhanced Toxicity in Amphibians: Synergistic Interactions of Solar Ultraviolet Radiation and Aquatic Contaminants. *J.Iowa Acad.Sci.* 107: 67-71.

EcoReference No.: 71949
Chemical of Concern: CBL,ALSV; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED (CBL),OK(ALSV).

326. Liu, D. H. W. and Lee, J. M. (1975). Toxicity of Selected Pesticides to the Bay Mussel (Mytilus edulis). *EPA-660/3-75-016, U.S.EPA, Corvallis, OR* 102 p. (U.S.NTIS PB-243221).

EcoReference No.: 8127
Chemical of Concern: MXC,CBL,MLN,TFN; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(MLN,MXC,TFN).

327. Lloyd, G. K., Ligget, M. P., Kynoch, S. R., and Davies, R. E. (1977). Assessment of the Acute Toxicity and Potential Irritancy of Hair Dye Constituents. *Food Cosmet.Toxicol.* 15: 607-610.

EcoReference No.: 88033
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY,MOR; Rejection Code: LITE EVAL CODED(CBL).

328. Lohner, T. W. (1987). Effects of pH, Temperature, and Sediment on the Aquatic Fate and Toxicity of Selected Pesticides. *Ph.D.Thesis, The Ohio State University, Columbus, OH: 125 p., Diss.Abstr.Int.B Sci.Eng.* 48: 2593 (1988) (Publ in Part As 12261, 3278, 12569, 3337).

EcoReference No.: 2993
Chemical of Concern: CBL,PRN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(PRN).

329. Lohner, T. W. and Fisher, S. W. (1990). Effects of pH and Temperature on the Acute Toxicity and Uptake of Carbaryl in the Midge, Chironomus riparius. *Aquat.Toxicol.* 16: 335-354.

EcoReference No.: 3278
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY,ACC,MOR; Rejection Code: LITE EVAL CODED(CBL).

330. Lox, C. D. (1984). The Effects of Acute Carbaryl Exposure on Clotting Factor Activity in the

Rat. *Ecotoxicol.Environ.Saf.* 8: 280-283.

EcoReference No.: 86762
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH,GRO,PHY,CEL; Rejection Code: LITE EVAL CODED(CBL).

331. Lunn, C. R., Toews, D. P., and Pree, D. J. (1976). Effects of Three Pesticides on Respiration, Coughing, and Heart Rates of Rainbow Trout (Salmo gairdneri Richardson). *Can.J.Zool.* 54: 214-219.

EcoReference No.: 7846
Chemical of Concern: DDT,CBL,DLD; Habitat: A; Effect Codes: PHY,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(DLD,DDT).

332. Lydy, M. J. , Bruner, K. A., Fry, D. M., and Fisher, S. W. (1990). Effects of Sediment and the Route of Exposure on the Toxicity and Accumulation of Neutral Lipophilic and Moderately Water-Soluble Metabolizable Compounds in the Midge, Chironomus riparius. *In: W.G.Landis and W.H.Van der Schalie (Eds.), Aquatic Toxicology and Risk Assessment, 13th Volume, ASTM STP 1096, Philadelphia, PA* 140-164.

EcoReference No.: 18935
Chemical of Concern: HCCH,PCB,PCP,ADC,DLD,CBL,PRN,DDT,BAP; Habitat: A; Effect Codes: ACC,MOR; Rejection Code: LITE EVAL CODED(CBL,ADC,PCP),OK(ALL CHEMS).

333. Macek, K. J. and McAllister, W. A. (1970). Insecticide Susceptibility of Some Common Fish Family Representatives. *Trans.Am.Fish.Soc.* 99: 20-27 (Publ in Part As 6797).

EcoReference No.: 610
Chemical of Concern: AZ,CBL,HCCH,MLN,MP,TXP; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

334. MacKenzie, K. E. and Winston, M. L. (1989). The Effects of Sublethal Exposure to Diazinon, Carbaryl and Resmethrin on Longevity and Foraging in Apis mellifera L. *Apidologie* 20: 29-40.

EcoReference No.: 70542
Chemical of Concern: RSM,DZ,CBL; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(RSM),OK(ALL CHEMS).

335. Mallik, M. A. B. and Tesfai, K. (1985). Pesticidal Effect on Soybean-Rhizobia Symbiosis. *Plant Soil* 85: 33-41.

EcoReference No.: 70794
Chemical of Concern: PNB,CBL,TXP,DZ,ACP,CAPTAN,MLN,GYP; Habitat : T; Effect Codes: GRO,BCM; Rejection Code: LITE EVAL CODED(DZ,CBL,ACP),OK(ALL CHEMS),NO MIXTURE(CAPTAN).

336. Maly, M. and Ruber, E. (1983). Effects of Pesticides on Pure and Mixed Species Cultures of Salt Marsh Pool Algae. *Bull.Environ.Contam.Toxicol.* 30: 464-472.

EcoReference No.: 15240
Chemical of Concern: PPX,TMP,CPY,CBL,MLN; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

337. Maly, M. P. (1980). A Study of the Effects of Pesticides on Single and Mixed Species

Cultures of Algae. *Ph.D.Thesis, Northeastern University, Boston, MA:261 p.; Diss.Abstr.Int.B Sci.Eng.41(4):1227 (Author Communication Used) (Publ in Part As 15240).*

EcoReference No.: 5131
Chemical of Concern: CBL,MLN,ABT,PPX; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

338. Mandal, A. and Lahiri, P. (1989). Insecticide Induced Hematological Changes in Pigeons. *Proc.Indian Acad.Sci.* 98: 133-137.

EcoReference No.: 87669
Chemical of Concern: CHD,FNT,CBL; Habitat: T; Effect Codes: GRO,BCM,PHY,CEL; Rejection Code: LITE EVAL CODED(CBL),OK(CHD,FNT).

339. Mani, M. (1994). Relative Toxicity of Different Pesticides to Campoletis chlorideae Uchida (Hym., Ichneumonidae). *J.Biol.Control* 8: 18-22.

EcoReference No.: 62600
Chemical of Concern: 2INEB,DINO,DCF,Cu,ES,MOM,CBL,FNV,PHSL,CYP,DM,DMT,MLN,CPY,MP,FNTH,DDVP,PPHD,FVL,ACP,MZB,CBD; Habitat: T; Effect Codes: MOR; Rejection Code: OK TARGET(DMT,MLN,FVL,CYP).

340. Mani, M. and Nagarkatti, S. (1983). Susceptibility of Two Braconid Parasites Apanteles angaleti Muesebeck and Bracon kirkpatricki (Wilkinson) to Several Chemical Pesticides. *Entomon* 8: 87-92.

EcoReference No.: 62601
Chemical of Concern: MOM,PHSL,PPHD,CBL,CPY,DDVP,DCF,DMT,ES,FNT,MLN; Habitat: T; Effect Codes: MOR,POP; Rejection Code: OK TARGET(DMT).

341. Manna, A. K. and Ghosh, J. J. (1987). Anaerobic Toxicity of Sublethal Concentration of Carbaryl Pesticide Sevin to Guppy Lebistes reticulatus. *Environ.Ecol.* 5: 447-450.

EcoReference No.: 14048
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BEH,BCM; Rejection Code: LITE EVAL CODED(CBL).

342. Mansour, S. A. and Al-Jalili, M. K. (1985). Determination of Residues of Some Insecticides in Clover Flowers: A Bioassay Method Using Honeybee Adults. *J.Apic.Res.* 24: 195-198.

EcoReference No.: 67983
Chemical of Concern: PPX,CPY,CBL,FNT,MOM; Habitat: T; Effect Codes: MOR,ACC; Rejection Code: LITE EVAL CODED(MOM).

343. Marian, M. P., Arul, V., and Pandian, T. J. (1983). Acute and Chronic Effects of Carbaryl on Survival, Growth, and Metamorphosis in the Bullfrog (Rana tigrina). *Arch.Environ.Contam.Toxicol.* 12: 271-275.

EcoReference No.: 10697
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,PHY,GRO; Rejection Code: LITE EVAL CODED(CBL).

344. Marletto, F., Patetta, A., and Manino, A. (2003). Laboratory Assessment of Pesticide Toxicity to Bumblebees. *Bull.Insectol.* 56: 155-158.

EcoReference No.: 73698
User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,IMC,LCYT,CYF,DMT,AV,ACP,CBL,CPYM,PSPL; Habitat: T; Effect Codes: MOR; Rejection Code: OK TARGET(DMT).

345. Martinez, D. G. and Pienkowski, R. L. (1983). Comparative Toxicities of Several Insecticides to an Insect Predator, a Nonpest Prey Species, and a Pest Prey Species. *J.Econ.Entomol.* 76: 933-935.

EcoReference No.: 37837
Chemical of Concern: MDT,AZ,CBF,MOM,CBL,MLN; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CBF,MOM,AZ),TARGET(MLN),OK(MDT).

346. Mason, C. E. (1986). Progression of Knockdown and Mortality of Honey Bees (Hymenoptera: Apidae) Sprayed with Insecticides Mixed with Penncap-M. *Environ.Entomol.* 15: 170-176.

EcoReference No.: 40005
Chemical of Concern: CBL,MLN,MP,OML,PRM,PHSL,MOM; Habitat: T; Effect Codes: MOR; Rejection Code: OK.

347. Mason, L. J., Seal, D. R., and Jansson, R. K. (1991). Response of Sweetpotato Weevil (Coleoptera: Apionidae) to Selected Insecticides. *Fla.Entomol.* 74: 350-355.

EcoReference No.: 62617
User Define 2: WASHT
Chemical of Concern: MOM,CBL,ES,PRN,CPY; Habitat: T; Effect Codes: MOR; Rejection Code: OK.

348. Mathur, A. and Bhatnagar, P. (1991). A Teratogenic Study of Carbaryl in Swiss Albino Mice. *Food Chem.Toxicol.* 29: 629-632.

EcoReference No.: 87868
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,MOR,PHY,REP; Rejection Code: LITE EVAL CODED(CBL).

349. Mathur, D. S. (1974). Toxicity of Sevin to Certain Fishes. *J.Inl.Fish.Soc.India* 6: 0.

EcoReference No.: 8638
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL).

350. Mayer, F. L. J. and Ellersieck, M. R. (1986). Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals. *Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC* 505 p. (USGS Data File).

EcoReference No.: 6797
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern: EDT,RSM,SZ,24DXY,ACP,ACR,ADC,ATZ,AZ,BS,Captan,CBF,CBL,CMPH,CPY,Cu,CuS,DBN,DFZ,DMB,DMT,DOD,DPDP,DS,DU,DZ,FO,GYP,HCCH,HXZ,LNR,MBZ,MDT,MLN,MLT,MOM,MP,MTL,Naled,OYZ,PEB,PAQT,PRT,PSM,Folpet,PYN,CYT,DMM,EFS,NAA,NTP,PMR,PPB,TFN,WFN,RTN; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(MTL,MLT,CBF,ADC,MOM,PPB,SZ,DMT,WFN),OK(ALL CHEMS).

351. Mayer, F. L. Jr. and Ellersieck, M. R. (1986). Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals. *Resour.Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC* 505 p. (USGS Data File).

EcoReference No.: 6797
Chemical of Concern: EDT,RSM,SZ,24DXY,ACP,ACR,ADC,ATM,ATN,ATZ,AZ,BS,CaPS,Captan,CBF,CBL,CMPH,CQTC,CPY,CuS,DBN,DFZ,DMB,DMT,DOD,DPDP,DS,DU,DZ,FO,GYP,HCCH,HXZ,IGS,LNR,MBZ,MCPB,MDT,MLN,MLT,MOM,MP,MTL,NaN3,Naled,OYZ,PCP,PEB,PAQT,PRT,PSM,Folpet,PYN,CYT,DMM,EFS,NAA,NTP,PMR,PPB,TFN,WFN,RSM,RTN,ALSV,Se,DBAC,Zn,As,MTPN,DCB,MTAS,OXD; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL,MTAS,MTPN,DCB,DZ,IGS,ATZ,MTL,MLT,CBF,ADC,MOM,PPB,SZ,DMT,WFN,RTN,CuS, DOD,NaN3,DMB,RSM,CaPS,MCPB, NaPCP,PCP,AMSV,ALSV,PRT,ATM,CQTC,ATN,DBAC),OK(ALL CHEMS).

352. McArtney, S., White, M., Latter, I., and Campbell, J. (2004). Individual and Combined Effects of Shading and Thinning Chemicals on Abscission and Dry-Matter Accumulation of 'Royal Gala' Apple Fruit. *J.Hortic.Sci.Biotechnol.* 79: 441-448.

EcoReference No.: 77571
Chemical of Concern: CaPS,CBL; Habitat: T; Effect Codes: ACC; Rejection Code: LITE EVAL CODED(CaPS),OK(CBL).

353. McCord, E. Jr. and Yu, S. J. (1987). The Mechanisms of Carbaryl Resistance in the Fall Armyworm, Spodoptera frugiperda (J.E. Smith). *Pestic.Biochem.Physiol.* 27: 114-122.

EcoReference No.: 87559
Chemical of Concern: PMR,CYP,CBL,MOM,PRN,DZ; Habitat: T; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL,DZ,MOM),OK(PMR,CYP,PRN) .

354. McDonald, S. (1967). Oral Toxicity of 23 Insecticides to Grasshoppers in the Laboratory and the Influence of Species, Pretreatment, and Geographical Distribution. *J.Econ.Entomol.* 60: 844-849.

EcoReference No.: 71105
User Define 2: WASHT,CALFT
Chemical of Concern: ALD,DLD,HPT,EN,CHD,MP,Naled,DMT,AZ,MLN,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: OK(ALL CHEMS),OK TARGET(DMT,MLN).

355. McKim, J. M., Schmieder, P. K., Niemi, G. J., Carlson, R. W., and Henry, T. R. (1987). Use of Respiratory-Cardiovascular Responses of Rainbow Trout (Salmo gairdneri) in Identifying Acute Toxicity Syndromes in Fish: Part 2. Malathion, Carbaryl, Acrolein and Benzaldehyde. *Environ.Toxicol.Chem.* 6: 313-328.

EcoReference No.: 12182
Chemical of Concern: ACL,CBL,MLN; Habitat: A; Effect Codes: MOR,PHY,BCM,CEL; Rejection Code: LITE EVAL CODED(CBL,ACL),OK(MLN).

356. McLeese, D. W., Zitko, V., and Peterson, M. R. (1979). Structure-Lethality Relationships for Phenols, Anilines and Other Aromatic Compounds in Shrimp and Clams. *Chemosphere* 8: 53-57 (OECDG Data File).

EcoReference No.: 5810
Chemical of Concern: CBL,PCP,CP,NP,PL,FNT,4NP,AN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,PCP),OK(ALL CHEMS).

357. Mcleod, M. J., Twidwell, E. K., and Gallenberg, D. J. (1994). Alfalfa Weevil Control, 1993. *Arthropod Manag.Tests* 19: 172-173 (No. 7F).

EcoReference No.: 88952
Chemical of Concern: CPY,CBF,PSM,MP,MLN,CBL,PMR; Habitat: T; Effect Codes: POP,BCM; Rejection Code: LITE EVAL CODED(CBL,MLN),OK(CPY,CBF,PSM,MP,PMR),OK TARGET(MLN).

358. McNulty, E. W., Dwyer, F. J., Ellersieck, M. R., Greer, E. I., Ingersoll, C. G., and Rabeni, C. F. (1999). Evaluation of Ability of Reference Toxicity Tests to Identify Stress in Laboratory Populations of the Amphipod Hyalella azteca. *Environ.Toxicol.Chem.* 18: 544-548.

EcoReference No.: 52121
Chemical of Concern: CdCl,CBL,NaPCP; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,NaPCP),OK(CaCl).

359. McNulty, E. W., Ellersieck, M. R., Greer, E. I., Ingersoll, C. G., and Rabeni, C. F. (1999). Evaluation of Ability of Reference Toxicity Tests to Identify Stress in Laboratory Populations of the Amphipod Hyalella azteca. *Environ.Toxicol.Chem.* 18: 544-548.

EcoReference No.: 52121
Chemical of Concern: Cd,CBL,NaPCP; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(NaPCP).

360. Megharaj, M., Venkateswarlu, K., and Rao, A. S. (1989). Effects of Carbofuran and Carbaryl on the Growth of a Green Alga and Two Cyanobacteria Isolated from a Rice Soil. *Agric.Ecosyst.Environ.* 25: 329-336.

EcoReference No.: 74542
Chemical of Concern: CBF,CBL; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(CBL,CBF).

361. Merriam, T. L. and Axtell, R. C. (1983). Relative Toxicity of Certain Pesticides to Lagenidium giganteum (Oomycetes: Lagenidiales), a Fungal Pathogen of Mosquito Larvae. *Environ.Entomol.* 12: 515-521.

EcoReference No.: 66427
Chemical of Concern: MTPN,ACR,CPY,FNTH,MLN,TMP,DFZ,Captan,ATZ,DDT,HCCH,CBL,PPX,PMR,TXP; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(MLN,CBL,MTPN,ATZ),OK(ALL CHEMS).

362. Metts, B. S., Hopkins, W. A., and Nestor, J. P. (2005). Interaction of an Insecticide with Larval Density in Pond-Breeding Salamanders (Ambystoma). *Freshw.Biol.* 50: 685-696.

EcoReference No.: 85946
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR,CEL; Rejection Code: LITE EVAL CODED(CBL).

363. Mills, N. E. and Semlitsch, R. D. (2004). Competition and Predation Mediate the Indirect Effects of an Insecticide on Southern Leopard Frogs. *Ecol.Appl.* 14: 1041-1054.

EcoReference No.: 86760
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

364. Mora, B. R., Martinez-Tabche, L., Sanchez-Hidalgo, E., Hernandez, G. C., Ruiz, M. C. G., and Murrieta, F. F. (2000). Relationship Between Toxicokinetics of Carbaryl and Effect on Acetylcholinesterase Activity in Pomacea patula Snail. *Ecotoxicol.Environ.Saf.* 46: 234-239.

EcoReference No.: 52354
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,ACC,BCM; Rejection Code: LITE EVAL CODED(CBL).

365. Mora, P., Michel, X., and Narbonne, J.-F. (1999). Cholinesterase Activity as Potential Biomarker in Two Bivalves . *Environ.Toxicol.Pharmacol.* 7: 253-260.

EcoReference No.: 60846
Chemical of Concern: CBL,MP; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL),OK(MP).

366. Moscioni, A. D., Engel, J. L., and Casida, J. E. (1977). Kynurenine Formamidase Inhibition as a Possible Mechanism for Certain Teratogenic Effects of Organophosphorus and Methylcarbamate Insecticides in Chicken Embryos. *Biochem.Pharmacol.* 26: 2251-2258.

EcoReference No.: 38043
Chemical of Concern: DCTP,DZ,CBL,PIRM,PPHD,MTM,PRN,PRT,MP,CMPH,MVP,MLN,DMT,DDVP; Habitat: T; Effect Codes: BCM,GRO; Rejection Code: LITE EVAL CODED(DZ,CBL),NO ENDPOINT(DCTP,PIRM,PPHD,MTM,PRN,PRT,MP,CMPH,MVP,MLN,DMT,DDVP).

367. Mostert, M. A., Schoeman, A. S., and Van der Merwe, M. (2002). The Relative Toxicities of Insecticides to Earthworms of the Pheretima Group (Oligochaeta). *Pest Manag.Sci.* 58: 446-450.

EcoReference No.: 66555
Chemical of Concern: CYF,IMC,CPY,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CYF),OK(IMC,CPY,CBL),NO ENDPOINT(FPN).

368. Mostert, M. A., Schoeman, A. S., and Van der Merwe, M. (2002). The Relative Toxicities of Insecticides to Earthworms of the Pheretima Group (Oligochaeta). *Pest Manag.Sci.* 58: 446-450.

EcoReference No.: 66555
Chemical of Concern: CYF,IMC,CPY,CBL,FPN; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CYF),OK(IMC,CPY),NO ENDPOINT(FPN).

369. Mostert, M. A., Schoeman, A. S., and Van der Merwe, M. (2000). The Toxicity of Five Insecticides to Earthworms of the Pheretima Group, Using an Artificial Soil Test. *Pest Manag.Sci.* 56: 1093-1097.

EcoReference No.: 62642
Chemical of Concern: CYF,FPN,IMC,CBL,CPY; Habitat: T; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CYF,FPN),OK(ALL CHEMS).

370. Mount, M. E. and Oehme, F. W. (1981). Diagnostic Criteria for Carbaryl Poisoning in Sheep. *Arch.Environ.Contam.Toxicol.* 10: 483-495.

EcoReference No.: 38050
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC,MOR,BCM; Rejection Code: LITE EVAL CODED(CBL).

371. Muirhead-Thomson, R. C. (1973). Laboratory Evaluation of Pesticide Impact on Stream Invertebrates. *Freshw.Biol.* 3: 479-498.

EcoReference No.: 2719
Chemical of Concern: PPX,CBL,TXP,ES,DDT,PRN,AZ; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),NO ENDPOINT(AZ),OK(PPX,TXP,ES,DDT,PRN).

372. Muncy, R. J. and Oliver, A. D. Jr. (1963). Toxicity of Ten Insecticides to the Red Crawfish, Procambarus clarki (Girard). *Trans.Am.Fish.Soc.* 92: 428-431.

EcoReference No.: 2156
Chemical of Concern: MRX,DCTP,DMT,PPHD,MLN,MP,CBL,EN,DDT,Naled; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DMT),OK(ALL CHEMS).

373. Murray, F. J., Staples, R. E., and Schwetz, B. A. (1979). Teratogenic Potential of Carbaryl Given to Rabbits and Mice by Gavage or by Dietary Inclusion. *Toxicol.Appl.Pharmacol.* 51: 81-89.

EcoReference No.: 87557
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,PHY,REP,MOR; Rejection Code: LITE EVAL CODED(CBL).

374. Murray, H. E. and Guthrie, R. K. (1980). Effects of Carbaryl, Diazinon and Malathion on Native Aquatic Populations of Microorganisms. *Bull.Environ.Contam.Toxicol.* 24: 535-542.

EcoReference No.: 6587
Chemical of Concern: CBL,DZ,MLN; Habitat: A; Effect Codes: PHY,POP; Rejection Code: LITE EVAL CODED(CBL),OK(MLN),NO ENDPOINT(DZ).

375. Nair, G. A., Mohamed, A. I., and Bhuyan, K. C. (1995). Comparative Effects of Chemical Pesticides on Survival, Body Mass and Respiration of the Pulmonate Slugs, Milax rusticus (Millet, 1843) and Milax sowerbyi (Ferussac, 1823) (Mollusca: Milacidae). *J.Afr.Zool.* 109: 141-149.

EcoReference No.: 87865
Chemical of Concern: CBL,MDT,FNV,GYP; Habitat: T; Effect Codes: MOR,GRO,BCM; Rejection Code: LITE EVAL CODED(CBL),OK(MDT,FNV,GYP).

376. Nalecz-Jawecki, G., Kucharczyk, E., and Sawicki, J. (2002). The Sensitivity of Protozoan Spirostomum ambiguum to Selected Pesticides. *Fresenius Environ.Bull.* 11: 98-101.

EcoReference No.: 69821
Chemical of Concern: ACYP,DM,PRM,HCCH,CBL,MOM,MLN,Captan,LNR,GYP,PDM,BT,DMB,24DXY,MCPA,TPE,PDM,PCH,DDVP,THM,DOD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,MLN,MOM,DMB),OK(ALL CHEMS).

377. Nalecz-Jawecki, G. and Sawicki, J. (1999). Spirotox - A New Tool for Testing the Toxicity of Volatile Compounds. *Chemosphere* 38: 3211-3218.

EcoReference No.: 19880
Chemical of Concern: NAPH,C8OH,TOL,MOL,CBL,ETHN; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL,NAPH,C8OH),OK(ALL CHEMS).

378. Naqvi, S. M. and Ferguson, D. E. (1970). Levels of Insecticide Resistance in Fresh-Water Shrimp, Palaemonetes kadiakensis. *Trans.Am.Fish.Soc.* 99: 696-699.

EcoReference No.: 2665
Chemical of Concern: AZ,CBL,HCCH,DDT,EN,CHD,PRN,HPT,TXP,MO; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL), OK(ALL CHEMS).

379. Naqvi, S. M. and Ferguson, D. E. (1968). Pesticide Tolerances of Selected Freshwater Invertebrates. *J.Miss.Acad.Sci.* 14: 121-127.

EcoReference No.: 2093
Chemical of Concern: AZ,CBL,CPY,HCCH,MLN,MP,DZ; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(ALL CHEMS).

380. Naqvi, S. M. and Hawkins, R. (1988). Toxicity of Selected Insecticides (Thiodan, Security, Spartan, and Sevin) to Mosquitofish, Gambusia affinis. *Bull.Environ.Contam.Toxicol.* 40: 779-784.

EcoReference No.: 5806
Chemical of Concern: CBL,ES,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ES,MLN).

381. Naqvi, S. M. Z. (1973). Toxicity of Twenty-Three Insecticides to a Tubificid Worm Branchiura sowerbyi From the Mississippi Delta. *J.Econ.Entomol.* 66: 70-74.

EcoReference No.: 2798
Chemical of Concern: AZ,CBL,CPY,HCCH,MLN,MP; Habitat: A; Effect Codes: MOR; Rejection Code: NO ENDPOINT(AZ),LITE EVAL CODED(CBL).

382. Nayak, M. K., Collins, P. J., and Reid, S. R. (1998). Efficacy of Grain Protectants and Phosphine Against Liposcelis bostrychophila, L. entomophila, and L. paeta (Psocoptera: Liposcelidae) . *J.Econ.Entomol.* 91: 1208-1212.

EcoReference No.: 70616
Chemical of Concern: RSM,CYP,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(CYP,RSM).

383. Neil, K. A., Gaul, S. O., and McRae, K. B. (1997). Control of the English Grain Aphid [Sitobion avenae (F.)] (Homoptera: Aphididae) and the Oat-Birdcherry Aphid [Rhopalosiphum padi (L.)] (Homoptera: Aphididae) on Winter Cereals. *Can.Entomol.* 129: 1079-1091.

EcoReference No.: 63983
Chemical of Concern: MCPP,DMB,24DXY,MCPA,DMT,CBL,MZB,TDF,PCZ,CQTC,EPH,BMN,PIM; Habitat: T; Effect Codes: REP,MOR,POP; Rejection Code: LITE EVAL CODED(DMT,PCZ,DMB,TDF),OK(ALL CHEMS).

384. Neluvhalani, M. J., Ferreira, S. M., and Van Aarde, R. J. (1995). The Effect(s) of Carbaryl-Treated Seed on Body Maintenance and Survival of the Multi-Mammate Mouse, Mastomys natalensis (sensu lato). *Onderstepoort J.Vet.Res.* 62: 235-240.

EcoReference No.: 52644
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,MOR,BEH; Rejection Code: LITE EVAL CODED(CBL).

385. Neuhauser, E. F. and Callahan, C. A. (1990). Growth and Reproduction of the Earthworm Eisenia fetida Exposed to Sublethal Concentrations of Organic Chemicals. *Soil Biol.Biochem.* 22: 175-179.

EcoReference No.: 40469
Chemical of Concern: PL,4NP,PAH,DLD,CBL; Habitat: T; Effect Codes: GRO,REP,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

386. Neuhauser, E. F., Durkin, P. R., Malecki, M. R., and Anatra, M. (1986). Comparative Toxicity of Ten Organic Chemicals to Four Earthworm Species. *Comp.Biochem.Physiol.C* 83: 197-200 (OECDG Data File).

EcoReference No.: 40417
Chemical of Concern: PL,4NP,CBL,PAH; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

387. Neuhauser, E. F., Loehr, R. C., and Malecki, M. R. (1986). Contact and Artificial Soil Tests Using Earthworms to Evaluate the Impact of Wastes in Soil. *In: J.K.Petros,Jr., W.J.Lacy, and R.A.Conway (Eds.), Hazardous and Industiral Solid Waste Testing, 4th Symposium, ASTM STP 886, Philadelphia, PA* 886: 192-203.

EcoReference No.: 40578
Chemical of Concern: Cd,Ni,Pb,Zn,PAH,CuS,CuCl,NAPH,CuN,PL,CBL,PCP,AMSV,ETHB,DCB; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DCB,NAPH,CuCl,CuS,PCP,AMSV),OK(ALL CHEMS).

388. Neuhauser, E. F., Loehr, R. C., Malecki, M. R., Milligan, D. C., and Durkin, P. R. (1985). The Toxicity of Selected Chemicals to the Earthworm Eisenia fetida. *J.Environ.Qual.* 14: 383-388 (OECDG Data File).

EcoReference No.: 40495
Chemical of Concern: PAH,PCP,4NP,2CP,NP,CBL,PL,DPDP,FA,ACE,AMSV; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(PCP).

389. Neuhauser, E. F., Loehr, R. C., Malecki, M. R., Milligan, D. C., and Durkin, P. R. (1985). The Toxicity of Selected Organic Chemicals to the Earthworm Eisenia fetida. *J.Environ.Qual.* 14: 383-388 (OECDG Data File).

EcoReference No.: 40495
Chemical of Concern: PAH,PCP,4NP,2CP,NP,CBL,PL,DPDP,FA,ACE,AMSV,ETHB; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(PCP,AMSV).

390. Neuhauser, E. F., Loehr, R. C., Malecki, M. R., Milligan, D. L., and Durkin, P. R. (1985). The Toxicity of Selected Organic Chemicals to the Earthworm Eisenia fetida. *J.Environ.Qual.* 14: 383-388 (OECDG Data File).

EcoReference No.: 40495
Chemical of Concern: PAH,PCP,4NP,2CP,CBL,PL,DPDP,FA,ACE,AMSV,ETHB,NAPH,NP,TOL,BNZ.DCB; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(DCB,NAPH,PCP,AMSV,CBL), OK(ALL CHEMS).

391. Nielsen, D. G. and Balderston, C. P. (1975). Evaluation of Insecticides for Preventing Reproduction of Pales and Northern Pine Weevils in Pine Stumps. *J.Econ.Entomol.* 68: 205-206.

EcoReference No.: 73554
User Define 2: WASHT,CALFT
Chemical of Concern: HCCH,CBF,CPY,CBL ; Habitat: T; Rejection Code: LITE EVAL CODED(CBF).

392. Nimmo, D. R., Hamaker, T. L., Matthews, E., and Moore, J. C. (1981). An Overview of the Acute and Chronic Effects of First and Second Generation Pesticides on an Estuarine Mysid. *In: F.J.Vernberg, A.Calabrese, F.P.Thurberg, and W.B.Vernberg (Eds.), Biological Monitoring of Marine Pollutants, Academic Press, Inc., NY* 3-19.

EcoReference No.: 4891
Chemical of Concern: CBL,MP,PRT,DZ,TFN,TXP,DFZ; Habitat: A; Effect Codes: REP,MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,PRT),OK(ALL CHEMS).

393. Noetzel, D. and Kellesvig, K. (1992). Flea Beetle Control in Canola, Trial 3, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 192.

EcoReference No.: 79763
Chemical of Concern: TBO,CBF,ES,CBL,EFV,MP; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(EFV),OK(ALL CHEMS).

394. Noetzel, D., Ricard, M., and Heuser, L. (1992). Grasshopper Control in Conservation Reserve Program Land, 1991 . *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 185-186.

EcoReference No.: 79759
Chemical of Concern: MLN,ACP,EFV,CBL,CBF,CPY; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(EFV),OK(ALL CHEMS).

395. Nogrady, T. and Keshmirian, J. (1986). Rotifer Neuropharmacology - I. Cholinergic Drug Effects on Oviposition of Philodina acuticornis (Rotifera, Aschelminthes). *Comp.Biochem.Physiol.C* 83: 335-338.

EcoReference No.: 74964
Chemical of Concern: DMT,MLN,CBL,TCF; Habitat: A; Effect Codes: REP; Rejection Code: LITE EVAL CODED(DMT,MLN,CBL).

396. Nollenberger, E. L. (1981). Toxicant-Induced Changes in Brain, Gill, Liver, and Kidney of Brook Trout Exposed to Carbaryl, Atrazine, 2,4-Dichlorophenoxyacetic Acid, and Parathion: A Cytochemical Study. *Ph.D.Thesis, Pennsylvania State Univ., University Park, PA* 213 p.

EcoReference No.: 72745
Chemical of Concern: ATZ,CBL,24DXY,PRN; Habitat: A; Effect Codes: PHY,CEL,BCM,BEH; Rejection Code: LITE EVAL CODED(CBL,ATZ),OK(24DXY,PRN).

397. Norberg-King, T. J. (1987). An Evaluation of the Fathead Minnow Seven-Day Subchronic Test for Estimating Chronic Toxicity. *M.S.Thesis, University of Wyoming, Laramie, WY* 80 p.

EcoReference No.: 17878
Chemical of Concern: AgN,ZnS,CBL,Se,DZ,K2Cr207,CPH; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(ALL CHEMS).

398. Norberg-King, T. J. (1989). An Evaluation of the Fathead Minnow Seven-Day Subchronic

Test For Estimating Chronic Toxicity. *Environ.Toxicol.Chem.* 8: 1075-1089.

EcoReference No.: 5313
Chemical of Concern: CBL,DZ,ZnS,Se,NaCr,CPY,AgN; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,NaCr),OK(ALL CHEMS).

399. Obulakondaiah, M., Sreenivasulu, C., and Venkateswarlu, K. (1993). Nontarget Effects of Carbaryl and Its Hydrolysis Product, 1-Naphthol, Towards Anabaena torulosa. *Biochem.Mol.Biol.Int.* 29: 703-710.

EcoReference No.: 88395
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,PHY; Rejection Code: LITE EVAL CODED(CBL).

400. Olaifa, J. I., Adenuga, A. O., and Kanu, K. M. (1991). Relative Efficacy of a Neem Formulation and Four Conventional Insecticides in the Protection of Some Arable Crops Against Acridoid Grasshoppers. *Discov.Innov.* 3: 115-121.

EcoReference No.: 69311
Chemical of Concern: DLD,CYP,CBL,AZD; Habitat: T; Effect Codes: PHY,POP; Rejection Code: LITE EVAL CODED(AZD,CYP),OK(ALL CHEMS).

401. Omkar and Murti, R. (1985). Toxicity of Some Pesticides to the Freshwater Prawn, Macrobrachium dayanum (Henderson) (Decapoda, Caridea). *Crustaceana* 49: 1-6 .

EcoReference No.: 12422
Chemical of Concern: ES,CBL,PPHD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ES,PPHD).

402. Omkar and Shukla, G. S. (1985). Toxicity of Insecticides to Macrobrachium lamarrei (H.Milne Edwards) (Decapoda: Palaemonidae). *Crustaceana* 48: 1-5.

EcoReference No.: 11541
Chemical of Concern: DDVP,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(DDVP).

403. Oris, J. T., Winner, R. W., and Moore, M. V. (1991). A Four-Day Survival and Reproduction Toxicity Test for Ceriodaphnia dubia. *Environ.Toxicol.Chem.* 10: 217-224.

EcoReference No.: 3590
Chemical of Concern: ACR,ATZ,MXC,BTC,CuS,CBL,24DXY,PL,PAH; Habitat: A; Effect Codes: REP,MOR; Rejection Code: LITE EVAL CODED(CBL,ATZ,CuS,OW-TRV-Cu),OK(ALL CHEMS).

404. Orsted, K. M., Dubay, S. A., Raisbeck, M. F., Siemion, R. S., Sanchez, D. A., and Williams, E. S. (1998). Lack of Relay Toxicity in Ferret Hybrids fed Carbaryl-Treated Prairie Dogs. *J.Wildl.Dis.* 34: 362-364.

EcoReference No.: 64394
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL).

405. Ortego, F. and Bowers, W. S. (1996). Induction of Autotomy in the American Bird Grasshopper Schistocerca americana (Drury) by the Ecdysone Agonist RH-5849 and Investigation of Its Mode of Action. *Experientia* 52: 42-50.

EcoReference No.: 83211
Chemical of Concern: 4AP,DCF,AND,ES,TXP,HCCH,MLN,PRN,SBDA,CBL,CBF,ALD ; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(4AP),OK(ALL CHEMS).

406. Ostlie, K. R. (1992). Insecticide Performance Against First-Generation European Corn Borer-Liquids vs Granules, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 215-216.

EcoReference No.: 79800
Chemical of Concern: BFT,MP,CBF,CYF,FNF,CPY,EFV,DZ,CBL,PMR,LCYT; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(BFT,CYF,EFV),OK(ALL CHEMS).

407. Palawski, D., Hunn, J. B., and Dwyer, F. J. (1985). Sensitivity of Young Striped Bass to Organic and Inorganic Contaminants in Fresh and Saline Waters. *Trans.Am.Fish.Soc.* 114: 748-753.

EcoReference No.: 11334
Chemical of Concern: CBL,MLN,CuS,AsO5,Ni,Cd,Se,Pb,Cr,TXP,Zn; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CuS,OW-TRV-Cu,AsO5),OK(Cd,Ni,Zn,MLN,TXP),NO MIXTURE(Ag,Cr,Se).

408. Pant, J. C. and Singh, T. (1983). Inducement of Metabolic Dysfunction by Carbamate and Organophosphorus Compounds in a Fish, Puntius conchonius. *Pestic.Biochem.Physiol.* 20: 294-298.

EcoReference No.: 10709
Chemical of Concern: CBL,DMT; Habitat: A; Effect Codes: MOR,PHY,BCM; Rejection Code: LITE EVAL CODED(CBL,DMT).

409. Pant, N., Shankar, R., and Srivastava, S. P. (1996). Spermatotoxic Effects of Carbaryl in Rats. *Hum.Exp.Toxicol.* 15: 736-738.

EcoReference No.: 87646
Chemical of Concern: CBL; Habitat: T; Effect Codes: REP; Rejection Code: LITE EVAL CODED(CBL).

410. Pant, N., Srivastava, S. C., Prasad, A. K., Shankar, R., and Srivastava, S. P. (1995). Effects of Carbaryl on the Rat's Male Reproductive System. *Vet.Hum.Toxicol.* 37: 421-425.

EcoReference No.: 87648
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,BCM,CEL,REP,BEH; Rejection Code: LITE EVAL CODED(CBL).

411. Pantani, C., Pannunzio, G., De Cristofaro, M., Novelli, A. A., and Salvatori, M. (1997). Comparative Acute Toxicity of Some Pesticides, Metals, and Surfactants to Gammarus italicus Goedm. and Echinogammarus tibaldii Pink. and Stock. *Bull.Environ.Contam.Toxicol.* 59: 963-967.

EcoReference No.: 18621
Chemical of Concern: ACR,ATZ,AZ,CBF,CBL,DMT,FMP,HCCH,MLT,MOM,MP,Cd,ADC,DDT,MXC,OML,TBC,CuCl,Cr,PPX,Zn,Hg; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(MLT,CBF,ADC,MOM,DMT,CuCl),OK(ALL CHEMS).

412. Pantani, C., Pannunzio, G., De Cristofaro, M., Novelli, A. A., and Salvatori, M. (1997). Comparative Acute Toxicity of Some Pesticides, Metals, and Surfactants to Gammarus italicus Goedm. and Echinogammarus tibaldii Pink. and Stock (Crustacea: Amphipoda). *Bull.Environ.Contam.Toxicol.* 59: 963-967.

EcoReference No.: 18621
Chemical of Concern: CBF,ADC,DDT,MP,MXC,FMP,HCCH,DMT,AZ,PPX,OML,TBC,MOM,CBL,ACR,ATZ,MLT,CD,Zn,CuCl,Hg,Cr; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,AZ,ATZ,MLT,CBF,ADC,MOM,DMT,CuCl),OK(ALL CHEMS).

413. Parker, B. L., Dewey, J. E., and Bache, C. A. (1970). Carbamate Bioassay Using Daphnia magna. *J.Econ.Entomol.* 63: 710-714.

EcoReference No.: 9659
Chemical of Concern: CBL,ADC,PPX; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,ADC),OK(PPX).

414. Parsons, J. T. and Surgeoner, G. A. (1991). Acute Toxicities of Permethrin, Fenitrothion, Carbaryl and Carbofuran to Mosquito Larvae During Single- or Multiple-Pulse Exposures. *Environ.Toxicol.Chem.* 10: 1229-1233.

EcoReference No.: 3917
Chemical of Concern: CBF,CBL,PMR,FNT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CBF),OK(PMR,FNT).

415. Parsons, J. T. and Surgeoner, G. A. (1991). Effect of Exposure Time on the Acute Toxicities of Permethrin, Fenitrothion, Carbaryl and Carbofuran to Mosquito Larvae. *Environ.Toxicol.Chem.* 10: 1219-1227.

EcoReference No.: 3916
Chemical of Concern: CBF,CBL,PMR,FNT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CBF),OK(PMR).

416. Patil, P. S., Gadkari, M. P., Bhale, K. B., and Kulkarni, K. M. (1992). Toxicity of Carbamate Insecticides to Freshwater Crab Paratelphusa jacquemontii (Rathbun). *Environ.Ecol.* 10: 397-399.

EcoReference No.: 5819
Chemical of Concern: CBF,CBL; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBF,CBL).

417. Peterson, H. G., Boutin, C., Martin, P. A., Freemark, K. E., Ruecker, N. J., and Moody, M. J. (1994). Aquatic Phyto-Toxicity of 23 Pesticides Applied at Expected Environmental Concentrations. *Aquat.Toxicol.* 28: 275-292.

EcoReference No.: 13800
Chemical of Concern: ACL,CBL,24DXY,SZ,CBF,ATZ,BMN,TPR,MBZ,GYP,TET,MTC,IZT,DMM,PCL,CSF,HXZ; Habitat: A; Effect Codes: PHY,POP; Rejection Code: LITE EVAL CODED(CBL,ATZ,CBF,MTL,SZ,PCZ,ACL),OK(ALL CHEMS).

418. Peterson, J. L., Jepson, P. C., and Jenkins, J. J. (2001). Effect of Varying Pesticide Exposure Duration and Concentration on the Toxicity of Carbaryl to Two Field-Collected Stream Invertebrates, Calineuria californica (Plecoptera: Perlidae) and Cinygma sp. (Ephemeroptera: Heptageniidae). *Environ.Toxicol.Chem.* 20: 2215-2223.

EcoReference No.: 62450
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL).

419. Peterson, J. L., Jepson, P. C., and Jenkins, J. J. (2001). A Test System to Evaluate the Susceptibility of Oregon, USA, Native Stream Invertebrates to Triclopyr and Carbaryl. *Environ.Toxicol.Chem.* 20: 2205-2214.

EcoReference No.: 62451
Chemical of Concern: CBL,TBR; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(TPR).

420. Pfeiffer, C. J., Qiu, B., and Cho, C. H. (1997). Electron Microscopic Perspectives of Gill Pathology Induced by 1-Naphthyl-N-Methylcarbamate in the Goldfish (Carassius auratus Linnaeus). *Histol.Histopathol.* 12: 645-653.

EcoReference No.: 19944
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,CEL; Rejection Code: LITE EVAL CODED (CBL).

421. Phipps, G. L. and Holcombe, G. W. (1985). A Method for Aquatic Multiple Species Toxicant Testing: Acute Toxicity of 10 Chemicals to 5 Vertebrates and 2 Invertebrates. *Environ.Pollut.Ser.A* 38: 141-157 (Author Communication Used) (OECDG Data File).

EcoReference No.: 10775
Chemical of Concern: CBL,CPY,PCP,Cd; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,PCP),OK(CPY,Cd).

422. Pickering, Q. H., Lazorchak, J. M., and Winks, K. L. (1996). Subchronic Sensitivity of One-, Four-, and Seven-Day-Old Fathead Minnow (Pimephales promelas) Larvae to Five Toxicants. *Environ.Toxicol.Chem.* 15: 353-359.

EcoReference No.: 16510
Chemical of Concern: CBL,C8OH; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL,C8OH).

423. Pipy, B., Gaillard, D., and Derache, R. (1982). Enzymatic Activities of Liver Serine Esterases During the Reticuloendothelial System Phagocytosis Blockade by Carbaryl, an Anticholinesterasic Insecticide. *Toxicol.Appl.Pharmacol.* 62: 11-18.

EcoReference No.: 87558
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,GRO,BCM,PHY; Rejection Code: LITE EVAL CODED(CBL).

424. Pitre, H. N. (1988). Relationship of Fall Armyworm (Lepidoptera: Noctuidae) from Florida, Honduras, Jamaica, and Mississippi: Susceptibility to Insecticides with Reference to Migration. *Fla.Entomol.* 71: 56-61.

EcoReference No.: 73699
User Define 2: WASHT,CALFT,CORE
Chemical of Concern: MOM,CBL,PMR,CPY,MP; Habitat: T; Effect Codes: MOR; Rejection Code: OK .

425. Pomeroy, S. E. and Barrett, G. W. (1975). Dynamics of Enclosed Small Mammal Populations in Relation to an Experimental Pesticide Application. *Am.Midl.Nat.* 93: 91-106.

EcoReference No.: 35390
Chemical of Concern: CBL; Habitat: T; Effect Codes: POP,REP; Rejection Code: LITE EVAL CODED(CBL).

426. Poole, A. and Buckley, P. (1989). 1-Naphthol-Single and Repeated Dose (30-Day) Oral Toxicity Studies in the Mouse. *Food Chem.Toxicol.* 27: 233-238.

EcoReference No.: 53242
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,BCM,CEL; Rejection Code: LITE EVAL CODED(CBL).

427. Post, G. and Schroeder, T. R. (1971). The Toxicity of Four Insecticides to Four Salmonid Species. *Bull.Environ.Contam.Toxicol.* 6: 144-155.

EcoReference No.: 964
Chemical of Concern: DDT,CBL,EN,MLN; Habitat: A; Effect Codes: PHY,MOR,GRO; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

428. Potter, D. A., Buxton, M. C., Redmond, C. T., Patterson, C. G., and Powell, A. J. (1990). Toxicity of Pesticides to Earthworms (Oligochaeta: Lumbricidae) and Effect on Thatch Degradation in Kentucky Bluegrass Turf. *J.Econ.Entomol.* 83: 2362-2369.

EcoReference No.: 71484
Chemical of Concern: BMY,IZF,PCZ,CTN,TCF,PDM,IFP,FRM,EP,CPY,DZ,CBL,BDC,24DXY,TPR,DMB; Habitat: T; Effect Codes: POP,GRO; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(ALL CHEMS).

429. Pozarycki, S. V. (1999). Sublethal Effects of Estuarine Carbaryl Applications on Juvenile English Sole (Pleuronectes vetulus). *Ph.D.Thesis, Oregon State Univ., Corvallis, OR* 60: 105 p.

EcoReference No.: 72739
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM,BEH,PHY; Rejection Code: LITE EVAL CODED(CBL).

430. Pradhan, S. C. and Mishra, P. C. (1998). Inhibition and Recovery Kinetics of Acetylcholinesterase Activity in Drawida calebi and Octochaetona surensis, the Tropical Earthworms, Exposed to Carbaryl Insecticide. *Bull.Environ.Contam.Toxicol.* 60: 904-908.

EcoReference No.: 53290
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

431. Pree, D. J., Whitty, K. J., Bittner, L. A., and Pogoda, M. K. (2002). Mechanisms of Resistance to Organophosphorus Insecticides in Populations of the Obliquebanded Leafroller Choristoneura rosaceana (Harris) (Lepidoptera: Tortricidae) from Southern Ontario. *Pest Manag.Sci.* 59: 79-84.

EcoReference No.: 74170
Chemical of Concern: MOM,Naled,CPY,CBL,CYP1; Habitat: T; Effect Codes: MOR,BCM,ACC; Rejection Code: OK(MOM),TARGET(CYP).

432. Pree, D. J. , Whitty, K. J., Van Driel, L., and Walker, G. M. (1998). Resistance to Insecticides in Oriental Fruit Moth Populations (Grapholita molesta) from the Niagara Peninsula of

Ontario. *Can.Entomol.* 130: 245-256.

EcoReference No.: 63915
Chemical of Concern: MOM,PFF,CBF,AZ,PSM,EPRN,MLN,Naled,FNT,CPY,ACP,MTM,MDT,CBL,CYP; Habitat: T; Effect Codes: POP,MOR,GRO; Rejection Code: LITE EVAL CODED(MLN,MTM,CBL,ACP,AZ),NO CONTROL(MOM,CBF,CYP),OK(PFF,PSM,EPRN,Naled,FNT,MDT).

433. Prescott, L. M., Kubovec, M. K., and Tryggestad, D. (1977). The Effects of Pesticides, Polychlorinated Biphenyls and Metals on the Growth and Reproduction of Acanthamoeba castellanii. *Bull.Environ.Contam.Toxicol.* 18: 29-34.

EcoReference No.: 7625
Chemical of Concern: SZ,ATZ,CBL,LNR,DLD,AND,Hg,Pb,PCB,CuS,Zn; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL,ATZ,SZ,CuS),OK(ALL CHEMS).

434. Proctor and Gamble Company (1998). Initial Submission: Interim Results (Including Neurological Data) from Oral (Gavage) Developmental Toxicity Study of 1-Naphthol in Rats, with Cover Letter Dated 3/3/1998. *EPA/OTS Doc.#88980000102* 30 p. (OTS 0559254).

EcoReference No.: 89076
Chemical of Concern: CBL; Habitat: T; Effect Codes: CEL,BEH,PHY,GRO,REP,MOR; Rejection Code: LITE EVAL CODED(CBL).

435. Punzo, F. (2003). Effects of Carbaryl-Treated Bait on Maternal Behavior and Sprint Performance in the Meadow Jumping Mouse, Zapus hudsonius. *Bull.Environ.Contam.Toxicol.* 71: 37-41.

EcoReference No.: 72049
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

436. Puyear, R. L. and Paulson, G. D. (1972). Effect of Carbaryl (1-Naphthyl N-Methylcarbamate) on Pentobarbital-Induced Sleeping Time and Some Liver Microsomal Enzymes in White Leghorn Cockerels. *Toxicol.Appl.Pharmacol.* 22: 621-627.

EcoReference No.: 38415
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,BCM,BEH; Rejection Code: LITE EVAL CODED(CBL).

437. Rai, H. S., Tiwari, R. C., and Shrivastava, R. N. (1995). Comparative Efficacy of Insecticides Against Creontiades sp., a Pest of Niger in Madhya Pradesh. *Geobios* 22: 187-190.

EcoReference No.: 75774
Chemical of Concern: CYP,CBL,DMT,ES,DEM,MLN,DDVP,MP,DCM; Habitat: T; Effect Codes: MOR,POP; Rejection Code: LITE EVAL CODED(CYP,CBL,MLN),OK(ALL CHEMS).

438. Rajyalakshmi, A. and Reddy, P. U. (1992). Carbaryl Induced Changes in the Lipid Metabolism of the Scorpion, Heterometrus fulvipes (Koch) and the Embryos During the Gestation Period. *J.Environ.Biol.* 13: 13-19.

EcoReference No.: 53393
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,GRO; Rejection Code: LITE

EVAL CODED(CBL).

439. Rajyalakshmi, A. and Reddy, T. G. (1988). Effect of Carbaryl and Lindane on the Lipid Content of Maternal Tissues and Embryos of the Viviparous Scorpion, Heterometrus fulvipes (Koch). *J.Environ.Biol.* 9: 97-105.

EcoReference No.: 87554
Chemical of Concern: HCCH,CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL),OK(HCCH).

440. Ramaswami, M. (1990). Adaptive Trends in Lipid Levels of Liver and Muscle of Sarotherodon mossambicus (Peters) Exposed to Sevin. *J.Ecobiol.* 2: 56-61.

EcoReference No.: 3807
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED (CBL).

441. Ramaswamy, M. (1987). Effects of Sevin on Blood Free Amino Acid Levels of the Fish Sarotherodon mossambicus. *Environ.Biol.5(4):633-637/Aquat.Sci.Fish.Abstr.18(4):5466-1Q18 (1988).*

EcoReference No.: 13230
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

442. Ramaswamy, M. and Maheswari, R. U. (1993). Comparative Lactic Acidosis in Fishes Following Pesticide Stress. *Sci.Total Environ.* (Suppl.): 877-885.

EcoReference No.: 4312
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

443. Ramaswamy, M., Thangavel, P., and Selvam, N. P. (1999). Glutamic Oxaloacetic Transaminase (GOT) and Glutamic Pyruvic Transaminase (GPT) Enzyme Activities in Different Tissues of Sarotherodon mossambicus (Peters) Exposed to a Carbamate Pesticide, Carbaryl. *Pestic.Sci.* 55: 1217-1221.

EcoReference No.: 87640
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

444. Randell, R. , Butler, J. D., and Hughes, T. D. (1972). The Effect of Pesticides on Thatch Accumulation and Earthworm Populations in Kentucky Bluegrass Turf. *Hortscience* 7: 64-65.

EcoReference No.: 44303
Chemical of Concern: CBL,CHD,DLD,PMA; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

445. Rao, D. M., Murty, A. S., and Swarup, P. A. (1984). Relative Toxicity of Technical Grade and Formulated Carbaryl and 1-Naphthol to, and Carbaryl-Induced Biochemical Changes in, the Fish Cirrhinus mrigala. *Environ.Pollut.Ser.A* 34: 47-54.

EcoReference No.: 10502
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL).

446. Rao, I. G. and Singh, D. K. (2002). Toxic Effect of Single and Binary Treatments of Synthetic and Plant-Derived Molluscicides Against Achatina fulica. *J.Appl.Toxicol.* 22: 211-215.

EcoReference No.: 77559
Chemical of Concern: CYP,MAL,AZD,CBL,CYP,PRT; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CYP),OK(ALL CHEMS).

447. Rao, K. R. S. S. (1987). Variations in the Nitrogen Products of Channa punctatus Augmented by Interaction of Carbaryl and Phenthoate in the Media. *J.Environ.Biol.* 8: 173-177.

EcoReference No.: 12642
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL).

448. Rao, K. R. S. S., Rao, K. S. P., Sahib, I. K. A., and Rao, K. V. R. (1985). Combined Action of Carbaryl and Phenthoate on a Freshwater Fish (Channa punctatus Bloch). *Ecotoxicol.Environ.Saf.* 10: 209-217.

EcoReference No.: 11217
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

449. Rao, K. R. S. S. and Rao, K. V. R. (1989). Combined Action of Carbaryl and Phenthoate on the Sensitivity of the Acetylcholinesterase System of the Fish, Channa punctatus (Bloch). *Ecotoxicol.Environ.Saf.* 17: 12-15.

EcoReference No.: 450
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

450. Rao, K. S. P., Rao, K. R. S. S., Sahib, I. K. A., and Rao, K. V. R. (1985). Combined Action of Carbaryl and Phenthoate on Tissue Lipid Derivatives of Murrel, Channa punctatus (Bloch). *Ecotoxicol.Environ.Saf.* 9: 107-111.

EcoReference No.: 10584
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY,MOR,BCM; Rejection Code: LITE EVAL CODED(CBL).

451. Rao, K. V. R., Ghouselazam, S., and Surendranath, P. (1991). Inhibition and Recovery of Selected Target Enzyme Activities in Tissues of Penaeid Prawn, Metapenaeus monoceros (Fabricius), Exposed to Different Insecticides. *Indian J.Exp.Biol.* 29: 489-491.

EcoReference No.: 3724
Chemical of Concern: CBL,DDT,FNV,PPHD; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(DDT,FNV,PPHD).

452. Rawash, I. A., Gaaboub, I. A., El-Gayar, F. M., and El-Shazli, A. Y. (1975). Standard Curves for Nuvacron, Malathion, Sevin, DDT and Kelthane Tested Against the Mosquito Culex pipiens L. and the Microcrustacean Daphnia magna Straus. *Toxicology* 4: 133-144 (Author Communication Used).

EcoReference No.: 5539
Chemical of Concern: MLN,DDT,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(MLN,DDT).

453. Ray, S. K. and Poddar, M. K. (1986). Pentylenetetrazol: Effect on Carbaryl-Induced Changes

of Serotonin Metabolism in Pons-Medulla of Rat Brain. *Biosci.Rep.* 6: 767-774.

EcoReference No.: 87560
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

454. Reddy, M. S., Jayaprada, P., and Rao, K. V. R. (1990). Recovery of Carbaryl Inhibited AChE in Penaeid Prawn, Metapenaeus monoceros. *Biochem.Int.* 22: 189-198.

EcoReference No.: 3988
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL).

455. Reddy, M. S. and Rao, K. V. R. (1991). Methylparathion, Carbaryl and Aldrin Impact on Nitrogen Metabolism of Prawn, Penaeus indicus. *Biochem.Int.* 23: 389-396.

EcoReference No.: 3993
Chemical of Concern: CBL,MP,AND; Habitat: A; Effect Codes: BCM,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(MP,AND).

456. Reddy, M. S. and Rao, K. V. R. (1991). Tissue Glycolytic Potentials of Penaeid Prawn, Metapenaeus monoceros During Methylparathion, Carbaryl and Aldrin Exposure. *Biochem.Int.* 23: 367-375.

EcoReference No.: 3992
Chemical of Concern: CBL,AND,MP; Habitat: A; Effect Codes: PHY,BCM; Rejection Code: LITE EVAL CODED(CBL),OK(AND,MP).

457. Reddy, M. V. and Reddy, V. R. (1992). Effects of Organochlorine, Organophosphorus and Carbamate Insecticides on the Population Structure and Biomass of Earthworms in a Semi-Arid Tropical Grassland. *Soil Biol.Biochem.* 24: 1733-1738.

EcoReference No.: 87653
Chemical of Concern: ES,MP,CBL; Habitat: T; Effect Codes: POP,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ES,MP).

458. Relyea, R. A. (2004). Growth and Survival of Five Amphibian Species Exposed to Combinations of Pesticides. *Environ.Toxicol.Chem.* 23: 1737-1742.

EcoReference No.: 86767
Chemical of Concern: DZ,CBL,MLN,GYP; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL,MLN,DZ),OK(GYP).

459. Relyea, R. A. (2005). The Impact of Insecticides and Herbicides on the Biodiversity and Productivity of Aquatic Communities. *Ecol.Appl.* 15: 618-627.

EcoReference No.: 89112
Chemical of Concern: CBL,MLN,GYP,24DXY; Habitat: A; Effect Codes: MOR,POP; Rejection Code: LITE EVAL CODED(CBL,MLN), OK(GYP,24DXY).

460. Relyea, R. A. and Mills, N. (2001). Predator-Induced Stress Makes the Pesticide Carbaryl More Deadly to Gray Treefrog Tadpoles (Hyla versicolor). *Proc.Natl.Acad.Sci.* 98: 2491-2496.

EcoReference No.: 70872
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO,BEH; Rejection Code:

LITE EVAL CODED(CBL).

461. Rettich, F. (1980). Residual Toxicity of Wall-Sprayed Organophosphates, Carbamates and Pyrethroids to Mosquito Culex pipiens molestus Forskal. *J.Hyg.Epidemiol.Microbiol.Immunol.* 24: 110-117.

EcoReference No.: 70015
Chemical of Concern: RSM,SZ,CPY,CBL,PYT,PMR,DMT; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(PMR,DMT),TARGET(RSM).

462. Reynolds, T. (1978). Comparative Effects of Aromatic Compounds on Inhibition of Lettuce Fruit Germination. *Ann.Bot.* 42: 419-427 (OECDG Data File).

EcoReference No.: 42996
Chemical of Concern: BZO,MCRE,PL,SCA,CBL; Habitat: T; Effect Codes: REP; Rejection Code: LITE EVAL CODED(BZO,CBL,SCA),OK(ALL CHEMS).

463. Riad, Y., El-Nahas, H. M., El-Kady, E. M., and El-Bardan, A. A. (1992). Aromatic Sulphides, Sulphoxides, and Sulphones as Larvicides for Culex pipiens molestus and Aedes caspius (Diptera: Culicidae). *J.Econ.Entomol.* 85: 2096-2099.

EcoReference No.: 13544
Chemical of Concern: DLD,MLN,DDT,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(MLN,DDT,DLD).

464. Ribera, D., Narbonne, J. F., Arnaud, C., and Saint-Denis, M. (2001). Biochemical Responses of the Earthworm Eisenia fetida andrei Exposed to Contaminated Aritificial Soil, Effects of Carbaryl. *Soil Biol.Biochem.* 33: 1123-1130.

EcoReference No.: 60409
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

465. Rigon, A. R., Reis, M., and Takahashi, R. N. (1994). Effects of Carbaryl on Some Dopaminergic Behaviors in Rats. *Gen.Pharmac.* 25: 1263-1267.

EcoReference No.: 87667
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH,BCM,PHY; Rejection Code: LITE EVAL CODED(CBL).

466. Robel, R. J., Felthousen, R. W., and Dayton, A. D. (1982). Effects of Carbamates on Bobwhite Food Intake, Body Weight, and Locomotor Activity. *Arch.Environ.Contam.Toxicol.* 11: 611-615.

EcoReference No.: 53641
Chemical of Concern: CBL,CBF; Habitat: T; Effect Codes: BEH,GRO; Rejection Code: LITE EVAL CODED(CBF,CBL).

467. Robens, J. F. (1969). Teratologic Studies of Carbaryl, Diazinon, Norea, Disulfiram, and Thiram in Small Laboratory Animals. *Toxicol.Appl.Pharmacol.* 15: 152-163.

EcoReference No.: 84742
Chemical of Concern: CBL,DZ,THM; Habitat: T; Effect Codes: MOR,REP,GRO; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(THM).

468. Roberts, B. L. and Dorough, H. W. (1984). Relative Toxicities of Chemicals to the

Earthworm Eisenia foetida. *Environ.Toxicol.Chem.* 3: 67-78.

EcoReference No.: 40531
Chemical of Concern:
DU,FNV,ES,FNF,FML,NCTN,CBD,MLN,PRN,Captan,TPM,PPB,DCTP,ACP,BMY,MBZ,PAQT,BNZ,CH3I,TFN,NaN03,AZ,24DXY,NP,Cd,Pb,CuS,DDT,PAH,IDM,DMM,CYP,PMR,CBF,ADC,MOM,CBL,PPX,CPY,NHN,CTC; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(ADC,CBL,NCTN,CBF,MOM,PPB,CuS,CYP),OK(ALL CHEMS).

469. Rodgers, R. D. and Robel, R. J. (1977). Effects of Carbaryl on Body Weight and Fat Reserves of Dietetically-Stressed Bobwhites. *Bull.Environ.Contam.Toxicol.* 17: 184-189.

EcoReference No.: 35406
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH,GRO,BCM; Rejection Code: LITE EVAL CODED(CBL).

470. Rohr, J. R., Elskus, A. A., Shepherd, B. S., Crowley, P. H., McCarthy, T. M., Niedzwiecki, J. H., Sager, T., Sih, A., and Palmer, B. D. (2003). Lethal and Sublethal Effects of Atrazine, Carbaryl, Endosulfan, and Octylphenol on the Streamside Salamander (Ambystoma barbouri) . *Environ.Toxicol.Chem.* 22: 2385-2392.

EcoReference No.: 71723
Chemical of Concern: ATZ,CBL,ES; Habitat: A; Effect Codes: BEH,MOR,GRO; Rejection Code: LITE EVAL CODED(CBL,ATZ),OK(ES).

471. Rossini, G. D. B. and Ronco, A. E. (1996). Acute Toxicity Bioassay Using Daphnia obtusa as a Test Organism. *Environ.Toxicol.Water Qual.* 11: 255-258.

EcoReference No.: 20191
Chemical of Concern: MOL,ETHN,CBL,PL,PAQT,Cd,Hg,Mn,Cr,Cu; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL,Cu),OK(ALL CHEMS).

472. Ruppert, P. H., Cook, L. L., Dean, K. F., and Reiter, L. W. (1983). Acute Behavioral Toxicity of Carbaryl and Propoxur in Adults Rats. *Pharmacol.Biochem.Behav.* 18: 579-584.

EcoReference No.: 87851
Chemical of Concern: CBL,PPX; Habitat: T; Effect Codes: BEH,BCM,GRO; Rejection Code: LITE EVAL CODED(CBL),OK(PPX).

473. Rzehak, K., Maryanska-Nadachowska, A., and Jordan, M. (1977). The Effect of Karbatox 75, a Carbaryl Insecticide, upon the Development of Tadpoles of Rana temporaria and Xenopus laevis. *Folia Biol.(Krakow)* 25: 391-399.

EcoReference No.: 7662
Chemical of Concern: CBL; Habitat: A; Effect Codes: CEL,GRO,MOR,POP; Rejection Code: LITE EVAL CODED(CBL).

474. Sadek, M., Samaan, H., and El-Garawany, A. (1989). The In Vivo and In Vitro Inhibition of Serum Aminotransferases by Anticholinesterase Insecticides in Rats. *Egypt.J.Pharm.Sci.* 30: 437-444.

EcoReference No.: 86941
Chemical of Concern: CBL,MLN,MP; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(MLN,CBL),OK(MP).

475. Sakamoto, M., Chang, K. H., and Hanazato, T. (2005). Differential Sensitivity of a Predacious Cladoceran (Leptodora) and Its Prey (the Cladoceran Bosmina) to the Insecticide Carbaryl: Results of Acute Toxicity Tests. *Bull.Environ.Contam.Toxicol.* 75: 28-33.

EcoReference No.: 81396
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

476. Salama, H. S., Foda, M. S., Zaki, F. N., and Moawad, S. (1984). Potency of Combinations of Bacillus thuringiensis and Chemical Insecticides on Spodoptera littoralis (Lepidoptera: Noctuidae). *J.Econ.Entomol.* 77: 885-890.

EcoReference No.: 74456
Chemical of Concern: MOM,CBL,FNV,DMT,PMR,PFF,CYP,DFZ; Habitat: T; Effect Codes: MOR; Rejection Code: OK TARGET(DMT,CYP).

477. Sampath, K. and Elango, P. (1997). Lipid Metabolism in Common Frog (Rana tigrina) Exposed to Carbaryl. *J.Environ.Biol.* 18: 23-26.

EcoReference No.: 66373
Chemical of Concern: CBL; Habitat: AT; Effect Codes: BCM,MOR; Rejection Code: LITE EVAL CODED(CBL).

478. Sampath, K., Elango, P., and Thanalakshmi, S. (1992). Effect of Carbaryl (Sevin) on the Carbohydrate Metabolism of the Common Frog Rana tigrina. *Environ.Ecol.* 10: 278-281.

EcoReference No.: 86761
Chemical of Concern: CBL; Habitat: AT; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL).

479. Sampath, K., Kennedy, I. J. J., and James, R. (2002). Pesticide Impact on Excretory Physiology of the Common Frog, Rana tigrina (Daud) Tadpoles. *Bull.Environ.Contam.Toxicol.* 68: 652-659.

EcoReference No.: 65895
Chemical of Concern: CBL,MP; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(MP).

480. Samsoe-Petersen, L. (1995). Effects of 67 Herbicides and Plant Growth Regulators on the Rove Beetle Aleochara bilineata (Col.: Staphylinidae) in the Laboratory. *Entomophaga* 40: 95-104.

EcoReference No.: 63490
Chemical of Concern: SZ,ATZ,DU,HFP,MCPP,PYD,FXP,BT,MTL,PDM,CBL,MTSM,AMTL,CQTC,DPP1,MCPP1, Habitat: T; Effect Codes: MOR,REP,GRO; Rejection Code: LITE EVAL CODED(SZ,MTL,ATZ,CQTC),NO MIXTURE(MCPP1,DPP1),OK(ALL CHEMS).

481. Samsoe-Petersen, L. (1987). Laboratory Method for Testing Side-Effects of Pesticides on the Rove Beetle Aleochara bilineata - Adults. *Entomophaga* 32: 73-81.

EcoReference No.: 70278
User Define 2: REPS,WASHT,CALFT,CORE,SENT
Chemical of Concern: SZ,CBL,ACP,AMZ,DM,FNT,THM,MZB,BMC,CQTC; Habitat: T; Effect Codes: MOR,REP; Rejection Code: LITE EVAL CODED(SZ).

482. Samsoe-Petersen, L. (1987). Laboratory Method for Testing Side-Effects of Pesticides on the Rove Beetle Aleochara bilineata - Adults. *Entomophaga* 32: 73-81.

EcoReference No.: 70278
Chemical of Concern: SZ,CBL,ACP,AMZ,AZ,DM,FNT,THM,MZB,BMC,CQTC; Habitat: T; Effect Codes: MOR,REP; Rejection Code: LITE EVAL CODED(SZ,CQTC),OK(ALL CHEMS).

483. Samson, P. R., Parker, R. J., and Jones, A. L. (1989). Laboratory Studies on Protectants for Control of Sitophilus oryzae (Coleoptera: Curculionidae) and Rhyzopertha dominica (Coleoptera: Bostrichidae) in Paddy Rice. *J.Stored Prod.Res.* 25: 39-48.

EcoReference No.: 70629
Chemical of Concern: RSM,CYP,CBL_ _; Habitat: T; Effect Codes: POP; Rejection Code: TARGET(CYP,RSM).

484. Sanders, H. O. (1969). Toxicity of Pesticides to the Crustacean Gammarus lacustris. *Tech.Pap.No.25, U.S.D.I., Bur.Sports Fish.Wildl., Fish Wildl.Serv., Washington, D.C.* 18 p. (Author Communication Used)(Used with Reference 732) (Publ in Part As 6797).

EcoReference No.: 885
Chemical of Concern: SZ,EDT,24DXY,AZ,CBL,CMPH,CPY,DBN,DMB,DMT,DS,DU,DZ,HCCH,MLN,MLT,Naled,PAQT,PRT,TFN,RTN,NaN3,ATN,OXD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,AZ,DZ,MLT,SZ,DMT,RTN,NaN3,DMB,PRT,ATN),OK(ALL CHEMS).

485. Sanders, H. O. (1972). Toxicity of Some Insecticides to Four Species of Malacostracan Crustaceans. *Tech.Pap.No.66, Bur.Sports Fish.Wildl., Fish Wildl.Serv., U.S.D.I., Washington, D.C.* 19 p. (Publ in Part As 6797).

EcoReference No.: 887
Chemical of Concern: AZ,MLN,CBL,CMPH,CPY,DS,HCCH,MLN,Naled,PRT,PSM,ATN,DZ,OXD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,PRT,ATN),OK(ALL CHEMS).

486. Sanders, H. O. and Cope, O. B. (1968). The Relative Toxicities of Several Pesticides to Naiads of Three Species of Stoneflies. *Limnol.Oceanogr.* 13: 112-117 (Author Communication Used) (Publ in Part As 6797).

EcoReference No.: 889
Chemical of Concern: 24DXY,AZ,CBL,CPY,DBN,DMT,DS,DU,DZ,HCCH,MLN,MLT,Naled,PYN,TFN,RTN,As,NaN3,ATN,OXD; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,MLT,DMT,RTN,NaN3,ATN),OK(ALL CHEMS).

487. Santharam, K. R., Thayumanavan, B., and Krishnaswamy, S. (1976). Toxicity of Some Insecticides to Daphnia carinata King, an Important Link in the Food Chain in the Freshwater Ecosystems. *Indian J.Ecol.* 3: 70-73 (OECDG Data File).

EcoReference No.: 5194
Chemical of Concern: DDT,CBL,ES,MLN,PMR; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

488. Sappington, L. C., Mayer, F. L., Dwyer, F. J., Buckler, D. R., Jones, J. R., and Ellersieck, M.

R. (2001). Contaminant Sensitivity of Threatened and Endangered Fishes Compared to Standard Surrogate Species. *Environ.Toxicol.Chem.* 20: 2869-2876.

EcoReference No.: 65396
Chemical of Concern: CuS,PMR,CBL,PCP,NYP; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CuS,PCP),OK(PMR,NYP).

489. Sastry, K. V. and Siddiqui, A. A. (1982). Chronic Toxic Effects of the Carbamate Pesticide Sevin on Carbohydrate Metabolism in a Freshwater Snakehead Fish, Channa punctatus. *Toxicol.Lett.* 14: 123-130.

EcoReference No.: 10047
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL).

490. Sastry, K. V. and Siddiqui, A. A. (1985). Effect of the Carbamate Pesticide Sevin on the Intestinal Absorption of Some Nutrients in the Teleost Fish, Channa punctatus. *Water Air Soil Pollut.* 24 : 247-252.

EcoReference No.: 11556
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED (CBL).

491. Sastry, K. V., Siddiqui, A. A., and Samuel, M. (1988). Acute and Chronic Toxic Effects of the Carbamate Pesticide Sevin on Some Haematological, Biochemical and Enzymatic Parameters in the Fresh Water Teleost Fish Channa punctatus. *Acta Hydrochim.Hydrobiol.* 16: 625-631.

EcoReference No.: 466
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM,PHY; Rejection Code: LITE EVAL CODED(CBL).

492. Saxena, P. K. and Garg, M. (1978). Effect of Insecticidal Pollution on Ovarian Recrudescence in the Fresh Water Teleost Channa punctatus (Bl.). *Indian J.Exp.Biol.* 16: 689-691.

EcoReference No.: 639
Chemical of Concern: CBL,FNT; Habitat: A; Effect Codes: PHY,REP; Rejection Code: LITE EVAL CODED(CBL),OK(FNT).

493. Saxena, P. K., Singh, V. P., Kondal, J. K., and Soni, G. L. (1989). Effect of Some Pesticides on In-Vitro Lipid and Protein Synthesis by the Liver of the Freshwater Teleost, Channa punctatus (Bl.). *Environ.Pollut.* 58: 273-280.

EcoReference No.: 88911
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL,MLN).

494. Scaps, P., Demuynck, S., Descamps, M., and Dhainaut, A. (1997). Effects of Organophosphate and Carbamate Pesticides on Acetylcholinesterase and Choline Acetyltransferase Activities of the Polychaete Nereis diversicolor. *Arch.Environ.Contam.Toxicol.* 33: 203-208.

EcoReference No.: 18418
Chemical of Concern: MLN,PRN,PHSL,CBL; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

495. Schnelle, M. A. and Hensley, D. L. (1990). Effects of Pesticides upon Nitrogen Fixation and

Nodulation by Dry Bean. *Pestic.Sci.* 28: 83-88.

EcoReference No.: 53973
Chemical of Concern: PNB,CBL,DZ,ES,CTN,CAPTAN,BMY,FNV,SXD,DCF,MLN,BT,TFN,ACR,MANEB,EPTC; Habitat: T; Effect Codes: BCM,GRO; Rejection Code: LITE EVAL CODED(DZ),OK(ALL CHEMS).

496. Schuytema, G. S., Nebeker, A. V., and Griffis, W. L. (1994). Effects of Dietary Exposure to Forest Pesticides on the Brown Garden Snail Helix aspersa Muller. *Arch.Environ.Contam.Toxicol.* 26: 23-28.

EcoReference No.: 54011
Chemical of Concern: ATZ,CBL,ACP,GYP,HXZ,PCL,FNT,MP,PAQT,TCF; Habitat: T; Effect Codes: GRO,BEH,ACC; Rejection Code: LITE EVAL CODED(CBL,AZ,ACP),NO ENDPOINT(ATZ),OK(GYP,HXZ,PCL,FNT,MP,PAQT,TCF).

497. Scott, J. G. and Georghiou, G. P. (1986). Malathion-Specific Resistance in Anopheles stephensi From Pakistan. *J.Am.Mosq.Control Assoc.* 2: 29-32.

EcoReference No.: 11799
Chemical of Concern: BDC,CBL,MLN,FNT,PMR; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

498. Seiler, J. P. (1977). Nitrosation In Vitro and In Vivo by Sodium Nitrite, and Mutagenicity of Nitrogenous Pesticides. *Mutat.Res.* 48: 225-236.

EcoReference No.: 88676
Chemical of Concern: Du,BMY,ANTV,ACP,ADC,CBL,CBF,DMT,Maneb,ETU,FMU,MOM,PPX; Habitat: T; Effect Codes: CEL,PHY; Rejection Code: LITE EVAL CODED(CBL,ETU,Maneb),NO ENDPOINT(MOM),OK(ALL CHEMS),NO COC(MTAS).

499. Selvakumar, S., Geraldine, P., Shanju, S., and Jayakumar, T. (2005). Stressor-Specific Induction of Heat Shock Protein 70 in the Freshwater Prawn Macrobrachium malcolmsonii (H. Milne Edwards) Exposed to the Pesticides Endosulfan and Carbaryl. *Pestic.Biochem.Physiol.* 82: 125-132.

EcoReference No.: 80963
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: BCM,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ES).

500. Semlitsch, R. D., Bridges, C. M., and Welch, A. M. (2000). Genetic Variation and a Fitness Tradeoff in the Tolerance of Gray Treefrog (Hyla versicolor) Tadpoles to the Insecticide Carbaryl . *Oecologia* 125: 179-185.

EcoReference No.: 62322
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

501. Seuge, J. and Bluzat, R. (1983). Chronic Toxicity of Three Insecticides (Carbaryl, Fenthion and Lindane) in the Freshwater Snail Lymnaea stagnalis. *Hydrobiologia* 106: 65-72.

EcoReference No.: 11221
Chemical of Concern: CBL,HCCH,FNTH; Habitat: A; Effect Codes: GRO,REP,POP; Rejection Code: LITE EVAL CODED(CBL),OK(HCCH,FNTH).

502. Shacklock, P. F. and Croft, G. B. (1981). Effect of Grazers on Chondrus crispus in Culture. *Aquaculture* 22: 331-342.

EcoReference No.: 69472
Chemical of Concern: DMT,MLN,CBL,RTN,DZ; Habitat: A; Effect Codes: MOR,GRO,BEH; Rejection Code: LITE EVAL CODED(CBL,DZ,MLN),OK(DMT,RTN).

503. Shaikila, I. B., Thangavel, P., and Ramaswamy, M. (1993). Adaptive Trends in Tissue Acid and Alkaline Phosphatases of Sarotherodon mossambicus (Peters) Under Sevin Toxicity. *Indian J.Environ.Health* 35: 36-39.

EcoReference No.: 17796
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

504. Shanmugam, M., Venkateshwarlu, M., and Naveed, A. (2000). Effect of Pesticides on the Freshwater Crab Barytelphusa cunicularis (West Wood). *J.Ecotoxicol.Environ.Monit.* 10: 273-279.

EcoReference No.: 88807
Chemical of Concern: CBL,ES; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ES).

505. Sharma, B. (1999). Effect of Carbaryl on Some Biochemical Constituents of the Blood and Liver of Clarias batrachus, a Fresh-Water Teleost. *J.Toxicol.Sci.* 24: 157-164.

EcoReference No.: 87647
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

506. Sharma, B. and Gopal, K. (1995). Changes in Lactic Acid Content and Activity of Lactate Dehydrogenase in Clarias batrachus, Exposed to Carbaryl. *Toxicol.Environ.Chem.* 47: 89-95.

EcoReference No.: 16170
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

507. Sharma, B., Gopal, K., and Khanna, Y. P. (1993). Interaction of Carbaryl with Acetylcholinesterase of the Teleost, Clarias batrachus. *Toxicol.Environ.Chem.* 39: 147-152.

EcoReference No.: 17100
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL).

508. Sharma, B., Ram, M. D., Lata, S., and Gopal, K. (1993). Carbaryl Induced Alterations in the Level of Biogenic Amines in Various Parts of the Brain of Clarias batrachus. *Toxicol.Environ.Chem.* 38: 95-99.

EcoReference No.: 9838
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

509. Sharma, L. L. and Saxena, P. N. (1997). Carbaryl Induced Haematological Changes in Columba livia Gmelin. *J.Environ.Biol.* 18: 17-22.

EcoReference No.: 54092

Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,CEL; Rejection Code: LITE EVAL CODED(CBL).

510. Shea, T. B. and Berry, E. S. (1983). Toxicity of Carbaryl and 1-Naphthol to Goldfish (Carassius auratus) and Killifish (Fundulus heteroclitus). *Bull.Environ.Contam.Toxicol.* 31: 526-529.

EcoReference No.: 10111
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

511. Shrivastava, S. and Singh, S. (2004). Changes in Protein Content in the Muscle of Heteropneustes fossilis Exposed to Carbaryl. *J.Ecotoxicol.Environ.Monit.* 14: 119-122.

EcoReference No.: 87625
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

512. Shrivastava, S. and Singh, S. (2003). Toxic Effect of Carbaryl on Glucose Level in the Muscles of Heteropneustes fossilis. *Nat.Environ.Pollut.Technol.* 2: 35-37.

EcoReference No.: 82708
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

513. Shukla, G. S. and Mishra, P. K. (1980). Bioassay Studies on Effects of Carbamate Insecticides on Dragonfly Nymphs. *Indian J.Environ.Health* 22: 328-335 .

EcoReference No.: 17128
Chemical of Concern: CBF,CBL; Habitat: A; Effect Codes: MOR,BEH,PHY; Rejection Code: LITE EVAL CODED(CBL,CBF).

514. Shukla, G. S. and Omkar (1984). Insecticide Toxicity to Macrobrachium lamarrei (H. Milne Edwards) (Decapoda, Palaemonidae). *Crustaceana* 46: 283-287 .

EcoReference No.: 11010
Chemical of Concern: CBL,ES; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(ES).

515. Shukla, G. S., Omkar, and Upadhyay, V. B. (1982). Acute Toxicity of Few Pesticides to an Aquatic Insect, Ranatra elongata (Fabr.). *J.Adv.Zool.* 3: 148-150.

EcoReference No.: 4596
Chemical of Concern: PPHD,AND,CBL; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(CBL),OK(PPHD,AND).

516. Shukla, Y., Antony, M., and Mehrotra, N. K. (1992). Carcinogenic and Cocarcinogenic Studies with Carbaryl Following Topical Exposure in Mice. *Cancer Lett.* 62: 133-140.

EcoReference No.: 87856
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY,GRO; Rejection Code: LITE EVAL CODED(CBL).

517. Simon, K. A. (1982). Acute Toxicity of Carbaryl, Alpha Naphthol and Sevin-4-Oil Tank Mix to Cambarus bartoni and Orconectes virilis. *In: Environ.Monit.Rep.from the 1982 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Service, Dep.of*

Conservation, Augusta, ME 61-91.

EcoReference No.: 19508
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

518. Singh, D. K. and Agarwal, R. A. (1983). In Vivo and In Vitro Studies on Synergism with Anticholinesterase Pesticides in the Snail Lymnaea acuminata. *Arch.Environ.Contam.Toxicol.* 12: 483-487.

EcoReference No.: 10898
Chemical of Concern: CBL,PRT; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL,PRT).

519. Singh, D. K. and Agarwal, R. A. (1986). Synergistic Effect of Sulfoxide with Carbaryl on the In Vivo Acetylcholinesterase Activity and Carbohydrate Metabolism of the Snail Lymnaea acuminata. *Acta Hydrochim.Hydrobiol.* 14: 421-427 .

EcoReference No.: 12090
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM,PHY; Rejection Code: LITE EVAL CODED(CBL).

520. Singh, D. K. and Agarwal, R. A. (1986). Toxicity of Pesticides to Fecundity, Hatchability and Survival of Young Snails of Lymnaea acuminata. *Acta Hydrochim.Hydrobiol.* 14: 191-194.

EcoReference No.: 12375
Chemical of Concern: CBL,PRT; Habitat: A; Effect Codes: REP,MOR; Rejection Code: LITE EVAL CODED(CBL,PRT).

521. Singh, D. K. and Agarwal, R. A. (1989). Toxicity of Piperonyl Butoxide - Carbaryl Synergism on the Snail Lmynaea acuminata. *Int.Rev.Gesamten Hydrobiol.* 74: 689-699.

EcoReference No.: 5095
Chemical of Concern: CBL,PPB; Habitat: A; Effect Codes: PHY,BCM,CEL; Rejection Code: LITE EVAL CODED(CBL,PPB).

522. Singh, O. and Agarwal, R. A. (1984). Carbamate and Organophosphorus Pesticides Against Snails. *Pesticides* 18: 30-33.

EcoReference No.: 65606
Chemical of Concern: CBL,ADC,TCF,PRT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(ADC,CBL,PRT),OK(ALL CHEMS).

523. Singh, O. and Agarwal, R. A. (1981). Toxicity of Certain Pesticides to Two Economic Species of Snails in Northern India. *J.Econ.Entomol.* 74: 568-571 .

EcoReference No.: 917
Chemical of Concern: CBL,PRT,ADC,TCF; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,ADC,PRT),OK(TCF).

524. Singh, S. K., Tripathi, P. K., Yadav, R. P., Singh, D., and Singh, A. (2004). Toxicity of Malathion and Carbaryl Pesticides: Effects on Some Biochemical Profiles of the Freshwater Fish Colisa fasciatus. *Bull.Environ.Contam.Toxicol.* 72: 592-599.

EcoReference No.: 74220
Chemical of Concern: MLN,CBL; Habitat: A; Effect Codes: MOR,BCM; Rejection Code:

LITE EVAL CODED(MLN,CBL).

525. Sinha, N., Lal, B., and Singh, T. P. (1991). Carbaryl-Induced Thyroid Dysfunction in the Freshwater Catfish Clarias batrachus. *Ecotoxicol.Environ.Saf.21(3):240-247 / In: Responses of Mar.Organisms to Pollutants, Part 2, Banaras Hindu University, Varanas, India* 226-227 (ABS).

EcoReference No.: 3108
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM,PHY; Rejection Code: LITE EVAL CODED(CBL).

526. Sinha, N., Lal, B., and Singh, T. P. (1991). Pesticides Induced Changes in Circulating Thyroid Hormones in the Freshwater Catfish Clarias batrachus. *Comp.Biochem.Physiol.100C(1/2):107-110 (Publ in Part As 3721, 3108) In: Responses of Mar.Organisms to Pollutants, Part 2, Banaras Hindu University, Varanasi, India* 226-227 (ABS).

EcoReference No.: 3971
Chemical of Concern: CBL,MLN,ES; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL),OK(MLN,ES).

527. Sinha, P. K., Pal, S., Kumar, K., Triar, S. B., and Singh, R. (1986). Thiodicarb, an Effective Molluscicide for Grazer Snails of Blue Green Algae. *J.Entomol.Res.* 10: 116-118.

EcoReference No.: 9
Chemical of Concern: ES,PRT,TDC,CBL,DZ,CPY,CBF; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,CBF,PRT),OK(ALL CHEMS) .

528. Sinha, P. K., Pal, S., and Triar, S. B. (1986). An Effective Molluscicide for Grazer Snails of Blue Green Algae. *Pesticides* 20: 44-45.

EcoReference No.: 74591
Chemical of Concern: CBF,CPY,DZ,CBL,ES,TDC,PRT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,CBF,PRT),OK(CPY,ES),OK TARGET(TDC).

529. Sinha, P. K., Pal, S., and Triar, S. B. (1986). An Effective Molluscicide for Grazer Snails of Blue Green Alge . *Pesticides* 20: 44-45.

EcoReference No.: 74591
Chemical of Concern: CBF,CPY,DZ,CBL,ES,TDC,PRT
Endpoint: MOR; Habitat: A; Rejection Code: LITE EVAL CODED(CBF).

530. Sinha, P. K., Pal, S., and Triar, S. B. (1986). An Effective Molluscicide for Grazer Snails of Blue Green Alge . *Pesticides* 20: 44-45.

EcoReference No.: 74591
Chemical of Concern: CBF,CPY,DZ,CBL,ES,TDC,PRT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(DZ,CBF,PRT),OK(ALL CHEMS).

531. Smith, J. W. and Grigoropoulos, S. G. (1968). Toxic Effects of Odorous Trace Organics. *Am.Water Works Assoc.J.* 60: 969-979.

EcoReference No.: 8101
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(MLN).

532. Smulders, C. J. G. M., Van Kleef, R. G. D. M., De Groot, A., Gotti, C., and Vijverberg, H. P. M. (2004). A Noncompetitive, Sequential Mechanism for Inhibition of Rat alpha4beta2 Neuronal Nicotinic Acetylcholine Receptors by Carbamate Pesticides. *Toxicol.Sci.* 82: 219-227.

EcoReference No.: 86935
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY,CEL; Rejection Code: LITE EVAL CODED(CBL).

533. Solomon, H. M. and Weis, J. S. (1979). Abnormal Circulatory Development in Medaka Caused by the Insecticides Carbaryl, Malathion and Parathion. *Teratology* 19: 51-62.

EcoReference No.: 14285
Chemical of Concern: CBL,MLN,PRN; Habitat: A; Effect Codes: GRO,PHY,CEL; Rejection Code: LITE EVAL CODED(CBL),OK(PRN,MLN).

534. Solomon, K. E. and Robel, R. J. (1980). Effects of Carbaryl and Carbofuran on Bobwhite Energetics. *J.Wildl.Manag.* 44: 682-686.

EcoReference No.: 54372
Chemical of Concern: CBL,CBF; Habitat: T; Effect Codes: GRO,BCM,BEH; Rejection Code: LITE EVAL CODED(CBF,CBL).

535. Somers, J. D., Khan, A. A., Kumar, Y., and Barrett, M. W. (1991). Effects of Simulated Field Spraying of Carbofuran, Carbaryl and Dimethoate on Pheasant and Partridge Chicks. *Bull.Environ.Contam.Toxicol.* 46: 113-119.

EcoReference No.: 74587
Chemical of Concern: CBF,DMT,CBL; Habitat: T; Effect Codes: MOR,GRO,BCM; Rejection Code: LITE EVAL CODED(CBL,CBF,DMT).

536. Sood, N. K. , Kaushik, U. K., and Rathore, V. S. (1972). Phytotoxicity of Modern Insecticides to Cucurbits. *Indian J.Hortic.* 29: 111-113.

EcoReference No.: 41604
Chemical of Concern: ES,MLN,DDVP,CBL,DMT,PRN,EN,PPHD; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL,DMT,MLN,ES,DDVP,PRN,EN).

537. Sorensen, K. A. and Holloway, C. W. (1999). Pickleworm Control with Insecticides, 1998. *Arthropod Manage.Tests* 24: 135-136 (E44).

EcoReference No.: 88283
Chemical of Concern: CBL,MOM,EFV,TUZ,IMC,EMMB; Habitat: T; Effect Codes: PHY,MOR; Rejection Code: LITE EVAL CODED(MOM,CBL),OK(ALL CHEMS).

538. Speese III, J. (1996). Foliar Sprays to Control Worms on Early and Late Sweet Corn, 1995. *Arthropod Manag.Tests* 21 : 112-113.

EcoReference No.: 54410
Chemical of Concern: MOM,EFV,PMR,TDC,CBL; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(EFV,MOM),OK(ALL CHEMS).

539. Stadnyk, L., Campbell, R. S., and Johnson, B. T. (1971). Pesticide Effect on Growth and C14 Assimilation in a Freshwater Alga. *Bull.Environ.Contam.Toxicol.* 6: 1-8.

EcoReference No.: 2251

Chemical of Concern: 24DXY,CBL,DU,DZ; Habitat: A; Effect Codes: PHY; Rejection Code: NO ENDPOINT(DZ),LITE EVAL CODED(CBL).

540. Stenersen, J. (1979). Action of Pesticides on Earthworms. Part I: The Toxicity of Cholinesterase-Inhibiting Insecticides to Earthworms as Evaluated by Laboratory Tests. *Pestic.Sci.* 10: 66-74.

EcoReference No.: 38925
Chemical of Concern: ADC,OML,CBF,CBL,PRN,KMDC; Habitat: T; Effect Codes: MOR,BEH,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

541. Stephenson, G. R., Phatak, S. C., Makowski, R. I., and Bouw, W. J. (1980). Phytotoxic Interactions Involving the Herbicide Metribuzin and Other Pesticides in Tomatoes. *Can.J.Plant Sci.* 60: 167-175.

EcoReference No.: 26089
Chemical of Concern: MBZ,CBL,DZ,ES,MLN,CBF,DEM,MVP,CTN,MZB,MANEB,TFN; Habitat: T; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(DZ),OK(ALL CHEMS).

542. Stewart, N. E., Millemann, R. E., and Breese, W. P. (1967). Acute Toxicity of the Insecticide Sevin and Its Hydrolytic Product 1-Naphthol to Some Marine Organisms. *Trans.Am.Fish.Soc.* 96: 25-30.

EcoReference No.: 4825
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

543. Street, J. C. and Sharma, R. P. (1975). Alteration of Induced Cellular and Humoral Responses by Pesticides and Chemicals of Environmental Concern: Quantitative Studies on Immunosuppression by DDT, Aroclor 1254, Carbaryl, Carbofuran, and Methylparathion. *Toxicol.Appl.Pharmacol.* 32: 587-602.

EcoReference No.: 38979
Chemical of Concern: CBF,DDT,PCB,CBL,MP; Habitat: T; Effect Codes: BCM,CEL,GRO,PHY; Rejection Code: LITE EVAL CODED(CBF,CBL),OK(ALL CHEMS).

544. Sukumar, R. V. and Rao, M. B. (1985). Toxicity of gamma-HCH, Methyl Parathion and Carbaryl to Two Varieties of a Tropical Freshwater Gastropod, Bellamya bengalensis (Lamarck) (Gastropoda: Viviparidae). *In: R.C.Dalela and U.H.Mane (Eds.), Proc.5th Natl.Symp.Assess.Environ.Pollut., Dec.20-22, 1984, Aurangabad, India* 101-106.

EcoReference No.: 4953
Chemical of Concern: CBL,MP; Habitat: A; Effect Codes: BEH,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(MP).

545. Sundaram, R. and Velayutham, B. (1988). Relative Efficacy of Some Insecticides and Neem Cake in the Control of Rotylenchulus reniformis and Helicotylenchus dihystera Affecting Garden Bean. *Indian J.Nematol.* 18: 329-331.

EcoReference No.: 74715
Chemical of Concern: ADC,PPHD,CBL,PRT,AZD,DMT; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(ADC,AZD,DMT).

546. Suseela, K. P., Ramadevi, R., and Chandrakantha, J. (1994). Toxic Effects of Pesticides on

Survival and Proximate Composition of Tubifex tubifex. *J.Ecotoxicol.Environ.Monit.* 4: 21-26.

EcoReference No.: 17386
Chemical of Concern: DDT,PPHD,MP,CBL; Habitat: A; Effect Codes: BCM,MOR; Rejection Code: LITE EVAL CODED(CBL),OK(DDT,PPHD,MP).

547. Suwanchaichinda, C. and Brattsten, L. B. (2001). Effects of Exposure to Pesticides on Carbaryl Toxicity and Cytochrome P450 Activities in Aedes albopictus Larvae (Diptera: Culicidae). *Pestic.Biochem.Physiol.* 70: 63-73.

EcoReference No.: 87671
Chemical of Concern: CBL,ATZ,SZ,TDF,DCZ,PCP; Habitat: T; Effect Codes: MOR,PHY; Rejection Code: LITE EVAL CODED(CBL,SZ),OK(ALL CHEMS).

548. Swartz, W. J. (1985). Effects of Carbaryl on Gonadal Development in the Chick Embryo. *Bull.Environ.Contam.Toxicol.* 34: 481-485.

EcoReference No.: 39027
Chemical of Concern: CBL; Habitat: T; Effect Codes: REP,MOR,CEL,GRO; Rejection Code: LITE EVAL CODED(CBL).

549. Swartz, W. J. (1981). Long- and Short-Term Effects of Carbaryl Exposure in Chick Embryos. *Environ.Res.* 26: 463-471.

EcoReference No.: 39026
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,GRO,CEL; Rejection Code: LITE EVAL CODED(CBL).

550. Swihart, R. K. and Conover, M. R. (1991). Responses of Woodchucks to Potential Garden Crop Repellents. *J.Wildl.Manag.* 55: 177-181.

EcoReference No.: 75424
Chemical of Concern: DMT,CBL; Habitat: T; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL),OK(DMT).

551. Tagatz, M. E., Ivey, J. M., Lehman, H. K., and Oglesby, J. L. (1979). Effects of Sevin on Development of Experimental Estuarine Communities. *J.Toxicol.Environ.Health* 5: 643-651.

EcoReference No.: 7275
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

552. Takahashi, R. N., Poli, A., Morato, G. S., Lima, T. C. M., and Zanin, M. (1990). Behavioral and Biochemical Changes Following Repeated Administration of Carbaryl to Aging Rats. *Braz.J.Med.Biol.Res.* 23: 879-882.

EcoReference No.: 87857
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,PHY,BEH; Rejection Code: LITE EVAL CODED(CBL).

553. Takahashi, R. N., Poli, A., Morato, G. S., Lima, T. C. M., and Zanin, M. (1991). Effects of Age on Behavioral and Physiological Responses to Carbaryl in Rats. *Neurotoxicol.Teratol.* 13: 21-26.

EcoReference No.: 87668

Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH,PHY,BCM; Rejection Code: LITE EVAL CODED(CBL).

554. Taley, Y. M. and Thakare, K. R. (1979). Chemical Control of Sorghum Tissue Borers. *Indian.J.Entomol.* 41: 134-138.

EcoReference No.: 45610
Chemical of Concern: HCCH,ES,EN,DDT,CBL,PRT; Habitat: T; Effect Codes: POP,GRO; Rejection Code: LITE EVAL CODED(CBL,PRT),OK(ALL CHEMS).

555. Tejada, A. W., Bajet, C. M., Magbauna, M. G., Gambalan, N. B., Araez, L. C., and Magallona, E. D. (1994). Toxicity of Pesticides to Target and Non-Target Fauna of the Lowland Rice Ecosystem. *In: B.Widianarko, K.Vink, and N.M.Van Straalen (Eds.), Environmental Toxicology in South East Asia, VU University Press, Amsterdam, Netherlands* 89-103.

EcoReference No.: 20421
Chemical of Concern: MP,ES,CBF,CPY,EFX,TDC,MTM,MLN,FNV,CYF,FNT,CBL,24DXY,MCPA,BTC,FZFB,TBC,ODZ,MZB; Habitat: AT; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,MTM,DZ,MLN,CYP,CYF),OK(ALL CHEMS).

556. Thomas, P. C. and Murthy, T. L. (1976). Acid Phosphatase Activity in a Fresh-Water Air Breathing Fish Heteropneustes fossilis & the Effect of Certain Organic Pesticides on It. *Indian J.Biochem.Biophys.* 13: 347-349.

EcoReference No.: 87565
Chemical of Concern: EN,PPHD,CBL,DEM; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL),OK(EN,PPHD,DEM).

557. Tilak, K. S., Rao, D. M., Devi, A. P., and Murty, A. S. (1981). Toxicity of Carbaryl and 1-Naphthol to Four Species of Freshwater Fish. *J.Biosci.* 3: 457-462.

EcoReference No.: 4969
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

558. Tilak, K. S., Rao, D. M. R., Devi, A. P., and Murty, A. S. (1980). Toxicity of Carbaryl and 1-Naphthol to the Freshwater Fish Labeo rohita. *Indian J.Exp.Biol.* 18: 75-76.

EcoReference No.: 573
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

559. Todd, N. E. and Van Leeuwen, M. (2002). Effects of Sevin (Carbaryl Insecticide) on Early Life Stages of Zebrafish (Danio rerio). *Ecotoxicol.Environ.Saf.* 53: 267-272.

EcoReference No.: 72765
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL).

560. Trial, J. G. (1981). The Effect of Carbaryl on Leaf Litter Processing in Maine Streams. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1980 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 150-167.

EcoReference No.: 16303

Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

561. Trial, J. G. (1980). The Effectiveness of Unsprayed Buffers in Lessening the Impact of Aerial Applications of Carbaryl on Aquatic Insects. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1979 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 98-132.

EcoReference No.: 16311
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

562. Trial, J. G. (1982). The Effectiveness of Upstream Refugia for Promoting Recolonization of Plecoptera Killed by Exposure to Carbaryl. *J.Freshw.Ecol.* 1: 563-567.

EcoReference No.: 9787
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

563. Trial, J. G. (1980). The Effects of Sevin-4-Oil on Aquatic Insect Communities of Streams. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1979 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 253-270.

EcoReference No.: 16314
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

564. Trial, J. G. (1979). The Effects of Sevin-4-Oil on Aquatic Insect Communities of Streams (1976-1978). *In: K.G.Stratton (Ed.), Environ.Monit.of Cooperative Spruce Budworm Control Program, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 6-22 (Author Communication Used).

EcoReference No.: 13808
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

565. Trial, J. G. (1978). The Effects of Sevin-4-Oil on Aquatic Insect Communities of Streams: A Continuation of 1976 Studies. *In: K.G.Stratton (Ed.), Environ.Monit.of Cooperative Spruce Budworm Control Project, Maine 1976 and 1977, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 124-140.

EcoReference No.: 16307
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL).

566. Trial, J. G. and Gibbs, K. E. (1978). Effects of Orthene, Sevin-4-Oil and Dylox on Aquatic Insects Incidental to Attempts to Control Spruce Budworm in Maine, 1976. *In: K.G.Stratton (Ed.), Environ.Monit.of Cooperative Spruce Budworm Control Project, Maine 1976 and 1977, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 207-216.

EcoReference No.: 16309
Chemical of Concern: CBL,ACP; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL,ACP).

567. Triolo, A. J., Lang, W. R., Coon, J. M., Lindstrom, D. , and Herr, D. L. (1982). Effect of the

Insecticides Toxaphene and Carbaryl on Induction of Lung Tumors by Benzo(a)pyrene in the Mouse. *J.Toxicol.Environ.Health* 9: 637-649.

EcoReference No.: 39134
Chemical of Concern: TXP,CBL; Habitat: T; Effect Codes: GRO,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(TXP).

568. Tripathi, G. and Shukla, S. P. (1988). Toxicity Bioassay of Technical and Commercial Formulations of Carbaryl to the Freshwater Catfish, Clarias batrachus. *Ecotoxicol.Environ.Saf.* 15: 277-281.

EcoReference No.: 13053
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL).

569. Tripathi, P. K. and Singh, A. (2004). Carbaryl Induced Alterations in the Reproduction and Metabolism of Freshwater Snail Lymnaea acuminata. *Pestic.Biochem.Physiol.* 79: 1-9.

EcoReference No.: 86766
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY,REP,MOR,BCM; Rejection Code: LITE EVAL CODED(CBL).

570. Tripathi, P. K. and Singh, A. (2002). Toxic Effects of Dimethoate and Carbaryl Pesticides on Carbohydrate Metabolism of Freshwater Snail Lymnaea acuminata. *Bull.Environ.Contam.Toxicol.* 68: 606-611.

EcoReference No.: 65841
Chemical of Concern: CBL,DMT; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(DMT,CBL).

571. Tripathi, P. K. and Singh, A. (2003). Toxic Effects of Dimethoate and Carbaryl Pesticides on Protein Metabolism of the Freshwater Snail Lymnaea acuminata. *Bull.Environ.Contam.Toxicol.* 70: 146-152.

EcoReference No.: 71890
Chemical of Concern: CBL,DMT; Habitat: A; Effect Codes: BCM,CEL; Rejection Code: LITE EVAL CODED(CBL,DMT).

572. Tripathi, P. K. and Singh, A. (2003). Toxic Effects of Dimethoate and Carbaryl Pesticides on Reproduction and Related Enzymes of the Freshwater Snail Lymnaea acuminata. *Bull.Environ.Contam.Toxicol.* 71: 535-542.

EcoReference No.: 71686
Chemical of Concern: CBL,DMT; Habitat: A; Effect Codes: REP,BCM,MOR; Rejection Code: LITE EVAL CODED(CBL,DMT).

573. Trisyono, A. and Chippendale, G. M. (1997). Effect of the Nonsteroidal Ecdysone Agonists, Methoxyfenozide and Tebufenozide, on the European Corn Borer (Lepidoptera: Pyralidae). *J.Econ.Entomol.* 90: 1486-1492.

EcoReference No.: 64128
Chemical of Concern: MFZ,DFZ,TUZ,CBL; Habitat: T; Effect Codes: GRO,MOR,REP; Rejection Code: LITE EVAL CODED(MFZ,DFZ,TUZ,CBL).

574. Trisyono, A., Puttler, B., and Chippendale, G. M. (2000). Effect of the Ecdysone Agonists, Methoxyfenozide and Tebufenozide, on the Lady Beetle, Coleomegilla maculata.

Entomol.Exp.Appl. 94: 103-105.

EcoReference No.: 64129
Chemical of Concern: MFZ,CBL,TUZ; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(MFZ,CBL,TUZ).

575. Twagilimana, L., Bohatier, J., Groliere, C-A., Bonnemoy, F., and Sargos, D. (1998). A New Low-Cost Microbiotest with the Protozoan Spirostomum teres: Culture Conditions and Assessment of Sensitivity of the Ciliate to 14 Pure Chemicals. *Ecotoxicol.Environ.Saf.* 41: 231-244.

EcoReference No.: 20057
Chemical of Concern: Cd,CuS,CBL,HCCH,MP,CPH,NaPCP,HgCl2,Zn,Cr,PRN,PbN,THM; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CuS,NaPCP),OK(ALL CHEMS).

576. Uddin, M. B., Karim, M. A., and Alam, M. Z. (1995). Effectiveness of Some Carbamate Insecticides for Repelling a Pest Bird (Lonchura striata) to Reduce Ear Damage of Fox-Tail Millet. *Pak.J.Sci.Ind.Res.* 38: 435-437.

EcoReference No.: 87672
Chemical of Concern: CBF,CBL; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL),OK(CBF).

577. Ukeles, R. (1962). Growth of Pure Cultures of Marine Phytoplankton in the Presence of Toxicants. *Appl.Microbiol.* 10: 532-537.

EcoReference No.: 8039
Chemical of Concern: TXP,Nabam,CBL,DCB,Du,PL,CBZ,DDT,DZ; Habitat: A; Effect Codes: MOR,POP; Rejection Code: LITE EVAL CODED(CBL,DCB,DZ),OK(ALL CHEMS).

578. Union Carbide Chemical and Plastics Company (1991). Letter Submitting Multiple Enclosed Studies on Multiple Chemicals with Attachments. *EPA/OTS Doc.#86-920000742* 1,534 p. (NTIS/OTS0535072).

EcoReference No.: 75195
Chemical of Concern: ACL,HOX,4AP,FML.EGY,CBL,TEG,BMN; Habitat: AT; Effect Codes: MOR,GRO,BEH,BCM,CEL; Rejection Code: LITE EVAL CODED(CBL),OK(HOX,FML,EGY,TEG,BMN),NO COC(ADC,CBF,MTAS),NO CONTROL(ACL,4AP).

579. Vasumathi, D., Sampath, K., and James, R. (2001). Acute Toxicity of Endosulfan, Methyl Parathion and Carbaryl on Macropodus cupanus. *Environ.Ecol.* 19: 576-579.

EcoReference No.: 87644
Chemical of Concern: ES,MP,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL),OK(ALL CHEMS).

580. Venkateswaran, P. and Ramaswamy, M. (1987). Lactic Acidosis in Different Tissues of Sarotherodon mossambicus (Peters) Exposed to Sevin. *Curr.Sci.* 56: 320-322.

EcoReference No.: 4550
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(CBL).

581. Verma, S. R., Bansal, S. K., Gupta, A. K., Pal, N., Tyagi, A. K., Bhatnagar, M. C., Kumar, K., and Dalela, R. C. (1979). Acute Toxicity of Twenty Three Pesticides to a Fresh Water Teleost, Saccobranchus fossilis. *In: S.R.Verma, A.K.Tyagi, and S.K.Bansal (Eds.), Environmental Biology: Proc.Symp.Environ.Biol.,Muzaffarnagar, India* 481-497.

EcoReference No.: 7375
Chemical of Concern:
ABT,CBF,CBL,THM,ES,HPT,CHD,AND,HCCH,PHSL,DZ,DMT,TCF,DDVP,MLN,FNT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(MLN,CBL,DZ),OK(ALL CHEMS).

582. Verma, S. R., Bansal, S. K., Gupta, A. K., Pal, N., Tyagi, A. K., Bhatnagar, M. C., Kumar, V., and Dalela, R. C. (1982). Bioassay Trials with Twenty Three Pesticides to a Fresh Water Teleost, Saccobranchus fossilis. *Water Res.* 16: 525-529.

EcoReference No.: 15179
Chemical of Concern:
HPT,CBF,CBL,CHD,DMT,HCCH,ES,DDVP,MLN,FNT,AND,DZ,PHSL,ABJ; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,DZ,CBF,DMT),OK(ALL CHEMS),NO COC(OXD).

583. Verma, S. R. and Tonk, I. P. (1984). Biomonitoring of the Contamination of Water by a Sublethal Concentration of Pesticides - A System Analysis Approach. *Acta Hydrochim.Hydrobiol.* 12: 399-409.

EcoReference No.: 12980
Chemical of Concern: DEM,DDVP,CBF,CHD,AND,CBL; Habitat: A; Effect Codes: PHY,BCM,MOR; Rejection Code: LITE EVAL CODED(CBL,CBF),OK(ALL CHEMS).

584. Verma, S. R., Tonk, I. P., and Dalela, R. C. (1981). Determination of the Maximum Acceptable Toxicant Concentration (MATC) and the Safe Concentration for Certain Aquatic Pollutants. *Acta Hydrochim.Hydrobiol.* 9: 247-254.

EcoReference No.: 10385
Chemical of Concern: DDVP,Cd,PL,CBL,MLN,CBF,CuS,DEM,CHD,NaPCP; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: LITE EVAL CODED(CBL,CBF,CuS,NaPCP)//OK(ALL CHEMS).

585. Verma, S. R., Tonk, I. P., Gupta, A. K., and Saxena, M. (1984). Evaluation of an Application Factor for Determining the Safe Concentration of Agricultural and Industrial Chemicals. *Water Res.* 18: 111-115.

EcoReference No.: 10575
Chemical of Concern:
NaPCP,CHD,Cd,CuS,Zn,HgCl2,ABT,CBF,HCCH,DDVP,CBL,PL,ES,MLN,SA,AND; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,CBF,CuS,NaPCP)//OK(ALL CHEMS).

586. Versteeg, D. J. (1990). Comparison of Short- and Long-Term Toxicity Test Results for the Green Alga, Selenastrum capricornutum. *In: W.Wang, J.W.Gorsuch, and W.R.Lower (Eds.), Plants for Toxicity Assessment, ASTM STP 1091, Philadelphia, PA* 40-48.

EcoReference No.: 17639
Chemical of Concern: Cu20,SZ,Cd,PCP,CBL,ATZ; Habitat: A; Effect Codes: PHY,POP; Rejection Code: LITE EVAL CODED(CBL,ATZ,SZ,PCP,Cu2O),OK(Cd) .

587. Ville, P., Roch, P., Cooper, E. L., and Narbonne, J.-F. (1997). Immuno-Modulator Effects of Carbaryl and 2,4 D in the Earthworm Eisenia fetida andrei. *Arch.Environ.Contam.Toxicol.* 32: 291-297.

EcoReference No.: 40121
Chemical of Concern: CBL,24D; Habitat: T; Effect Codes: BCM,CEL,MOR,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(24D).

588. Virk, S., Kaur, K., and Kaur, S. (1987). Histopathological and Biochemical Changes Induced by Endrin and Carbaryl in the Stomach, Intestine and Liver of Mystus tengara. *Indian J.Ecol.* 14: 14-20.

EcoReference No.: 3244
Chemical of Concern: EN,CBL; Habitat: A; Effect Codes: CEL,PHY; Rejection Code: LITE EVAL CODED(CBL),OK(EN).

589. Walgenbach, J. F., Leidy, R. B., and Sheets, T. J. (1991). Persistence of Insecticides on Tomato Foliage and Implications for Control of Tomato Fruitworm (Lepidoptera: Noctuidae). *J.Econ.Entomol.* 84: 978-986.

EcoReference No.: 74169
Chemical of Concern: MOM,EFV,ES,CBL,RTN; Habitat: T; Effect Codes: PHY,POP,ACC,MOR; Rejection Code: LITE EVAL CODED(EFV,MOM),OK(ALL CHEMS).

590. Walsh, G. E. and Alexander, S. V. (1980). A Marine Algal Bioassay Method: Results with Pesticides and Industrial Wastes. *Water Air Soil Pollut.* 13: 45-55 (Author Communication Used).

EcoReference No.: 5297
Chemical of Concern: CBL,EP,MP,PRT,TBC,PMR; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(CBL,PRT),OK(ALL CHEMS).

591. Weaver, J. E. and McCutcheon, T. W. (1988). Green June Beetle Control, West Virginia, 1987. *Insectic.Acaric.Tests* 13: 270 (No. 121F).

EcoReference No.: 88816
Chemical of Concern: CBL,CYH,TCF,CYF,DZ,ACP; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(CBL,DZ),OK(ALL CHEMS).

592. Weil, C. S., Woodside, M. D., Bernard, J. B., Condra, N. I., King, J. M., and Carpenter, C. P. (1973). Comparative Effect of Carbaryl on Rat Reproduction and Guinea Pig Teratology When fed Either in the Diet or by Stomach Intubation. *Toxicol.Appl.Pharmacol.* 26: 621-638.

EcoReference No.: 39322
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,GRO,MOR,REP; Rejection Code: LITE EVAL CODED(CBL).

593. Weil, C. S., Woodside, M. D., Carpenter, C. P., and Smyth, H. F. Jr. (1972). Current Status of Tests of Carbaryl for Reproductive and Teratogenic Effect. *Toxicol.Appl.Pharmacol.* 21: 390-404.

EcoReference No.: 39323
Chemical of Concern: CBL; Habitat: T; Effect Codes: REP,GRO,MOR; Rejection Code: LITE EVAL CODED(CBL).

594. Weis, J. S. and Mantel, L. H. (1976). DDT as an Accelerator of Limb Regeneration and Molting in Fiddler Crabs. *Estuar.Coast.Mar.Sci.* 4: 461-466.

EcoReference No.: 61096
Chemical of Concern: CBL,DDT,MLN,PRN; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(CBL,MLN),OK(DDT,PRN).

595. Weis, J. S. and Weis, P. (1975). Retardation of Fin Regeneration in Fundulus by Several Insecticides. *Trans.Am.Fish.Soc.* 104: 135-137.

EcoReference No.: 8232
Chemical of Concern: DDT,CBL,MLN,PRN; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(CBL),OK(DDT,MLN,PRN).

596. Weis, P. and Weis, J. S. (1974). Schooling Behavior of Menidia medidia in the Presence of the Insecticide Sevin (Carbaryl). *Mar.Biol.* 28: 261-263.

EcoReference No.: 6302
Chemical of Concern: CBL; Habitat: A; Effect Codes: BEH; Rejection Code: LITE EVAL CODED(CBL).

597. Weissling, T. J. and Meinke, L. J. (1991). Potential of Starch Encapsulated Semiochemical-Insecticide Formulations for Adult Corn Rootworm (Coleoptera: Chrysomelidae) Control. *J.Econ.Entomol.* 84: 601-609.

EcoReference No.: 73709
User Define 2: WASHT,CALFT
Chemical of Concern: MOM,CBF,CBL; Habitat: T; Effect Codes: POP; Rejection Code: OK.

598. Weltens, R., Vanderplaetse, F., Vangenechten, C., and Verhulst, T. (2000). Automated beta Galactosidase Activity Bioassay for Adult Daphnia magna Versus Classic Immobilization Test. *Bull.Environ.Contam.Toxicol.* 65: 139-146.

EcoReference No.: 55506
Chemical of Concern: Cd,Hg,Zn,CBL,HCCH,PCP,Se; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(CBL,PCP),OK(Cd,Hg,Zn,HCCH,Se).

599. Wernersson, A. S. and Dave, G. (1997). Phototoxicity Identification by Solid Phase Extraction and Photoinduced Toxicity to Daphnia magna. *Arch.Environ.Contam.Toxicol.* 32: 268-273.

EcoReference No.: 17714
Chemical of Concern: FA,FNV,CBL; Habitat: A; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(CBL),OK(FA,FNV).

600. Westlake, G. E., Hardy, A. R., and Stevenson, J. H. (1985). Effects of Storage and Pesticide Treatments on Honey Bee Brain Acetyl Cholinesterase Activities. *Bull.Environ.Contam.Toxicol.* 34: 668-675.

EcoReference No.: 35515
Chemical of Concern: CYP,PMR,DM,PHSL,AZ,CBL,DMT; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(DMT,CYP,CBL).

601. Whitten, B. K. and Goodnight, C. J. (1966). Toxicity of Some Common Insecticides to Tubificids. *J.Water Pollut.Control Fed.* 38: 227-235.

EcoReference No.: 8046
Chemical of Concern: DDT,PRN,HCCH,DLD,CBL,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL) OK(ALL CHEMS).

602. Wilder, I. B. and Stanley, J. G. (1983). RNA-DNA Ratio as an Index to Growth in Salmonid Fishes in the Laboratory and in Streams Contaminated by Carbaryl. *J.Fish Biol.* 22: 165-172.

EcoReference No.: 11074
Chemical of Concern: CBL; Habitat: A; Effect Codes: CEL,GRO; Rejection Code: LITE EVAL CODED(CBL).

603. Wood, B. and Payne, J. (1984). Influence of Single Applications of Insecticides on Net Photosynthesis of Pecan. *Hortscience* 19: 265-266.

EcoReference No.: 44270
Chemical of Concern: PHSL,MOM,CBL,AZ,FNV,DMT; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(AZ,DMT,MOM),OK(PHSL,CBL,FNV).

604. Wood, B. W. and Payne, J. A. (1986). Net Photosynthesis of Orchard Grown Pecan Leaves Reduced by Insecticide Sprays. *Hortscience* 21: 112-113.

EcoReference No.: 74343
Chemical of Concern: MOM,CBL,FNV,DMT,PHSL; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(MOM,DMT),OK(ALL CHEMS).

605. Worthley, E. G. and Schott, C. D. (1972). The Comparative Effects of CS and Various Pollutants on Fresh Water Phytoplankton Colonies of Wolffia papulifera Thompson. *Edgewater Arsenal Tech.Rep.EATR 4595* 29 p. (U.S.NTIS AD-736336).

EcoReference No.: 9184
Chemical of Concern: 24DXY,CBL,DZ,MLN,IAA,AND,DLD,DDT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBL,IAA,DZ),OK(ALL CHEMS).

606. Yoke, O. P. and Sudderuddin, K. I. (1975). Toxicological Studies of Four Insecticides Against Musca domestica L. *Southeast Asian J.Trop.Med.Public Health* 6: 525-531.

EcoReference No.: 70125
Chemical of Concern: RSM,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(RSM).

607. Yu, S. J. (1991). Insecticide Resistance in the Fall Armyworm, Spodoptera frugiperda (J. E. Smith). *Pestic.Biochem.Physiol.* 39: 84-91.

EcoReference No.: 73599
Chemical of Concern: MOM,PMR,CYP,CYT,BFT,TMT,FVL,DZ,CPY,MP,CBL,TDC,DDVP,SPS,TLM,MLN,FNV; Habitat: T; Effect Codes: MOR; Rejection Code: OK TARGET(MLN,FVL,CYP).

608. Yueh, L. Y. and Hensley, D. L. (1993). Pesticide Effect on Acetylene Reduction and Nodulation by Soybean and Lima Bean. *J.Am.Soc.Hortic.Sci.* 118: 73-76.

EcoReference No.: 70497
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern: PNB,DZ,CBL,MOM,SXD; Habitat: T; Effect Codes: BCM,PHY; Rejection Code: TARGET(SXD).

609. Yueh, L. Y. and Hensley, D. L. (1993). Pesticide Effect on Acetylene Reduction and Nodulation by Soybean and Lima Bean. *J.Am.Soc.Hortic.Sci.* 118: 73-76.

EcoReference No.: 70497
Chemical of Concern: CAPTAN,MANEB,ZINEB,MOM,MLN,PMR,BT,SXD,TFN,DZ,CBL,PNB; Habitat: T; Effect Codes: BCM,PHY; Rejection Code: LITE EVAL CODED(DZ),TARGET(SXD),OK(ALL CHEMS).

610. Zaga, A., Little, E. E., Rabeni, C. F., and Ellersieck, M. R. (1998). Photoenhanced Toxicity of a Carbamate Insecticide to Early Life Stage Anuran Amphibians. *Environ.Toxicol.Chem.* 17: 2543-2553.

EcoReference No.: 15683
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO,BEH; Rejection Code: LITE EVAL CODED(CBL).

611. Zeman, P. and Zelezny, J. (1985). The Susceptibility of the Poultry Red Mite, Dermanyssus gallinae (De Geer, 1778), to Some Acaricides Under Laboratory Conditions. *Exp.Appl.Acarol.* 1: 17-22.

EcoReference No.: 71145
Chemical of Concern: DDT,CBL,HCCH,PMR,CYP,DM,TMT; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(CYP).

612. Zimmerman, R. J. and Cranshaw, W. S. (1990). Compatibility of Three Entomogenous Nematodes (Rhabditida) in Aqueous Solutions of Pesticides Used in Turfgrass Maintenance. *J.Econ.Entomol.* 83: 97-100.

EcoReference No.: 71366
Chemical of Concern: PCB,DZ,Hg,CBL,CPY,PNB,BDC,BMY,DMB; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(DMB),OK(ALL CHEMS)//NO SPECIES(PCB).

613. Zinkl, J. G., Shea, P. J., Nakamoto, R. J., and Callman, J. (1987). Brain Cholinesterase Activity of Rainbow Trout Poisoned by Carbaryl. *Bull.Environ.Contam.Toxicol.* 38: 29-35.

EcoReference No.: 12399
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY,MOR,BEH,ACC; Rejection Code: LITE EVAL CODED (CBL).

Acceptable for ECOTOX but not OPP

1. Abad, A., Moreno, M. J., Pelegri, R., Martinez, M. I., Saez, A., Gamon, M., and Montoya, A. (1999). Determination of Carbaryl, Carbofuran and Methiocarb in Cucumbers and Strawberries by Monoclonal Enzyme Immunoassays and High-Performance Liquid Chromatography with Fluorescence Detection. An Analytical Comparison. *J.Chromatogr.A* 833: 3-12.

Chemical of Concern: CBL,CBF; Habitat: T; Rejection Code: NO CONC.

2. Abd El-Magid, M. M. (1986). Effect of Some Pesticides on the Growth of Blue-Green Alga Spirulina platensis. *C.A.Sel.-Environ.Pollut.* 26: (ABS No.105-220575t).

EcoReference No.: 12706
Chemical of Concern: CuS,CBL,HCCH,MLN,DDT,PIRM; Habitat: A; Effect Codes: POP; Rejection Code: NO ABSTRACT(ALL CHEMS).

3. Abdou, R. F. and Abdel-Wahab, M. A. (1985). Cytological and Developmental Effects of Certain Insecticides in Vicia faba. *Int.Pest Control* 27: 123-125.

EcoReference No.: 44263
Chemical of Concern: CBL,CPY,CYP,MTM; Habitat: T; Effect Codes: REP,GRO,CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

4. Acevedo, R. (1991). Preliminary Observations on Effects of Pesticides Carbaryl, Naphthol, and Chlorpyrifos on Planulae of the Hermatypic Coral Pocillopora damicornis. *Pac.Sci.* 45: 287-289.

EcoReference No.: 71944
Chemical of Concern: CBL,CPY; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(CBL,CPY).

5. Adair, R. J. and Holtkamp, R. H. (1999). Development of a Pesticide Exclusion Technique for Assessing the Impact of Biological Control Agents for Chrysanthemoides monilifera. *Biocontrol Sci.Technol.* 9: 383-390.

EcoReference No.: 77561
Chemical of Concern: CBF,DMT,FVL,CBL,BMY; Habitat: T; Effect Codes: POP,MOR; Rejection Code: NO ENDPOINT(FVL),MIXTURE(DMT,CBL,BMY,CBF),TARGET(CBL).

6. Adams, P. B. and Wong, J. A. L. (1991). The Effect of Chemical Pesticides on the Infection of Sclerotia of Sclerotinia minor by the Biocontrol Agent Sporidesmium sclerotivorum. *Phytopathology* 81: 1340-1343.

EcoReference No.: 70656
Chemical of Concern: PNB,CBL,CHD,DZ; Habitat: T; Effect Codes: PHY; Rejection Code: TARGET(DZ).

7. Adhikary, S. P. (1989). Effect of Pesticides on the Growth, Photosynthetic Oxygen Evolution and Nitrogen Fixation of Westiellopsis prolifica. *J.Gen.Appl.Microbiol.* 35: 319-326.

EcoReference No.: 74837
Chemical of Concern: CBF,CBL,DMT; Habitat: A; Effect Codes: GRO,MOR,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

8. Adhikary, S. P., Dash, P., and Pattnaik, H. (1984). Effect of the Carbamate Insecticide Sevin on Anabaena sp. and Westiellopsis prolifica. *Acta Microbiol.Hung.* 31: 335-338.

EcoReference No.: 9257
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO,PHY; Rejection Code: NO CONTROL(CBL).

9. Agnello, A. M., Spangler, S. M., Reissig, W. H., Lawson, D. S., and Weires, R. W. (1992). Seasonal Development and Management Strategies for Comstock Mealybug (Homoptera: Pseudococcidae) in New York Pear Orchards. *J.Econ.Entomol.* 85: 212-225.

EcoReference No.: 73713
Chemical of Concern: MOM,CPY,CBL,MP,AZ,ES,RSM,EFV,MVP; Habitat: T; Effect Codes: POP,MOR; Rejection Code: OK(MOM),TARGET(RSM,EFV).

10. Agrawal, H. P. (1986). The Accumulation of Biocide Residues in a Few Tissues of Lamellidens marginalis. *J.Anim.Morphol.Physiol.* 33: 45-50.

EcoReference No.: 3986
Chemical of Concern: CBL,CHD; Habitat: A; Effect Codes: ACC; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

11. Ahmad, M., Hollingworth, R. M., and Wise, J. C. (2002). Broad-Spectrum Insecticide Resistance in Obliquebanded Leafroller _Choristoneura rosaceana_ (Lepidoptera: Tortricidae) from Michigan. *Pest Manag.Sci.* 58: 834-838.

EcoReference No.: 70966
Chemical of Concern: IDC,CFP,EMMB,MFZ,TUZ,BFT,ZCYP,AZ,CPY,PSM,CYP,DM,EFV,ES,TDC,MOM,MZ,CBL,SS; Habitat: T; Effect Codes: MOR; Rejection Code: OK(MOM),TARGET(CYP,BFT,EFV).

12. Ahmad, M. and McCaffery, A. R. (1991). Elucidation of Detoxication Mechanisms Involved in Resistance to Insecticides in the Third Instar Larvae of a Field-Selected Strain of Helicoverpa armigera with the Use of Synergists. *Pestic.Biochem.Physiol.* 41: 41-52.

EcoReference No.: 74894
Chemical of Concern: PPB,CYP,FNV,DDT,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO MIXTURE(PPB),TARGET(CYP,CBL).

13. Ahmad, M. H. and Vekataraman, G. S. (1973). Tolerance of Aulosira fertilissima to Pesticides. *Curr.Sci.* 42: 108 (ABS).

Chemical of Concern: MCPB,MCPA,HCCH,PRN,EN,CBL,DZ,PPN; Habitat: A; Rejection Code: NO ABSTRACT.

14. Al-Thaqafi, K. and White, K. N. (1991). Effect of Shore Position and Environmental Metal Levels on Body Metal Burdens in the Barnacle, Elminius modestus. *Environ.Pollut.* 69: 89-104.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO CONC.

15. Alawi, M. A., Gharaibeh, S., and Al Shureiki, Y. (1990). Rueckstandsuntersuchungen auf Fenitrothion und Pyrethroide in Wasser, Boden und Pflanzen nach der Heuschreckenbekaempfung in Jordanien 1989. *Chemosphere* 20: 443-447 (GER).

EcoReference No.: 3113
Chemical of Concern: PYT,CBL; Habitat: A; Rejection Code: NO FOREIGN.

16. Ali, A. D. and Garcia, J. (1988). White Grub Control in Kentucky Bluegrass, 1987. *Insectic.Acaric.Tests* 13: 330 (No. 6G).

EcoReference No.: 88829
Chemical of Concern: CBL,EP; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(EP,CBL).

17. Ali, M. S. (1989). Determination of N-Methylcarbamate Pesticides in Liver by Liquid Chromatography. *J.Assoc.Off.Anal.Chem.* 72: 586-592.

Chemical of Concern: MOM,ADC,CBF,CBL,MCB; Habitat: T; Rejection Code: NO IN VITRO.

18. Aly, O. M. and El-Dib, M. A. (1971). Studies on the Persistence of Some Carbamate Insecticides in the Aquatic Environment - I. Hydrolysis of Sevin, Baygon, Pyrolan and Dimetilan in Waters.

Water Res. 5: 1191-1205.

EcoReference No.: 60705
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SPECIES.

19. Amalin, D. M., Pena, J. E., Yu, S. J., and McSorley, R. (2000). Selective Toxicity of Some Pesticides to Hibana velox (Araneae: Anyphaenidae), a Predator of Citrus Leafminer. *Fla.Entomol.* 83 : 254-262.

EcoReference No.: 68114
Chemical of Concern: ALSV,Cu,CPY,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

20. Amer, S. (1964). Cytological Effects of N-Methyl-1-Naphthyl Carbamate "Sevin". *Naturwissenschaften* 51: 494-495.

EcoReference No.: 27777
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO GENETIC,TARGET(CBL).

21. Amer, S. (1965). Cytological Effects of Pesticides I. Mitotic Effects of N-Methyl-1-Naphthyl Carbamate "Sevin". *Cytologia* 30: 175-181.

EcoReference No.: 44264
Chemical of Concern: CBL; Habitat: T; Effect Codes: CEL; Rejection Code: NO ENDPOINT(CBL).

22. Amer, S. M., Fahmy, M. A., and Donya, S. M. (1996). Cytogenetic Effect of Some Insecticides in Mouse Spleen. *J.Appl.Toxicol.* 16: 1-3.

EcoReference No.: 75291
Chemical of Concern: CPY,CBL,DDT,MLN,MOM; Habitat: T; Effect Codes: CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

23. Amer, S. M. and Farah, O. R. (1968). Cytological Effects of Pesticides III. Meiotic Effects of N-Methyl-1-Naphthyl Carbamate "Sevin". *Cytologia* 33: 337-344 .

EcoReference No.: 44248
Chemical of Concern: CBL; Habitat: T; Effect Codes: CEL,REP; Rejection Code: NO ENDPOINT(CBL).

24. Anderson, J. F. and Wojtas, M. A. (1986). Honey Bees (Hymenoptera: Apidae) Contaminated with Pesticides and Polychlorinated Biphenyls. *J.Econ.Entomol.* 79: 1200-1205.

Chemical of Concern: CBL,MOM,MP,MLN,DZ,CHD,ES,Captan; Habitat: T; Rejection Code: NO CONTROL(ALL CHEMS).

25. Andrawes, N. R., Chancey, E. L., Crabtree, R. J., Herrett, R. A., and Weiden, M. H. J. (1972). Fate of Naphthyl-1-14C Carbaryl in Laying Chickens. *J.Agric.Food Chem.* 20: 608-617.

EcoReference No.: 35652
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT(CBL).

26. Andreu-Moliner, E. S., Almar, M. M., Legarra, I., and Nunez, A. (1986). Toxicity of Some Ricefield Pesticides to the Crayfish P. clarkii, Under Laboratory and Field Conditions in Lake Albufera (Spain). *J.Environ.Sci.Health Part B* 21: 529-537.

EcoReference No.: 12517
Chemical of Concern: CBF,FNT,MLN,TCF,CBL,ES,HCCH,CuS,MLT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBF),NO MIXTURE(MLT),OK(CBL),NO ENDPOINT(CuS).

27. Applegate, V. C., Howell, J. H., Hall, A. E. Jr., and Smith, M. A. (1957). Toxicity of 4,346 Chemicals to Larval Lampreys and Fishes. *Spec.Sci.Rep.Fish.No.207, Fish Wildl.Serv., U.S.D.I., Washington, D.C.* 157 p.

EcoReference No.: 638
Chemical of Concern: 24DXY,DZ,HCCH,MLN,MP,ACL,NAA,NYP,CST,Cu,RTN,NaN3,Ni,CuS,PCP,NaPCP,NaCr,DBAC,Zn,ATZ,Cd,NaID,Pb,As,DCB,CBL; Habitat: A; Effect Codes: BEH,MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

28. Areekul, S. (1986). Toxicity to Fishes of Insecticides Used in Paddy Fields and Water Resources. I. Laboratory Experiment. *Kasetsart J.* 20: 164, 178 (Thi) (Eng Abs); C.A.Sel.-Environ.Pollut.12:106-190732T (1987).

EcoReference No.: 283
User Define 2: ECOTOX MED,WASH,CALF,CORE
Chemical of Concern: CBL,CPY,DS,DZ,MLN,PRT,ADC; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN.

29. Arora, N. and Kulshrestha, S. K. (1984). Comparison of the Toxic Effects of Two Pesticides on the Testes of a Fresh Water Teleost Channa striatus BL. *Acta Hydrochim.Hydrobiol.* 12: 435-441.

EcoReference No.: 11260
Chemical of Concern: CBL,ES; Habitat: A; Effect Codes: CEL,PHY; Rejection Code: NO ENDPOINT(CBL,ES).

30. Arora, N. and Kulshrestha, S. K. (1985). Effects of Chronic Exposure to Sublethal Doses of Two Pesticides on Alkaline and Acid Phosphatase Activities in the Intestine of a Fresh Water Teleost, Channa striatus BL. (Channidae). *Acta Hydrochim.Hydrobiol.* 13: 619-624.

EcoReference No.: 11306
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: BCM; Rejection Code: NO ENDPOINT(CBL,ES).

31. Arunachalam, S., Palanichamy, S., and Balasubramanian, M. P. (1985). Effect of Carbaryl on Esterases in the Air-Breathing Fish Channa punctatus (Bloch). *Proc.Indian Acad.Sci.(Anim.Sci.)* 94: 73-77.

EcoReference No.: 12459
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: NO ENDPOINT(CBL).

32. Arunachalam, S., Palanichamy, S., Vasanthi, M., and Baskaran, P. (1990). The Impact of Pesticides on the Feeding Energetics and Body Composition in the Freshwater Catfish Mystus vittatus. *In: R.Hirano and I.Hanyu (Eds.), Proc.of the 2nd Asian Fisheries Forum, Apr.17-22, 1989, Tokyo, Japan, Asian Fisheries Society, Manila, Philippines* 939-941.

EcoReference No.: 4046
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: BEH,GRO,PHY,BCM;

Rejection Code: NO ENDPOINT(ALL CHEMS).

33. Aspock, H. and Ander Lan, H. (1963). Okologische Auswirkungen und Physiologische Besonderheiten des Pflanzenschutzmittels Sevin (1-Naphtyl-N-Methylcarbamat). *Z.Angew.Zool.* 50: 343-380 (GER)(ENG ABS).

EcoReference No.: 59316
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

34. Atiri, G. I., Ivbijaro, M. F., and Oladele, A. D. (1991). Effects of Natural and Synthetic Chemicals on the Incidence and Severity of Okra Mosaic Virus in Okra. *Trop.Agric.* 68: 178-180.

EcoReference No.: 75423
Chemical of Concern: DMT,AZD,CBL,LCYT,CYP; Habitat: T; Effect Codes: PHY; Rejection Code: LITE EVAL CODED(AZD),OK(CBL,LCYT),NO MIXTURE(DMT,CYP),TARGET(CBL).

35. Atkins, E. L. and Kellum, D. (1986). Comparative Morphogenic and Toxicity Studies on the Effect of Pesticides on Honeybee Brood. *J.Apic.Res.* 25: 242-255 .

EcoReference No.: 70351
Chemical of Concern: DZ,CPY,EN,CBL,ES; Habitat: T; Rejection Code: TARGET(DZ).

36. Atlavinyte, O., Daciulyte, J., and Lugauskas, A. (1977). The Effect of Lumbricidae on Plant Humification and Soil Organism Biocenoses Under Application of Pesticides. *Ecol.Bull.* 25: 222-228.

EcoReference No.: 70733
Chemical of Concern: SZ,CBL; Habitat: T; Effect Codes: GRO,POP,BEH,BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

37. Atterby, H., Kerins, G. M., and MacNicoll, A. D. (2005). Whole-Carcass Residues of the Rodenticide Difenacoum in Anticoagulant-Resistant and -Susceptible Rat Strains (Rattus norvegicus). *Environ.Toxicol.Chem.* 24: 318-323.

EcoReference No.: 79379
Chemical of Concern: DFM,CBL; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT(DFM).

38. Awasthi, M. D. (1990). Soil Retention and Plant Uptake of Soil Applied Granular Phorate and Carbaryl. *Indian J.Plant Prot.* 18: 219-223.

EcoReference No.: 78830
Chemical of Concern: PRT,CBL; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT(PRT,CBL),TARGET(CBL).

39. Babcock, J. M. and Tanigoshi, L. K. (1988). Resistance Levels of Typhlodromus occidentalis (Acari: Phytoseiidae) from Washington Apple Orchards to Ten Pesticides. *Exp.Appl.Acarol.* 4: 151-157.

EcoReference No.: 74105
Chemical of Concern: CHX,FTT,PPG,AZ,DZ,MOM,CBL,FNV,ES,MDT; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(DZ).

40. Bahl, A. K. and Pomeroy, B. S. (1978). Acute Toxicity in Poults Associated with Carbaryl Insecticide. *Avian Dis.* 22: 526-528.

EcoReference No.: 35705
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,ACC; Rejection Code: NO ENDPOINT(CBL).

41. Baidina, N. L. (1994). Inactivation of Heavy Metals by Humus and Zeolites in a Technogenically Polluted Soil. *Pochvovedenie* 0: 121-125.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO SPECIES,NO TOX DATA.

42. Bajpai, V. N. and Perti, S. L. (1969). Resistance to Malathion. *Pesticides* 3: 43-45.

EcoReference No.: 60753
Chemical of Concern: MLN,DZ,DLD,DDT,HCCH,CBL,FNTH; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

43. Bakalian, A. B. (1985). The Use of Sevin on Estuarine Oyster Beds in Tillamook Bay, Oregon. *Coast.Zone Manage.J.* 13 : 49-83.

EcoReference No.: 60754
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO DURATION,NO TOX DATA.

44. Bakthavathsalam, R., Murugaboopathy, N., and Karnan, P. (1987). Effects of Carbofuran on Certain Tissues of the Fish Lepidocephalichthys thermalis. *Aquat.Sci.Fish.Abstr.17(11, Pt.1):16596-1Q17 / Environ.Ecol.* 5: 216-219.

there is no abstract attached to the cover sheet. it has fallen off//
EcoReference No.: 11859
User Define 2: TITLE MED,WASH,CALF
Chemical of Concern: CBL,CBF; Habitat: A; Effect Codes: CEL; Rejection Code: NO ABSTRACT.

45. Balasubramanian, S. and Ramaswami, M. (1991). Effect of Pesticide Sevin on Acetylcholinesterase (AchE) Activity in Different Tissues of Oreochromis mossambicus (Peters). *J.Ecobiol.* 3: 117-122.

EcoReference No.: 7521
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: NO ENDPOINT(CBL).

46. Baldwin, N. A. and Bennett, J. R. (1990). Evaluation of Chemical Treatments for Inhibition of Earthworm Casting in Amenity Turf. *Tests Agrochem.Cultiv.* 11: 14-15.

EcoReference No.: 40463
Chemical of Concern: Fe,RTN,CuS,KPM,CBL,CHD,SFR; Habitat: T; Effect Codes: PHY; Rejection Code: NO OM, ERE,OK TARGET(ALL CHEMS).

47. Barcelo, J. and Poschenrieder, C. (1992). Plant Responses to Heavy Metal Contamination (Respuestas de las Plantas a la Contaminacion por Metales Pesados). *Suelo Planta* 2: 345-361.

EcoReference No.: 56498
Chemical of Concern: CBL; Habitat: T; Rejection Code: NON-ENGLISH,TARGET(CBL).

48. Barker, J. L. (1964). An Evaluation of the Effect of Sevin upon Fish and Some Aquatic Macroinvertebrates. *New Jersey Dep.of Conservation and Economic Dev., Div.of Fish and*

Game, Fish.Res.and Dev.Section, Misc.Rep.No.26 12 p.

EcoReference No.: 15678
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

49. Baronia, A. K., Sahai, Y. N., and Sharma, J. D. (1992). Histopathological Alterations Induced by Carbaryl in the Adrenals of Rat. *J.Ecobiol.* 4: 201-203.

EcoReference No.: 86936
Chemical of Concern: CBL; Habitat: T; Effect Codes: CEL; Rejection Code: NO ENDPOINT(CBL).

50. Barua, B. and Jana, S. (1986). Effects of Heavy Metals on Dark Induced Changes in Hill Reaction Activity, Chlorophyll and Protein Contents, Dry Matter and Tissue Permeability in Detached Spinacia oleracea L. Leaves. *Photosynthetica* 20: 74-76.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

51. Basak, P. K. and Konar, S. K. (1976). Pollution of Water by Pesticides and Protection of Fishes: Parathion. *Proc.Natl.Acad.Sci.India Sect.B (Biol.Sci.)* 46: 382-392.

EcoReference No.: 60982
Chemical of Concern: DDT,HCCH,ES,EN,AND,DMT,PRN,MP,MLN,PPHD,CBL,Cu,Captan,FNT; Habitat: A; Effect Codes: MOR,BEH,CEL,GRO,REP; Rejection Code: OK(PRN),NO SURVEY(DDT,HCCH,ES,EN,AND,DMT,MP,MLN,PPHD,CBL,Cu,Captan,FNT).

52. Baydina, N. L. (1996). Inactivation of Heavy Metals by Humus and Zeolites in Industrially Contaminated Soil. *Eurasian Soil Sci.* 28: 96-105.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE,SPECIES.

53. Beavis, C., Simpson, P., Syme, J., and Ryan, C. (1991). Chemicals for the Protection of Field Crops, Forage Crops, and Pastures. *Queensland Dep.of Primary Ind.Info.Ser.No.QI91006, Infopest: Chemicals for the Protection of Field Crops, Forage Crops, and Pastures, 2nd Edition, Brisbane, Queensland, Australia* 312 p.

Chemical of Concern: PIM,MOM,TBO,EFV,DM,MB,TCF,PPHN,ADC,AZ,CBL,DZ,FNT,ES,PMR,DU,ATZ,GYP,PAQT,BMN,SZ,CPY,DDVP,TDC,BDC; Habitat: T; Rejection Code: NO TOX DATA.

54. Beavis, C., Simpson, P., Syme, J., and Ryan, C. (1991). Chemicals for the Protection of Fruit and Nut Crops. *Queensland Dep.of Primary Ind.Info.Ser.No.QI91004, Infopest: Chemicals for the Protection of Field Crops, Forage Crops, and Pastures, 2nd Edition, Brisbane, Queensland, Australia* 312 p.

Chemical of Concern: PIM,MOM,TBO,EFV,DM,MB,TCF,PPHN,ADC,AZ,CBL,DZ,FNT,ES,PMR,DU,ATZ,GYP,PAQT,BMN,SZ,CPY,DDVP,TDC,BDC; Habitat: T; Rejection Code: NO TOX DATA.

55. Beavis, C., Simpson, P., Syme, J., and Ryan, C. (1991). Chemicals for the Protection of Ornamentals and Turf. *Queensland Dep.of Primary Ind.Info.Ser.No.QI91003, Infopest: Chemicals for the Protection of Field Crops, Forage Crops, and Pastures, 2nd Edition, Brisbane, Queensland, Australia* 312 p.

Chemical of Concern: PIM,MOM,TBO,EFV,DM,MB,TCF,PPHN,ADC,AZ,CBL,DZ,FNT,ES,PMR,DU,ATZ,GYP, PAQT,BMN,SZ,CPY,DDVP,TDC,BDC; Habitat: T; Rejection Code: NO TOX DATA.

56. Beavis, C., Simpson, P., Syme, J., and Ryan, C. (1991). Chemicals for the Protection of Vegetable Crops. *Queensland Dep.of Primary Ind.Info.Ser.No.QI91005, Infopest: Chemicals for the Protection of Field Crops, Forage Crops, and Pastures, 2nd Edition, Brisbane, Queensland, Australia* 312 p.

Chemical of Concern: PIM,MOM,TBO,EFV,DM,MB,TCF,PPHN,ADC,AZ,CBL,DZ,FNT,ES,PMR,DU,ATZ,GYP, PAQT,BMN,SZ,CPY,DDVP,TDC,BDC; Habitat: T; Rejection Code: NO TOX DATA.

57. Beck, L. and Dumpert, K. (1984). Vergleichende Okologische Untersuchungen in Einem Buchenwald nach Einwirkung von Umweltchemikalien. *Projekt: Methoden zur Okologiche Bewertung von Chemikalien (Voortgangsrapportage Jan.'82 - Juni '84).*

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO ARCHIVE.

58. Behki, R. M. (1994). Degradation of Thiocarbamate Herbicides and Organophosphorus Insecticides by Rhodococcus Species. *In: G.R.Chaudhry (Ed.), Biological Degradation of Bioremediation of Toxic Chemicals, Chapter 11, Dioscorides Press, Portland, OR* 234-255.

Chemical of Concern: TRL,CYC,VNT,BTY,MXC,GFS,AND,CBL,MLT,EPTC; Habitat: T; Rejection Code: NO BACTERIA.

59. Behrendt, S. and Menck, B. H. (1974). Herbicidal Spectrum and Effect of Bentazon-Dichlorprop with Special Consideration of Developmental Stages of Weeds, Temperature at Time of Application and Rainfall Before and After Application (Wirkungsspektrum und Wirkung von Bentazon + Dichlorprop unter Besonderer Berucksichtigung der Unkrautstadien, der Temperatur zum Zeipunkt und der Niederschlage von und nach der Behandlung). *Z Pflanzenkr.Pflanzenschutz* 81: 257-264.

EcoReference No.: 30146
Chemical of Concern: BT,DPP1,CBL; Habitat: T; Rejection Code: NO FOREIGN.

60. Bellows, T. S. Jr. and Morse, J. G. (1993). Toxicity of Insecticides Used in Citrus to Aphytis Melinus debach (Hymenoptera: Aphelinidae) and Rhizobius lophanthae (Blaisd.) (Coleoptera: Coccinellidae). *Can.Entomol.* 125: 987-994.

EcoReference No.: 59334
Chemical of Concern: MOM,AZ,BFT,EFV,FPP,FVL,CBL,TDC,MVP,Naled,TCF; Habitat: T; Effect Codes: MOR; Rejection Code: OK(MOM),TARGET(FVL,BFT,EFV).

61. Bernard, F. J. and Lane, C. E. (1961). Absorption and Excretion of Copper Ion During Settlement and Metamorphosis of the Barnacle, Balanus Amphitrite niveus. *Biol.Bull.* 121: 438-448.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO DURATION.

62. Beys-l'Hoest, B. (1991). Pollution of Ecosystems by Acridian Control Measures (La Pollution des Ecosystemes par la Lutte Antiacridienne). *Nat.Belg.* 72: 41-64 (FRE).

EcoReference No.: 71631
Chemical of Concern: HCCH,DLD,DZ,CBL; Habitat: T; Rejection Code: NO FOREIGN.

63. Bhardwaj, A. C. and Rakesh Sharma (2000). Predatory Response of Naiad of Pantala flavescens Fabr.

(Odonata) Under Fenvalerate and Carbaryl Constrain. *J.Exp.Zool.(India)* 3: 115-117.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SOURCE.

64. Bhattacharya, S. (2001). Stress Response to Pesticides and Heavy Metals in Fish and Other Vertebrates. *PINSA-B: Proc.Int.Indian Natl.Sci.Acad.Part B* 67: 215-246.

EcoReference No.: 70123
Chemical of Concern: EN,ES,DLD,TXP,Hg,Cd,PCB,DDT,HCCH,AND,As,CBL; Habitat: A; Rejection Code: NO REVIEW.

65. Bhattacharya, S. (1993). Target and Non-Target Effects of Anticholinesterase Pesticides in Fish. *Sci.Total Environ.(Suppl.)* 859-876.

EcoReference No.: 4311
User Define 2: ECOTOX MED,WASH,CALF
Chemical of Concern: CBF,CBL,MP; Habitat: A; Effect Codes: BCM,MOR; Rejection Code: NO CONTROL.

66. Bielecki, K. and Skrabka, M. (1976). Effect of Some Herbicides on Photosynthesis of Spirodela polyrrhiza (Lemnaceae). *Acta Agrobot.* 29: 59-68 (POL) (ENG ABS).

EcoReference No.: 30665
Chemical of Concern: SZ,CBL; Habitat: A; Rejection Code: NO FOREIGN.

67. Bills, T. D. and Marking, L. L. (1988). Control of Nuisance Populations of Crayfish with Traps and Toxicants. *Prog.Fish-Cult.* 50: 103-106.

EcoReference No.: 7603
Chemical of Concern: EDT,CBL,MLN,CYF,Cu,CuS,RTN,NaN3,ATM,CYF; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

68. Bittar, E. E. and Wu, J. R. (1993). Influence of Pentachlorophenol on Light Emission from Single Barnacle Muscle Fibers Preloaded with Aequorin. *Environ.Health Perspect.* 101: 622-625.

Chemical of Concern: PCP,CBL; Habitat: A; Rejection Code: NO IN VITRO.

69. Blickenstaff, C. C. and Skoog, F. E. (1974). Insecticides Tested Versus Grasshoppers: Correlations Between Results of Ground and Aerial Applications. *J.Econ.Entomol.* 67: 127-129.

EcoReference No.: 71348
Chemical of Concern: CPY,CBL,DZ; Habitat: T; Rejection Code: TARGET(DZ).

70. Bluzat, R. and Seuge, J. (1979). Effects of Three Insecticides (Lindane, Fenthion, and Carbaryl) on the Acute Toxicity to Four Aquatic Invertebrate Species and the Chronic Toxicity. *Environ.Pollut.* 18: 51-70 (FRE) (ENG ABS).

EcoReference No.: 5589
Chemical of Concern: CBL,HCCH,FNTH; Habitat: A; Effect Codes: MOR,REP; Rejection Code: NO FOREIGN (ALL CHEMS).

71. Bluzat, R. and Seuge, J. (1979). Study of the Chronic Toxicity of Two Insecticides Carbaryl and Lindane on the F-1 Generation of Lymnaea stagnalis (Mollusca Gastropoda Pulmonata) 1. *Hydrobiologia* 65: 245-255 (FRE) (ENG ABS).

EcoReference No.: 6776

Chemical of Concern: CBL,HCCH; Habitat: A; Rejection Code: NO FOREIGN.

72. Bodola, A. (1968). The Effect the Application of Sevin to a Stream had on Some Immature Insect Species. *Bur Sport Fish Wildl Unpubl Rep* 48.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ARCHIVE.

73. Bogacka, T. and Groba, J. (1980). Toxicity and Biodegradation of Chlorfenvinphos, Carbaryl, and Propoxur in Water Environment. *Bromatol.Chem.Toksykol.* 13: 151-158 (POL) (ENG ABS).

EcoReference No.: 6191
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY,BCM,MOR; Rejection Code: NO FOREIGN(CBL).

74. Bogaerts, P., Bohatier, J., and Bonnemoy, F. (2001). Use of the Ciliated Protozoan Tetrahymena pyriformis for the Assessment of Toxicity and Quantitative Structure-Activity Relationships of Xenobiotics: Comparison with the Microtox Test. *Ecotoxicol.Environ.Saf.* 49: 293-301.

EcoReference No.: 62033
Chemical of Concern:
Hg,Cd,CuS,CrAC,Zn,Mn,Fe,Pb,Co,Ni,As,CBL,MLN,PRN,HCCH,DM,ATZ,DU,PL, Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(ATZ,CuS,CrAC),NO PUBL AS(PCP,NaPCP),OK(ALL CHEMS).

75. Bolhar-Nordenkampf, H. R. (1975). Changes in Chlorophyll Content in Ontogenetically Different Leaves of Phaseolus Vulgaris Var. Nanus L. After Atrazine Application (Die Veranderungen des Chlorophyllgehaltes in Ontogenetisch verschiedenen Blattern von Phaseolus vulgaris var.nannus l. nach Behandlung mit Atrazin). *Biochem.Physiol.Pflanz.(BPP)* 167: 41-64.

EcoReference No.: 30772
Chemical of Concern: ATZ,CBL; Habitat: T; Rejection Code: NO FOREIGN.

76. Boone, M. D. and James, S. M. (2003). Interactions of an Insecticide, Herbicide, and Natural Stressors in Amphibian Community Mesocosms. *Ecol.Appl.* 13: 829-841.

EcoReference No.: 81455
Chemical of Concern: ATZ,CBL; Habitat: AT; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL CODED(ATZ),OK(ALL CHEMS).

77. Borkowski, J. and Jankiewicz, L. S. (1979). Inhibition of Spinach Bolting by Growth Regulators. *Acta Agrobot.* 32: 233-238.

EcoReference No.: 30264
Chemical of Concern: MLH,CBL; Habitat: T; Effect Codes: GRO; Rejection Code: OK(MLH),NO COC(FAME),TARGET(CBL).

78. Bossard, R. L., Dryden, M. W., and Broce, A. B. (2002). Insecticide Susceptibilities of Cat Fleas (Siphonaptera: Pulicidae) from Several Regions of the United States. *J.Med.Entomol.* 39: 742-746.

EcoReference No.: 68605
User Define 2: NEW PPB
Chemical of Concern: PYT,PMR,CBL,MLN,PPB; Habitat: T; Effect Codes: MOR; Rejection Code: NO MIXTURE(PPB).

79. Bowman, J. S. and Barry, D. W. (1988). Control of Lepidopterous Larvae on Late Season Sweet Corn

with Foliar Sprays, 1987. *Insectic.Acaric.Tests* 13: 113-114 (No. 37E).

Chemical of Concern: CPY,MP,CYF,CYP,FNV,EFV,PMR,MOM,TDC,CBL; Habitat: T; Rejection Code: NO DURATION(CPY,FNV,TARGET-ALL CHEMS).

80. Bowman, M. C., Oller, W. L., Cairns, T., Gosnell, A. B., and Oliver, K. H. (1981). Stressed Bioassay Systems for Rapid Screening of Pesticide Residues. Part I: Evaluation of Bioassay Systems. *Arch.Environ.Contam.Toxicol.* 10: 9-24.

EcoReference No.: 2192
Chemical of Concern: ATZ,CBL,HgCl2,DLD,PRN,Maneb; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

81. Bozsik, A. (1991). Effect of Chemcials on Aphidophagous Insects: Response of Adults of Common Green Lacewing Chrysoperla carnea to Pesticides. *In: L.Polgar, et al.(Eds.), Behaviour and Impact of Aphidophaga, 4th Meet.of the IOBC W.G.Ecology of Ephidophaga, Sept.1990, Godollo, Hungary, SPB Acad.Publ.B.V., The Hague, Netherlands* 297-304.

EcoReference No.: 76482
Chemical of Concern: DM,TCF,CBL,ES,MDT,MLX,EPH,PHSL,AMZ,Captan,DOD,Zineb,FRM,PCZ; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS),TARGET(CBL).

82. Brandon, P. C. and Elgersma, O. (1973). Effects of alpha-Benzyl-alpha-Bromo-Malodinitrile on the Primary Electron Acceptor of Photosystem II in Spinach Chloroplasts. *Biochim.Biophys.Acta* 292: 753-762.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

83. Brattsten, L. B., Holyoke, C. W. Jr., Leeper, J. R., and Raffa, K. F. (1986). Insecticide Resistance: Challenge to Pest Management and Basic Research. *Science* 231: 1255-1260.

EcoReference No.: 72033
Chemical of Concern: CBL,DDT,AND,PYN,DZ,PPB,PRN,MP,ACP; Habitat: T; Rejection Code: NO REVIEW.

84. Brattsten, L. B. and Metcalf, R. L. (1973). Age-Dependent Variations in the Response of Several Species of Diptera to Insecticidal Chemicals. *Pestic.Biochem.Physiol.* 3: 189-198.

EcoReference No.: 87381
Chemical of Concern: DLD,AND,PPB,CBL; Habitat: T; Effect Codes: PHY,ACC,MOR; Rejection Code: NO CONTROL(CBL,DLD,AND,PPB).

85. Brattsten, L. B. and Metcalf, R. L. (1970). The Synergistic Ratio of Carbaryl with Piperonyl Butoxide as an Indicator of the Distribution of Multifunction Oxidases in the Insecta. *J.Econ.Entomol.* 63: 101-104.

EcoReference No.: 39905
Chemical of Concern: PPB,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL,MIXTURE(PPB),OK(CBL),TARGET(CBL).

86. Breckenridge, A. M., Leck, J. B., Park, B. K., Serlin, M. J., and Wilson, A. (1978). Mechanisms of Action of the Anticoagulants Warfarin, 2-Chloro-3-Phytylnaphthoquinone (Cl-K), Acenocoumarol, Brodifacoum and Difenacoum in the Rabbit. *Br.J.Pharmacol.* 64: 399P.

EcoReference No.: 75568

Chemical of Concern: BDF,WFN,DFM,CBL; Habitat: T; Rejection Code: NO ENDPOINT,CONTROL(ALL CHEMS).

87. Bressa, G., Bronzi, P., Romano, P., Carmignato, F., Dorini, M., and Sisti, E. (1996). Chlorinated Pesticides and PCB Content in Thermal Aquaculture of Sturgeon (Acipenser naccarii). *Food Addit.Contam.* 13: 843-850.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO MIXTURE,CONC.

88. Bridges, C., Little, E., Gardiner, D., Petty, J., and Huckins, J. (2004). Assessing the Toxicity and Teratogenicity of Pond Water in North-Central Minnesota to Amphibians. *Environ.Sci.Pollut.Res.* 11: 233-239.

Chemical of Concern: ATZ,CBL; Habitat: A; Rejection Code: NO EFFLUENT.

89. Bridges, T. S. and Farrar, J. D. (1997). The Influence of Food Ration on Sediment Toxicity in Neanthes arenaceodentata (Annelida: Polychaeta). *Environ.Toxicol.Chem.* 16: 1659-1665.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO CONC,SEDIMENT.

90. Bridges, T. S. and Farrar, J. D. (1997). The Influence of Worm Age, Duration of Exposure and Endpoint Selection on Bioassay Sensitivity for Neanthes areanaceodentata (Annelida: Polychaeta). *Environ.Toxicol.Chem.* 16: 1650-1658.

Chemical of Concern: CBL; Habitat: AT; Rejection Code: NO TOXICANT,SEDIMENT,CONC.

91. Bringmann, G. and Kuhn, R. (1977). Limiting Values for the Damaging Action of Water Pollutants to Bacteria (Pseudomonas putida) and Green Algae (Scenedesmus quadricauda) in the Cell Multiplication Inhibition Test. *Wasser-Abwasser-Forsch.10(3/4):87-98 (GER) (ENG ABS); TR-80-0400, TR-78-0043, Literature Research Company* (GER)(ENG TRANSL)(OECD Data File).

EcoReference No.: 7453
Chemical of Concern: CBL,HCCH,Cr,CN,FUR,CuS,BZO,As,Ni,Cd,Se,ATZ,Pb,AMSV; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

92. Bringmann, G. and Kuhn, R. (1977). Limiting Values for the Damaging Action of Water Pollutants to Bacteria (Pseudomonas putida) and Green Algae (Scenedesmus quadricauda) in the. *Wasser-Abwasser-Forsch.10(3/4):87-98 (GER) (ENG ABS); TR-80-0400, TR-78-0043, Literature Research Company* (GER)(ENG TRANSL)(OECD Data File).

EcoReference No.: 7453
Chemical of Concern: CBL,HCCH,Cr,CN,FUR,Cu,CuS,BZO,As,Ni,Cd,Se,ATZ,Pb; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN,LITE EVAL CODED(OW-TRV-Cu).

93. Bringmann, G. and Kuhn, R. (1977). Limiting Values for the Damaging Action of Water Pollutants to Bacteria (Pseudomonas putida) and Green Algae (Scenedesmus quadricauda) in the Cell Multiplication Inhibition Test. *Wasser-Abwasser-Forsch.10(3/4):87-98 (GER) (ENG ABS) / TR-80-0400, TR-78-0043, Literature Research Company* (GER)(ENG TRANSL)(OECD Data File).

EcoReference No.: 7453
Chemical of Concern:

CBL,HCCH,NaCr,CN,FUR,CuS,BZO,As,Ni,Cd,Se,ATZ,Pb,AMSV,NaBr,Ag,NaID,C8OH,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

94. Bringmann, G. and Kuhn, R. (1977). Limiting Values for the Damaging Action of Water Pollutants to Bacteria (Pseudomonas putida) and Green Algae (Scenedesmus quadricauda) in the Cell Multiplication Inhibition Test. *Wasser-Abwasser-Forsch.10(3/4):87-98 (GER) (ENG ABS) / TR-80-0400, TR-78-0043, Literature Research Company* (GER)(ENG TRANSL)(OECD Data File).

EcoReference No.: 7453
Chemical of Concern:
CBL,HCCH,NaCr,CN,FUR,CuS,BZO,As,Ni,Cd,Se,ATZ,Pb,AMSV,NaBr,Ag,NaID,C8OH,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

95. Bringmann, G. and Kuhn, R. (1977). Limiting Values for the Damaging Action of Water Pollutants to Bacteria (Pseudomonas putida) and Green Algae (Scenedesmus quadricauda) in the Cell Multiplication Inhibition Test. *Z.Wasser-Abwasser-Forsch.10(3/4):87-98 (GER)(ENG ABS) / TR-80-0400, TR-78-0043, Literature Research Company* (ENG TRANSL)(OECD Data File) .

EcoReference No.: 7453
Chemical of Concern:
CBL,HCCH,NaCr,CN,FUR,CuS,BZO,As,Ni,Cd,Se,ATZ,Pb,AMSV,NaBr,Ag,NaID,C8OH,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

96. Bringmann, G. and Kuhn, R. (1978). Limiting Values for the Noxious Effects of Water Pollutant Material to Blue Algae (Microcystis aeruginosa) and Green Algae (Scenedesmus quadricauda) in Cell Propagation Inhibition Tests (Grenzwerte der Schadwirkung Wassergefahrdender Stoffe Gegen Blaualgen (Microcystis aeruginosa) und Grunalgen (Scenedesmus quadricauda) im Zellvermehrungshemmtest). *Vom Wasser* 50: 45-60.

EcoReference No.: 19121
Chemical of Concern: ATZ,CBL,HCCH,Cr,CN,FUR,CuS,BZO,As,Ni,Zn,Ag,Cd,Pb,AMSV; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

97. Bringmann, G. and Kuhn, R. (1978). Limiting Values for the Noxious Effects of Water Pollutant Material to Blue Algae (Microcystis aeruginosa) and Green Algae (Scenedesmus quadricauda) in Cell Propagation Inhibition Test. *Vom Wasser* 50: 45-60.

EcoReference No.: 19121
Chemical of Concern: ATZ,CBL,HCCH,Cr,CN,FUR,CuS,BZO,As,Ni,Zn,Ag,Cd,Pb ; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN,LITE EVAL CODED(OW-TRV-Cu).

98. Bringmann, G. and Kuhn, R. (1978). Limiting Values for the Noxious Effects of Water Pollutant Material to Blue Algae (Microcystis aeruginosa) and Green Algae (Scenedesmus quadricauda) in Cell Propagation Inhibition Tests (Grenzwerte der Schadwirkung Wassergefahrdender Stoffe Gegen Blaualgen (Microcystis aeruginosa) und Grunalgen (Scenedesmus quadricauda) im Zellvermehrungshemmtest). *Vom Wasser* 50: 45-60.

EcoReference No.: 19121
Chemical of Concern:
ATZ,CBL,HCCH,NaCr,CN,FUR,CuS,BZO,As,Ni,Zn,Ag,Cd,Pb,AMSV,NaBr,Se,NaID,C8O

H,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

99. Bringmann, G. and Kuhn, R. (1978). Limiting Values for the Noxious Effects of Water Pollutant Material to Blue Algae (Microcystis aeruginosa) and Green Algae (Scenedesmus quadricauda) in Cell Propagation Inhibition Tests (Grenzwerte der Schadwirkung Wassergefahrdender Stoffe Gegen Blaualgen (Microcystis aeruginosa) und Grunalgen (Scenedesmus quadricauda) im Zellvermehrungshemmtest). *Vom Wasser* 50: 45-60.

EcoReference No.: 19121
Chemical of Concern:
ATZ,CBL,HCCH,NaCr,CN,FUR,CuS,BZO,As,Ni,Zn,Ag,Cd,Pb,AMSV,NaBr,Se,NaID,C8OH,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

100. Bringmann, G. and Kuhn, R. (1978). Limiting Values for the Noxious Effects of Water Pollutant Material to Blue Algae (Microcystis aeruginosa) and Green Algae (Scenedesmus quadricauda) in Cell Propagation Inhibition Tests (Grenzwerte der Schadwirkung Wassergefahrdender Stoffe Gegen Blaualgen (Microcystis aeruginosa) und Grunalgen (Scenedesmus quadricauda) im Zellvermehrungshemmtest). *Vom Wasser* 50: 45-60 (GER) (ENG ABS) (ENG TRANSL) (OECDG).

EcoReference No.: 19121
Chemical of Concern:
ATZ,CBL,HCCH,NaCr,CN,FUR,CuS,BZO,As,Ni,Zn,Ag,Cd,Pb,AMSV,NaBr,Se,NaID,C8OH,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO FOREIGN(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

101. Bringmann, G. and Kuhn, R. (1978). Testing of Substances for Their Toxicity Threshold: Model Organisms Microcystis (Diplocystis) aeruginosa and Scenedesmus quadricauda. *Mitt.Int.Ver.Theor.Angew.Limnol.* 21: 275-284 (Author Communication Used).

EcoReference No.: 15134
Chemical of Concern:
Be,Cd,Ag,CuS,Ni,SFL,HgCl2,ATZ,LNR,Pb,CN,DNT,24DC,FRN,PL,CBZ,MCRE,ETHB,FUR,NBZ,PHTH,3CE,NP,AN,CBL,CF,HCCH,ATC,Urea,CTC,Cr,Cu,BZO,As,Se,AMSV; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

102. Bringmann, G. and Kuhn, R. (1978). Testing of Substances for Their Toxicity Threshold: Model Organisms Microcystis (Diplocystis) aeruginosa and Scenedesmus quadricauda. *Mitt.Int.Ver.Theor.Angew.Limnol.* 21: 275-284 (Author Communication Used).

EcoReference No.: 15134
Chemical of Concern:
Be,Cd,Ag,CuS,Ni,SFL,HgCl2,ATZ,LNR,Pb,CN,DNT,24DC,FRN,PL,CBZ,MCRE,ETHB,FUR,NBZ,PHTH,3CE,NP,AN,CBL,CF,HCCH,ATC,Urea,CTC,NaCr,Cu,BZO,As,Se,AMSV,NaBr,NaID,C8OH,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

103. Bringmann, G. and Kuhn, R. (1978). Testing of Substances for Their Toxicity Threshold: Model Organisms Microcystis (Diplocystis) aeruginosa and Scenedesmus quadricauda. *Mitt.Int.Ver.Theor.Angew.Limnol.* 21: 275-284 (Author Communication Used).

EcoReference No.: 15134
Chemical of Concern:
Be,Cd,Ag,CuS,Ni,SFL,HgCl2,ATZ,LNR,Pb,CN,DNT,24DC,FRN,PL,CBZ,MCRE,ETHB,FU

R,NBZ,PHTH,3CE,NP,AN,CBL,CF,HCCH,ATC,Urea,CTC,NaCr,Cu,BZO,As,Se,AMSV,NaBr,NaID,C8OH,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

104. Bringmann, G. and Kuhn, R. (1978). Testing of Substances for Their Toxicity Threshold: Model Organisms Microcystis (Diplocystis) aeruginosa and Scenedesmus quadricauda. *Mitt.Int.Ver.Theor.Angew.Limnol.* 21: 275-284 (Author Communication Used).

EcoReference No.: 15134
Chemical of Concern: Be,Cd,Ag,CuS,Ni,SFL,HgCl2,ATZ,LNR,Pb,CN,DNT,24DC,FRN,PL,CBZ,MCRE,ETHB,FUR,NBZ,PHTH,3CE,NP,AN,CBL,CF,HCCH,ATC,Urea,CTC,NaCr,Cu,BZO,As,Se,AMSV,NaBr,NaID,C8OH,DCB; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

105. Bringmann, G. and Kuhn, R. (1978). Threshold Values of Substances Harmful to Water for Blue Algae (Microcystis aeruginosa) and Green Algae (Scenedesmus quadricauda) in Tests Measuring. *Vom Wasser 50:45-60 (GER) (ENG ABS), Tr-80-0201, Literature Research Company* 22 p. (ENG TRANSL) (OECDG Data File).

EcoReference No.: 2463
Chemical of Concern: ATZ,CBL,HCCH,FUR,CuS,AMSV; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN.

106. Bringmann, G. and Kuhn, R. (1960). The Water-Toxicological Detection of Insecticides (Zum Wasser-Toxikologischen Nachweis von Insektiziden). *Gesund.Ing.* 8: 243-244 (GER) (ENG ABS).

EcoReference No.: 58990
Chemical of Concern: DZ,HCCH,MLN,EN,DLD,DDT,Ag,Cd,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN.

107. Brooks, K. M. (1993). Impacts on Benthic Invertebrate Communities Caused by Aerial Application of Carbaryl to Control Burrowing Shrimp in Willapa Bay, WA. *J.Shellfish Res.* 12: 146.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT(CBL).

108. Broschewitz, B., Rober, K. C., and Amelung, D. (2000). Simulation of Damages on Winter Wheat Following Improper Usage of Pesticides (Simulation von Schadbildern an Winterweizen nach Unsachgemasser Applikation von Pflanzenschutzmitteln). *Z.Pflanzenkr.Pflanzenschutz* 17: 315-317 (GER) (ENG ABS).

EcoReference No.: 63529
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

109. Brown, S. B., Adams, B. A., Cyr, D. G., and Eales, J. G. (2004). Contaminant Effects on the Teleost Fish Thyroid. *Environ.Toxicol.Chem.* 23: 1680-1701.

EcoReference No.: 74683
Chemical of Concern: PCB,PAH,MRX,DDT,EN,ES,MB,CF,HCCH,MLN,FNT,MP,NH,AL,CBF,CBL,CN,Cd,As,Pb,Hg; Habitat: A; Rejection Code: NO REVIEW,RESIDUE,EFFECT.

110. Brucker-Davis, F. (1998). Effects of Environmental Synthetic Chemicals on Thyroid Function. *Thyroid* 8: 827-856.

EcoReference No.: 84025
Chemical of Concern:
TFN,TPZ,TDP,PYN,PYM,PPB,PPM,Al,Cd,Pb,Hg,PHTH,DXN,FRN,HCB,PCB,BMN,CBL,CBF,AND,ACR,DDT,DCF,DLD,ES,EN,HCCH,TXP,DMT,FNT,MLN,MP,CYH,BFT,FNV,DM,PCL,MBZ,Maneb,Nabam,PDM,PCNB,Zineb,ATZ,Nf,PCP,ACO,DCPA,EFX,BMC,CTZ,FNB,FPN; Habitat: T; Rejection Code: NO REVIEW.

111. Brugger, J. E. (1973). Cam - 1: Using Enzymes to Detect Insecticides. *U.S.EPA, News of Environ.Research, Edison Water Quality* 4 p.

EcoReference No.: 89034
Chemical of Concern: PRN,DDVP,MLN,CBL; Habitat: T; Rejection Code: NO METHODS(ALL CHEMS).

112. Bruneau, A. H., Watkins, J. E., and Brandenburg, R. L. (1992). Integrated Pest Management. *In: D.V.Waddington, R.N.Carrow, and R.C.Shearman (Eds.), Agronomy No.32, Turfgrass, Am.Soc.of Agron.Inc., Crop Sci.Soc.of Am., Soil Sci.Soc.of Am.Inc., Madison, WI* 501-534.

EcoReference No.: 87479
Chemical of Concern: CBL,EP,IFP,CPY,DZ,IZF,TCF,BDC; Habitat: T; Rejection Code: NO REVIEW(ALL CHEMS).

113. Buchanan, D. V. (1970). Effects of the Insecticide Sevin on the Dungeness Crab, Cancer magister Dana. *Ph.D.Thesis, Oregon State University, Corvallis, OR* 53 p.

EcoReference No.: 5579
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO PUBL AS.

114. Bull, J. O. (1976). Laboratory and Field Investigations with Difenacoum, a Promising New Rodenticide. *In: Proc.7th Vert Pest Conf Monterey* 72-84.

EcoReference No.: 86456
Chemical of Concern: DFM,WFN,CBL; Habitat: T; Effect Codes: MOR,CEL,PHY; Rejection Code: NO CONTROL(ALL CHEMS).

115. Burnett, C. M. and Goldenthal, E. I. (1988). Multigeneration Reproduction and Carcinogenicity Studies in Sprague-Dawley Rats Exposed Topically to Oxidative Hair-Colouring Formulations Containing p-Phenylenediamine and Other Aromatic Amines. *Food Chem.Toxicol.* 26: 467-474.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE(CBL).

116. Burridge, M. J., Peter, T. F., Allan, S. A., and Mahan, S. M. (2002). Evaluation of Safety and Efficacy of Acaricides for Control of the African Tortoise Tick (Amblyomma marmoreum) on Leopard Tortoises (Geochelone pardalis). *J.Zoo Wildl.Med.* 33: 52-57.

EcoReference No.: 71543
Chemical of Concern: HCCH,CPY,CBL,CYF,FMR; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: OK(ALL CHEMS),OK TARGET(CYF).

117. Butler, G. L., Deason, T. R., and O'Kelley, J. C. (1975). The Effect of Atrazine, 2,4-D, Methoxychlor, Carbaryl and Diazinon on the Growth of Planktonic Algae. *Br.Phycol.J.* 10: 371-376.

EcoReference No.: 7429

Chemical of Concern: 24DXY,ATZ,CBL,DZ; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

118. Butler, P. A. (1963). Commercial Fisheries Investigatinons. *Circ.No.167, Fish Wildl.Serv., Washington, D.C.* 11-25 .

EcoReference No.: 2188
Chemical of Concern: AZ,CBL,DZ,HCCH,MLN,Naled,PSM,24DXY,DS,DU,PEB,Folpet,RTN,FBM,CHD,DEM,TXP,MRX,ETN,DZ,AND,MCPA,HPT,DDT,DDVP,EN,CBL,MXC; Habitat: A; Effect Codes: NOC,GRO,MOR,BEH,PHY; Rejection Code: NO CONTROL(ALL CHEMS).

119. Butler, P. A. (1963). Commercial Fisheries Investigations. *Circ.No.167, Fish Wildl.Serv., Washington, D.C.* 11-25.

EcoReference No.: 2188
Chemical of Concern: AZ,CBL,DZ,HCCH,MLN,Naled,PSM,24DXY,DS,DU,PEB,Folpet,RTN,FBM,CHD,DEM,TXP,MRX,ETN,DZ,AND,MCPA,HPT,DDT,DDVP,EN,CBL,MXC,OXD; Habitat: A; Effect Codes: NOC,GRO,MOR,BEH,PHY; Rejection Code: NO CONTROL(ALL CHEMS).

120. Butler, P. A. (1964). Commercial Fishery Investigations. *In: Pesticide-Wildlife Studies, 1963, U.S.D.I., Fish and Wildl.Serv.,Circ.199* 28 p.(Author Communication Used).

EcoReference No.: 646
Chemical of Concern: AZ,DS,HCCH,MLN,MP,Naled,PRT,24DXY,CMPH,DMT,DU,PEB,PSM,NTP,TXP,CBL; Habitat: A; Effect Codes: BEH,POP,MOR,GRO,ACC,SYS; Rejection Code: LITE EVAL CODED(PRT),OK(AZ),NO ENDPOINT(DMT).

121. Cajaraville, M. P., Marigomez, J. A., and Angulo, E. (1989). Stability of 1-Naphthol in Sea Water Solutions and Its Uptake by the Marine Prosobranch Gastropod Littorina littorea (L.). *Bull.Environ.Contam.Toxicol.* 42: 799-806.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SPECIES.

122. Calvinho, P. J., Capela-Silva, F., Franca, M. B., Rafael, A., Cabrita, A. M. S., and Beja, M. L. M. (1999). Liver Morphology in Experimental Administration of 1-Naphthyl N-Methylcarbamate. *Annu.Meet.of the Professional Res.Sci.on Experimental Biology, No.99, Apr.17-21, 1999, Washington, D.C., FASEB J.* 13: A737.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO ABSTRACT,NO ENDPOINT(CBL).

123. Campbell, B. C. (1988). The Effect of Plant Growth Regulators and Herbicides on Host Plant Quality to Insects. *In: E.A.Heinrichs, Plant Stress-Insect Interactions, John Wiley and Sons, NY* 205-247.

EcoReference No.: 72128
Chemical of Concern: 24DXY,ATZ,ACR,DMB,GYP,DU,CBL; Habitat: T; Rejection Code: NO REVIEW.

124. Caprio, P. D. (1978). Effects of Sevin on Egg and Eggshell Characteristics of Coturnix Quail (Coturnix coturnix japonica). *Ohio J.Sci.* 78: 91 p.

EcoReference No.: 36066

Chemical of Concern: CBL; Habitat: T; Effect Codes: REP,ACC; Rejection Code: NO ENDPOINT,CONTROL,ABSTRACT(CBL).

125. Carey, A. E., Wiersma, G. B., Tai, H., and Mitchell, W. G. (1973). Organochlorine Pesticide Residues in Soils and Crops of the Corn Belt Region, United States - 1970. *Pestic.Monit.J.* 6: 369-376.

Chemical of Concern: PCB,As,EN,CHD,TFN,PPZ,PCH,PRT,PRN,MXC,ACR,AND,ATZ,BOR,BTY,Captan,CBL, CPP,24DB,DDT,DZ,DLD,DS,FNF,FNTH,CBF,HPT,EPTC,HCCH,LNR,MLN,MCPB; Habitat: T; Rejection Code: NO MIXTURE,EFFECT,SPECIES(PCB).

126. Carlson, R. W. (1990). Ventilatory Patterns of Bluegill (Lepomis macrochirus) Exposed to Organic Chemicals with Different Mechanisms of Toxic Action. *Comp.Biochem.Physiol.C* 95: 181-196.

EcoReference No.: 3461
Chemical of Concern: CBL,MLN,ACL,RTN,NP,PCP; Habitat: A; Effect Codes: PHY,BEH; Rejection Code: NO ENDPOINT(ALL CHEMS).

127. Carneiro, M. A. C., Siqueira, J. O., and Maria de Souza Moreira, F. (2001). Establishment of Herbaceous Plants in Heavy Metal Contaminated Soils Inoculated with Arbuscular Mycorrhizal Fungi (Estabelecimento de Plantas Herbaceas em solo com Contaminacao de Metais Pesados e Inoculacao de Fungos Micorrizicos Arbusculares). *Pesq.Agropecu.Bras.* 36: 1443-1452 (POR) (ENG ABS).

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN,MIXTURE.

128. Carricaburu, P., Biwer, G., and Goyffon, M. (1982). Effects of Carbaryl on the Spontaneous and Evoked Potentials of the Scorpion Prosomian Nervous System. *Comp.Biochem.Physiol.C* 73: 201-204.

EcoReference No.: 87754
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY; Rejection Code: NO ENDPOINT(CBL).

129. Carter, F. L. and Graves, J. B. (1972). Measuring Effects of Insecticides on Aquatic Animals. *La.Agric.* 16: 14-15.

EcoReference No.: 942
Chemical of Concern: CPY,MP,AZ,DCTP,CBL,CBF,DDT,TXP,MRX,MLN,MOM,ADC; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

130. Casado, S., Alonso, M., Herradon, B., Tarazona, J. V., and Navas, J. M. (2006). Activation of the Aryl Hydrocarbon Receptor by Carbaryl: Computational Evidence of the Ability of Carbaryl to Assume a Planar Conformation. *Environ.Toxicol.Chem.* 25: 3141-3147.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO(CBL).

131. Casale, G. P., Vennerstrom, J. L., Bavari, S., and Wang, T.-L. (1993). Inhibition of Interleukin 2 Driven Proliferation of Mouse CTLL2 Cells, by Selected Carbamate and Organophosphate Insecticides and Congeners of Carbaryl. *Immunopharmacol.Immunotoxicol.* 15: 199-215.

Chemical of Concern: ADC,MVP,CBF,CBL,DDVP,MCB; Habitat : T; Rejection Code: NO IN VITRO(CBL,CBF,DDVP,MCB,MVP,ADC).

132. Casper, H. H., Pekas, J. C., and Dinusson, W. E. (1973). Gastric Absorption of a Pesticide (1-Naphthyl N-Methylcarbamate) in the Fasted Rat. *Pestic.Biochem.Physiol.* 2: 391-396.

EcoReference No.: 36092
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC,PHY; Rejection Code: NO ENDPOINT(CBL).

133. Castaneda, P., Mata, R., and Lotina-Hennsen, B. (1998). Effect of Encecalin, Euparin and Demethylencecalin on Thylakoid Electron Transport and Photophosphorylation in Isolated Spinach Chloroplasts. *J.Sci.Food Agric.* 78: 102-108.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

134. Casterline, J. L. Jr., Barnett, N. M., and Ku, Y. (1985). Uptake, Translocation, and Transformation of Pentachlorophenol in Soybean and Spinach Plants. *Environ.Res.* 37: 101-118.

EcoReference No.: 59127
Chemical of Concern: PCP,CBL; Habitat: T; Effect Codes: ACC,BCM; Rejection Code: NO pH,ERE//NO ENDPOINT(PCP).

135. Chaiyarach, S., Ratananun, V., and Harrel, R. C. (1975). Acute Toxicity of the Insecticides Toxaphene and Carbaryl and the Herbicides Propanil and Molinate to Four Species of Aquatic Organisms . *Bull.Environ.Contam.Toxicol.* 14: 281-284 .

EcoReference No.: 849
Chemical of Concern: CBL,MLT,TXP,PPN; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

136. Chambers, J. S. (1970). Investigation of Chemical Control of Ghost Shrimp on Oyster Grounds 1960-1963. *In: Washington (State) Dep.Fish., Tech.Rep.No.1* 25-62.

EcoReference No.: 15241
Chemical of Concern: CBL,HCCH; Habitat: A; Effect Codes: ACC,POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

137. Chan, W. F. and Larson, R. A. (1995). Product of Ozonolysis of Aromatic Compounds in Aqueous Solution Containing Nitrite Ion. *Ozone Sci.Eng.* 17: 627-635 .

Chemical of Concern: CBL,24DC; Habitat: T; Rejection Code: NO SPECIES(CBL,24DC).

138. Chandna, S., Sareen, P. K, Saharan, R. P., and CHOWDHARY, J. P. (1998). Clastogenicity of Laboratory Mixture of Lindane and Carbaryl in Mice. *Indian J.Genet.* 58: 439-443.

EcoReference No.: 87859
Chemical of Concern: CBL,HCCH; Habitat: T; Effect Codes: CEL; Rejection Code: NO MIXTURE(CBL,HCCH).

139. Chen, P. S., Lin, Y. N., and Chung, C. L. (1971). Laboratory Studies on the Susceptibility of Mosquito-Eating Fish, Lebistes reticulatus and the Larvae of Culex pipiens fatigans to Insecticides. *Tai-Wan I.Hsueh Hui Tsa Chih* 70: 28-35.

EcoReference No.: 9297
Chemical of Concern: DDT,PRN,HCCH,CBL,MLN,DZ; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

140. Chern, W. H. and Dauterman, W. C. (1983). Studies on the Metabolism and Excretion of 1-Naphthol, 1-Naphthyl-Beta-D-Glucuronide, and 1-Naphthyl-Beta-D-Glucoside in the Mouse. *Toxicol.Appl.Pharmacol.* 67: 303-309.

EcoReference No.: 36134
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC; Rejection Code: NO CONTROL,ENDPOINT(CBL).

141. Chibale, K., Haupt, H., Kendrick, H., Yardley, V., Saravanamuthu, A., Fairlamb, A. H., and Croft, S. L. (2001). Antiprotozoal and Cytotoxicity Evaluation of Sulfonamide and Urea Analogues of Quinacrine. *Bioorg.Med.Chem.Lett.* 11: 2655-2657.

EcoReference No.: 80756
Chemical of Concern: AKTMD,CBL; Habitat: T; Effect Codes: BCM; Rejection Code: NO CONTROL(ALL CHEMS).

142. Childers, C. C., Aguilar, H., Villanueva, R., and Abou-Setta, M. M. (2001). Comparative Residual Toxicities of Pesticides to the Predator Euseius mesembrinus (Acari: Phytoseiidae) on Citrus in Florida. *Fla.Entomol.* 84: 391-401 .

EcoReference No.: 78987
Chemical of Concern: DFZ,ALSV,ETN,PRB,CBL,FTT,FO,CPY,DCF,CuOH,DMT,AZD,CuS,FMB,BMY,MLN,PPG,FNB,CFP,AZ; Habitat: T; Effect Codes: POP,MOR; Rejection Code: OK(CuOH,CuS,FNB,BMY,FBM,CPY,PRB,CBL,FTT,FO,DCF,DMT,AZD),TARGET(MLN,AZ,CBL),NO MIXTURE(ETN).

143. Childers, C. C., Villanueva, R., Aguilar, H., Chewning, R., and Michaud, J. P. (2001). Comparative Residual Toxicities of Pesticides to the Predator Agistemus industani (Acari: Stigmaeidae) on Citrus in Florida. *Exp.Appl.Acarol.* 25: 461-474.

EcoReference No.: 78988
Chemical of Concern: DFZ,ALSV,ETN,PRB,CBL,FTT,FO,CPY,DCF,CuOH,AZD,CuS,FBM,BMY,MLN,PPG,FNB,CFP; Habitat: T; Effect Codes: REP,MOR; Rejection Code: OK(DFZ,PRB,FTT,FO,CPY,DCF,AZD,CuS,FBM,BMY,PPG,FNB,CFP),NO MIXTURE(ALSV,ETN,CuOH),OK TARGET(CBL,MLN).

144. Christiansen, T. A., Lockwood, J. A., and Powell, J. (1989). Mediation of Nutrient Cycling by Arthropods in Unmanaged and Intensively Managed Mountain Brush Habitats. *Great Basin Nat.* 49: 134-139.

EcoReference No.: 87652
Chemical of Concern: CBL,MLN; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(TARGET-CBL,MLN).

145. Christie, A. E. (1969). Effects of Insecticides on Algae. *Water Sewage Works* 116: 172-176.

EcoReference No.: 2248
Chemical of Concern: CBL,MLN,DDT; Habitat: A; Effect Codes: GRO,ACC; Rejection Code: NO ENDPOINT(ALL CHEMS).

146. Christoffers, D. and Ernst, D. E. W. (1983). The In-Vivo Fluorescence of Chlorella fusca as a Biological Test for the Inhibition of Photosynthesis. *Toxicol.Environ.Chem.* 7: 61-71.

EcoReference No.: 45160

Chemical of Concern: CBL,PbAC,PCP,DLD,DDT,HCCH,Cd,HgCl2; Habitat: A; Effect Codes: PHY; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

147. Chung, J. G., Lee, J. H., and Hung, C. F. (1999). Kinetics of Acetyl CoA: Arylamine N-Acetyltransferase in Rapid and Slow Acetylator Livers from the Pelecypoda Cristaria plicata. *Toxicol.Environ.Chem.* 68: 83-90.

Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: NO IN VITRO.

148. Chung, Y. C., Richardson, L., and Morrisey, M. T. (1993). Effects of pH and NaCl on Gel Strength of Pacific Whiting Surimi. *J.Aquat.Food Prod.Technol.* 2: 19-35.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO IN VITRO.

149. Cleland, C. F., Tanaka, O., and Feldman, L. J. (1982). Influence of Plant-Growth Substances and Salicylic-Acid on Flowering and Growth in the Lemnaceae (Duckweeds). *Aquat Bot* 13: 3-20.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO REVIEW.

150. Cocks, J. A. (1973). The Effect of Aldrin on Water Balance in the Freshwater Pulmonate Gastropod (Biomphalaria glabrata). *Environ.Pollut.* 5: 149-151.

EcoReference No.: 8797
Chemical of Concern: CBL,MLN,DDT,AND; Habitat: A; Effect Codes: PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

151. Cohen, E. (2006). Pesticide-Mediated Homeostatic Modulation in Arthropods. *Pestic.Biochem.Physiol.* 85: 21-27.

EcoReference No.: 88445
Chemical of Concern: CBL,MOM,MZB; Habitat: T; Rejection Code: NO REVIEW(CBL,MOM,MZB).

152. Collins, T. F. X. Hansen W. H. &. Keeler H. V. (1972). Fertility Reduction by Carbaryl: The Effect of Carbaryl (Sevin) on Reproduction of the Rat and the Gerbil. *Food Cosmet.Toxicol.* 10: 261-262.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO ABSTRACT.

153. Comer, S. W., Staiff, D. C., Armstrong, J. F., and Wolfe, H. R. (1975). Exposure of Workers to Carbaryl. *Bull.Environ.Contam.Toicol.* 13: 385-391.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO HUMAN HEALTH(CBL).

154. Conners, D. E. and Black, M. C. (2004). Evaluation of Lethality and Genotoxicity in the Freshwater Mussel Utterbackia imbecillis (Bivalvia: Unionidae) Exposed Singly and in Combination to Chemicals Used in Lawn Care. *Arch.Environ.Contam.Toxicol.* 46: 362-371.

EcoReference No.: 74236
Chemical of Concern: ATZ,GYP,DZ,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(ATZ,CuS),OK(ALL CHEMS).

155. Connor, P. F. (1960). A Study of Small Mammals, Birds and Other Wildlife in an Area

Sprayed with Sevin. *N.Y.Fish Game J.* 7: 26-32.

EcoReference No.: 64042
Chemical of Concern: CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

156. Cook, W. L., Fielder, D., and Bourquin, A. W. (1980). Succession of Microfungi in Estuarine Microcosms Perturbed by Carbaryl, Methyl Parathion and Pentachlorophenol. *Bot.Mar.* 23: 129-131.

EcoReference No.: 15421
Chemical of Concern: CBL,MP,PCP; Habitat: A; Effect Codes: POP; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

157. Cooper, E. L. and Roch, P. (2003). Earthworm Immunity: A Model of Immune Competence. *Pedobiologia* 47: 676-688.

EcoReference No.: 87656
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO REVIEW(ALL CHEMS).

158. Cope, O. B. (1966). Contamination of the Freshwater Ecosystem by Pesticides. *J.Appl.Ecol.* 3: 33-44 (Publ in Part As 6797).

EcoReference No.: 10337
Chemical of Concern: DDT,HCCH,DLD,DU,MLN,24DXY,CBL,DBN,DZ,MLT,PAQT,PYN,TFN,CuS; Habitat: A; Effect Codes: MOR,ACC,REP; Rejection Code: NO CONTROL(ALL CHEMS).

159. Cope, O. B. (1965). Sport Fishery Investigations. *In: Fish and Wildl.Serv.Cicr.226, Effects of Pesticides on Fish and Wildlife - 1964 Research Findings of the Fish and Wildlife Service, Washington, D.C.* 51-63 (Publ in Part As 6797).

EcoReference No.: 2871
Chemical of Concern: MLN,DBN,24DXY,BS,CBL,DMT,DU,DZ,HCCH,MLT,Naled,SZ,TFN,ADC,CHD,TXP,TCF,CuS,PAQT,MCB,AND,PYN,HPT,DLD,EN,EPRN,DDT,FNTH,FNF,MVP,BTY,NSM,RTN,AMSV,VNT,Cu,ATN,MXC,DDVP,DBM,DBAC; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: NO CONTROL(ALL CHEMS).

160. Corbett, J. R., Wright, K., and Baillie, A. C. (1984). Insecticides Inhibiting Acetylcholinesterase. *In: The Biochemical Mode of Action of Pesticides, Second Edition, Acad.Press, London* 99-140.

EcoReference No.: 72145
Chemical of Concern: AZ,CPY,DZ,DMT,MLN,PRN,PSM,CBL,CBF; Habitat: T; Rejection Code: NO REVIEW.

161. Corson, M. S., Mora, M. A., and Grant, W. E. (1998). Simulating Cholinesterase Inhibition in Birds Caused by Dietary Insecticide Exposure. *Ecol.Model.* 105: 299-323.

Chemical of Concern: TBO,MP,MLN,DS,ACP,AZ,CBL,CBF,CPY,DCTP,DMT,OML,TBC; Habitat: T; Rejection Code: NO MODELING.

162. Coutant, C. C. (1964). Insecticide Sevin: Effect of Aerial Spraying on Drift of Stream Insects. *Science* 146: 420-421.

EcoReference No.: 7985
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

163. Cranmer, M. and Peoples, A. (1973). Determination of Trace Quantities of Anticholinesterase Pesticides. *Anal.Biochem.* 55: 255-265.

Chemical of Concern: MLO,CBL; Habitat: T; Rejection Code: NO HUMAN HEALTH.

164. Crawford, R. B. and Guarino, A. M. (1985). Effects of Environmental Toxicants on Development of a Teleost Embryo. *J.Environ.Pathol.Toxicol.* 6: 185-194.

EcoReference No.: 14348
Chemical of Concern: TXP,AND,MLN,24DXY,PCP,CBL,HCCH,PRN,DDT,PAQT; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: NO CONTROL,ENDPOINT(PCP,CBL).

165. Crawford, R. B. and Guarino, A. M. (1976). Sand Dollar Embryos as Monitors of Environmental Pollutants. *Bull.Mt.Desert Isl.Biol.Lab.* 16: 17.

EcoReference No.: 13938
Chemical of Concern: TXP,CBL,MLN,PCP,PL,DDT; Habitat: A; Effect Codes: GRO; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

166. Crystal, M. M. and DeMilo, A. B. (1988). Susceptibility of Laboratory-Reared Northern Fowl Mites, Ornithonyssus sylviarum (Acari: Macronyssidae), to Selected Acaricides. *Exp.Appl.Acarol.* 4: 353-358.

EcoReference No.: 70191
Chemical of Concern: PIRM,CMPH,ADC,PMR,RSM,CBL,DZ; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

167. D'Mello, J. P. F., Macdonald, A. M. C., Postel, D., Dijksma, W. T. P., Dujardin, A., and Placinta, C. M. (1998). Pesticide Use and Mycotoxin Production in Fusarium and Aspergillus Phytopathogens. *Eur.J.Plant Pathol.* 104: 741-751.

EcoReference No.: 87552
Chemical of Concern: TDM,TEZ,PCZ,TDF,BMY,TBA,TBM,THM,TCM,DFC,DDVP,Naled,CBL; Habitat: T; Rejection Code: NO REVIEW(ALL CHEMS).

168. Daou, H. and Talbert, R. E. (1999). Control of Propanil-Resistant Barnyardgrass (Echinochloa crus-galli) in Rice (Oryza sativa) with Carbaryl/Propanil Mixtures. *Weed Technol.* 13: 65-70.

EcoReference No.: 63795
Chemical of Concern: CBL,MLT; Habitat: T; Effect Codes: PHY,POP; Rejection Code: NO MIXTURE(MLT),TARGET(CBL).

169. Davis, H. C. (1961). Effects of Some Pesticides on Eggs and Larvae of Oysters (Crassostrea virginica) and Clams (Venus mercenaria). *Commer.Fish.Rev.* 23: 18-23.

EcoReference No.: 4811
Chemical of Concern: AND,DDT,DLD,TCF,EN,AZ,HCCH,PRN,TXP,DBAC,CBL,DU,CBZ,DCB,OPHP,Nabam,PL; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(DBAC),NO ENDPOINT(DCB).

170. Davis, J., Labenia, J. S., Baldwin, D. H., French, B., and Scholz, N. L. (2004). Sublethal Effects of the Carbamate Insecticide-Carbaryl-on Coastal Cutthroat Trout. *In: 2003 Georgia Basin/Puget Sound Res.Conf., Mar.31-Apr.3, 2003, Vancouver, B.C.(Canada).*

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT(CBL).

171. De Girolamo, D. J., Jensen, J. N., and Van Benschoten, J. (1991). Inactivation of Adult Zebra Mussels by Chlorine. *Abstr.Am.Water Assoc.Annu.Conf., Philadelphia, PA.*

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SOURCE.

172. De la vega Salazar, M. Y., Martinez Tabche, L., and Macias Garcia, C. (1997). Bioaccumulation of Methyl Parathion and Its Toxicology in Several Species of the Freshwater Community in Ignacio Ramirez Dam in Mexico. *Ecotoxicol.Environ.Saf.* 38: 53-62.

Chemical of Concern: MP,CBL; Habitat: A; Rejection Code: NO DURATION.

173. De Maroussem, D., Pipy, B., Beraud, M., Souqual, M. C., and Forgue, M. F. (1986). The Effect of Carbaryl on the Arachidonic Acid Metabolism and Superoxide Production by Mouse Resident Peritoneal Macrophages Challenged by Zymosan. *Int.J.Immunopharmacol.* 8: 155-166.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

174. Deo, P. G., Hasan, S. B., and Majumder, S. K. (1988). Toxicity and Suitability of Some Insecticides for Household Use. *Int.Pest Control* 30: 118-121,129.

EcoReference No.: 35123
Chemical of Concern: AND,BRSM,CHD,CBL,CYP,DDT,DCM,DEM,DZ,DDVP,DMT,EN,ES,FNT,FNV,HPT,HCCH,MLN,MXC,PRN,MP,PMR,PYN; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

175. Desmarchelier, J. M. (1980). Comparative Study of Analytical Methods for Bioresmethrin, Fenothrin, d-Fenothrin, Pyrethrum I, Carbaryl, Fenitrothion, Methacrifos, Pirimiphos-Methyl and Dichlorvos on Various Grains. *J.Pestic.Sci.* 5: 521-532.

Chemical of Concern: BRSM,RSM,CBL,PYN; Habitat: T; Rejection Code: NO SPECIES.

176. DeWitt, J. B. and George, J. L. (1960). Bureau of Sport Fisheries and Wildlife Pesticide-Wildlife Review, 1959 . *Fish and Wildlife Service, Circular No.84, U.S.Depar.of the Interior, Bureau of Sport Fisheries and Wildlife, September 1960, Washington* 36 p.

EcoReference No.: 88413
Chemical of Concern: CBL,AND,EN,DLD,HPT,CHD,HCCH,MLN,TXP,DDT,DS,AZ,MXC; Habitat: T; Effect Codes: MOR,REP,ACC; Rejection Code: NO ENDPOINT(ALL CHEMS).

177. Dhingra, S. and Sarup, P. (1992). Detection of Resistance in the Blister Beetle, Mylabris pustulata Thunb. to Various Insecticides Evaluated During the Last Quarter Century. *J.Entomol.Res.* 16: 231-235.

EcoReference No.: 75778
Chemical of Concern: DMT,MLN,HCCH,PPHD,CBL,MP,LCYT,DCM,CYP,FPP,FNV,PYN,ES; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL

CHEMS),TARGET(,MLN,CBL).

178. Dimick, R. E. and Breese, W. P. (1965). Bay Mussel Embryo Bioassay. *Proc.12th Pacific Northwest Ind.Waste Conf., Univ.of Washington, Seattle, WA* 165-175.

EcoReference No.: 3758
Chemical of Concern: CBL,NaPCP; Habitat: A; Effect Codes: GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

179. Dive, D., Leclerc, H., and Persoone, G. (1980). Pesticide Toxicity on the Ciliate Protozoan Colpidium campylum: Possible Consequences of the Effect of Pesticides in the Aquatic Environment. *Ecotoxicol.Environ.Saf.* 4: 129-133 (Author Communication Used).

EcoReference No.: 5941
Chemical of Concern: PNB,24DXY,AZ,CBL,DMT,HCCH,MLN,MP,THM,PCP,PCB,EPRN,MCPB,MCPA,AND,DDT,FNT,EN,ES,DLD; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS)//NO SPECIES(PCB).

180. Dodson, S. I. and Hanazato, T. (1995). Commentary on Effects of Anthropogenic and Natural Organic Chemicals on Development, Swimming Behavior, and Reproduction of Daphnia, a Key Member of Aquatic Ecosystems. *Environ.Health Perspect.* 103: 7-11.

EcoReference No.: 48751
Chemical of Concern: DMB,CBL; Habitat: A; Rejection Code: NO REVIEW,NO REFS CHECKED.

181. Doherty, F. G., Evans, D. W., and Neuhauser, E. F. (1993). An Assessment of Total and Leachable Contaminants in Zebra Mussels (Dreissena polymorpha) from Lake Erie. *Ecotoxicol.Environ.Saf.* 25: 328-340.

EcoReference No.: 83380
Chemical of Concern: Se,Ag,Ald,DLD,As,Ba,Cd,CBL,CTC,CN,24DXY,EN,Pb,HCCH,Hg,MXC,MPRN,PRN,PCB; Habitat: A; Rejection Code: NO SPECIES,MIXTURE,SURVEY.

182. Dragland, S. (1996). Content of Cadmium and Lead in Chamomile (Chamomilla recutita L.) and Feverfew (Tanacetum parthenium L.) Grown in Different Parts of Norway (Innhold av Kadmium og bly i Kamille (Chamomilla recutita L.) og Matrem (Tanacetum parthenium L.) Dyrket pa Ulike Steder i Norge). *Norsk.Landbruksforsking* 10: 181-188.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE, OM, pH, CONTROL, CONCS, ERE.

183. Dumbauld, B. R., Armstrong, D. A., Doty, D. C., and Jensen, G. C. (1989). Burrowing Shrimp Recruitment to Washington Coastal Estuaries: A New Approach to an Old Problem. *J.Shellfish Res.* 8: 412-413.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT(CBL).

184. Dumbauld, B. R., Tufts, D., Armstrong, D. A., and Posey, M. H. (1992). The Effect of Burrowing Shrimp and the Pesticide Carbaryl on the Benthic Community in Willapa Bay, Washington. *J.Shellfish Res.* 11: 552 (ABS).

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT(CBL).

185. Dupont Specialty Chemicals (1994). Toxicity of Compounds, Including 1-Chloro-4-Nitrobenzene (P-Nitrochlorobenzene), with Cover Letter Dated 05/10/94 (Sanitized). *EPA/OTS Doc.#86940000732S* 17 p. (OTS 0557142).

EcoReference No.: 88907
Chemical of Concern: CBL,DNT; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

186. Durfey, J. E. and Simpson, J. B. (1995). Control of Two Burrowing Shrimp Species, Ghost Shrimp, Callianassa californiensis and Mud Shrimp, Upogebia pugettensis, Using Subsurface Injection of Carbaryl ("Sevin") as an Alternative to Aerial Application in Preparation of Oyster Beds for Seeding. *J.Shellfish Res.* 14: 264 (ABS).

EcoReference No.: 19530
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ABSTRACT(CBL).

187. Duso, C. (1994). Comparison Between Field and Laboratory Testing Methods to Evaluate the Pesticide Side-Effects on the Predatory Mites Amblyseius andersoni and Typhlodromus pyri. *IOBC/WPRS Bull.* 17: 7-19.

EcoReference No.: 73145
Chemical of Concern: PRN,CBL,AZ,ACP,DM; Habitat: T; Effect Codes: POP; Rejection Code: TARGET(ACP,AZ,CBL).

188. Duso, C., Camporese, P., and Van der Geest, L. P. S. (1992). Toxicity of a Number of Pesticides to Strains of Typhlodromus pyri and Amblyseius andersoni (Acari: Phytoseiidae). *Entomophaga* 37: 363-372.

EcoReference No.: 73088
Chemical of Concern: PRN,CBL,ACP,AZ,CPY,MDT,MOM,DM,CPYM,FNT,TCF,CBL; Habitat: T; Effect Codes: MOR,REP; Rejection Code: OK TARGET(ACP,AZ,CBL).

189. Duso, C. and Pavan, F. (1986). Control of Grape Moths (Lobesia botrana Den. and Schiff.; Eupoecilia ambiguella Hb.). 2. Consideration on the Side Effects of Various Insecticides (Il Controllo delle Tignole della vite (Lobesia botrana Den. e Schiff.; Eupoecilia ambiguella Hb.). 2. Considerazioni sugli Effetti Collaterali di Insetticidi Diversi). *Riv.Vitic.Enol.* 39: 304-312 (ITA) (ENG ABS) .

EcoReference No.: 73431
Chemical of Concern: CBL,ACP,CPY,DCNA; Habitat: T; Rejection Code: NO FOREIGN.

190. Dutt, N. and Somchoudhury, A. K. (1980). Persistent Toxicity of Some Insecticides to Trichogramma perkinsi Girault and Trichogramma australicum Girault (Hymenoptera: Trichogrammatidae). *J.Entomol.Res.* 4: 203-214.

EcoReference No.: 88981
Chemical of Concern: ES,EN,PRN,MLN,DZ,HCCH,DDT,CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

191. Dwyer, F. J., Hardesty, D. K., Henke, C. E., Ingersoll, C. G., Whites, D. W., Mount, D. R., and Bridges, C. M. (1999). Assessing Contaminant Sensitivity of Endangered and Threatened Species: Effluent Toxicity Tests. *EPA 600/R-99/099, U.S.EPA, Washington, D.C.* 9 p.

EcoReference No.: 56162
Chemical of Concern: CBL,CuS,NYP,PCP,PRM,NH,DZ; Habitat: A; Effect Codes:

GRO,REP,MOR; Rejection Code: OK(CBL,NH),NO MIXTURE(CuS,PCP,NYP,PRM),NO COC(DZ).

192. Dynamac Corporation (1988). Results of the Locust Pesticide Testing Trials in Sudan. Technical Report. *USAID Contract No.AFR-0517-C-00-7035-00,Dynamac Corp., Rockville, MD* 50 p.

EcoReference No.: 81907
Chemical of Concern: LCYT,TLM,CBL,BDC,CPY,DZ,FNT,MLN; Habitat: T; Effect Codes: MOR,ACC,POP; Rejection Code: NO ENDPOINT(DZ).

193. E.I.Dupont De Nemours & Company (1992). Initial Submission: Toxicity of Various Compounds Used in Hydrogen Reduction Building with Cover Letter Dated 10/15/92. *EPA/OTS Doc.#88-920010280* 21 p. (OTS 0555669).

EcoReference No.: 88906
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,MOR,CEL,PHY; Rejection Code: NO CONTROL(CBL).

194. Easterbrook, M. A., Solomon, M. G., Cranham, J. E., and Souter, E. F. (1985). Trials of an Integrated Pest Management Programme Based on Selective Pesticides in English Apple Orchards. *Crop Prot.* 4: 215-230.

EcoReference No.: 76518
Chemical of Concern: DFZ,PIM,Captan,ES,CBL,AZ,CHX,CPY,PHSL,DOD; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT,CONTROL(ALL CHEMS,TARGET-CBL).

195. Edelson, J. V., Royer, T. A., and Cartwright, B. (1987). Control of Arthropod Pests on Cantaloupe, 1986. *Insectic.Acaric.Tests* 12: 108 (No. 116).

EcoReference No.: 88727
Chemical of Concern: ETN,Naled,FNV,PRN,ES,OML,PPHD,MTM,MOM,MVP,MLN,DCF,CBL,DZ,AZ,DMT; Habitat: T; Effect Codes: POP,GRO; Rejection Code: OK(ALL CHEMS),OK TARGET(MOM,CBL).

196. Edge, V. E. and Casimir, M. (1976). Toxicity of Insecticides to Adult Australian Plague Locust, Chortoicetes terminifera (Orthoptera: Acrididae). *J.Aust.Entomol.Soc.* 14: 321-326.

EcoReference No.: 70906
Chemical of Concern: DZ,CPY,CBL,RSM; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(RSM,DZ).

197. Edwards, C. A. (1988). The Use of Key Indicator Processes for Assessment of the Effects of Pesticides on Soil Ecosystems. *In: Brighton Crop Prot.Conf., Pests and Diseases - 1988, Lavenham Press Ptd., Lavenham, U.K.* 2: 739-746.

EcoReference No.: 71768
Chemical of Concern: CBL,DZ; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

198. Edwards, C. A. (1988). The Use of Key Indicator Processes for Assessment of the Effects of Pesticides on Soil Indicators. *In: Brighton Crop Prot.Conf., Pests and Diseases - 1988, Lavenham Press Ptd., Lavenham, U.K.* 2: 739-746.

EcoReference No.: 71768
Chemical of Concern: CBL,DZ; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

199. Eid, A., Hanna, B. F., Mohammed, R. K., Amin, G. M., Ali, A. M., and Guirguis, I. I. (1971). Toxic Effect of Insecticides on Seeds. *Agric.Res.Rev.* 49: 46-54.

EcoReference No.: 41178
Chemical of Concern: DLD,CBL; Habitat: T; Effect Codes: REP,GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

200. Eisenbrand, G., Ungerer, O., and Preussmann, R. (1975). Formation of N-Nitroso Compounds from Agricultural Chemicals and Nitrite. *I.A.R.C (Int.Agency Res.Cancer) Sci.Publ.* 9: 71-74.

EcoReference No.: 72101
Chemical of Concern: SZ,CBL,ATZ,Ziram,PPX; Habitat: T; Effect Codes: PHY; Rejection Code: NO IN VITRO(SZ,CBL,PPX,ATZ),OK(Ziram).

201. El-Refai, A. and Mowafy, M. M. (1973). Propanil Hydrolysis: Inhibition in Rice Plants by Diazinon and Carbaryl Translocated from the Soil. *J.AOAC (Assoc.Off.Anal.Chem.) Int.* 56: 1178-1182.

EcoReference No.: 25479
Chemical of Concern: CBL,DZ,PPN; Habitat: T; Effect Codes: BCM,POP; Rejection Code: NO ENDPOINT(ALL CHEMS),TARGET(CBL).

202. El-Sayed, G. N. and Knowles, C. O. (1984). Synergism of Insecticide Activity to Heliothis zea (Boddie) (Lepidoptera: Noctuidae) by Formanilides and Formamidines. *J.Econ.Entomol.* 77: 872-875.

EcoReference No.: 78950
Chemical of Concern: CYP,FNL,MP,CPY,CBL,MOM,EN,PFF; Habitat: T; Effect Codes: MOR; Rejection Code: OK(ALL CHEMS),NO COC(Br2),TARGET(CBL,MOM) .

203. Elliott, M. (1980). The Future for Insecticides. *In: M.Locke and D.S.Smith (Eds.), Insect Biology in the Future, Academic Press Inc., New York, NY* 879-904.

EcoReference No.: 70599
Chemical of Concern: RSM,DZ,PRN,DLD,AND,END,ES,CBL,DDT; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

204. Elliott, M. (1990). Pyrethroid Insecticides and Human Welfare. *J.E.Casida (Ed.), Pesticides and Alternatives, Elsevier, Amsterdam* 345-355.

Chemical of Concern: PMR,DM,ES,PRN,DDT,CBL,PYT; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

205. Ellis, M. D., Siegfried, B. D., and Spawn, B. (1997). The Effect of Apistan on Honey Bee (Apis mellifera L). Responses to Methyl Parathion, Carbaryl and Bifenthrin Exposure. *Apidologie* 28: 123-127.

EcoReference No.: 63845
Chemical of Concern: BFT,CBL,MP; Habitat: T; Rejection Code: TARGET(BFT).

206. Elmamlouk, T. H., Philpot, R. M., and Bend, J. R. (1977). Separation of Two forms of Cytochrome P-450 from Hepatic Microsomes of 1,2,3,4-Dibenzanthracene (DBA) Pretreated

Little Skates (Raja erinacea). *Pharmacologist* 19: 160 (ABS).

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT.

207. Elsner, E. A., Beers, E. H., and Baird, R. J. (1987). Apple, First Generation White Apple Leafhopper Commercial Orchard Insecticide Evaluation, 1986. *Insectic.Acaric.Tests* 12: 7 (010).

EcoReference No.: 88519
Chemical of Concern: CBL,AZ; Habitat: T; Effect Codes: POP; Rejection Code: NO CONTROL(TARGET-CBL,AZ).

208. EPA/OTS (1991). Letter to U.S.EPA Regarding the Enclosed Acute and Chronic Oral Toxicity Studies on 1-Ethoxy-4-Nitrobenzene with Attachments (Sanitized). *EPA/OTS Doc.#86-920000378S*.

EcoReference No.: 88962
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,PHY,BCM,BEH; Rejection Code: NO CONTROL(CBL).

209. EPA/OTS (1994). Toxicity of Compounds Including P-Nitrodichlorobenzene Used in Building No. 750 with Cover Letter Outlining Current Study of Tetrahydrofuran Toxicity Dated 05/10/94 (Sanitized). *EPA/OTS Doc.#86940000705S*.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO CONTROL(CBL).

210. Estes, P. S. and Pritchard, A. W. (1988). Physiological Responses of Ghost Shrimp to Carbaryl and 1-Naphthol. *Am.Zool.* 28: A21 (ABS).

EcoReference No.: 2350
Chemical of Concern: CBL; Habitat: A; Effect Codes: PHY; Rejection Code: NO ABSTRACT(CBL).

211. Eto, M., Seifert, J., Engel, J. L., and Casida, J. E. (1980). Organophosphorus and Methylcarbamate Teratogens: Structural Requirements for Inducing Embryonic Abnormalities in Chickens and Kynurenine Formamidase Inhibition in Mouse Liver. *Toxicol.Appl.Pharmacol.* 54: 20-30.

EcoReference No.: 77201
Chemical of Concern: CBL,DZ; Habitat: T; Effect Codes: PHY,GRO; Rejection Code: NO ENDPOINT(DZ,CBL)//NO DIET,COC.

212. Eulitz, E. G. (1986). Initial Experiments in the Control of False Wireworm (Tenebrionidae) on Tobacco Transplants. *Phytophylactica* 18: 115-119.

EcoReference No.: 74106
Chemical of Concern: TLF,TVP,CBL,ACP,MOM,ES,DZ,CPY; Habitat: T; Effect Codes: MOR,POP,BEH; Rejection Code: OK(ALL CHEMS),OK TARGET(DZ,ACP,CBL).

213. Evans, D. A. and Raj, R. K. (1991). Quassin: A Mosquito Larvicide with Selective Toxicity. *J.Ecotoxicol.Environ.Monit.* 1: 243-249.

EcoReference No.: 16192
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,GRO,PHY,BCM; Rejection Code: NO ENDPOINT(CBL).

214. Everts, K. L. (1998). Effects of Host Resistance and Fungicides on Yield and Quality of Spinach in Maryland. *Meet.of the Am.Phytopathol.Soc., Potomac Div., Mar.18-20, 1998, Morgantown, WV, Phytopathology* 88: S130.

Chemical of Concern: Maneb,DOD,CuOH,CBL; Habitat: T; Rejection Code: NO ABSTRACT.

215. Fahrig, R. (1974). Comparative Mutagenicity Studies with Pesticides. *IARC Sci.Publ.* 10: 161-181.

EcoReference No.: 76858
Chemical of Concern: MCPB,CBL,SZ,DQT,MP,Ziram,DMT,PCP,Folpt,Captan,MCPA,MLN,DZ,AND,EN,ES; Habitat: T; Rejection Code: NO REVIEW.

216. Falzon, M., Fernandez, Y., Cambon-Gros, C., and Mitjavila, S. (1983). Influence of Experimental Hepatic Impairment on the Toxicokinetics and the Anticholinesterase Activity of Carbaryl in the Rat. *J.Appl.Toxicol.* 3: 87-89.

EcoReference No.: 87663
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,PHY,ACC; Rejection Code: NO CONTROL(CBL).

217. Farage-Elawar, M. and Rowles, T. K. (1992). Toxicology of Carbaryl and Aldicarb on Brain and Limb Cultures of Chick Embryos. *J.Appl.Toxicol.* 12: 239-244.

Chemical of Concern: CBL,ADC; Habitat: T; Rejection Code: NO IN VITRO(CBL,ADC).

218. Fedorko, A., Kamionek, M., Kozlowska, J., and Mianowska, E. (1977). The Effects of Some Insecticides on Nematodes from Different Ecological Groups. *Pol.Ecol.Stud.* 3: 79-88.

EcoReference No.: 72265
Chemical of Concern: HCCH,CBL,FNT,MXC; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(TARGET-CBL).

219. Fedtke, C. (1991). Mode of Action Studies with Mefenacet. *Pestic.Sci.* 33: 421-426.

EcoReference No.: 73931
Chemical of Concern: MTL,GYP,SXD,HFP,PCP,ATZ,ACR,BTC,DU,CPP,BSF,PAQT,CBL; Habitat: A; Effect Codes: GRO; Rejection Code: NO CONTROL(ALL CHEMS).

220. Feeney, R. E., Leonard, R. M., and Eufernio, D. D. (1956). Irreversible Inactivation of Lysozyme by Copper. *Arch.Biochem.Biophys.* 61: 72-83.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO,NO BACTERIA.

221. Feldhaus, J. M., Feldhaus, A. J., Ace, L. N., and Pope, C. N. (1998). Interactive Effects of Pesticide Mixtures on the Neurobehavioral Responses and AChE Levels of Planaria. *In: E.E.Little, A.J.DeLonay, and B.M.Greenberg (Eds.), Environmental Toxicology and Risk Assessment, 7th Volume, ASTM STP 1333, Philadelphia, PA* 140-150.

EcoReference No.: 59846
Chemical of Concern: 24DXY,CBL,MLN; Habitat: A; Effect Codes: BCM,BEH; Rejection Code: NO CONTROL(MLN,CBL,24DXY).

222. Feldman, K. L., Armstrong, D. A., Dumbauld, B. R., and Langdon, C. J. (1995). Controlling

Populations of Burrowing Thalassinid Shrimp on Oyster Culture Grounds: Effects of Harvesting and Shell Configuration on Recruitment of Young-of-the-Year. *J.Shellfish Res.* 14: 265.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT(CBL).

223. Feral, C. and LeGall, S. (1982). The Influence of a Pollutant Factor (Tributyltin) on the Neuroendocrine Mechanism Reponsible for the Occurence of a Penis in the Females of Ocenebra erinacea. *In: J.Lever and H.H.Boer (Eds.), Molluscan Neuroendocrinology: Proceedings of the International Minisymposium on Molluscan Endocrinology, Elsevier, Amsterdam* 173-175.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO CONC.

224. Fernandez-Alba, A. R., Guil, L. H., Lopez, G. D., and Chisti, Y. (2001). Toxicity of Pesticides in Wastewater: A Comparative Assessment of Rapid Bioassays. *Anal.Chim.Acta* 426: 289-301.

EcoReference No.: 74540
Chemical of Concern: DZ,DDT,CBL,CBF,MLN,CYR,FMP,FTT,PPM,PAQT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBF),OK(DDT,CYR,FMP,FTT,PPM,PAQT),NO REVIEW(DZ,CBL,MLN).

225. Fernandez-Alba, A. R., Guil, L. H., Lopez, G. D., and Chisti, Y. (2001). Toxicity of Pesticides in Wastewater: A Comparative Assessment of Rapid Bioassays. *Anal.Chim.Acta* 426: 289-301.

User 1 Abbreviation: www.sciencedirect.com (1995-Present)
EcoReference No.: 74540
Chemical of Concern: DZ,DDT,CBL,CBF,MLN,CYR,FMP,FTT,PPM,PAQT; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBF),OK(ALL CHEMS),NO REVIEW(DZ).

226. Fernandez, O. A. (1965). (Germinacion y Desarrollo de Semillas de Pepino y Nabo Sembradas a Distintas Profundidades en un Suelo Tratado con el Acido 2,4-D) Germination and Growth of Cucumber and Turnip Seeds Sown at Different Depth in a 2,4-Dichlorophenoxyacetic Acid-Treated Soil. *Rev.Fac.Agron.Univ.Nac.la Plata* 41: 187-196.

EcoReference No.: 30076
Chemical of Concern: 24DXY,CBL; Habitat: T; Rejection Code: NO FOREIGN.

227. Fitzgerald, G. P., Gerloff, G. C., and Skoog, F. (1952). Studies on Chemicals with Selective Toxicity to Blue-Green Algae. *Sewage Ind.Wastes* 24: 888-896.

EcoReference No.: 8065
Chemical of Concern: NAA,IAA,CN,CuS,24DXY,AN,BZD,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

228. Fleeger, J. W., Carman, K. R., and Nisbet, R. M. (2003). Indirect Effects of Contaminants in Aquatic Ecosystems. *Sci.Total Environ.* 317: 207-233.

EcoReference No.: 87526
Chemical of Concern: ES,CBL,CPY,CYP,EFV,FNV,PMR,HCCH,TMP,DM,ATZ,LNR,GFS,BNZ,Cu,PAH,LPS,PCP,CBD,Cd,TBT; Habitat: A; Rejection Code: NO REVIEW(ALL CHEMS).

229. Frank, K. (1994). Energiskogens Miljoekonsekvenser. Aspekter Paa Odling, Slamgoedsling Och Foerbraenning. (Environmental Effects of Energy Forest (Short Rotation Willow). Aspects on Cultivation, Sludge Application and Combustion). *Swedish National Board for Industrial and Technical Development, Stockholm, Sweden (NTIS#DE94763358)* 31.

Chemical of Concern: CBL; Habitat: T; Rejection Code: No Mixture-Field, Non-English,NO MIXTURE.

230. Freitag, D. , Geyer, H., Kraus, A., Viswanathan, R., Kotzias, D., Attar, A., Klein, W., and Korte, F. (1982). Ecotoxicological Profile Analysis VII. Screening Chemicals for Their Environmental Behavior by Comparative Evaluation. *Ecotoxicol.Environ.Saf.* 6: 60-81.

EcoReference No.: 3781
Chemical of Concern: AN,PAH,PCP,PCB,AND,NP,CBL; Habitat: AT; Effect Codes: ACC; Rejection Code: NO ENDPOINT,CONTROL(ALL CHEMS).

231. Gaines, T. B. (1969). Acute Toxicity of Pesticides. *Toxicol.Appl.Pharmacol.* 14: 515-534.

EcoReference No.: 36729
Chemical of Concern: AND,CHD,DDT,DLD,ES,EN,HPT,HCCH,TXP,DZ,PRN,As,Cu,CBL,NAPH,PAH,PCP,CN,PQT,PPB,PPHD,Zineb,MRX,ABT,DMT,DS,FNT,PSM,Naled,OXD,THM,HCCH,MLN,MP,FPN,ETN; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

232. Gapochka, L. D., Artiukchova, V. I., Lobacheva, G. V., and Lebedeva, T. E. (1980). The Study of the Adaptation of Blue-Green Algae Synechocystis aquatilis and Anacystis nidulans to Dispersant DN-75. *Vestn.Mosk.Univ.Ser.16 Biol.* 2: 30-38 (RUS) (ENG ABS).

EcoReference No.: 6932
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN.

233. Garcinuno, R. M., Fernandez-Hernando, P., and Camara, C. (2003). Evaluation of Pesticide Uptake by Lupinus Seeds. *Water Res.* 37: 3481-3489.

EcoReference No.: 69589
Chemical of Concern: ATZ,SZ,CBL,FMP,PMR,LNR; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT,CONTROL(MTL),TARGET(ATZ,SZ,CBL).

234. Garten, C. T. and Trabalka, J. R. (1983). Evaluation of Models for Predicting Terrestrial Food Chain Behavior of Xenobiotics. *Environ.Sci.Technol.* 17: 590-595.

EcoReference No.: 36745
Chemical of Concern: DZ,ADC,AND,AZ,BMY,HCCH,CBL,CHD,CPY,CPYM,CMPH,DDT,DMB,DLD,DMT,DU,ES,EN,ETN,MLN,MTZ,MXC,MRX,PPHD,PCL,TDZ,TXP,TPR,TFL,PCB; Habitat: AT; Rejection Code: NO REVIEW,NO TITLES,NO REFS CHECKED.

235. Gencsoylu, I., Liu, W., Usmani, K. A., and Knowles, C. O. (1998). Toxicity of Acaricides to the Bulb Mite Rhizoglyphus echinopus (Acari: Acaridae). *Exp.Appl.Acarol.* 22: 343-351.

EcoReference No.: 64443
Chemical of Concern: TFY,FPP,CYP,DDT,IMC,CPY,DZ,DMT,CBL,RTN,PMR,FNV,BFT,CBF,DLD,EN,AND,FPN; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CBF),OK TARGET(DMT,RTN,CYP,BFT,FPN,DZ),OK(ALL CHEMS).

236. Gentile, T. J. and Calabrese, E. J. (1987). Screening for Potiential Hemolytic Responses to Environmental Agents Using a Bioactivation System: Evaluation of Six Pesticides. *J.Environ.Sci.Health Part A* 22: 427-444.

Chemical of Concern: MTL,CBL,DU,GYP,MLN; Habitat: T; Rejection Code: NO IN VITRO.

237. Georghiou, G. P. (1990). The Effect of Agrochemicals on Vector Populations. *In: R.T.Roush and B.E.Tabashnik (Eds.), Pesticide Resistance in Arthropods, Chapter 7, Chapman and Hall, New York, NY* 183-202.

EcoReference No.: 70833
Chemical of Concern: DDT,CBL,DLD,CPY; Habitat: T; Rejection Code: NO REVIEW.

238. Georghiou, G. P. (1972). Studies on Resistance to Carbamate and Organophosphorus Insecticides in Anopheles albimanus. *Am.J.Trop.Med.Hyg.* 21: 797-806.

Chemical of Concern: ABT,PPX,CBL,MP,PRN,MLN,DDT,DLD,FNTH,FNT,DDVP,CPY; Habitat: T; Rejection Code: NO REVIEW(ALL CHEMS).

239. Geyer, H., Politzki, G., and Freitag, D. (1984). Prediction of Ecotoxicological Behaviour of Chemicals: Relationship Between N-Octanol/Water Partition Coefficient and Bioaccumulation of Organic Chemicals by Alga Chlorella. *Chemosphere* 13: 269-283.

EcoReference No.: 11297
Chemical of Concern: PCP,24DXY,BZO,CYP,PNB,ATZ,CBL,DBN,HCCH,NAPH; Habitat: A; Effect Codes: ACC; Rejection Code: NO CONTROL(ALL CHEMS).

240. Ghersi-Egea, J. F., Walther, B., Decolin, D., Minn, A., and Siest, G. (1987). The Activity of 1-Naphthol-UDP-Glucuronosyltransferase in the Brain. *Neuropharmacology* 26: 367-372.

EcoReference No.: 88476
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: NO IN VITRO(CBL).

241. Ghosh, C., Ray, A. K., Bhattacharya, S., and Bhattacharya, S. (2001). Sub-Lethal Concentration of Pesticides Impair Interrenal Steroidogenesis in Freshwater Perch, Anabas testudineus. *Asian J.Microbiol., Biotechnol.Environ.Sci.* 3: 17-24.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SOURCE(CBL).

242. Ghosh, P. and Bhattacharya, S. (1992). In Vivo and In Vitro Acetylcholinesterase Inhibition by Metacid-50 and Carbaryl in Channa punctatus Under Natural Field Condition. *Biomed.Environ.Sci.* 5: 18-24.

EcoReference No.: 13352
Chemical of Concern: CBL,MP; Habitat: A; Rejection Code: NO MIXTURE.

243. Ghosh, P. K. (1990). Interrelationship of Acetylcholinesterase-Acetylcholine, Triiodothyronine-Thryoxine and Gonadotropin-Gonadotropin Releasing Hormone in Pesticide Treated Murrel, Channa punctatus (Bloch). *Ph.D.Thesis (Synopsis), Visva-Bharati University, Santiniketan, India* 6p.

EcoReference No.: 17838
Chemical of Concern: CBL,MP; Habitat: A; Effect Codes: BCM; Rejection Code: NO ENDPOINT(CBL).

244. Gibbs, K. E., Mingo, T. M., and Courtemanch, D. L. (1982). The Effects in 1982 on Pond Macroinvertebrates from Forest Spraying of Carbaryl, Sevin-4-Oil in 1980. *K.G.Stratton (Ed.), Environ.Monit.Coop.Spruce Budworm Control Project, Maine Dep.Cons., Forestry* 17 p.

EcoReference No.: 4768
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

245. Gibbs, K. E., Mingo, T. M., and Courtemanch, D. L. (1981). The Long-Term Effects on Pond Macroinvertebrates from Forest Spraying of Carbaryl (Sevin-4-Oil) In 1980 and Its Persistence in Water and Sediment in 1981. *K.G.Stratton (Ed.), Environ.Monit.Coop.Spruce Budworm Control Project, Maine Dep.Cons., Bur.of For.:* 20 p.

EcoReference No.: 4767
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

246. Gibbs, K. E., Mingo, T. M., and Courtemanch, D. L. (1984). Persistence of Carbaryl (Sevin-4-Oil) in Woodland Ponds and its Effects on Pond Macroinvertebrates Following Forest Spraying. *Can.Entomol.* 116: 203-213.

EcoReference No.: 11294
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

247. Gibbs, K. E., Mingo, T. M., and Courtemanch, D. L. (1983). Persistence of Carbaryl (Sevin-4-Oil) in Woodland Ponds and Its Effects on Pond Macroinvertebrates Following Forest Spraying (1980-1983). *In: K.G.Stratton (Ed.), Environ.Monit.Coop.Spruce Budworm Control Project, Maine Forest Serv., Dep.of Conservation, August, ME* 37-66 (Publ As 11294).

EcoReference No.: 4769
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO PUBL AS.

248. Gilbert, F., Galgani, F., and Cadiou, Y. (1992). Rapid Assessment of Metabolic Activity in Marine Microalgae: Application in Ecotoxicological Tests and Evaluation of Water Quality. *Mar.Biol.(Berl.)* 112: 199-205.

EcoReference No.: 68365
Chemical of Concern: HCCH,Zn,Cu,PCP,CBL; Habitat: A; Effect Codes: BCM; Rejection Code: OK(HCCH,Zn),NO CONTROL(Cu,PCP,CBL).

249. Gilbert, F., Galgani, F., and Cadiou, Y. (1992). Rapid Assessment of Metabolic Activity in Marine Microalgae: Application in Ecotoxicological Tests and Evaluation of Water Quality. *Mar.Biol.* 112: 199-205.

EcoReference No.: 68365
Chemical of Concern: HCCH,Zn,Cu,PCP,CBL; Habitat: A; Effect Codes: BCM; Rejection Code: OK(HCCH,Zn),NO CONTROL(Cu,PCP,CBL).

250. Gill, T. S., Pant, J. C., and Pant, J. (1988). Gill, Liver, and Kidney Lesions Associated with Experimental Exposures to Carbaryl and Dimethoate in the Fish (Puntius conchonius Ham.). *Bull.Environ.Contam.Toxicol.* 41: 71-78.

EcoReference No.: 5617
Chemical of Concern: CBL,DMT; Habitat: A; Effect Codes: CEL; Rejection Code: NO

ENDPOINT(DMT,CBL).

251. Gorter, C. J. (1962). Further Experiments on Auxin-Synergists. *Physiol.Plant.* 15: 88-95.

EcoReference No.: 40795
Chemical of Concern: IAA,CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(IAA,CBL).

252. Grafton-Cardwell, E. E. and Hoy, M. A. (1985). Intraspecific Variability in Response to Pesticides in the Common Green Lacewing, Chrysoperla carnea (Stephens) (Neuroptera: Chrysopidae). *Hilgardia* 53: 1-31.

EcoReference No.: 73696
Chemical of Concern: MOM,DZ,PMR,FNV,CBL,PSM; Habitat: T; Effect Codes: MOR,REP; Rejection Code: TARGET(DZ).

253. Grafton-Cardwell, E. E., Morse, J. G., and Gjerde, A. (1998). Effect of Insecticide Treatments to Reduce Infestation by Citrus Thrips (Thysanoptera: Thripidae) on Growth of Nonbearing Citrus. *J.Econ.Entomol.* 91: 235-242.

EcoReference No.: 82778
Chemical of Concern: MLSS,MOM,Naled,MLK,FVL,DMT,SBDA,CBL,FO,CPY,ACP,FTT; Habitat: T; Effect Codes: GRO,REP,POP; Rejection Code: NO MIXTURE(ALL CHEMS),TARGET(CBL).

254. Grahl, K. (1983). The Classification of Water Pollutants According to Their Toxicity to Aquatic Organisms (Die Klassifizierung von Wasserinhaltsstoffen nach ihrem Toxizitatspotential Gegenuber Wasserorganismen). *Acta Hydrochim.Hydrobiol.* 11: 137-143 (GER) (ENG TRANSL).

EcoReference No.: 49690
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO REFS CHECKED,NO REVIEW.

255. Grauslund, J. (1988). Fruit Thinning VI. Further Experiments on Chemical Thinning of the Apple Cultivar 'Summerred'. *Tidsskr.Planteavl* 92: 269-273.

EcoReference No.: 77552
Chemical of Concern: CaPS,EPH,CBL; Habitat: T; Effect Codes: GRO,POP; Rejection Code: OK(EPH),NO MIXTURE(CBL),CONC(CaPS),TARGET(CBL).

256. Greaves, J. H., Shepherd, D. S., and Gill, J. E. (1982). An Investigation of Difenacoum Resistance in Norway Rat Populations in Hampshire. *Ann.Appl.Biol.* 100: 581-587.

EcoReference No.: 49712
Chemical of Concern: DFM,CBL; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: NO CONTROL,ENDPOINT(DFM).

257. Groba, J. and Trzcinska, B. (1980). Effect of Selected Organophosphorous and Carbamate Insecticides on Rainbow Trout (Salmo gairdneri R.). *Bromatol.Chem.Toksykol.* 12: 33-38 (CZE) (ENG ABS).

EcoReference No.: 6861
Chemical of Concern: CBL; Habitat: A; Effect Codes: BCM; Rejection Code: NO FOREIGN(CBL).

258. Grosch, D. S. (1973). Reproduction Tests: The Toxicity for Artemia of Derivatives From Non-Persistent Pesticides . *Biol.Bull.* 145: 340-351.

EcoReference No.: 8852
Chemical of Concern: DZ,NP,CBL; Habitat: A; Effect Codes: REP,MOR,POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

259. Gruber, S. J. and Munn, M. D. (1998). Organophosphate and Carbamate Insecticides in Agricultural Waters and Cholinesterase (ChE) Inhibition in Common Carp (Cyprinus carpio). *Arch.Environ.Contam.Toxicol.* 35: 391-396.

EcoReference No.: 86598
Chemical of Concern: DZ,CPY,AZ,DS,CBL,MLN,EP; Habitat: A; Rejection Code: NO MIXTURE.

260. Guak, S., Beulah, M., and Looney, N. E. (2004). Thinning of Fuji and Gala Apple with Lime Sulphur and Other Chemicals. *Acta Hortic.* 636: 339-346.

EcoReference No.: 77606
Chemical of Concern: CaPS,CBL; Habitat: T; Effect Codes: PHY; Rejection Code: NO ENDPOINT(ALL CHEMS),TARGET(CBL).

261. Guilbault, G. G., Sadar, M. H., Kuan, S., and Casey, D. (1970). Effect of Pesticides on Liver Cholinesterases from Rabbit, Pigeon, Chicken, Sheep and Pig. *Anal.Chim.Acta* 51: 83-93.

Chemical of Concern: DDVP,PRN,MP,CBL; Habitat: T; Rejection Code: NO IN VITRO.

262. Gupta, A. and Singhal, G. S. (1996). Effect of Heavy Metals on Phycobiliproteins of Anacystis nidulans. *Photosynthetica (Prague)* 32: 545-548.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO IN VITRO.

263. Gupta, B. P. and Rai, K. M. (1984). Phytotoxic Effects of Some Insecticides of Peach Saplings. *Prog.Hortic.* 16 : 150-152.

EcoReference No.: 57161
Chemical of Concern: DLD,DZ,HPT,DDT,CBL,FNTH,ES,DEM,EPRN; Habitat: T; Effect Codes: PHY,CEL; Rejection Code: NO OM, pH//NO ENDPOINT(ALL CHEMS).

264. Gupta, R. and Sahai, Y. N. (1989). Qualitative Detection of Organochlorine and Carbamate Residues in the Brain of Catfish, Heteropenustes fossilis (Bloch) by Thin Layer Chromatography. *Environ.Exper.Toxicology* 151-156.

EcoReference No.: 13286
Chemical of Concern: ES,HCCH,CBL; Habitat: A; Effect Codes: ACC; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

265. Gupta, S. L. (1985). Influence of Inorganic Nitrogen-Nutrients on Copper Toxicity in Anacystis nidulans and Cyanophage AS-I Resistant Mutant. *Bull.Bot.Surv.India* 27: 142-144.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO DURATION.

266. Gworek, B. (1992). Inactivation of Cadmium in Contaminated Soils Using Synthetic Zeolites. *Environ.Pollut.* 75: 269-272.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO CONC.

267. Hadler, M. R., Redfern, R., and Rowe, F. P. (1975). Laboratory Evaluation of Difenacoum as a Rodenticide. *J Hyg.* 74: 441-448.

EcoReference No.: 86457
Chemical of Concern: DFM,WFN,CPC,DPC,CBL; Habitat: T; Effect Codes: PHY,BEH,MOR; Rejection Code: NO CONTROL(ALL CHEMS).

268. Haider, G. (1988). Histopathologische Veranderungen in der Muskulatur von Regenbogenforellen nach Langzeiteinwirkung von Zink. *Fischer.Teichwirt.* 39: 181-186 (GER).

EcoReference No.: 3877
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN.

269. Halliday, W. R., Morgan, N. O., and Kirkpatrick, R. L. (1987). Evaluation of Insecticides for Control of Stored-Product Pests in Transport Vehicles. *J.Entomol.Sci.* 22: 224-236.

EcoReference No.: 70501
Chemical of Concern: RSM,DDT,CBL,MOM,BDC,BFT,ACP,CHT,FPP,CYF,FVL,CYP,PMR,FNV; Habitat: T; Effect Codes: MOR,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS,TARGET(BFT,CYF,ACP,CBL,MOM).

270. Hamlen, R. A. and Henley, R. W. (1976). Phytotoxicity to Tropical Foliage Plants of Repeated Insecticide and Miticide Applications Under Fiberglass-Covered Greenhouse Conditions. *Proc.Fla.State Hortic.Soc.* 89: 336-338.

EcoReference No.: 25150
Chemical of Concern: RSM,OML,ACP,CPY,DMT,CBL; Habitat: T; Effect Codes: PHY,GRO; Rejection Code: NO ENDPOINT(ALL CHEMS),TARGET(CBL).

271. Han Il, R., Shim, J. C., Hong, H. K., Lee, J. S., Cho, H. W., and Kim, C. L. (1981). Studies on Control Effects of Pesticide Applications Against the Vector Mosquito Larvae in Rice Fields in Korea. *Korean J.Entomol.* 11: 39-45.

EcoReference No.: 10440
Chemical of Concern: MLN,DZ,ABT,FNT,CPY,CBL; Habitat: A; Effect Codes: MOR,POP; Rejection Code: LITE EVAL CODED(DZ),OK(ABT,FNT,CPY),NO ENDPOINT(CBL,MLN).

272. Hanazato, T. and Yasuno, M. (1987). Effects of a Carbamate Insecticide, Carbaryl, on the Summer Phyto- and Zooplankton Communities in Ponds. *Environ.Pollut.* 48: 145-159.

EcoReference No.: 12620
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,SYS; Rejection Code: NO ENDPOINT(CBL).

273. Hanazato, T. and Yasuno, M. (1988). Effects of a Carbamate Insecticide, Carbaryl, on the Zooplankton Communities in Ponds. 2. Experiment in the Cold Season. *Res.Rep.Natl.Inst.Environ.Stud./Kokuritsu Kogai Kenkyusho Kenkyo Hokoku 114:49-57 (JPN) (ENG ABS) (Publ As 8962).*

EcoReference No.: 8964
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN,NO QSAR.

274. Hanazato, T. and Yasuno, M. (1989). Effects of Carbaryl on the Spring Zooplankton

Communities in Ponds. *Environ.Pollut.* 56: 1-10.

EcoReference No.: 839
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

275. Hanazato, T. and Yasuno, M. (1990). Influence of Chaoborus Density on the Effects of an Insecticide on Zooplankton Communities in Ponds. *Hydrobiologia* 194: 183-197.

EcoReference No.: 3111
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

276. Hanazato, T. and Yasuno, M. (1989). Influence of Overwintering Daphnia on Spring Zooplankton Communities: An Experimental Study. *Ecol.Res.* 4: 323-328 (Author Communication Used).

EcoReference No.: 8962
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

277. Hanazato, T. and Yasuno, M. (1990). Influence of Persistence Period of an Insecticide on Recovery Patterns of a Zooplankton Community in Experimental Ponds. *Environ.Pollut.* 67: 109-122.

EcoReference No.: 8879
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

278. Hanazato, T. and Yasuno, M. (1990). Influence of Time of Application of an Insecticide on Recovery Patterns of a Zooplankton Community in Experimental Ponds. *Arch.Environ.Contam.Toxicol.* 19: 77-83.

EcoReference No.: 3007
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

279. Hanker, I., Talmr, L., and Kudelova, A. (1976). Influence of Lannate (Methomyl) and Cytrolane Insecticides on the Uptake and Transportation of 32P Phosphorus Isotope in Hop Seedlings (Vlik Insekticidu Lannate (Methomyl) a Cytrolane na Prijem a Transport 32P u Semenacku Chmele. *Sb.UNVI (Ustav.Vedeckotech.Inf.)Ochr.Rostln.* 12: 233-237 (CZE).

Chemical of Concern: MOM,CBL; Habitat: T; Rejection Code: NO SOURCE.

280. Hansen, D. J. (1969). Avoidance of Pesticides by Untrained Sheepshead Minnows. *Trans.Am.Fish.Soc.* 98: 426-429.

EcoReference No.: 5145
Chemical of Concern: 24DXY,CBL,CPY,MLN,DDT,EN; Habitat: A; Effect Codes: BEH; Rejection Code: NO CONTROL(CBL).

281. Hansen, D. J., Matthews, E., Nall, S. L., and Dumas, D. P. (1972). Avoidance of Pesticides by Untrained Mosquitofish, Gambusia affinis. *Bull.Environ.Contam.Toxicol.* 8: 46-51.

EcoReference No.: 5147
Chemical of Concern: DDT,CBL,EN,MLN; Habitat: A; Effect Codes: BEH; Rejection

Code: NO ENDPOINT(ALL CHEMS).

282. Harilal, K. S. and Sahai, Y. N. (1990). Qualitative Identification of Metabolites of Carbaryl in the Gonads of Catfish Heteropneustes fossilis (Bloch). *J.Environ.Biol.11(2-Supp)* 253-258.

EcoReference No.: 5010
Chemical of Concern: CrCl3,NaCN,CBL; Habitat: A; Effect Codes: ACC; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

283. Harris, C. R. and Svec, H. J. (1970). Laboratory Studies on the Contact Toxicity of Some Insecticides to Honeybees. *Pestic.Prog.* 8: 25-28.

EcoReference No.: 70979
Chemical of Concern: PRN,CBL,DLD,AND,DZ,EN,CHD,DDT,ES,HPT,MLN,MOM,CPY,CBF,Naled,AZ,DMT; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS,TARGET-AZ,TARGET-CBL,MLN,MOM).

284. Hashimoto, Y. and Fukami, J. I. (1969). Toxicity of Orally and Topically Applied Pesticide Ingredients to Carp, Cyprinus carpio Linne. *Botyu-Kagaku* 34: 63-66.

EcoReference No.: 9038
Chemical of Concern: CBL,DDT,EN,DLD,AND,PRN,MP,DZ,MOM,RTN,ATN,FBM,Ziram,FNT,ANZ,NaPCP,Zn; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

285. Hashimoto, Y. and Nishiuchi, Y. (1981). Establishment of Bioassay Methods for the Evaluation of Acute Toxicity of Pesticides to Aquatic Organisms. *J.Pestic.Sci.* 6: 257-264 (JPN) (ENG ABS).

EcoReference No.: 5761
Chemical of Concern: DDT,TPN,FNTH,24OXY,PRN,PAQT,CBL,PYN,Zineb,CZE,FBM,PPX,PPX,MOM,ES,TBC ,MLN,FE,SZ,NaPCP,Captan,AND,DZ,ETN,FLAC,PPN,FNT,RTN,EN,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN,CONTROL,(ALL CHEMS).

286. Hassan, S. A., Albert, R., Bigler, F., Blaisinger, P., Bogenschutz, H., Boller, E., Brun, J., Chiverton, P., Edwards, P., Englert, W. D., Huang, P., Inglesfield, C., Naton, E., Oomen, P. A., Overmeer, W. P. J., Rieckmann, W., Samsos-Petersen, L., Staubli, A., Tuset, J. J., Viggiani, G., and Vanwetswinkel, G. (1987). Results of the Third Joint Pesticide Testing Programme by the IOBC/WPRS-Working Group. Pesticides and Beneficial Organisms. *J.Appl.Entomol.* 103: 92-107 .

EcoReference No.: 59146
User Define 2: REPS,WASH,CALF,CORE,SENT
Chemical of Concern: SZ,CBL,PHMD; Habitat: T; Effect Codes: MOR,POP,PHY; Rejection Code: NO CONTROL(SZ,PHMD).

287. Hassan, S. A., Albert, R., Bigler, F., Blaisinger, P., Bogenschutz, H., Boller, E., Brun, J., Chiverton, P., Edwards, P., Englert, W. D., Huang, P., Inglesfield, C., Naton, E., Oomen, P. A., Overmeer, W. P. J., Rieckmann, W., Samsoe-Petersen, L., Staubli, A., Tuset, J. J., Viggiani, G., and Vanwetswinkel, G. (1987). Results of the Third Joint Pesticide Testing Program by the IOBC/WPRS-Working Group "Pesticides and Beneficial Organisms". *J.Appl.Entomol.* 103: 92-107 .

EcoReference No.: 59146

Chemical of Concern: AMTL,ACP,PHMD,AMZ,PMR,SZ,CBL,MOM,MZB; Habitat: T; Effect Codes: MOR,POP,PHY; Rejection Code: NO CONTROL(SZ,PHMD),NO ENDPOINT(ALL CHEMS).

288. Hata, T. Y., Hara, A. H., and Hu, B. K. S. (1997). Molluscicides and Mechanical Barriers Against Slugs, Vaginula plebeia Fischer and Veronicella cubensis (Pfeiffer) (Stylommatophora: Veronicellidae). *Crop Prot.* 16: 501-506.

EcoReference No.: 86757
Chemical of Concern: MCB,MAL,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO MIXTURE(CBL,MCB).

289. Hatch, R. C. (1988). Poisons Causing Nervous Stimulation or Depression. *In: N.H.Booth and L.E.McDonald (Eds.), Vet.Pharmacol.Theraput., 6th Edition, Iowa State Univ.Press, Ames, Iowa* 1053-1101 .

EcoReference No.: 70678
Chemical of Concern: PNB,Pb,DDT,ES,CHD,HCCH,TXP,AND,EN,DLD,CBL,PRN,CPY; Habitat: T; Rejection Code: NO COC,NO REVIEW.

290. Hattenschwiler, S. and Schafellner, C. (1999). Opposing Effects of Elevated CO2 and N Deposition on Lymantria monacha Larvae Feeding on Spruce Trees. *Oecologia* 118: 210-217.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO TOXICANT.

291. Haven, D., Castagna, M., Chanley, P., Wass, M., and Whitcomb, J. (1966). Effects of the Treatment of an Oyster Bed with Polystream and Sevin. *Chesapeake Sci.* 7: 179-188.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO MIXTURE,ENDPOINT(CBL).

292. Havens, K. E. (1993). The Effects of Two Chemical Stressors on the Freshwater Zooplankton: A Mesocosm Study. *Ohio J.Sci.* 93: 47 p.

Chemical of Concern: CBL,Cu; Habitat: A; Rejection Code: NO ABSTRACT(CBL,Cu).

293. Haverty, M. I. and Wood, J. R. (1981). Residual Toxicity of Eleven Insecticide Formulations to the Mountain Pine Cone Beetle, Conophthorus monticolae Hopkins. *J.Ga.Entomol.Soc.* 16: 77-83.

EcoReference No.: 70899
Chemical of Concern: RSM,CBL,HCCH,CYP,DZ; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(CYP,RSM,DZ).

294. Haynes, H. L., Moorefield, H. H., Borash, A. J., and Keays, J. W. (1958). The Toxicity of Sevin to Goldfish. *J.Econ.Entomol.* 51: 540.

EcoReference No.: 7999
Chemical of Concern: DDT,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: NO ABSTRACT(ALL CHEMS).

295. Heimbach, F. (1984). Correlations Between Three Methods for Determining the Toxicity of Chemicals to Earthworms . *Pestic.Sci.* 15: 605-611 (OECDG Data File).

EcoReference No.: 40492

Chemical of Concern: PCP,MDT,ES,PPX,CHD,CBL,Captan,CuS; Habitat: T; Effect Codes: MOR; Rejection Code: OK(EcoSSL)//NO CONTROL(ALL CHEMS).

296. Heinisch, E., Beitz, H., Seefeld, F., Hartisch, J., Dunsing, M., and Reifenstein, H. (1971). Residues of Crop Protectives on the Harvested Crop after Unintentional Treatment (Pflanzenschutzmittelruckstande an Pflanzlichem Erntegut nach Nicht Beabsichtigten Mitbehandlungen) . *Nachrichtenbl.Pflanzenschutzdienst DDR* 25: 141-146 (GER) (ENG ABS).

EcoReference No.: 68963
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

297. Heise, G. A. and Hudson, J. D. (1985). Effects of Pesticides and Drugs on Working Memory in Rats: Continuous Delayed Response. *Pharmacol.Biochem.Behav.* 23: 591-598.

EcoReference No.: 87757
Chemical of Concern: CBL,PPX,DM; Habitat: T; Effect Codes: BEH; Rejection Code: NO ENDPOINT(ALL CHEMS).

298. Helal, M., Baibagyshew, E., and Saber, S. (1998). Uptake of Cd and Ni by Spinach, Spinacea oleracea (L.) from Polluted Soil Under Field Conditions as Affected by Salt Water Irrigation. *Agronomie* 18: 443-448.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE, CONTROL, 1 CONC, ERE.

299. Heller, P. R. and Kellogg, S. (1988). Hairy Chinch Bug Control on a Home Lawn in Boalsburg, PA., 1987. *Insectic.Acaric.Tests* 13: 352 (No. 48G).

EcoReference No.: 88824
Chemical of Concern: CPY,CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(CPY,TARGET-CBL).

300. Heller, P. R. and Kellogg, S. (1988). Hairy Chinch Bug Control on a Home Lawn in Somerset, PA, 1987. *Insectic.Acaric.Tests* 13: 351 (No. 46G).

EcoReference No.: 88825
Chemical of Concern: FPP,CPY,ACP,CBL,CYF; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(FPP,CPY,TARGET-ACP,CBL,CYF).

301. Heller, P. R. and Kellogg, S. (1988). Pine Needle Scale Control on Scotch Pine in Centre County, Pennsylvania, 1987. *Insectic.Acaric.Tests* 13: 382 (No. 22H).

EcoReference No.: 88821
Chemical of Concern: CPY,FVL,ACP,CYF,CBL,DZ,EFV; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(CPY,TARGET-ALL CHEMS).

302. Heller, P. R. and Kellogg, S. (1988). Spring Control of Northern Masked Chafer and Asiatic Garden Beetle Grubs on a Golf Course Rough in Snyder County, PA, 1987. *Insectic.Acaric.Tests* 13: 334 (No. 14G).

EcoReference No.: 88827
Chemical of Concern: CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

303. Heller, P. R. and Kellogg, S. (1988). Summer Control of Japanese Beetle Grubs on a Golf

Course Fairway in Lewistown, PA, 1987. *Insectic.Acaric.Tests* 13: 333 (No. 11G).

EcoReference No.: 88828
Chemical of Concern: CBL,CPY; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(CPY,CBL).

304. Hellman, J. L. and Patton, T. W. (1988). Control of Green June Beetle Grubs on a Golf Course, 1986. *Insectic.Acaric.Tests* 13: 363 (No. 68G).

EcoReference No.: 88823
Chemical of Concern: DZ,CBL,IZF,CYF,ACP,TCF,CPY,PMR; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

305. Henderson, C., Pickering, Q. H., and Tarzwell, C. M. (1960). The Toxicity of Organic Phosphorus and Chlorinated Hydrocarbon Insecticides to Fish. *In: C.M.Tarzwell (Ed.), Biological Problems in WAter Pollution, Trans.2nd Seminar, April 20-24, 1959, Tech.Rep.W60-3, U.S.Public Health Service, R.A.Taft Sanitary Engineering Center, Cincinnati, OH* 76-88.

EcoReference No.: 936
Chemical of Concern: AZ,DDT,HCCH,DLD,CBL,EN; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

306. Hendrick, R. D., Everett, T. R., and Caffey, H. R. (1966). Effects of Some Insecticides on the Survival, Reproduction, and Growth of the Louisiana Red Crawfish. *J.Econ.Entomol.* 59: 188-192.

EcoReference No.: 8001
Chemical of Concern: AND,CBL,MP; Habitat: A; Effect Codes: POP,MOR,GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

307. Henzell, R. F., Skinner, R. A., and Clements, R. O. (1983). Insecticides for Control of Adult Grass Grub, Costelytra zealandica (White). V. Screening and Behaviour of Insecticides in Soil Bioassays. *N.Z.J.Agric.Res.* 26: 129-133 .

EcoReference No.: 79045
Chemical of Concern: PRT,NAPH,PMR,ES,DCB,PSM,DS,DZ,CBF,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: OK(ALL CHEMS),OK TARGET(PRT,DZ,NAPH,DCB).

308. Herbert, D. A. Jr. (1992). Experimental Foliar Treatments for Control of Tobacco Thrips in Peanut, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 245.

EcoReference No.: 79774
Chemical of Concern: ACP,CYH,CBL,ADC,FPP; Habitat: T; Effect Codes: POP; Rejection Code: OK TARGET(ACP,ADC,CBL).

309. Hermann, G. (1975). Routine Testing of New Bayer Pesticides for Fish Toxicity, as Part of the Product Development Programme Pflanzenschutz-Nachr. 28: 197-209.

EcoReference No.: 50152
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO METHODS.

310. Hernandez, D. A., Lombardo, R. J., Ferrari, L., and Tortorelli, M. C. (1986). Toxicity of Ethil-Parathion and Carbaryl on Early Stages of the Development of Sea Urchin [Toxicidad

Del Etil-Paration Y Carbaril Sobre Estadios Tempranos Del Desarrollo Del Erizo De Mar]. *Arch.Biol.Med.Exp.* 19: R212 (ABS)(SPA).

EcoReference No.: 16045
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT,FOREIGN(CBL).

311. Herve, J. J. (1985). Agricultural, Public Health and Animal Health Usage. *In: J.P.Leahey (Ed.), The Pyrethroid Insecticides, Chapter 6, Taylor and Francis, London* 343-425.

EcoReference No.: 72263
Chemical of Concern: PRN,ES,CPY,DZ,CBL,DLD,RSM,DDT; Habitat: T; Rejection Code: NO REVIEW.

312. Heungens, A. (1969). L'Influence de la Fumure et des Pesticides aldrine, Carbaryl et DBCP sur la Faune du sol dans la Culture des Azales. *Rev.Ecol.Biol.Sol.* 6: 131-145 (FRE) (ENG ABS).

EcoReference No.: 59468
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

313. Hickey, C. W., Roper, D. S., and Buckland, S. J. (1995). Metal Concentrations of Resident and Transplanted Freshwater Mussels Hyridella menziesi (Unionacea: Hyriidae) and Sediments in the Waikato River, New Zealand. *Sci Total Environ* 175: 163-177.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SEDIMENT,SURVEY.

314. Hirai, Y. (1991). Major Pests of Maize and Control Measures in Japan. *JARQ* 25: 12-16.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO REVIEW(CBL).

315. Hirakoso, S. (1969). Inactivating Effects of Micro-organisms on Insecticidal Activity of Dursban. *Jpn.J.Exp.Med.* 39: 17-20.

Chemical of Concern: CPY,PRN,CBL; Habitat: AT; Rejection Code: NO SPECIES,NO BACTERIA.

316. Hirakoso, S. (1968). Inactivation of Some Insecticides by Bacteria in Mosquito Breeding Polluted Water. *Jpn.J.Exp.Med.* 38: 327-334.

EcoReference No.: 62777
Chemical of Concern: DZ,CBL; Habitat: A; Rejection Code: NO BACTERIA.

317. Hirose, K. and Kitsukawa, M. (1976). Acute Toxicity of Agricultural Chemicals to Seawater Teleosts, with Special Respect to TLM and the Vertebral Abnormality. *Bull.Tokai Reg.Fish.Res.Lab.(Tokai-Ku Suisan Kenkyusho Kenkyo Hokoku)* 84: 11-20 (JPN) (ENG ABS).

EcoReference No.: 6128
Chemical of Concern: CBL,DZ; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: NO FOREIGN.

318. Hirose, K. and Kitsukawa, M. (1976). Acute Toxicity of Agricultural Chemicals to Seawater Teleosts, with Special Respect to TLm and the Vertebral Abnormality. *Bull.Tokai Reg.Fish.Res.Lab.* 84: 11-20 (CHI) (ENG ABS).

EcoReference No.: 6128
Chemical of Concern: CBL,DZ; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: NO FOREIGN(ALL CHEMS).

319. Hislop, R. G. and Prokopy, R. J. (1981). Integrated Management of Phytophagous Mites in Massachusetts (U.S.A.) Apple Orchards. 2. Influence of Pesticides on the Predator Amblyseius fallacis (Acarina: Phytoseiidae) Under Laboratory and Field Conditions. *Prot.Ecol.* 3: 157-172.

EcoReference No.: 70632
Chemical of Concern: SZ,CBL,DZ,PRN,ES,NH,MOM,DMT; Habitat: T; Effect Codes: MOR,REP,POP; Rejection Code: TARGET(DMT,DZ).

320. Hitchcock, A. E. and Zimmerman, P. W. (1941). The Use of Naphthalenacetic Acid and Its Derivatives for Preventing Fruit Drop of Apple. *Proc.Am.Soc.Horticult.* 38: 104-110.

EcoReference No.: 42198
Chemical of Concern: NAA,CBL,NAD KNPH; Habitat: T; Effect Codes: POP,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

321. Hoebaus, E. (1989). Active Substances and Plant Protection Agents Approved for Use Against Animal Pests in Viticulture Listed by Active Substance (Wirkstoffe und Genehmigte Pflanzenschutzmittel Gegen Tierische Schadlinge im Weinbau (nach Wirkstoffen Geordnet)). *Pflanzenschutz (Vienna)* 2: 12-15 (GER).

EcoReference No.: 76474
Chemical of Concern: PCZ,PMR,PRN,CYP,TDF,CBL; Habitat: T; Rejection Code: NO FOREIGN(PCZ,PMR,PRN,CYP,TDF,CBL).

322. Hoffman, D. J. and Albers, P. H. (1984). Evaluation of Potential Embryotoxicity and Teratogenicity of 42 Herbicides, Insecticides, and Petroleum Contaminants to Mallard Eggs. *Arch.Environ.Contam.Toxicol.* 13: 15-27.

EcoReference No.: 35249
Chemical of Concern: ACP,CBL,DZ,DMT,EN,HCCH,MLN,MOM,Naled,PRN,PMR,PSM,SPS,TMP,TXP,AMTL,ATZ,BMN,MCPA,24DXY,DMB,GYP,PAQT,PCL,PRO,PPN,TFN,ALSV; Habitat: T; Effect Codes: MOR,GRO,DVP; Rejection Code: LITE EVAL CODED(ATZ,MOM,DMT,DMB,ALSV),OK(ALL CHEMS except BMN,MCPA-MIXTURE).

323. Holloway, P. J. and Stock, D. (1990). Factors Affecting the Activation of Foliar Uptake of Agrochemicals by Surfactants. *In: D.R.Karsa (Ed.), Symp., Royal Soc.of Chem.Spec.Publ.No.77, Industrial Applications of Surfactants II, Apr.19-20, 1989, Cambridge, England, CRC Press Inc., Boca Raton, FL* 303-337.

EcoReference No.: 70472
Chemical of Concern: SZ,CBL,ATZ; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

324. Hooda, P. S. and Alloway, B. J. (1996). The Effect of Liming on Heavy Metal Concentrations in Wheat, Carrots and Spinach Grown on Previously Sludge-Applied Soils. *J.Agric.Sci.* 127: 289-294.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE,SURVEY.

325. Hopf, H. S. and Muller, R. L. (1962). Laboratory Breeding and Testing of Australorbis glabratus for Molluscicidal Screening. *Bull.W.H.O.* 27: 783-789 .

EcoReference No.: 14399
Chemical of Concern: ACL,CBL,Naled,TBT,CuS,NaPCP; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(NaPCP),NO CONTROL(CuS,ACL,CBL,TBT,Naled).

326. Horsburgh, R. L., Kilmer, S. W., Cook II, K. E., Cook, M. K., Warren, J. R., and Dogger, J. R. (1992). Apple, Miticide Evaluations 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Vol.17, Entomol.Soc.of Am., Lanham, MD* 10-12.

EcoReference No.: 76444
Chemical of Concern: PMR,CBL; Habitat: T; Effect Codes: POP; Rejection Code: OK(ALL CHEMS),NO COC(DOD),TARGET(CBL).

327. Hota, A. K., Mishra, D. K., and Tripathy, P. C. (1993). Metabolic Effects of Kilex Carbaryl on a Fresh Water Teleost, Channa punctatus (Bloch). *In: V.P.Agrawal, S.A.H.Abidi, and G.P.Verma (Eds.), Environmental Impact on Aquatic and Terrestrial Habitats, Dec.1991, Berhampur, Soc.of Biosciences, Muzaffarnagar, India* 335-342.

EcoReference No.: 17646
Chemical of Concern: CBL; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(CBL).

328. Houston, J. B., Upshall, D. G., and Bridges, J. W. (1975). Phamacokinetics and Metabolism of Two Carbamate Insecticides, Carbaryl and Landrin, in the Rat. *Xenobiotica* 5: 637-648.

EcoReference No.: 50331
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC,PHY; Rejection Code: NO ENDPOINT,CONTROL(CBL).

329. Howitt, A. and Biddinger, D. J. (1988). Apple, Insecticide Evaluation, 1987. *Insectic.Acaric.Tests* 13: 14 (No. 13A).

EcoReference No.: 88830
Chemical of Concern: CBL,CPY,PSM,DMT,FVL; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS,TARGET-CBL,DMT,FVL).

330. Hulina, N. and Dumija, L. (1999). Ability of Reynoutria japonica Houtt. (Polygonaceae) to Accumulate Heavy Metals . *Period.Biol.* 101: 233-235.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE.

331. Hurej, M. and Dutcher, J. D. (1994). Indirect Effect of Insecticides on Convergent Lady Beetle (Coleoptera: Coccinellidae) in Pecan Orchards. *J.Econ.Entomol.* 87: 1632-1635.

Chemical of Concern: MOM,EFV,PSM,CBL,ES; Habitat: T; Rejection Code: NO CONC,TARGET(MOM).

332. Hurwood, I. S. (1967). Studies on Pesticide Residues. 2. Carbaryl Residues in the Body Tissues and Milk of Cattle Following Dermal Application. *Queens.J.Agric.Anim.Sci.* 24: 69-74.

EcoReference No.: 37218
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC; Rejection Code: NO

ENDPOINT(CBL).

333. Hwang, S. W. and Schanker, L. S. (1974). Absorption of Carbaryl from the Lung and Small Intestine of the Rat. *Environ.Res.* 7: 206-211.

EcoReference No.: 87676
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC,PHY; Rejection Code: NO CONTROL,ENDPOINT(CBL).

334. Imada, K. (1976). Studies on the Vertebral Malformation of Fishes III. Vertebral Deformation of Goldfish (Carassius auratus) and Medakafish (Olyzias latipes) Exposed to Carbamate Insecticides. *Hokkaidoritsu Suisan Fukajo Kenkyu Hokoku* 31: 43-65 (JPN) (ENG ABS).

EcoReference No.: 7806
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,CEL; Rejection Code: NO FOREIGN(CBL).

335. Innes, J. R. M., Ulland, B. M., Valerio, M. G., Petrucelli, L., Fishbein, L., Hart, E. R., Pallotta, A. J., Bates, R. R., Falk, H. L., Gart, J. J., Klein, M., Mitchell, I., and Peters, J. (1969). Bioassay of Pesticides and Industrial Chemicals for Tumorigenicity in Mice: A Preliminary Note. *J.Natl.Cancer Inst.* 42: 1101-1114.

EcoReference No.: 71346
Chemical of Concern: DU,PNB,DDT,SZ,ATZ,RTN,FBM,MRX,PPZ,THM,CBL,24DXY,Maneb,Zineb,Captan,Nabam,Folpet; Habitat: T; Effect Codes: CEL; Rejection Code: LITE EVAL CODED(ATZ,RTN,PPZ),OK(ALL CHEMS).

336. Inoue, K. (1987). (A-III) Insecticides: Fruit Trees. *Jpn.Pestic.Inf.* 50: 28-29.

Chemical of Concern: CYF,FVL,CBL,BFT; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

337. Iqbal, S. H. and Khalil, S. (1981). Effect of DDT on Vesicular Arbuscular Mycorrhizal Plants of Different Ages and Subsequent Production of Endogonaceous Spores by the Vesicular Arbuscular Endophytes. *Bull.Mycol.* 1: 101-110.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO ARCHIVE.

338. Ishii, Y. and Hashimoto, Y. (1970). Metabolic Fate of Carbaryl (1-Naphthyl N-Methyl Carbamate) Orally Administered to Carp, Cyprinus carpio. *Bull.Agric.Chem.Insp.Stn.* 10: 48-50 (JPN) (ENG ABS).

EcoReference No.: 9590
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN(CBL).

339. Ito, A. and Shinohara, K. (1992). Dual Mode Cytotoxicities of Reactive Oxygens on L5178Y Radiosensitive Mutant M10. *Free Radic.Biol.Med.* 13: 299-304 .

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO COC(MTL).

340. Ivey, M. C., Ivie, G. W., Devaney, J. A., and Beerwinkle, K. R. (1984). Residues of Carbaryl and Two of Its Metabolites in Eggs of Laying Hens Treated with Sevin for Northern Fowl Mite Control by Dipping. *Poult.Sci.* 63: 61-65.

EcoReference No.: 37263
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT(ALL CHEMS).

341. Jacob, J., Schmoldt, A., Hamann, M., Raab, G., and Grimmer, G. (1987). Monooxygenase Induction by Various Xenobiotics and Its Influence on Rat Liver Microsomal Metabolism of Chrysene in Comparison to Benz[a]anthracene. *Cancer Lett.* 34: 91-102.

Chemical of Concern: PCB,PCP,DDT,CBL,HCCH,PAH; Habitat : T; Rejection Code: NO ENDPOINT(ALL CHEMS).

342. James, D. G. (2003). Pesticide Susceptibility of Two Coccinellids (Stethorus punctum picipes and Harmonia axyridis) Important in Biological Control of Mites and Aphids in Washington Hops. *Biocontrol Sci.Technol.* 13: 253-259.

EcoReference No.: 76934
Chemical of Concern: CPY,MLN,PSM,DZ,DMT,CBL,PIM,MOM,ES,IMC,TMX,BFT; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(BFT,DZ).

343. James, D. G. and Rayner, M. (1995). Toxicity of Viticultural Pesticides to the Predatory Mites Amblyseius victoriensis and Typhlodromus doreenae. *Plant Prot.Q.* 10: 99-102.

EcoReference No.: 67984
Chemical of Concern: CaPS,BMY,CBD,CTN,MZB,FRM,IPD,MLX,Cu,PCZ,TDM,VCZ,Zineb,Ziram,CuOH,AZ,CBL,CPY,DZ,DMT,ES,MLN,MDT,DCF; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CaPS),OK(ALL CHEMS),OK TARGET(DZ).

344. Jamnback, H. and Frempong-Boadu, J. (1966). Testing Blackfly Larvicides in the Laboratory and in Streams. *Bull.W.H.O.* 34: 405-421.

EcoReference No.: 2837
Chemical of Concern: Naled,CBL,CPY,DZ,MDT,DMT,ATM,ABT,PPX,PSM; Habitat: A; Effect Codes: BEH,POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

345. Jauhar, L. and Kulshrestha, S. K. (1983). Histopathological Changes Induced by the Sublethal Doses of Endosulfan and Carbaryl in the Intestine of Channa striatus Bloch. *Indian J.Zool.* 11: 35-42.

EcoReference No.: 4589
Chemical of Concern: CBL,ES; Habitat: A; Effect Codes: PHY,CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

346. Jauhar, L. and Kulshrestha, S. K. (1985). Histopathological Effects Induced by Sublethal Doses of Sevin and Thiodan on the Gills of Channa striatus BL. (Pisces, Channidae). *Acta Hydrochim.Hydrobiol.* 13: 395-400.

EcoReference No.: 11510
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(ES,CBL).

347. Jawale, M. D. (1986). Effect of Pesticides on Metabolic Rate of Freshwater Crab Barytelphusa quereni. *Environ.Ecol.4(1):142-143 / C.A.Sel.-Environ.Pollut.3:106-28672B (1987) / Aquat.Sci.Fish.Abstr.* 16: 8429-1Q16.

EcoReference No.: 124

Chemical of Concern: DDT,EN,CBL; Habitat: A; Effect Codes: PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

348. Jena, P. K., Adhya, T. K., and Rao, V. R. (1987). Influence of Carbaryl on Nitrogenase Activity and Combinations of Butachlor and Carbofuran on Nitrogen-Fixing Microorganisms in Paddy Soils. *Pestic.Sci.* 19: 179-184.

Chemical of Concern: CBL,BTC,CBF; Habitat: T; Rejection Code: NO BACTERIA.

349. Jenkins, D., Klein, S. A., Yang, M. S., Wagenet, R. J., and Biggar, J. W. (1978). The Accumulation, Translocation and Degradation of Biocides at Land Wastewater Disposal Sites: the Fate of Malathion, Carbaryl, Diazinon and 2,4-D Butoxyethyl Ester. *Water Res.* 12: 713-723.

Chemical of Concern: CBL,MLN,DZ; Rejection Code: NO SPECIES.

350. Jenkins, K. D. (1991). Metal Adaptation in the Polychaete Neanthes arenaceodentata. Annual Report, Year 2. *Rep.No.DOE/ER/60495-T2, National Inst.of Standards and Technology, Gaithersburg, MD, Ionizing Radiation Div., U.S.Dep.Energy* 14.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO PUBL AS.

351. Johansen, C. A. and Brown, F. C. (1972). Toxicity of Carbaryl-Contaminated Pollen Collected by Honey Bees. *Environ.Entomol.* 1: 385-386.

EcoReference No.: 35280
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(CBL).

352. John, P. J. and Prakash, A. (2003). Bioaccumulation of Pesticides on Some Organs of Freshwater Catfish Mystus vittatus. *Bull.Environ.Contam.Toxicol.* 70: 1013-1016.

EcoReference No.: 71980
Chemical of Concern: CBL; Habitat: A; Effect Codes: ACC; Rejection Code: NO ENDPOINT(CBL).

353. Johnson, I. C., Keller, A. E., and Zam, S. G. (1993). A Method for Conducting Acute Toxicity Tests with the Early Life Stages of Freshwater Mussels. *In: W.G.Landis, J.S.Hughes, and M.A.Lewis (Eds.), Environmental Toxicology and Risk Assessment, ASTM STP 1179, Philadelphia, PA* 381-396.

EcoReference No.: 50679
Chemical of Concern: ATZ,CBL,CYH; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(ATZ),OK(ALL CHEMS).

354. Johnson, J. W., Kriegel, R. D., and Wise, J. C. (1996). Grape Season-Long Broad-Spectrum Control, 1995. *Arthropod Manag.Tests* 63-64.

EcoReference No.: 77611
Chemical of Concern: TDF,CBL,AZ; Habitat: T; Effect Codes: POP; Rejection Code: OK(CBL,AZ),NO CONC(TDF),TARGET(AZ,CBL).

355. Johnson, N. C. and Pfleger, F. L. (1992). Vesicular-Arbuscular Mycorrhizae and Cultural Stresses. *In: G.J.Bethlenfalvay and R.G.Linderman (Eds.), ASA (Am.Soc.of Agron.), Spec.Publ.No.54, Oct.31, 1991, Denver, CO, Am.Soc.of Agron.Inc., Crop Sci.Soc.of Am.Inc., Soil Sci.Soc.of Am.Inc., Madison, WI* 71-99.

EcoReference No.: 70839
Chemical of Concern: SZ,PNB,CBL,DZ,PRN,CBF,ADC,DCNA,PHMD; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

356. Johnson, W. W. and Finley, M. T. (1980). Handbook of Acute Toxicity of Chemicals to Fish and Aquatic Invertebrates. *Resour.Publ.137, Fish Wildl.Serv., U.S.D.I., Washington, D.C* 98 p. (OECDG Data File) (Publ As 6797).

EcoReference No.: 666
Chemical of Concern: EDT,RSM,Captan,CBF,CBL,DFZ,PSM,24DXY,ACP,ACR,AZ,BS,Captan,CMPH,CPY,DBN,DMB,DMT,DPDP,DS,DU,DZ,FO,GYP,HCCH,HXZ,MDT,MLN,MLT,MOM,MP,Naled,OYZ,PRT,SZ,TBC,TPR,As,Pb; Habitat: A; Effect Codes: MOR,ITX,BEH; Rejection Code: NO PUBL AS.

357. Jones, K. H., Sanderson, D. M., and Noakes, D. N. (1968). Acute Toxicity Data for Pesticides (1968). *World Rev.Pest Control* 7: 135-143.

EcoReference No.: 70074
Chemical of Concern: 24DXY,ABT,ACL,ADC,AMTL,AMTR,AND,ASM,ATN,ATZ,AZ,BFL,BMC,BMN,BS,BTY,Captan,CBL,CCA,CHD,CMPH,CPP,CPY,CQTC,CTHM,Cu,CuFRA,DBN,DCB,DCNA,DDD,DDT,DDVP,DEM,DINO,DLD,DMB,DMT,DOD,DPP1,DQTBr,DS,DU,DZ,DZM,EDT,EN,EP,EPTC,ES,ETN,FLAC,FMU,FNF,FNT,FNTH,Folpet,HCCH,HPT,LNR,Maneb,MCB,MCPA,MCPB,MCPP1MDT,MLH,MLN,MLT,MRX,MTM,MVP,MXC,Naled,NPM,PB,PCH,PCL,PCP,PEB,PHMD,PHSL,PMT,PPHD,PPN,PPX,PPZ,PQT,PRN,PRO,PRT,PYN,PYZ,RTN,SFT,SID,SZ,TCF,TFN,THM,TRB,TRL,TXP,VNT,Zineb; Habitat: T; Effect Codes: MOR; Rejection Code: NO PUBL AS(24DXY,ABT,ACL,AMTL,AMTR,ASM,ATN,AZ,BFL,BMC,BMN,BS,BTY,CCA,CMPH,CPP,CPY,CQTC,CTHM,DBN,DCB,DCNA,DDT,DINO,DOD,DPP1,DQTBr,DU,DZM,EP,EPTC,ES,FMU,FNF,FNT,Folpet,HCCH,HPT,LNR,MCB,MCPP1,MLT,MP,MRX,MTM,MXC,Naled,NPM,Pb,PCH,PCL,PEB,PHSL,PPN,PPZ,PQT,PRO,PYN,PYZ,RTN,RYA,SFT,SID,TFN,THM,TRL,VNT),NO CONTROL,DURATION(ALL CHEMS).

358. Jones, M., d'Arcy Doherty, M., and Cohen, G. M. (1986). Antitumour Activity of 1-Naphthol Against L1210 Leukaemia In Vivo and Ehrlich Ascites Tumour Cells In Vivo and In Vitro. *Cancer Lett.* 33 : 347-354.

EcoReference No.: 88039
Chemical of Concern: CBL; Habitat: T; Effect Codes: CEL; Rejection Code: NO ENDPOINT(CBL).

359. Joshi, N. and Kumar, S. (2001). Acid and Alkaline Phosphatases Activity in Different Tissues of Fresh Water Crab, Paratelphusa masoniana (Henderson) to Pesticide Exposure. *Himalayan J.Environ.Zool.* 15: 101-104.

EcoReference No.: 68523
Chemical of Concern: CBL,AND; Habitat: A; Effect Codes: BCM; Rejection Code: NO CONC(AND,CBL).

360. Jubb, G. L. Jr. (1984). Patterns of Pesticide Use on 'Concord' Grapes in Erie County, Pennsylvania: 1970-1982. *Melsheimer Entomol.Ser.* 34: 1-11.

Chemical of Concern: SZ,PRN,CBL,DZ,Cu; Habitat: T; Rejection Code: NO TOX DATA.

361. Juhnke, I. and Luedemann, D. (1978). Results of the Investigation of 200 Chemical Compounds for Acute Fish Toxicity with the Golden Orfe Test (Ergebnisse der Untersuchung von 200 Chemischen Verbindungen auf Akute Fischtoxizitat mit dem Goldorfentest). *Z.Wasser-Abwasser-Forsch.* 11: 161-164 (GER) (ENG TRANSL) (OECDG Data File).

EcoReference No.: 547
Chemical of Concern: ATZ,CBL,HCCH,ACL,FUR,BZO,AMSV,APAC,C8OH,DCB,Se; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN,CONTROL(ALL CHEMS).

362. Julich, F. (1979). Hamatologische Untersuchungen an Regenbogenforellen (Salmo gairdneri) Und Karpfen (Cyprinus carpio) Nach Einwirkung Von Subletalen Kunzentrationen. *Z.Angew.Zool.* 66: 475-504.

EcoReference No.: 6691
Chemical of Concern: DMT,CBL; Habitat: A; Effect Codes: BCM; Rejection Code: NO FOREIGN.

363. Jurkowska, H. and Rogoz, A. (1988). Content of Mineral Nutrients in Plants of Oats as Depending on the Dose and Form of the Copper Fertilizer Part II. Microelements (Zawartosc Skladnikow Mineralnych w Roslinach owsa w Zaleznosci od Dawki i Formy Nawozu Miedziowego). *Acta Agrar.Silvestria* 27: 155-166 (POL) (ENG ABS).

EcoReference No.: 68937
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

364. Kakiichi, N., Kitamikado, A., Sasamori, T., Tanaka, Y., Ishiwata, Y., Sakurai, A., Shimizu, K., and Kamata, S. I. (1996). Toxicity of Several Insecticides Against Ciliate Colpoda aspera. *Anim.Sci.Technol.* 67: 844-850.

EcoReference No.: 70277
Chemical of Concern: PMR,CYR,PYX,PTP,FNTH,DDVP,RSM,CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO CONTROL(ALL CHEMS),MIXTURE(DDVP,FNTH,FNT,RSM).

365. Kanazawa, J. (1981). Bioconcentration Potential of Pesticides by Aquatic Organisms. *Jpn.Pestic.Inf.* 39: 12-16.

EcoReference No.: 12534
Chemical of Concern: HCCH,CBL,TFN,FNT,TBC,MLT,PNB,DZ,DLD; Habitat: A; Effect Codes: ACC,GRO; Rejection Code: NO CONTROL(ALL CHEMS).

366. Kanazawa, J. (1983). In Vitro and In Vivo Effects of Organophosphorus and Carbamate Insecticides on Brain Acetylcholinesterase Activity of Fresh-Water Fish, Topmouth Gudgeon. *Bull.Natl.Inst.Agric.Sci.Sect.C* 37: 19-30.

EcoReference No.: 11600
Chemical of Concern: DZ,FNT,PRN,PPX,CBL,MOM; Habitat: A; Effect Codes: BCM,MOR,BEH,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

367. Kanazawa, J. (1981). Measurement of the Bioconcentration Factors of Pesticides by Freshwater Fish and Their Correlation with Physicochemical Properties or Acute Toxicities. *Pestic.Sci.* 12: 417-424.

EcoReference No.: 15599
Chemical of Concern: DLD,DZ,MLT,FNT,CBL,TBC,PNB,HCCH,TFN; Habitat: A; Effect

Codes: MOR,ACC; Rejection Code: NO CONTROL(ALL CHEMS).

368. Kanazawa, J. (1983). A Method of Predicting the Bioconcentration Potential of Pesticides by Using Fish. *Jpn.Agric.Res.Q.* 17: 173-179.

EcoReference No.: 10750
Chemical of Concern: HCCH,MLT,TFN,CBL,DLD,DZ,FNT,TBC,PNB; Habitat: A; Effect Codes: ACC,BCM,GRO; Rejection Code: NO CONTROL(ALL CHEMS).

369. Kanazawa, J. (1980). Prediction of Biological Concentration Potential of Pesticides in Aquatic Organisms. *Rev.Plant Prot.Res.* 13: 27-36.

EcoReference No.: 59925
Chemical of Concern: PNB,DZ,MLT,TBC,HCCH,TFN,FNT,CBL,DLD; Habitat: A; Effect Codes: ACC,MOR; Rejection Code: NO CONTROL(ALL CHEMS).

370. Karinen, J. F., Lamberton, J. G., Stewart, N. E., and Terriere, L. C. (1967). Persistence of Carbaryl in the Marine Estuarine Environment. *J.Agric.Food Chem.* 15: 148-156.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO EFFECT.

371. Kaufman, D. D. (1977). Biodegradation and Persistence of Several Acetamide, Acylanilide, Azide, Carbamate, and Organophosphate Pesticide Combinations. *Soil Biol.Biochem.* 9: 49-57.

EcoReference No.: 87267
Chemical of Concern: PPN,PCH,PRT,NaN3,FMU,DU,DZ,CBL,CPP; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

372. Kaur, H. and Toor, H. S. (1997). Histopathological Changes in the Liver of Fingerlings of Indian Major Carp, Cirrhina mrigala (Hamilton) Exposed to Some Biocides. *Indian J.Ecol.* 24: 193-195.

EcoReference No.: 59932
Chemical of Concern: MLN,CBL; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(CBL,MLN).

373. Kavlock, R. J., Short, R. D. Jr., and Chernoff, N. (1987). Further Evaluation of an In Vivo Teratology Screen. *Teratog.Carcinog.Mutagen.* 7: 7-16 .

EcoReference No.: 70488
Chemical of Concern: PNB,CBL,EN,MANEB; Habitat: T; Effect Codes: REP,MOR; Rejection Code: NO ENDPOINT(CBL),OK(EN,PNB).

374. Kemper, B. (1976). Inactivation of Parathyroid Hormone mRNA by Treatment with Periodate and Aniline. *Nature* 262: 321-323.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO CONC,NO DURATION.

375. Keshavan, R. and Deshmukh, P. B. (1984). Vitamin A Concentrations in Liver and Serum of the Frog, Rana tigrina, Treated with DDT and Sevin. *Indian J.Comp.Anim.Physiol.* 2: 32-36.

EcoReference No.: 50919
Chemical of Concern: CBL,DDT; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

376. Khalil, S. K., Anwar, M., Naeem, M., Inamullah, Ali, I., Shah, F., and Jabbar, A. (1991). Studies on the Population Dynamics, Host Preference and Chemical Control of Brown Garden Snail Helix aspersa Muller. *Sarhad J.Agric.* 7: 83-89.

EcoReference No.: 86932
Chemical of Concern: CBL,ES,EP,CBF,ADC; Habitat: T; Effect Codes: POP,MOR,BEH; Rejection Code: NO ENDPOINT(ALL CHEMS).

377. Khare, S., Singh, S., and Mehrotra, A. (2002). Histopathological Changes in the Gills of Nandus nandus Induced by Endosulfan and Carbaryl. *Nat.Environ.Pollut.Technol.* 1: 1-4.

EcoReference No.: 82011
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT,STATS(ALL CHEMS).

378. Khazraji, A. L., Al-Iraqi, R. A., and Al-Saffar, Z. Y. (1984). The Relative Susceptibility of Culex pipiens molestus Forskal to Certain Insecticides in Nineva District, Iraq. *J.Biol.Sci.Res.* 15: 7-12.

Chemical of Concern: DZ,CBL; Habitat: A; Rejection Code: NO DURATION.

379. Khemani, S., Khemani, L. D., and Pant, M. C. (1990). Toxicological Effects of Selected Pesticides on Brain Acethylcholinesterase AChE Activity in Rats. *Indian J.Environ.Health* 32: 39-44.

Chemical of Concern: PHSL,CBL; Habitat: T; Rejection Code: NO CONC(ALL CHEMS).

380. Khillare, Y. K. and Wagh, S. B. (1987). Chronic Effects of Endosulfan, Malathion and Sevin in the Fresh Water Fish, Barbus stigma Testis Histopathology. *J.Sci.Res.* 9: 19-22.

EcoReference No.: 3706
Chemical of Concern: CBL,MLN,ES; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

381. Khillare, Y. K. and Wagh, S. B. (1987). Developmental Abnormalities Induced by the Pesticides in the Fish, Barbus stigma (Ham.). *Indian J.Appl.Pure Biol.* 2: 73-76.

EcoReference No.: 106
Chemical of Concern: CBL,MLN,ES; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

382. Khillare, Y. K. and Wagh, S. B. (1989). Effect of Certain Pesticides on Spermatogenesis in Fish Barbus stigma (Ham.). *Oikoassay* 6: 19-22.

EcoReference No.: 89101
Chemical of Concern: ES,MLN,CBL; Habitat: A; Effect Codes: CEL,REP; Rejection Code: NO ENDPOINT(ES,MLN,CBL).

383. Khillare, Y. K. and Wagh, S. B. (1989). Effects of Endosulfan, Malathion and Sevin on Biochemical Constituents of the Fish Puntius stigma. *Environ.Ecol.* 7: 66-69.

EcoReference No.: 2387
Chemical of Concern: ES,MLN,CBL; Habitat: A; Effect Codes: BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

384. Khillare, Y. K. and Wagh, S. B. (1988). Long-Term Effects of Pesticides Endosulfan,

Malathion and Sevin on the Fish Puntius stigma. *Environ.Ecol.* 6: 589-593.

EcoReference No.: 3426
Chemical of Concern: MLN,ES,CBL; Habitat: A; Effect Codes: MOR,GRO,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

385. Khmelevskii, V. N. (1969). Data on Experimental Therapy in Sevin Poisoning of Chickens. *Veterinariia* 46: 63-64 (RUS).

EcoReference No.: 50944
Chemical of Concern: CBL,PAH; Habitat: T; Rejection Code: NO FOREIGN.

386. Khodayari, K., Smith, R. J. Jr., and Tugwell, N. P. (1986). Interaction of Propanil and Selected Insecticides on Rice (Oryza sativa). *Weed Sci.* 34: 800-803.

EcoReference No.: 74315
Chemical of Concern: MOM,MP,CBL,PPN; Habitat: T; Effect Codes: PHY,POP,GRO; Rejection Code: NO MIXTURE(MOM),TARGET(CBL).

387. Kimura, T. and Keegan, H. L. (1966). Toxicity of Some Insecticides and Molluscicides for the Asian Blood Sucking Leech, Hirudo nipponia Whitman. *Am.J.Trop.Med.Hyg.* 15: 113-115.

EcoReference No.: 2890
Chemical of Concern: CBL,DZ,CHD,HCCH,MLN,CuS,DDT,DLD,NaPCP; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: NO CONTROL(ALL CHEMS).

388. Kirchmann, R., Fagniart, E., and Van Puymbroeck, S. (1966). Studies on Foliar Contamination by Radiocaesium and Radiostrontium. *In: Radioecological Concentration Process, Proc.of an Internat.Sympos.,Stockholm, April 25-29* 475-483.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE.

389. Klass, M. C. and Olson, J. K. (1985). The Effects of Selected Rice and Soybean Pesticides on the Eggs of Psorophora columbiae. *J.Am.Mosq.Control Assoc.* 1: 458-462.

Chemical of Concern: MLT,CBL,CBF,MLN,MP,TXP,PDM,PPN,ACP,Sn; Habitat: T; Rejection Code: NO CONC.

390. Kline, E. R., Mattson, V. R., Pickering, Q. H., Spehar, D. L., and Stephan, C. E. (1987). Effects of Pollution on Freshwater Organisms. *J.Water Pollut.Control Fed.* 59: 539-572.

EcoReference No.: 51026
Chemical of Concern: AND,Al,NH,As,ATZ,Ba,BNZ,Be,Cd,CBL,CTC,CHD,Cl,Cl2,CBZ,CF,CPH,CPY,Cr,Co,cU,CN,DDT,DZ,TCDD,DCB,DPDP,DLD,DMB,DXN,EDT,ES,EN,ETHB,FRN,FML,HPT,HCCH,Fe,Pb,Mn,Hg,PRN,Mo,NAPH,PAH,Ni,NBZ,NP,PCB,PCP,PL,PHTH,Se,Ag,SZ,Sn,TOL,TXP,TPH,TCE,V,Zn; Habitat: A; Rejection Code: NO REVIEW,NO REFS CHECKED.

391. Knaak, J. B., Yee, K., Ackerman, C. R., Zweig, G., Fry, D. M., and Wilson, B. W. (1984). Percutaneous Absorption and Dermal Dose-Cholinesterase Response Studies with Parathion and Carbaryl in the Rat. *Toxicol.Appl.Pharmacol.* 76: 252-263.

EcoReference No.: 37516
Chemical of Concern: PRN,CBL; Habitat: T; Effect Codes: ACC,BCM; Rejection Code: NO CONTROL(ALL CHEMS),NO ENDPOINT(CBL).

392. Knight, E. V., Alvares, A. P., and Chin, B. H. (1987). Effects of Phenobarbital Pretreatment on the In Vivo Metabolism of Carbaryl in Rats. *Bull.Environ.Contam.Toxicol.* 39: 815-821.

EcoReference No.: 87643
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: NO CONTROL(CBL).

393. Konno, T. and Kajihara, O. (1985). Synergism of Pirimicarb and Organophosphorus Insecticides Against the Resistant Rice Stem Borer, Chilo suppressalis Walker (Lepidoptera: Pyralidae). *Appl.Entomol.Zool.* 20: 403-410.

EcoReference No.: 74137
Chemical of Concern: CPYM,FNT,MP,FNTH,DZ,CPY,PRN,MLN,PSM,MDT,DDVP,TVP,CBL,BDC,PIRM,PIM,MOM; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(MLN,DZ).

394. Kopecek, K., Fuller, F., Ratzmann, W., and Simonis, W. (1975). The Light Dependent Effect of Insecticides on Unicellular Algae. (Lichtabhangige Insektizidwirkungen auf Einzellige Algen). *Ber.Dtsch.Bot.Ges.* 88: 269-281 (GER) (ENG ABS) .

EcoReference No.: 7828
Chemical of Concern: CBL,HCCH,DLD; Habitat: A; Effect Codes: BCM; Rejection Code: NO FOREIGN(CBL,DLD,HCCH).

395. Korn, S. (1973). The Uptake and Persistence of Carbaryl in Channel Catfish. *Trans.Am.Fish.Soc.* 102: 137-139.

EcoReference No.: 8889
Chemical of Concern: CBL; Habitat: A; Effect Codes: ACC,MOR; Rejection Code: NO CONTROL(CBL).

396. Korn, S. and Earnest, R. (1974). Acute Toxicity of Twenty Insecticides to Striped Bass, Morone saxatilis. *Calif.Fish Game* 60: 128-131.

EcoReference No.: 602
Chemical of Concern: CBL,CPY,HCCH,MLN,MP,Naled,ABT,FNTH,EN,ES,DDT,HPT,MXC,TXP,AND,CHD,PRN,DLD; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

397. Kossakowski, S., Zuk, M., and Dziura, A. (1982). Effect of Carbaryl Intoxication on Thyroid Function. *Bull.Vet.Inst.Pulawy* 25: 62-65.

EcoReference No.: 87750
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY,MOR,BCM; Rejection Code: NO ENDPOINT(CBL).

398. Koundinya, P. R. and Ramamurthi, R. (1980). Toxicity of Sumithion and Sevin to the Freshwater Fish, Sarotherodon mossambicus (Peters). *Curr.Sci.* 49: 875-876.

EcoReference No.: 6547
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: NO CONTROL(CBL).

399. Koval'Chuk, L. Y., Perevozchenko, I. I., and Braginskii, L. P. (1971). Acute Toxicity of Yalan, Eptam and Sevin for Daphnis magna. *Exp.Water Toxicol.(Eksp.Vodn.Toksikol.)* 2: 56-64 (RUS) (ENG ABS).

EcoReference No.: 6133
Chemical of Concern: CBL,MLT; Habitat: A; Rejection Code: NO FOREIGN,NO CONTROL(ALL CHEMS).

400. Koval'Chuk, L. Ya, Perevozchenko, I. I., and Braginskii, L. P. (1971). Acute Toxicity of Yalan, Eptam and Sevin for Daphnia magna. *Exp.Water Toxicol.(Eksp.Vodn.Toksikol.)* 2: 56-64 (RUS) (ENG ABS).

EcoReference No.: 6133
LITE Eval Status: NO FOREIGN
ECOTOX Status: A CBL,MLT; Effect Codes: A

401. Krechniak, J. and Englot, B. (1994). Interaction of Lindane and Carbaryl on Cholinesterase Activity in Rats. *Toxicol.Lett.* 74: 44-45.

Chemical of Concern: CBL,HCCH; Habitat: T; Rejection Code: NO ABSTRACT(ALL CHEMS).

402. Krieger, R. I. and Lee, P. W. (1973). Inhibition of In Vivo and In Vitro Epoxidation of Aldrin, and Potentiation of Toxicity of Various Insecticide Chemicals by Diquat in Two Species of Fish. *Arch.Environ.Contam.Toxicol.* 1: 112-121 (Used 2775 As Ref.).

EcoReference No.: 8894
Chemical of Concern: DDT,PRN,CBL,AND; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: NO CONTROL(ALL CHEMS).

403. Krijnen, C. J. and Boyd, E. M. (1971). The Influence of Diets Containing from 0 to 81 per Cent of Protein on Tolerated Doses of Pesticides. *Comp.Gen.Pharmacol.* 2: 373-376.

Chemical of Concern: DZ,CBL,HCCH; Habitat: T; Rejection Code: NO DURATION.

404. Krijnen, C. J. and Boyd, E. M. (1970). Susceptibility to Captan Pesticide of Albino Rats Fed from Weaning on Diets Containing Various Levels of Protein. *Food Cosmet.Toxicol.* 8: 35-42.

EcoReference No.: 84917
Chemical of Concern: DZ,HCCH,CBL,CAPTAN; Habitat: T; Effect Codes: MOR,GRO; Rejection Code: NO CONTROL(ALL CHEMS).

405. Kroes, R., Galli, C., Munro, I., Schilter, B., Tran, L. A., Walker, R., and Wurtzen, G. (2000). Threshold of Toxicological Concern for Chemical Substances Present in the Diet: A Practical Tool for Assessing the Need for Toxicity Testing. *Food Chem.Toxicol.* 38: 255-312.

EcoReference No.: 87546
Chemical of Concern: AZ,CBL,DMT,MLN,ADC,DZ,Captan,ATZ,MTM,ACP,MZB,PCB ; Habitat: T; Rejection Code: NO REVIEW.

406. Kulshrestha, S. K. and Arora, N. (1984). Effect of Sublethal Doses of Carbaryl and Endosulfan on the Skin of Channa striatus BL. *J.Environ.Biol.* 5: 141-147.

EcoReference No.: 10885
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

407. Kulshrestha, S. K. and Arora, N. (1984). Impairments Induced by Sublethal Doses of Two

Pesticides in the Ovaries of a Freshwater Teleost Channa striatus Bloch. *Toxicol.Lett.* 20: 93-98.

EcoReference No.: 10069
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: PHY,REP,GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

408. Kulshrestha, S. K. and Jauhar, L. (1984). Histochemical Localization of Mucosubstances in the Intestine of Channa striatus on Exposure to Sublethal Doses of Sevin and Thiodan. *Int.J.Acad.Ichthyol.* 5: 27-32.

EcoReference No.: 4309
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

409. Kulshrestha, S. K. and Jauhar, L. (1986). Impairments Induced by Sublethal Doses of Sevin and Thiodan on the Brain of a Freshwater Teleost Channa striatus BL. (Channidae). *Acta Hydrochim.Hydrobiol.* 14: 429-432.

EcoReference No.: 12068
Chemical of Concern: CBL,ES; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

410. Kumar, K. and Chapman, R. B. (1984). Sub-lethal Effects of Insecticides on the Diamondback Moth Plutella xylostella (L.). *Pestic.Sci.* 15: 344-352 .

EcoReference No.: 72015
Chemical of Concern: CBL,PRM,MTM; Habitat: T; Effect Codes: MOR,REP,GRO; Rejection Code: TARGET(CBL,MTM).

411. Kuwabara, K., Nakamura, A., and Kashimoto, T. (1980). Effect of Petroleum Oil, Pesticides, PCBs and Other Environmental Contaminants on the Hatchability of Artemia salina Dry Eggs. *Bull.Environ.Contam.Toxicol.* 25: 69-74.

EcoReference No.: 6548
Chemical of Concern: DS,DZ,HCCH,CBL,DLD,DMT,DDT,FNT,MLN,Captan,ALSV; Habitat: A; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

412. Lakshmi, G. V., Bharathi, C., Sandeep, B. V., and Rao, B. V. S. S. R. S (2002). Toxicity of Endosulfan and Carbaryl to a Brackish Water Oligochaete Pontodrilus bermudensis. *J.Ecophysiol.Occup.Health* 2: 39-43.

EcoReference No.: 82310
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: MOR,BEH,PHY; Rejection Code: NO CONTROL(CBL,ES).

413. Lal, O. P. (1975). Insecticidal Sprayings Causing Pollen Sterility in Chinese Cabbage. *Acta Agron.Hung.* 24: 145-147.

EcoReference No.: 40851
User Define 2: WASH,CALF,MED
Chemical of Concern: CBL,DMT,HCCH,MLN,DDT,ES,PRN,PPHD,DDVP,TCF,TXP; Habitat: T; Effect Codes: REP; Rejection Code: NO ENDPOINT(ALL CHEMS).

414. Lange, M., Gebauer, W., Markl, J., and Nagel, R. (1995). Comparison of Testing Acute Toxicity on Embryo of Zebrafish, Brachydanio rerio and RTG-2 Cytotoxicity as Possible

Alternatives to the Acute Fish Test. *Chemosphere* 30: 2087-2102.

EcoReference No.: 16033
Chemical of Concern: CBL,MLN,UREA; Habitat: A; Effect Codes: MOR,GRO,PHY; Rejection Code: NO IN VITRO(CBL,MLN).

415. Lasat, M. M., Baker, A. J. M., and Kochian, L. V. (1996). Physiological characterization of root Zn2+ absorption and translocation to shoots in Zn hyperaccumulator and nonaccumulator species of Thlaspi. *Plant Physiology.* 112: 1715-1722.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO TOXICANT.

416. Lavy, T. L., Dewell, R. A., Beard, C. R., Mattice, J. D., and Skulman, B. W. (1996). Environmental Implications of Pesticides in Rice Production. *Ark.Agric.Exp.Stn.Res.Ser.* 453: 61-69.

Chemical of Concern: MLT,BMY,CBL,TBC,CBF,MP,DCPA,24DC,BSF,MLN,MCPA,PCZ; Habitat: T; Rejection Code: NO SPECIES.

417. Le, D. P., Thirugnanam, M., Lidert, Z., Carlson, G. R., and Ryan, J. B. (1996). RH-2485: A New Selective Insecticide for Caterpillar Control. *In:Proc.Int.Conf.held at Farnham, Surrey: Br.Crop Prot.Conf.* 2: 481-486.

EcoReference No.: 82537
Chemical of Concern: MFZ,CBL,FNV,EFV,CPY,MP,AZ; Habitat: T; Effect Codes: MOR,POP,PHY; Rejection Code: LITE EVAL CODED(MFZ),NO ENDPOINT(FNV),PUBL AS(EFV,MP,CPY),MIXTURE(AZ,TARGET-CBL).

418. LeBerre, R., Philippon, B., Grebaut, S., Sechan, Y., Lenormand, J., Etienne, J., and Garreta, P. (1976). Control of Simulium damnosum, the Vector of Human Onchocerciasis in West Africa. I. Supplementary Trials of New Insecticides. *W.H.O.Documentary Series, WHO/VBC/76.614* 18 p.

EcoReference No.: 3725
Chemical of Concern: CBL,MXC,ABT,CPYM; Habitat: A; Effect Codes: MOR; Rejection Code: NO ENDPOINT,CONTROL(ALL CHEMS).

419. Lechner, D. W. and Abdel-Rahman, M. S. (1986). Kinetics of Carbaryl and Malathion in Combination in the Rat. *J.Toxicol.Environ.Health* 18: 241-256.

EcoReference No.: 86611
Chemical of Concern: CBL,MLN; Habitat: T; Effect Codes: PHY,ACC,BCM; Rejection Code: NO CONTROL,ENDPOINT(CBL,MLN).

420. Lee, C. Y., Lee, L. C., Ang, B. H., and Chong, N. L. (1999). Insecticide Resistance in Blattella germanica (L.) (Dictyoptera: Blattellidae) from Hotels and Restaurants in Malaysia. *In: W.H.Robinson, R.Rettich, and G.Rambo (Eds.), Proc.3rd Int.Conf.on Urban Pests, Graficke Zavody Hronov, Czech Republic* 171-182.

EcoReference No.: 77207
Chemical of Concern: ES,DLD,DDT,PMSM,FNT,DZ,CPY,CPYM,MLN,CBL,PPX,BFT,PMR,DM,ACT,HMN; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(BFT,DZ).

421. Lee, J. S., Lee, B. G., Yoo, H., Koh, C. H., and Luoma, S. N. (2001). Influence of Reactive Sulfide (AVS) and Supplementary Food on Ag, Cd and Zn Bioaccumulation in the Marine

Polychaete Neanthes arenaceodentata. *Mar.Ecol.Prog.Ser.* 216: 129-140.

Chemical of Concern: Ag,Zn,Cd,CBL; Habitat: A; Rejection Code: NO MIXTURE.

422. Lemke, L. A. and Kissam, J. B. (1987). Evaluation of Various Insecticides and Home Remedies for Control of Individual Red Imported Fire Ant Colonies. *J.Entomol.Sci.* 22: 275-281.

EcoReference No.: 78182
Chemical of Concern: ALSV,DZ,PYN,CBL,ACP,CPY; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(ALSV),OK(ALL CHEMS),OK TARGET(DZ).

423. Li, G. C. and Chen, C. Y. (1981). Study on the Acute Toxicities of Commonly Used Pesticides to Two Kinds of Fish. *K'O Hsueh Fa Chan Yueh K'an* 9: 146-152(CHI)(ENG ABS).

EcoReference No.: 5345
Chemical of Concern: ACR,CBL,ODZ,TBC,DZ,ES,BTC; Habitat: A; Effect Codes: PHY; Rejection Code: NO FOREIGN(ALL CHEMS).

424. Lichtenstein, E. P., Schulz, K. R., Skrentny, R. F., and Tsukano, Y. (1966). Toxicity and Fate of Insecticide Residues in Water. *Arch.Environ.Health* 12: 199-212.

EcoReference No.: 8020
Chemical of Concern: DDT,MP,AZ,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL,NO ENDPOINT(ALL CHEMS).

425. Lilly, J. H. and Downey, J. E. (1961). Annual Progress Report on Cooperative Project on Effects of Sevin and DDT on Harmful and Beneficial Arthropods of Forests and on Wildlife. *Manuscript, University of Massachusetts, Amherst, MA* 22.

EcoReference No.: 16464
Chemical of Concern: CBL,DDT; Habitat: T; Rejection Code: NOT EcoSSL SPECIES,TARGET(CBL).

426. Lilly, J. H., Mohiyudden, S., Prabhuswamy, H. P., Samuel, J. C., and Shetty, S. V. R. (1969). Effects of Insecticide-Treated Rice Plants and Paddy Water on Vertebrate Animals. *Mysore J.Agric.Res.* 3: 371-379.

EcoReference No.: 37713
Chemical of Concern: DZ,CBL,PRT; Habitat: AT; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

427. Lilly, J. H., Mohiyuddin, S., Prabhuswamy, H. P., Samuel, J. C., and Shetty, S. V. R. (1969). Effects of Insecticide-Treated Rice Plants and Paddy Water on Vertebrate Animals. *Mysore J.Agric.Res.* 3: 371-379.

EcoReference No.: 37713
Chemical of Concern: DZ,CBL,PRT; Habitat: AT; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

428. Liu, M., Hashi, Y., Song, Y., and Lin, J. M. (2005-). Simultaneous Determination of Carbamate and Organophosphorus Pesticides in Fruits and Vegetables by Liquid Chromatography-Mass Spectrometry. *J.Chromatogr.A* 1097: 183-187.

Chemical of Concern: MCB,ADC,CBL,MDT,AZ,MLN,PHSL,FMA; Habitat: T; Rejection

Code: NO METHODS(ALL CHEMS).

429. Loeb, H. A. and Kelly, W. H. (1963). Acute Oral Toxicity of 1,496 Chemicals Force-fed to Carp. *U.S.Fish.Wildl.Serv., Sp.Sci.Rep.-Fish.No.471, Washington, D.C.* 124 p.

EcoReference No.: 15898
Chemical of Concern: AZ,Captan,CBL,CMPH,HCCH,MLN,Naled,SZ,PNB,ACL,WFN,FUR,DPC,RTN,NaN3,PCP, NaPCP,AsAC,ACL,ATZ,Se,Zn,DZ,PYPG; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: NO CONTROL(ALL CHEMS).

430. Lotufo, G. R., Farrar, J. D., and Bridges, T. S. (2000). Effects of Exposure Source, Worm Density, and Sex on DDT Bioaccumuluation and Toxicity in the Marine Polychaete Neanthes arenaceodentata. *Environ.Toxicol.Chem.* 19: 472-484 .

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SEDIMENT.

431. Lourens, J. H. M. and Lyaruu, D. M. (1979). Susceptibility of Some East African Strains of Rhipicephalus appendiculatus to Cholinesterase Inhibiting Acaricides. *PANS (Pest Artic.News Summ.)* 25: 135-142.

EcoReference No.: 72641
Chemical of Concern: CBL,CPY,DZ; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(DZ).

432. Lowe, J. I. (1967). Effects of Prolonged Exposure to Sevin on an Estuarine Fish, Leiostomus xanthurus Lacepede . *Bull.Environ.Contam.Toxicol.* 2: 147-155.

EcoReference No.: 629
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,MOR; Rejection Code: NO ENDPOINT(CBL).

433. Lubek, B. M., Kubow, S., Basu, P. K., and Wells, P. G. (1990). Cataractogenicity and Bioactivation of Naphthalene Derivatives in Lens Culture and In Vivo. *In: S.Lerman and R.C.Tripathi (Eds.), Ocular Toxicology, 1st Congr.of the Int.Soc.of Ocular Toxicology, June 7, 1988, Toronto, Ontario, Canada, Marcel Dekker Inc., New York, NY* 203-210.

EcoReference No.: 83784
Chemical of Concern: NAPH,CBL; Habitat: T; Effect Codes: CEL; Rejection Code: NO ENDPOINT(NAPH).

434. Lucena, J. J., Hernandez, L. E., Olmos, S., Carpena-Ruiz, R. O., Fragoso, M. A. C., and Van, Beusichem M. L. (1993). Micronutrient content in graminaceous and leguminous plants contaminated with mercury. <Book> developments in plant and soil sciences; optimization of plant nutrition. *Dev.Plant Soil Sci.* 531-537.

Chemical of Concern: CBL; Habitat: T; Rejection Code: No Mixture-Field, Control, Duration, Concs, Ere,NO MIXTURE,SURVEY.

435. Lucero, H. A., Andreo, C. S., and Vallejos, R. H. (1976). Sulphydryl Groups in Photosynthetic Energy Conservation III. Inhibition of Photophosphorylation in Spinach Chloroplasts by CdCl2. *Plant Sci.Lett.* 6: 309-313.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MEDIA, OM, pH,NO IN VITRO.

436. Lund, M. (1981). Comparative Effect of the Three Rodenticides Warfarin, Difenacoum and Brodifacoum on Eight Rodent Species in Short Feeding Periods. *J.Hyg.* 87: 101-107.

EcoReference No.: 75609
Chemical of Concern: BDF,WFN,DFM,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL,ENDPOINT(DFM).

437. Lupetti, P. , Marsili, L., Focardi, S., and Dallai, R. (1994). Organochlorine Compounds in Litter-Dwelling Arthropods: Collembola (Insecta Apterygota) from Central Italy. *Acta Zool.Fenn.* 94-97.

Chemical of Concern: CBL; Habitat: T; Rejection Code: No Conc.

438. Lysak, A. and Marcinek, J. (1972). Multiple Toxic Effect of Simultaneous Action of Some Chemical Substances on Fish. *Rocz.Nauk Roln.Ser.H Rybactwo* 94: 53-63.

EcoReference No.: 9125
Chemical of Concern: FML,TOL,AN,CBL,BNZ; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: NO CONTROL(ALL CHEMS).

439. Maas, J. L. (1982). Toxicity of Pesticides. *Rep.No.82, Lab.for Ecotoxicol., Inst.for Inland Water Manag.and Waste Water Treatment* 15: 4 p.(DUT).

EcoReference No.: 5370
Chemical of Concern: DMT,CBL,DZ,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN(CBL,DZ,MLN,DMT).

440. MacCrimmon, H. R., Wren, C. D., and Gots, B. L. (1983). Mercury Uptake by Lake Trout, Salvelinus namaycush, Relative to Age, Growth, and Diet in Tadenac Lake with Comparative Data from Other Precambrian Shield Lakes. *Can J Fish Aquat Sci* 40: 114-120.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SURVEY.

441. Macek, J., Cencelj, J., Dorer, M., and Milharcic, L. (1974). Contamination of Potato Field Soil and Potato Tubers with Residuals of Carbaryl DDT and Lindane in Slovenia (Kontaminacija Zemlje iz Krompirisc in Gomoljev Krompirja z Residui Carbarila, Diklordifeniltrikloretana in Lindana v Sloveniji). *Zb.Bioteh.Fak.Univ.Ljublj.Kmetijstvo.* 23: 57-68 (POL).

EcoReference No.: 46240
Chemical of Concern: CBL,HCCH; Habitat: T; Rejection Code: NO FOREIGN.

442. Macek, J. and Ilc, T. (1991). Weed Control Trials with Some Herbicides in Medicinal Herbs (Echinacea purpurea L. and Plantago afra L.) (Versuche zur Unkrautbekampfung in Heilpflanzen (Echinacea pupurea L. und Plantago afra L.) mit Einigen Herbiziden). *Med.Fac.Landbouwwet.Rijksuniv.Gent* 56: 665-671 (GER) (ENG ABS).

EcoReference No.: 70188
Chemical of Concern: SZ,MTL,PHMD,CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO FOREIGN.

443. MacKenzie, C. L. Jr. and Shearer, L. W. (1959). Chemical Control of Polydora websteri and Other Annelids Inhabiting Oyster Shells. *Proc.Natl.Shellfish Assoc.* 50: 105-111.

EcoReference No.: 19935
Chemical of Concern: CBL,RTN,24DC,DCB,DDT,3CE,4CE,PL; Habitat: A; Effect Codes:

BEH; Rejection Code: NO CONTROL(ALL CHEMS).

444. MacKenzie, K. E. and Winston, M. L. (1989). The Effects of Sublethal Exposure to Diazinon, Carbaryl and Resmethrin on Longevity and Foraging in Apis mellifera L. *Apidologie* 20: 29-40.

EcoReference No.: 70542
Chemical of Concern: RSM,DZ,CBL; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL CODED(RSM),OK(ALL CHEMS),OK TARGET(DZ).

445. MacPhee, C. and Ruelle, R. (1969). Lethal Effects of 1888 Chemicals upon Four Species of Fish From Western North America. *Bull.No.3, Forest, Wildl.and Range Exp.Stn., Univ.of Idaho, Moscow, ID* 112 p.

EcoReference No.: 15148
Chemical of Concern: PNB,24DXY,Captan,CBL,DOD,HCCH,MLN,NYP,CST,WFN,FUR,Cu,CuS,NaN3,CuCl,PCP,ACL,ATM,Se,DBAC,Zn,DZ,Pb,DCB,IAA; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: NO CONTROL(ALL CHEMS).

446. Macpherson, S. E., Scott, R. C., Rawlins, M. D., and Williams, F. M. (1989). Carbaryl Metabolism by Rat Skin and Liver. *In: Joint Meet.of the Br.Toxicol.Soc.and Inst.of Biol., Sept.22-23, 1988, Oxford, England, U.K., Hum.Toxicol.* 8: 67-68.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

447. Madhukar, B. V. and Matsumura, F. (1979). Comparison of Induction Patterns of Rat Hepatic Microsomal Mixed-Function Oxidases by Pesticides and Related Chemicals. *Pestic.Biochem.Physiol.* 11: 301-308.

EcoReference No.: 37794
Chemical of Concern: PCB,DDT,HCCH,DLD,CBL,DZ,CHD,MRX,TCDD,DXN; Habitat: T; Effect Codes: BCM; Rejection Code: No Oral (TRV)//NO RESIDUE//NO ENDPOINT(ALL CHEMS).

448. Maheshwari, D. K., Gupta, M., Sawhney, R., and Khandelwal, A. (1993). Dual Behaviour of Carbaryl and 2,4-Dichlorophenoxyacetic Acid in Rhizobium leguminosarum 2005 Under Explanta Conditions. *Zentralbl Mikrobiol* 148: 588-592.

Chemical of Concern: CBL,24DXY; Habitat: A; Rejection Code: NO SPECIES,COC(MTL),NO BACTERIA.

449. Mahlberg, A. (1990). Heavy Metals in Soils, Plants, Running Waters and Their Sediments in the Banana Cultivation Region of Baru, Panama (Schwermetalle in Boeden, Pflanzen, Fliessgewaessern und Ihren Sedimenten im Bananenanbaugebiet Baru, Panama). *Gov.Rep.Announce.Index* 24 .

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO DURATION,NO SURVEY.

450. Maier-Bode, H. (1972). Verhalten von Herbiziden in Wasser, Schlamm und Fischen nach Applikation in Fischteichen. *Schriftenkeihe des Vereins* 37: 67-75 (GER).

EcoReference No.: 79757
Chemical of Concern: AMTR,SZ,ATZ,CBL; Habitat: A; Rejection Code: NO FOREIGN.

451. Maine Forest Serv., Dep. of Conservation (1980). Effects of Carbaryl (Sevin) on Brook Trout

in Streams Receiving Drift from Spraying of Nearby Forests. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1979 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 1-300.

EcoReference No.: 16310
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO REVIEW.

452. Maine Forest Serv., Dep. of Conservation (1978). Effects of Sevin, a Spruce Budworm Insecticide on Fish and Invertebrates in the Mattawamkeag River in 1976. *In: K.G.Stratton (Ed.), Environ.Monit.of Cooperative Spruce Budworm Control Projects, Maine 1976 and 1977, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 1-242.

EcoReference No.: 16304
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO REVIEW.

453. Maine Forest Serv., Dep. of Conservation (1984). A Study of Leaf-Processing Disruption in Streams Within Spruce Budworm Supprjession Project Carbaryl Spray Blocks. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1983 Maine Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 1-113.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

454. Malley, D. F. (1996). Cadmium Whole-Lake Experiment at the Experimental Lakes Area - An Anachronism. *Can J Fish Aquat Sci* 53: 1862-1870.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO REVIEW.

455. Malvisi, J., Zaghini, A., and Stracciari, G. (1992). Carbaryl Distribution in Rabbit Tissues and Body Fluids . *Vet.Hum.Toxicol.* 34: 501-503.

EcoReference No.: 87664
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC,PHY; Rejection Code: NO CONTROL,ENDPOINT(CBL).

456. Mani, M. (1994). Relative Toxicity of Different Pesticides to Campoletis chlorideae Uchida (Hym., Ichneumonidae). *J.Biol.Control* 8: 18-22.

EcoReference No.: 62600
Chemical of Concern: 2INEB,DINO,DCF,Cu,ES,MOM,CBL,FNV,PHSL,CYP,DM,DMT,MLN,CPY,MP,FNTH,DDVP,PPHD,FVL,ACP,MZB,CBD; Habitat: T; Effect Codes: MOR; Rejection Code: OK TARGET(DMT,MLN,FVL,CYP,ACP,CBL).

457. Mani, M. and Krishnamoorthy, A. (1996). Response of the Encyrtid Parasitoid, Tetracnemoidea indica of the Oriental Mealybug Planococcus lilacinus to Different Pesticides. *Indian J.Plant Prot.* 24: 80-85.

EcoReference No.: 67219
Chemical of Concern: TDF,PPHD,DMT,ES,DDVP,FNV,CYP,DM,MP,FNTH,MLN,PHSL,CBL,FVL,CPY,AZD,FSTAI,Captan,Ziram,MZB,DINO,Cu,CTN,DCF; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS),TARGET(MLN,CBL).

458. Manorik, A. V., Vasil'chenko, V. F., Mandrovskaya, N. M., and Malichenko, S. M. (1968). Inactivation of Herbicides of the 1,3,5-Triazine Series by Soil Microorganisms. *Agrokhimiya*

4: 123-135 (RUS).

EcoReference No.: 72441
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

459. Mansour, S. A. (1987). Is it Possible to Use the Honey Bee Adult as a Bioindicator for the Detection of Pesticide Residues in Plants? *Acta Biol.Hung.* 38: 69-76.

EcoReference No.: 67982
Chemical of Concern: MOM,CBL,PIRM,FNT,CPY,DCF,FNV,PPX,DZ; Habitat: T; Effect Codes: MOR,ACC; Rejection Code: NO DURATION,ENDPOINT(DZ),NO ENDPOINT(MOM),TARGET(CBL).

460. Mansour, S. A., Ali, A. D., and Al-Jalili, M. K. (1984). The Residual Toxicity to Honeybees of Some Insecticides on Clover Flowers: Laboratory Studies. *J.Apic.Res.* 23: 213-216.

EcoReference No.: 35334
Chemical of Concern: CBL,FNV,PIRM,PPX,FNT,CPY,MOM,DCF,DZ; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(DZ,MOM),OK TARGET(PPX,CBL,FNT,CPY,PIRM,DCF,FNV).

461. Marking, L. L., Bills, T. D., and Crowther, J. R. (1984). Effects of Five Diets on Sensitivity of Rainbow Trout to Eleven Chemicals. *Prog.Fish-Cult.* 46: 1-5 .

EcoReference No.: 10656
Chemical of Concern: Cl,TFM,CBL,PMR,ATM,MLN,CN,CuS,RTN,Cu; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS),LITE EVAL CODED(OW-TRV-Cu).

462. Marletto, F., Patetta, A., and Manino, A. (2003). Laboratory Assessment of Pesticide Toxicity to Bumblebees. *Bull.Insectology* 56: 155-158.

EcoReference No.: 73698
Chemical of Concern: MOM,IMC,LCYT,CYF,DMT,AV,ACP,CBL,CPYM,PSPL; Habitat: T; Effect Codes: MOR; Rejection Code: OK(ALL CHEMS),OK TARGET(ACP,CBL).

463. Marsh, J. A. P. and Davies, H. A. (1978). The Effect of Herbicides on Respiration and Transformation of Nitrogen in Two Soils. III. Lenacil, Terbacil, Chlorthiamid and 2,4,5-T. *Weed Res.* 18: 57-62.

Chemical of Concern: TRB,CBL; Habitat: T; Rejection Code: NO SPECIES.

464. Martinek, V. and Svestka, M. (1968). Recent Experience in the Check and Control of Nun Moth Lymantria-monacha in the USSR (Die Neuesten Eriahrungen mit der Kontrolle und Bekampfung der Nonne Lymantria monacha L. in der CSSR). *Centralbl.Gesamte Forstwes.* 85: 129-141 (GER).

EcoReference No.: 46104
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

465. Martinez-Tabche, L., German-Faz, C., Ramirez-Mora, B., and Galar-Castelan, I. (1995). Effect of Carbaryl and Lead on Phenols Chlorophyll and Proteins of the Microalga Ankistrodesmus falcatus. *Rev.Latinoam.Microbiol.* 37: 93-99 (SPA) (ENG ABS).

EcoReference No.: 18576
Chemical of Concern: CBL,Pb; Habitat: A; Effect Codes: BCM; Rejection Code: NO

FOREIGN(ALL CHEMS).

466. Marzouk, S. A. and El-Gendy, K. S. (1998). Some Biological Effects of the Insecticide Carbaryl on Mice. *Toxicol.Lett.* 95: 144.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO ABSTRACT(CBL).

467. Mason, A. Z., Jenkins, K. D., and Sullivan, P. A. (1988). Mechanisms of Trace Metal Accumulation in the Polychaete Neathes arenaceodentata. *J Mar Biol Assoc U K* 68: 61-80.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO MIXTURE.

468. Matthewson, M. D., Wilson, R. G., and Hammant, C. A. (1976). The Development of Resistance to Certain Organophosphorus and Carbamate Ixodicides by the Blue Tick, Boophilus decoloratus (Koch) (Acarina, Ixodidae), in Rhodesia. *Bull.Entomol.Res.* 66: 553-560.

EcoReference No.: 72642
Chemical of Concern: PSM,ETN,CBL,CMPH,CPY,DZ,DCTP; Habitat: T; Effect Codes: MOR; Rejection Code: NO DURATION(ALL CHEMS),NO COC(MTAS).

469. Mayer, F. L. Jr. (1974). Pesticides as Pollutants. *In: B.G.Liptak (Ed.), Environmental Engineer's Handbook, Chilton Book Co., Radnor, PA* 405-418 (Publ in Part As 6797).

EcoReference No.: 70421
Chemical of Concern: AND,CHD,DDT,DLD,ES,EN,HPT,TXP,DZ,CPY,PRN,CBL,ACL,ATZ,Cu,EDT,SZ,As,AZ,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

470. Mayer, F. L. Jr. and Ellersieck, M. R. (1988). Experiences with Single-Species Tests for Acute Toxic Effects on Freshwater Animals. *Ambio* 17: 367-375 .

EcoReference No.: 20679
Chemical of Concern: EDT,TXP,CBL,DDT,CPY,EN,CLD; Habitat: A; Rejection Code: NO REVIEW,NO REFS CHECKED.

471. Mazuranich, P. C. and Onsager, J. A. (1986). Laboratory Insecticide Bioassays, M. Sanguinipes, Bozeman, Montana, 1977-1984. *Insectic.Acaric.Tests* 11: 308.

EcoReference No.: 88040
Chemical of Concern: TDC,CBF,MLN,CBL,CYF; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS,TARGET-CBL,MLN,TDC).

472. McCracken, N. W., Blain, P. G., and Williams, F. M. (1993). Nature and Role of Xenobiotic Metabolizing Esterases in Rat Liver, Lung, Skin and Blood. *Biochem.Pharmacol.* 45: 31-36.

Chemical of Concern: CBL,FZFB; Habitat: T; Rejection Code: NO IN VITRO(ALL CHEMS).

473. McKim, J. M. (1977). The Use of Embryo-Larval, Early Juvenile Toxicity Tests with Fish for Estimating Long-Term Toxicity. *J.Fish.Res.Board Can.* 34: 21 p.

EcoReference No.: 87542
Chemical of Concern: TFN,ACL,TXP,ES,HPT,MLN,HCCH,AZ,EN,DZ,CBL,Captan,ATZ,PCB,Cl,Hg,Zn,Ni,Pb,Cr,Cu,Cd; Habitat: A; Rejection Code: NO REVIEW.

474. Megharaj, M., Rao, A. P., Rao, A. S., and Venkateswarlu, K. (1990). Interaction Effects of Carbaryl and Its Hydrolysis Product, 1-Naphthol, Towards Three Isolates of Microalgae from Rice Soil. *Agric.Ecosyst.Environ.* 31: 293-300.

EcoReference No.: 88394
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,BCM,PHY; Rejection Code: NO ENDPOINT(CBL).

475. Megharaj, M., Venkateswarlu, K., and Rao, A. S. (1989). The Use of Unicellular Soil Green Algae for Insecticide Bioassay. *J.Microbiol.Methods* 10: 119-122.

EcoReference No.: 75296
Chemical of Concern: CYP,FNV,CBF,CBL; Habitat: A; Effect Codes: GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

476. Mehta, R. S. and Hawxby, K. W. (1979). Effects of Simazine on the Blue-Green Alga Anacystis nidulans. *Bull.Environ.Contam.Toxicol.* 23: 319-326.

EcoReference No.: 6870
Chemical of Concern: SZ,CBL; Habitat: A; Effect Codes: PHY; Rejection Code: NO ENDPOINT(SZ).

477. Menzer, R. E. and Ditman, L. P. (1968). Residues in Spinach Grown in Disulfoton- and Phorate-Treated Soil. *J.Econ.Entomol.* 61: 225-229.

EcoReference No.: 46437
Chemical of Concern: DS,PRT,CBL; Habitat: T; Effect Codes: ACC,POP; Rejection Code: NO ENDPOINT(ALL CHEMS),TARGET(CBL).

478. Merino, G., Vazquez, V., and Soria, S. (1968). Efficacy of 9 Insecticides in the Fight Against Epitrix sp. in Potato Plantations in Ecuador. *Turrialba* 18: 68-70.

EcoReference No.: 52174
Chemical of Concern: CBL,DZ,MLN; Habitat: T; Rejection Code: Not Ecossl Species//TARGET(MLN,DZ,CBL).

479. Merriam, T. L. and Axtell, R. C. (1983). Relative Toxicity of Certain Pesticides to Lagenidium giganteum (Oomycetes: Lagenidiales), a Fungal Pathogen of Mosquito Larvae. *Environ.Entomol.* 12: 515-521.

EcoReference No.: 66427
Chemical of Concern: MTPN,ACR,CPY,FNTH,MLN,TMP,DFZ,Captan,ATZ,DDT,HCCH,CBL,PPX,PMR,TXP; Habitat: A; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(ATZ).

480. Miller, B. E., Forcum, D. L., Weeks, K. W., Wheeler, J. R., and Rail, C. D. (1970). An Evaluation of Insecticides for Flea Control on Wild Mammals. *J.Med.Entomol.* 7: 697-702.

EcoReference No.: 69363
Chemical of Concern: DZ,CBL,CPY,MLN; Habitat: T; Effect Codes: POP; Rejection Code: OK TARGET(DZ),OK(ALL CHEMS).

481. Miller, P. M. (1967). Stimulating Emergence of Larvae of Heterodera tabacum with Fungicides. *Plant Dis.Rep.* 51: 202-206.

EcoReference No.: 72392

Chemical of Concern: CuS,Zn,Nabam,Maneb,MXC,PNB,Captan,CBL; Habitat: T; Effect Codes: POP,MOR; Rejection Code: NO ENDPOINT(CBL).

482. Mishra, D. P., Singh, R. L., and Gupta, R. K. (1992). Pesticide Induced Response in Maize Chloroplast Lipids. *Photosynthetica* 26: 441-444.

EcoReference No.: 44272
Chemical of Concern: ES,CBF,SZ,CBL
User Define 2: REPS,WASH,CALF,CORE,SENT; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

483. Mitsuhashi, J., Grace, T. D. C., and Waterhouse, D. F. (1970). Effects of Insecticides on Cultures of Insect Cells. *Entomol.Exp.Appl.* 13: 327-341 .

EcoReference No.: 2797
Chemical of Concern:
CBL,DZ,HCCH,MLN,PPB,PYN,RTN,ATN,AND,DDT,DLD,MXC,As
; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

484. Miyashita, K., Tachibana, S., Soma, E., and Nakajima, F. (1966). Studies on Chemical Thinning of Apples. I. Effect of Sevin (1-Naphthyl N-Methylcarbamate) on Thinning Leading Apple Varieties . *Res.Bull.Hokkaido Natl.Agric.Exp.Stn.* 89: 1-14 (JPN) (ENG ABS).

EcoReference No.: 28068
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

485. Mohamed, A. K. A., Pratt, J. P., and Nelson, F. R. S. (1987). Compatibility of Metarhizium anisopliae var. anisopliae with Chemical Pesticides. *Mycopathologia* 99: 99-105.

EcoReference No.: 70030
Chemical of Concern:
MTPN,CPY,Zineb,Maneb,BMY,CHD,TXP,MOM,CBF,CBL,DZ,TMP,FNTH,RSM; Habitat: T; Effect Codes: POP,REP; Rejection Code: NO ENDPOINT(ALL CHEMS).

486. Mora, M. A., Auman, H. J., Ludwig, J. P., Giesy, J. P., Verbrugge, D. A., and Ludwig, M. E. (1993). Polychlorinated Biphenyls and Chlorinated Insecticides in Plasma of Caspian Terns: Relationships with Age, Productivity, and Colony Site Tenacity in the Great Lakes. *Arch.Environ.Contam.Toxicol.* 24: 320-331.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE,CONC,SURVEY.

487. Moran, S. and Sofer, S. (1995). The Toxicity of Difenacoum and Difethialone to the Rock Hyrax, Procavia capensis . *Pestic.Sci.* 44: 305-307.

EcoReference No.: 75485
Chemical of Concern: DFT,DFM,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

488. Moreland, D. E. (1999). Biochemical Mechanisms of Action of Herbicides and the Impact of Biotechnology on the Development of Herbicides. *J.Pestic.Sci.* 24: 299-307.

EcoReference No.: 70107
Chemical of Concern: SZ,HCCH,ATZ,PL,DDT,PCP,CBL,24DXY,SXD,IZP,DMB; Habitat: T; Rejection Code: NO REVIEW.

489. Moreland, D. E. and Novitzky, W. P. (1984). Interference by DDT and Cyclodiene Types of

Insecticides with Chloroplast-Associated Reactions (Spinach, Spinacea oleracea). *Chem.-Biol.Interact.* 48: 153-168.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

490. Morgan, J. E., Richards, S. P. G., and Morgan, A. J. (2001). Stable Strontium Accumulation by Earthworms: A Paradigm for Radiostrontium Interactions with Its Cationic Analogue, Calcium. *Environ.Toxicol.Chem.* 20: 1236-1243.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO DURATION,SURVEY.

491. Morgan, W. S. G. (1975). Monitoring Pesticides by Means of Changes in Electric Potential Caused by Fish Opercular Rhythms. *Prog.Water Technol.* 7: 33-40 (Author Communication Used).

EcoReference No.: 8151
Chemical of Concern: PRN,CHD,CBL; Habitat: A; Effect Codes: PHY,GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

492. Morishita, M. (2001). Toxicity of Some Insecticides to Larvae of Flankliniella occidentalis (Pergande) (Thysanoptera: Thripidae) Evaluated by the Petri Dish-Spraying Tower Method. *Appl.Entomol.Zool.* 36: 137-141.

EcoReference No.: 82021
Chemical of Concern: PRB,EMMB,THO,ACT,EFX,TDL,PIM,PHSL,PIRM,DMT,FNTH,MLN,DDVP,ACT,LUF,TCF,CYP,ES,SS,IMC,FVL,PMR,CBL,MOM,ALP,FNT,MDT,CPY,FF,DZ,BFT; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(DZ).

493. Morison, R. (1984). The Acute Sublethal Effects of the Pesticides Carbaryl and Malathion on Partial Ethograms of the Yellow Bullhead (Ictalurus natalis (Lesueur)). *Ph.D.Thesis, University of Tennessee, Knoxville, TN* 435 p.

EcoReference No.: 9103
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: BEH; Rejection Code: NO ENDPOINT(CBL,MLN).

494. Moscioni, A. D., Engel, J. L., and Casida, J. E. (1977). Kynurenine Formamidase Inhibition as a Possible Mechanism for Certain Teratogenic Effects of Organophosphorus and Methylcarbamate Insecticides in Chicken Embryos. *Biochem.Pharmacol.* 26: 2251-2258.

EcoReference No.: 38043
Chemical of Concern: DCTP,DZ,CBL,PIRM,PPHD,MTM,PRN,PRT,MP,CMPH,MVP,MLN,DMT,DDVP; Habitat: T; Effect Codes: BCM,GRO; Rejection Code: LITE EVAL CODED(DZ,CBL),NO ENDPOINT(DCTP,PIRM,PPHD,MTM,PRN,PRT,MP,CMPH,MVP,MLN,DMT,DDVP).

495. Moser, V. C. (1995). Comparisons of the Acute Effects of Cholinesterase Inhibitors Using a Neurobehavioral Screening Battery in Rats. *Neurotoxicol.Teratol.* 17: 617-625.

EcoReference No.: 83781
Chemical of Concern: ADC,DZ,CBL,PRN,CPY,FNTH; Habitat: T; Effect Codes: BEH,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

496. Mostert, M. A., Schoeman, A. S., and Van der Merwe, M. (2002). The Relative Toxicities of

Insecticides to Earthworms of the Pheretima Group (Oligochaeta). *Pest Manag.Sci.* 58: 446-450.

EcoReference No.: 66555
Chemical of Concern: CYF,IMC,CPY,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CYF),OK(IMC,CPY,CBL),NO ENDPOINT(FPN).

497. Mueller, H., Meisel, S., Graller, P., Kahr, G., and Ninaus, W. (1991). Verteilung Und Wanderung Von Radionukliden In Boeden Und Deren Aufnahme In Pflanzen Nach Dem Reaktorunfall In Tschernobyl. (Distribution And Migration Of Radionuclides In Soils And Their Uptake In Plants After The Chernobyl Reactor Accident). *Gov.Rep.Announce.Index*.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO SPECIES.

498. Mulla, M. S., Norland, R. L., Fanara, D. M., Darwazeh, H. A., and McKean, D. W. (1971). Control of Chironomid Midges in Recreational Lakes. *J.Econ.Entomol.* 64: 300-307.

EcoReference No.: 5158
Chemical of Concern: ABT,EPRN,HCCH,MP,CBF,FNTH,CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

499. Mulla, M. S., Norland, R. L., Westlake, W. E., Dell, B., and St.Amant, J. (1973). Aquatic Midge Larvicides, Their Efficacy and Residues in Water, Soil, and Fish in a Warm-Water Lake. *Environ.Entomol.* 2: 58-65.

EcoReference No.: 4277
Chemical of Concern: CBL,CPY,FNT; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

500. Muller, G. (1972). Changes in the Beetle Fauna of the Upper Surface of the Soil of Cultivated Fields After Application of Herbicides (Coleoptera) (Die Veranderungen der Koleopterenfauna der Bodenoberflache von Kulturfeldern nach Herbizideinsatz (Col.)). *Folia Entomol.Hung.* 25: 297-305 (HUN).

EcoReference No.: 72195
Chemical of Concern: ATZ,CBL; Habitat: T; Rejection Code: NO FOREIGN.

501. Munn, M. D. and Gilliom, R. J. (2001). Pesticide Toxicity Index for Freshwater Aquatic Organisms. *Water-Resour.Investig.Rep.No.01-4077, U.S.Geol.Surv., Sacramento, CA* 1-55.

Chemical of Concern: MCPB,CBL,CPY,DZ,MLN,ACR,ATZ,BFL,BTY,CZE,LNR,MTL,MBZ,PDM,PRO,SZ,TET,TFN; Habitat: A; Rejection Code: NO REVIEW,REFS CHECKED.

502. Murakami, M. and Fukami, J. I. (1986). Relationship Between Specific Molecular Connectivity Indices and Teratogenicity, Carcinogenicity, and Mutagenicity of Carbamate Pesticides. *Bull.Environ.Contam.Toxicol.* 37: 326-329.

Chemical of Concern: MOM,CBF,ADC,CBL,BMY,PPX,TRL; Habitat: T; Rejection Code: NO CONC,NO DURATION.

503. Murray, H. E. and Guthrie, R. K. (1980). Effects of Carbaryl, Diazinon and Malathion on Native Aquatic Populations of Microorganisms. *Bull.Environ.Contam.Toxicol.* 24: 535-542.

EcoReference No.: 6587
Chemical of Concern: CBL,DZ,MLN; Habitat: A; Effect Codes: PHY,POP; Rejection

Code: OK(CBL,MLN),NO ENDPOINT(DZ).

504. Murugesan, K. and Dhingra, S. (1995). Variability in Resistance Pattern of Various Groups of Insecticides Evaluated Against Spodoptera litura (Fabricius) During a Period Spanning Over Three Decades. *J.Entomol.Res.(New Delhi)* 19: 313-319.

Chemical of Concern: DM,LCYT,CYP,FNV,FPP,MP,CPY,PPHD,ES,MLN,FNT,HCCH,FNTH,DMT,CBL; Habitat: A; Rejection Code: NO CONC.

505. Naqvi, S. M. Z. (1973). Toxicity of Twenty-Three Insecticides to a Tubificid Worm Branchiura sowerbyi From the Mississippi Delta. *J.Econ.Entomol.* 66: 70-74.

EcoReference No.: 2798
Chemical of Concern: AZ,CBL,CPY,HCCH,MLN,MP; Habitat: A; Effect Codes: MOR; Rejection Code: NO ENDPOINT(AZ),LITE EVAL CODED(CBL).

506. Narayanan, K. S. and Chaudhuri, R. K. (1992). Emulsifiable Concentrate Formulations for Multiple Active Ingredients Using N-Alkylpyrrolidones. *In: L.E.Bode and D.G.Chasin (Eds.), Pesticide Formulations and Application Systems, ASTM STP 1112, Philadelphia, PA* 11: 73-96.

Chemical of Concern: MTL,ATZ,CBL,DU,MTL,PDM,TDZ; Habitat: T; Rejection Code: NO SPECIES, TOX DATA.

507. National Library of Medicine (1989). TOXLINE Search on Saltwater, Freshwater, Bioconcentration and Carbaryl. *http://toxnet.nlm.nih.gov* 11 p.

EcoReference No.: 67313
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO REVIEW.

508. Navas, J. M. and Segner, H. (1998). Antiestrogenic Activity of Anthropogenic and Natural Chemicals. *Environ.Sci.Pollut.Res.* 5: 75-82.

EcoReference No.: 82896
Chemical of Concern: OML,MOM,CBL,PPX,ADC,ES,PAH,PCB,TCDD; Habitat: AT; Rejection Code: NO REVIEW,COC(ASCN).

509. Nayak, M. K., Collins, P. J., and Kopittke, R. A. (2003). Residual Toxicities and Persistence of Organophosphorus Insecticides Mixed with Carbaryl as Structural Treatments Against Three Liposcelidid Psocid Species (Psocoptera: Liposcelididae) Infesting Stored Grain. *J.Stored Prod.Res.* 39: 343-353.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO MIXTURE.

510. Neil, K. A., Gaul, S. O., and McRae, K. B. (1997). Control of the English Grain Aphid [Sitobion avenae (F.)] (Homoptera: Aphididae) and the Oat-Birdcherry Aphid [Rhopalosiphum padi (L.)] (Homoptera: Aphididae) on Winter Cereals. *Can.Entomol.* 129: 1079-1091.

EcoReference No.: 63983
Chemical of Concern: MCPP1,DMB,24DXY,MCPA,DMT,CBL,MZB,TDF,PCZ,CQTC,EPH,BMN,PIM; Habitat: T; Effect Codes: REP,MOR,POP; Rejection Code: LITE EVAL CODED(DMT,PCZ,DMB,TDF),NO MIXTURE(MCPP1),OK(44DXY,MCPA,MZB,EPH,BMN,PIM),OK TARGET(CQTC,CBL).

511. Neuberger, C. L. and Achituv, Y. (1990). Effects of Sublethal and Lethal Concentrations of Zn and Cd, on the Burrowing Behavior, Respiration and Ammonium - Excretion of Donax trunculus (Bivalvia-Donacidae). *12th Annu.Conf.on Physiological and Biochemical Approaches to the Toxicological Assessment of Environmental Pollution, Aug.27-31, Utrecht, Netherlands.*

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SOURCE.

512. Neuhold, J. M. (1987). The Relationship of Life History Attributes to Toxicant Tolerance in Fishes. *Environ.Toxicol.Chem.* 6: 709-716.

EcoReference No.: 68899
Chemical of Concern: BNZ,CBL,Se,DDT,AND,NH,ATZ,CHD,Cu,DLD,ES,EN,HPT,HCCH,PRN,PCP,TXP,Zn; Habitat: A; Rejection Code: NO REVIEW,NO REFS CHECKED.

513. Nielsen, D. G., Dunlap, M. J., and Purrington, F. F. (1988). Evaluation of BT-Pyrenone Against Gypsy Moth Larvae on Red Oak, Wooster, Ohio, 1986. *Insectic.Acaric.Tests* 13: 379 (No. 16H).

EcoReference No.: 88822
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: NO ENDPOINT(TARGET-CBL).

514. Nishiuchi, Y. (1976). Toxicity of Formulated Pesticides to Some Fresh Water Organisms. XXXIX. *The Aquiculture (Suisan Zoshoku)* 24: 102-105 (JPN).

EcoReference No.: 7874
Chemical of Concern: CBL,PCP; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN.

515. Nishiuchi, Y. (1977). Toxicity of Formulated Pesticides to Some Freshwater Organisms. XXXXV. *The Aquiculture (Suisan Zoshoku)* 25: 105-107 (JPN).

EcoReference No.: 7595
Chemical of Concern: CBL,NaPCP; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN(ALL CHEMS).

516. Nishiuchi, Y. (1972). Toxicity of Pesticides to Some Water Organisms. *Bull.Agric.Chem.Insp.Stn.(Noyaku Kensasho Hokoku)* 12: 122-128 (JPN) (ENG TRANSL).

EcoReference No.: 10258
Chemical of Concern: 3CE,AC,AMTL,AMTR,AND,As,ATZ,BMC,BS,Captan,CBL,CPA,CPY,CTN,Cu,DBN,DCPA,DDT,DDVP,DLD,DMB,DMT,DPA,DSMA,DU,DZ,EDB,EDC,EN,EPTC,ES,ETN,Fe,FLAC,FML,FNT,FNTH,HCCH,Hg,HPT,LNR,MCAP,MCPB,MCPP1,MDT,MLN,MOM,MP,MTAS,NALED,Ni,NTCN,OPHP,Pb,PCB,PCP,PCZ,PEB,PHMD,PHSL,PHTH,PMT,PNB,PPX,PPZ,PRN,PSM,PYN,SFL,SID,STREP,SZ,TBC,TFN,THM,TPE,TPH,TPM,TRN,Zn; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS)//NO RESIDUE.

517. Nishiuchi, Y. and Asano, K. (1981). Comparison of Pesticide Susceptibility of Colored Carp with Japanese Common Carp. *Bull.Agric.Chem.Insp.Stn.(Noyaku Kensasho Hokoku)* 21: 61-63 (JPN) (ENG ABS).

EcoReference No.: 15570
Chemical of Concern: CBL,DZ,MLN,PSM,NaPCP,ETN,FNT; Habitat: A; Effect Codes:

MOR; Rejection Code: NO FOREIGN.

518. Nishiuchi, Y. and Asano, K. (1978). Toxicity of Formulated Agrochemicals to Fresh Water Organisms LII. *Suisan Zoshoku* 26: 26-30 (JPN).

EcoReference No.: 7119
Chemical of Concern: CBL,DZ,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN(ALL CHEMS).

519. Nishiuchi, Y. and Hashimoto, Y. (1967). Toxicity of Pesticide Ingredients to Some Fresh Water Organisms. *Sci.Pest Control (Botyu-Kagaku)* 32: 5-11 (JPN) (ENG ABS) (Author Communication Used).

EcoReference No.: 15192
Chemical of Concern: ATZ,Captan,CBL,CTN,DBN,DMB,DMT,DU,DZ,HCCH,LNR,MLN,MP,PMT,PSM,SZ,24DXY,MCPB,NaPCP,PPZ,ZIRAM,PRN,MP,MLN,ETN,DDT,DLD,MCPA,Zn; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN(ALL CHEMS).

520. Nishiuchi, Y. and Yoshida, K. (1972). Toxicities of Pesticides to Some Fresh Water Snails. *Bull.Agric.Chem.Insp.Stn.* 12: 86-92 (JPN) (ENG ABS) (ENG TRANSL) (Author Communication Used).

EcoReference No.: 9158
Chemical of Concern: AMTR,AND,CBL,CTN,CuOH,CuS,CZE,DCF,DDT,DDVP,DEM,DINO,DMT,DOD,DZ,EN,ES,ETN,FNT,Folpet,HCCH,MDT,MOM,MP,NPH,PAQT,PCP,PEB,PHMD,PHSL,PPN,PRN,PYN,RTN,TBC,TCF,TDE,TFN,Zineb,Ziram,Zn; Habitat: A; Effect Codes: PHY,GRO; Rejection Code: NO FOREIGN,CONTROL(ALL CHEMS).

521. Noddegard, E., Hansen, T., and Rasmussen, A. N. (1970). Testing of Fungicides and Insecticides in 1969. *Tidsskr.Planteavl* 74: 618-661.

EcoReference No.: 89085
Chemical of Concern: MZB,DDVP,CBL,DZ,Captan,MOM,PHSL,AZ,BMY,CAP; Habitat: T; Rejection Code: NO FOREIGN(ALL CHEMS).

522. Noetzel, D. (1988). Control of Striped Cucumber Beetle in Muskmelon, 1987. *Insectic.Acaric.Tests* 13: 105-106 (No. 26E).

Chemical of Concern: CBF,CBL,MXC,PMR; Habitat: T; Rejection Code: NO DURATION(CBF,MXC,PMR-TARGET-CBL).

523. Noetzel, D. (1988). Furadan for Control of Striped Cucumber Beetle, 1987. *Insectic.Acaric.Tests* 13: 121-122 (No. 51E).

Chemical of Concern: CBL,CBF; Habitat: T; Rejection Code: NO DURATION(CBF,TARGET-CBL).

524. Noetzel, D., Ricard, M., and Heuser, L. (1992). Grasshopper Control in Barley, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 184-185.

EcoReference No.: 79760
Chemical of Concern: EFV,CBF,CPY,CBL; Habitat: T; Effect Codes: POP; Rejection Code: OK(ALL CHEMS),OK TARGET(EFV).

525. Noetzel, D., Ricard, M., Heuser, L., and Rustad, D. (1992). Grasshopper Control in Conservation Reserve Program Land; Insecticide Comparisons, 1990. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 178.

EcoReference No.: 79758
Chemical of Concern: CYH,MP,EFV,DMT,CYF,CBL,ACP,CBF,CPY,BFT,MLN; Habitat: T; Effect Codes: POP; Rejection Code: TARGET(EFV,CYF,BFT,ACP,CBL).

526. Noetzel, D., Ricard, M., and Holder, B. (1992). Control of Flea Beetle in Canola, Trial I, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 191.

EcoReference No.: 79290
Chemical of Concern: TBO,CBF,EFV,MP,CBL,ES; Habitat: T; Effect Codes: POP; Rejection Code: TARGET(EFV).

527. Noetzel, D., Ricard, M., and Roman, H. (1988). Furadan Soil Treatment vs. Furadan Soil Treatment Plus Sevin XLR for Flea Beetle Control in Canola, 1987. *Insectic.Acaric.Tests* 13: 196 (No. 31F).

EcoReference No.: 88851
Chemical of Concern: CBF,CBL; Habitat: T; Effect Codes: POP; Rejection Code: OK(CBF),NO MIXTURE(TARGET-CBL).

528. Noetzel, D. and Roman, H. (1992). Counter Soil Systemic Plus Foliar Control of Flea Beetle, 1989. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 189.

EcoReference No.: 79808
Chemical of Concern: TBO,EFV,CBF,CBL; Habitat: T; Effect Codes: POP; Rejection Code: TARGET(EFV).

529. Noetzel, D. and Roman, H. (1992). Flea Beetle Control in Canola, 1989. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 189-190.

EcoReference No.: 79807
Chemical of Concern: TBO,EFV,CBF,CBL; Habitat: T; Effect Codes: POP; Rejection Code: TARGET(EFV).

530. Noetzel, D. and Sheets, B. (1992). Foliar Insect Control in Dry Navy Bean, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 185.

EcoReference No.: 79806
Chemical of Concern: CBF,CBL,MP,CPY,DMT,CYF,MLN,MXC,CYH; Habitat: T; Effect Codes: POP; Rejection Code: TARGET(CYF).

531. Noetzel, D. and Sheets, B. (1992). Foliar Insect Control in Lupin, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 241.

EcoReference No.: 79805
Chemical of Concern: CBF,EFV,ES,CYH,CBL,DMT; Habitat: T; Effect Codes: POP; Rejection Code: TARGET(EFV).

532. Nollenberger, E. L. (1981). Toxicant-Induced Changes in Brain, Gill, Liver, and Kidney of Brook Trout Exposed to Carbaryl, Atrazine, 2,4-Dichlorophenoxyacetic Acid, and Parathion: A Cytochemical Study. *Ph.D.Thesis, Pennsylvania State Univ., University Park, PA* 213 p.

EcoReference No.: 72745
Chemical of Concern: ATZ,CBL,24DXY,PRN; Habitat: A; Effect Codes: PHY,CEL,BCM,BEH; Rejection Code: LITE EVAL CODED(ATZ),OK(ALL CHEMS) .

533. Nollenberger, E. L., Neff, W., and Anthony, A. (1981). Cytochemical Analysis of Brain Nucleic Acid Changes in Brook Trout (Salvelinus fontinalis) Exposed to Carbaryl and Parathion Toxication . *In: 57th Annu.Meet.of the Pa.Acad.of Sci., Apr.5-7, 1981, Lancaster, PA, Proc.Pa.Acad.Sci.* 55: 97 (ABS).

EcoReference No.: 65536
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABS,NO ABSTRACT.

534. Nolte, T., Harleman, J. H., and Jahn, W. (1995). Histopathology of Chemically Induced Testicular Atrophy in Rats. *Exp.Toxicol.Pathol.* 47: 267-286 .

EcoReference No.: 70475
Chemical of Concern: PNB,PHTH,TCDD,DXN,TOL,Cd,DDT,Cr,Al,As,Co,Pb,Hg,Mo,Ni,Ag,VYL,PAH,BNZ,HCCH,CBL,AND,CHD,DLD; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

535. Norris, L. A., Lorz, H. W., and Gregory, S. V. (1991). Forest Chemicals. *In: W.R.Meehan (Ed.), Am.Fish.Soc.Spec.Publ.No.19, Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats, Chapter 7, Am.Fish.Soc., Bethesda, MD* 207-296.

EcoReference No.: 77470
Chemical of Concern: DMB,AMTL,ATZ,AZ,CBL,CBF,DDT,DMB,GYP,HCCH,HXZ,MLN,MXC,PCZ,SZ,TXP,24DXY; Habitat: AT; Rejection Code: NO REVIEW.

536. Nunes, G. S., Skladal, P., Yamanaka, H., and Barcelo, D. (1998). Determination of Carbamate Residues in Crop Samples by Cholinesterase-Based Biosensors and Chromatographic Techniques. *Anal.Chim.Acta* 362: 59-68.

Chemical of Concern: ADC,CBF,MOM,CBL,PPX; Habitat: T; Rejection Code: NO IN VITRO,DURATION.

537. Nwoga, J. and Bittar, E. E. (1991). An Investigation of the Sensitivity of the Ouabain-Insensitive Sodium Efflux in Single Barnacle Muscle Fibers to Pentachlorophenol. *Toxicol.Appl.Pharmacol.* 108: 330-341.

Chemical of Concern: PCP,CBL; Habitat: A; Rejection Code: NO IN VITRO.

538. O'Brien, K. A. F., Smith, L. L., and Cohen, G. M. (1985). Differences in Naphthalene-Induced Toxicity in the Mouse and Rat. *Chem.Biol.Interact.* 55: 109-122.

EcoReference No.: 83771
Chemical of Concern: NAPH,CBL; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

539. Oaks, J. L., Gilbert, M., Virani, M. Z., Watson, R. T., Meteyer, C. U., Rideout, B. A., Shivaprasad, H. L., Ahmed, S., Chaudhry, M. J. I., Arshad, M., Mahmood, S., Ali, A., and

Khan, A. A. (2004). Diclofenac Residues as the Cause of Population Decline of Vultures in Pakistan: Supplementary Information. *www.nature.com/nature* 13 p.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO PUBL AS.

540. Office of Pesticide Programs (2000). Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)). *Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.*

EcoReference No.: 344
Chemical of Concern: 4AP,24DXY,ACL,ACP,ACR,Ag,AKTMD,ALSV,APAC,AQS,AsAC,ASCN,ATM,ATN,ATZ,AZ,BBN,BDF,BFT,BMC,BML,BMN,Br2,BrCl,BRSM,BS,BT,CaPS,Captan,CBF,CBL,CFE,CFE,CFRM,CLNB,CLP,CMPH,CPC,CPY,CQTC,CrACCTN,CTZ,Cu,CuFRA,CuO,CuOT,CuTE,CuS,CYD,CYF,CYP,CYT,DBN,DCNA,DBAC,DDAC,DFT,DFZ,DIIS,DKGNa,DM,DMB,DMM,DMP,DMT,DOD,DPC,DPDP,DPP1,DPP2,DS,DSP,DU,DZ,DZM,EFL,EFS,EFV,EP,FHX,FAME,FMP,FO,Folpet,FPN,FPP,FTN,FVL,GTN,GYP,HCCH,HXZ,IGS,IODN,IPD,IZP,KMFD,LNR,MAL,MB,MBZ,MCPP1,MCPP2,MDT,MFDD,MFX,MFZ,MGK,MLN,MLT,MOM,MP,MTC,MTL,MTM,NAA,NaBr,Naled,NAPH,NFZ,NPP,NTP,OTN,OXF,OXT,OYZ,PCP,PCZ,PDM,PEB,PHMD,PMR,PMT,PNB,PPB,PPG,PPMH,PPZ,PQT,PRB,PRT,PSM,PYN,PYZ,RSM,RTN,SMM,SMT,SS,SXD,SZ,TBC,TBD,TCMTB,TDC,TDF,TDZ,TET,TFN,TFR,TMT,TPR,TRB,WFN,ZnP,PRO; Habitat: AT; Effect Codes: MOR,POP,PHY,GRO,REP; Rejection Code: NO EFED (344).

541. Ogiu, T., Nishimura, M., Watanabe, F., Ukai, H., Ishii-Ohba, H., Shimada, Y., Tsuji, H., Sakurai, J., and Hino, O. (2000). Absence of Linkage Between Radiosensitivity and the Predisposing Atp7b Gene Mutation for Heritable Hepatitis in the LEC Rat. *Radiat.Res.* 154: 113-116.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO TOXICANT.

542. Oomen, P. A., Jobsen, J. A., Romeijn, G., and Wiegers, G. L. (1994). Side-Effects of 107 Pesticides on the Whitefly Parasitoid Encarsia formosa, Studies and Evaluated According to EPPO Guideline No. 142. *Bull.OEPP* 24: 89-107.

Chemical of Concern: SZ,CBL,DZ,ES,HCCH,PRN,CQTC,MTAS,MANEB; Habitat: T; Rejection Code: NO DURATION(ALL CHEMS).

543. Osterloh, J., Letz, G., Pond, S., and Becker, C. (1983). An Assessment of the Potential Testicular Toxicity of 10 Pesticides Using the Mouse-Sperm Morphology Assay. *Mutat.Res.* 116: 407-415.

EcoReference No.: 74322
Chemical of Concern: ATZ,MLT,DPDP,BMY,CBL; Habitat: T; Effect Codes: REP,MOR; Rejection Code: LITE EVAL CODED(ATZ),OK(MLT,PCP,DPDP),NO ENDPOINT(CBL,BMY).

544. Ostlie, K. R. (1992). Insecticide Performance Against First-Generation European Corn Borer-Liquids vs Granules, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 215-216.

EcoReference No.: 79800
Chemical of Concern: BFT,MP,CBF,CYF,FNF,CPY,EFV,DZ,CBL,PMR,LCYT; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(BFT,CYF,EFV),OK(ALL CHEMS),OK TARGET(DZ).

545. Owen, B. B. Jr. (1967). Aquatic Insect Populations Reduced by Aerial Spraying of Insecticide Sevin. *Proc.Pa.Acad.Sci.* 40: 63-69.

EcoReference No.: 13587
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(CBL).

546. Pantani, C., Pannunzio, G., De Cristofaro, M., Novelli, A. A., and Salvatori, M. (1997). Comparative Acute Toxicity of Some Pesticides, Metals, and Surfactants to Gammarus italicus Goedm. and Echinogammarus tibaldii Pink. and Stock (Crustacea: Amphipoda). *Bull.Environ.Contam.Toxicol.* 59: 963-967.

EcoReference No.: 18621
Chemical of Concern: ACR,ATZ,AZ,CBF,CBL,DMT,FMP,HCCH,MLT,MOM,MP,Cd,ADC,DDT,MXC,OML,TBC,CuCl,Cr,PPX,Zn,Hg; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(ATZ,MLT,CBF,ADC,MOM,DMT,CuCl),OK(ALL CHEMS).

547. Paris, D. F., Lewis, D. L., Barnett, J. T. Jr., and Baughman, G. L. (1975). Microbial Degradation and Accumulation of Pesticides in Aquatic Systems. *EPA-660/3-75-007, U.S.EPA, Corvallis, OR* 46 p.

EcoReference No.: 78294
Chemical of Concern: ATZ,PRN,DZ,Captan,CBL,MLN,24DXY,TXP,MXC; Habitat: A; Effect Codes: GRO; Rejection Code: NO ENDPOINT(ALL CHEMS) .

548. Park, B. K. and Leck, J. B. (1982). A Comparison of Vitamin K Antagonism by Warfarin, Difenacoum and Brodifacoum in the Rabbit. *Biochem.Pharmacol.* 31: 3635-3639.

EcoReference No.: 75575
Chemical of Concern: BDF,WFN,DFM,CBL; Habitat: T; Rejection Code: NO MIXTURE.

549. Parveen, A. and Vasantha, N. (1994). Evaluation of Pesticides and Impact of Endosulfan on Respiratory Metabolism of Fish Clarias batrachus. *Indian J.Comp.Physiol.* 12: 83-89.

EcoReference No.: 88885
Chemical of Concern: DEM,ES,CBL; Habitat: A; Effect Codes: MOR,BCM,PHY; Rejection Code: NO COC(OXD),OK(ES),NO CONTROL(DEM,CBL).

550. Patil, N. M., Ghule, B. D., Dhumal, V. S., and Deokar, A. B. (1992). Losses in Seed Yield of Sesamum Caused by the Major Insect-Pests. *J.Maharashtra Agric.Univ.* 17: 479.

EcoReference No.: 75150
Chemical of Concern: ES,CBL; Habitat: T; Rejection Code: NO MIXTURE,ENDPOINT(ES,CBL).

551. Patrick, S. (2004). Marine Invertebrate Cholinesterases: Utilization as Biomarkers of Pesticide Contamination . *Toxicology* 1: 145-151.

EcoReference No.: 88808
Chemical of Concern: EPRN,MP,PHSL,CBL,CBF,MLN,DMT,DDVP; Habitat: A; Rejection Code: NO REVIEW(ALL CHEMS).

552. Paulson, G. D., Zaylskie, R. G., Zehr, M. V., Portnoy, C. E., and Feil, V. J. (1970). Metabolites of Carbaryl (1-Naphthyl Methylcarbamate) in Chicken Urine. *J.Agric.Food Chem.* 18: 110-115.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO ENDPOINT(CBL).

553. Perry, J. A. (1979). Pesticide and PCB Residues in the Upper Snake River Ecosystem, Southeastern Idaho, Following the Collapse of the Teton Dam 1976. *Arch.Environ.Contam.Toxicol.* 8: 139-159.

EcoReference No.: 67585
Chemical of Concern: HCCH,DDT,PCB,DLD,CBL,AND,24D; Habitat: AT; Effect Codes: ACC; Rejection Code: NO MIXTURE,EFFECT,ENDPOINT(ALL CHEMS).

554. Peschek, G. A. (1979). Nitrate and Nitrite Reductase and Hydrogenase in Anacystis nidulans Grown in Fe- and Mo-Deficient Media. *FEMS (Fed.Eur.Microbiol.Soc.) Microbiol.Lett.* 6: 371-374.

EcoReference No.: 67587
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO MIXTURE.

555. Peshney, N. L. (1990). Compatibility of Fungicides with Some Insecticides with Reference to Fungitoxicity and Phytotoxicity. *PKV (Punjabrao Krishi Vidyapeeth) Res.J.* 14: 35-37.

Chemical of Concern:
CBL,CPY,PMR,PPHD,MLN,ES,HCCH,TBA,MZB,ZIRAM,THM,TPM,ACP; Habitat: T; Rejection Code: NO MIXTURE.

556. Pessah, I. N. and Sokolove, P. G. (1983). The Interaction of Organophosphate and Carbamate Insecticides with Cholinesterases in the Terrestrial Pulmonate, Limax maximus. *Comp.Biochem.Physiol.C* 74: 291-297.

EcoReference No.: 87846
Chemical of Concern: AZ,MCB,MOM,CBL; Habitat: T; Effect Codes: BEH,BCM; Rejection Code: NO IN VITRO(AZ,MOM,CBL),OK(MCB).

557. Peter, J., Ali, A. S., and Ali, S. A. (1996). Effect of Certain Phenolic Compounds on the Isolated Scale Melanophores of the Fish, Channa punctatus. *Pigment Cell Res.* 68 (No. 188).

Chemical of Concern: CBL,PL; Habitat: A; Rejection Code: NO ABSTRACT(CBL,PL).

558. Peterson, R. H. (1976). Temperature Selection of Juvenile Atlantic Salmon (Salmo salar) as Influenced by Various Toxic Substances. *J.Fish.Res.Board Can.* 33: 1722-1730.

EcoReference No.: 5160
Chemical of Concern: ZN,AZ,CBL,CPY,HCCH,HPT,NaPCP,FNT,MLN,Naled,CuS; Habitat: A; Effect Codes: MOR,BEH; Rejection Code: NO ENDPOINT(CuS,NaPCP,AZ,CBL).

559. Phipps, G. L., Harden, M. J., Leonard, E. N., Roush, T. H., Spehar, D. L., Stephan, C. E., Pickering, Q. H., and Buikema, A. L. J. (1984). Effects of Pollution on Freshwater Organisms. *J.Water Pollut.Control Fed.* 56: 725-758.

EcoReference No.: 53156
Chemical of Concern:
EDT,AND,Al,NH,PAH,Sb,As,ATZ,Ba,BNZ,BZD,Be,Cd,CBL,CTC,CHD,Cl,Cl2,CPY,Cr,Co,Cu,CN,DDT,DZ,CBZ,CPH,DLD,ES,EN,FA,HPT,HCCH,HCCP,Fe,ISO,Pb,Mn,Hg,Mo,NAPH,Ni,NBZ,NP,PCB,PRN,PNB,PCP,PL,Se,Ag,SZ,TCDD,TOL,TXP,V,Zn; Habitat: A; Rejection Code: NO REVIEW,NO REFS CHECKED.

560. Picollo, M. I., Vassena, C. V., Mougabure Cueto, G. A., Vernetti, M., and Zerba, E. N. (2000). Resistance to Insecticides and Effect of Synergists on Permethrin Toxicity in Pediculus capitis (Anoplura: Pediculidae) from Buenos Aires. *J.Med.Entomol.* 37: 721-725.

EcoReference No.: 59603
Chemical of Concern: PMR,CBL,DM; Habitat: T; Effect Codes: POP; Rejection Code: NO CONTROL(ALL CHEMS).

561. Pitts, J. (1992). Control of Shrimp Infestation on Oyster Beds. *43rd Annu.Meet.of the Pacific Coast Oyster Growers Assoc.and the Natl.Shellfish.Assoc., Sept.17-19, 1992, J.Shellfish Res.* 11: 555.

Chemical of Concern: CBL; Habitat: A; Rejection Code: ABSTRACT,NO TOX DATA(CBL).

562. Pitts, J. L. (1993). An Integrated Pest Management Plan for the Control of Burrowing Shrimp Populations on Oyster Beds in Southwestern Washington State. *J.Shellfish Res.* 12: 147.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT(CBL).

563. Plaut, H. N. and Mansour, F. A. (1981). Effects of Photostable Pyrethroids on Spider Mites (Tetranychidae). *Phytoparasitica* 9: 218 (ABS).

Chemical of Concern: PMR,CYP,AZ,CBL,PYT; Habitat: T; Rejection Code: NO ABSTRACT.

564. Pohla-Gubo, V. G. and Adam, H. (1982). Influence of the Anionactive Detergent Na-Alkyl-Benzenesulphonate (LAS) on the Head Epidermis of Juvenile Rainbow Trout (Salmo gairdneri Richardson). *Zool.Anz.* 209: 97-110 (GER) (ENG ABS).

EcoReference No.: 11611
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN(CBL).

565. Pol, E. W. V. D. (1968). Note on the Determination of Carbaryl Residues in Hen Skin. *J.Assoc.Off.Anal.Chem.* 51 : 901.

EcoReference No.: 38365
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT,NO CONTROL,NO DURATION(CBL).

566. Poldoski, J. E. (1977). Molecular Spectral Interference in the Determination of Arsenic by Furnace Atomic Absorption. *At.Absorption Newsl.* 16: 70-73.

EcoReference No.: 67606
Chemical of Concern: As,CBL; Habitat: A; Rejection Code: NO SPECIES.

567. Pool, R. A. F. (1977). A Rapid Bioassay for Pesticide Phytotoxicity. *J.Agric.Food* 25: 1216-1218.

EcoReference No.: 43504
Chemical of Concern: SZ,BMC,CBL,DU,Captan,MLN,TFN,GYP,DCPA,BMY,MANEB; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

568. Poortinga, A. M. and De Kok, L. J. (2000). Sulfate and Thiol Levels in Roots and Shoot of Sulfur-Deprived Spinach Plants as Affected by High Pedospheric Sulfate Levels. *Phyton* 40: 95-102.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO TOX DATA.

569. Potter, D. A. (1993). Pesticide and Fertilizer Effects on Beneficial Invertebrates and Consequences for Thatch Degradation and Pest Outbreaks in Turfgrass. *In: K.D.Racke and A.R.Leslie (Eds.), ACS Symp.Ser.No.522, Pesticides in Urban Environments: Fate and Significance, 203rd Natl.Meet.of the Am.Chem.Soc., Apr.5-10, 1992, San Francisco, CA* 331-343.

EcoReference No.: 77472
Chemical of Concern: DMB,24DXY,PCZ,DZ,FRM,TDF,CPY,PDM,CTN,BMY,CBL,BDC,EP; Habitat: T; Rejection Code: NO REVIEW.

570. Power, F. M. (1983). Long-Term Effects of Oil Dispersants on Intertidal Benthic Invertebrates I. Survival of Barnacles and Bivalves. *Oil Petrochem.Pollut.* 1: 97-108.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO CONC.

571. Pree, D. J., Whitty, K. J., Van Driel, L., and Walker, G. M. (1998). Resistance to Insecticides in Oriental Fruit Moth Populations (Grapholita molesta) from the Niagara Peninsula of Ontario. *Can.Entomol.* 130: 245-256.

EcoReference No.: 63915
Chemical of Concern: MOM,PFF,CBF,AZ,PSM,EPRN,MLN,Naled,FNT,CPY,ACP,MTM,MDT,CBL,CYP; Habitat: T; Effect Codes: POP,MOR,GRO; Rejection Code: NO CONTROL(MOM,CBF,CYP).

572. Prescott, L. M., Kubovec, M. K., and Tryggestad, D. (1977). The Effects of Pesticides, Polychlorinated Biphenyls and Metals on the Growth and Reproduction of Acanthamoeba castellanii. *Bull.Environ.Contam.Toxicol.* 18: 29-34.

EcoReference No.: 7625
Chemical of Concern: SZ,ATZ,CBL,LNR,DLD,AND,Hg,Pb,PCB,CuS,Zn; Habitat: A; Effect Codes: POP; Rejection Code: LITE EVAL CODED(ATZ,SZ,CuS),OK(ALL CHEMS).

573. Proctor, N. H., Moscioni, A. D., and Casida, J. E. (1976). Chicken Embryo Nad Levels Lowered by Teratogenic Organophosphorus and Methylcarbamate Insecticidesag. *Biochem.Pharmacol.* 25: 757-762.

EcoReference No.: 84915
Chemical of Concern: DZ,CBL,CBF,ADC; Habitat: T; Effect Codes: GRO; Rejection Code: NO ENDPOINT(DZ).

574. Proctor, N. H., Moscioni, A. D., and Casida, J. E. (1976). Chicken Embryo Nad Levels Lowered by Teratogenic Organophosphorus and Methylcarbamate Insecticides. *Biochem.Pharmacol.* 25: 757-762.

EcoReference No.: 84915
Chemical of Concern: PPHD,DCTP,CBL,PRN,MP,PSM,DZ,CBL,CBF,ADC,MTM; Habitat: T; Effect Codes: GRO; Rejection Code: NO ENDPOINT(ALL CHEMS) .

575. Przedziecki, Z., Bankowska, J., Komorowska-Malewska, W., and Janicka, T. (1968). Studies on the Short-Period Toxicity of Carbaryl [Badanie Toksycznosci Krotkookresowej

Karbarylu]. *Rocz.Panstw.Zakl.Hig.* 19: 675-684 (POL) (ENG ABS).

EcoReference No.: 87661
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN(CBL).

576. Pullen, J. S. H. and Rainbow, P. S. (1991). The Composition of Pyrophosphate Heavy Metal Detoxification Granules in Barnacles. *J.Exp.Mar.Biol.Ecol.* 150: 249-266.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO TOXICANT.

577. Rainbow, P. S. (1987). Heavy Metals in Barnacles. *In: A.J.Southward (Ed.), Crustacean Issues, 5.Barnacle Biology, Rotterdam, Netherlands* 405-417.

EcoReference No.: 57361
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO REVIEW.

578. Rainbow, P. S. and Wang, W. X. (2001). Comparative Assimilation of Cd, Cr, Se, and Zn by the Barnacle Elminius modestus from Phytoplankton and Zooplankton Diets. *Mar.Ecol.Prog.Ser.* 218: 239-248.

EcoReference No.: 78524
Chemical of Concern: Cr,Zn,Cd,Se,CBL; Habitat: A; Effect Codes: ACC,PHY; Rejection Code: NO ENDPOINT,CONTROL(ALL CHEMS).

579. Rajendran, N. and Venugopalan, V. K. (1983). Effect of Pesticides on Phytoplankton Production. *Mahasagar Bull.Natl.Inst.Oceanogr.* 16: 193-197 .

EcoReference No.: 67306
Chemical of Concern: DDT,HCCH,ES,MP,MLN,CBL; Habitat: A; Effect Codes: PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

580. Rajyalakshmi, A. and Reddy, T. G. K. (1991). Effect of Carbaryl and Lindane on the Activity Levels of Some Selected Enzymes in the Maternal and Embryonic Tissues of the Viviparous Scorpion, Heterometrus fulvipes (Koch). *Comp.Physiol.Sci.* 16: 166-169.

EcoReference No.: 88806
Chemical of Concern: CBL,HCCH; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(CBL,HCCH).

581. Ramachandran, S., Rajendran, N., Nandakumar, R., and Venugopalan, V. K. (1984). Effect of Pesticides on Photosynthesis and Respiration of Marine Macrophytes. *Aquat.Bot.* 19: 395-399.

EcoReference No.: 10569
Chemical of Concern: DMT,ES,MP,DDT,CBL,HCCH; Habitat: A; Effect Codes: PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

582. Ramakrishnan, M., Arunachalam, S., and Palanichamy, S. (1997). Sublethal Effects of Pesticides on Feeding Energetics in the Air Breathing Fish Channa striatus. *J.Ecotoxicol.Environ.Monit.* 7: 169-175.

EcoReference No.: 60086
Chemical of Concern: ES,MLN,CBL; Habitat: A; Effect Codes: BEH,GRO; Rejection Code: NO ENDPOINT(CBL,MLN,ES).

583. Ramakrishnan, M., Arunachalam, S., and Palanichamy, S. (1997). Sublethal Effects of

Pesticides on Physiological Energetics of Freshwater Fish, Oreochromis mossambicus. *J.Ecotoxicol.Environ.Monit.* 7: 237-242.

EcoReference No.: 88971
Chemical of Concern: ES,MLN,CBL; Habitat: A; Effect Codes: BEH,PHY; Rejection Code: NO ENDPOINT(ES,MLN,CBL).

584. Rao, G. S. and Kannupandi, T. (1990). Acute Toxicity of Three Pesticides and Their Effect on the Behaviour of the Edible Crab Scylla serrata (Forskal). *Mahasagar* 23: 159-162.

EcoReference No.: 7249
Chemical of Concern: CBL,HPT,PHSL; Habitat: A; Effect Codes: BEH,MOR; Rejection Code: NO CONTROL(ALL CHEMS).

585. Rao, H. R. G. and Anders, M. W. (1973). Inhibition of Microsomal Drug Metabolism by Anticholinesterase Insecticides. *Bull.Environ.Contam.Toxicol.* 9: 4-9.

EcoReference No.: 89072
Chemical of Concern: MLO,MLN,CBL,PRN; Habitat: T; Effect Codes: BCM,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS),NO CONTROL,IN VITRO(MLO,CBL,PRN),MIXTURE(MLN).

586. Rao, K. R. S. S. (1987). Combined Toxicity of Carbaryl and Phenthoate on Indian Snakehead, Channa punctatus. *In: K.S.Rao and S.Shrivastava (Eds.), Perspectives of Hydrobiology, Symp., Ujjain, India Feb 8-10, 1986* 119-122 (Publ As 11217).

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO PUBL AS.

587. Rao, K. R. S. S. and Rao, J. C. (1987). Independent and Combined Action of Carbaryl and Phenthoate on Snake Head, Channa punctatus (Bloch). *Curr.Sci.* 56: 331-332.

EcoReference No.: 14039
Chemical of Concern: CBL; Habitat: A; Effect Codes: GRO,BEH; Rejection Code: NO ENDPOINT.

588. Rao, K. R. S. S. and Rao, K. V. R. (1988). Synergistic Action of Carbaryl and Phenthoate on the Respiratory Metabolism of Channa punctatus (Bloch). *Faseb J.* 2: 1799 (ABS No. 8730).

EcoReference No.: 17071
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO ABSTRACT.

589. Rao, K. S. P., Basha, S. M., and Rao, K. V. R. (1984). Differential Action of Malathion, Carbaryl and BHC on Acetyl-Cholinesterase Activity of a Teleost, Tilapia mossambica (Peters). *J.Environ.Biol.* 5: 241-247.

EcoReference No.: 10519
Chemical of Concern: HCCH,CBL,MLN; Habitat: A; Rejection Code: NO DURATION.

590. Rao, M. B. (1981). Effect of gamma-Hexachloran and Sevin on the Survival of the Black Sea Mussel, Mytilus galloprovincialis Lam. *Hydrobiologia* 78: 33-37 (Used 6044 As Ref).

EcoReference No.: 6369
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: NO ENDPOINT(CBL).

591. Rao, P. S., Roberts, G. H., Pope, C. N., and Ferguson, P. W. (1994). Comparative Inhibition

of Rodent and Human Erythrocyte Acetylcholinesterase by Carbofuran and Carbaryl. *Pestic.Biochem.Physiol.* 48: 79-84.

Chemical of Concern: CBF,CBL; Habitat: T; Rejection Code: NO IN VITRO,DURATION,HUMAN HEALTH.

592. Rawlins, S. C. and Mansingh, A. (1978). Patterns of Resistance to Various Acaricides in Some Jamaican Populations of Boophilus microplus. *J.Econ.Entomol.* 71: 956-960.

EcoReference No.: 72313
Chemical of Concern: CBL,CPY,DZ,HCCH,DDT; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(DZ).

593. Reddy, G. P. V. and Murthy, M. M. K. (1989). Integrated Pest Management in Rice. *Pesticides* 23: 32F-32I.

Chemical of Concern: SZ,AND,CHL,CBL,CPY,DZ,EN,HPT,ATZ,MOM,ADC,CBF,DMT,DMB,ATN; Habitat: T; Rejection Code: NO TOX DATA.

594. Reddy, M. S. and Rao, K. V. R. (1992). Toxicity of Selected Insecticides to the Penaeid Prawn, Metapenaeus monoceros (Fabricius). *Bull.Environ.Contam.Toxicol.* 48: 622-629.

EcoReference No.: 14969
Chemical of Concern: CBL,DMT,HCCH,MLN,MP,DDT,PRN,DLD,DDVP,SMT,AND,PPH,OXD; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

595. Redmond, C. and Potter, D. A. (1988). Efficacy of Insecticides for Control of Southern Masked Chafer Grubs in Kentucky, 1987. *Insectic.Acaric.Tests* 13: 338 (No. 19G).

EcoReference No.: 88826
Chemical of Concern: DZ,CBL,FPP; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(DZ,CBL,FPP).

596. Rennecker, J. L., Marinas, B. J., Owens, J. H., and Rice, E. W. (1999). Inactivation of Cryptosporidium parvum Oocysts with Ozone. *Water Res.* 33: 2481-2488.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO DURATION.

597. Rennison, B. D. and Hadler, M. R. (1975). Field Trials of Difenacoum Against Warfarin-Resistant Infestations of Rattus norvegicus. *J.Hyg.* 74: 449-455.

EcoReference No.: 86459
Chemical of Concern: WFN,DFM,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL,ENDPOINT(DFM).

598. Rettich, F. (1980). Residual Toxicity of Wall-Sprayed Organophosphates, Carbamates and Pyrethroids to Mosquito Culex pipiens molestus Forskal. *J.Hyg.Epidemiol.Microbiol.Immunol.* 24: 110-117.

EcoReference No.: 70015
Chemical of Concern: RSM,SZ,CPY,CBL,PMR,DMT; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT,CONTROL(ALL CHEMS),TARGET(CBL).

599. Rettich, F. (1977). The Susceptibility of Mosquito Larvae to Eighteen Insecticides in

Czechoslovakia. *Mosq.News* 37: 252-257.

EcoReference No.: 2914
Chemical of Concern: DLD,TCF,MXC,HCCH,MLN,CBL,DZ,CPY,DDT,FNTH,DDVP,PPX,FNT,TMP; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

600. Richmond, M. L., Henny, C. J., Floyd, R. L., Mannan, R. W., Finch, D. M., and DeWeese, L. R. (1979). Effects of Sevin-4-Oil, Dimilin, and Orthene on Forest Birds in Northeastern Oregon. *Res.Paper No.PSW-148, Pacific Forest and Range Experiment Station, U.S.D.I., Washington, D.C.* 19.

EcoReference No.: 53614
Chemical of Concern: ACP,CBL; Habitat: T; Effect Codes: MOR,BEH,PHY,POP; Rejection Code: NO ENDPOINT(ACP).

601. Roberts, B. L. and Dorough, H. W. (1984). Relative Toxicities of Chemicals to the Earthworm Eisenia foetida. *Environ.Toxicol.Chem.* 3: 67-78.

EcoReference No.: 40531
Chemical of Concern: DU,FNV,ES,FNF,FML,NCTN,CBD,MLN,PRN,Captan,TPM,PPB,DCTP,ACP,BMY,MBZ,PAQT,BNZ,CH3I,TFN,NaN03,AZ,24DXY,NP,Cd,Pb,CuS,DDT,PAH,IDM,DMM,CYP,PMR,CBF,ADC,MOM,CBL,PPX,CPY,NHN,CTC; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(ADC,CBL,NCTN,CBF,MOM,PPB,CuS,CYP),OK(ALL CHEMS).

602. Roberts, D. (1975). The Effect of Pesticides on Byssus Formation in the Common Mussel, Mytilus edulis. *Environ.Pollut.* 8: 241-254.

EcoReference No.: 6291
Chemical of Concern: CBL,ES,ETHN; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

603. Rocchi, P., Perocco, P., Alberghini, W., Fini, A., and Prodi, G. (1980). Effect of Pesticides on Scheduled and Unscheduled DNA Synthesis of Rat Thymocytes and Human Lymphocytes. *Arch.Toxicol.* 45: 101-108.

Chemical of Concern: TRL,HCCH,DLD,DDT,AND,Folpet,PQT,DQTBr,CBL,Maneb,THM,ZINEB,ZIRAM,Captan; Habitat: T; Rejection Code: NO IN VITRO.

604. Rohr, J. R., Elskus, A. A., Shepherd, B. S., Crowley, P. H., McCarthy, T. M., Niedzwiecki, J. H., Sager, T., Sih, A., and Palmer, B. D. (2003). Lethal and Sublethal Effects of Atrazine, Carbaryl, Endosulfan, and Octylphenol on the Streamside Salamander (Ambystoma barbouri). *Environ.Toxicol.Chem.* 22: 2385-2392.

EcoReference No.: 71723
Chemical of Concern: ATZ,CBL,ES; Habitat: A; Effect Codes: BEH,MOR,GRO; Rejection Code: LITE EVAL CODED(ATZ),OK(ALL CHEMS).

605. Romankow-Zmudowska, A. (1983). Effectiveness of Difenacoum and Brodifacoum Against Common Vole [Microtus arvalis], Mouse [Mus musculus V. Alba] and Rabbit [Oryctolagus cuniculus] in the Laboratory Tests. *Prace Naukowe Insty.Ochrony Roslin* 83-90.

EcoReference No.: 86458

Chemical of Concern: DFM,BDF,CBL; Habitat: T; Effect Codes: MOR,GRO,BEH,PHY; Rejection Code: NO CONTROL(ALL CHEMS).

606. Rosch, R. and Liese, W. (1970). Ringschalentest Mit Holzzerstorenden Pilzen: I. Pruefung Von Substraten Fuer den Nachweis Von Phenoloxidasen. *Arch.Mikrobiol.* 73: 281-292.

EcoReference No.: 30419
Chemical of Concern: CBL; Habitat: AT; Rejection Code: NO ENGLISH(ALL CHEMS).

607. Royer, T. A., Edelson, J. V., and Cartwright, B. (1987). Worm Control on Cabbage, 1985. *Insectic.Acaric.Tests* 12: 103 (No. 109).

EcoReference No.: 88726
Chemical of Concern: EFV,CYF,PMR,MTM,CPY,MOM,ES,CBL,MLN,DZ,MP,AZ,FVL,MVP,DMT,MXC,OXD, Naled; Habitat: T; Effect Codes: POP; Rejection Code: OK TARGET(ALL CHEMS).

608. Rubinigg, M., Posthumus, F., Ferschke, M., Elzenga, J. T. M., and Stulen, I. (2003). Effects of NaCl Salinity on 15N-Nitrate Fluxes and Specific Root Length in the Halophyte Plantago maritima L. *Plant Soil* 250: 201-213.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO TOXICANT.

609. Ruppel, R. F. and Yun, Y. M. (1965). Ground-Applied Insecticides Against the Cereal Leaf Beetle. *J.Econ.Entomol.* 58: 41-46.

EcoReference No.: 71476
Chemical of Concern: CBL,DLD,EN,HCCH,DDT,AND,PRN,TXP,DZ; Habitat: T; Effect Codes: POP,MOR; Rejection Code: TARGET(DZ).

610. Sahai, Y. N. and Gupta, R. (1992). Residue Analysis of Some Pesticides in the Brain of a Teleost Fish Heteropneustes fossilis (Bloch). *J.Tissue Res.* 2: 35-41.

EcoReference No.: 13285
Chemical of Concern: HCCH,MLN,ES,CBL; Habitat: A; Effect Codes: ACC; Rejection Code: NO ENDPOINT(ALL CHEMS).

611. Sahu, J., Das, M. K., and Adhikary, S. P. (1992). Reaction of Blue-Green Algae of Rice-Field Soils to Pesticide Application. *Trop.Agric.* 69: 362-364 .

EcoReference No.: 14725
Chemical of Concern: CBF,CBL,DMT,ES; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

612. Salgare, S. A. (1988). Alteration of Resting Period of Pollen of Successive Flowers of Apocynaceae by Herbicides (Acrolein, Simazine, Nitrofen). *Adv.Plant Sci.* 1: 82-86.

EcoReference No.: 72298
Chemical of Concern: SZ,ACL,CBL; Habitat: T; Effect Codes: REP; Rejection Code: NO ENDPOINT(TARGET-SZ,TARGET-ACL,CBL).

613. Salgare, S. A. (1991). Inhibitory Effect of Herbicides (Acrolein, Simazine, Nitrofen) on Pollen Germination of Successive Flowers of Apocynaceae. *Bioved.* 1: 189-194.

EcoReference No.: 72330
Chemical of Concern: SZ,ACL,CBL; Habitat: T; Effect Codes: REP; Rejection Code: NO

ENDPOINT(TARGET-SZ,TARGET-ACL,CBL).

614. Salgare, S. A. (1988). Stimulatory Effect of Some Herbicides on Pollen Tube Growth of Successive Flowers of Apocynaceae. *Adv.Plant Sci.* 1: 255-261.

Chemical of Concern: 24D,24DC,CBL; Habitat: T; Rejection Code: NO TOX DATA.

615. Salunkhe, G. N. (1985). Protection of Sorghum Seeds from Infestation of Rice Weevil. *J.Maharashtra Agric.Univ.* 10: 223 p.

Chemical of Concern: DDT,CBL,MLN,Captan; Habitat: T; Rejection Code: NO ENDPOINT(DDT,Captan,TARGET-CBL,MLN).

616. Sampath, K., Elango, P., and Roseline, V. (1995). Effect of Carbaryl on the Levels of Protein and Aminoacids of Common Frog Rana tigrina. *J.Environ.Biol.* 16: 61-65.

EcoReference No.: 40117
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR,BCM; Rejection Code: NO CONTROL(CBL).

617. Samsoe-Petersen, L. (1995). Effects of 67 Herbicides and Plant Growth Regulators on the Rove Beetle Aleochara bilineata (Col.: Staphylinidae) in the Laboratory. *Entomophaga* 40: 95-104.

EcoReference No.: 63490
Chemical of Concern: SZ,ATZ,DU,HFP,MCPP1,PYD,FXP,BT,MTL,PDM,CBL,MTSM,AMTL,CQTC,DPP1; Habitat: T; Effect Codes: MOR,REP,GRO; Rejection Code: LITE EVAL CODED(MTL,SZ,ATZ,CQTC),NO MIXTURE(MCPP1,DPP1),TARGET(CBL).

618. Sanchez-Bayo, F. (2006). Comparative Acute Toxicity of Organic Pollutants and Reference Values for Crustaceans. I. Branchiopoda, Copepoda and Ostracoda. *Environ.Pollut.* 139: 385-420.

EcoReference No.: 88444
Chemical of Concern: CBL,MTPN,PSM,PRN,MLN,DZ; Habitat: A; Rejection Code: NO REVIEW(CBL,MTPN,PSM,PRN, MLN,DZ).

619. Sanders, H. O. and Cope, O. B. (1966). Toxicities of Several Pesticides to Two Species of Cladocerans. *Trans.Am.Fish.Soc.* 95: 165-169 (Author Communication Used) (Publ in Part As 6797).

EcoReference No.: 888
Chemical of Concern: 24DXY,CBL,DBN,DU,DZ,HCCH,MLN,Naled,CYT,PYN,TFN,RTN,As; Habitat: A; Effect Codes: PHY; Rejection Code: NO CONTROL(ALL CHEMS).

620. Sanders, H. O., Finley, M. T., and Hunn, J. B. (1983). Acute Toxicity of Six Forest Insecticides to Three Aquatic Invertebrates and Four Fishes. *Tech.Pap.No.110, U.S.Fish Wildl.Serv., Washington, D.C.* 1-5 (Author Communication Used) (Publ in Part As 6797).

EcoReference No.: 15574
Chemical of Concern: MOM,CBL,TCF,FNT,ACP; Habitat: A; Effect Codes: MOR; Rejection Code: NO PUBL AS(MOM),NO CONTROL(ALL CHEMS).

621. Sangha, G. K. (1971). Environmental Effects of Carbamate Insecticides as Assayed in the

"Model Ecosystem" - A Comparison with DDT. *Diss.Abstr.Int.B Sci.Eng.32:4650-B (1972) / Ph.D.Thesis, Univ.of Illinois at Urbana-Champaign, IL* 153 p.

Chemical of Concern: DDT,PPX,CBL,CBF,ADC; Habitat: A; Rejection Code: NO ABSTRACT.

622. Satoh, M., Karaki, E., Kakehashi, M., Okazaki, E., Gotoh, T., and Oyama, Y. (1999). Heavy-Metal Induced Changes in Nonproteinaceous Thiol Levels and Heavy-Metal Binding Peptide in Tetraselmis tetrathele (Prasinophyceae). *J.Phycol.* 35: 989-994.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

623. Satoh, T. (1991). Release of Liver Microsomal Beta-Glucuronidase from Hepatocytes In Vitro and In Vivo by Organophosphates and Hepatotoxic Agents. *J.Toxicol.Sci.* 16: 133-142.

EcoReference No.: 80752
Chemical of Concern: PTR,FNT,CBL; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

624. Sawyer, T. W., Weiss, M. T., and Dickinson, T. (1996). Effect of Metabolism on the Anticholinesterase Activity of Carbamate and Organophosphate Insecticides in Neuron Culture. *In Vitro Toxicol.* 9: 343-352.

Chemical of Concern: ADC,TBC,CBL,MOM,ABT,PRN,ACP,PRT,PPHD,FNF,DZ,ETN,FNTH,TCF,AZ,PHSL,MLN,MP,Naled,DMT,DS,CPY; Habitat: T; Rejection Code: NO IN VITRO.

625. Saxena, P. K. and Aggarwal, S. (1970). Toxicity of Some Insecticides to the Indian Cat-Fish, Heteropneustes fossilis (Bloch). *Anat.Anz.Bd.* 127: 502-503.

EcoReference No.: 9686
Chemical of Concern: EN,CBL; Habitat: A; Effect Codes: MOR,PHY,BEH; Rejection Code: NO CONTROL(ALL CHEMS).

626. Sayce, C. S. (1970). The Uptake of Sevin by Pacific Oysters and Bottom Muds. *In: Washington (State) Dep.Fish., Tech.Rep.No.1* 9-17.

EcoReference No.: 15242
Chemical of Concern: CBL; Habitat: A; Effect Codes: ACC; Rejection Code: NO ENDPOINT(CBL).

627. Sayce, C. S. and Chambers, J. S. (1970). Observations on Potential Uptake of Sevin by Pacific Oysters. *In: Washington (State) Dep.Fish., Tech.Rep.No.1* 18-24.

EcoReference No.: 15243
Chemical of Concern: CBL; Habitat: A; Effect Codes: ACC; Rejection Code: NO ENDPOINT(CBL).

628. Scaps, P., Descamps, M., and Demuynck, S. (2002). Biochemical and Physiological Responses Induced by Toxics in Annelida: Utilization as Biomarkers. *Trends Comp.Biochem.Physiol.* 9: 165-173.

EcoReference No.: 88470
Chemical of Concern: Cd,Zn,CuCl,Pb,MLN,CBL,EPRN,PHSL; Habitat: AT; Effect Codes: BCM; Rejection Code: NO ENDPOINT,CONTROL(ALL CHEMS).

629. Schafer, E. W. (1972). The Acute Oral Toxicity of 369 Pesticidal, Pharmaceutical and Other Chemicals to Wild Birds. *Toxicol.Appl.Pharmacol.* 21: 315-330 .

EcoReference No.: 38655
Chemical of Concern: Ziram,AN,BZO,BZC,Captan,THM,ZINEB,CYT,SFL,MAL,MRX,ACL,MLN,ABT,CBZ,MCB,CBL,CMPH,HCCH,EN,AND,ES,NP,TCF,CPY,DDVP,PPHD,DCTP,DS,PRT,DMT,AZ,PSM,ETN,DEM,DZ,FNTH,MP,NCTN; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS),NO COC(4AP).

630. Schafer, E. W. Jr. and Bowles, W. A. Jr. (1985). Acute Oral Toxicity and Repellency of 933 Chemicals to House and Deer Mice. *Arch.Environ.Contam.Toxicol.* 14: 111-129.

EcoReference No.: 35426
Chemical of Concern: ADC,CST,MOM,CPC,ZnP,DOD,MLN,Cu,AQS,CuCO,RSM,ACL,4AP,DZ,As,IAA,CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

631. Schafer, E. W. Jr., Bowles, W. A. Jr., and Hurlbut, J. (1983). The Acute Oral Toxicity, Repellency, and Hazard Potential of 998 Chemicals to One or more Species of Wild and Domestic Birds. *Arch.Environ.Contam.Toxicol.* 12: 355-382.

EcoReference No.: 38656
Chemical of Concern: RSM,TBT,CBL,EN,PAH,ACL,PL,ES,AND,DZ,CPY,Sb,Pb,Zn,Cu,Tl,DLD,HCCH,APAC,4AP; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

632. Schafer, E. W. Jr., Bowles, W. A. Jr., and Hurlbut, J. (1983). The Acute Oral Toxicity, Repellency, and Hazard Potential of 998 Chemicals to One or more Species of Wild and Domestic Birds. *Arch.Environ.Contam.Toxicol.* 12: 355-382.

EcoReference No.: 38656
Chemical of Concern: RSM,TBT,CBL,EN,PAH,ACL,PL,ES,AND,DZ,CPY,Sb,Pb,Zn,Cu,Tl,DLD,HCCH,APAC,4AP; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

633. Schiewer, U. (1974). Salt Tolerance and the Influence of Increasing NaCl Conentrations on the Contents of Nitrogen, Carbohydrates, Pigments and the Production of Extracellular Carbohydrates in Some Freshwater Bleu-Green Algae. *Arch.Hydrobiol.Suppl.* 46: 171-184.

EcoReference No.: 53945
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO TOX DATA.

634. Schiffman, S. S., Suggs, M. S., Donia, M. B. A., Erickson, R. P., and Nagle, H. T. (1995). Environmental Pollutants Alter Taste Responses in the Gerbil. *Pharmacol.Biochem.Behav.* 52: 189-194.

EcoReference No.: 74836
Chemical of Concern: CBF,PYT,MTM,ACP,CPY,DEM,MLN,CBL,FNV,PAQT,GYP; Habitat: T; Effect Codes: PHY; Rejection Code: NO ENDPOINT(ALL CHEMS) .

635. Schneider, M. and Guhne, M. (2000). CYD 3410 - A New Post Emergence Herbicide in Fall and Spring for Control of Broad Leaf Weeds in Cereals (CYD 34103 - Ein Neues Nachauflaufherbizid im Herbst und Fruhjahr zur Bekampfung von Breitblattrigen Unkrautern im Getreide). *Z.Pflanzenkr.Pflanzenschutz* 17: 571-576 (GER) (ENG ABS).

EcoReference No.: 66528
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

636. Schoettger, R. A. (1973). Fish-Pesticide Research Laboratory. *In: Resour.Publ.No.121, Prog.Sport Fish.Res., Div.Fish.Res., Bur.Sport Fish.Wildl., U.S.D.I., Washington, D.C.:* 2-17.

EcoReference No.: 16616
Chemical of Concern: CBL,PCL,MXC,PHTH,ABT,PCB,DDT,DLD,EN,AND,HCCH,HPT,CHD,CMPH,TCF,DZ,ATM,TXP,MP,SZ,CAPTAN,DCF; Habitat: A; Effect Codes: POP,PHY,ACC,REP,MOR,BCM; Rejection Code: NO ENDPOINT(SZ),NO CONTROL(ATM,DZ,CBL).

637. Schoettger, R. A. (1970). Fish-Pesticide Research Laboratory: Progress in Sport Fishery Research. *U.S.Dep.Interior, Bur.Sport Fish.Wildl.Res., Publ.* 106: 2-40 (Publ in Part As 6797).

EcoReference No.: 6615
Chemical of Concern: RSM,SZ,CBL,CPY,HCCH,MLN,MP,Naled,24DXY,MCPB,ATM; Habitat: A; Effect Codes: SYS,ACC,MOR,BCM,POP; Rejection Code: NO CONTROL(CBL,SZ,RSM,MCPB,ATM).

638. Schoettger, R. A. and Mauck, W. L. (1978). Toxicity of Experimental Forest Insecticides to Fish and Aquatic Invertebrates. *In: D.I.Mount, W.R.Swain, and N.K.Ivanikiw (Eds.), Proc.1st and 2nd USA-USSR Symp.on Effects of Pollutants upon Aquatic Ecosystems, Vol.1, Symp.Oct.21-23, 1975, Vol.2, USSR Symp., June 22-26, 1976, Duluth, MN* 250, 266 (U.S.NTIS PB-287219) (Publ in Part As 6797).

EcoReference No.: 5238
Chemical of Concern: ACP,CBL,DFZ; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ACP,CBL,DFZ).

639. Scott, G. R. and Sloman, K. A. (2004-). The Effects of Environmental Pollutants on Complex Fish Behaviour: Integrating Behavioural and Physiological Indicators of Toxicity. *Aquat.Toxicol.* 68: 369-392.

EcoReference No.: 87520
Chemical of Concern: DU,DDT,CPY,CHD,CBL,PCP,PL,C8OH,DZ,MP,FNV,ES,Zn,Ni,Hg,Cd,Cu,Pb; Habitat: A; Rejection Code: NO REVIEW.

640. Scott, P. W. and Fogle, B. (1983). Treatment of Ornamental Koi Carp (Cyprinus carpio) Infected with Anchor Worms (Lernaea cyprinacea). *Vet.Rec.* 113: 421.

EcoReference No.: 65622
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO TOX DATA.

641. Seifert, J. and Casida, J. E. (1978). Relation of Yolk Sac Membrane Kynurenine Formamidase Inhibition to Certain Teratogenic Effects of Organophosphorus Insecticides and of Carbaryl and Eserine in Chicken Embryos. *Biochem.Pharmacol.* 27: 2611-2615.

EcoReference No.: 38708
Chemical of Concern: MLN,PRT,DCTP,DZ,CBL,MTM; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

642. Seiler, J. P. (1977). Nitrosation In Vitro and In Vivo by Sodium Nitrite, and Mutagenicity of

Nitrogenous Pesticides. *Mutat.Res.* 48: 225-236.

EcoReference No.: 88676
Chemical of Concern: Du,BMY,ANTV,ACP,ADC,CBL,CBF,DMT,Maneb,ETU,FMU,MOM,PPX; Habitat: T; Effect Codes: CEL,PHY; Rejection Code: OK(ALL CHEMS),NO COC(MTAS).

643. Sell, P. (1984). Investigations for Testing Effects of Pesticides on the Efficiency of the Predacious Gall Midge Aphidoletes aphidimyza (Rond.) (Diptera, Cecidomyiidae) and Their Progeny (Untersuchungen zur Prufung der Wirkungen von Pflanzenschutzmitteln auf Leistungen der Rauberischen Gallmucke Aphidoletes aphidimyza (Rond.) (Diptera, Cecidomyiidae) und Deren Nachkommen). *Z.Angew.Entomol.* 98: 425-431 (GER) (ENG ABS).

EcoReference No.: 69496
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

644. Semel, M. (1959). Control of the Corn Earworm Attacking Sweet Corn. *J.Econ.Entomol.* 52: 1111-1114.

EcoReference No.: 71074
Chemical of Concern: DDT,EN,CBL,ES,DZ,TXP,HPT,MLN; Habitat: T; Effect Codes: POP; Rejection Code: OK(ALL CHEMS),OK TARGET(DZ,MLN).

645. Seuge, J. and Bluzat, R. (1979). Chronic Toxicity of Carbaryl and Lindane to the Freshwater Mollusc Lymnea stagnalis L. *Water Res.* 13: 285-293 (FRE) (ENG ABS).

EcoReference No.: 6775
Chemical of Concern: CBL,HCCH; Habitat: A; Rejection Code: NO FOREIGN(HCCH,CBL).

646. Seuge, J. and Bluzat, R. (1979). Study of the Chronic Toxicity of Two Insecticides (Carbaryl and Lindane) Toward the F-sub-1 Generation of Lymnea stagnalis L. (Mollusca, Gasteropoda, Pulmonata). 2. Consequences on the Reproductive Potential. *Hydrobiologia* 66: 25-31 (FRE) (ENG ABS).

EcoReference No.: 7254
Chemical of Concern: CBL,HCCH; Habitat: A; Effect Codes: GRO,REP; Rejection Code: NO FOREIGN(CBL,HCCH).

647. Shah, P. V., Fisher, H. L., Sumler, M. R., Monroe, R. J., Chernoff, N., and Hall, L. L. (1987). Comparison of the Penetration of 14 Pesticides Through the Skin of Young and Adult Rats. *J.Toxicol.Environ.Health* 21: 353-366.

EcoReference No.: 84377
Chemical of Concern: NCTN,ATZ,CAPTAN,CBL,CBF,CPY,DSMA,FOLPET,MSMA,PRN,PCB,PMR; Habitat: T; Effect Codes: ACC; Rejection Code: NO CONTROL(ALL CHEMS).

648. Shah, P. V., Monroe, R. J., and Guthrie, F. E. (1981). Comparative Rates of Dermal Penetration of Insecticides in Mice. *Toxicol.Appl.Pharmacol.* 59: 414-423.

EcoReference No.: 88947
Chemical of Concern: MLN,PMR,PRN,MOM,CBL,DDT,DLD,NCTN,CPY,CBF; Habitat: T; Effect Codes: ACC; Rejection Code: NO CONTROL(ALL CHEMS).

649. Shamaan, N. A., Hamidah, R., Jeffries, J., Hashim, A. J., and Wan Ngah, W. Z. (1993). Insecticide Toxicity, Glutathione Transferases and Carboxylesterase Activities in the Larva of the Aedes Mosquito. *Comp.Biochem.Physiol.C* 104: 107-110.

EcoReference No.: 6867
Chemical of Concern: ABT,CBL,DDT,HCCH; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

650. Sharma, R. P. and Reddy, R. V. (1987). Toxic Effects of Chemicals on the Immune System. *In: T.J.Haley and W.O.Berndt (Eds.), Handbook of Toxicology, Chapter 15, Hemisphere Publ.Corp., Washington, D.C.* 555-591.

EcoReference No.: 70597
Chemical of Concern: PNB,DDT,HCCH,DZ,CHD,DLD,END,HPT,TXP,PRN,CBL,AND,CTC,DBAC,MANEB; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

651. Sharom, M. S., Miles, J. R. W., Harris, C. R., and McEwen, F. L. (1980). Behaviour of 12 Insecticides in Soil and Aqueous Suspensions of Soil and Sediment. *Water Res.* 14: 1095-1100.

Chemical of Concern: MVP,CBF,CBL,DZ,HCCH,PRN,CPY,DDT,DLD,EN,ETN; Habitat: AT; Rejection Code: NO FATE.

652. Sharom, M. S., Miles, J. R. W., Harris, C. R., and McEwen, F. L. (1980). Persistence of 12 Insecticides in Water. *Water Res.* 14: 1089-1093.

Chemical of Concern: CBF,MVP,CBL,DZ,CPY,ETN,EN,DLD,PRN,DDT,HCCH; Habitat: A; Rejection Code: NO FATE,NO TOX DATA.

653. Shaw, R. D., Cook, M., and Carson, R. E. Jr. (1968). Developments in the Resistance Status of the Southern Cattle Tick to Organophosphorus and Carbamate Insecticides. *J.Econ.Entomol.* 61: 1590-1594.

EcoReference No.: 72637
Chemical of Concern: PRN,DZ,CBL,HCCH,TXP,CPY; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(DZ).

654. Shaw, R. D., Thompson, G. E., and Baker, J. A. F. (1967). Resistance to Cholinesterase-Inhibitors in the Blue Tick, Boophilus decoloratus, in South Africa. *Vet.Rec.* 81: 548-549.

EcoReference No.: 72320
Chemical of Concern: CBL,DZ; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(DZ).

655. Shea, T. B. and Berry, B. S. (1984). Suppression of Interferon Synthesis by the Pesticide Carbaryl as a Mechanism for Enhancement of Goldfish Virus-2 Replication. *Appl.Environ.* 47: 250-252.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO IN VITRO.

656. Sherstneva, L. A. (1978). Effect of Some Pesticides on the Fresh Water Crustaceans. *Rybn.Khoz.* 2: 33-35 (RUS).

EcoReference No.: 7170
Chemical of Concern: CBL,HCCH; Habitat: A; Rejection Code: NO

FOREIGN(HCCH,CBL).

657. Shinohara, A., Saito, K., Yamazoe, Y., Kamataki, T., and Kato, R. (1986). Inhibition of Acetyl-coenzyme a Dependent Activation of N-Hydroxyarylamines by Phenolic Compounds. Pentachlorophenol and 1-Nitro-2-Naphthol. *Chem.-Biol.Interact.* 60: 275-285.

Chemical of Concern: PCP,PL,CBL; Habitat: T; Rejection Code: NO IN VITRO.

658. Shukla, D. S. and Misra, A. P. (1972). Effect of Soil Application of Fungicides in Inactivation of Sclerotia of Ozonium texanum var. parasiticum and Incidence of Gram Wilt. *Indian Phytopathol.* 25: 378-386.

Chemical of Concern: PNB,CAPTAN,Cu,Hg,CBL; Habitat: T; Rejection Code: NO TOX DATA.

659. Sijm, D. T. H. M., Flenner, C. K., and Opperhuizen, A. (1991). The Influence of Biochemical Species Differences on Acute Fish Toxicity of Organic Chemicals. *Comp.Biochem.Physiol.C* 100: 33-35.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO REVIEW(ALL CHEMS).

660. Sikka, H. C., Miyazaki, S., and Rice, C. P. (1973). Metabolism of Selected Pesticides by Marine Microorganisms. *Rep.No.SURC-TR-73-520; Life Sci.Div., Syracuse University Res.Corp., Syracuse, NY* 16 p. (U.S.NTIS AD-763410).

EcoReference No.: 8982
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,PHY; Rejection Code: NO ENDPOINT(CBL).

661. Sikka, H. C. and Rice, C. P. (1974). Interaction of Selected Pesticides with Marine Microorganisms. *Office of Naval Res., Arlington, VA* 78 p. (U.S.NTIS AD-785079).

EcoReference No.: 8713
Chemical of Concern: DDT,DLD,CBL,MXC; Habitat: A; Effect Codes: ACC,POP,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

662. Simwat, G. S. and Dhawan, A. K. (1993). Effect of Insecticides on Some Yield Contributing Parameters in Asiatic Cotton, Gossypium arboreum L. *J.Insect Sci.* 6: 305-306.

EcoReference No.: 87631
Chemical of Concern: CYP,FNV,PMR,FYT,DM,FVL,PHSL,ES,DDT,FNT,CBL,ACP; Habitat: T; Effect Codes: POP,GRO,PHY; Rejection Code: OK(ALL CHEMS),OK TARGET(ACP).

663. Simwat, G. S. and Dhawan, A. K. (1993). Phytotoxic Effect of Spraying Mixtures of Systemic and Contact Insecticides on Upland Cotton (Gossypium hirsutum). *Indian J.Agric.Sci.* 63: 390-392.

EcoReference No.: 75555
Chemical of Concern: CPY,CBL,ACP,ES,DM,DMT,PPHD,FNV,CYP; Habitat: T; Rejection Code: NO MIXTURE(ALL CHEMS),TARGET(CBL).

664. Sinclair, C. J. and Boxall, A. B. A. (2003). Assessing the Ecotoxicity of Pesticide Transformation Products . *Environ.Sci.Tech.* 37: 4617-4625.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO MODELING(CBL).

665. Singh, A., Singh, A., Misra, T. N., and Agarwal, R. A. (1996). Molluscicides of Plant Origin. *Biol.Agric.Hortic.* 13: 205-252.

EcoReference No.: 83309
Chemical of Concern: DM,NSM,ADC,CBL,PRT,CYP,PMR,FNV; Habitat: A; Rejection Code: NO REVIEW,COC(SCA).

666. Singh, A. K. and Spassova, D. (1998). Effects of Hexamethonium, Phenothiazines, Propranolol and Ephedrine on Acetylcholinesterase Carbamylation by Physostigmine, Aldicarb and Carbaryl: Interaction Between the Active Site and the Functionally Distinct Peripheral Sites in Acetylcholinesterase. *Comp.Biochem.Physiol.C* 119: 97-105.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

667. Singh, D. P. and Kshatriya, K. (2002). NaCl-Induced Oxidative Damage in the Cyanobacterium Anabaena doliolum. *Curr.Microbiol.* 44: 411-417.

EcoReference No.: 78641
Chemical of Concern: NaN3,CBL; Habitat: A; Effect Codes: BCM,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

668. Singh, J. M. (1970). The Effect of Caffeine and the Pesticide Carbaryl (1Naphthyl-N-Methylcarbamate) on Female Rats. *In: W.B.Deichmann, J.L.Radomski, and R.A.Penalver (Eds.), Pesticides Symposia, Inter-Am.Conf.on Toxicol.and Occup.Med., Univ.of Miami Schl.of Med., Miami, FL* 253-255.

EcoReference No.: 73111
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH; Rejection Code: NO ENDPOINT(CBL).

669. Singh, S. and Shrivastava, N. (1998). Histopathological Changes in the Liver of the Fish Nandus nandus Exposed to Endosulfan and Carbaryl. *J.Ecotoxicol.Environ.Monit.* 8: 139-144.

EcoReference No.: 60139
Chemical of Concern: ES,CBL; Habitat: A; Effect Codes: CEL; Rejection Code: NO ENDPOINT(ES,CBL).

670. Singh, U. D., Sethunathan, N., and Raghu, K. (1991). Fungal Degradation of Pesticides. *In: D.K.Arora (Ed.), Handbook of Applied Mycology, Chapter 19, Soil and Plants, Marcel Dekker Inc., NY* 1: 541-588.

EcoReference No.: 70474
Chemical of Concern: SZ,PNB,ATZ,PCP,DDT,AND,DLD,HPT,EN,CHD,ES,DZ,PRN,CBL,FRN,MLT,ADC,CBF,CLNB; Habitat: T; Rejection Code: NO REVIEW,NO REFS CHECKED.

671. Singh, V. K. and Saxena, P. N. (2001). Effect of Cybil (Cypermethrin 25 EC) and Cybil-Sevin (Carbaryl 50 EC) Combinations on Liver and Serum Phosphatases in Wistar Albino Rats. *J.Ecophysiol.Occup.Health* 1: 229-234.

EcoReference No.: 79178
Chemical of Concern: CYP,CBL; Habitat: T; Effect Codes: BCM; Rejection Code: NO MIXTURE(CBL),OK(CYP).

672. Singh, V. P., Gupta, S., and Saxena, P. K. (1984). Evaluation of Acute Toxicity of Carbaryl

and Malathion to Freshwater Teleosts, Channa punctatus (Bloch) and Heteropneustes fossilis (Bloch). *Toxicol.Lett.* 20: 271-276.

EcoReference No.: 11346
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(CBL,MLN).

673. Sinha, N., Lal, B., and Singh, T. P. (1993). Effect of Pesticides on Extrathyroidal Conversion of T4 to T3 in the Freshwater Catfish Clarias batrachus. *In: J.J.Stegeman, M.N.Moore, and M.E.Hahn (Eds.), Mar.Environ.Res., 1993, Int.Symp.on Responses of Marine Organisms to Pollutants, Apr.24, 1992, Woods Hole, MA.*

Chemical of Concern: CBL,ES,MLN; Habitat: A; Rejection Code: NO ABSTRACT.

674. Skalsky, H. L. and Guthrie, F. E. (1977). Affinities of Parathion, DDT, Dieldrin and Carbaryl for Macromolecules in the Blood of the Rat and American Cockroach and the Competitive Interactions of Steroids. *Pestic.Biochem.Physiol.* 7: 289-296.

Chemical of Concern: DDT,DLD,CBL,PRN; Habitat: T; Rejection Code: NO IN VITRO.

675. Smalley, H. E. (1970). Diagnosis and Treatment of Carbaryl Poisoning in Swine. *J.Am.Vet.Med.Assoc.* 156: 339-344.

EcoReference No.: 38808
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH,MOR,PHY; Rejection Code: NO CONTROL,ENDPOINT(CBL).

676. Smalley, H. E., Curtis, J. M., and Earl, F. L. (1968). Teratogenic Action of Carbaryl in Beagle Dogs. *Toxicol.Appl.Pharmacol.* 13: 392-403.

EcoReference No.: 72685
Chemical of Concern: CBL; Habitat: T; Effect Codes: REP,GRO; Rejection Code: NO ENDPOINT(CBL).

677. Smalley, H. E., O'Hara, P. J., Bridges, C. H., and Radeleff, R. D. (1969). The Effects of Chronic Carbaryl Administration on the Neuromuscular System of Swine. *Toxicol.Appl.Pharmacol.* 14: 409-419.

EcoReference No.: 38810
Chemical of Concern: CBL; Habitat: T; Effect Codes: BEH,PHY,MOR,CEL; Rejection Code: NO ENDPOINT(CBL).

678. Smith, D. N., King, W. J., Topper, C. P., Mhando, H., and Cooper, J. F. (1997). Studies on Spray Deposition on Cashew Trees in Tanzania with Reference to the Use of Fungicides to Control Oidium anacardii. *Crop Prot.* 16: 313-322 .

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO TOXICANT.

679. Solomon, H. M. (1978). The Teratogenic Effects of the Insecticides DDT, Carbaryl, Malathion and Parathion on Developing Medaka Eggs (Oryzias latipes). *Ph.D Thesis, Rutgers University, Newark, NJ* 158 p.

EcoReference No.: 2941
Chemical of Concern: DDT,PRN,CBL,MLN; Habitat: A; Effect Codes: GRO,CEL,MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

680. Sonnet, P. E., Lye, T. L., and Sackett, R. R. (1978). Effects of Selected Herbicides on the Toxicity of Several Insecticides to Honey Bees. *Environ.Entomol.* 7: 254-256.

EcoReference No.: 35454
Chemical of Concern: MLN,MP,CBL,DZ,MVP,24DXY,PRN,ATZ,CBF; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS,TARGET-MLN),NO MIXTURE(ATZ).

681. Sopinska, A., Niezgoda, J., and Jamroz, M. (1984). Study on Acute Toxicity of a Suspension Gamakarbatox Preparation in Carp (Cyprinus carpio L.). *Bromatol.Chem.Toksykol.* 17: 131-134 (RUS) (ENG ABS).

EcoReference No.: 14837
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN.

682. Sorensen, A. J. and Barbosa, P. (1975). Effectiveness of Carbaryl and Thuricide 16-B on a Population of Larval Lambdina athasaria pellucidaria. *J.Econ.Entomol.* 68: 561-562.

EcoReference No.: 54385
Chemical of Concern: CBL; Habitat: T; Rejection Code: No Ecossl Chem,TARGET(CBL).

683. Spain, A. V. (1974). The Effects of Carbaryl and DDT on the Litter Fauna of a Corsican Pine (Pinus nigra var. maritima) Forest: A Multivariate Comparison. *J.Appl.Ecol.* 11: 467-481.

EcoReference No.: 44403
Chemical of Concern: DDT,CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO OM,NO ENDPOINT(CBL).

684. Sperelakis, N. (1992). Chemical Agent Actions on Ion Channels and Electrophysiology of the Heart. *In: D.Acosta, Jr.(Ed.), Target Organ Toxicology Ser.: Cardiovascular Toxicology, 2nd Edition, Raven Press, New York, NY* 283-338.

EcoReference No.: 87547
Chemical of Concern: Ba,Cd,CBL,DDT,ATN,AND,CTC,CF,3CE,PCB,Mn,Co,Pb,Hg ; Habitat: AT; Rejection Code: NO REVIEW(ALL CHEMS).

685. St.L.Searle, C. M. (1965). The Susceptibility of Pauridia peregrina Timb. (Hymenoptera: Encyrtidae) to Some Pesticide Formulations. *J.Entomol.Soc.S.Afr.* 27: 239-49.

EcoReference No.: 77569
Chemical of Concern: CaPS,FNTH,AZ,DMT,PRN,DEM,ES,CBL,DDT,DLD; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS),MIXTURE(PRN,DMT,ES,AZ,FNTH).

686. Stadnyk, L., Campbell, R. S., and Johnson, B. T. (1971). Pesticide Effect on Growth and C14 Assimilation in a Freshwater Alga. *Bull.Environ.Contam.Toxicol.* 6: 1-8.

EcoReference No.: 2251
Chemical of Concern: 24DXY,CBL,DU,DZ; Habitat: A; Effect Codes: PHY; Rejection Code: NO ENDPOINT(DZ),LITE EVAL CODED(CBL).

687. Stanley, J. G. and Trial, J. G. (1980). Disappearance Constants of Carbaryl from Streams Contaminated by Forest Spraying. *Bull.Environ.Contam.Toxicol.* 25: 771-776.

EcoReference No.: 65949
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SPECIES.

688. Statham, C. N. and Lech, J. J. (1975). Potentiation of the Acute Toxicity of Several Pesticides and Herbicides in Trout by Carbaryl. *Toxicol.Appl.Pharmacol.* 34: 83-87.

EcoReference No.: 5550
Chemical of Concern: 24DXY,CBL,RTN,DLD,PCP; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

689. Statham, C. N. and Lech, J. J. (1975). Synergism of the Acute Toxic Effects of 3,4-D Butyl Ester, Dieldrin, Rotenone, and Pentachlorophenol in Rainbow Trout by Carbaryl. *In: 14th Annu.Meet.of Soc.of Toxicol., Mar.9-13, 1975, Williamsburg, VA* 133 p. (ABS No.166).

EcoReference No.: 6058
Chemical of Concern: DLD,CBL,RTN,PCP; Habitat: A; Effect Codes: MOR,ACC,BCM; Rejection Code: NO ABSTRACT(ALL CHEMS).

690. Stegeman, J. J. and Kaplan, H. B. (1981). Mixed-Function Oxygenase Activity of Benzo(a)pyrene Metabolism in the Barnacle Balanus eburneus (Crustacea, Cirripedia). *Comp.Biochem.Physiol.* 68C: 55-61.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO METABOLISM,NO CONC,NO SURVEY.

691. Stene, A. and Lonning, S. (1985). Effects of Short-Time Exposure to Naphthalene, Methyl-, and Hydroxynaphthalenes on Two Different Embryonic Stages of Cod (Gadus morhua L.). *Sarsia* 70: 279-285.

EcoReference No.: 17422
Chemical of Concern: NAPH,CBL; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: NO ENDPOINT(NAPH,CBL).

692. Stenersen, J., Brekke, E., and Engelstad, F. (1992). Earthworms for Toxicity Testing; Species Differences in Response Towards Cholinesterase Inhibiting Insecticides. *Soil Biol.Biochem.* 24: 1761-1764.

EcoReference No.: 74718
Chemical of Concern: CBL; Habitat: T; Effect Codes: POP,BCM,BEH,PHY; Rejection Code: NO ENDPOINT,CONTROL(CBL),NO COC(MTM,CBF,ADC).

693. Sterling, G. H., Doukas, P. H., Jackson, C., Caccese, R. , O'Neill, K. J., and O'Neill, J. J. (1993). 3-Carbamyl-N-Allylquinuclidinium Bromide: Effects on Cholinergic Activity and Protection Against Soman. *Biochem.Pharmacol.* 45: 465-472.

Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,MOR; Rejection Code: NO MIXTURE.

694. Stevens, P. J. G., Walker, J. T. S., Shaw, P. W., and Suckling, D. M. (1994). Organosilicone Surfactants: Tools for Horticultural Crop Protection. *In: Brighton Crop Prot.Conf.- Pests and Disease, Conf., Nov.21-24, 1994, Brighton, England* 1-3: 755-760.

Chemical of Concern: TDF,Captan,CPY,AZ,DOD,CBL,FUZ; Habitat: T; Rejection Code: NO MIXTURE.

695. Stevenson, J. H. (1978). The Acute Toxicity of Unformulated Pesticides to Worker Honey Bees (Apis mellifera L.). *Plant Pathol.* 27: 38-40.

EcoReference No.: 38931

Chemical of Concern: RSM,CBL,CHD,CPY,DDT,DZ,DLD,EN,HCCH,DMB,DZM; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS,TARGET-DZ,CBL).

696. Stratton, G. W. and Corke, C. T. (1981). Interaction of Permethrin with Daphnia magna in the Presence and Absence of Particulate Material. *Environ.Pollut.* 24: 135-144.

EcoReference No.: 5197
Chemical of Concern: PMR,MXC,CYP,DZ,CBL; Habitat: A; Effect Codes: MOR; Rejection Code: OK(PMR),NO CONTROL,ENDPOINT(DZ,MXC,CYP,CBL).

697. Strickman, D. (1985). Aquatic Bioassay of 11 Pesticides Using Larvae of the Mosquito, Wyeomyia smithii (Diptera: Culicidae). *Bull.Environ.Contam.Toxicol.* 35: 133-142.

EcoReference No.: 11480
Chemical of Concern: DDT,HPT,CPY,MLN,TMP,CBL,MOM,PPX,PMR,RSM; Habitat: A; Effect Codes: MOR,GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

698. Stroben, E., Brommel, C., Oehlmann, J., and Fioroni, P. (1992). The Genital Systems of Trivia arctica and Trivia monacha (Prosobranchia, Mesogastropoda) and Tributyltin Induced Imposex. *Zool Beitr* 34: 349-374.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SURVEY.

699. Sultana, P. (1989). Efficacy of Sevin and Marshal as Bird Repellent. *Bangladesh J.Zool.* 17: 131-134.

EcoReference No.: 87751
Chemical of Concern: CBL; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(CBL).

700. Sundaram, K. M. S. and Szeto, S. Y. (1987). Distribution and Persistence of Carbaryl in Some Terrestrial and Aquatic Components of a Forest Environment. *J.Environ.Sci.Health* B22: 579-599.

EcoReference No.: 12850
Chemical of Concern: CBL; Habitat: AT; Effect Codes: ACC,GRO; Rejection Code: NO ENDPOINT(CBL).

701. Sundstrom, G., Hutzinger, O., Safe, S., Ruzo, L., and Jones, D. (1975). Methods for the Study of Metabolism of Toxic and Persistent Chemicals in Aquatic Organisms as Exemplified by Chloronaphthalenes. *In: J.H.Koeman and J.J.T.W.A.Strik (Eds.), Sublethal Effects of Toxic Chemicals on Aquatic Animals, Elsevier Scientific Publ.Co., The Netherlands* 177-188.

EcoReference No.: 18147
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(CBL).

702. Suwanchaichinda, C. and Brattsten, L. B. (2002). Induction of Microsomal Cytochrome P450s by Tire-Leachate Compounds, Habitat Components of Aedes albopictus Mosquito Larvae. *Arch.Insect Biochem.Physiol.* 49: 71-79.

EcoReference No.: 69740
Chemical of Concern: CBL,AND,PBO,DEF,RTN,TMP; Habitat: A; Effect Codes: MOR,BCM; Rejection Code: NO MIXTURE(PBO,DEF),NO CONTROL(AND,CBL,RTN,TMP).

703. Suzuki, J., Watanabe, T., Sato, K., and Suzuki, S. (1988). Roles of Oxygen in Photochemical Reaction of Naphthols in Aqueous Nitrite Solution and Mutagen Formation. *Chem.Pharm.Bull.* 36: 4567-4575.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO BACTERIA(CBL).

704. Sykut, A. and Ostapczuk, E. (1995). A Study of the Effect of Selected Herbicydes Applied at Different Seasons on Starch Biosynthesis in the Grain of the Koda and Polanka Wheat Varieties (Badania Wplywu Stosowania w Roznych Terminach Wybranych Herbicydow na Biosynteze Skrobi w Ziarnie Pszenicy Ozimej Odmiany Koda i Polanka). *Bromatol.Chem.Toksykol.* 28: 283-285 (POL) (ENG ABS).

EcoReference No.: 67347
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

705. Tachikawa, M., Sawamura, R., and Okada, S. (1989). The Effects of Environmental Chemical Pollutants on Fish Gills . *Eisei Kagaku* 35: 397-407 (JPN) (ENG ABS) .

EcoReference No.: 69529
Chemical of Concern: PCP,DDT,DLD,EN,HPT,TXP,CBL,NAPH,PAH,PL,ATZ,TBT,NH,Cd,Cu,Hg,Zn; Habitat: A; Rejection Code: NO REVIEW.

706. Tauberger, G. and Klimmer, O. R. (1963). Animal Experimental Study of Several Cobalt Compounds after Intravenous Injection (Tierexperimentelle Untersuchungen Einiger Kobaltverbindungen nach Intravenoser Injektion). *Arch.Int.Pharmacodyn.* 143: 219-239 (GER).

EcoReference No.: 58201
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

707. Tegelberg, H. and Magoon, D. (1970). Sevin Treatment of a Subtidal Oyster Bed in Grays Harbor. *In: Washington (State) Dep.Fish., Tech.Rep.No.1* 1-8.

EcoReference No.: 15244
Chemical of Concern: CBL; Habitat: A; Effect Codes: POP,MOR; Rejection Code: NO ENDPOINT(CBL).

708. Tekel, J., Tahotna, S., and Vaverkova, S. (1998). Gas Chromatographic Method for Determination of Uracil Herbicides in Roots of Echinacea angustifolia Moench (Asteraceae). *J.Pharm.Biomed.Anal.* 16: 753-758.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO.

709. Thacker, E. J. (1971). Pesticide Metabolism in Animals. *In: Int.Symp.Identification and Measurement of Environmental Pollutants, Campbell Printing, Ottawa* 92-97.

EcoReference No.: 70610
Chemical of Concern: CBL,ATZ,PPZ; Habitat: T; Rejection Code: NO REVIEW.

710. Thakur, N. and Sahai, S. (1994). Toxicity Assessment of Some Commonly used Pesticides to Three Species of Fishes. *Environ.Ecol.* 12: 462-464.

EcoReference No.: 17548
Chemical of Concern: CBL,MLN,BHC; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

711. Thomas, J. A. (1974). Actions of Pesticides and Other Drugs on the Male Reproductive System. *EPA-650/1-74-011, U.S.EPA, Research Triangle Park, NC* 41 p. (U.S. NTIS PB-237381).

EcoReference No.: 62502
Chemical of Concern: DDT,DLD,CBL,PRN,TPE; Habitat: T; Effect Codes: GRO,BCM; Rejection Code: OK Coded ISSI (DLD); Coded CCK (DDT),NO ENDPOINT(CBL).

712. Thomas, J. A., Dieringer, C. S., and Schein, L. (1974). Effects of Carbaryl on Mouse Organs of Reproduction. *Toxicol.Appl.Pharmacol.* 28: 142-145.

EcoReference No.: 39097
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC,GRO; Rejection Code: NO ENDPOINT(CBL).

713. Thomas, P. T. and House, R. V. (1989). Pesticide-Induced Modulation of the Immune System. *In: N.N.Ragsdale and R.E.Menzer (Eds.), ACS (Am.Chem.Soc.) Symp.Ser.414, Carcinogenicity and Pesticides: Principles, Issues, and Relationships, 196th Natl.Meet.of the Am.Chem.Soc., Sept.25-30, 1988, Los Angeles, CA, Am.Chem.Soc., Washington, D.C.* 94-106.

EcoReference No.: 74733
Chemical of Concern: TBT,CBL,ADC,CBF; Habitat: T; Rejection Code: NO REVIEW.

714. Thompson, A. R. and Gore, F. L. (1972). Toxicity of Twenty-Nine Insecticides to Folsomia candida: Laboratory Studies. *J.Econ.Entomol.* 65: 1255-1260.

EcoReference No.: 40474
Chemical of Concern: CBL,HCCH,AND,AZ,DDT,DLD,MOM,EN,PRN,MP,DS,CBF,DZ,CPY,CHD,PRT,FNT,ADC,FNF,HPT; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

715. Tilak, K. S. (1984). Relative Toxicity of Carbaryl, 1-Naphthol, and Three Formulations of Carbaryl to Channa punctata (Bloch). *Aquat.Sci.Fish.Abstr.18(7):10247-1Q18 (1988) / Matsya* 8: 45-47 (Unpublished Thesis Summary Attached).

EcoReference No.: 831
Chemical of Concern: CBL; Habitat: A; Effect Codes: MOR; Rejection Code: NO ABSTRACT(CBL).

716. Tillander, M., Miettinen, J. K., Rissanen, K., Miettinen, V., and Minkkinen, E. (1968). Excreation of Phenyl and Methyl Mercury Nitrate After Oral Administration or Intramuscular Injection in Fish, Mussel, Mollusc and Crayfish (Utsondring av Fenyl och Methlmerkurinitrat Efter Oral Administration Eller Intramuskular Injektion i Fisk, Mussla, Snacka och Krafta). *In: Proc.of the Nordic Symp.on the Problems of Mercury, Oct.10-11, 1968, Lidingo, Sweden* 181-183 (SWE).

EcoReference No.: 60161
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN.

717. Tizio, R., Trippi, V. S., Trione, S. O., and Almelapons, G. (1961). Studies on Rooting in Grapevine Cuttings. IV. Action of 2,4-D, 2,4,5-T, NAA and IAA, Alone or in Combination and with or Without Addition of Sucrose, on Rooting Capacity (Estudios Sobre Enraizamiento en vid. IV. Efecto de los Acidos 2,4-Diclorofenoxiacetico, 2,4,5-Triclorofenoxiacetico, Naftalenacetico e indol-3-acetico y Combinaciones de los Mismos y con Sacarosa, Sobre la Capacidad de Enraizamiento). *Phyton (B.Aires)* 17: 15-19.

EcoReference No.: 25585
Chemical of Concern: 24DXY,IAA,CBL; Habitat: T; Rejection Code: NO FOREIGN.

718. Tompkins, W. A. (1966). Sevin Residues in Marine and Freshwater Aquatic Organisms. *In: Report of the Surveillance Prog.Conducted in Connection with an Application of Carbaryl (Sevin) for the Control of Gypsy Moth on Cape Cod, MA Pestic.Bd.Publ.* 547: 37-47.

EcoReference No.: 14737
Chemical of Concern: CBL; Habitat: A; Effect Codes: ACC; Rejection Code: NO ENDPOINT(CBL).

719. Toor, H. S. and Kaur, K. (1974). Toxicity of Pesticides to the Fish, Cyprinus carpio communis Linn. *Indian J.Exp.Biol.* 12: 334-336 (Used 6722 As Reference).

EcoReference No.: 6299
Chemical of Concern: FNT,PPHD,CBL,DZ; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

720. Tos-Luty, S., Przebirowska, D., Latuszynska, J., and Tokarska-Rodak, M. (2001). Histological and Ultrastructural Studies of Rats Exposed to Carbaryl. *Ann.Agric.Environ.Med.* 8: 137-144.

EcoReference No.: 87638
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,CEL; Rejection Code: NO ENDPOINT(CBL).

721. Travis, B. V., Dewey, J. E., and Pendleton, R. F. (1968). Comparative Toxicity Data on Pesticides Used for Mosquito Control. *Proc.N.J.Mosq.Exterm.Assoc.* 55: 122-129.

Chemical of Concern: DDT,PRN,HPT,DLD,CBL,PYN,MXC,ABT,MLN,DDVP,Naled,HCCH,CPY,FNTH,Cu,As,CHD,MP; Habitat: T; Rejection Code: NO REVIEW(ALL CHEMS).

722. Trebst, A. and Wietoska, H. (1975). Mode of Action and Structure-Activity-Relationships of the Aminotriazinone Herbicide Metribuzin. Inhibition of Photosynthetic Electron Transport in Spinach Chloroplasts by Metribuzin(Wirkungsmechanismus und Struktur-Aktivitatsbeziehungen des Aminotriazinon-Herbizids Metribuzin. Hemmung des Photosynthetischen Elektronentransports von Chloroplasten durch Metribuzin). *Z.Naturforsch.* 30C: 499-504.

EcoReference No.: 26095
Chemical of Concern: MBZ,DMM,CBL; Habitat: T; Rejection Code: NO FOREIGN.

723. Trial, J. G. (1983). A Study of Leaf-Processing Disruption in Streams Within Spruce Budworm Suppression Project Carbaryl Spray Blocks. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1983 Maine Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 1-34.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO CONC(CBL).

724. Trial, J. G. and Cree, K. L. (1981). The Effectiveness of Upstream Refugia for Promoting Recolonization of Plecoptera Killed by Exposure to Carbaryl. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1980 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, August, ME* 51-62 (Publ As 9787).

EcoReference No.: 16301
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO PUBL AS.

725. Tsuge, S., Nishimura, T., Kazano, H., and Tomizawa, C. (1980). Uptake of Pesticides From Aquarium Tank Water by Aquatic Organisms. *J.Pestic.Sci./Nihon Noyakugaku Kaishi* 5: 585-593(JPN)(ENG ABS).

EcoReference No.: 6666
Chemical of Concern: 24DC,AND,DDT,CBL; Habitat: A; Effect Codes: ACC; Rejection Code: NO FOREIGN(AND,DDT,24DC,CBL).

726. Tsuji, S., Tonogai, Y., Ito, Y., and Kanoh, S. (1986). The Influence of Rearing Temperatures on the Toxicity of Various Environmental Pollutants for Killifish (Oryzias latipes). *J.Hyg.Chem.(Eisei Kagaku)* 32: 46-53 (JPN) (ENG ABS) .

EcoReference No.: 12497
Chemical of Concern: Captan,CBL,DZ,HCCH,CuS,CuCl,CrAC, NaLS, CdCl, AgN, PL, BNZ,PbN,PbAc,FML,AND,3CE,CF,MnCl,ZnCl2,DDT,FeCl3,CrO3,HgCl2,PRN,CTC,Se,Zn, C8OH; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN(ALL CHEMS).

727. Turner, E. C. Jr. (1986). Structural and Litter Pests. *Poult.Sci.* 65: 644-648.

EcoReference No.: 75521
Chemical of Concern: BDF,CPY,PMR,CBL; Habitat: T; Rejection Code: NO REVIEW.

728. Tyburczyk, W. and Podolak-Majczak, M. (1984). Effect of Joint Action of Sodium Nitrite and Carbaryl on Rat's Organism. Part I. Serotonin Metabolism [Wplyw Skojarzonego Dzialania Azotynu Sodowego I Karbarylu na Organizm Szczura]. *Bromatol.Chem.Toksykol.* 17: 125-130 (POL) (ENG ABS).

EcoReference No.: 87657
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN(CBL).

729. Union Carbide Chemical and Plastics Company (1991). Letter Submitting Multiple Enclosed Studies on Multiple Chemicals with Attachments. *EPA/OTS Doc.#86-920000742* 1,534 p. (NTIS/OTS0535072).

EcoReference No.: 75195
Chemical of Concern: ACL,HOX,4AP,FML,EGY,CBL,TEG,BMN; Habitat: AT; Effect Codes: MOR,GRO,BEH,BCM,CEL; Rejection Code: OK(CBL,HOX,FML,EGY,TEG,BMN),NO COC(ADC,CBF,MTAS),NO CONTROL(ACL,4AP).

730. Union Carbide Corporation (1985). Miscellaneous Toxicity Studies. *EPA/OTS Doc #FYI-OTS-0885-0443* 8 p. (NTIS 0000443-0).

EcoReference No.: 88595
Chemical of Concern: CBL,ADC; Habitat: T; Effect Codes: MOR; Rejection Code: NO CONTROL(ADC,CBL),NO INHALE(ADC).

731. Upadhyay, R. R. and Upadhyay, L. (1993). Development of Marked Basophilia in the Liver of Heteropneustes fossilis by Some Selected Chemicals. *Curr.Sci.* 65: 708-710.

EcoReference No.: 74980
Chemical of Concern: CBF,CBL; Habitat: A; Effect Codes: MOR,CEL; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

732. Vaishampayan, A. (1985). Mutagenic Activity of Alachlor, Butachlor and Carbaryl to a N2-Fixing Cyanobacterium Nostoc muscorum. *J.Agric.Sci.Cambridge* 104: 571-576.

EcoReference No.: 11856
Chemical of Concern: ACR,BTC,CBL; Habitat: A; Effect Codes: POP,CEL; Rejection Code: NO ENDPOINT(ALL CHEMS).

733. Van der Gulik, J. and Springett, J. A. (1980). The Effects of Commonly Used Biocides on Slugs. *Proc.N.Z.Weed Pest Control Conf.* 33: 225-229.

EcoReference No.: 79821
Chemical of Concern: DQT,CPP,MAL,MCPA,THM,TPE,BMY,CBL,DZM,MOM,PRT,ACR,PQT,PRN; Habitat: T; Effect Codes: MOR; Rejection Code: OK(MOM,CBL,PRT,ACR,PQT),NO ENDPOINT(DZM).

734. Van Gestel, C. A. M. (1992). Validation of Earthworm Toxicity Test by Comparison with Field Studies: A Review of Benomyl, Carbendazim, Carbofuran, and Carbaryl. *Ecotoxicol.Environ.Saf.* 23: 221-236.

Chemical of Concern: CBF,CBL,BMY,CBD; Habitat: T; Rejection Code: NO REVIEW.

735. Van Hoof, F. (1980). Evaluation of an Automatic System for Detection of Toxic Substances in Surface Water Using Trout. *Bull.Environ.Contam.Toxicol.* 25: 221-225.

EcoReference No.: 6726
Chemical of Concern: Captan,EPRN,CdS,ZnCl2,CBL,MLN; Habitat: A; Effect Codes: BEH,MOR; Rejection Code: NO CONTROL(ALL CHEMS).

736. Verma, A. N., Sandhu, G. S., and Saramma, P. U. (1967). Relative Efficacy of Different Insecticides as Contact Poisons to the Adults of Singhara-d Beetle Galerucella-birmanica Coleoptera Chrysomellidae trapa-bispinosa-d Mevinphos Carbaryl Bidrin Nicotine Sulfate Parathion Diazinon Phosphamidon DDT Malathion te. *J.Res.Punjab Agric.Univ.* 4: 415-419.

EcoReference No.: 55198
Chemical of Concern: CBL,DZ,MLN,NCTN; Habitat: T; Rejection Code: Not Ecossl Species//TARGET(MLN,DZ,NCTN,CBL).

737. Verma, S. K. (2003). Bioefficacy of Pesticides Against Pod Borer Lampides boeticus L. (Lycaenidae: Lepidoptera) in Summer Mung Bean. *Ann.Arid Zone* 42: 75-78.

Chemical of Concern: ES,CBL; Habitat: T; Rejection Code: NO TOX DATA.

738. Verma, S. R., Bansal, S. K., and Dalela, R. C. (1977). Quantitative Estimation of Biocide Residues in a Few Tissues of Labeo rohita and Saccobranchus fossilis. *Indian J.Environ.Health* 19: 189-198.

EcoReference No.: 7708
Chemical of Concern: DEM,CBL,CHD; Habitat: A; Effect Codes: ACC; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

739. Verma, S. R., Kumar, V., and Dalela, R. C. (1981). Studies on the Accumulation and Elimination of Three Pesticides in the Gonads of Notopterus notopterus and Colisa fasciatus. *Indian J.Environ.Health* 23: 275-281.

EcoReference No.: 67523

Chemical of Concern: EPRN,CHD,CBL; Habitat: A; Effect Codes: ACC,BCM; Rejection Code: NO CONTROL,ENDPOINT(ALL CHEMS).

740. Versteeg, D. J. (1990). Comparison of Short- and Long-Term Toxicity Test Results for the Green Alga, Selenastrum capricornutum. *In: W.Wang, J.W.Gorsuch, and W.R.Lower (Eds.), Plants for Toxicity Assessment, ASTM STP 1091, Philadelphia, PA* 40-48.

EcoReference No.: 17639
Chemical of Concern: ATZ,CBL,SZ,PCP,Cu2O,Cd; Habitat: A; Effect Codes: PHY,POP; Rejection Code: LITE EVAL CODED(ATZ,SZ,PCP,Cu2O),OK(ALL CHEMS).

741. Vickers, D. H. and Boyd, C. E. (1971). Effects of Organic Insecticides upon Carbon-14 Uptake by Freshwater Phytoplankton. *Rep.No.CONF-710501-PL, Proc.3rd Natl.Symposium on Radioecology, Oak Ridge, TN* 492-496.

EcoReference No.: 9445
Chemical of Concern: TXP,MRX,AND,CBL,DLD,DDT,MP,MLN; Habitat: A; Effect Codes: POP,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

742. Ville, P., Roch, P., Cooper, E. L., and Narbonne, J. F. (1997). Immuno-modulator Effects of PCBs, Carbaryl and 2,4 D in the Earthworm Eisenia fetida andrei: The 7th Congress of The International Society of Developmental and Comparative Immunology. *Dev.Comp.Immunol.* 21: 118.

Chemical of Concern: CBL,PCB; Habitat: T; Rejection Code: NO ABSTRACT.

743. Vincent, B., Jiracek, J., Noble, F., Loog, M., Roques, B., Dive, V., Vincent, J. P., and Checler, F. (1997). Contribution of Endopeptidase 3.4.24.15 to Central Neurotensin Inactivation. *Eur.J.Pharmacol.* 334: 49-53.

Chemical of Concern: PRT,CBL; Habitat: T; Rejection Code: NO IN VITRO.

744. Von Windeguth, D. L., Eliason, D. A., and Schoof, H. F. (1971). The Efficacy of Carbaryl, Propoxur, Abate and Methoxychlor as Larvicides Against Field Infestations of Aedes aegypti. *Mosq.News* 31: 91-95.

EcoReference No.: 2912
Chemical of Concern: ABT,MLN,PPX,MXC,CBL,DDT; Habitat: A; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

745. Vosylene, M. (1981). Effect of Sevin on the Content of the Catecholamines in Carp Tissues. *Exp.Water Toxicol.(Eksp.Vodn.Toksikol.)* 2: 104-122 (RUS).

EcoReference No.: 3845
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN.

746. Wagner, H. and Grevel, J. (1982). New Cardioactive Drugs II, Detection and Isolation of Cardiotonic Amines with Ionpair-HPLC (Neue Herzwirksame Drogen II, Nachweis und Isolierung Herzwirksamer Amine Durch Lonenpaar-HPLC. *Planta Med.* 44: 36-40 (GER) (ENG ABS).

EcoReference No.: 82647
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN.

747. Wakakura, M., Ishikawa, S., and Uga, S. (1978). Ultrastructural Hepatic Changes by Carbamate Pesticide (Sevin) in Rats. *Environ.Res.* 16: 191-204 .

EcoReference No.: 87755
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM,CEL; Rejection Code: NO ENDPOINT(CBL).

748. Walker, C. H. (1998). Biochemical Biomarkers and Potentiation of Toxicity. *Biotherapy* 11: 113-117.

Chemical of Concern: CBL,BDF,PAH,PCB,WFN,MLN; Habitat: AT; Rejection Code: NO REVIEW(ALL CHEMS).

749. Walker, G. (1977). Copper Granules in the Barnacle Balanus balanoides. *Mar Biol* 39: 343-349.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO CONC,NO SURVEY.

750. Watrin, C. G. and Radcliffe, E. B. (1986). Control of Colorado Potato Beetle Larvae with Foliar Insecticides, 1985. *Insectic.Acaric.Tests* 11: 182-183 (No. 234).

EcoReference No.: 88800
Chemical of Concern: PMR,CYF,BFT,CBF,AZ,LCYT,MTM,MP,CBL; Habitat: T; Effect Codes: POP; Rejection Code: OK TARGET(CBL,MTM),OK(ALL CHEMS).

751. Watrin, C. G. and Radcliffe, E. B. (1986). Control of Potato Leafhopper Nymphs with Foliar Insecticides, 1985. *Insectic.Acaric.Tests* 11: 184-185 (No. 237).

EcoReference No.: 88801
Chemical of Concern: PMR,CYF,BFT,CBF,LCYT,MTM,MP,CBL; Habitat: T; Effect Codes: POP; Rejection Code: OK TARGET(CBL,MTM),OK(ALL CHEMS).

752. Watson, D., Foster, P., and Walker, G. (1995). Barnacle Shells as Biomonitoring Material. *Mar Pollut Bull* 31: 111-115.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO CONC.

753. Wauchope, R. D. (1978). The Pesticide Content of Surface Water Draining from Agricultural Fields - A Review. *J.Environ.Qual.* 7: 459-472.

EcoReference No.: 83831
Chemical of Concern: DBN,DMB,ASAC,ACR,ATZ,DZ,AND,AMTL,CBL,CBF,CZE,24DXY,DDT,DLD,DU,ES,EN,FMU,FNF,HPT,LNR,MXC,PRN,MBZ,MLT,MSMA,PAQT,PRT,PCL,PMT,PCH,PPZ,SZ,TXP,TFN; Habitat: A; Rejection Code: NO SPECIES.

754. Wauchope, R. D. and Haque, R. (1973). Effects of pH, Light and Temperature on Carbaryl in Aqueous Media. *Bull.Environ.Contam.Toxicol.* 9: 257-260.

EcoReference No.: 67428
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SPECIES.

755. Weber, F. H., Shea, T. B., and Berry, E. S. (1982). Toxicity of Certain Insecticides to Protozoa. *Bull.Environ.Contam.Toxicol.* 28: 628-631.

EcoReference No.: 15370
Chemical of Concern: CBL,MLN; Habitat: A; Effect Codes: MOR; Rejection Code: NO ENDPOINT(CBL,MLN).

756. Weber, J. B. (1977). The Pesticide Scorecard. Toxicological Effects, Biological Distributions, and the Fate of These Chemicals can be Quantified in a Simplified, Straightforward Manner. *Environ.Sci.Technol.* 11: 756-761.

EcoReference No.: 19577
Chemical of Concern: 24DXY,PCL,ATZ,AMTR,CZE,PRO,EDT,AND,HCCH,DDT,DLD,EN,DDVP,ACR,BMC,Captan,DS,MLN,PRN,PRT,CBL,CBF,CuS,Cu,DMB,DU,Hg,PYZ; Habitat: AT; Rejection Code: NO REVIEW,NO REFS CHECKED.

757. Wedzisz, A. (1986). Pesticides in Plants. *In: H.U.Bergmeyer (Ed.), Methods of Enzymatic Analysis, Volume XII, Drugs and Pesticides, 3rd Edition, VCH Verlag., Weinheim, W.Germany* 418-425.

EcoReference No.: 89171
Chemical of Concern: TVP,Naled,FNT,MLN,CBL,PPX; Habitat: AT; Rejection Code: NO ENDPOINT(ALL CHEMS).

758. Weis, J. S. and Weis, P. (1976). Optical Malformations Induced by Insecticides in Embryos of the Atlantic Silverside, Menidia menidia. *Fish.Bull.NMFS/NOAA* 74: 208-211.

EcoReference No.: 15997
Chemical of Concern: MLN,DDT,CBL; Habitat: A; Effect Codes: PHY,MOR,GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

759. Weis, P. and Weis, J. S. (1976). Abnormal Locomotion Associated with Skeletal Malformations in the Sheepshead Minnow, Cyprinodon variegatus, Exposed to Malathion. *Environ.Res.* 12: 196-200.

EcoReference No.: 15998
Chemical of Concern: CBL,DDT,MLN; Habitat: A; Effect Codes: BEH,GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

760. Weis, P. and Weis, J. S. (1974). Cardiac Malformations and Other Effects due to Insecticides in Embryos of the Killifish, Fundulus heteroclitus. *Teratology* 10: 263-267.

EcoReference No.: 8754
Chemical of Concern: DDT,MLN,PRN,CBL; Habitat: A; Effect Codes: GRO,BEH,MOR,PHY; Rejection Code: NO ENDPOINT(ALL CHEMS).

761. Weisgerber, I., Klein, and Korte, F. (1970). Contributions to Ecological Chemistry. XXVI. Conversion and Residue Behavior of 14-C-Aldrin and 14-C-Dieldrin in White Cabbage, Spinach and Carrots. *Tetrahedron* 26: 779-789.

Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC; Rejection Code: ARCHIVE,NO SOURCE(ALL CHEMS).

762. Weiss, C. M. (1958). The Determination of Cholinesterase in the Brain Tissue of Three Species of Freshwater Fish and Its Inactivation In Vivo. *Ecology* 39: 194-198.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO IN VITRO.

763. Wells, P. G., Wilson, B., and Lubek, B. M. (1989). In Vivo Murine Studies on the Biochemical Mechanism of Naphthalene Cataractogenesis. *Toxicol.Appl.Pharmacol.* 99: 466-473.

EcoReference No.: 88032
Chemical of Concern: NAPH,CBL; Habitat: T; Effect Codes: PHY; Rejection Code: OK(NAPH),NO CONTROL(CBL).

764. Wile, I. (1967). Aquatic Plant Control with Diquat, Fenac, and Simazine in Ontario Farm Ponds. *Publication No.31, The Ontario Water Resources Comm., Canada* 19 p.

EcoReference No.: 18488
Chemical of Concern: SZ,CBL; Habitat: A; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

765. Wilkinson, C. F. (1973). Insecticide Synergism. *Chemtech* 492-497.

Chemical of Concern: CBL,DDT; Habitat: T; Rejection Code: NO REVIEW(ALL CHEMS).

766. Williams, M. W. and Batjer, L. P. (1964). Site and Mode of Action of 1-Naphthyl N-Methylcarbamate (Sevin) in Thinning Apples. *Proc.Am.Soc.Hort.* 85: 1-10.

EcoReference No.: 42292
Chemical of Concern: CBL; Habitat: T; Effect Codes: GRO,ACC; Rejection Code: NO CONTROL,ENDPOINT(TARGET-CBL).

767. Wills, J. H., Jameson, E., and Coulston, F. (1968). Effects of Oral Doses of Carbaryl on Man. *Clin.Toxicol.* 1: 265-271.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO HUMAN HEALTH.

768. Wilson, A. S., Davis, C. D., Williams, D. P., Buckpitt, A. R., Pirmohamed, M., and Park, B. K. (1996). Characterisation of the Toxic Metabolite(s) of Naphthalene. *Toxicology* 114: 233-242.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO IN VITRO(CBL).

769. Wilton, D. P., Fetzer, L. E. Jr., and Fay, R. W. (1973). Insecticide Baits for Anopheline Larvae. *Mosq.News* 33: 198-203.

EcoReference No.: 13956
Chemical of Concern: FNTH,FNT,CMPH,CBL,MXC,MCB,CPY,RSM; Habitat: A; Effect Codes: MOR; Rejection Code: NO ENDPOINT(RSM,MCB,MXC,CBL,FNTH),OK(FNT,CPY,CMPH).

770. Witkowski, T. (1973). Significance of Chemical Improvement of the Environment for the Soil Nematodes (Nematoda). Part II. Observations upon Survival of the Soil Nematodes in Aqueous Solutions of Herbicide Substances (Znaczenie Chemizacji Srodowiska Dla Nicieni (Nematoda) Glebowych. Czesc II. Obserwacje Nad Przezywaniem Nicieni Glebowych w Wodnych Roztworach Preparatow Chwastobojczych). *Rocz.Glebozn.* 24: 367-387 (POL) (ENG ABS).

EcoReference No.: 58751
Chemical of Concern: CBL; Habitat: T; Rejection Code: NO FOREIGN(CBL).

771. Woelke, C. E. (1972). Development of a Receiving Water Quality Bioassay Criterion Based on the 48-Hour Pacific Oyster (Crassostrea gigas) Embryo. *Tech.Rep.No.9, Wash.Dep.of Fish., Seattle, WA* 93 p.

EcoReference No.: 58783
Chemical of Concern: NaPCP,DDT,HCCH,PRN,CBL; Habitat: A; Effect Codes: GRO; Rejection Code: NO ENDPOINT(ALL CHEMS).

772. Woodward, D. F. and Mauck, W. L. (1980). Toxicity of Five Forest Insecticides to Cutthroat Trout and Two Species of Aquatic Invertebrates. *Bull.Environ.Contam.Toxicol.* 25: 846-854.

EcoReference No.: 5618
Chemical of Concern: CBL,DDT,TCF,FNT,ACP; Habitat: A; Effect Codes: MOR; Rejection Code: NO CONTROL(ALL CHEMS).

773. Wu, F. F., Stachyra, A., and Viglierchio, D. R. (1992). The Capacity of Soil Microbial Isolates form Non-fumigant Nematicide Stressed Heterodera schachtii Greenhouse Culture Stocks to Inactive Non-fumigant Nematicides. *Fundam.Appl.Nematol.* 15: 193-200.

EcoReference No.: 74724
Chemical of Concern: FMP,CBF,ADC,OML,CBL; Habitat: T; Effect Codes: POP; Rejection Code: NO ENDPOINT(ALL CHEMS).

774. Wu, R. S. S., Lam, P. K. S., and Zhou, B. S. (1997). Effects of Two Oil Dispersants on Phototaxis and Swimming Behaviour of Barnacle Larvae. *Hydrobiologia* 352: 9-16.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO MIXTURE,OIL.

775. Xu, F. L., Dawson, R. W., Tao, S., Li, B. G., and Cao, J. (2002). System-Level Responses of Lake Ecosystems to Chemical Stresses Using Energy and Structural Exergy as Ecological Indicators. *Chemosphere* 46: 173-185.

EcoReference No.: 81425
Chemical of Concern: ATZ,CBL,BFT,HXZ,PMR,PCP,Cu; Habitat: A; Rejection Code: NO REVIEW,MODELING.

776. Yamashita, S. and Yokoi, M. (1974). Anion Inactivation by Quinones. *Jpn.Kokai:377-379 (JPN).*

EcoReference No.: 8765
Chemical of Concern: CBL; Habitat: A; Rejection Code: NO FOREIGN.

777. Yan, N. D., Mackie, G. L., and Dillon, P. J. (1990). Cadmium Concentrations of Crustacean Zooplankton of Acidified and Nonacidified Canadian Shield Lakes. *Environ.Sci.Technol.* 24: 1367-1372.

Chemical of Concern: CBL; Habitat: A; Rejection Code: NO SURVEY.

778. Yardim, E. N. and Edwards, C. A. (2003). An Economic Comparison of Pesticide Application Regimes for Processing Tomatoes. *Phytoparasitica* 31: 51-60.

Chemical of Concern: PAQT,TFN,CBL,ES,EFV,CTN; Habitat: T; Rejection Code: NO MIXTURE.

779. Yardim, E. N. and Edwards, C. A. (1998). The Effects of Chemical Pest, Disease and Weed Management Practices on the Trophic Structure of Nematode Populations in Tomato Agroecosystems. *Appl.Soil Ecol.* 7: 137-147.

Chemical of Concern: EFV,PAQT,TFN,CTN,CBL,ES; Habitat: T; Rejection Code: NO MIXTURE.

780. Yasuno, M., Hirakoso, S., Sasa, M., and Uchida, M. (1965). Inactivation of Some Organophosphorous Insecticides by Bacteria in Polluted Water. *Jpn.J.Exp.Med.* 35: 545-563.

EcoReference No.: 15271
Chemical of Concern: DZ,CBL; Habitat: A; Rejection Code: NO COC(DZ).

781. Yawetz, A., Manelis, R., and Gasith, A. (1993). Cholinesterase Enzymatic Profiles and the Exposure of Fish to Organophosphorus and Carbamate Pesticides in Israel. *Water Sci.Technol.* 27: 465-472.

EcoReference No.: 13643
Chemical of Concern: CBL,MLN,MOM,PRN; Habitat: A; Effect Codes: MOR,PHY; Rejection Code: NO CONTROL(MOM),NO CONC(CBL,MLN,PRN).

782. Yokoyama, T., Saka, H., Fujita, S., and Nishiuchi, Y. (1988). Sensitivity of Japanese Eel, Anguilla japonica, to 68 Kinds of Agricultural Chemicals. *Bull.Agric.Chem.Insp.Stn.* 28: 26-33 (JPN) (ENG ABS).

EcoReference No.: 8570
Chemical of Concern: ACP,Captan,CBL,CTN,DMT,DS,DZ,FO,HXZ,MDT,MLN,MOM,PPG,PSM,TET,CYP,FVL,PMR,TFR,Cu,CuS,PCP,IZP,MCPP1; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN(ALL CHEMS).

783. Yokoyama, V. Y., Pritchard, J., and Dowell, R. V. (1984). Laboratory Toxicity of Pesticides to Geocoris pallens (Hemiptera: Lygaeidae), a Predator in California Cotton. *J.Econ.Entomol.* 77: 10-15.

EcoReference No.: 88497
Chemical of Concern: ACP,CBL,DMT,MTM,EFV,MTAS; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(MTAS),OK TARGET(ACP,CBL,DMT,MTM,EFV).

784. Young, G. R. (1979). Biological and Chemical Control of Ostrinia furnacalis Guenee (Lepidoptera: Pyralidae) on the Mainland of Papua New Guinea. *Papua New Guinea Agric.J.* 30: 21-24.

EcoReference No.: 57587
Chemical of Concern: DDT,CBL; Habitat: T; Effect Codes: GRO, PHY, POP; Rejection Code: NO OM, pH,TARGET(CBL).

785. Yu, S. J. (1991). Insecticide Resistance in the Fall Armyworm, Spodoptera frugiperda (J. E. Smith). *Pestic.Biochem.Physiol.* 39: 84-91.

EcoReference No.: 73599
Chemical of Concern: MOM,PMR,CYP,CYT,BFT,TMT,FVL,DZ,CPY,MP,CBL,TDC,DDVP,SPS,TLM,MLN,FNV; Habitat: T; Effect Codes: MOR; Rejection Code: OK TARGET(MLN,FVL,CYP,DZ),TARGET(BFT).

786. Yurawecz, M. P., Dreifuss, P. A., and Kamps, L. R. (1976). Determination of Hexachloro-1,3-Butadiene in Spinach, Eggs, Fish, and Milk by Electron Capture Gas-Liquid Chromatography. *J.A.O.A.C.(Assoc.Off.Anal.Chem.) Int.* 59: 552-558.

Chemical of Concern: CBL; Habitat: T; Rejection Code: NO DURATION,NO SURVEY.

787. Zeakes, S. J., Hansen, M. F., and Robel, R. J. (1981). Increased Susceptibility of Bobwhites (Colinus virginianus) to Histomonas meleagridis After Exposure to Sevin Insecticide. *Avian Dis.* 25: 981-987.

EcoReference No.: 39507
Chemical of Concern: CBL; Habitat: T; Effect Codes: PHY,MOR; Rejection Code: NO ENDPOINT(CBL).

788. Zhu, Y. G., Huang, Y. Z., Hu, Y., and Liu, Y. X. (2003). Iodine Uptake by Spinach (Spinacia oleracea L.) Plants Grown in Solution Culture: Effects of Iodine Species and Solution Concentrations. *Environ.Int.* 29: 33-37.

EcoReference No.: 71281
Chemical of Concern: CBL; Habitat: T; Effect Codes: ACC,GRO; Rejection Code: NO COC(IODN),TARGET(CBL).

789. Zimmerman, R. J. and Cranshaw, W. S. (1990). Compatibility of Three Entomogenous Nematodes (Rhabditida) in Aqueous Solutions of Pesticides Used in Turfgrass Maintenance. *J.Econ.Entomol.* 83: 97-100.

EcoReference No.: 71366
Chemical of Concern: PCB,DZ,Hg,CBL,CPY,BDC,BMY,DMB; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(DZ,DMB),OK(ALL CHEMS),OK TARGET(CBL).

790. Zinkl, J. G., Henny, C. J., and DeWeese, L. R. (1977). Brain Cholinesterase Activities of Birds from Forests Sprayed with Trichlorfon (Dylox) and Carbaryl (Sevin-4-Oil). *Bull.Environ.Contam.Toxicol.* 17: 379-386.

EcoReference No.: 35539
Chemical of Concern: CBL; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(ALL CHEMS).

H.3. ECOTOX accepted references, relevant to carbaryl degredates, cited within the risk assessment or used for deriving species sensitivity distributions

H.4. ECOTOX accepted references, relevant to carbaryl degredates, not utilized or cited within this risk assessment

H.5. List of exclusion terms utilized for reviewing studies considered for ECOTOX database

Review--all toxicity tests reported elsewhere. If the publication is applicable to one of the ECOTOX databases, the bibliography is skimmed and any applicable articles are ordered.

Methods--no usable toxicity tests. Reports of methods of conducting tests, determination or purification of chemicals, etc. Methods publications are selected to be ordered for the ECOTOX toxicology methods information file (Methfile).

Modeling only, no new organism exposure data. Modeling studies may report original toxicity tests performed as comparisons or as a basis for extrapolation; order the paper if it is not clear from the abstract.

Other ambient conditions--effects on organisms from changes in conditions other than addition of chemicals, including radioactivity, ultraviolet light (UV), temperature, pH, salinity, dissolved oxygen (DO), or other water, air, or soil parameters.

Biological Toxicant--includes venoms, fungal toxins, *Bacillus thuringiensis*, other plant, animal, or microbial extracts or toxins.

Drug--testing for drug effects and side-effects .

Effluent, sewage, or polluted runoff.

Mixture--no single chemical tests reported.

Nutrient studies--in situ chemicals tested as nutrients.

No Species--no organism present or tested or unable to verify a species or exposure of dead organism.

In Vitro studies, including exposure of cell cultures and excised tissues.

Bacteria as test organism, including **Microtox** tests, or other microbial organisms.

Yeast as a test organism is historically not coded in ECOTOX.

No Toxicity **Data--**publications which are not toxicology studies.

Human Health effects; studies with human subjects or with animal subjects as surrogates for human health risk assessment.

No Concentration--no usable dose or concentration reported; identified after examination of full paper. Includes lead-shot studies which lack dose information or give only number of pellets. Concentrations reported only in log units are not coded.

Sediment Concentration--chemical concentration reported in sediment only. Sediment studies are coded for AQUIRE only if a water concentration of the added chemical is also reported; order the publication if unclear from the abstract.

No Duration reported, identified after examination of full paper.

Incident papers--reports of animal deaths by poison, etc. Lacks usable concentration or duration or both.

Survey studies--measuring amounts of chemical present, but no usable quantification of exposure. Lacks either usable concentration or duration or both.

Fate: Studies reporting only what happens to the chemical in abiotic matrices

Food Studies, no chemical and effects information are reported

PUBL AS, author has results were published in a different format. For example, may be used for a Ph.D. dissertation when the same results were also published in a peer-reviewed journal.

NON-ENGLISH or **FORE**, paper was published in a foreign language.

H6. ECOTOX rejected references.

1. 1989). 104 WEEK CHRONIC TOXICITY AND ONCOGENICITY STUDY WITH 1,3-DICHLOROPROPAN-2-OL IN THE RAT (PART I) WITH COVER LETTER DATED 080389. *EPA/OTS; Doc #89-890000058*.
   Rejection Code: NO COC.

2. 1963). 13. 2-amino-1-naphthol metabolism. *Food and Cosmetics Toxicology* 1: 104.
   Rejection Code: METABOLISM.

3. 1970). 2049. Further details of the fate of carbaryl: Paulson, G. D., Zaylskie, R. G., Zehr, M. V., Portnoy, C. E. & Feil, V. J. (1970). Metabolites of carbaryl (1-naphthyl methylcarbamate) in chicken urine. J. agric. Fd Chem. 18, 110. *Food and Cosmetics Toxicology* 8: 705.
   Rejection Code: FATE.

4. 1977). 3104. Naphthol in the river: Bollag, J.-M., Czaplicki, E. J. & Minard, R. D. (1975). Bacterial metabolism of 1-naphthol. J. agric. Fd Chem. 23, 85. *Food and Cosmetics Toxicology* 15: 80-81.
   Rejection Code: BACTERIA, METABOLISM.

5. 1988). 4738920 Method for assaying a biocomponent using 4-methoxy-1-naphthol and hydrogen peroxide : Tatsuya Ishiguro, Kyoto, Japan assigned to Kyowa Medex Co Ltd. *Biotechnology Advances* 6 : 789.
   Rejection Code: METHODS.

6. 1990). 4833164 2-substituted-1-naphthols, pharmaceutical compositions of, and their use as 5-lipoxygenase inhibitors : Douglas G Batt assigned to E I Du Pont de Nemours and Company. *General Pharmacology: The Vascular System* 21: x.
   Rejection Code: NO TOX DATA.

7. 1987). 87:6677 Inside a Texas tornado : Hall, R.S., 1987. One of the most amazing weather stories ever told. Weatherwise, 40(2):72-75. *Deep Sea Research Part B. Oceanographic Literature Review* 34: 1013.
   Rejection Code: NO TOX DATA.

8. 1966). 924 Unusual metabolism of two arylazonaphthol colourings: Barrett, J. F., Pitt, Patricia A., Ryan, A. J. & Wright, S. E. (1965). The metabolism of 2-phenylazo-1-naphthol-4- and -5-sulphonic acids in the rat. Biochem. Pharmac. 14, 873. *Food and Cosmetics Toxicology* 4: 101.
   Rejection Code: METABOLISM.

9. 2000). ACQUISITION AND CHEMICAL ANALYSIS OF MOTHER'S MILK FOR SELECTED TOXIC SUBSTANCES (DECEMBER 1980). *EPA/OTS; Doc #40-8023083*.
   Rejection Code: HUMAN HEALTH.

10. 1978). ACUTE TOXICITY STUDIES IN RABBITS AND RATS WITH ATTACHMENTS, COVER SHEET AND LETTER DATED 071978. *EPA/OTS; Doc #88-7800227*.
    Rejection Code: NO COC.

11. 1982). BIOCHEMICAL OXYGEN DEMAND OF SHELL CHEMICALS. *EPA/OTS; Doc #878210131*.
    Rejection Code: METABOLISM.

12. 1982). BIODEGRADABILITY OF OIL AT SEA. *EPA/OTS; Doc #878210144*.
Rejection Code: FATE.

13. 1996). Carbaryl effects on sperm: Combination Toxicology. *Food and Chemical Toxicology* 34: 1191.
Rejection Code: MIXTURE.

14. 1982). CHEMICAL OXYGEN DEMAND OF SHELL CHEMICALS. *EPA/OTS; Doc #878210134*.
Rejection Code: METABOLISM.

15. 1982). DETERMINATION OF ACUTE TOXICITY TO FISH OF SHELL CHEMICAL, II. (NOTE: THIS DOCUMENT IS UNREADABLE). *EPA/OTS; Doc #878210130*.
Rejection Code: NO SOURCE.

16. 1994). DETERMINATION OF ACUTE TOXICITY TO FISH OF SHELL CHEMICALS I. (INCLUDING TETRAHYDROTHIOPHENE 1,1-DIOXIDE), WITH COVER LETTER DATED 2/7/84. *EPA/OTS; Doc #FYI-OTS-0794-1002*.
Rejection Code: NO COC.

17. 1982). DETERMINATION OF ACUTE TOXICITY TO FISH OF SHELL CHEMICALS. I. (NOTE: THIS DOCUMENT IS UNREADABLE). *EPA/OTS; Doc #878210129*.
Rejection Code: NO SOURCE, NO COC.

18. 1982). DETERMINATION OF THE CHEMICAL OXYGEN DEMAND OF SHELL CHEMICALS. *EPA/OTS; Doc #878210098*.
Rejection Code: METHODS.

19. 2000). THE DEVELOPMENT OF A TEST FOR THE POTABILITY OF WATER TREATED BY DIRECT REUSE SYSTEM (CONTRACT NO. DADA-17-73-C-3013) (FINAL REPORT). *EPA/OTS; Doc #40-8069226*.
Rejection Code: METHODS.

20. 1988). DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR EASTMAN KODAK COMPANY'S PROPOSED CELLULOSE TRIACETATE FILM BASE MACHINE ON METHYLENE CHLORIDE (VOLUME I - VOLUME V) W-LETTER DATED 111588. *EPA/OTS; Doc #86-890000038*.
Rejection Code: NO TOX DATA.

21. 1987). DRAFT FINAL REPORT ON THE FATE AND EFFECTS OF PRODUCED WATER DISCHARGES IN NEARSHORE MARINE WATERS (VOLUME I & II) WITH COVER LETTER DATED 091187. *EPA/OTS; Doc #FYI-AX-0987-0451*.
Rejection Code: FATE.

22. 1990). ENDANGERMENT ASSESSMENT FOR NECCO PARK NIAGARA FALLS, NEW YORK (FINAL REPORT) WITH ATTACHED APPENDIX, COVER SHEET AND LETTER DATED 013090. *EPA/OTS; Doc #86-900000075*.
Rejection Code: SURVEY.

23. 2000). EVALUATION OF VINYL FLUORIDE IN THE IN VITRO ASSAY FOR CHROMOSOME ABERRATIONS IN CHINESE HAMSTER OVARY (CHO) CELLS WITH COVER LETTER DATED 102286 . *EPA/OTS; Doc #86870000006*.
Rejection Code: IN VITRO.

24. 1989). FATE AND EFFECTS OF PRODUCED WATER DISCHARGES IN NEARSHORE

MARINE WATERS (FINAL REPORT) WITH COVER LETTER DATED 101188. *EPA/OTS; Doc #FYI-AX-1288-0432*.
Rejection Code: FATE.

25. 1985). HYDROGEOLOGICAL INVESTIGATION AT THE FISHER SCIENTIFIC COMPANY FAIR LAWN NEW JERSEY FACILITY WITH COVER LETTER. *EPA/OTS; Doc #878216008*.
Rejection Code: SURVEY.

26. 1996). INACTIVE RANCHO CORDOVA TEST SITE, RANCHO CORDOVA, CA - TECHNICAL MEMORANDUM COREHOLE AND GEOPHYSICAL INVESTIGATION, ADMINISTRATION AREA, WITH COVER LETTER DATED 7/24/96. *EPA/OTS; Doc #86960000521*.
Rejection Code: SURVEY.

27. 1996). INACTIVE RANCHO CORDOVA TEST SITE, RANCHO CORDOVA, CA - TECHNICAL MEMORANDUM, FLUX CHAMBER, ADMINISTRATION AREA, WITH COVER LETTER DATED 7/24/96. *EPA/OTS; Doc #86960000518*.
Rejection Code: SURVEY.

28. 1996). INACTIVE RANCHO CORDOVA TEST SITE, RANCHO CORDOVA, CA - TECHNICAL MEMORANDUM, SHALLOW SOIL SAMPLING, ADMINISTRATION AREA, WITH COVER LETTER DATED 7/24/96. *EPA/OTS; Doc #86960000520*.
Rejection Code: SURVEY.

29. 1996). INACTIVE RANCHO CORDOVA TEST SITE, RANCHO CORDOVA, CA, TECHNICAL MEMORANDUM: SOIL VAPOR PILOT STUDY, ADMINISTRATION AREA, WITH COVER LETTER DATED 8/28/96. *EPA/OTS; Doc #86960000574*.
Rejection Code: SURVEY.

30. 1996). INACTV RANCHO CORDOVA TEST SITE, RANCHO CORDOVA, CA-TECH MEMO: LMTD ASSMT OF SEDIMENT/SURFACE WATER AT SELECTED VERNAL POOLS AND SOILS AT DM-14 ASSEMBLY AREA, W/CVR LTD DTD 7/24/96. *EPA/OTS; Doc #86960000522*.
Rejection Code: SURVEY.

31. 1992). INITIAL SUBMISSION: 5,5-DIMETHYL-2-METHYLIMINO-4[0-(METHYLCARBAMOYL) OXIMINO]-1,3-DITHIOLANE: MISCELLANEOUS TOXICITY STUDIES (PROJECT REPORT) WITH COVER SHEET & LETTER DATED 012492. *EPA/OTS; Doc #88-9200007688*.
Rejection Code: NO COC.

32. 1992). INITIAL SUBMISSION: ACUTE ORAL TOXICITY STUDY IN MALE RATS HUGHSON CHEMICALS RD 3703-63 (FINAL REPORT) WITH COVER LETTER DATED 022692. *EPA/OTS; Doc #88-920001056*.
Rejection Code: NO COC.

33. 1992). INITIAL SUBMISSION: DUST INHALATION TOXICITY STUDY OF 1-NAPHTHOL IN RATS WITH COVER LETTER DATED 101992. *EPA/OTS; Doc #88-920009593*.
Rejection Code: INHALE.

34. 1992). INITIAL SUBMISSION: LETTER FROM MONSANTO CO TO USEPA REGARDING TOXICITY STUDIES WITH COVER LETTER DATED 08/25/92. *EPA/OTS; Doc #88-920008191*.
Rejection Code: NO COC.

35. 1992). INITIAL SUBMISSION: MECARBAM/CARBARYL: ACUTE INHALATION STUDY IN RATS, 4 HOUR EXPOSURE WITH COVER LETTER DATED 042192 AND ATTACHMENT (SANITIZED). *EPA/OTS; Doc #88-920002293S*.
Rejection Code: INHALE.

36. 1992). INITIAL SUBMISSION: MECARBAM/CARBARYL WETTABLE POWDER: ACUTE ORAL TOXICITY STUDY IN RATS WITH COVER SHEET AND LETTER DATED 042192 (SANITIZED). *EPA/OTS; Doc #88-920002305S (NTIS/OTS0536357)*.
Rejection Code: MIXTURE.

37. 1992). INITIAL SUBMISSION: PROGRESS REPORT FOR THE MONTH ENDING AUGUST 31, 1961 WITH COVER SHEET AND LETTER DATED 052892. *EPA/OTS; Doc #88-920003273*.
Rejection Code: NO COC.

38. 1989). INTERNATIONAL PROGRAMME FOR THE EVALUATION OF SHORT-TERM TESTS FOR CARCINOGENICITY: THE ACTIVITY OF 27 CODED COMPOUNDS IN THE RL1 CHROMOSOME ASSAY WITH COVER SHEETS & LETTER 060689. *EPA/OTS; Doc #86-890000950*.
Rejection Code: METHODS.

39. 1981). LETTER FROM GULF OIL COMPANY TO USEPA REGARDING INFORMATION ON THE MUTATION ASSAY AND IN VITRO CELL TRANSFORMATION TESTING CONDUCTED AT EG&G MASON LABORATORIES. *EPA/OTS; Doc #88-8100177*.
Rejection Code: IN VITRO.

40. 1990). LETTER FROM HOECHST CELANESE CORP TO US EPA REGARDING SUBMISSION OF STUDY AND DATA FOR 1,5-NAPHTHALENEDISULFONIC ACID, 2-(4,5-DIHYDRO-3-METHYL-5-* WITH ATTACHMENTS (SANITIZED). *EPA/OTS; Doc #89-910000040*.
Rejection Code: NO COC.

41. 1990). LETTER FROM NATL PAINT & COATINGS ASSN TO US EPA SUBMITTING STUDIES ON SEVERAL SOLVENTS WITH ATTACHMENTS. *EPA/OTS; Doc #86-910000031* .
Rejection Code: NO COC.

42. 1991). LETTER SUBMITTING MULTIPLE ENCLOSED STUDIES ON MULTIPLE CHEMICALS WITH ATTACHMENTS. *EPA/OTS; Doc #86-920000742*.
Rejection Code: NO COC.

43. 1992). LETTER SUBMITTING ONE ENCLOSED TERATOLOGY STUDY AND ONE ENCLOSED SUPPLEMENTARY STUDY ON ISOPROPANOL. *EPA/OTS; Doc #86-920000727*.
Rejection Code: NO COC.

44. 1984). METABOIC FATE OF (U-14C) HYDROQUINONE ADMINISTERED BY GAVAGE TO MALE FISCHER 344 RATS WITH COVER LETTER. *EPA/OTS; Doc #878214473*.
Rejection Code: NO COC.

45. 2000). METHEMOGLOBIN INDUCING POTENTIAL OF VARIOUS SUBSTITUTED ANILINES WITH COVER LETTER DATED 121984. *EPA/OTS; Doc #40-8476328*.
Rejection Code: METHODS.

46. 1986). Method for maintaining a constant tension on a seismic marine cable : Carl H Savit assigned to Western Geophysical Company of America. *Ocean Engineering* 13: I.
Rejection Code: METHODS.

47. 1982). MUTAGENIC ACTIVITY OF BENZENAMINE, 4-CHLORO-2-NITRO IN THE SALMONELLA/MICROSOME ASSAY. *EPA/OTS; Doc #878220271*.
Rejection Code: BACTERIA.

48. 2000). ORGANO BROMIDES IODIDES AND FLUORIDES CLASS STUDY WITH COVER LETTER DATED 07/01/81. *EPA/OTS; Doc #40-8134106*.
Rejection Code: NO COC.

49. 1992). Pesticide chemicals manufacturing category effluent limitations guidelines, pretreatment standards, and new source performance standards. *Federal Register* 57: 12560-601.
Rejection Code: NO TOX DATA.

50. 1989). PETITIONERS AND EXHIBITS TO PETITIONERS MEMORANDUMS IN SUPPORT OF THEIR MOTION FOR A REMAND WITH ATTACHMENTS AND COVER LETTER DATED 012389. *EPA/OTS; Doc #86-890000094*.
Rejection Code: NO TOX DATA.

51. 1994). PHARMACOKINETIC PROFILE OF DODECAMETHYLPENTASILOXANE IN RATS FOLLOWING ORAL ADMINISTRATION, WITH COVER LETTER DATED 4/20/94. *EPA/OTS; Doc #86940001447*.
Rejection Code: METABOLISM, NO COC.

52. 2000). PHARMACOKINETICS OF METHYL-T-BUTYL ETHER & TERT-BUTYL ALCOHOL IN MALE & FEMALE FISCHER 344 RATS AFTER SINGLE & REPEATED INHALATION (NOSE-ONLY) EXPOSURE TO MTBE (FINAL REPORT). *EPA/OTS; Doc #40-9013459*.
Rejection Code: INHALE.

53. 1992). A PILOT ONE-GENERATION STUDY WITH ISOPROPYL ALCOHOL IN RATS (FINAL REPORT) WITH ATTACHMENTS AND COVER LETTER DATED 013092. *EPA/OTS; Doc #86-920000728*.
Rejection Code: NO COC.

54. 1989). THE PRECHRONIC DOSED WATER STUDY OF DIETHANOLAMINE IN B6C3F1 MICE (FINAL REPORT) WITH COVER LETTER DATED 071289. *EPA/OTS; Doc #86-890001043*.
Rejection Code: NO COC.

55. 1996). Spain - Biosensor for organophosphorus pesticides and carbaryl in freeze-dried waters : In ANAL. CHIM. ACTA (311/3 (265-271) 1995) J.L. Marty, N. Mionetto, S. Lacorte & D. Barcelo of CID-CSIC report on `Validation of an enzymatic biosensor with various liquid chromatographic techniques for determining organophosphorus pesticides and carbaryl in freeze-dried waters'. *Biosensors and Bioelectronics* 11: xxi.
Rejection Code: METHODS.

56. 1996). SUMMARY OF IRCTS (INACTIVE RANCHO CORDOVA TEST SITE) SENSITIVE BIOTA FIELD INVESTIGATION 1993-1995, WITH COVER LETTER DATED 7/24/96. *EPA/OTS; Doc #86960000519*.
Rejection Code: REVIEW.

57. 2000). SUPPORT DOCUMENT FOR THE SARA SECTION 110 "SECOND 100" LIST

(DRAFT). *EPA/OTS; Doc #110-881013*.
Rejection Code: NO TOX DATA.

58. 1994). SUPPORT: SUPPLEMENTAL SUBMISSION ON GROUNDWATER CONTAMINATION, EPA DOC CNTL NO 8EHQ-0979-0310, AEROJET PROPULSION DIV, RANCHO CORDOVA, CA FACILITY WITH COVER LETTER DATED 032194. *EPA/OTS; Doc #0007859590*.
Rejection Code: SURVEY.

59. 1987). TELEPHONE COMMUNICATION FROM SALESMAN TO OCCIDENTAL CHEM CORP REGARDING AN ITT RAYONIER STUDY CONDUCTED ON DF-112 WITH COVER LETTER DATED 021187. *EPA/OTS; Doc #86870000225*.
Rejection Code: NO TOX DATA.

60. 1985). TEMIK AND OTHER MATERIALS MISCELLANEOUS SINGLE DOSE PERORAL AND PARENTERAL LD50 ASSAYS AND SOME JOINT ACTION STUDIES. *EPA/OTS; Doc #FYI-OTS-0885-0443*.
Rejection Code: METHODS.

61. 1982). TOTAL PARTICULATE GASES AND VAPORS (GENERAL) NITROSAMINES FORMALDEHYDE MISCELLANEOUS WITH COVER LETTER. *EPA/OTS; Doc #878210919*.
Rejection Code: SURVEY.

62. 1991). XENOBIOTIC MINERALISATION AT LOW CONCENTRATIONS IN ENVIRONMENTAL SAMPLES - A PRELIMINARY SURVEY WITH COVER LETTER DATED 112791. *EPA/OTS; Doc #86-920000484*.
Rejection Code: FATE.

63. Abad, A. and Montoya, A. (1995). Application of a monoclonal antibody-based ELISA to the determination of carbaryl in apple and grape juices: Papers Presented at the First Workshop on Biosensors and Biological Techniques in Environmental analysis, ESPCI. *Analytica Chimica Acta* 311: 365-370.
Rejection Code: METHODS.

64. Abad, A., Moreno, M. J., Pelegri, R., Martinez, M. I., Saez, A., Gamon, M., and Montoya, A. (1999). Determination of Carbaryl, Carbofuran and Methiocarb in Cucumbers and Strawberries by Monoclonal Enzyme Immunoassays and High-Performance Liquid Chromatography with Fluorescence Detection. An Analytical Comparison. *J.Chromatogr.A* 833: 3-12.
Rejection Code: NO CONC/NO DURATION.

65. Abad, A., Moreno, M. J., Pelegri, R., Martinez, M. I., Saez, A., Gamon, M., and Montoya, A. (1999). Determination of Carbaryl, Carbofuran and Methiocarb in Cucumbers and Strawberries by Monoclonal Enzyme Immunoassays and High-Performance Liquid Chromatography with Fluorescence Detection. An Analytical Comparison. *J.Chromatogr.A* 833: 3-12.
Rejection Code: NO CONC/NO DURATION.

66. Abad, A., Moreno, M. J., Pelegri, R., Martinez, M. I., Saez, A., Gamon, M., and Montoya, A. (1999). Determination of carbaryl, carbofuran and methiocarb in cucumbers and strawberries by monoclonal enzyme immunoassays and high-performance liquid chromatography with fluorescence detection. An analytical comparison. *Journal of Chromatography A, 833 (1) pp. 3-12, 1999*.
Rejection Code: METHODS.

67. Abad, J. M., Pariente, F., Hernandez, L., and Lorenzo, E. (1998). A quartz crystal microbalance assay for detection of antibodies against the recombinant African swine fever virus attachment protein p12 in swine serum. *Analytica Chimica Acta* 368: 183-189.
Rejection Code: METHODS.

68. ABBOTT HA (1986). THE INFLUENCE OF MOLASSES ON THE PHYSICAL PROPERTIES AND SPRAYABILITY OF TWO PESTICIDE FORMULATIONS. *PESTIC SCI; 17* 526-534.
Rejection Code: METHODS.

69. Abdel-Aal, Yehia A. I., Lampert, Emmett P., Roe, Richard M., and Semtner, Paul J. (1992). Diagnostic esterases and insecticide resistance in the tobacco aphid, Myzus nicotianae Blackman (Homoptera: Aphididae). *Pesticide Biochemistry and Physiology* 43: 123-133.
Rejection Code: NO TOX DATA.

70. Abdel-Rahman, Mohamed S., Suh, Duck H., Kadry, Abdelrazak M., and Skowronski, Gloria A. (1999). Inter- and Intra-Species Extrapolation in Risk Assessment of Different Classes of Pesticides. *Human and Ecological Risk Assessment* 5: 985-996.
Rejection Code: NO TOX DATA.

71. Abrahams, JP and De Graaff, RAG (1998). New developments in phase refinement. *Current Opinion in Structural Biology* 8: 601-605.
Rejection Code: METHODS.

72. ACHARYA MR and SHAH RK (1999). Some microbiological and chemical attributes of mango pulp samples. *JOURNAL OF FOOD SCIENCE AND TECHNOLOGY; 36* 339-341.
Rejection Code: SURVEY.

73. ACHMAN DR, BROWNAWELL BJ, and ZHANG, L. (1996). Exchange of polychlorinated biphenyls between sediment and water in the Hudson River Estuary. *ESTUARIES; 19* 950-965.
Rejection Code: SURVEY.

74. ADAIR RJ and HOLTKAMP RH (1999). Development of a pesticide exclusion technique for assessing the impact of biological control agents for Chrysanthemoides monilifera. *BIOCONTROL SCIENCE AND TECHNOLOGY; 9* 383-390.
Rejection Code: METHODS.

75. Adamczewski, K. (1984). Use of Basagran to Papilionaceous Crops Seeded Alone or Undersown into Cereals in the Year of Sowing [Stosowanie Basagranu w Roku Zasiewu Roslin Motylkowych Uprawianych w Siewie Czystym i Jako Wsiewka w Zboza]. *Nowe Roln* 4: 12-13 (GER).
Rejection Code: NON-ENGLISH.

76. ADAMS HR, MATTOX ML, and PARKER JL (1991). CORONARY VASCULAR SMOOTH MUSCLE AND ENDOTHELIUM-DEPENDENT RESPONSES IN GUINEA-PIG ENDOTOXIN SHOCK. *75TH ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, ATLANTA, GEORGIA, USA, APRIL 21-25, 1991. FASEB (FED AM SOC EXP BIOL) J; 5 (6). 1991. A1725.*
Rejection Code: ABSTRACT.

77. Adams, P. B. and Wong, J. A. L. (1991). The Effect of Chemical Pesticides on the Infection of Sclerotia of Sclerotinia minor by the Biocontrol Agent Sporidesmium sclerotivorum. *Phytopathology* 81: 1340-1343.

; Habitat: T; Effect Codes: PHY

78. ADDISON RF and SMITH TG (1998). Trends in organochlorine residue concentrations in ringed seal (Phoca hispida) from Holman, Northwest Territories, 1972-91. *ARCTIC; 51* 253-261.
Rejection Code: SURVEY.

79. Aggelis, A., John, I., and Grierson, D. (1997). Analysis of physiological and molecular changes in melon (Cucumis melo L.) varieties with different rates of ripening. *Journal of Experimental Botany, 48 (308) pp. 769-778, 1997.*
Rejection Code: NO TOX DATA.

80. AGNIHOTRI MK and PAL UK (1997). Effect of tetrasodium pyrophosphate (TSPP) on quality of chevon sausages. *INDIAN JOURNAL OF ANIMAL SCIENCES; 67* 1000-1003.
Rejection Code: HUMAN HEALTH.

81. Agrawal, B. B. L. and Margoliash, E. (1970). A spectrophotometric method for the determination of aminotriazole and other aromatic amines. *Analytical Biochemistry* 34: 505-516.
Rejection Code: METHODS.

82. AGRELL, C., OKLA, L., LARSSON, P., BACKE, C., and WANIA, F. (1999). Evidence of latitudinal fractionation of polychlorinated biphenyl congeners along the Baltic Sea region. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 33* 1149-1156.
Rejection Code: SURVEY.

83. AGUER JP, BOULE, P., BONNEMOY, F., and CHEZAL JM (1998). Phototransformation of napropamide (N,N-diethyl-2-(1-naphthyloxy)propionamide) in aqueous solution: Influence on the toxicity of solutions. *PESTICIDE SCIENCE; 54* 253-257.
Rejection Code: NO SPECIES.

84. Ahmad, M. (1994). Analysis of insecticide resistance in Helicoverpa armigera in Thailand. *FAO Plant Protection Bulletin [FAO PLANT PROT. BULL.]. Vol. 42, no. 1-2, pp. 63-69. 1994.*
Rejection Code: SURVEY.

85. Ahmad, M., Hollingworth, R. M., and Wise, J. C. (2002). Broad-spectrum insecticide resistance in obliquebanded leafroller Choristoneura rosaceana (Lepidoptera: Tortricidae) from Michigan. *Pest Management Science, 58 (8) pp. 834-838, 2002.*
Rejection Code: SURVEY.

86. Ahmad, M. H. and Vekataraman, G. S. (1973). Tolerance of Aulosira fertilissima to Pesticides. *Curr.Sci.* 42: 108 (ABS).
Rejection Code: ABSTRACT.

87. Ahmad, Sami, Forgash, Andrew J., and Das, Yesu T. (1980). Penetration and metabolism of [14C]carbaryl in larvae of the gypsy moth, Lymantria dispar (L.). *Pesticide Biochemistry and Physiology* 14: 236-248.
Rejection Code: FATE, METABOLISM.

88. AHN DU, OLSON DG, JO, C., CHEN, X., WU, C., and LEE JI (1998). Effect of muscle type, packaging, and irradiation on lipid oxidation, volatile production, and color in raw pork patties. *MEAT SCIENCE; 49* 27-39.
Rejection Code: HUMAN HEALTH.

89. AKEY WC, RUSSELL, T., ALFORD, C., MORRISON, T., and DENNING, M. (1997). Will the toad croak? An endangered species decision case. *JOURNAL OF NATURAL RESOURCES AND LIFE SCIENCES EDUCATION; 26* 148-156.
Rejection Code: NO TOX DATA.

90. AKITA, M., YOKOYAMA, A., and KONTANI, H. (1999). Teratogenicity of salicylate and its metabolites (2,4-dihydroxybenzoic acid and 2,5-Dihydroxybenzoic acid) studied in the rat embryo culture method. *72ND ANNUAL MEETING OF THE JAPANESE PHARMACOLOGICAL SOCIETY, SAPPORO, JAPAN, MARCH 22-25, 1999.YJAPANESE JOURNAL OF PHARMACOLOGY; 79* 295P.
Rejection Code: ABSTRACT.

91. Aktas, Nahit , Cicek, Hasan, Taspinar Unal, Arzu, Kibarer, Gunay, Kolankaya, Nazif, and Tanyolac, Abdurrahman (2001). Reaction kinetics for laccase-catalyzed polymerization of 1-naphthol. *Bioresource Technology* 80: 29-36.
Rejection Code: METABOLISM.

92. Al-Tamrah, S. A. and Townshend, Alan (1987). Determination of naphthols by flow-injection chemiluminescence. *Analytica Chimica Acta* 202: 247-250.
Rejection Code: METHODS.

93. Al-Thaqafi, K. and White, K. N. (1991). Effect of Shore Position and Environmental Metal Levels on Body Metal Burdens in the Barnacle, Elminius modestus. *Environ.Pollut.* 69: 89-104.
Rejection Code: NO CONC.

94. Alawi, M. A., Gharaibeh, S., and Al Shureiki, Y. (1990). Rueckstandsuntersuchungen auf Fenitrothion und Pyrethroide in Wasser, Boden und Pflanzen nach der Heuschreckenbekaempfung in Jordanien 1989. *Chemosphere* 20: 443-447 (GER).
Rejection Code: NON-ENGLISH.

95. Albanis, T. A., Pomonis, P. J., and Sdoukos, A. T. (1986). Organophosphorus and carbamates pesticide residues in the aquatic system of Ioannina basin and Kalamas River (Greece). *Chemosphere. Vol. 15, no. 8, pp. 1023-1034. 1986.*
Rejection Code: SURVEY.

96. Albanis, T. A., Pomonis, P. J., and Sdoukos, A. T. (1986). Organophosphorus and carbamates pesticide residues in the aquatic system of Ioannina basin and Kalamas River (Greece). *Chemosphere. Vol. 15, no. 8, pp. 1023-1034. 1986.*
Rejection Code: SURVEY.

97. Albanis, T. A., Pomonis, P. J., and Sdoukos, A. Th. (1986). Organophosphorous and carbamates pesticide residues in the aquatic system of ioannina basin and Kalamas river(Greece). *Chemosphere* 15: 1023-1034.
Rejection Code: SURVEY.

98. Albanis, T. A., Pomonis, P. J., and Sdoukos, A. Th. (1986). Organophosphorous and carbamates pesticide residues in the aquatic system of ioannina basin and Kalamas river(Greece). *Chemosphere* 15: 1023-1034.
Rejection Code: NO EFFECT.

99. Alfonta, Lital, Bardea, Amos, Khersonsky, Olga, Katz, Eugenii, and Willner, Itamar (2001). Chronopotentiometry and Faradaic impedance spectroscopy as signal transduction methods for the biocatalytic precipitation of an insoluble product on electrode supports: routes for enzyme sensors, immunosensors and DNA sensors. *Biosensors and Bioelectronics* 16: 675-687.

Rejection Code: METHODS.

100. Ali, M. S. (1989). Determination of N-Methylcarbamate Pesticides in Liver by Liquid Chromatography. *J.Assoc.Off.Anal.Chem.* 72: 586-592.
Rejection Code: IN VITRO.

101. Ali Taher, Mohammad, Mostafavi Dehzoei, Ali, Krishan Puri, Bal, and Puri, Swati (1998). Derivative UV-visible spectrophotometric determination of nickel in alloys and biological samples after preconcentration with the ion pair of 2-nitroso-1-naphthol-4-sulfonic acid and tetradecyldimethylbenzylammonium chloride onto microcrystalline naphthalene or by a column method. *Analytica Chimica Acta* 367: 55-61.
Rejection Code: METHODS.

102. Alikhanidi, Sokratis and Takahashi, Yoshimasa (2004). Pesticide persistence in the environment - collected data and structure-based analysis. *Journal of Computer Chemistry, Japan* 3: 59-70.
Rejection Code: SURVEY.

103. ALLARD A-S and NEILSON AH (1997). Bioremediation of organic waste sites: A critical review of microbiological aspects. *INTERNATIONAL BIODETERIORATION & BIODEGRADATION; 39* 253-285.
Rejection Code: REVIEW.

104. Allen, M. A. and Stewart, T. S. (1983). A simulation model for a swine breeding unit producing feeder pigs. *Agricultural Systems* 10: 193-211.
Rejection Code: MODELING.

105. ALTMAN DW, ELISSALDE MH, STIPANOVIC RD, and NORMAN JO (1989). HELIOTHIS-VIRESCENS CELL GROWTH IN ORGANIC SOLVENTS. *IN VITRO CELL DEV BIOL; 25* 331-333.
Rejection Code: IN VITRO.

106. Alvarez-Rodriguez, L, Esteve-Romero, J, Escrig-Tena, I, and Garcia Alvarez-Coque, M C (Flow-injection spectrophotometric determination of phenolic drugs and carbamate pesticides by coupling with diazotized 2,4,6-trimethylaniline. *Journal Of AOAC International* 82: 937-947.
Rejection Code: METHODS.

107. Alvarez-Rodriguez, L, Monferrer-Pons, L, Esteve-Romero, J S, Garcia-Alvarez-Coque, M C, and Ramis-Ramos, G (1997). Spectrophotometric determination of carbamate pesticides with diazotized trimethylaniline in a micellar medium of sodium dodecyl sulfate. *The Analyst* 122: 459-463.
Rejection Code: METHODS.

108. Aly, M. M., Makhyoun, M., and El-Ezaby, S. (1973). Coordination compounds of ligands containing more than one coordination site--I : Cooridnation compounds of the ligand 7-nitroso-8-hydroxyquinoline-5-sulphonic acid. *Journal of Inorganic and Nuclear Chemistry* 35: 2727-2734.
Rejection Code: NO SPECIES.

109. Aly, O. M. and El-Dib, M. A. (1971). Studies on the Persistence of Some Carbamate Insecticides in the Aquatic Environment - I. Hydrolysis of Sevin, Baygon, Pyrolan and Dimetilan in Waters. *Water Res.* 5: 1191-1205.
Rejection Code: NO SPECIES.

110. Aly, Osman M. and El-Dib, M. A. (1971). Studies on the persistence of some carbamate insecticides in the aquatic environment--I. Hydrolysis of sevin, baygon, pyrolan and dimetilan in waters. *Water Research* 5: 1191-1205.
Rejection Code: FATE.

111. Ambrosino, G., Sassoli, P., Bielli, M., Carotenuto, P. , and Romanazzo, M. (1999). A modeling framework for impact assessment of urban transport systems. *Transportation Research Part D: Transport and Environment* 4: 73-79.
Rejection Code: MODELING.

112. Amri, Hajar Souhaili-El, Fargetton, Xavier, Benoit, Etienne, Totis, Muriel, and Batt, Anne-Marie (1988). Inducing effect of albendazole on rat liver drug-metabolizing enzymes and metabolite pharmacokinetics. *Toxicology and Applied Pharmacology* 92: 141-149.
Rejection Code: METABOLISM.

113. ANADON, A., MARTINEZ-LARRANAGA MR, FERNANDEZ-CRUZ ML, DIAZ MJ, FERNANDEZ MC, and MARTINEZ MA (1996). Toxicokinetics of deltamethrin and its 4'-HO-metabolite in the rat. *TOXICOLOGY AND APPLIED PHARMACOLOGY; 141* 8-16.
Rejection Code: NO COC.

114. Anderson, J. F. and Wojtas, M. A. (1986). Honey bees (Hymenoptera: Apidae) contaminated with pesticides and polychlorinated biphenyls. *Journal of economic entomology [j. Econ. Entomol.]* 79: 1200-1205.
Rejection Code: SURVEY.

115. Anderson, J. F. and Wojtas, M. A. (1986). Honey Bees (Hymenoptera: Apidae) Contaminated with Pesticides and Polychlorinated Biphenyls. *J.Econ.Entomol.* 79: 1200-1205.
Rejection Code: SURVEY.

116. Anderson, J. R. A., Costoulas, A. J., and Garnett, J. L. (1959). The use of napthalene derivatives in inorganic analysis : The nitronaphthols as fluorimetric reagents for stannous tin. *Analytica Chimica Acta* 20: 236-242.
Rejection Code: METHODS.

117. Andersson, Tommy, Pesonen, Maija, and Johansson, Conny (1985). Differential induction of cytochrome P-450-dependent monooxygenase, epoxide hydrolase, glutathione transferase and UDP glucuronosyl transferase activities in the liver of the rainbow trout by [beta]-naphthoflavone or clophen A50. *Biochemical Pharmacology* 34: 3309-3314.
Rejection Code: METABOLISM.

118. Andre, F., Gillon, J., Andre, C., Lafont, S., and Jourdan, G. (1983). Pesticide-containing diets augment anti-sheep red blood cell nonreaginic antibody responses in mice but may prolong murine infection with Giardia muris . *Environmental Research [ENVIRON. RES.]. Vol. 32, no. 1, pp. 145-150. 1983.*
Rejection Code: IN VITRO.

119. Andreou, Vangelis G. and Clonis, Yannis D. (2002). Novel fiber-optic biosensor based on immobilized glutathione S-transferase and sol-gel entrapped bromcresol green for the determination of atrazine. *Analytica Chimica Acta* 460: 151-161.
Rejection Code: METHODS.

120. Andreou, Vangelis G. and Clonis, Yannis D. (2002). A portable fiber-optic pesticide biosensor based on immobilized cholinesterase and sol-gel entrapped bromcresol purple for in-field use. *Biosensors and Bioelectronics* 17: 61-69.

Rejection Code: METHODS.

121. Andrews, Laura E., Bonnett, Raymond, and Appelman, Evan H. (1985). Substitution and addition reactions of organic substrates with hypofluorous acid. *Tetrahedron* 41: 781-784.
Rejection Code: METHODS.

122. ANON (1997). 44th Symposium on Toxins (Kasarazu, Japan; July 30-August 1, 1997). *JAPANESE JOURNAL OF MEDICAL SCIENCE AND BIOLOGY; 50* 182-207.
Rejection Code: ABSTRACT.

123. ANON (1985). IMPLICATIONS OF IMPORT AND EXPORT POLICY FOR 1985-1986. *PESTICIDES (BOMBAY); 19 (9). 1985 (RECD. 1986). 21-23.*
Rejection Code: NO TOX DATA.

124. ANON (1989). PROGRESS IS SLOW ON FRB PROGRAM. *CITROGRAPH; 74* 155-156.
Rejection Code: REVIEW.

125. ANON (1985). REPORT OF THE WORKING GROUP OF THE PLANNING COMMISSION ON PESTICIDES INDUSTRY FOR THE SEVENTH FIVE YEAR PLAN. *PESTICIDES (BOMBAY); 19 (9). 1985 (RECD. 1986). 11-20.*
Rejection Code: NO TOX DATA.

126. ANON (1989). UNIVERSITY OF CALIFORNIA USA TEST RESULTS ON SCALICIDES. *CITROGRAPH; 74* 157.
Rejection Code: SURVEY.

127. Anon. and Elder, R. L. (ed) (1989). Final report on the safety assessment of 1-naphthol.
Rejection Code: HUMAN HEALTH.

128. Anonymous (Occupational Safety And Health Guidelines For Chemical Hazards. Supplement Iv-Ohg.
Rejection Code: HUMAN HEALTH.

129. ANYANWU GI, DAVIES DH, MOLYNEUX DH, and PHILLIPS, A. (1997). Variation in cuticular hydrocarbons among strains of Anopheles (Cellia) stephensi Liston possibly related to prior insecticide exposure. *ANNALS OF TROPICAL MEDICINE AND PARASITOLOGY; 91* 649-659.
Rejection Code: BACTERIA.

130. AOSHIMA, H. (1996). Effects of alcohols and food additives on glutamate receptors expressed in Xenopus oocytes: Specificity in the inhibition of the receptors. *BIOSCIENCE BIOTECHNOLOGY AND BIOCHEMISTRY; 60* 434-438.
Rejection Code: IN VITRO.

131. AOYAMA, M. and NAGUMO, T. (1996). Factors affecting microbial biomass and dehydrogenase activity in apple orchard soils with heavy metal accumulation. *SOIL SCIENCE AND PLANT NUTRITION; 42* 821-831.
Rejection Code: BACTERIA.

132. Arand, Michael, Coughtrie, Michael W. H., Burchell, Brian, Oesch, Franz, and Robertson, Larry W. (1991). Selective induction of bilirbuin UDP-glucuronosyl-transferase by perfluorodecanoic acid. *Chemico-Biological Interactions* 77: 97-105.
Rejection Code: METABOLISM.

133. Ardizzone, C., Krokos, H., and Lippe, C. (1990). Actions of carbaryl on the ionic transport across

the isolated skin of Rana esculenta. *Comparative Biochemistry and Physiology Part C: Comparative Pharmacology* 97: 49-51.
Rejection Code: IN VITRO.

134. Arduini, Fabiana, Ricci, Francesco, Tuta, Catalin S., Moscone, Danila, Amine, Aziz, and Palleschi, Giuseppe (Detection of carbamic and organophosphorous pesticides in water samples using a cholinesterase biosensor based on Prussian Blue-modified screen-printed electrode. *Analytica Chimica Acta* In Press, Corrected Proof.
Rejection Code: METHODS.

135. Areekul, S. (1987). Toxicity to Fishes of Insecticides Used in Paddy Fields and Water Resources. I. Laboratory Experiment. *Kasetsart J.20(2):164-178(1986)(THI)(ENG ABS) /C.A.Sel.-Environ.Pollut.* 12: 106-190732T.

; Habitat: A; Effect Codes: MOR

136. Armbrust, K. L. (2000). Pesticide hydroxyl radical rate constants: Measurements and estimates of their importance in aquatic environments. *Environmental toxicology and chemistry [environ. Toxicol. Chem.]. Vol. 19, no. 9, pp. 2175-2180. Aug 2000.*
Rejection Code: MODEL.

137. Armbrust, K. L. (2000). Pesticide hydroxyl radical rate constants: Measurements and estimates of their importance in aquatic environments. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 19, no. 9, pp. 2175-2180. Aug 2000.*
Rejection Code: METHODS.

138. Armbrust, K. L. (2000). Pesticide hydroxyl radical rate constants: Measurements and estimates of their importance in aquatic environments. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 19, no. 9, pp. 2175-2180. Aug 2000.*
Rejection Code: FATE.

139. ARMBRUST KL and CROSBY DG (1991). Fate of carbaryl, 1-naphthol, and atrazine in seawater. *PAC SCI; 45* 314-320.
Rejection Code: FATE.

140. Armstrong, David A. and Millemann, Raymond E. (1974). Pathology of acute poisoning with the insecticide Sevin in the bent-nosed clam, Macoma nasuta. *Journal of Invertebrate Pathology* 24: 201-212.

141. ARORA CL and KAUR, T. (1993). CARBARYL 1-NAPHTHYL N-METHYL CARBAMATE FERRIC CHLORIDE COMPLEX AND ITS PERSISTENCE. *JOURNAL OF RESEARCH PUNJAB AGRICULTURAL UNIVERSITY; 30* 50-52.
Rejection Code: FATE.

142. ARRETO C-D, DUMAREY, C., NAHORI M-A, and VARGAFTIG BB (1997). The LPS-induced neutrophil recruitment into rat air pouches is mediated by TNFalpha: Likely macrophage origin. *MEDIATORS OF INFLAMMATION; 6* 335-343.
Rejection Code: IN VITRO.

143. Arsenault, A. Larry, Ottensmeyer, F. Peter, and Heath, I. Brent (1988). An electron microscopic and spectroscopic study of murine epiphyseal cartilage: Analysis of fine structure and matrix vesicles preserved by slam freezing and freeze substitution. *Journal of Ultrastructure and Molecular Structure Research* 98: 32-47.
Rejection Code: METHODS.

144. Arunachalam, S., Palanichamy, S., Vasanthi, M., Baskaran, P., Hirano, R., and Hanyu, I. (eds) (1990). The impact of pesticides on the feeding energetics and body composition in the freshwater catfish Mystus vittatus . *Second Asian Fisheries Forum, Tokyo (Japan), 17-22 Apr 1989.*
Rejection Code: ABSTRACT.

145. Asikainen, A., Tarhanen, J., Poso, A., Pasanen, M., Alhava, E., and Juvonen, R. O. (2003). Predictive value of comparative molecular field analysis modelling of naphthalene inhibition of human CYP2A6 and mouse CYP2A5 enzymes. *Toxicology In Vitro [Toxicol. In Vitro]. Vol. 17, no. 4, pp. 449-455. Aug 2003.*
Rejection Code: MODELING.

146. Aspock, H. and Ander Lan, H. (1963). Okologische Auswirkungen und Physiologische Besonderheiten des Pflanzenschutzmittels Sevin (1-Naphtyl-N-Methylcarbamat). *Z.Angew.Zool.* 50: 343-380 (GER)(ENG ABS).
Rejection Code: NON-ENGLISH.

147. ATIRI GI, IVBIJARO MF, and OLADELE AD (1991). Effects of natural and synthetic chemicals on the incidence and severity of okra mosaic virus in okra. *TROP AGRIC; 68* 178-180.
Rejection Code: VIRUS.

148. Atkins, E. L. and Kellum, D. (1986). Comparative Morphogenic and Toxicity Studies on the Effect of Pesticides on Honeybee Brood. *J.Apic.Res.* 25: 242-255 .

; Habitat: T

149. Atlavinyte, O., Daciulyte, J., and Lugauskas, A. (1977). The Effect of Lumbricidae on Plant Humification and Soil Organism Biocenoses Under Application of Pesticides. *Ecol.Bull.* 25: 222-228.

; Habitat: T; Effect Codes: GRO,POP,BEH,BCM

150. AYALA JH, AFONSO AM, and GONZALEZ, V. (1991). Spectrofluorimetric determination of carbaryl and 1-naphthol in micellar media. *MIKROCHIM ACTA; 1* 171-180.
Rejection Code: METHODS.

151. Azadi-Ardakani, Manouchehr and Wallace, Timothy W. (1983). 3,6-dimethoxybenzocyclobutenone: a versatile quinone precursor. *Tetrahedron Letters* 24: 1829-1832.
Rejection Code: METHODS.

152. Azadi-Ardakani, Manouchehr and Wallace, Timothy W. (1988). 36-Dimethoxybenzocyclobutenone: a reagent for quinone synthesis. *Tetrahedron* 44: 5939-5952.
Rejection Code: METHODS.

153. AZIMAHTOL HAWARIAH LP and YONG KN (1996). Dissipation of carbaryl in Malaysian sandy clay soil. *MALAYSIAN APPLIED BIOLOGY; 25* 27-34.
Rejection Code: FATE.

154. Babcock, J. M. and Tanigoshi, L. K. (1988). Resistance Levels of Typhlodromus occidentalis (Acari: Phytoseiidae) from Washington Apple Orchards to Ten Pesticides. *Exp.Appl.Acarol.* 4: 151-157.

; Habitat: T; Effect Codes: MOR

155. Bach, J. and Snegaroff, J. (1989). Effects of the fungicide prochloraz on xenobiotic metabolism in rainbow trout: In vivo induction. *Xenobiotica. Vol. 19, no. 1, pp. 1-9. 1989.*
Rejection Code: METABOLISM.

156. BAE J-Y and CALDWELL WS (1996). A STUDY OF NICOTINE NITROSATION BY STIMULATED MACROPHAGES IN VITRO. *212TH AMERICAN CHEMICAL SOCIETY NATIONAL MEETING, ORLANDO, FLORIDA, USA, AUGUST 25-29, 1996. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 212* TOXI 63.
Rejection Code: IN VITRO.

157. BAGI CM and MILLER SC (1992). Dose-related effects of 1,25-dihydroxyvitamin D3 on growth, modeling, and morphology of fetal mouse metatarsals cultured in serum-free medium. *J BONE MINER RES; 7* 29-40.
Rejection Code: MODELING.

158. Baidina, N. L. (1994). Inactivation of Heavy Metals by Humus and Zeolites in a Technogenically Polluted Soil. *Pochvovedenie* 0: 121-125.
Rejection Code: NO SPECIES/NO TOX DATA.

159. Bajpai, V. N. and Perti, S. L. (1969). Resistance to Malathion. *Pesticides* 3: 43-45.

; Habitat: A; Effect Codes: MOR

160. Bajue, S. A. and Lalor, G. C. (1973). The reactions of cobalt compounds with nitroso-naphthols--V[1] : The stoicheiometry of the reaction between cobaltous ions and 2-nitroso-1-naphthol-4-sulphonate. *Journal of Inorganic and Nuclear Chemistry* 35: 4231-4236.
Rejection Code: NO SPECIES.

161. Bajue, S. A. and Lalor, G. C. (1975). The reactions of cobalt compounds with nitroso-naphthols--VII. [1] : The formation of some Co(III) complexes of 2-nitroso-1-naphthol-4-sulphonic acid by solid state reactions. *Journal of Inorganic and Nuclear Chemistry* 37: 699-701.
Rejection Code: NO SPECIES.

162. Bajue, S. A., Lalor, G. C., and Stuart, K. L. (1975). The reactions of cobalt compounds with nitroso--naphthols--VI[1] : The preparation and properties of some Co(III) complexes of the 2-nitroso--1-naphthol--4-sulphonate and 2-nitroso--1-naphthol ligands. *Journal of Inorganic and Nuclear Chemistry* 37: 51-54.
Rejection Code: NO SPECIES.

163. Bajue, S. A., Taylor, G. A., and Lalor, G. C. (1972). The reactions of cobalt compounds with nitroso-naphthols-III[1] : Formation constants of the mono nitroso-naphthol complexes of 1-nitroso-2-naphthol-3, 6-disulphonate and 2-nitroso-1-naphthol-4-sulphonate with cobaltous ions. *Journal of Inorganic and Nuclear Chemistry* 34: 1353-1364.
Rejection Code: NO SPECIES.

164. Bakalian, A. B. (1985). The Use of Sevin on Estuarine Oyster Beds in Tillamook Bay, Oregon. *Coast.Zone Manage.J.* 13: 49-83.
Rejection Code: NO DURATION/NO TOX DATA.

165. Baker, Robert W. and Taylor, James A. (2000). Synthesis, resolution and rates of racemisation of 1-(2'-methyl-3'-indenyl)-2-naphthylamine and -2-naphthol. *Tetrahedron Letters* 41: 4471-4473.
Rejection Code: METHODS.

166. BALASUBRAMANIAN, G., CHELLIAH, S., and BALASUBRAMANIAN, M. (1988).

DIFFERENCES IN PESTICIDE SUSCEPTIBILITY OF SPODOPTERA-LITURA FAB COLLECTED FROM THREE LOCALITIES IN TAMIL NADU INDIA. *INDIAN J PLANT PROT; 16* 67-70.
Rejection Code: SURVEY.

167. Ballesteros, E., Gallego, M., and Valcarcel, M. (Automatic determination of N-methylcarbamate pesticides by using a liquid-liquid extractor derivatization module coupled on-line to a gas chromatograph equipped with a flame ionization detector.
Rejection Code: METHODS/NO SPECIES.

168. Ballesteros, E., Gallego, M., and Valcarcel, M. *. (1996). On-line preconcentration and gas chromatographic determination of N-methylcarbamates and their degradation products in aqueous samples. *Environmental Science & Technology [ENVIRON. SCI. TECHNOL.], vol. 30, no. 6, pp. 2071-2077, 1996*.
Rejection Code: CHEM METHODS.

169. Banerjee, Amitav and Dey, Arun K. (1968). Stepwise formation of uranium(vi) complexes with sulphonated phenolic compounds. *Analytica Chimica Acta* 42: 473-479.
Rejection Code: METHODS.

170. BANJERJEE, S. (1996). Estimating water solubilities of organics as a function of temperature. *WATER RESEARCH; 30* 2222-2225.
Rejection Code: METHODS.

171. Barcelo, D. , Durand, G., Bouvot, V., and Nielen, M. (Use of extraction disks for trace enrichment of various pesticides from river water and simulated seawater samples followed by liquid chromatography-rapid-scanning UV-visible and thermospray-mass spectrometry detection.
Rejection Code: NO SPECIES.

172. Barcelo, D. , Durand, G., Bouvot, V., and Nielen, M. (Use of extraction disks for trace enrichment of various pesticides from river water and simulated seawater samples followed by liquid chromatography-rapid-scanning UV-visible and thermospray-mass spectrometry detection.
Rejection Code: NO SPECIES.

173. Barcelo, D. , House, W. A., Maier, E. A., Griepink, B., Quevauviller, P., and Benoliel, M. J. (1994).
Rejection Code: NO SPECIES.

174. BARRATT MD (1996). Quantitative structure-activity relationships (QSARs) for skin corrosivity of organic acids, bases and phenols: Principal components and neural network analysis of extended datasets. *TOXICOLOGY IN VITRO; 10* 85-94.
Rejection Code: QSAR.

175. Barrett, C. and Cassells, A. C. (1994). An evaluation of antibiotics for the elimination of Xanthomonas campestris pv. pelargonii (Brown) from Pelargonium x domesticum cv. 'Grand Slam' explants in vitro. *Plant Cell, Tissue and Organ Culture, 36 (2) pp. 169-175, 1994* .
Rejection Code: IN VITRO.

176. Barrett, J. F., Pitt, Patricia A., Ryan, A. J., and Wright, S. E. (1965). The metabolism of 2-phenylazo-1-naphthol-4-and -5-sulphonic acids in the rat. *Biochemical Pharmacology* 14: 873-879.
Rejection Code: METABOLISM.

177. BARROW CJ, NAKANISHI, K., and TACHIBANA, K. (1992). Structure and activity studies of pardaxin and analogues using model membranes of phosphatidylcholine. *BIOCHIM BIOPHYS ACTA; 1112* 235-240.
Rejection Code: MODELING.

178. Bartlett, Paul D. and Ghosh, Tirthankar (1985). Rearrangement of 10-oxabenzo--sesquinorbornene by light and by acids. *Tetrahedron Letters* 26: 2613-2616.
Rejection Code: METHODS.

179. Barua, B. and Jana, S. (1986). Effects of Heavy Metals on Dark Induced Changes in Hill Reaction Activity, Chlorophyll and Protein Contents, Dry Matter and Tissue Permeability in Detached Spinacia oleracea L. Leaves. *Photosynthetica* 20: 74-76.
Rejection Code: IN VITRO.

180. BASHER LR and WEBB TH (1997). Wind erosion rates on terraces in the Mackenzie Basin. *JOURNAL OF THE ROYAL SOCIETY OF NEW ZEALAND; 27* 499-512.
Rejection Code: NO TOX DATA, SURVEY.

181. Basol, M. S., Eren, S., and Sadar, M. H. (1980). Comparative Toxicity of Some Pesticides on Human Health and Some Aquatic Species. *Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants and Agricultural Wastes [J. ENVIRON. SCI. HEALTH, PART B.]. Vol. 15, no. 6, pp. 993-1004. 1980.*
Rejection Code: IN VITRO.

182. Bayad, Jamal, Bagrel, Denyse, Sabolovic, Nicole, Magdalou, Jacques, and Siest, Gerard (1991). Expression and regulation of drug metabolizing enzymes in an immortalized rat hepatocyte cell line. *Biochemical Pharmacology* 42: 1345-1351.
Rejection Code: IN VITRO, METABOLISM.

183. Baydina, N. L. (1996). Inactivation of Heavy Metals by Humus and Zeolites in Industrially Contaminated Soil. *Eurasian Soil Sci.* 28: 96-105.
Rejection Code: MIXTURE/NO SPECIES.

184. Baynes, R. E., Halling, K. B., and Riviere, J. E. (1997). The Influence of Diethyl-m-toluamide (DEET) on the Percutaneous Absorption of Permethrin and Carbaryl. *Toxicology and Applied Pharmacology* 144: 332-339.
Rejection Code: IN VITRO.

185. Baynes, R. E. and Riviere, J. E. (1998). Influence of inert ingredients in pesticide formulations on dermal absorption of carbaryl. *Am J Vet Res* 59: 168-175.
Rejection Code: IN VITRO.

186. BAYNES RE and RIVIERE JE (1998). Influence of inert ingredients in pesticide formulations on dermal absorption of carbaryl. *AMERICAN JOURNAL OF VETERINARY RESEARCH;* 59: 168-175.
Rejection Code: IN VITRO.

187. BAYNES RE and RIVIERE JE (1998). Influence of inert ingredients in pesticide formulations on dermal absorption of carbaryl. *AMERICAN JOURNAL OF VETERINARY RESEARCH; 59* 168-175.
Rejection Code: IN VITRO.

188. BEAL MF, BROUILLET, E., SRIVASTAVA, R., DE SOCARRAZ H, JENKINS, B., ROSEN, B., and HYMAN BT (1993). BOTH LOCAL AND SYSTEMIC ADMINISTRATION OF THE MITOCHONDRIAL TOXIN SODIUM AZIDE RESULT IN STRIATAL

LESIONS BY AN EXCITOTOXIC MECHANISM. *45TH ANNUAL MEETING OF THE AMERICAN ACADEMY OF NEUROLOGY, NEW YORK, NEW YORK, USA, APRIL 25-MAY 1, 1993. NEUROLOGY; 43* A407.
Rejection Code: BIOLOGICAL TOXICANT.

189. Beavis, C., Simpson, P., Syme, J., and Ryan, C. (1991). Chemicals for the Protection of Field Crops, Forage Crops, and Pastures. *Queensland Dep.of Primary Ind.Info.Ser.No.QI91006, Infopest: Chemicals for the Protection of Field Crops, Forage Crops, and Pastures, 2nd Edition, Brisbane, Queensland, Australia* 312 p.
Rejection Code: NO TOX DATA.

190. Beavis, C., Simpson, P., Syme, J., and Ryan, C. (1991). Chemicals for the Protection of Fruit and Nut Crops. *Queensland Dep.of Primary Ind.Info.Ser.No.QI91004, Infopest: Chemicals for the Protection of Field Crops, Forage Crops, and Pastures, 2nd Edition, Brisbane, Queensland, Australia* 312 p.
Rejection Code: NO TOX DATA.

191. Beavis, C., Simpson, P., Syme, J., and Ryan, C. (1991). Chemicals for the Protection of Ornamentals and Turf. *Queensland Dep.of Primary Ind.Info.Ser.No.QI91003, Infopest: Chemicals for the Protection of Field Crops, Forage Crops, and Pastures, 2nd Edition, Brisbane, Queensland, Australia* 312 p.
Rejection Code: NO TOX DATA.

192. Beavis, C., Simpson, P., Syme, J., and Ryan, C. (1991). Chemicals for the Protection of Vegetable Crops. *Queensland Dep.of Primary Ind.Info.Ser.No.QI91005, Infopest: Chemicals for the Protection of Field Crops, Forage Crops, and Pastures, 2nd Edition, Brisbane, Queensland, Australia* 312 p.
Rejection Code: NO TOX DATA.

193. BECKER, P. (1999). About the order in aerobic heterotrophic microbial communities from hydrocarbon-contaminated sites. *INTERNATIONAL BIODETERIORATION & BIODEGRADATION; 43* 135-146.
Rejection Code: BACTERIA.

194. BECKER PM, WAND, H., MARTIUS, G. GS, WEISSBRODT, E., and STOTTMEISTER, U. (1998). Functional and structural successions in arbitrary samples of heterotrophic bacteria during aerobic treatments of lignite-carbonization wastewater in in situ enclosures. *CANADIAN JOURNAL OF MICROBIOLOGY; 44* 211-220.
Rejection Code: BACTERIA, METABOLISM.

195. BECKER PM, WAND, H., WEISSBRODT, E., KUSCHAK, P., and STOTTMEISTER, U. (1997). Distribution of contaminants and the self-purifying potential for aromatic compounds in a carbonization wastewater deposition. *CHEMOSPHERE; 34* 731-748.
Rejection Code: FATE, BACTERIA.

196. BECKER PR, MACKEY EA, DEMIRALP, R., SCHANTZ MM, KOSTER BJ, and WISE SA (1997). Concentrations of chlorinated hydrocarbons and trace elements in marine mammal tissues archived in the U.S. National Biomonitoring Specimen Bank. *CHEMOSPHERE; 34* 2067-2098.
Rejection Code: REVIEW.

197. Behki, R. M. (1994). Degradation of Thiocarbamate Herbicides and Organophosphorus Insecticides by Rhodococcus Species. *In: G.R.Chaudhry (Ed.), Biological Degradation of Bioremediation of Toxic Chemicals, Chapter 11, Dioscorides Press, Portland, OR* 234-255.

Rejection Code: BACTERIA.

198. BEHKI RM (1995). Activation of atrazine metabolism by thiocarbamate herbicides in Rhodococcus TE1. *JOURNAL OF ENVIRONMENTAL SCIENCE AND HEALTH PART B PESTICIDES FOOD CONTAMINANTS AND AGRICULTURAL WASTES; 30* 201-219.
Rejection Code: BACTERIA.

199. Behrendt, S. and Menck, B. H. (1974). Herbicidal Spectrum and Effect of Bentazon-Dichlorprop with Special Consideration of Developmental Stages of Weeds, Temperature at Time of Application and Rainfall Before and After Application (Wirkungsspektrum und Wirkung von Bentazon + Dichlorprop unter Besonderer Berucksichtigung der Unkrautstadien, der Temperatur zum Zeipunkt und der Niederschlage von und nach der Behandlung). *Z Pflanzenkr.Pflanzenschutz* 81: 257-264.
Rejection Code: NON-ENGLISH.

200. Belcher, C. B. and Skelton, L. B. (1960). The rapid analysis of silica in refractories and minerals an improved method of sample preparation. *Analytica Chimica Acta* 22: 567-570.
Rejection Code: METHODS.

201. Belcher, J. N. (2006). Industrial packaging developments for the global meat market: 52nd International Congress of Meat Science and Technology (52nd ICoMST) 13-18 August 2006 Dublin, Ireland. *Meat Science* 74: 143-148.
Rejection Code: HUMAN HEALTH.

202. Bell, Duncan H., Patterson, L. K., and Gould, J. Michael (1983). Transmembrane pH gradients and functional heterogeneity in reconstituted vesicle systems. *Biochimica et Biophysica Acta (BBA) - Bioenergetics* 725: 368-375.
Rejection Code: NO TOXICANT, IN VITRO.

203. BENIGNI, R. and GIULIANI, A. (1985). CLUSTER ANALYSIS OF SHORT-TERM TESTS A NEW METHODOLOGICAL APPROACH. *MUTAT RES; 147* 139-152.
Rejection Code: METHODS.

204. Benmoussa, H., Martin, G., Tonnard, F., Richard, Y., and Leprince, A. (1986). Etude de l'inhibition de la nitrification par les composes organiques: Inhibition study of the nitrification by organic compounds. *Water Research* 20: 1465-1470.
Rejection Code: METHODS, FATE.

205. BENNETT DA, CHUNG AC, and LEE SM (1997). Multiresidue method for analysis of pesticides in liquid whole milk. *JOURNAL OF AOAC INTERNATIONAL; 80* 1065-1077.
Rejection Code: METHODS.

206. Benson, William H. and Long, Scott F. (Evaluation of humic-pesticide interactions on the acute toxicity of selected organophosphate and carbamate insecticides. 21: 301-7 CODEN: EESADV; ISSN: 0147-6513.
Rejection Code: BACTERIA.

207. Benson, William H. and Long, Scott F. (1991). Evaluation of humic-pesticide interactions on the acute toxicity of selected organophosphate and carbamate insecticides. *Ecotoxicology and Environmental Safety* 21: 301-307.
Rejection Code: BACTERIA.

208. Beraud, Maryse, Forgue, Marie-Francoise, Pipy, Bernard, and Derache, Philippe (1989).

Interaction of carbaryl and N-nitrosocarbaryl with microsomal monooxygenase activities. *Toxicology Letters* 45: 251-260.
Rejection Code: IN VITRO.

209. Beraud, Maryse, Forgue, Marie-Francoise, Pipy, Bernard, Didier, Alain, and Carre, Philippe (1989). Lipid peroxidation in rat liver microsomes: Influence of carcinogenic N-nitrosocarbaryl. *Toxicology* 58: 299-311.
Rejection Code: IN VITRO.

210. BERGQVIST P-A, STRANDBERG, B., EKELUND, R., RAPPE, C., and GRANMO, A. (1998). Temporal monitoring of organochlorine compounds in seawater by semipermeable membranes following a flooding episode in Western Europe. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 32* 3887-3892.
Rejection Code: SURVEY.

211. BERMAN RF and HANNIGAN JH (1999). Electrophysiology hippocampal CA1 neurons after prenatal ethanol exposure. AU - KRAHL SE. *ALCOHOL* 17: 125-131.
Rejection Code: IN VITRO.

212. BERNARD CB and PHILOGENE, B. JR (1993). INSECTICIDE SYNERGISTS ROLE IMPORTANCE AND PERSPECTIVES. *J TOXICOL ENVIRON HEALTH; 38* 199-223.
Rejection Code: REVIEW.

213. Bernard, F. J. and Lane, C. E. (1961). Absorption and Excretion of Copper Ion During Settlement and Metamorphosis of the Barnacle, Balanus Amphitrite niveus. *Biol.Bull.* 121: 438-448.
Rejection Code: NO DURATION.

214. BERNHEIMER AW (1996). Some aspects of the history of membrane-damaging toxins. *MEDICAL MICROBIOLOGY AND IMMUNOLOGY; 185* 59-63.
Rejection Code: REVIEW.

215. BETINA, V. (1989). STRUCTURE-ACTIVITY RELATIONSHIPS AMONG MYCOTOXINS. *CHEM-BIOL INTERACT; 71* 105-146.
Rejection Code: MODELING.

216. Beyer, Carl F. (1984). A `dot-immunobinding assay' on nitrocellulose membrane for the determination of the immunoglobulin class of mouse monoclonal antibodies. *Journal of Immunological Methods* 67: 79-87.
Rejection Code: METHODS.

217. Beyers, D. W., Carlson, C. A., and Tessari, J. D. (1991). Solid-phase extraction of carbaryl and malathion from pond and well water. *Environmental Toxicology and Chemistry [ENVIRON. TOXICOL. CHEM.]. Vol. 10, no. 11, pp. 1425-1429. 1991.*
Rejection Code: METHODS.

218. Beys-l'Hoest, B. (1991). Pollution of Ecosystems by Acridian Control Measures (La Pollution des Ecosystemes par la Lutte Antiacridienne). *Nat.Belg.* 72: 41-64 (FRE).
Rejection Code: NON-ENGLISH.

219. BHATT TS (1988). SYNTHESIS AND BIOLOGICAL ACTIVITY OF SOME FURTHER CYCLOPENTA-A-PHENANTHRENES. *CARCINOGENESIS (LOND); 9* 1669-1672.
Rejection Code: METHODS.

220. Bhattacharya, R., Srivastava, B. P., Belsare, S. D., and Centre, D. (1988(1989)). Phytotonic effect of some soil pesticides on paddy crop and their impact on rhizosphere microflora. *Int J*

Trop Agric 6 : 276-286.
Rejection Code: BACTERIA.

221. Bhattacharya, Rajib, Bhattacharya, Dipanwita, and Dhar, Tarun K. (1999). A novel signal amplification technology based on catalyzed reporter deposition and its application in a Dot-ELISA with ultra high sensitivity. *Journal of Immunological Methods* 227: 31-39.
Rejection Code: METHODS.

222. Bhattacharya, S. (2001). Stress Response to Pesticides and Heavy Metals in Fish and Other Vertebrates. *PINSA-B: Proc.Int.Indian Natl.Sci.Acad.Part B* 67: 215-246.
Rejection Code: REVIEW.

223. Bhunya, S. P. and Sahoo, S. N. (2004). Genotoxic potential of Carbaryl in the peripheral blood erythrocytes of Anabas testudineus. *Indian journal of fisheries [Indian J. Fish.]. Vol. 51, no. 4, pp. 417-423. 2004.*
Rejection Code: IN VITRO.

224. Bhushan, R, Thapar, S, and Mathur, R P (1997). Accumulation pattern of pesticides in tropical fresh waters. *Biomedical Chromatography: BMC* 11: 143-150.
Rejection Code: SURVEY.

225. BIANCHI AP and VARNEY MS (1998). Volatile organic compounds in the surface waters of a British estuary: Part 1. Occurrence, distribution and variation. *WATER RESEARCH; 32* 352-370.
Rejection Code: SURVEY.

226. BIBAK, A., STURUP, S., KNUDSEN, L., and GUNDERSEN, V. (1999). Concentrations of 63 elements in cabbage and sprouts in Denmark. *COMMUNICATIONS IN SOIL SCIENCE AND PLANT ANALYSIS; 30* 2409-2418.
Rejection Code: SURVEY.

227. Bielecki, K. and Skrabka, M. (1976). Effect of Some Herbicides on Photosynthesis of Spirodela polyrrhiza (Lemnaceae). *Acta Agrobot.* 29: 59-68 (POL) (ENG ABS).
Rejection Code: NON-ENGLISH.

228. Bier, Mark E., Winkler, Paul C., and Herron, Jack R. (1993). Coupling a particle beam interface directly to a quadrupole ion trap mass spectrometer. *Journal of the American Society for Mass Spectrometry* 4: 38-46.
Rejection Code: METHODS.

229. BIGAUD, M., JULOU-SCHAEFFER, G., PARRATT JR, and STOCLET J-C (1990). Endotoxin-induced impairment of vascular smooth muscle contractions elicited by different mechanisms. *EUR J PHARMACOL* 190: 185-192.
Rejection Code: METHODS, HUMAN HEALTH.

230. Bigot-Lasserre, D., Chuzel, F., Debruyne, E. L. M., Bars, R., and Carmichael, N. G. (2003). Tumorigenic potential of carbaryl in the heterozygous p53 knockout mouse model. *Food and Chemical Toxicology [Food Chem. Toxicol.]. Vol. 41, no. 1, pp. 99-106. Jan 2003.*
Rejection Code: MODELING.

231. BILLINGSLEY KA, BACKUS SM, JUNESON, C., and WARD OP (1997). Comparison of the degradation patterns of polychlorinated biphenyl congeners in Aroclors by Pseudomonas strain LB400 after growth on various carbon sources. *CANADIAN JOURNAL OF MICROBIOLOGY; 43* 1172-1179.

Rejection Code: BACTERIA.

232. BIRCHFIELD NB and CASIDA JE (1997). Protoporphyrinogen oxidase of mouse and maize: Target site selectivity and thiol effects on peroxidizing herbicide action. *PESTICIDE BIOCHEMISTRY AND PHYSIOLOGY; 57* 36-43.
Rejection Code: IN VITRO.

233. BISCHOF, J. C., SMITH, D., PAZHAYANNUR, P. V., MANIVEL, C., HULBERT, J., and ROBERTS, K. P. (1997). Cryosurgery of Dunning AT-1 Rat Prostate Tumor: Thermal, Biophysical, and Viability Response at the Cellular and Tissue Level. *Cryobiology* 34: 42-69.
Rejection Code: IN VITRO.

234. Bishop, J. (2001). California Wastewater Plants Try To Gain Power During Energy Crunch. *Water Environment & Technology [Water Environ. Technol.]. Vol. 13, no. 6, pp. 14-20. Jun 2001.*
Rejection Code: EFFLUENT.

235. BLAIS JM, SCHINDLER DW, MUIR, D. CG, KIMPE LE, DONALD DB, and ROSENBERG, B. (1998). Accumulation of persistent organochlorine compounds in mountains of western Canada. *NATURE (LONDON); 395* 585-588.
Rejection Code: SURVEY.

236. Blasco, C., Fernandez, M., Pena, A., Lino, C., Silveira, M. I., Font, G., and Pico, Y. (2003). Assessment of Pesticide Residues in Honey Samples from Portugal and Spain. *Journal of Agricultural and Food Chemistry [J. Agric. Food Chem.]. Vol. 51, no. 27, pp. 8132-8138. Dec 2003.*
Rejection Code: SURVEY.

237. Blasco, Cristina, Fernandez, Monica, Pena, Angelina, Lino, Celeste, Silveira, M Irene, Font, Guillermina, and Pico, Yolanda (2003). Assessment of pesticide residues in honey samples from portugal and Spain. *Journal Of Agricultural And Food Chemistry* 51: 8132-8138.
Rejection Code: NO TOX DATA/FOOD/SURVEY.

238. Blickenstaff, C. C. and Skoog, F. E. (1974). Insecticides Tested Versus Grasshoppers: Correlations Between Results of Ground and Aerial Applications. *J.Econ.Entomol.* 67: 127-129.

; Habitat: T

239. Bluzat, R. and Seuge, J. (1979). Study of the Chronic Toxicity of Two Insecticides Carbaryl and Lindane on the F-1 Generation of Lymnaea stagnalis (Mollusca Gastropoda Pulmonata) 1. *Hydrobiologia* 65: 245-255 (FRE) (ENG ABS).
Rejection Code: NON-ENGLISH.

240. Boberschmidt, L., Saari, S., Sassaman, J., and Skinner, L. (1989). Pesticide background statements. Volume 4. Insecticides.
Rejection Code: REVIEW.

241. Bock, K. W. , Lilienblum, W., Fischer, G., Schirmer, G., and Bock-Hennig, B. S. (1987). Induction and inhibition of conjugating enzymes with emphasis on UDP-glucuronyltransferases. *Pharmacology & Therapeutics [PHARMACOL. THER.]. Vol. 33, no. 1, pp. 23-27. 1987.*
Rejection Code: IN VITRO, METABOLISM.

242. Bock, Karl W., Frohling, Wolfgang, Remmer, Herbert, and Rexer, Bernhard (1973). Effects of phenobarbital and 3-methylcholanthrene on substrate specificity of rat liver microsomal UDP-glucuronyltransferase. *Biochimica et Biophysica Acta (BBA) - Enzymology* 327: 46-56.
Rejection Code: IN VITRO, METABOLISM.

243. Bock, Karl W. and Winne, Dietrich (1975). Glucuronidation of 1-naphthol in the rat intestinal loop. *Biochemical Pharmacology* 24: 859-862.
Rejection Code: METABOLISM.

244. Bock, Karl Walter, Clausbruch, Ulrich C. V., Kaufmann, Rolf, Lilienblum, Werner, Oesch, Franz, Pfeil, Hugo, and Platt, Karl L. (1980). Functional heterogeneity of UDP-glucuronyltransferase in rat tissues. *Biochemical Pharmacology* 29: 495-500.
Rejection Code: IN VITRO, METABOLISM.

245. Bock, Karl Walter, Lilienblum, Werner, and Pfeil, Hugo (1982). Functional heterogeneity of UDP-glucuronosyltransferase activities in C57BL/6 and DBA/2 mice. *Biochemical Pharmacology* 31: 1273-1277.
Rejection Code: IN VITRO, METABOLISM.

246. BOCK KW, MUNZEL PA, ROHRDANZ, E., SCHRENK, D., and ERIKSSON LC (1990). Persistently increased expression of a 3-methylcholanthrene-inducible phenol UDP-glucuronosyltransferase in rat hepatocyte nodules and hepatocellular carcinomas.
Rejection Code: IN VITRO.

247. BOCQUENE, G., BELLANGER, C., CADIOU, Y., and GALGANI, F. (1995). Joint action of combinations of pollutants on the acetylcholinesterase activity of several marine species. *ECOTOXICOLOGY; 4* 266-279.
Rejection Code: MIXTURE.

248. Bocquene, G. and Galgani, F. (1991). Acetylcholinesterase activity in the common prawn (Palaemon serratus) contaminated by carbaryl and phosalone: Choice of a method for detection of effects. *Ecotoxicology and Environmental Safety* 22: 337-344.
Rejection Code: METHODS.

249. BOCZKOWSKI, J., VICAUT, E., and AUBIER, M. (1992). In vivo effects of Escherichia coli endotoxemia on diaphragmatic microcirculation in rats. *J APPL PHYSIOL; 72* 2219-2224.
Rejection Code: BACTERIA.

250. BODE, P., LAKMAKER, O., VAN ALLER P, and BLAAUW, M. (1998). Feasibility studies of neutron activation analysis with kilogram-size samples. *FRESENIUS' JOURNAL OF ANALYTICAL CHEMISTRY; 360* 10-17.
Rejection Code: METHODS.

251. BOEGER, P. and SANDMANN, G. (1998). ACTION OF MODERN HERBICIDES. *RAGHAVENDRA, A. S. (ED.). PHOTOSYNTHESIS: A COMPREHENSIVE TREATISE. XVIII+376P. CAMBRIDGE UNIVERSITY PRESS: NEW YORK, NEW YORK, USA; CAMBRIDGE, ENGLAND, UK. ISBN 0-521-57000-X.; 0 (0). 1998. 337-351.*
Rejection Code: METABOLISM.

252. BOEGER, P. and SANDMANN, G. (1993). Pigment biosynthesis and herbicide interaction. *PHOTOSYNTHETICA (PRAGUE); 28* 481-493.
Rejection Code: IN VITRO.

253. Bogialli, S., Curini, R., Di Corcia, A., Nazzari, M., and Tamburro, D. (2004Feb25). A simple and rapid assay for analyzing residues of carbamate insecticides in vegetables and fruits: hot water extraction followed by liquid chromatography-mass spectrometry. *J Agric Food Chem 2004 Feb 25;52(4):665-71.* 52: 665-71.
Rejection Code: NO SPECIES.

254. BOLES JW and KLAASSEN CD (1998). Effects of molybdate on the sulfation of harmol and alpha-naphthol. *TOXICOLOGY; 127* 121-127.
Rejection Code: METABOLISM.

255. Bolhar-Nordenkampf, H. R. (1975). Changes in Chlorophyll Content in Ontogenetically Different Leaves of Phaseolus Vulgaris Var. Nanus L. After Atrazine Application (Die Veranderungen des Chlorophyllgehaltes in Ontogenetisch verschiedenen Blattern von Phaseolus vulgaris var.nannus l. nach Behandlung mit Atrazin). *Biochem.Physiol.Pflanz.(BPP)* 167: 41-64.
Rejection Code: NON-ENGLISH.

256. Bolinger, Reese A. and Kennish, John M. (1992). The effect of [beta]-naphthoflavone and phenobarbital on UDP-glucuronosyltransferase in King Salmon (Oncorhyncus tshawytscha). *Marine Environmental Research* 34: 227-231.
Rejection Code: METABOLISM, IN VITRO.

257. Bollag, J. M., Sjoblad, R. D., Czaplicki, E. J., and Hoeppel, R. E. (1976). Transformation of 1-naphthol by the culture filtrate of Rhizoctonia praticola. *Soil Biology and Biochemistry* 8: 7-11.
Rejection Code: IN VITRO, METABOLISM.

258. Bollag, Jean M. and Henninger, Nancy M. (1976). Influence of pesticides on denitrification in soil and with an isolated bacterium. *Journal of Environmental Quality* 5: 15-18.
Rejection Code: BACTERIA.

259. BOLTON JL (1996). QUINOIDS FROM CYTOTOXIC CATECHOLS ROLE IN ESTROGEN METABOLISM. *212TH AMERICAN CHEMICAL SOCIETY NATIONAL MEETING, ORLANDO, FLORIDA, USA, AUGUST 25-29, 1996. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 212* TOXI 37.
Rejection Code: METABOLISM.

260. Bondarenko, S. and Gan, J. *. (2004). Degradation and sorption of selected organophosphate and carbamate insecticides in urban stream sediments. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 23, no. 8, pp. 1809-1814. Aug 2004.*
Rejection Code: FATE.

261. Bondarenko, S. and Gan, J. *. (2004). Degradation and sorption of selected organophosphate and carbamate insecticides in urban stream sediments. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 23, no. 8, pp. 1809-1814. Aug 2004.*
Rejection Code: FATE.

262. Bondarenko, S., Gan, J., Haver, D. L., and Kabashima, J. N. (2004). Persistence of selected organophosphate and carbamate insecticides in waters from a coastal watershed. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 23, no. 11, pp. 2649-2654. Nov 2004.*
Rejection Code: FATE.

263. Bondarenko, S., Gan, J., Haver, D. L., and Kabashima, J. N. (2004). Persistence of selected organophosphate and carbamate insecticides in waters from a coastal watershed.

Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 23, no. 11, pp. 2649-2654. Nov 2004.
Rejection Code: FATE.

264. BORDAS AC, BRADY MS, SIEWIERSKI, M., and KATZ SE (1997). In vitro enhancement of antibiotic resistance development-interaction of residue levels of pesticides and antibiotics. *JOURNAL OF FOOD PROTECTION; 60* 531-536.
Rejection Code: IN VITRO.

265. BORDAS AC, BRADY MS, SIEWIERSKI, M., and KATZ SE (1997). In vitro enhancement of antibiotic resistance development-interaction of residue levels of pesticides and antibiotics. *JOURNAL OF FOOD PROTECTION; 60* 531-536.
Rejection Code: IN VITRO.

266. Bordier, Clement and Ryter, Philippe (1986). A hand-held photometer for quantitative dot-immunobinding assays. *Analytical Biochemistry* 152: 113-118.
Rejection Code: METHODS.

267. Borraccino, Remi, Kharoune, Mourad, Giot, Renaud, Agathos, Spiros N., Nyns, Edmond-Jacques, Naveau, Henry P., and Pauss, Andre (2001). Abiotic transformation of catechol and 1-naphthol in aqueous solution--Influence of environmental factors. *Water Research* 35: 3729-3737.
Rejection Code: NO TOX DATA.

268. BOTSFORD JL , RIVERA, J., NAVAREZ, J., RILEY, R., WRIGHT, T., and BAKER, R. (1997). ASSAY FOR TOXIC CHEMICALS USING BACTERIA. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 59* 1000-1009.
Rejection Code: BACTERIA.

269. Bowen, I. D. and Lloyd, D. C. (1971). A technique for the electron cytochemical localization of the site of carbaryl metabolism. *Journal of Invertebrate Pathology* 18: 183-190.
Rejection Code: METHODS.

270. Bowman, J. S. and Barry, D. W. (1988). Control of Lepidopterous Larvae on Late Season Sweet Corn with Foliar Sprays, 1987. *Insectic.Acaric.Tests* 13 : 113-114 (No. 37E).
Rejection Code: NO DURATION.

271. BOYD CE and DHENDUP, T. (1995). Quality of Potential Effluents from the Hypolimnia of Watershed Ponds Used in Aquaculture. *PROGRESSIVE FISH-CULTURIST; 57* 59-63.
Rejection Code: EFFLUENT, SURVEY.

272. Brahmaprakash, G. P. and Sethunathan, N. (1985). Metabolism of carbaryl and carbofuran in soil planted to rice. *Agriculture, Ecosystems & Environment* 13: 33-42.
Rejection Code: FATE.

273. BRAMAN SK, OETTING RD, and FLORKOWSKI, W. (1997). Assessment of pesticide use by commercial landscape maintenance and lawn care firms in Georgia. *JOURNAL OF ENTOMOLOGICAL SCIENCE; 32* 403-411.
Rejection Code: NO TOX DATA.

274. BRAMAN SK, OETTING RD, and FLORKOWSKI, W. (1997). Assessment of pesticide use by commercial landscape maintenance and lawn care firms in Georgia. *JOURNAL OF ENTOMOLOGICAL SCIENCE; 32* 403-411.
Rejection Code: SURVEY.

275. BRAMAN SK, OETTING RD, and FLORKOWSKI, W. (1997). Assessment of pesticide use by commercial landscape maintenance and lawn care firms in Georgia. *JOURNAL OF ENTOMOLOGICAL SCIENCE; 32* 403-411.
Rejection Code: SURVEY.

276. BRAMAN SK, OETTING RD, and FLORKOWSKI, W. (1997). Assessment of pesticide use by commercial landscape maintenance and lawn care firms in Georgia. *JOURNAL OF ENTOMOLOGICAL SCIENCE; 32* 403-411.
Rejection Code: SURVEY.

277. Brandon, P. C. and Elgersma, O. (1973). Effects of alpha-Benzyl-alpha-Bromo-Malodinitrile on the Primary Electron Acceptor of Photosystem II in Spinach Chloroplasts. *Biochim.Biophys.Acta* 292: 753-762.
Rejection Code: IN VITRO.

278. BRANN MR and JELSEMA, C. (1985). DOPAMINE D-2 RECEPTORS LOCATED ON PHOTORECEPTOR MEMBRANES COUPLE TO A PERTUSSIS AND CHOLERA-TOXIN-SENSITIVE GTP-BINDING PROTEIN. *15TH ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, PART 2, DALLAS, TEX., USA, OCT. 20-25, 1985. SOC NEUROSCI ABSTR; 11* 891.
Rejection Code: IN VITRO.

279. Brattsten, L. B., Holyoke, C. W. Jr., Leeper, J. R., and Raffa, K. F. (1986). Insecticide Resistance: Challenge to Pest Management and Basic Research. *Science* 231: 1255-1260.
Rejection Code: REVIEW.

280. Brattsten, L. B., Holyoke, C. W. Jr., Leeper, J. R., and Raffa, K. F. (1986). Insecticide Resistance: Challenge to Pest Management and Basic Research. *Science* 231: 1255-1260.
Rejection Code: REVIEW.

281. Braun, J. E., Mehnert, Th., and Neusser, H. J. (2000). Binding energy of van der Waals- and hydrogen-bonded clusters by threshold ionization techniques. *International Journal of Mass Spectrometry* 203: 1-18.
Rejection Code: METHODS.

282. Bredereck, K. and Karaca, S. (1979). Beeinflussung des O/P-verhaltnisses bei azokupplungen mit 1-naphthol durch grenzflachenreaktion. *Tetrahedron Letters* 20: 3711-3712.
Rejection Code: METHODS.

283. BREDHOLT, H. and EIMHJELLEN, K. (1999). Induction and development of the oil emulsifying system in an alkane oxidizing Rhodococcus species. *CANADIAN JOURNAL OF MICROBIOLOGY; 45* 700-708.
Rejection Code: BACTERIA.

284. BREMLE, G. and LARSSON, P. (1997). Long-term variations of PCB in the water of a river in relation to precipitation and internal sources. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 31* 3232-3237.
Rejection Code: SURVEY.

285. BREMLE, G. and LARSSON, P. (1998). PCB in Eman River Ecosystem. *AMBIO; 27* 384-392.
Rejection Code: SURVEY.

286. BREMLE, G. and LARSSON, P. (1998). PCB in the air during landfilling of a contaminated lake sediment. *ATMOSPHERIC ENVIRONMENT; 32* 1011-1019.
Rejection Code: SURVEY.

287. BREMLE, G., OKLA, L., and LARSSON, P. (1998). PCB in water and sediment of a lake after remediation of contaminated sediment. *AMBIO; 27* 398-403.
Rejection Code: SURVEY.

288. BRENNAN JF (1997). EXOGENOUS CALCIUM EFFECTS ON SALICYLATE INDUCED AUDITORY DEFICITS IN RATS. *27TH ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, NEW ORLEANS, LOUISIANA, USA, OCTOBER 25-30, 1997. SOCIETY FOR NEUROSCIENCE ABSTRACTS; 23* 2068.
Rejection Code: ABSTRACT.

289. Bressa, G., Bronzi, P., Romano, P., Carmignato, F., Dorini, M., and Sisti, E. (1996). Chlorinated Pesticides and PCB Content in Thermal Aquaculture of Sturgeon (Acipenser naccarii). *Food Addit.Contam.* 13: 843-850.
Rejection Code: NO CONC.

290. Bridges, C., Little, E., Gardiner, D., Petty, J., and Huckins, J. (2004). Assessing the Toxicity and Teratogenicity of Pond Water in North-Central Minnesota to Amphibians. *Environ.Sci.Pollut.Res.* 11: 233-239.
Rejection Code: EFFLUENT.

291. Bridges, T. S. and Farrar, J. D. (1997). The Influence of Food Ration on Sediment Toxicity in Neanthes arenaceodentata (Annelida: Polychaeta). *Environ.Toxicol.Chem.* 16: 1659-1665.
Rejection Code: NO CONC/SEDIMENT.

292. Bridges, T. S. and Farrar, J. D. (1997). The Influence of Worm Age, Duration of Exposure and Endpoint Selection on Bioassay Sensitivity for Neanthes areanaceodentata (Annelida: Polychaeta). *Environ.Toxicol.Chem.* 16: 1650-1658.
Rejection Code: NO TOXICANT/SEDIMENT CONC.

293. BROMILOW RH and CHAMBERLAIN, K. (1991). PATHWAYS AND MECHANISMS OF TRANSPORT OF HERBICIDES IN PLANTS. *KIRKWOOD, R. C. (ED.). TOPICS IN APPLIED CHEMISTRY: TARGET SITES FOR HERBICIDE ACTION. XV+339P. PLENUM PRESS: NEW YORK, NEW YORK, USA; LONDON, ENGLAND, UK. ILLUS. ISBN 0-306-43846-1.; 0 (0). 1991. 245-284.*
Rejection Code: FATE.

294. Brooks, K. M. (1993). Impacts on Benthic Invertebrate Communities Caused by Aerial Application of Carbaryl to Control Burrowing Shrimp in Willapa Bay, WA. *J.Shellfish Res.* 12: 146.
Rejection Code: ABSTRACT.

295. Brooksbank, Robert (2000). SLAM the door on measles. *Molecular Medicine Today* 6: 414.
Rejection Code: HUMAN HEALTH.

296. Broschewitz, B., Rober, K. C., and Amelung, D. (2000). Simulation of Damages on Winter Wheat Following Improper Usage of Pesticides (Simulation von Schadbildern an Winterweizen nach Unsachgemasser Applikation von Pflanzenschutzmitteln). *Z.Pflanzenkr.Pflanzenschutz* 17: 315-317 (GER) (ENG ABS).
Rejection Code: NON-ENGLISH.

297. BROWN HA, MINOTT DA, INGRAM CW, and WILLIAMS, L. AD (1998). Biological activities of the extracts and constituents of pimento, Pimenta dioica L. against the southern cattle tick, Boophilus microplus. *INSECT SCIENCE AND ITS APPLICATION; 18* 9-16.

Rejection Code: BIOLOGICAL TOXICANT.

298. Brown, S. B., Adams, B. A., Cyr, D. G., and Eales, J. G. (2004). Contaminant Effects on the Teleost Fish Thyroid. *Environ.Toxicol.Chem.* 23: 1680-1701.
Rejection Code: REVIEW.

299. Bruce, E., Korpalski, S., Johnson, D., Klonne, D., Nagel, W., Holden, L., and Lange, B. (2006). Effect of dislodging techniques on foliar residue determination for agricultural crops. *Archives of Environmental Contamination and Toxicology, 50 (1) pp. 138-143, 2006*.
Rejection Code: METHODS.

300. Brucker-Davis, F. (1998). Effects of Environmental Synthetic Chemicals on Thyroid Function. *Thyroid* 8: 827-856.
Rejection Code: REVIEW.

301. Brugger, J. E. (1973). Cam - 1: Using Enzymes to Detect Insecticides. *U.S.EPA, News of Environ.Research, Edison Water Quality* 4 p.
Rejection Code: METHODS.

302. Bruneau, A. H., Watkins, J. E., and Brandenburg, R. L. (1992). Integrated Pest Management. *In: D.V.Waddington, R.N.Carrow, and R.C.Shearman (Eds.), Agronomy No.32, Turfgrass, Am.Soc.of Agron.Inc., Crop Sci.Soc.of Am., Soil Sci.Soc.of Am.Inc., Madison, WI* 501-534.
Rejection Code: REVIEW.

303. BRUSSOL, C. , DUANE, M., CARLIER, P., and KOTZIAS, D. (1999). Photo-induced OH reactions of naphthalene and its oxidation products on SiO2. *ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH INTERNATIONAL; 6* 138-140.
Rejection Code: FATE.

304. Buchanan, D. V. (1970). Effects of the Insecticide Sevin on the Dungeness Crab, Cancer magister Dana. *Ph.D.Thesis, Oregon State University, Corvallis, OR* 53 p.
Rejection Code: PUBL AS.

305. BUCHIN, S., DELAGUE, V., DUBOZ, G., BERDAGUE JL, BEUVIER, E., POCHET, S., and GRAPPIN, R. (1998). Influence of pasteurization and fat composition of milk on the volatile compounds and flavor characteristic of a semi-hard cheese. *JOURNAL OF DAIRY SCIENCE; 81* 3097-3108.
Rejection Code: HUMAN HEALTH.

306. Buck, Nelson L., Vaughan, David H., and Hughes, Harold A. (1988). A general-purpose simulation program for agricultural operations. *Computers and Electronics in Agriculture* 3: 29-44.
Rejection Code: MODELING.

307. Buckpitt, Alan R., Bahnson, Linda S., and Franklin, Ronald B. (1985). Evidence that 1-naphthol is not an obligate intermediate in the covalent binding and the pulmonary bronchiolar necrosis by naphthalene.   *Biochemical and Biophysical Research Communications* 126: 1097-1103.
Rejection Code: IN VITRO, FATE.

308. Bucur, Bogdan, Fournier, Didier, Danet, Andrei, and Marty, Jean-Louis (2006). Biosensors based on highly sensitive acetylcholinesterases for enhanced carbamate insecticides detection. *Analytica Chimica Acta* 562: 115-121.
Rejection Code: METHODS.

309. BUFFINTON GD, HUNT NH, COWDEN WB, and CLARK IA (1988). Detection of short-chain carbonyl products of lipid peroxidation from malaria-parasite (Plasmodium vinckei) infected red blood cells exposed to oxidative stress. *BIOCHEM J; 249* 63-68.
Rejection Code: IN VITRO.

310. BUNCE NJ, LIU, L., ZHU, J., and LANE DA (1997). Reaction of naphthalene and its derivatives with hydroxyl radicals in the gas phase. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 31* 2252-2259.
Rejection Code: NO TOX DATA.

311. Burgos, William D., Berry, Duane F., Bhandari, Alok, and Novak, John T. (1999). Impact of soil-chemical interactions on the bioavailability of naphthalene and 1-naphthol. *Water Research* 33: 3789-3795.
Rejection Code: FATE.

312. Burnett, C. M. and Goldenthal, E. I. (1988). Multigeneration Reproduction and Carcinogenicity Studies in Sprague-Dawley Rats Exposed Topically to Oxidative Hair-Colouring Formulations Containing p-Phenylenediamine and Other Aromatic Amines. *Food Chem.Toxicol.* 26: 467-474.
Rejection Code: MIXTURE.

313. Burns, D. S., Kienzle, M. A., and Ferris, D. C. (1996). Investigation of the potential for long-range transport of mercury to the Everglades using the Organic Chemistry Integrated Dispersion (ORCHID) model.
Rejection Code: MODELING.

314. BURNS KA and CODI, S. (1998). Contrasting impacts of localised versus catastrophic oil spills in mangrove sediments. *MANGROVES AND SALT MARSHES; 2* 63-74.
Rejection Code: INCIDENT.

315. Buscarons, F. and Pareira, M. (1967). The detection of oxygen in organic compounds with potassium tetrathiocyanato-cobaltate(II). *Analytica Chimica Acta* 37: 490-496.
Rejection Code: METHODS.

316. Bushway, R. J. (1981). High-performance liquid chromatographic determination of carbaryl and 1-naphthol at residue levels in various water sources by direct injection and trace enrichment. *Journal of Chromatography A* 211: 135-143.
Rejection Code: CHEM METHODS.

317. BUSHWAY RJ, SAVAGE SA, and FERGUSON BS (1987). INHIBITION OF ACETYL CHOLINESTERASE BY SOLANACEOUS GLYCOALKALOIDS AND ALKALOIDS. *AM POTATO J; 64* 409-414.
Rejection Code: NO TOX DATA.

318. Butler, G. L., Deason, T. R., and O'Kelley, J. C. (1975). The Effect of Atrazine, 2,4-D, Methoxychlor, Carbaryl and Diazinon on the Growth of Planktonic Algae. *Br.Phycol.J.* 10: 371-376.

; Habitat: A; Effect Codes: POP

319. Butler, P. A. (1963). Commercial Fisheries Investigations. *Circ.No.167, Fish Wildl.Serv., Washington, D.C.* 11-25.

; Habitat: A; Effect Codes: NOC,GRO,MOR,BEH,PHY

320. BUTLER, T. (1988). COMPOSITION OF PARTICLES DRY DEPOSITED TO AN INERT SURFACE AT ITHACA NEW YORK USA. *ATMOS ENVIRON; 22* 895-900.
Rejection Code: SURVEY.

321. BYERS RE, BARDEN JA, and CARBAUGH DH (90). **<04 Article Title>.** *J AM SOC HORTIC SCI; 115* <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

322. Caballo-Lopez, A and Luque de Castro, M D (2003). Continuous ultrasound-assisted extraction coupled to on line filtration-solid-phase extraction-column liquid chromatography--post column derivatisation-fluorescence detection for the determination of N-methylcarbamates in soil and food. *Journal Of Chromatography. A* 998: 51-59.
Rejection Code: METHODS.

323. CABRITA, A. MS, CARVALHO MT, RAFAEL, A., CARMO SILVA J, and MATOS-BEJA ML (1999). MORPHOLOGIC EVALUATION OF THE BOWEL IN EXPERIMENTAL DRINKING OF AN EXTRACT OF WINE PLUS 1-NAPHTYL N-METHYLCARBAMATEYMEETING ABSTRACT RAT BOWEL 1-NAPHTYL N-METHYLCARBAMATE CARCINOGEN RED WINE ABERRANT CRYPTS DIGESTIVE SYSTEM FOODS TUMOR BIOLOGY DIGESTIVE SYSTEM ALCOHOLIC BEVERAGE PRENEOPLASTIC LESIONS =63252 =64175. *ANNUAL MEETING OF THE PROFESSIONAL RESEARCH SCIENTISTS ON EXPERIMENTAL BIOLOGY 99, WASHINGTON, D.C., USA, APRIL 17-21, 1999.YFASEB JOURNAL; 13* A919.
Rejection Code: ABSTRACT.

324. Cairns, T., Siegmund, E. G., and Doose, G. M. (1983). Potential identification problems with carbaryl. *Bulletin of Environmental Contamination and Toxicology [BULL. ENVIRON. CONTAM. TOXICOL.]. Vol. 30, no. 1, pp. 93-98. 1983.*
Rejection Code: METHODS.

325. Cajaraville, M. P., Marigomez, J. A., and Angulo, E. (1989). Stability of 1-Naphthol in Sea Water Solutions and Its Uptake by the Marine Prosobranch Gastropod Littorina littorea (L.). *Bull.Environ.Contam.Toxicol.* 42: 799-806.
Rejection Code: NO SPECIES.

326. Calabrese, E. J. and Geiger, C. P. (1986). Low erythrocyte glucose-6-phosphate dehydrogenase (G-6-PD) activity and susceptibility to carbaryl-induced methemoglobin formation and glutathione depletion. *Bulletin of Environmental Contamination and Toxicology [BULL. ENVIRON. CONTAM. TOXICOL.]. Vol. 36, no. 4, pp. 506-509. 1986.*
Rejection Code: IN VITRO.

327. Calamari, D. and Delos Reyes, M. (1997). Rapid appraisal of environmental risk from pesticide pollution in Batangas Bay and Xiamen waters. *Tropical coasts. Quezon City [Trop. Coasts]. Vol. 4, no. 2, pp. 13-15. 1997.*
Rejection Code: SURVEY.

328. Callahan, Clarence M., Conard Fernelius, W., and Block, B. P. (1957). Studies on coordination compounds : Formation constants of some metal salts of the nitrosonaphthols. *Analytica Chimica Acta* 16: 101-108.
Rejection Code: METHODS.

329. Calvinho, P. J., Capela-Silva, F., Franca, M. B., Rafael, A., Cabrita, A. M. S., and Beja, M. L. M. (1999). Liver Morphology in Experimental Administration of 1-Naphthyl N-Methylcarbamate. *Annu.Meet.of the Professional Res.Sci.on Experimental Biology, No.99, Apr.17-21, 1999, Washington, D.C., FASEB J.* 13: A737.

Rejection Code: ABSTRACT.

330. CAMEL, V. and BERMOND, A. (1998). The use of ozone and associated oxidation processes in drinking water treatment. *WATER RESEARCH; 32* 3208-3222.
Rejection Code: EFFLUENT.

331. CAMPBELL AG, ZHANG, X., and TRIPEPI RR (1995). Composting and evaluating a pulp and paper sludge for use as a soil amendment/mulch. *COMPOST SCIENCE & UTILIZATION; 3* 84-95.
Rejection Code: EFFLUENT.

332. Campbell, B. C. (1988). The Effect of Plant Growth Regulators and Herbicides on Host Plant Quality to Insects. *In: E.A.Heinrichs, Plant Stress-Insect Interactions, John Wiley and Sons, NY* 205-247.
Rejection Code: REVIEW.

333. CANTOR KP, BLAIR, A., BROWN LM, BURMEISTER LF, and EVERETT, G. (1993). PESTICIDES AND OTHER AGRICULTURAL RISK FACTORS FOR NON-HODGKIN'S LYMPHOMA AMONG MEN IN IOWA AND MINNESOTA CANCER RES. 52 2447-2455 1992. *CANCER RES; 53* 2421.
Rejection Code: NO TOX DATA.

334. Carey, A. E., Wiersma, G. B., Tai, H., and Mitchell, W. G. (1973). Organochlorine Pesticide Residues in Soils and Crops of the Corn Belt Region, United States - 1970. *Pestic.Monit.J.* 6: 369-376.
Rejection Code: SURVEY.

335. CARLTON WW (1985). THIRD SYMPOSIUM ON PROPHYLAXIS AND TREATMENT OF CHEMICAL POISONING STOCKHOLM SWEDEN APRIL 22-24 1985. *FUNDAM APPL TOXICOL; 5 (6 PART 2). 1985 (RECD. 1986). S1-S279.*
Rejection Code: HUMAN HEALTH.

336. Carneiro, M. A. C., Siqueira, J. O., and Maria de Souza Moreira, F. (2001). Establishment of Herbaceous Plants in Heavy Metal Contaminated Soils Inoculated with Arbuscular Mycorrhizal Fungi (Estabelecimento de Plantas Herbaceas em solo com Contaminacao de Metais Pesados e Inoculacao de Fungos Micorrizicos Arbusculares). *Pesq.Agropecu.Bras.* 36: 1443-1452 (POR) (ENG ABS).
Rejection Code: MIXTURE/NON-ENGLISH.

337. Caro, Isabelle, Boulenc, Xavier, Rousset, Monique, Meunier, Viviane, Bourrie, Martine, Julian, Bernand, Joyeux, Henri, Roques, Claude, Berger, Yves, Zweibaum, Alain, and Fabre, Gerard (1995). Characterisation of a newly isolated Caco-2 clone (TC-7), as a model of transport processes and biotransformation of drugs. *International Journal of Pharmaceutics* 116: 147-158.
Rejection Code: IN VITRO, METABOLISM.

338. Carr, B. A. and Franklin, M. R. *. (1998). Drug-metabolizing enzyme induction by 2,2'-dipyridyl, 1,7-phenanthroline, 7,8-benzoquinoline and oltipraz in mouse. *Xenobiotica [Xenobiotica]. Vol. 28, no. 10, pp. 949-956. Oct 1998.*
Rejection Code: METABOLISM.

339. CARRICK JB, MORRIS DD, and MOORE JN (1993). Administration of a receptor antagonist for platelet-activating factor during equine endotoxaemia. *EQUINE VET J; 25* 152-157.
Rejection Code: DRUG.

340. Carrier, Marie-Noelle, Scheer, Corinne, Gouvine, Pascal, Bartoli, Jean-Francois, Battioni, Pierrette, and Mansuy, Daniel (1990). Biomimetic hydroxylation of aromatic compounds: Hydrogen peroxide and manganese-polyhalogenated porphyrins as a particularly good system. *Tetrahedron Letters* 31: 6645-6648.
Rejection Code: METHODS.

341. Casado, S., Alonso, M., Herradon, B., Tarazona, J. V., and Navas, J. M. (2006). Activation of the Aryl Hydrocarbon Receptor by Carbaryl: Computational Evidence of the Ability of Carbaryl to Assume a Planar Conformation. *Environ.Toxicol.Chem.* 25: 3141-3147.
Rejection Code: IN VITRO.

342. Casale, G. P., Bavari, S., and Connolly, J. J. (1989). INHIBITION OF HUMAN SERUM COMPLEMENT ACTIVITY BY DFP AND SELECTED ANTICHOLINESTERASE INSECTICIDES. *Fundam Appl Toxicol* 12 : 460-468.
Rejection Code: HUMAN HEALTH.

343. Casale, G. P., Vennerstrom, J. L., Bavari, S., and Wang, T.-L. (1993). Inhibition of Interleukin 2 Driven Proliferation of Mouse CTLL2 Cells, by Selected Carbamate and Organophosphate Insecticides and Congeners of Carbaryl. *Immunopharmacol.Immunotoxicol.* 15: 199-215 .
Rejection Code: IN VITRO.

344. Casale, G. P., Vennerstrom, J. L., Bavari, S., and Wang Tian-Lan (1993). Inhibition of interleukin 2 driven proliferation of mouse CTLL2 cells, by selected carbamate and organophosphate insecticides and congeners of carbaryl. *Immunopharmacology and Immunotoxicology [IMMUNOPHARMACOL. IMMUNOTOXICOL.]. Vol. 15, no. 2-3, pp. 199-215. 1993.*
Rejection Code: IN VITRO.

345. Casale, G. P., Vennerstrom, J. L., Bavari, S., and Wang Tian-Lan (1993). Inhibition of interleukin 2 driven proliferation of mouse CTLL2 cells, by selected carbamate and organophosphate insecticides and congeners of carbaryl. *Immunopharmacology and Immunotoxicology [IMMUNOPHARMACOL. IMMUNOTOXICOL.]. Vol. 15, no. 2-3, pp. 199-215. 1993.*
Rejection Code: IN VITRO.

346. CASELLAS, M., GRIFOLL, M., BAYONA JM, and SOLANAS AM (1997). New metabolites in the degradation of fluorene by Arthrobacter sp. strain F101. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 819-826.
Rejection Code: FATE.

347. Caselli, Federico, Gastaldi, Laura, Gambi, Naimj, and Fabbri, Elena (2006). In vitro characterization of cholinesterases in the earthworm Eisenia andrei. *Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology* 143: 416-421.
Rejection Code: IN VITRO.

348. Caskey, A. L., Antepenko, R. J., and Swan, J. C. L. (1975). Reagents for determinations of trace impurities in water, phase 2.
Rejection Code: METHODS.

349. Cassanelli, Stefano, Reyes, Maritza, Rault, Magali, Carlo Manicardi, Gian, and Sauphanor, Benoit (2006). Acetylcholinesterase mutation in an insecticide-resistant population of the codling moth Cydia pomonella (L.). *Insect Biochemistry and Molecular Biology* 36: 642-653.
Rejection Code: NO TOX DATA.

350. Castaneda, P., Mata, R., and Lotina-Hennsen, B. (1998). Effect of Encecalin, Euparin and

Demethylencecalin on Thylakoid Electron Transport and Photophosphorylation in Isolated Spinach Chloroplasts. *J.Sci.Food Agric.* 78: 102-108.
Rejection Code: IN VITRO.

351. CAVANAGH JE , NICHOLS PD, FRANZMANN PD, and MCMEEKIN TA (1998). Hydrocarbon degradation by Antarctic coastal bacteria. *ANTARCTIC SCIENCE; 10* 386-397.
Rejection Code: BACTERIA.

352. CENCI, G. and CALDINI, G. (1997). Catechol dioxygenase expression in a Pseudomonas fluorescens strain exposed to different aromatic compounds. *APPLIED MICROBIOLOGY AND BIOTECHNOLOGY; 47* 306-308.
Rejection Code: BACTERIA.

353. Cerniglia, Carl E. and Gibson, David T. (1978). Metabolism of naphthalene by cell extracts of Cunninghamella elegans. *Archives of Biochemistry and Biophysics* 186: 121-127.
Rejection Code: METABOLISM.

354. Cerniglia, Carl E., Gibson, David T., and Baalen, Chase Van (1979). Algal oxidation of aromatic hydrocarbons: Formation of 1-naphthol from naphthalene by Agmenellum quadruplicatum, strain PR-6. *Biochemical and Biophysical Research Communications* 88: 50-58.
Rejection Code: NO TOX DATA.

355. CHA DK, SARR, D., CHIU PC, and KIM DW (1998). HAZARDOUS WASTE TREATMENT TECHNOLOGIES. *WATER ENVIRONMENT RESEARCH; 70* 705-720.
Rejection Code: EFFLUENT.

356. CHAMEL, A. (1986). FOLIAR ABSORPTION OF HERBICIDES STUDY OF THE CUTICULAR PENETRATION USING ISOLATED CUTICLES . *PHYSIOL VEG; 24* 491-508.
Rejection Code: IN VITRO.

357. Chan, W. F. and Larson, R. A. (1995). Product of Ozonolysis of Aromatic Compounds in Aqueous Solution Containing Nitrite Ion. *Ozone Sci.Eng.* 17: 627-635.
Rejection Code: FATE.

358. Chandran, G. J., Harilal, K. S., and Sahai, S. (1991). A method for the estimation of safe experimental concentration for intermediate toxicity test. *Journal for Nature Conservation [J. NAT. CONSERV.]. Vol. 3, no. 2, pp. 211-217. 1991.*
Rejection Code: METHODS.

359. CHANG, A. and HARTMANN, T. (1998). Solubilization and characterization of a senecionine N-oxygenase from Crotalaria scassellatii seedlings. *PHYTOCHEMISTRY (OXFORD); 49* 1859-1866.
Rejection Code: METHODS.

360. Chang S. K. , Brooks J. D., Monteiroriviere N. A., and Riviere J. E. (1995). Enhancing or Blocking Effect of Fenvalerate on the Subsequent Percutaneous Absorption of Pesticides in Vitro. *Pesticide Biochemistry and Physiology* 51: 214-219.
Rejection Code: IN VITRO.

361. Chang, S. K., Williams, P. L., Dauterman, W. C., and Riviere, J. E. *. (1994). Percutaneous absorption, dermatopharmacokinetics and related bio-transformation studies of carbaryl, lindane, malathion, and parathion in isolated perfused porcine skin. *Toxicology. Vol. 91,*

no. 3, pp. 269-280. 1994.
Rejection Code: IN VITRO.

362. CHAO J-H and CHUNG, C. (1992). Radionuclide monitoring in environmental water body using an in situ gamma probe. *APPL RADIAT ISOT; 43* 475-480.
Rejection Code: SURVEY.

363. CHAPALAMADUGU, S. and CHAUDHRY GR (1991). COMPLETE DEGRADATION OF CARBARYL BY A RECOMBINANT PSEUDOMONAS-SP 50605. *91ST GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, DALLAS, TEXAS, USA, MAY 5-9, 1991. ABSTR GEN MEET AM SOC MICROBIOL; 91* 217.
Rejection Code: FATE.

364. CHAPALAMADUGU, S. and CHAUDHRY GR (1992). PARTIAL PURIFICATION OF A MEMBRANE-BOUND CARBARYL HYDROLASE IN PSEUDOMONAS-AERUGINOSA 50581. *92ND GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS, LOUISIANA, USA, MAY 26-30, 1992. ABSTR GEN MEET AM SOC MICROBIOL; 92* 262.
Rejection Code: BACTERIA.

365. Chapman, R A and Cole, C M (1982). Observations on the influence of water and soil pH on the persistence of insecticides. *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 17: 487-504.
Rejection Code: FATE.

366. Chaput, D. (1988May-Jun). Simplified multiresidue method for liquid chromatographic determination of N-methyl carbamate insecticides in fruits and vegetables. *J Assoc Off Anal Chem 1988 May-Jun;71(3):542-6.* 71: 542-6.
Rejection Code: CHEM METHODS.

367. Charalambous, J., Frazer, M. J., and Sims, R. (1976). Complexes of iron(III) and iron(II) with o-nitrosophenols (mono-oximes of ortho-benzoquinones). *Inorganica Chimica Acta* 18: 247-251.
Rejection Code: NO TOX DATA.

368. Charalambous, J., Maple, P., Nassef, N. A., and Taylor, F. B. (1978). Complexes of nickel(II) with 1-nitroso-2-naphthol and 2-nitroso-1-naphthol (Monooximes of 1,2-naphthoquinones). *Inorganica Chimica Acta* 26: 107-111.
Rejection Code: NO TOX DATA.

369. Charalambous, J., Soobramanien, G., Betts, A., and Bailey, J. (1982). Complexes of cobalt(III) with 2-nitroso-1-naphthol and 1-nitroso-2-naphthol. (Monooximes of 1,2-naphthoquinone). *Inorganica Chimica Acta* 60: 151-155.
Rejection Code: NO TOX DATA.

370. CHARLWOOD BV and BROWN JT (1988). THE ACCUMULATION OF MONO AND SESQUITERPENES IN PLANT CELL CULTURES. *BIOCHEM SOC TRANS; 16* 61-63.
Rejection Code: IN VITRO.

371. Chary, M. S., Ramasubbaiah, K., and Bhushan, V. S. (1990). Effect of Certain Modern Insecticides on the Yield of Groundnut. *Indian J.Entomol.* 52: 478-481.

; Habitat: T; Effect Codes: POP

372. CHATTERJEE SN (1997). Professor Shambu Nath De Memorial Lecture 1996: The nitrofurans: Molecular mechanism of antimicrobial action, genotoxicity and carcinogenic potential. *PROCEEDINGS OF THE INDIAN NATIONAL SCIENCE ACADEMY PART B BIOLOGICAL SCIENCES; 63* 477-500.
Rejection Code: IN VITRO.

373. Chaudhry, G Rasul, Mateen, A, Kaskar, B, Bloda, M , and Riazuddin, Sheikh (2002). Purification and biochemical characterization of the carbamate hydrolase from Pseudomonas sp. 50432. *Biotechnology And Applied Biochemistry* 36: 63-70.
Rejection Code: BACTERIA/METHODS.

374. Chen, P. S., Lin, Y. N., and Chung, C. L. (1971). Laboratory Studies on the Susceptibility of Mosquito-Eating Fish, Lebistes reticulatus and the Larvae of Culex pipiens fatigans to Insecticides. *Tai-Wan I.Hsueh Hui Tsa Chih* 70: 28-35.

; Habitat: A; Effect Codes: MOR

375. CHEN, S., INSKEEP WP, WILLIAMS SA, and CALLIS PR (1992). Complexation of 1-naphthol by humic and fulvic acids. *SOIL SCI SOC AM J; 56* 67-73.
Rejection Code: FATE.

376. Chen, Y. L. and Chen, S. R. (2004). A new synonym of Xanthium sibiricum Patrin ex Widder. *Acta Phytotaxonomica Sinica, 42 (2) pp. 191-192, 2004.*
Rejection Code: NO TOX DATA.

377. CHENG HH (1990). SSSA SOIL SCIENCE SOCIETY OF AMERICA BOOK SERIES NO. 2. PESTICIDES IN THE SOIL ENVIRONMENT PROCESSES IMPACTS AND MODELING. *CHENG, H. H. (ED.). SSSA (SOIL SCIENCE SOCIETY OF AMERICA) BOOK SERIES, NO. 2. PESTICIDES IN THE SOIL ENVIRONMENT: PROCESSES, IMPACTS, AND MODELING. XXIII+530P. SOIL SCIENCE SOCIETY OF AMERICA, INC.: MADISON, WISCONSIN, USA. ILLUS. ISBN 0-89118-791-X.; 0 (0). 1990. XXIII+530P.*
Rejection Code: MODELING.

378. Cheng Senping, Chen Jianfeng, Qiu Yang, Hong, X. i. a., Xia Yankai, Feng Ting, Liu Jiayin, Song, L. i. n., Zhang Zhengdong, and Wang Xinru (2006). Carbaryl inhibits basal and FSH-induced progesterone biosynthesis of primary human granulosa-lutein cells. *Toxicology [Toxicology]. Vol. 221, no. 1, pp. 37-45. 3 Apr 2006.*
Rejection Code: HUMAN HEALTH.

379. Cheniclet, Catherine, Rafia, Fatima, Saint-Guily, Agnes, Verna, Alain, and Carde, Jean-Pierre (1992). Localization of the enzyme geranylgeranylpyrophosphate synthase inCapsicum fruits by immunogold cytochemistry after conventional chemical fixation or quick-freezing followed by freeze-substitution. Labelling evolution during fruit ripening. *Biology of the Cell* 75: 145-154.
Rejection Code: IN VITRO.

380. Chern, W. H. and Dauterman, W. C. (1983). Studies on the metabolism and excretion of 1-naphthol, 1-naphthyl-[beta]--glucuronide, and 1-naphthyl-[beta]--glucoside in the mouse. *Toxicology and Applied Pharmacology* 67: 303-309.
Rejection Code: METABOLISM.

381. Chern, W. H. and Dauterman, W. C. (1983). Studies on the metabolism and excretion of 1-naphthol, 1-naphthyl- beta -glucuronide, and 1-naphthyl- beta -D-glucoside in the mouse. *Toxicology and Applied Pharmacology [TOXICOL. APPL. PHARMACOL.]. Vol. 67, no.*

3, pp. 303-309. 1983.
Rejection Code: METABOLISM.

382. Childers, C. C., Aguilar, H., Villanueva, R., and Abou-Setta, M. M. (2001). Comparative residual toxicities of pesticides to the predator Euseius mesembrinus (Acari: Phytoseiidae) on citrus in Florida. *Florida Entomologist, 84 (3) pp. 391-401, 2001.*
Rejection Code: SURVEY.

383. Childers, C. C., Villanueva, R., Aguilar, H., Chewning, R., and Michaud, J. P. (2001). Comparative residual toxicities of pesticides to the predator Agistemus industani (Acari: Stigmaeidae) on citrus in Florida. *Experimental and Applied Acarology, 25 (6) pp. 461-474, 2001.*
Rejection Code: SURVEY.

384. Chirachanchai, S., Lertworasirikul, A., and Tachaboonyakiat, W. (2001). Carbaryl insecticide conjugation onto chitosan via iodochitosan and chitosan carbonyl imidazolide precursors. *Carbohydrate Polymers* 46: 19-27.
Rejection Code: METABOLISM.

385. Chiron, S. and Barcelo, D. (1993). Determination of pesticides in drinking water by on-line solid-phase disk extraction followed by various liquid chromatographic systems. *J Chromatogr* 645 : 125-133.
Rejection Code: FATE,NO SPECIES.

386. Cho Taehyeon M, Rose Randy L, and Hodgson Ernest (2006). In vitro metabolism of naphthalene by human liver microsomal cytochrome P450 enzymes. *Drug Metabolism and Disposition [Drug Metab. Disposition]. Vol. 34, no. 1, pp. 176-183. Jan 2006.*
Rejection Code : IN VITRO, METABOLISM, HUMAN HEALTH.

387. CHUN U-H, SIMONOV, N., CHEN, Y., and BRITZ ML (1996). Continuous pollution monitoring using Photobacterium phosphoreum. *RESOURCES CONSERVATION AND RECYCLING; 18* 25-40.
Rejection Code: SURVEY.

388. Chung, J. H. and Lee, Y. B. (2003). Simulation of a Rice Mill Process. *Biosystems Engineering* 86: 145-150.
Rejection Code: NO TOX DATA.

389. CHUNG JG, WANG HH, TSOU MF, HSIEH SE, LO HH, YEN YS, CHANG SS, WU LT, LEE JH, and HUNG CF (1997). Evidence for arylamine N-acetyltransferase activity in the bacterium Helicobacter pylori. *TOXICOLOGY LETTERS (SHANNON); 91 (1). 1997. 63-71.*
Rejection Code: BACTERIA.

390. Chung, Y. C., Richardson, L., and Morrisey, M. T. (1993). Effects of pH and NaCl on Gel Strength of Pacific Whiting Surimi. *J.Aquat.Food Prod.Technol.* 2: 19-35.
Rejection Code: IN VITRO.

391. CHYAU C-C and MAU J-L (1999). Release of volatile compounds from microwave heating of garlic juice with 2,4-decadienals. *FOOD CHEMISTRY; 64* 531-535.
Rejection Code: HUMAN HEALTH.

392. CLARK JA and EL-SHAARAWI AH (1993). Evaluation of commercial presence-absence test kits for detection of total coliforms, Escherichia coli, and other indicator bacteria. *APPL ENVIRON MICROBIOL; 59* 380-388.

Rejection Code: BACTERIA.

393. CLARK JM, EDMAN SJ, NAGY SR, CANHOTO, A., HECHT, F., and VAN HOUTEN J (1995). ACTION OF DDT AND PYRETHROIDS ON CALCIUM CHANNELS IN PARAMECIUM TETRAURELIA. *CLARK, J. M. (ED.). ACS SYMPOSIUM SERIES, 591. MOLECULAR ACTION OF INSECTICIDES ON ION CHANNELS; 207TH NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY, SAN DIEGO, CALIFORNIA, USA, MARCH 13-17, 1994. X+356P. AMERICAN CHEMICAL SOCIETY: WASHINGTON, DC, USA. ISBN 0-8243-3165-6.; 0 (0). 1995. 173-190.*
Rejection Code: BACTERIA.

394. CLARKE DJ, BURCHELL, B., and GEORGE SG (1992). Differential expression and induction of UDP-glucuronosyltransferase isoforms in hepatic and extrahepatic tissues of a fish, Pleuronectes platessa: Immunochemical and functional characterization. *TOXICOL APPL PHARMACOL; 115* 130-136.
Rejection Code: IN VITRO, METABOLISM.

395. Clarke, Douglas J., Burchell, Brian, and George, Stephen (1988). Characterization and molecular analysis of hepatic microsomal UDP-glucuronosyltransferases in the marine fish, Pleuronectes platessa. *Marine Environmental Research* 24: 105-109.
Rejection Code: IN VITRO.

396. Cleland, C. F., Tanaka, O., and Feldman, L. J. (1982). Influence of Plant-Growth Substances and Salicylic-Acid on Flowering and Growth in the Lemnaceae (Duckweeds). *Aquat Bot* 13: 3-20.
Rejection Code: REVIEW.

397. CLEVENGER TE (1990). Safety and efficacy of food processing sludges as animal feed: Chemical characterization. *RES J WATER POLLUT CONTROL FED; 62* 820-827.
Rejection Code: HUMAN HEALTH.

398. Cnops, G., Wang, X., Linstead, P., Van Montagu, M., Van Lijsebettens, M., and Dolan, L. (2000). Tornado1 and tornado2 are required for the specification of radial and circumferential pattern in the Arabidopsis root. *Development, 127 (15) pp. 3385-3394, 2000*.
Rejection Code: IN VITRO.

399. Cochrane, Bruce J., Windelspecht, Michael, Brandon, Susan, Morrow, Matthew, and Dryden, Lorie (1998). Use of Recombinant Inbred Lines for the Investigation of Insecticide Resistance and Cross Resistance inDrosophila simulans. *Pesticide Biochemistry and Physiology* 61: 95-114.
Rejection Code: METHODS.

400. COFFI, A. (1992). REPUBLIC OF BENIN THE ACRIDID SITUATION IN THE REPUBLIC OF BENIN. *LOMER, C. J. AND C. PRIOR (ED.). BIOLOGICAL CONTROL OF LOCUSTS AND GRASSHOPPERS; WORKSHOP, COTONOU, BENIN, APRIL 29-MAY 1, 1991. XII+394P. C.A.B. INTERNATIONAL: WALLINGFORD, ENGLAND, UK; INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE: IBADAN, NIGERIA. ISBN 0-85198-779-6.; 0 (0). 1992. 86-89.*
Rejection Code: REVIEW.

401. Cohen, E. (2006). Pesticide-Mediated Homeostatic Modulation in Arthropods. *Pestic.Biochem.Physiol.* 85: 21-27.
Rejection Code: REVIEW.

402. COHEN, G., COHEN, E., and AMITAI, G. (1991). IN-VIVO AND IN-VITRO INTERACTION

OF CARBAMATES WITH QUATERNARY OXIMES. *21ST ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, NEW ORLEANS, LOUISIANA, USA, NOVEMBER 10-15, 1991. SOC NEUROSCI ABSTR; 17* 1526.
Rejection Code: ABSTRACT.

403. Cohen, Gerald M., Wilson, George D., Gibby, Elizabeth M., Smith, Martyn T., Doherty, Mary dArcy, and Connors, T. A. (1983). 1-Naphthol: A potential selective antitumour agent. *Biochemical Pharmacology* 32: 2363-2365.
Rejection Code: NO TOX DATA.

404. COHEN, S., SVRJCEK, A., DURBOROW, T., and BARNES NL (1999). Water quality impacts by golf courses. *JOURNAL OF ENVIRONMENTAL QUALITY; 28* 798-809.
Rejection Code: SURVEY.

405. COHN, J. and MACPHAIL, R. (1996). GENDER DIFFERENCES IN THE EFFECTS OF CARBARYL ON THE REPEATED ACQUISITION AND PERFORMANCE OF RESPONSE SEQUENCES IN RATS. *26TH ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, WASHINGTON, D.C., USA, NOVEMBER 16-21, 1996. SOCIETY FOR NEUROSCIENCE ABSTRACTS* 22: 437.
Rejection Code: ABSTRACT.

406. COLIN M-E and BELZUNCES LP (1992). Evidence of synergy between prochloraz and deltamethrin in Apis mellifera L.: A convenient biological approach. *PESTIC SCI; 36* 115-119.
Rejection Code: METHODS.

407. Collins, T. F. X. Hansen W. H. &. Keeler H. V. (1972). Fertility Reduction by Carbaryl: The Effect of Carbaryl (Sevin) on Reproduction of the Rat and the Gerbil. *Food Cosmet.Toxicol.* 10: 261-262.
Rejection Code: ABSTRACT.

408. Combellas, C., Suba, C., and Thiebault, A. (1994). Regioselective electrocatalyzed SRN1 reactions with 2-tert-butyl-1-naphthol. *Tetrahedron Letters* 35: 5217-5220.
Rejection Code: METHODS.

409. Comer, S. W., Staiff, D. C., Armstrong, J. F., and Wolfe, H. R. (1975). Exposure of Workers to Carbaryl. *Bull.Environ.Contam.Toicol.* 13: 385-391.
Rejection Code: HUMAN HEALTH.

410. Conyers, Susan M. and Kidwell, David A. (1991). Chromogenic substrates for horseradish peroxidase. *Analytical Biochemistry* 192: 207-211.
Rejection Code: METHODS.

411. Cook, B. J. , Nelson, D. R., and Hipps, P. (1969). Esterases and phosphatases in the gastric secretion of the cockroach, Periplaneta americana. *Journal of Insect Physiology* 15: 581-586.
Rejection Code: METABOLISM, NO TOX DATA.

412. COOKSON MR, MEAD, C., AUSTWICK SM, and PENTREATH VW (1995). Use of the MTT assay for estimating toxicity in primary astrocyte and C6 glioma cell cultures. *TOXICOLOGY IN VITRO; 9* 39-48.
Rejection Code: IN VITRO.

413. COOMBS MM and BHATT TS (1987). CAMBRIDGE MONOGRAPHS ON CANCER RESEARCH CYCLOPENTA-A-PHENANTHRENES POLYCYCLIC AROMATIC

COMPOUNDS STRUCTURALLY RELATED TO STEROIDS. *COOMBS, M. M. AND T. S. BHATT. CAMBRIDGE MONOGRAPHS ON CANCER RESEARCH: CYCLOPENTA(A)PHENANTHRENES: POLYCYCLIC AROMATIC COMPOUNDS STRUCTURALLY RELATED TO STEROIDS. XVII+266P. CAMBRIDGE UNIVERSITY PRESS: NEW YORK, NEW YORK, USA; CAMBRIDGE, ENGLAND, UK. ILLUS. ISBN 0-521-30123-8.; 0* XVII+266P.
Rejection Code: HUMAN HEALTH.

414. Cooper, E. L. and Roch, P. (2003). Earthworm Immunity: A Model of Immune Competence. *Pedobiologia* 47: 676-688 .
Rejection Code: REVIEW.

415. Cooper, J. F., Wynn, N. R., Deuse, J. P. L., Coste, C. M., Zheng, S. Q., and Schiffers, B. C (1997). Impact of insecticides on wild fauna: a proposed toxicity index. *Mededelingen - Faculteit Landbouwkundige en Toegepaste Biologische Wetenschappen (Universiteit Gent)* 62: 599-606.
Rejection Code: NO TOX DATA.

416. Cope, O. B. (1966). Contamination of the Freshwater Ecosystem by Pesticides. *J.Appl.Ecol.* 3: 33-44 (Publ in Part As 6797).

; Habitat: A; Effect Codes: MOR,ACC,REP

417. Cope, O. B. (1965). Sport Fishery Investigations. *In: Fish and Wildl.Serv.Cicr.226, Effects of Pesticides on Fish and Wildlife - 1964 Research Findings of the Fish and Wildlife Service, Washington, D.C.* 51-63 (Publ in Part As 6797).

; Habitat: A; Effect Codes: MOR,BCM

418. Corbett, J. R., Wright, K., and Baillie, A. C. (1984). Insecticides Inhibiting Acetylcholinesterase. *In: The Biochemical Mode of Action of Pesticides, Second Edition, Acad.Press, London* 99-140.
Rejection Code: REVIEW.

419. Corbett, J. R., Wright, K., and Baillie, A. C. (1984). Insecticides Inhibiting Acetylcholinesterase. *In: The Biochemical Mode of Action of Pesticides, Second Edition, Acad.Press, London* 99-140.
Rejection Code: REVIEW.

420. CORDLE MK (1988). USDA REGULATION OF RESIDUES IN MEAT AND POULTRY PRODUCTS. *J ANIM SCI; 66* 413-433.
Rejection Code: HUMAN HEALTH.

421. Corson, M. S., Mora, M. A., and Grant, W. E. (1998). Simulating Cholinesterase Inhibition in Birds Caused by Dietary Insecticide Exposure. *Ecol.Model.* 105: 299-323.
Rejection Code: MODELING.

422. CORY-SLECHTA DA (1994). NEUROTOXICANT-INDUCED CHANGES IN SCHEDULE-CONTROLLED BEHAVIOR. *CHANG, L. W. (ED.). NEUROLOGICAL DISEASE AND THERAPY, 26. PRINCIPLES OF NEUROTOXICOLOGY. XVIII+800P. MARCEL DEKKER, INC.: NEW YORK, NEW YORK, USA; BASEL, SWITZERLAND. ISBN 0-8247-8836-2.; 0 (0). 1994. 313-344.*
Rejection Code: MONKEY.

423. Cote-Sierra, Javier, Jongert, Erik, Bredan, Amin, Gautam, Dinesh C., Parkhouse, M., Cornelis,

Pierre, De Baetselier, Patrick, and Revets, Hilde (1998). A new membrane-bound OprI lipoprotein expression vector: High production of heterologous fusion proteins in Gram (-) bacteria and the implications for oral vaccination. *Gene* 221: 25-34.
Rejection Code: BACTERIA.

424. COUDERCHET, M., SCHMALFUSS, J., and BOEGER, P. (1998). A specific and sensitive assay to quantify the herbicidal activity of chloroacetamides. *PESTICIDE SCIENCE; 52* 381-387.
Rejection Code: METHODS.

425. COURT GS, DAVIS LS, FOCARDI, S., BARGARGLI, R., FOSSI, C., LEONZIO, C., and MARILI, L. (1997). Chlorinated hydrocarbons in the tissues of South Polar Skuas (Catharacta maccormicki) and Adelie Penguins (Pygoscelis adeliae) from Ross Sea, Antarctica. *ENVIRONMENTAL POLLUTION; 97* 295-301.
Rejection Code: SURVEY.

426. COWAN RM, ALAGAPPAN, G., ELLIS TG, HIGGINS MJ, and UBEROI, V. (1997). ACTIVATED SLUDGE AND OTHER AEROBIC SUSPENDED CULTURE PROCESSES. *WATER ENVIRONMENT RESEARCH; 69* 462-487.
Rejection Code: EFFLUENT.

427. Cranmer, M. and Peoples, A. (1973). Determination of Trace Quantities of Anticholinesterase Pesticides. *Anal.Biochem.* 55: 255-265.
Rejection Code: HUMAN HEALTH.

428. Cranmer, M. F. Jr (1986). Carbaryl: A toxicological review and risk analysis. *Neurotoxicology. Vol. 7, no. 1, pp. 247-332. 1986.*
Rejection Code: REVIEW.

429. CREBELLI, R. and CARERE, A. (1987). CHEMICAL AND PHYSICAL AGENTS ASSAYED IN TESTS FOR MITOTIC INTERGENIC AND INTRAGENIC RECOMBINATION IN ASPERGILLUS-NIDULANS DIPLOID STRAINS. *MUTAGENESIS; 2* 469-476.
Rejection Code: BACTERIA.

430. Cress, C. Ray and Strother, Allen (1974). Effects on drug metabolism of carbaryl and 1-naphthol in the mouse. *Life Sciences* 14: 861-872.
Rejection Code: METABOLISM.

431. CROKER KP, ALLEN JG, WOOD PM, and DHALIWAL, S. (1994). Treatment of sweet narrow-leafed lupin crops to reduce phomopsin-induced liver damage (lupinosis) in Merino wether weaners. *AUSTRALIAN JOURNAL OF EXPERIMENTAL AGRICULTURE; 34* 139-144.
Rejection Code: NO TOX DATA.

432. Crouse, David J. and Wheeler, Desmond M. S. (1979). Preparation of a 4-monoketal of juglone methyl ether. *Tetrahedron Letters* 20: 4797-4798.
Rejection Code: METHODS.

433. Crystal, M. M. and Demilo, A. B. (1988). Susceptibility of Laboratory-Reared Northern Fowl Mites, Ornithonyssus sylviarum (Acari: Macronyssidae), to Selected Acaricides. *Exp.Appl.Acarol.* 4: 353-358.

; Habitat: T; Effect Codes: MOR

434. CUNNINGHAM AR, ROSENKRANZ HS, and KLOPMAN, G. (1998). Structural analysis of a

group of phytoestrogens for the presence of a 2-D geometric descriptor associated with non-genotoxic carcinogens and some estrogens. *PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE; 217* 288-292.
Rejection Code: METHODS.

435. CUNNINGHAM ST and KELLEY AE (1992). EFFECTS OF CHOLERA TOXIN INFUSION INTO THE NUCLEUS ACCUMBENS ON LOCOMOTOR BEHAVIOR. *22ND ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, ANAHEIM, CALIFORNIA, USA, OCTOBER 25-30, 1992. SOC NEUROSCI ABSTR; 18* 1434.
Rejection Code: BIOLOGICAL TOXICANT.

436. d'Arcy Doherty, Mary, Makowski, Richard, Gibson, G. Gordon, and Cohen, Gerald M. (1985). Cytochrome P-450 dependent metabolic activation of 1-naphthol to naphthoquinones and covalent binding species. *Biochemical Pharmacology* 34: 2261-2267.
Rejection Code: METABOLISM.

437. D'Mello, J. P. F., Macdonald, A. M. C., Postel, D., Dijksma, W. T. P., Dujardin, A., and Placinta, C. M. (Pesticide use and mycotoxin production in Fusarium and Aspergillus phytopathogens. *European Journal of Plant Pathology, 104 (8) pp. 741-751, 1998*.
Rejection Code: REVIEW.

438. D'Mello, J. P. F., Macdonald, A. M. C., Postel, D., Dijksma, W. T. P., Dujardin, A., and Placinta, C. M. (1998). Pesticide Use and Mycotoxin Production in Fusarium and Aspergillus Phytopathogens. *Eur.J.Plant Pathol.* 104: 741-751.
Rejection Code: REVIEW.

439. D'ORIO, V., MENDES, P., CARLIER, P., FATEMI, M., and MARCELLE, R. (1991). Lung fluid dynamics and supply dependency of oxygen uptake during experimental endotoxic shock and volume resuscitation. *CRIT CARE MED; 19* 955-962.
Rejection Code: NO TOXICANT.

440. da Silva, Clovis L., de Lima, Elizabete C., and Tavares, Marina F. M. (Investigation of preconcentration strategies for the trace analysis of multi-residue pesticides in real samples by capillary electrophoresis. *Journal of Chromatography A* In Press, Corrected Proof.
Rejection Code: NO TOX DATA.

441. DABI RK, PURI MK, GUPTA HC, and SHARMA SK (1988). Synergistic response of low rate of Bacillus thuringiensis Berliner with sub-lethal dose of insecticides against Heliothis armigera Hubner. *INDIAN J ENTOMOL; 50* 28-31.
Rejection Code: BACTERIA.

442. Dahl, Ingvar (1972). The application of salicylaldoxime in solvent extraction : Part II. Spectrophotometric determination of copper with 2-(5-nitro-2-pyridylazo)-1-naphthol after separation with salicylaldoxime. *Analytica Chimica Acta* 62: 145-152.
Rejection Code: METHODS.

443. DAHLSTEN DL and DREISTADT SH (1991). FOREST PEST MANAGEMENT SOCIOPOLITICS. *XVIII INTERNATIONAL CONGRESS OF ENTOMOLOGY, VANCOUVER, BRITISH COLUMBIA, CANADA, 1988. FOR ECOL MANAGE; 39* 289-298.
Rejection Code: NO TOX DATA.

444. Daidoji, Tomo, Kaino, Taeko, Iwano, Hidetomo, Inoue, Hiroki, Kurihara, Ryo, Hashimoto, Shinya, and Yokota, Hiroshi (2006). Down regulation of bisphenol A glucuronidation in

carp during the winter pre-breeding season. *Aquatic Toxicology* 77: 386-392.
Rejection Code: METABOLISM, FATE.

445. DALBY RN (1992). Prediction and assessment of flammability hazards associated with metered-dose inhalers containing flammable propellants. *PHARM RES (N Y); 9 (5). 1992. 636-642.*
Rejection Code: NO SPECIES.

446. DALDORPH, P. WG (1998). Management and treatment of algae in lowland reservoirs in eastern England. *WATER SCIENCE AND TECHNOLOGY; 37* 57-63.
Rejection Code: NO TOXICANT.

447. DALLA SERRA M, PEDERZOLLI, C., and MENESTRINA, G. (1992). A fluorimetric assay for the effects of cytolytic toxins on the transport properties of resealed erythrocyte ghosts. *J BIOCHEM BIOPHYS METHODS; 25* 83-94.
Rejection Code: FATE.

448. Daniels, W. M., House, W. A., Rae, J. E., and Parker, A. (2000). The distribution of micro-organic contaminants in river bed-sediment cores. *The Science of The Total Environment* 253: 81-92.
Rejection Code: SEDIMENT CONC.

449. Daniels, W. M., House, W. A., Rae, J. E., and Parker, A. (2000). The distribution of micro-organic contaminants in river bed-sediment cores. *The Science of The Total Environment* 253: 81-92.
Rejection Code: FATE.

450. Darby, F. J., Heenan, M. P., and Smith, J. N. (1966). The absence of glucuronide conjugates from 1-naphthol dosed flies and grass grubs; Detection of 1-naphthylphosphate. *Life Sciences* 5: 1499-1502.
Rejection Code: METABOLISM.

451. DATTA, S., MCCONNELL LL, BAKER JE, LENOIR, J., and SEIBER JN (1998). Evidence for atmospheric transport and deposition of polychlorinated biphenyls to the Lake Tahoe basin, California-Nevada. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 32* 1378-1385.
Rejection Code: SURVEY.

452. DAUTERMAN WC (1994). ADAPTATION TO TOXICANTS. *HODGSON, E. AND P. E. LEVI (ED.). INTRODUCTION TO BIOCHEMICAL TOXICOLOGY, SECOND EDITION. XIX+588P. APPLETON AND LANGE: EAST NORWALK, CONNECTICUT, USA. ISBN 0-8385-4332-4.; 0 (0). 1994. 569-581.*
Rejection Code : REVIEW.

453. Davies, R. L., Parton, R., Coote, J. G., Gibbs, H. A., and Freer, J. H. (1994). Evaluation of different methods for the detection of outer membrane proteins and lipopolysaccharides of Pasteurella haemolytica by immunoblotting. *Journal of Immunological Methods* 167: 35-45.
Rejection Code: METHODS.

454. Davis, J., Labenia, J. S., Baldwin, D. H., French, B., and Scholz, N. L. (2004). Sublethal Effects of the Carbamate Insecticide-Carbaryl-on Coastal Cutthroat Trout. *In: 2003 Georgia Basin/Puget Sound Res.Conf., Mar.31-Apr.3, 2003, Vancouver, B.C.(Canada).*
Rejection Code: ABSTRACT.

455. Dawson, John, Knowles, Richard G., and Pogson, Christopher I. (1992). Measurement of glucuronidation by isolated rat liver cells using [14C]fructose. *Biochemical Pharmacology* 43: 971-978.
Rejection Code: METHODS, IN VITRO.

456. Dawson, John, Knowles, Richard G., and Pogson, Christopher I. (1991). Quantitative studies of sulphate conjugation by isolated rat liver cells using [35S]sulphate. *Biochemical Pharmacology* 42: 45-49.
Rejection Code: METHODS, IN VITRO.

457. Dawson, R. M. (1994). Rate constants of carbamylation and decarbamylation of acetylcholinesterase for physostigmine and carbaryl in the presence of an oxime. *Neurochemistry International* 24: 173-182.
Rejection Code: IN VITRO.

458. De Bertrand N and Barcelo, D. (1991). Photodegradation of the carbamate pesticides aldicarb, carbaryl and carbofuran in water. *Anal Chim Acta* 254 : 235-244.
Rejection Code: FATE.

459. DE BERTRAND N and BARCELO, D. (1991). Photodegradation of the carbamate pesticides aldicarb, carbaryl and carbofuran in water. *ANAL CHIM ACTA; 254* 235-244.
Rejection Code: FATE.

460. De Bertrand N, Durand, G., and Barcelo, D. (1991). Extraction, cleanup and liquid chromatographic-diode array determination of carbamate pesticides in soil samples. *J Environ Sci Health Part a Environ Sci Eng* 26 : 575-598.
Rejection Code: METHODS.

461. de la Guardia, M., Hernandez, M. L., Sancenon, S., and Carrion, J. L. (1990). Micellar fluorescence enhancement of carbamate pesticides. *Colloids and Surfaces* 48: 57-64.
Rejection Code: NO TOX DATA/NO SPECIES.

462. de la Guardia, M., Hernandez, M. L., Sancenon, S., and Carrion, J. L. (1990). Micellar fluorescence enhancement of carbamate pesticides. *Colloids and Surfaces* 48: 57-64.
Rejection Code: METHODS.

463. De la vega Salazar, M. Y., Martinez Tabche, L., and Macias Garcia, C. (1997). Bioaccumulation of Methyl Parathion and Its Toxicology in Several Species of the Freshwater Community in Ignacio Ramirez Dam in Mexico. *Ecotoxicol.Environ.Saf.* 38: 53-62.
Rejection Code: NO DURATION.

464. De Llasera, M. P. G. and Bernal-Gonzalez, M. (2001). Presence of carbamate pesticides in environmental waters from the northwest of Mexico: Determination by liquid chromatography. *Water research [water res.]. Vol. 35, no. 8, pp. 1933-1940. Jun 2001.*
Rejection Code: SURVEY.

465. De Maroussem, D., Pipy, B., Beraud, M., Souqual, M. C., and Forgue, M. F. (1986). The Effect of Carbaryl on the Arachidonic Acid Metabolism and Superoxide Production by Mouse Resident Peritoneal Macrophages Challenged by Zymosan. *Int.J.Immunopharmacol.* 8: 155-166.
Rejection Code: IN VITRO.

466. de Sandro, V., Chevrier, M., Boddaert, A., Melcion, C. , Cordier, A., and Richert, L. (1991). Comparison of the effects of propylthiouracil, amiodarone, diphenylhydantoin, phenobarbital, and 3-methylcholanthrene on hepatic and renal T4 metabolism and thyroid

gland function in rats. *Toxicology and Applied Pharmacology* 111: 263-278.
Rejection Code: IN VITRO, METABOLISM.

467. DE SIMONI MG, GEMMA, C., DE LUIGI A, MANFRIDI, A., and GHEZZI, P. (1992). INTERLEUKIN-6 AND TUMOR NECROSIS FACTOR INDUCTION BY CENTRAL ENDOTOXIN. *22ND ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, ANAHEIM, CALIFORNIA, USA, OCTOBER 25-30, 1992. SOC NEUROSCI ABSTR; 18* 483.
Rejection Code: ABSTRACT.

468. DE SNOO GR and DE WIT PJ (1998). Buffer zones for reducing pesticide drift to ditches and risks to aquatic organisms. *ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY; 41* 112-118.
Rejection Code: SURVEY.

469. De Sousa, G., Fontaine, F., Pralavorio, M., Botta-Fridlund, D., Letreut, Y., Rahmani, R. *., Marano, F. M., Benford, D. J., Castell, J. V., and Reinhardt, C. h. A. (eds) (1997). Insecticide cytotoxicity and CYP1A1/2 induction in primary human and rat hepatocyte cultures. *Toxicology in vitro [Toxicol. in vitro]. Vol. 11, no. 5, pp. 451-457. Oct 1997.*
Rejection Code: IN VITRO.

470. DE VANEY JA (1986). ECTOPARASITES. *POULT SCI; 65* 649-656.
Rejection Code: HUMAN HEALTH.

471. DE VINCENZI M, CASTRIOTTA, F., DI FOLCO S, DRACOS, A., MAGLIOLA, M., MATTEI, R., PURIFICATO, I., STACCHINI, A., STACCHINI, P., and SILANO, V. (1987). A BASIS FOR ESTIMATION OF CONSUMPTION LITERATURE VALUES FOR SELECTED FOOD VOLATILES PART II. *FOOD ADDIT CONTAM; 4* 161-218.
Rejection Code: HUMAN HEALTH.

472. Dean Blevins, R., Lee, Morris, and Regan, James D. (1977). Mutagenicity screening of five methyl carbamate insecticides and their nitroso derivatives using mutants of Salmonella typhimurium LT2*1. *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis* 56: 1-6.
Rejection Code: BACTERIA.

473. DEBAEKE, P. and HILAIRE, A. (1997). Production of rainfed and irrigated crops under different crop rotations and input levels in southwestern France. *CANADIAN JOURNAL OF PLANT SCIENCE; 77* 539-548.
Rejection Code: NO TOXICANT.

474. DEBNATH AK, DEBNATH, G., SHUSTERMAN AJ, and HANSCH, C. (1992). A QSAR investigation of the role of hydrophobicity in regulating mutagenicity in the Ames test: 1. Mutagenicity of aromatic and heteroaromatic amines in Salmonella typhimurium TA98 and TA100. *ENVIRON MOL MUTAGEN; 19* 37-52.
Rejection Code: BACTERIA.

475. DEBNATH AK, LOPEZ DE COMPADRE RL, SHUSTERMAN AJ, and HANSCH, C. (1992). Quantitative structure-activity relationship investigation of the role of hydrophobicity in regulating mutagenicity in the Ames test: 2. Mutagenicity of aromatic and heteroaromatic nitro compounds in Salmonella typhimurium TA100. *ENVIRON MOL MUTAGEN; 19* 53-70.
Rejection Code: BACTERIA.

476. DEC, J. and BOLLAG J-M (1997). Determination of covalent and noncovalent binding

interactions between xenobiotic chemicals and soil. *SOIL SCIENCE; 162* 858-874.
Rejection Code: FATE.

477. DEIANA, P. and FATICHENTI, F. (1992). PESTICIDE RESIDUES IN MILK PROCESSING. *ITAL J FOOD SCI; 4* 229-245.
Rejection Code: HUMAN HEALTH, REVIEW.

478. DEJONCKHEERE, W., STEURBAUT, W., DRIEGHE, S., VERSTRAETEN, R., and BRAECKMAN, H. (1996). Pesticide residue concentrations in the Belgian total diet, 1991-1993. *JOURNAL OF AOAC INTERNATIONAL; 79* 520-528.
Rejection Code: HUMAN HEALTH, SURVEY.

479. Del Carlo, Michele, Mascini, Marcello, Pepe, Alessia, Diletti, Gianfranco, and Compagnone, Dario (2004). Screening of food samples for carbamate and organophosphate pesticides using an electrochemical bioassay. *Food Chemistry* 84: 651-656.
Rejection Code: HUMAN HEALTH.

480. DEL PINO M and BLESSING RL (1988). CHEMICALS AND ALLIED PRODUCTS. *J WATER POLLUT CONTROL FED; 60* 909-916.
Rejection Code: METABOLISM.

481. del-Val, M. Isabel and Otero, Cristina (1998). Kinetic and spectroscopic behaviour of a lipase-microgel derivative in aqueous and micellar media. *Journal of Molecular Catalysis B: Enzymatic* 4: 137-147.
Rejection Code: METHODS, YEAST.

482. Dela Cruz, C. R. and Cagauan, A. G. (1981). Preliminary Study on the Bioassay of Seven Pesticides and Five Weedicides with Tilapia, Carps, Clam and Shrimp as Test Species. *Fish.Res.J.Philipp.* 6: 11-18.

; Habitat: A; Effect Codes: PHY

483. Delescluse, C., Ledirac, N., de Sousa, G., Pralavorio, M., Lesca, P., and Rahmani, R. (1998). Cytotoxic effects and induction of cytochromes P450 1A1/2 by insecticides, in hepatic or epidermal cells: binding capability to the Ah receptor. *Toxicology Letters* 96-97: 33-39.
Rejection Code: IN VITRO.

484. Della-Penna, Dean, Christoffersen, Rolf E., and Bennett, Alan B. (1986). Biotinylated proteins as molecular weight standards on Western blots. *Analytical Biochemistry* 152: 329-332.
Rejection Code: METHODS.

485. Demerjian, Kenneth L. (2000). A review of national monitoring networks in North America. *Atmospheric Environment* 34: 1861-1884.
Rejection Code: SURVEY.

486. Demirbas, A. (2000). Determination of carbaryl residues in agricultural lands in trabzon province. *Environmental Technology, 21 (3) pp. 351-356, 2000*.
Rejection Code: SURVEY, METHODS.

487. Demirbas, Ayhan (1998). Spectrophotometric determination of carbaryl pesticide and its hydrolysis product in soil and strawberry samples. *The Science of The Total Environment* 220: 235-241.
Rejection Code: FATE, METHODS.

488. Denison, M. S., Phelan, D., Winter, G. M., and Ziccardi, M. H. (1998). Carbaryl, a carbamate

insecticide, is a ligand for the hepatic Ah (dioxin) receptor. *Toxicology and Applied Pharmacology [Toxicol. Appl. Pharmacol.]. Vol. 152, no. 2, pp. 406-414. Oct 1998.*
Rejection Code: IN VITRO.

489. DENISON MS and HEATH-PAGLIUSO, S. (1998). The Ah receptor; A regulator of the biochemical and toxicological actions of structurally diverse chemicals. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 61* 557-568 .
Rejection Code: METABOLISM.

490. Deo, P. G., Hasan, S. B., and Majumder, S. K. (1988). Toxicity and Suitability of Some Insecticides for Household Use. *Int.Pest Control* 30: 118-121,129.

; Habitat: T; Effect Codes: MOR

491. DERWENT RG and PEARSON JK (1997). Improving air quality in the United Kingdom: The solvents contribution. *ENVIRONMENTAL TECHNOLOGY; 18* 1029-1036.
Rejection Code: SURVEY, HUMAN HEALTH.

492. DESHPANDE, S., SHIAU BJ, WADE, D., SABATINI DA, and HARWELL JH (1999). Surfactant selection for enhancing ex situ soil washing. *WATER RESEARCH; 33* 351-360.
Rejection Code: METHODS.

493. Desmarchelier, J. M. (1980). Comparative Study of Analytical Methods for Bioresmethrin, Fenothrin, d-Fenothrin, Pyrethrum I, Carbaryl, Fenitrothion, Methacrifos, Pirimiphos-Methyl and Dichlorvos on Various Grains. *J.Pestic.Sci.* 5 : 521-532.
Rejection Code: NO SPECIES.

494. DEVAUX, A. and RIVIERE J-L (1988). STUDY OF UDPG-TRANSFERASES IN THE CARP CYPRINUS-CARPIO. *SIEST, G., J. MAGDALOU AND B. BURCHELL (ED.). COLLOQUE INSERM (INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE), VOL. 173. ASPECTS CELLULAIRES ET MOLECULAIRES DE LA GLUCURONOCONJUGAISON; (INSERM (NATIONAL INSTITUTE OF HEALTH AND MEDICAL RESEARCH) COLLOQUIUM, VOL. 173. CELLULAR AND MOLECULAR ASPECTS OF GLUCURONIDATION); WORKSHOP, APRIL 27-29, 1988, MONTPELLIER, FRANCE. XX+328P. LES EDITIONS INSERM: PARIS, FRANCE; JOHN LIBBEY AND CO. LTD.: LONDON, ENGLAND, UK; PARIS, FRANCE. ILLUS. PAPER. ISBN 2-85598-353-3; ISBN 0-86196-182-X.; 0 (0). 1988. 293-296.*
Rejection Code: IN VITRO, METABOLISM.

495. DIAZ DIAZ R , GAGGI, C., SANCHEZ-HERNANDEZ JC, and BACCI, E. (1995). The role of soil and active ingredient properties in degradation of pesticides: A preliminary assessment. *CHEMOSPHERE; 30* 2375-2386.
Rejection Code: FATE.

496. Diaz-Diaz, Ricardo and Loague, Keith (2001). Assessing the potential for pesticide leaching for the pine forest areas of Tenerife. *Environmental Toxicology and Chemistry* 20: 1958-1967.
Rejection Code: FATE.

497. DICKHUT RM and GUSTAFSON KE (1995). Atmospheric inputs of selected polycyclic aromatic hydrocarbons and polychlorinated biphenyls to southern Chesapeake Bay. *MARINE POLLUTION BULLETIN; 30* 385-396.
Rejection Code: SURVEY.

498. Diener B., Abdellatif H., Arand M., and Oesch F. (1995). Xenobiotic Metabolizing Enzyme Activities and Viability Are Well Preserved in EDTA-Isolated Rat Liver Parenchymal Cells after Cryopreservation. *Toxicology and Applied Pharmacology* 130: 149-153.
Rejection Code: IN VITRO.

499. Dierickx, P. J. (CYP1/2 activation and glutathione-dependent cytotoxicity of four pesticides in Hep G2 and Fa32 cells. *Toxicology In Vitro [Toxicol. In Vitro]. Vol. 13, no. 4/5, pp. 779-783. Aug-Oct 1999.*
Rejection Code: HUMAN HEALTH.

500. Dierickx, P. J., Blaauboer, B. J., Marano, F., and van der Valk, J. (eds) (1999). CYP1/2 activation and glutathione-dependent cytotoxicity of four pesticides in Hep G2 and Fa32 cells. *Toxicology In Vitro [Toxicol. In Vitro]. Vol. 13, no. 4/5, pp. 779-783. Aug-Oct 1999.*
Rejection Code: IN VITRO.

501. Dierksmeier, G. (1996). PESTICIDE CONTAMINATION IN THE CUBAN AGRICULTURAL ENVIRONMENT. *Trends in Analytical Chemistry* 15 : 154-159.
Rejection Code: SURVEY.

502. Dierksmeier, G. (1996). Pesticide Contamination in the Cuban Agricultural Environment. *Trends in analytical chemistry* 15: 154-159.
Rejection Code: SURVEY.

503. DINGMAN DW (1993). EFFECT OF TURF PESTICIDES ON THE ENTOMOPATHOGEN BACILLUS-POPILLIAE. *93RD GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, ATLANTA, GEORGIA, USA, MAY 16-20, 1993. ABSTR GEN MEET AM SOC MICROBIOL; 93* 423.
Rejection Code: BACTERIA.

504. DINKINS RL, TEDDERS WL, and REID, W. (1994). Predaceous Neuropterans in Georgia and Kansas pecan trees. *JOURNAL OF ENTOMOLOGICAL SCIENCE; 29* 165-175.
Rejection Code: SURVEY.

505. DiTullio, Giacomo R. and Laws, Edward A. (1991). Impact of an atmospheric-oceanic disturbance on phytoplankton community dynamics in the North Pacific Central Gyre. *Deep Sea Research Part A. Oceanographic Research Papers* 38: 1305-1329.
Rejection Code: SURVEY.

506. DJURKIC, M. , KNEZEVIC, M., and OSTOJIC, Z. (1997). Effect of rimsulfuron application of weeds in maize inbred lines in Croatia. *CEREAL RESEARCH COMMUNICATIONS; 25* 203-209.
Rejection Code: SURVEY.

507. Doddamani, H P and Ninnekar, H Z (2001). Biodegradation of carbaryl by a Micrococcus species. *Current Microbiology* 43: 69-73.
Rejection Code: BACTERIA.

508. Dodson, S. I. and Hanazato, T. (1995). Commentary on Effects of Anthropogenic and Natural Organic Chemicals on Development, Swimming Behavior, and Reproduction of Daphnia, a Key Member of Aquatic Ecosystems. *Environ.Health Perspect.* 103: 7-11.
Rejection Code: REFS CHECKED/REVIEW.

509. Doherty, F. G., Evans, D. W., and Neuhauser, E. F. (1993). An Assessment of Total and Leachable Contaminants in Zebra Mussels (Dreissena polymorpha) from Lake Erie. *Ecotoxicol.Environ.Saf.* 25: 328-340.

Rejection Code: SURVEY.

510. Doherty, Mary d'Arcy, Wilson, Ian, Wardman, Peter, Basra, J., Patterson, Laurence H., and Cohen, Gerald M. (1986). Peroxidase activation of 1-naphthol to naphthoxy or naphthoxy-derived radicals and their reaction with glutathione. *Chemico-Biological Interactions* 58: 199-215.
Rejection Code: METABOLISM.

511. Doherty, Mary dArcy and Cohen, Gerald M. (1984). Metabolic activation of 1-naphthol by rat liver microsomes to 1,4-naphthoquinone and covalent binding species. *Biochemical Pharmacology* 33: 3201-3208.
Rejection Code: METABOLISM.

512. Doherty, Mary Darcy, Cohen, Gerald M., Gant, Timothy W., Naish, Sandra, and Riley, Patrick A. (1985). Metabolism of 1-naphthol by tyrosinase. *Biochemical Pharmacology* 34: 3167-3172.
Rejection Code: METABOLISM.

513. Doherty, Mary Darcy, Cohen, Gerald M., and Smith, Martyn T. (1984). Mechanisms of toxic injury to isolated hepatocytes by 1-naphthol. *Biochemical Pharmacology* 33: 543-549.
Rejection Code: IN VITRO, METABOLISM.

514. DOMAGALSKI, J. (1997). Results of a prototype surface water network design for pesticides developed for the San Joaquin River Basin, California. *JOURNAL OF HYDROLOGY (AMSTERDAM); 192 (1-4). 1997. 33-50.*
Rejection Code: SURVEY.

515. DOMAGALSKI JL, DUBROVSKY NM, and KRATZER CR (1997). Pesticides in the San Joaquin River, California: Inputs from the dormant sprayed orchards. *JOURNAL OF ENVIRONMENTAL QUALITY; 26* 454-465.
Rejection Code: SURVEY.

516. DOMINE, D., DEVILLERS, J., CHASTRETTE, M., and KARCHER, W. (1992). Multivariate structure-property relationships (MSPR) of pesticides. *PESTIC SCI; 35* 73-82.
Rejection Code: MODELING.

517. Domingo, A. and Marco, R. (1989). Visualization under ultraviolet light enhances 100-fold the sensitivity of peroxidase-stained blots. *Analytical Biochemistry* 182: 176-181.
Rejection Code: METHODS.

518. DONALDSON GM, BRAUNE BM, GASTON AJ, and NOBLE DG (1997). Organochlorine and heavy metal residues in breast muscle of known-age thick-milled murres (Uria lomvia) from the Canadian Arctic. *ARCHIVES OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 33* 430-435.
Rejection Code: SURVEY.

519. Dotz, Karl Heinz (1977). Reaktionen von komplexliganden : IX. Carbenliganden, carbonylliganden und alkine als bausteine fur isocyclische und heterocyclische systeme. *Journal of Organometallic Chemistry* 140: 177-186.
Rejection Code: NON-ENGLISH.

520. DOWNER AJ, KOEHLER CS, and PAINE TD (91). **<04 Article Title>.** *J ENVIRON HORTIC; 9* <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

521. Dragland, S. (1996). Content of Cadmium and Lead in Chamomile (Chamomilla recutita L.) and

Feverfew (Tanacetum parthenium L.) Grown in Different Parts of Norway (Innhold av Kadmium og bly i Kamille (Chamomilla recutita L.) og Matrem (Tanacetum parthenium L.) Dyrket pa Ulike Steder i Norge). *Norsk.Landbruksforsking* 10: 181-188.
Rejection Code: MIXTURE.

522. DRYDEN MW and RUST MK (1994). The cat flea: Biology, ecology and control. *VETERINARY PARASITOLOGY; 52* 1-19.
Rejection Code: REVIEW.

523. Duan, Jiun-Pey and Cheng, Chien-Hong (1993). Palladium-catalyzed stereoselective reductive coupling reactions of organic halides with 7-heteroatom norbornadienes. *Tetrahedron Letters* 34: 4019-4022.
Rejection Code: METHODS.

524. Dudek, G. and Dudek, E. P. (1967). Spectroscopic studies of keto-enol equilibria-X : Multiple hydrogen bonds. *Tetrahedron* 23: 3245-3251.
Rejection Code: METHODS.

525. DUFFY LK, HECKER MK, BLUNDELL GM, and BOWYER RT (1999). An analysis of the fur of river otters in Prince William Sound, Alaska: Oil related hydrocarbons 8 years after the Exxon Valdez oil spill. *POLAR BIOLOGY; 21* 56-58.
Rejection Code: SURVEY.

526. Dumbauld, B. R., Armstrong, D. A., Doty, D. C., and Jensen, G. C. (1989). Burrowing Shrimp Recruitment to Washington Coastal Estuaries: A New Approach to an Old Problem. *J.Shellfish Res.* 8: 412-413.
Rejection Code: ABSTRACT.

527. Dumbauld, B. R., Tufts, D., Armstrong, D. A., and Posey, M. H. (1992). The Effect of Burrowing Shrimp and the Pesticide Carbaryl on the Benthic Community in Willapa Bay, Washington. *J.Shellfish Res.* 11: 552 (ABS).
Rejection Code: ABSTRACT.

528. DUMBAULD BR , ARMSTRONG DA, and FELDMAN KL (1993). A PROPOSAL TO TAKE A CLOSER LOOK AT BURROWING SHRIMP RECRUITMENT TO OYSTER CULTURE AREAS IN WASHINGTON COASTAL ESTUARIES. *85TH ANNUAL MEETING OF THE NATIONAL SHELLFISHERIES ASSOCIATION, PORTLAND, OREGON, USA, MAY 31-JUNE 3, 1993. J SHELLFISH RES; 12* 146.
Rejection Code: NO TOX DATA.

529. DUMBAULD BR , PEOPLES, M., ARMSTRONG DA, and RATCHFORD SG (1996). A COMPARISON OF THE EFFECTS OF THREE DIFFERENT HABITAT MODIFICATIONS ON INTERTIDAL CLAM POPULATIONS IN PACIFIC NORTHWEST COASTAL ESTUARIES. *88TH ANNUAL MEETING OF THE NATIONAL SHELLFISHERIES ASSOCIATION, BALTIMORE, MARYLAND, USA, APRIL 14-18, 1996. JOURNAL OF SHELLFISH RESEARCH; 15* 480.
Rejection Code: SURVEY.

530. Dumbauld, Brett R. and Wyllie-Echeverria, Sandy (2003). The influence of burrowing thalassinid shrimps on the distribution of intertidal seagrasses in Willapa Bay, Washington, USA. *Aquatic Botany* 77: 27-42.
Rejection Code: FATE.

531. DUNCAN, E., ONODERA, T., and ASHRAF, M. (1992). Production of hydroxyl radicals and their disassociation from myocardial cell injury during calcium paradox. *FREE*

RADICAL BIOL MED; 12 11-18.
Rejection Code: IN VITRO.

532. DUNSTER JA (1987). CHEMICALS IN CANADIAN FORESTRY THE CONTROVERSY CONTINUES. *AMBIO; 16* 142-148.
Rejection Code: SURVEY.

533. Durand, G., De Bertrand N, and Barcelo, D. (1991). Applications of thermospray liquid chromatography-mass spectrometry in photochemical studies of pesticides in water. *J Chromatogr* 554 : 233-250.
Rejection Code: CHEM METHODS.

534. DURELL GS and LIZOTTE, R. D. JR (1998). PCB levels at 26 New York City and New Jersey WPCPs that discharge to the New Yorkew Jersey Harbor Estuary. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 32* 1022-1031.
Rejection Code: SURVEY.

535. Duso, C. and Pavan, F. (1986). Control of Grape Moths (Lobesia botrana Den. and Schiff.; Eupoecilia ambiguella Hb.). 2. Consideration on the Side Effects of Various Insecticides (Il Controllo delle Tignole della vite (Lobesia botrana Den. e Schiff.; Eupoecilia ambiguella Hb.). 2. Considerazioni sugli Effetti Collaterali di Insetticidi Diversi). *Riv.Vitic.Enol.* 39: 304-312 (ITA) (ENG ABS).
Rejection Code: NON-ENGLISH.

536. Duso, C. and Pavan, F. (1986). Control of Grape Moths (Lobesia botrana Den. and Schiff.; Eupoecilia ambiguella Hb.). 2. Consideration on the Side Effects of Various Insecticides (Il Controllo delle Tignole della vite (Lobesia botrana Den. e Schiff.; Eupoecilia ambiguella Hb.). 2. Considerazioni sugli Effetti Collaterali di Insetticidi Diversi). *Riv.Vitic.Enol.* 39: 304-312 (ITA) (ENG ABS).
Rejection Code: NON-ENGLISH.

537. Dutton, G. J. and Ko, Vivian (1964). The apparent absence of uridine diphosphate glucuronyltransferase for detoxication in Musca domestica. *Comparative Biochemistry and Physiology* 11: 269-272.
Rejection Code: METABOLISM, IN VITRO.

538. Dvorak, Zdenek (1988). Flow-injection determination of creatine in animal tissues. *Analytica Chimica Acta* 208: 307-312.
Rejection Code: METHODS.

539. Dwyer, F. J., Hardesty, D. K., Henke, C. E., Ingersoll, C. G. *., Whites, D. W., Augspurger, T., Canfield, T. J., Mount, D. R., and Mayer, F. L. (2005). Assessing Contaminant Sensitivity of Endangered and Threatened Aquatic Species: Part III. Effluent Toxicity Tests. *Archives of Environmental Contamination and Toxicology [Arch. Environ. Contam. Toxicol.]. Vol. 48, no. 2, pp. 174-183. Feb 2005.*
Rejection Code: EFFLUENT.

540. Dwyer, F. J., Hardesty, D. K., Henke, C. E., Ingersoll, C. G., Whites, D. W., Mount, D. R., and Bridges, C. M. (1999). Assessing Contaminant Sensitivity of Endangered and Threatened Species: Effluent Toxicity Tests. *EPA 600/R-99/099, U.S.EPA, Washington, D.C.* 9 p.

; Habitat: A; Effect Codes: GRO,REP,MOR

541. Dynamac Corporation (1988). Results of the Locust Pesticide Testing Trials in Sudan. Technical Report. *USAID Contract No.AFR-0517-C-00-7035-00,Dynamac Corp., Rockville, MD*

50 p.

; Habitat: T; Effect Codes: MOR,ACC,POP

542. EATOCK RA and RUESCH, A. (1997). DEVELOPMENTAL CHANGES IN THE PHYSIOLOGY OF HAIR CELLS. *SEMINARS IN CELL & DEVELOPMENTAL BIOLOGY; 8* 265-275.
Rejection Code: IN VITRO.

543. Ebbert, James C. and Embrey, Sandra S (2001). Pesticides in surface water of the Yakima River Basin, Washington 1999-2000 - Their occurrence and an assessment of factors affecting concentrations and loads. *Water-Resources Investigations Report (United States Geological Survey).*
Rejection Code: SURVEY.

544. ECKL, P., HOFMANN, W., and TUERK RR (1986). UPTAKE OF NATURAL AND MAN-MADE RADIONUCLIDES BY LICHENS AND MUSHROOMS. *RADIAT ENVIRON BIOPHYS; 25* 43-54.
Rejection Code: NO TOXICANT.

545. EDELSON JV and PETERS, M. (1997). CONTROL OF LEPIDOPTEROUS PESTS ON COLLARDS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 119.
Rejection Code: METHODS.

546. Edge, V. E. and Casimir, M. (1976). Toxicity of Insecticides to Adult Australian Plague Locust, Chortoicetes terminifera (Orthoptera: Acrididae). *J.Aust.Entomol.Soc.* 14: 321-326.

; Habitat: T; Effect Codes: MOR

547. Edmiston, C. E. Jr, Goheen, M., and Malaney, G. W. (1984). Environmental assessment of carbamate toxicity: Utilization of the Coomassie Blue G soluble protein assay as an index of environmental toxicity. *HAZARDOUS WASTE. Vol. 1, no. 2, pp. 205-216. 1984.*
Rejection Code: IN VITRO.

548. Edmiston, C. E. Jr, Goheen, M., Malaney, G. W., and Mills, W. L. (1985). Evaluation of carbamate toxicity: Acute toxicity in a culture of Paramecium multimicronucleatum upon exposure to aldicarb, carbaryl, and mexacarbate as measured by Warburg respirometry and acute plate assay. *Environmental Research. Vol. 36, no. 2, pp. 338-350. 1985.*
Rejection Code: BACTERIA.

549. Edwards, C. A. (1988). The Use of Key Indicator Processes for Assessment of the Effects of Pesticides on Soil Indicators. *In: Brighton Crop Prot.Conf., Pests and Diseases - 1988, Lavenham Press Ptd., Lavenham, U.K.* 2: 739-746.

; Habitat: T; Effect Codes: POP

550. EDWARDS RA, ORDONEZ JA, DAINTY RH, HIERRO EM, and DE LA HOZ L (1999). Characterization of the headspace volatile compounds of selected Spanish dry fermented sausages. *FOOD CHEMISTRY; 64* 461-465.
Rejection Code: HUMAN HEALTH.

551. Eeckhoutte, C., Giuliano Albo, A., Carletti, M., Rossetto Giaccherino, A., Galtier, P., Nebbia, C., and Dacasto, M. (2002). Time-dependent variations of drug-metabolising enzyme

activities (DMEs) in primary cultures of rabbit hepatocytes. *Toxicology in Vitro* 16: 375-382.
Rejection Code: IN VITRO, METABOLISM.

552. EELLS JT, PLEYTE KA, RASMUSSEN JL, and HOLMAN PA (1992). DIFFERENCES IN THE NEUROEXCITATORY ACTIONS OF SODIUM CHANNEL SPECIFIC NEUROTOXINS IN RAT AND TROUT BRAIN SYNAPTOSOMES. *22ND ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, ANAHEIM, CALIFORNIA, USA, OCTOBER 25-30, 1992. SOC NEUROSCI ABSTR; 18* 1135.
Rejection Code: ABSTRACT.

553. Efimov, Igor R. and Ripplinger, Crystal M. (2006). Tornado in a dish: Revealing the mechanisms of ventricular arrhythmias in engineered cardiac tissues. *Cardiovascular Research* 69: 307-308.
Rejection Code: METHODS.

554. Eijsackers, H. (1998). Earthworms In Environmental Research: Still A Promising Tool. *Selected Papers From The Fifth International Symposium On Earthworm Ecology, Columbus, Ohio, Usa, July 1994.Vi+389p.Crc Press, Inc.: Boca Raton, Florida, Usa; London, England, Uk.Isbn 1-884015-74-3.* 295-323.
Rejection Code: REFS CHECKED/REVIEW.

555. EINISTO, P. , WATANABE, M., ISHIDATE, M. JR, and NOHMI, T. (1991). Mutagenicity of 30 chemicals in Salmonella typhimurium strains possessing different nitroreductase or O-acetyltransferase activities. *MUTAT RES; 259* 95-102.
Rejection Code: BACTERIA.

556. Eitzer, B. D. and Chevalier, A. (1999). Landscape Care Pesticide Residues In Residential Drinking Water Wells. 62: 420-427.
Rejection Code: SURVEY.

557. EITZER BD and CHEVALIER, A. (1999). Landscape care pesticide residues in residential drinking water wells. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 62* 420-427.
Rejection Code: EFFLUENT.

558. EITZER BD and CHEVALIER, A. (1999). Landscape care pesticide residues in residential drinking water wells. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 62* 420-427.
Rejection Code: SURVEY.

559. EITZER BD and CHEVALIER, A. (1999). Landscape care pesticide residues in residential drinking water wells. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 62* 420-427.
Rejection Code: SURVEY.

560. EITZER BD and CHEVALIER, A. (1999). Landscape care pesticide residues in residential drinking water wells. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 62* 420-427.
Rejection Code: EFFLUENT.

561. El-Dib, M. A. (1971). Colorimetric determination of aniline derivatives in natural waters. *J. Assoc. Offic. Anal. Chem. Vol. 54, no. 6, pp. 1383-1387. 1971.*
Rejection Code: METHODS.

562. El-Dib, M. A., Abdel-Writh, A. M., and Ismail, M. M. (1973). Adsorption of Sevin and Baygon on powdered activated carbon. *W. Wass. Abwasserforsch. Vol. 6, no. 2, pp. 63-68. 1973.*
Rejection Code: FATE.

563. El-Dib, M. A., Ramadan, F. M., and Ismail, Magdy (1975). Adsorption of Sevin and Baygon on granular activated carbon. *Water Research* 9: 795-798.
Rejection Code: FATE.

564. El-Fadel, M. and Hashisho, Z. (2000). Vehicular emissions and air quality assessment in roadway tunnels: the Salim Slam tunnel. *Transportation Research Part D: Transport and Environment* 5: 355-372.
Rejection Code: SURVEY.

565. EL FANTROUSSI S, NTIBAHEZWA, E., THOMAS, S., NAVEAU, H., and AGATHOS SN (1998). Effect of specific inhibitors on the anaerobic reductiVE dechlorination of 2,4,6-trichlorophenol by a stable methanogenic consortium. *ANAEROBE; 4* 197-203.
Rejection Code: METABOLISM, BACTERIA.

566. El Fantroussi, Said, Giot, Renaud, Naveau, Henry, and Agathos, Spiros N. (1998). Acclimation of a methanogenic consortium to a mixture of hydroxylated aromatic compounds. *Chemosphere* 36: 1575-1583.
Rejection Code: MODELING, FATE.

567. El-Refai, A. and Mowafy, M. M. (1973). Propanil Hydrolysis: Inhibition in Rice Plants by Diazinon and Carbaryl Translocated from the Soil. *J.AOAC (Assoc.Off.Anal.Chem.) Int.* 56: 1178-1182.

; Habitat: T; Effect Codes: BCM,POP

568. El-Sayed, M. A., El-Shanshoury, A. R., Swelim, M. A., and El-Salam, S. Sa (1993). Microbiological and physicochemical properties of carbamate insecticides treated soil. *J Agron Crop Sci* 170 : 217-223.
Rejection Code: BACTERIA.

569. El-Seedi, Hesham R., Yamamura, Shosuke, and Nishiyama, Shigeru (2002). Anodic oxidation of 4-methoxy-1-naphthol. *Tetrahedron Letters* 43: 3301-3304.
Rejection Code: METHODS.

570. El-Seedi, Hesham R., Yamamura, Shosuke, and Nishiyama, Shigeru (2002). Reactivity of naphthol towards nucleophiles in anodic oxidation. *Tetrahedron* 58: 7485-7489.
Rejection Code: METHODS .

571. EL-SHARKAWY AM, ABDEL-RAHMAN SZ, HASSAN AA, GABR MH, EL-ZOGHBY SM, and EL-SEWEDY SM (1994). BIOCHEMICAL EFFECTS OF SOME INSECTICIDES ON THE METABOLIC ENZYMES REGULATING GLUTATHIONE METABOLISM. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 52* 505-510.
Rejection Code: METABOLISM.

572. Elespuru, R. K. and Lijinsky, W (1973). Formation of carcinogenic nitroso compounds from nitrite and some types of agricultural chemicals. *Food and Cosmetics Toxicology* 11: 807-17.
Rejection Code: METABOLISM.

573. ELLENSON WD , MUKERJEE, S., STEVENS RK, WILLIS RD, SHADWICK DS,

SOMERVILLE MC, and LEWIS RG (1997). An environmental scoping study in the Lower Rio Grade Valley of Texas: II. Assessment of transboundary pollution transport and other activities by air quality monitoring. *ENVIRONMENT INTERNATIONAL; 23* 643-655.
Rejection Code: SURVEY.

574. Elliott, M. (1980). The Future for Insecticides. *In: M.Locke and D.S.Smith (Eds.), Insect Biology in the Future, Academic Press Inc., New York, NY* 879-904.
Rejection Code: REFS CHECKED/REVIEW.

575. Elliott, M. (1980). The Future for Insecticides. *In: M.Locke and D.S.Smith (Eds.), Insect Biology in the Future, Academic Press Inc., New York, NY* 879-904.
Rejection Code: REFS CHECKED/REVIEW.

576. Elliott, M. (1990). Pyrethroid Insecticides and Human Welfare. *J.E.Casida (Ed.), Pesticides and Alternatives, Elsevier, Amsterdam* 345-355.
Rejection Code: REFS CHECKED/REVIEW.

577. ELLIOTT, M. (1989). THE PYRETHROIDS EARLY DISCOVERY RECENT ADVANCES AND THE FUTURE. *PESTIC SCI; 27* 337-352.
Rejection Code: REVIEW.

578. Elmamlouk, T. H., Philpot, R. M., and Bend, J. R. (1977). Separation of Two forms of Cytochrome P-450 from Hepatic Microsomes of 1,2,3,4-Dibenzanthracene (DBA) Pretreated Little Skates (Raja erinacea). *Pharmacologist* 19: 160 (ABS).
Rejection Code: ABSTRACT.

579. Elovaara, E., Vaeaenaenen, V., and Mikkola, J. (2003). Simultaneous analysis of naphthols, phenanthrols, and 1-hydroxypyrene in urine as biomarkers of polycyclic aromatic hydrocarbon exposure: intraindividual variance in the urinary metabolite excretion profiles caused by intervention with beta -naphthoflavone induction in the rat. *Archives of Toxicology [Arch. Toxicol.]. Vol. 77, no. 4, pp. 183-193. Apr 2003.*
Rejection Code: METABOLISM.

580. Eltom, S. E., Babish, J. G., and Ferguson, D. C. (1992). The interaction of L-triiodothyronine and 2,3,7,8-tetrachlorodibenzo-p-dioxin on Ah-receptor-mediated hepatic phase I and phase II enzymes and iodothyronine 5'-deiodinase in thyroidectomized rats. *Toxicology Letters [TOXICOL. LETT.]. Vol. 61, no. 2-3, pp. 125-139. 1992.*
Rejection Code: METABOLISM.

581. Eltom, Sakina E., Babish, John G., and Ferguson, Duncan C. (1992). The interaction of -triiodothyronine and 2,3,7,8-tetrachlorodibenzo-p-dioxin on Ah-receptor-mediated hepatic Phase I and Phase II enzymes and iodothyronine 5'-deiodinase in thyroidectomized rats. *Toxicology Letters* 61: 125-139.
Rejection Code: METABOLISM.

582. EMA, M., MIYAWAKI, E., HARAZONO, A., and OGAWA, Y. (1997). Effects of triphenyltin chloride on implantation and pregnancy in rats. *REPRODUCTIVE TOXICOLOGY; 11* 201-206.
Rejection Code: NO COC.

583. ENDO, T., NAKANISHI, M., FURUKAWA, S., JOUBERT FJ, TAMIYA, N., and HAYASHI, K. (1986). STOPPED-FLOW FLUORESCENCE STUDIES ON BINDING KINETICS OF NEUROTOXINS WITH ACETYLCHOLINE RECEPTOR. *BIOCHEMISTRY; 25* 395-404.

Rejection Code: METHODS.

584. Enriquez, Philip M. and Divincenzo, George D. (1984). Characterization of the urinary metabolites of 5-amino-1-naphthol in the rat. *Toxicology* 29: 337-343.
Rejection Code: METABOLISM.

585. ENTRY JA, WATRUD LS, MANASSE RS, and VANCE NC (1997). PHYTOREMEDIATION AND RECLAMATION OF SOILS CONTAMINATED WITH RADIONUCLIDES. *KRUGER, E. L., T. A. ANDERSON AND J. R. COATS (ED.). ACS SYMPOSIUM SERIES, 664. PHYTOREMEDIATION OF SOIL AND WATER CONTAMINANTS; SYMPOSIUM HELD DURING THE 212TH NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY, ORLANDO, FLORIDA, USA, AUGUST 25-29, 1996. X+318P. AMERICAN CHEMICAL SOCIETY: WASHINGTON, DC, USA. ISBN 0-8412-3503-1.; 664 (0). 1997. 299-306. AB - BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER FUNGUS BACTERIA PLANT MYCORRHIZAL BIOREMEDIATION AGENT PHYTOREMEDIATION SOIL RECLAMATION RADIONUCLIDE CONTAMINANT POLLUTION REMEDIATION METHOD*.
Rejection Code: EFFLUENT.

586. EPA/OTS (1994). Toxicity of Compounds Including P-Nitrodichlorobenzene Used in Building No. 750 with Cover Letter Outlining Current Study of Tetrahydrofuran Toxicity Dated 05/10/94 (Sanitized). *EPA/OTS Doc.#86940000705S*.
Rejection Code: PUBL AS.

587. ERDMANN, F. , BROSE, C., and SCHUETZ, H. (1990). A TLC screening program for 170 commonly used pesticide using the corrected Rf value (Rcf value). *INT J LEG MED; 104* 25-32.
Rejection Code: METHODS.

588. Erdos, Ervin G. (1961). Esterases in fireflies and their inhibition. *Archives of Biochemistry and Biophysics* 93: 302-305.
Rejection Code: IN VITRO.

589. Espinosa-Mansilla, A., de la Pena, A. Munoz, Salinas, F., and Zamoro, A. (1992). Simultaneous determination of pesticides by multivariate spectral analysis and derivative spectrophotometry. *Analytica Chimica Acta* 258: 47-53.
Rejection Code: METHODS.

590. Espinosa-Mansilla, A., Salinas, F., and Zamoro, A. (1994). Kinetic Study Of The Degradation Of Chlorpyrifos By Using A Stopped-Flow Fia System. Semiautomatic Determination In Commercial Formulations. 41: 651-657.
Rejection Code: CHEM METHOD.

591. ESTES EA (1992). Economics of insecticide use on staked tomatoes in western North Carolina. AU - WALGENBACH JF. *J ECON ENTOMOL; 85* 888-894.
Rejection Code: NO EFFECT.

592. Estesen, B J, Buck, N A, and Ware, G W (1982). Dislodgeable Insecticide Residues on Cotton Foliage: Carbaryl, Cypermethrin, and Methamidophos. *Bulletin Of Environmental Contamination And Toxicology* 28: 490-493.
Rejection Code: HUMAN HEALTH.

593. Eto, M., Kuwano, E., Yoshikawa, M., Shiko, M., Kohno, M., Kamihata, M., and Nakatsu, S. (1982). Mutagenicity and Anticholinesterase Activity of Some Possible Metabolites of Aryl N-Methylcarbamates. *Journal of the Faculty of Agriculture, Kyushu University [J.*

FAC. AGRIC., KYUSHU UNIV.]. Vol. 26, no. 4, pp. 213-219. 1982.
Rejection Code: BACTERIA.

594. Eto, M., Seifert, J., Engel, J. L., and Casida, J. E. (1980). Organophosphorus and Methylcarbamate Teratogens: Structural Requirements for Inducing Embryonic Abnormalities in Chickens and Kynurenine Formamidase Inhibition in Mouse Liver. *Toxicol.Appl.Pharmacol.* 54: 20-30.

; Habitat: T; Effect Codes: PHY,GRO

595. Eulitz, E. G. (1986). Initial Experiments in the Control of False Wireworm (Tenebrionidae) on Tobacco Transplants. *Phytophylactica* 18: 115-119.

596. Evans, Kathryn L. (1998). An SH2 domain stands between infectious mononucleosis and a fatal lymphoproliferative disease. *Molecular Medicine Today* 4: 510.
Rejection Code: IN VITRO.

597. Everts, K. L. (1998). Effects of Host Resistance and Fungicides on Yield and Quality of Spinach in Maryland. *Meet.of the Am.Phytopathol.Soc., Potomac Div., Mar.18-20, 1998, Morgantown, WV, Phytopathology* 88: S130.
Rejection Code: ABSTRACT.

598. Ewing, Bradley T, Kruse, Jamie B, and Thompson, Mark A (2003). A comparison of employment growth and stability before and after the Fort Worth tornado. *Global Environmental Change Part B: Environmental Hazards* 5: 83-91.
Rejection Code: NO TOX DATA.

599. F. Reis, Boaventura, Morales-Rubio, Angel, and de la Guardia, Miguel (1999). Environmentally friendly analytical chemistry through automation: comparative study of strategies for carbaryl determination with p-aminophenol. *Analytica Chimica Acta* 392: 265-272.
Rejection Code: METHODS.

600. Fahrig, R. (1974). Comparative Mutagenicity Studies with Pesticides. *IARC Sci.Publ.* 10: 161-181.
Rejection Code: REVIEW.

601. Fair, J. M. , Kennedy, P. L. *., and McEwen, L. C. (1995). Diet of nesting killdeer in North Dakota. *Wilson Bulletin [WILSON BULL.]. Vol. 107, no. 1, pp. 174-178. 1995.*
Rejection Code: SURVEY.

602. FALANDYSZ, J., STRANDBERG, L., BERGQVIST P-A, STRANDBERG, B., and RAPPE, C. (1997). Spatial distribution and bioaccumulation of polychlorinated naphthalenes (PCNs) in mussel and fish from the Gulf of Gdansk, Baltic Sea. *SCIENCE OF THE TOTAL ENVIRONMENT; 203* 93-104.
Rejection Code: SURVEY.

603. FALANDYSZ, J., STRANDBERG, L., KULP SE, STRANDBERG, B., BERGQVIST P-A, and RAPPE, C. (1996). Congener-specific analysis of chloronaphthalenes in white-tailed sea eagles Haliaeetus albicilla breeding in Poland. *CHEMOSPHERE; 33* 51-69.
Rejection Code: SURVEY.

604. Fallahi, E., Lee, R. R., and Lee, G. A. (1998). **<04 Article Title>.** *Horttechnology, 8 (4) pp. 556-560, 1998* <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

605. Fallahi, E., Lee, R. R., and Lee, G. A. (1998). Commercial-scale use of hydrogen cyanamide for apple and peach blossom thinning. *HortTechnology, 8 (4) pp. 556-560, 1998*.
Rejection Code: NO COC.

606. Faller, Peter and Vasak, Milan (1998). Detection of two novel lowest lying singlet-triplet transitions of the C---S---C chromophore in L-methionine. *Inorganica Chimica Acta* 272: 150-152.
Rejection Code: METHODS.

607. FAN, L., SONG, J., and BEAUDRY, R. (1997). USING HEXANAL VAPOR TO INHIBIT ACTIVITY OF PENICILLIUM EXPANSUM IN INOCULATED WHOLE APPLE FRUIT. *94TH ANNUAL INTERNATIONAL CONFERENCE OF THE AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE, SALT LAKE CITY, UTAH, USA, JULY 23-26, 1997. HORTSCIENCE; 32* 536.
Rejection Code: BACTERIA.

608. Fang, Feng, Kanan, Sofian, Patterson, Howard H., and Cronan, Christopher S. (1998). A spectrofluorimetric study of the binding of carbofuran, carbaryl, and aldicarb with dissolved organic matter. *Analytica Chimica Acta* 373: 139-151.
Rejection Code: CHEM METHODS.

609. Fang, Feng, Kanan, Sofian, Patterson, Howard H., and Cronan, Christopher S. (1998). A spectrofluorimetric study of the binding of carbofuran, carbaryl, and aldicarb with dissolved organic matter. *Analytica Chimica Acta* 373: 139-151.
Rejection Code: METHODS, NO TOX DATA.

610. Farage-Elawar, M. and Blaker, W. D. (1989). CHICK EMBRYO EXPOSURE TO CARBAMATES ALTERS NEUROCHEMICAL PARAMETERS AND BEHAVIOR. *19th Annual Meeting of the Society for Neuroscience, Phoenix, Arizona, Usa, October 29-November 3, 1989. Soc Neurosci Abstr* 15 : 142.
Rejection Code: ABSTRACT.

611. Farage-Elawar, M. and Rowles, T. K. (1992). Toxicology of Carbaryl and Aldicarb on Brain and Limb Cultures of Chick Embryos. *J.Appl.Toxicol.* 12: 239-244.
Rejection Code: IN VITRO.

612. Farage-Elawar, M and Rowles, T K (1992). Toxicology of carbaryl and aldicarb on brain and limb cultures of chick embryos. *Journal Of Applied Toxicology: JAT* 12: 239-244.
Rejection Code: IN VITRO.

613. Fatima, R. A. and Ahmad, M. (2006). Allium cepa derived EROD as a potential biomarker for the presence of certain pesticides in water. *Chemosphere, 62 (4) pp. 527-537, 2006.*
Rejection Code: METHODS.

614. FAUGERE MC, MATTHEWS, C., FRIEDLER RM, and MALLUCHE HH (1986). EFFECTS OF PARATHYROID HORMONE AND 1 25 DIHYDROXYVITAMIN D-3 ON ACCUMULATION OF ALUMINUM IN BONE IN DOGS WITH RENAL FAILURE. *MEETING OF THE AMERICAN SOCIETY OF NEPHROLOGY, NEW ORLEANS, LA., USA, DEC. 15-18, 1985. KIDNEY INT* 29: 213.
Rejection Code: ABSTRACT.

615. Feeney, R. E., Leonard, R. M., and Eufernio, D. D. (1956). Irreversible Inactivation of Lysozyme by Copper. *Arch.Biochem.Biophys.* 61: 72-83.
Rejection Code: BACTERIA/IN VITRO.

616. Feldman, K. L., Armstrong, D. A., Dumbauld, B. R., DeWitt, T. H., and Doty, D. C. (2000). Oysters, Crabs, and Burrowing Shrimp: Review of an Environmental Conflict Over Aquatic Resources and Pesticide Use in Washington State's (USA) Coastal Estuaries. *Estuaries [Estuaries]. Vol. 23, no. 2, pp. 141-176. Apr 2000.*
Rejection Code: REVIEW.

617. Feldman, K. L., Armstrong, D. A., Dumbauld, B. R., and Langdon, C. J. (1995). Controlling Populations of Burrowing Thalassinid Shrimp on Oyster Culture Grounds: Effects of Harvesting and Shell Configuration on Recruitment of Young-of-the-Year. *J.Shellfish Res.* 14: 265 .
Rejection Code: ABSTRACT.

618. Feldman, Ken S. and Perkins, Angela L. (2001). 1,6-C---H insertion of alkylidenecarbenes in 1-naphthol and 1-anthrol derivatives. *Tetrahedron Letters* 42: 6031-6033.
Rejection Code: METHODS.

619. Felsot, A. S. and Ruppert, J. R. (2002). Imidacloprid Residues in Willapa Bay (Washington State) Water and Sediment Following Application for Control of Burrowing Shrimp. *Journal of Agricultural and Food Chemistry [J. Agric. Food Chem.]. Vol. 50, no. 15, pp. 4417-4423. 17 Jul 2002.*
Rejection Code: SURVEY.

620. Feral, C. and LeGall, S. (1982). The Influence of a Pollutant Factor (Tributyltin) on the Neuroendocrine Mechanism Reponsible for the Occurence of a Penis in the Females of Ocenebra erinacea. *In: J.Lever and H.H.Boer (Eds.), Molluscan Neuroendocrinology: Proceedings of the International Minisymposium on Molluscan Endocrinology, Elsevier, Amsterdam* 173-175.
Rejection Code: NO CONC.

621. Fernandez-Alba, A. R., Guil, L. H., Lopez, G. D., and Chisti, Y. (2001). Toxicity of Pesticides in Wastewater: A Comparative Assessment of Rapid Bioassays. *Anal.Chim.Acta* 426: 289-301.

; Habitat: A; Effect Codes: MOR

622. Fernandez-Band, B., Linares, P., De Castro M Dl, and Valcarcel, M. (1991). Flow-through sensor for the direct determination of pesticide mixtures without chromatographic separation. *Anal Chem* 63 : 1672-1675.
Rejection Code: METHODS.

623. Fernandez, O. A. (1965). (Germinacion y Desarrollo de Semillas de Pepino y Nabo Sembradas a Distintas Profundidades en un Suelo Tratado con el Acido 2,4-D) Germination and Growth of Cucumber and Turnip Seeds Sown at Different Depth in a 2,4-Dichlorophenoxyacetic Acid-Treated Soil. *Rev.Fac.Agron.Univ.Nac.la Plata* 41: 187-196.
Rejection Code: NON-ENGLISH.

624. Fernandez, Y., Falzon, M., Cambon-Gros, C., and Mitjavila, S. (1982). Carbaryl Tricompartmental Toxicokinetics and Anticholinesterase Activity. *Toxicology Letters [TOXICOL. LETT.]. Vol. 13, no. 3-4, pp. 253-258. 1982.*
Rejection Code: METABOLISM.

625. Ferrari, Ana, Venturino, Andres, and Pechen de D'Angelo, Ana M. (Effects of carbaryl and azinphos methyl on juvenile rainbow trout (oncorhynchus mykiss) detoxifying enzymes. *Pesticide Biochemistry and Physiology* In Press, Accepted Manuscript.

Rejection Code: NO SOURCE.

626. Ferrari, M. J., Ator, S. W., Blomquist, J. D., and Dysart, J. E. (1997). Pesticides in surface water of the Mid-Atlantic region.
Rejection Code: NO SPECIES.

627. Ferre, J., Boque, R., Fernandez-Band, B., Larrechi, M. S. , and Rius, F. X. (1997). Figures of merit in multivariate calibration. Determination of four pesticides in water by flow injection analysis and spectrophotometric detection. *Analytica Chimica Acta* 348: 167-175.
Rejection Code: METHODS.

628. Ferree, D. C. and Schmid, J. C. (2001). Chemical thinning 'Gala' apple in the midwest. *Journal of the American Pomological Society, 55 (2) pp. 109-113, 2001*.
Rejection Code: NO COC .

629. Ferrer, I. and Barcelo, D. (1996). Determination and stability of pesticides in freeze-dried water samples by automated on-line solid-phase extraction followed by liquid chromatography with diode-array detection. *Journal of Chromatography A* 737: 93-99.
Rejection Code: CHEM METHOD.

630. FIEHN, O., VIGELAHN, L., KALNOWSKI, G., REEMTSMA, T., and JEKEL, M. (1997). Toxicity-directed fractionation of tannery wastewater using solid-phase extraction and luminescence inhibition in microtiter plates. *ACTA HYDROCHIMICA ET HYDROBIOLOGICA; 25* 11-16.
Rejection Code: EFFLUENT.

631. FIELD RP and HOY MA (1986). EVALUATION OF GENETICALLY IMPROVED STRAINS OF METASEIULUS-OCCIDENTALIS ACARINA PHYTOSEIIDAE FOR INTEGRATED CONTROL OF SPIDER MITES ON ROSES IN GREENHOUSES. *HILGARDIA; 54* 1-32.
Rejection Code: BIOLOGICAL TOXICANT.

632. Files, L. A. and Winefordner, J. D. (1987). FEASIBILITY STUDY OF CONSTANT ENERGY SYNCHRONOUS LUMINESCENCE SPECTROMETRY FOR PESTICIDE DETERMINATION APPLICATION TO CARBARYL NAPHTHOL AND CARBOFURAN. *J Agric Food Chem* 35 : 471-474.
Rejection Code: METHODS.

633. Fillion, Eric, Trepanier, Vincent E., Mercier, Lauren G., Remorova, Anna A., and Carson, Rebekah J. (2005). Oxidative coupling of 2-substituted 1,2-dihydro-1-naphthols using Jones reagent: a simple entry into 3,3'-disubstituted 1,1'-binaphthyl-4,4'-diols. *Tetrahedron Letters* 46: 1091-1094.
Rejection Code: METHODS.

634. Finerty, Jr Patrick J., Muhandiram, Ranjith, and Forman-Kay, Julie D. (2002). Side-chain Dynamics of the SAP SH2 Domain Correlate with a Binding Hot Spot and a Region with Conformational Plasticity. *Journal of Molecular Biology* 322: 605-620.
Rejection Code: IN VITRO.

635. Finley, Brent L., Ashley, Patrick J., Neptune, Andre G., and Yost, Garold S. (1986). Substrate-selective induction of rabbit hepatic UDP-glucuronyltransferases by ethanol and other xenobiotics. *Biochemical Pharmacology* 35: 2875-2881.
Rejection Code: IN VITRO, METABOLISM.

636. Fischer, E. , Lovas, M., and Molnar, L. (1982). The effect of benzimidazole, carbamate and

organophosphorous pesticides on the oxygens-dependent nuclear volume alterations in the chloragocytes of Tubifex tubifex mull. *Environmental Pollution Series A, Ecological and Biological* 28: 285-289.
Rejection Code: IN VITRO.

637. Fischer, Reiner, Erdelen, Christoph, and Bretschneider, Thomas (20011004). Synergistic insecticidal and acaricidal compositions containing dihydrofuranone derivatives. 49 pp.
Rejection Code: CHEM METHODS.

638. Flaskos, John, Fowler, Maxine J., Teurtrie, Cedric, and Hargreaves, Alan J. (1999). The effects of carbaryl and trichlorphon on differentiating mouse N2a neuroblastoma cells. *Toxicology Letters* 110: 79-84.
Rejection Code: IN VITRO.

639. Fleeger, J. W., Carman, K. R., and Nisbet, R. M. (2003). Indirect Effects of Contaminants in Aquatic Ecosystems. *Sci.Total Environ.* 317: 207-233.
Rejection Code: REVIEW.

640. FLINDT MR and KAMP-NIELSEN, L. (1997). Modelling of an estuarine eutrophication gradient. *ECOLOGICAL MODELLING; 102* 143-153.
Rejection Code: MODELING.

641. FLYNN JT and RENZI PM (1991). MICROVESSEL-DERIVED ENDOTHELIAL CELLS PRODUCE MORE PROSTAGLANDIN E-2 THAN PROSTACYCLIN IN-VITRO IN RESPONSE TO BACTERIAL ENDOTOXINS. *75TH ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, ATLANTA, GEORGIA, USA, APRIL 21-25, 1991. FASEB (FED AM SOC EXP BIOL) J; 5 (6). 1991. A1502.*
Rejection Code: IN VITRO.

642. Fogg, A. G. and Ahmed, Y. Z. (1974). Determination of sub-micromolar concentrations of sulphonamides by differential pulse polarography after diazotization and coupling with 1-naphthol. *Analytica Chimica Acta* 70: 241-244.
Rejection Code: METHODS.

643. Fong, A. T. , Swanson, H. I., Dashwood, R. H., Williams, D. E., Hendricks, J. D., and Bailey, G. S. (1990). Mechanisms of anti-carcinogenesis by indole-3-carbinol. Studies of enzyme induction, electrophile-scavenging, and inhibition of aflatoxin B sub(1) activation. *Biochemical Pharmacology [BIOCHEM. PHARMACOL.]. Vol. 39, no. 1, pp. 19-26. 1990.*
Rejection Code: METABOLISM, IN VITRO.

644. Fong, Arthur T., Swanson, Hollie I., Dashwood, Roderick H., Williams, Davide E., Hendricks, Jerry D., and Bailey, George S. (1990). Mechanisms of anti-carcinogenesis by indole-3-carbinol : Studies of enzyme induction, electrophile-scavenging, and inhibition of aflatoxin B1 activation. *Biochemical Pharmacology* 39: 19-26.
Rejection Code: IN VITRO.

645. FONG WP, WONG, R. NS, GO, T. TM, and YEUNG HW (1991). Minireview: Enzymatic properties of ribosome-inactivating protein (RIPs) and related toxins. *LIFE SCI; 49* 1859-1870.
Rejection Code: IN VITRO.

646. Foreman, W. T., Majewski, M. S., Goolsby, D. A., Wiebe, F. W., and Coupe, R. H. (2000). Pesticides in the atmosphere of the Mississippi River Valley, part II -- air. *The Science of*

The Total Environment 248: 213-226.
Rejection Code: SURVEY.

647. Foreman, W. T., Majewski, M. S., Goolsby, D. A., Wiebe, F. W., and Coupe, R. H (2000). Pesticides in the atmosphere of the Mississippi River Valley, part II - air. *Science of the Total Environment* 248: 213-226.
Rejection Code: SURVEY.

648. Foreman, W. T., Majewski, M. S., Goolsby, D. A., Wiebe, F. W., and Coupe, R. H. (2000). Pesticides in the atmosphere of the Mississippi River Valley, part II -- air. *The Science of The Total Environment* 248: 213-226.
Rejection Code: SURVEY.

649. Foretic, B. , Burger, N., and Hankonyi, V. (1995). Reactions of the aquapentacyanoferrate(II) ion with 2-nitroso-1-naphthol and 2-nitroso-1-naphthol-4-sulphonic acid. *Polyhedron* 14: 605-609.
Rejection Code: METHODS.

650. FOX, I. and DE LEON D (1986). FAILURE OF CARBARYL-BASED PRODUCTS TO REDUCE BROWN DOG TICK POPULATIONS IN PUERTO RICO. *J AGRIC UNIV P R; 70* 299-302.
Rejection Code: SURVEY.

651. FRANK DE, KRAMER TT, and AHRENS FA (1993). CYTOKINE PRODUCTION IN RESPONSE TO LIPOPOLYSACCHARIDE OR SALMONELLA IN A PIG LIVER PERFUSION MODEL. *JOINT MEETING OF THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS AND THE CLINICAL IMMUNOLOGY SOCIETY, DENVER, COLORADO, USA, MAY 21-25, 1993. J IMMUNOL; 150* 202A.
Rejection Code: BACTERIA.

652. Frank, K. (1994). Energiskogens Miljoekonsekvenser. Aspekter Paa Odling, Slamgoedsling Och Foerbraenning. (Environmental Effects of Energy Forest (Short Rotation Willow). Aspects on Cultivation, Sludge Application and Combustion). *Swedish National Board for Industrial and Technical Development, Stockholm, Sweden (NTIS#DE94763358)* 31.
Rejection Code: MIXTURE.

653. Frank, R., Braun, H. E., and Ripley, B. D. (1987). Residues of insecticides, fungicides, and herbicides in fruit produced in Ontario, Canada, 1980-1984. *Bulletin of Environmental Contamination and Toxicology [BULL. ENVIRON. CONTAM. TOXICOL.]. Vol. 39, no. 2, pp. 272-279. 1987.*
Rejection Code: SURVEY.

654. FRANK, R., BRAUN HE, RIPLEY BD, and PITBLADO, R. (1991). Residues of nine insecticides and two fungicides in raw and processed tomatoes. *J FOOD PROT;* 54: 41-46.
Rejection Code: NO TOX DATA.

655. Franklin, M. R. and Moody, D. E. (1992). Concomitant induction of microsomal epoxide hydrolase and UDP-glucuronosyltransferase activities by dipyridine compounds. *Drug Metabolism and Disposition [DRUG METAB. DISPOSITION.]. Vol. 20, no. 5, pp. 726-729. 1992.*
Rejection Code: METABOLISM.

656. Franklin, M. R., Slawson, M. H., and Moody, D. E. (1993). Selective induction of rat liver phase II enzymes by N-heterocycle analogues of phenanthrene: A response exhibiting high correlation between UDP-glucuronosyltransferase and microsomal epoxide hydrolase

activities. *Xenobiotica. Vol. 23, no. 3, pp. 267-277. 1993.*
Rejection Code: METABOLISM.

657. Franklin, Michael R. (1991). Drug metabolizing enzyme induction by simple diaryl pyridines; 2-substituted isomers selectively increase only conjugation enzyme activities, 4-substituted isomers also induce cytochrome P450. *Toxicology and Applied Pharmacology* 111: 24-32.
Rejection Code: METABOLISM.

658. Franklin, Michael R. (1993). Induction of rat liver drug-metabolizing enzymes by heterocycle-containing Mono-, Di-, Tri- and tetra-arylmethanes. *Biochemical Pharmacology* 46: 683-689.
Rejection Code: METABOLISM.

659. FRASER MP, CASS GR, SIMONEIT, B. RT, and RASMUSSEN RA (1998). Air quality model evaluation data for organics: 5. C6-C22 nonpolar and semipolar aromatic compounds. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 32* 1760-1770.
Rejection Code: MODELING.

660. FRENCH CL, YAUN S-S, BALDWIN LA, LEONARD DA, ZHAO XQ, and CALABRESE EJ (1995). Potency ranking of methemoglobin-forming agents. *JOURNAL OF APPLIED TOXICOLOGY; 15* 167-174.
Rejection Code: METHODS, IN VITRO.

661. FRITSCHE KL, BIENHOFF SE, ALLEN GA, and BERG JN (1991). PROSTAGLANDIN E-2 PGE-2 PRODUCTION FROM BOVINE ALVEOLAR MACROPHAGES STIMULATED WITH BOVINE RESPIRATORY VIRUSES AND BACTERIAL ENDOTOXINS . *75TH ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, ATLANTA, GEORGIA, USA, APRIL 21-25, 1991. FASEB (FED AM SOC EXP BIOL) J; 5 (5). 1991. A1272.*
Rejection Code: BACTERIA.

662. Fujita, S., Suzuki, M., and Suzuki, T. (1984). Structure-activity relationships in the induction of hepatic drug metabolism by azo compounds. *Xenobiotica. Vol. 14, no. 7, pp. 565-568. 1984.*
Rejection Code: MODELING, METABOLISM.

663. Fujita, Shoichi, Peisach, Jack, Ohkawa, Hideko, Yoshida, Yuko, Adachi, Shigeru, Uesugi, Takashi, Suzuki, Masahiko, and Suzuki, Tokuji (1984). The effect of Sudan III on drug metabolizing enzymes. *Chemico-Biological Interactions* 48: 129-143.
Rejection Code: METABOLISM, IN VITRO.

664. GAFTER, U., EDELSTEIN, S., HIRSH, J., and LEVI, J. (1986). METABOLIC ACIDOSIS ENHANCES 1 25 DIHYDROXYVITAMIN D-3-INDUCED INTESTINAL ABSORPTION OF CALCIUM AND PHOSPHORUS IN RATS. *MINER ELECTROLYTE METAB* 12: 213-217.
Rejection Code: METABOLISM.

665. Gaines, T. B. (1969). Acute Toxicity of Pesticides. *Toxicol.Appl.Pharmacol.* 14: 515-534.

; Habitat: T; Effect Codes: MOR

666. GALASSI, S. , VALSECCHI, S., and TARTARI GA (1997). The distribution of PCB's and chlorinated pesticides in two connected Himalayan lakes. *WATER AIR AND SOIL POLLUTION; 99* 717-725.

Rejection Code: SURVEY.

667. Galinsky, Raymond E., Manning, Bradford W., Kimura, Robert E., and Franklin, Micharl R. (1992). Changes in conjugative enzyme activity and acetaminophen metabolism in young and senescent male F-344 rats following prolonged exposure to buthionine sulfoximine. *Experimental Gerontology* 27: 221-232.
Rejection Code: METABOLISM.

668. GALLETTI GC , BOCCHINI, P., CHIAVARI, D. C-G, and MAZZEO, R. (1997). Chemical characterization of the black crust present on the stone central portal of St. Denis abbey. *FRESENIUS' JOURNAL OF ANALYTICAL CHEMISTRY; 357* 1211-1214.
Rejection Code: SURVEY.

669. GANESHKUMAR, M. and ABDULKAREEM, A. (1986). STUDIES ON THE EFFICACY OF SOME CHEMICAL COMBINATIONS IN CONTROLLING THE POWDERY MILDEW DISEASE ON BHENDI. *PESTICIDES (BOMBAY); 20 (9). 1986 (RECD. 1987). 16-19.*
Rejection Code: BACTERIA.

670. Gant, D. B., Cole, R. J., Valdes, J. J., Eldefrawi, M. E., and Eldefrawi, A. T. (1987). Action of Tremorgenic Mycotoxins on GABAa Receptor. *Life Sci.* 41: 2207-2214.
Rejection Code: IN VITRO.

671. Gao, J R, Rao, J V, Wilde, G E, and Zhu, K Y (1998). Purification and kinetic analysis of acetylcholinesterase from western corn rootworm, Diabrotica virgifera virgifera (Coleoptera: Chrysomelidae). *Archives Of Insect Biochemistry And Physiology* 39: 118-125.
Rejection Code: IN VITRO.

672. Gapochka, L. D., Artiukchova, V. I., Lobacheva, G. V., and Lebedeva, T. E. (1980). The Study of the Adaptation of Blue-Green Algae Synechocystis aquatilis and Anacystis nidulans to Dispersant DN-75. *Vestn.Mosk.Univ.Ser.16 Biol.* 2: 30-38 (RUS) (ENG ABS).
Rejection Code: NON-ENGLISH.

673. Garcia de Llasera, M. P., Bernal-Gonzalez, M., and de Llasera, M. P. Garcia (2001). Presence of carbamate pesticides in environmental waters from the Northwest of Mexico: determination by liquid chromatography. *Water Research (Oxford)* 35: 1933-1940.
Rejection Code: NO SPECIES.

674. Garcia-Martinez, M. J., Canoira, L., Blazquez, G., Da Riva, I., Alcantara, R., and Llamas, J. F. (2005). Continuous photodegradation of naphthalene in water catalyzed by TiO2 supported on glass Raschig rings. *Chemical Engineering Journal* 110: 123-128.
Rejection Code: FATE.

675. Garcia Sanchez, F., Navas Diaz, A., Ramos Peinado, M. C., and Belledone, C. (2003). Free and sol-gel immobilized alkaline phosphatase-based biosensor for the determination of pesticides and inorganic compounds. *Analytica Chimica Acta* 484: 45-51.
Rejection Code: METHODS.

676. Garrett, Kevin E., Chang Feng, Wu, Matsuzaka, Hiroyuki, Geoffroy, Gregory L., and Rheingold, Arnold L. (1990). Further studies of the synthesis of 1-naphthols and 4-hydroxy-5,6-dimethylbenzothiophene by protonation of Cp(CO)2W[triple bond; length as m-dash]CTol and Cp(CO)2W[triple bond; length as m-dash]C(2-C4H3S) in the presence of alkynes and carbon monoxide. *Journal of Organometallic Chemistry* 394: 251-264.
Rejection Code: METHODS.

677. Garten, C. T. and Trabalka, J. R. (1983). Evaluation of Models for Predicting Terrestrial Food Chain Behavior of Xenobiotics. *Environ.Sci.Technol.* 17: 590-595.
Rejection Code: REFS CHECKED/REVIEW.

678. Geen, Graham R., Mann, Inderjit S., Valerie Mullane, M., and McKillop, Alexander (1998). A versatile synthesis of fully aromatic benzo[c]phenanthridine alkaloids. *Tetrahedron* 54: 9875-9894.
Rejection Code: METHODS.

679. Gencsoylu, I., Liu, W., Usmani, K. A., and Knowles, C. O. (1998). Toxicity of Acaricides to the Bulb Mite Rhizoglyphus echinopus (Acari: Acaridae). *Exp.Appl.Acarol.* 22: 343-351.

; Habitat: T; Effect Codes: MOR

680. Gentile, T. J. and Calabrese, E. J. (1987). Screening for Potiential Hemolytic Responses to Environmental Agents Using a Bioactivation System: Evaluation of Six Pesticides. *J.Environ.Sci.Health Part A* 22: 427-444.
Rejection Code: IN VITRO.

681. GENTILE TJ and CALABRESE EJ (1987). SCREENING FOR POTENTIAL HEMOLYTIC RESPONSES TO ENVIRONMENTAL AGENTS USING A BIOACTIVATION SYSTEM EVALUATION OF SIX PESTICIDES. *J ENVIRON SCI HEALTH PART A ENVIRON SCI ENG; 22* 427-444.
Rejection Code: METHODS.

682. Georghiou, G. P. (1990). The Effect of Agrochemicals on Vector Populations. *In: R.T.Roush and B.E.Tabashnik (Eds.), Pesticide Resistance in Arthropods, Chapter 7, Chapman and Hall, New York, NY* 183-202.
Rejection Code: REVIEW.

683. Georghiou, G. P. (1972). Studies on Resistance to Carbamate and Organophosphorus Insecticides in Anopheles albimanus. *Am.J.Trop.Med.Hyg.* 21: 797-806.
Rejection Code: REVIEW.

684. Georghiou, Paris E. and Li, Zhaopeng (1993). Calix[4]naphthalenes: Cyclic tetramers of 1-naphthol and formaldehyde: The International Journal for the Rapid Publication of Preliminary. *Tetrahedron Letters* 34: 2887-2890.
Rejection Code: METHODS.

685. Gershbein, Leon L. (1965). Fat-soluble vitamins and rat diaphragm carbohydrate metabolism. *Archives of Biochemistry and Biophysics* 109: 603-606.
Rejection Code: IN VITRO, METABOLISM.

686. GERSTENBERGER SL, GALLINA MP, and DELLINGER JA (1997). Polychlorinated biphenyl congeners are selected organochlorines in Lake Superior fish, USA. *ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY; 16* 2222-2228.
Rejection Code: SURVEY.

687. Ghersi-Egea, Jean-Francois, Minn, Alain, and Siest, Gerard (1988). A new aspect of the protective functions of the blood-brain barrier: Activities of four drug-metabolizing enzymes in isolated rat brain microvessels. *Life Sciences* 42: 2515-2523.
Rejection Code: METABOLISM, NO TOX DATA.

688. Ghosh, P. and Bhattacharya, S. (1992). In Vivo and In Vitro Acetylcholinesterase Inhibition by Metacid-50 and Carbaryl in Channa punctatus Under Natural Field Condition.

Biomed.Environ.Sci. 5: 18-24.
Rejection Code: MIXTURE.

689. Ghosh, S., Bose, S., Ghosh, P., Bhattacharya, S., Sloof, W., and de Kruijf, H. (eds) (1993). Monitoring of xenobiotic stress in fish by an acute phase protein.
Rejection Code: SURVEY.

690. GHOSH SK, DOCTOR PB, BHATNAGAR VK, YADAV, S., DERASARI, A., KULKARNI PK, and KASHYAP SK (1997). RESPONSE OF THREE MICROBIAL TEST SYSTEMS TO PESTICIDES. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 58* 482-488.
Rejection Code: BACTERIA.

691. Gianfreda, L., Sannino, F., Ortega, N., and Nannipieri, P. (1994). Activity of free and immobilized urease in soil: Effects of pesticides. *Soil Biology and Biochemistry* 26: 777-784.
Rejection Code: FATE.

692. Gianfreda, Liliana, Sannino, Filomena, and Violante, Antonio (1995). Pesticide effects on the activity of free, immobilized and soil invertase. *Soil Biology and Biochemistry* 27: 1201-1208.
Rejection Code: NO SPECIES.

693. Gibbs, K. E., Mingo, T. M., and Courtemanch, D. L. (1983). Persistence of Carbaryl (Sevin-4-Oil) in Woodland Ponds and Its Effects on Pond Macroinvertebrates Following Forest Spraying (1980-1983). *In: K.G.Stratton (Ed.), Environ.Monit.Coop.Spruce Budworm Control Project, Maine Forest Serv., Dep.of Conservation, August, ME* 37-66 (Publ As 11294).
Rejection Code: PUBL AS.

694. GIBLIN-DAVIS RM (1994). COCONUT RED RING DISEASE. *PLOETZ, R. C., ET AL. (ED.). COMPENDIUM OF TROPICAL FRUIT DISEASES. VIII+88P. AMERICAN PHYTOPATHOLOGICAL SOCIETY (APS) PRESS: ST. PAUL, MINNESOTA, USA. ISBN 0-89054-162-0.; 0 (0). 1994. 30-32.*
Rejection Code: BACTERIA.

695. GIBSON DM, GALLO LG, KRASNOFF SB, and KETCHUM, R. EB (1995). Increased efficacy of Bacillus thuringiensis subsp. kurstaki in combination with tannic acid. *JOURNAL OF ECONOMIC ENTOMOLOGY; 88* 270-277.
Rejection Code: BACTERIA.

696. GILLAN KA, HASSPIELER BM, RUSSELL RW, ADELI, K., and HAFFNER GD (1998). Ecotoxicological studies in amphibian populations of Southern Ontario. *JOURNAL OF GREAT LAKES RESEARCH; 24* 45-54.
Rejection Code: SURVEY.

697. Giuseppone, Nicolas, Collin, Jacqueline, Domingos, Angela, and Santos, Isabel (1999). (R)-Binaphthoxy diiodide lanthanides. *Journal of Organometallic Chemistry* 590: 248-252.
Rejection Code: METHODS.

698. Glitzenstein, Jeff S. and Harcombe, Paul A. (1988). Effects of the December 1983 tornado on forest vegetation of the big thicket, southeast Texas, U.S.A. *Forest Ecology and Management* 25: 269-290.
Rejection Code: SURVEY.

699. Glogowski, M. E. and Williams, J. L. R. (1981). Boron photochemistry : XIV. The dimesitylboryl

group as an auxochrome in dyes: The synthesis of para-substituted dimesitylborylphenylazonaphthol dyes. *Journal of Organometallic Chemistry* 216: 1-8.
Rejection Code: METHODS.

700. GOALENI, N., SMITH JE, LACEY, J., and GETTINBY, G. (1997). Effects of temperature, water activity, and incubation time on production of aflatoxins and cyclopiazonic acid by an isolate of Aspergillus flavus in surface agar culture. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 1048-1053.
Rejection Code: IN VITRO.

701. GOEBBELS F-J and PUETTMANN, W. (1997). Structural investigation of isolated aquatic fulvic and humic acids in seepage water of waste deposits by pyrolysis-gas chromatography/mass spectrometry. *WATER RESEARCH; 31* 1609-1618.
Rejection Code: METHODS.

702. GOERKE, H. and WEBER, K. (1998). The bioaccumulation pattern of organochlorine residues in Lanice conchilega (Polychaeta) and its geographical variation between the English Channel and the German Bight. *CHEMOSPHERE; 37* 1283-1298.
Rejection Code: SURVEY.

703. GOIN CJ and MAYER VW (1995). Induction of chromosome loss in Saccharomyces cerevisiae strain D61.M by selected benzimidazole compounds. *MUTATION RESEARCH; 343* 185-199.
Rejection Code: BACTERIA.

704. GOLINSKI, P. (1991). SECONDARY METABOLITES MYCOTOXINS PRODUCED BY FUNGI COLONIZING CEREAL GRAIN IN STORAGE STRUCTURE AND PROPERTIES. *CHELKOWSKI, J. (ED.). DEVELOPMENTS IN FOOD SCIENCE, VOL. 26. CEREAL GRAIN: MYCOTOXINS, FUNGI AND QUALITY IN DRYING AND STORAGE. XXII+607P. ELSEVIER SCIENCE PUBLISHERS B.V.: AMSTERDAM, NETHERLANDS; (DIST. IN THE USA AND CANADA BY ELSEVIER SCIENCE PUBLISHING CO., INC.: NEW YORK, NEW YORK, USA). ILLUS. MAPS. ISBN 0-444-88554-4.; 0 (0). 1991. 355-403.*
Rejection Code: BIOLOGICAL TOXICANT.

705. GOMBAR VK, BORGSTEDT HH, ENSLEIN, K., HART JB, and BLAKE BW (1991). A QSAR model of teratogenesis. *QUANT STRUCT-ACT RELAT; 10* 306-332.
Rejection Code: MODELING.

706. GOMIS SM, GODSON DL, WOBESER GA, and POTTER AA (1998). Intracellular survival of Haemophilus somnus in bovine blood monocytes and alveolar macrophages. *MICROBIAL PATHOGENESIS; 25* 227-235.
Rejection Code: IN VITRO.

707. Gonzalez-Martinez, M. A., Morais, S., Puchades, R., Maquieira, A., Abad, A., and Montoya, A. (1997). Development of an automated controlled-pore glass flow through immunosensor for carbaryl. *Analytica Chimica Acta* 347 : 199-205 .
Rejection Code: NO SPECIES.

708. Gonzalez-Martinez, M. A., Morais, S., Puchades, R., Maquieira, A., Abad, A., and Montoya, A. (1997). Development of an automated controlled-pore glass flow-through immunosensor for carbaryl: The Second Workshop on Biosensors and Bioanalytical Techniques in Environmental Analysis. *Analytica Chimica Acta* 347: 199-205.
Rejection Code: METHODS.

709. Gonzalez, V., Ayala, J. H., and Afonso, A. M. (1992). Degradation of carbaryl in natural waters: Enhanced hydrolysis rate in micellar solution. *Bulletin of Environmental Contamination and Toxicology [BULL. ENVIRON. CONTAM. TOXICOL.]. Vol. 48, no. 2, pp. 171-178. 1992.*
Rejection Code: FATE.

710. Goon, Daniel and Klaassen, Curtis D. (1992). Effects of microsomal enzyme inducers upon UDP-glucuronic acid concentration and UDP-glucuronosyltransferase activity in the rat intestine and liver. *Toxicology and Applied Pharmacology* 115: 253-260.
Rejection Code: IN VITRO, METABOLISM.

711. GOREWIT RC (1993). Effects of intramammary endotoxin infusion on milking-induced oxytocin release. *J DAIRY SCI; 76* 722-727.
Rejection Code: NO TOX DATA.

712. GORROD JW and ZHAO KC (1992). COMUTAGENICITY STUDIES ON 2 AMINO-3-METHYLPYRIDINE AND ITS N-OXIDATION PRODUCTS. *FOURTH INTERNATIONAL CONFERENCE OF ANTICANCER RESEARCH, RETHYMNON, CRETE, GREECE, OCTOBER 21-25, 1992. ANTICANCER RES; 12* 1903.
Rejection Code: BACTERIA.

713. Gotelli, Nicholas J. and Bossert, William H. (1991). Ecological character displacement in a variable environment. *Theoretical Population Biology* 39: 49-62.
Rejection Code: MODELING.

714. GOWER JD and WILLS ED (1987). THE OXIDATION OF BENZO-A-PYRENE-7 8-DIHYDRODIOL MEDIATED BY LIPID PEROXIDATION IN THE RAT INTESTINE AND THE EFFECT OF DIETARY LIPIDS. *CHEM-BIOL INTERACT; 63* 63-74.
Rejection Code: METABOLISM, NO COC.

715. Grafton-Cardwell, E. E. and Hoy, M. A. (1985). Intraspecific Variability in Response to Pesticides in the Common Green Lacewing, Chrysoperla carnea (Stephens) (Neuroptera: Chrysopidae). *Hilgardia* 53: 1-31.

; Habitat: T; Effect Codes: MOR,REP

716. Grafton-Cardwell, E. E., Morse, J. G., and Gjerde, A. (1998). Effect of Insecticide Treatments to Reduce Infestation by Citrus Thrips (Thysanoptera: Thripidae) on Growth of Nonbearing Citrus. *J.Econ.Entomol.* 91: 235-242.

717. Grahl, K. (1983). The Classification of Water Pollutants According to Their Toxicity to Aquatic Organisms (Die Klassifizierung von Wasserinhaltsstoffen nach ihrem Toxizitatspotential Gegenuber Wasserorganismen). *Acta Hydrochim.Hydrobiol.* 11: 137-143 (GER) (ENG TRANSL).
Rejection Code: REFS CHECKED/REVIEW.

718. Grant, M. Helen and Duthie, Susan J. (1987). Conjugation reactions in hepatocytes isolated from streptozotocin-induced diabetic rats. *Biochemical Pharmacology* 36: 3647-3655.
Rejection Code: IN VITRO, METABOLISM.

719. Grayson, David A., Tewari, Yadu B., Mayhew, Martin P., Vilker, Vincent L., and Goldberg, Robert N. (1996). Tetralin as a Substrate for Camphor (Cytochrome P450) 5-Monooxygenase. *Archives of Biochemistry and Biophysics* 332: 239-247.
Rejection Code: METHODS.

720. Grayson, David A. and Vilker, Vincent L. (1999). Kinetic characterization of chiral biocatalysis of cycloarenes by the camphor 5-monooxygenase enzyme system. *Journal of Molecular Catalysis B: Enzymatic* 6: 533-547.
Rejection Code: IN VITRO.

721. GREEN MB, MARTIN JR, and GRIFFIN, P. (1999). Treatment of combined sewer overflows at small wastewater treatment works by constructed reed beds. *WATER SCIENCE AND TECHNOLOGY; 40* 357-364.
Rejection Code: EFFLUENT.

722. GREEN RE and KARICKHOFF SW (1990). SORPTION ESTIMATES FOR MODELING. *CHENG, H. H. (ED.). SSSA (SOIL SCIENCE SOCIETY OF AMERICA) BOOK SERIES, NO. 2. PESTICIDES IN THE SOIL ENVIRONMENT: PROCESSES, IMPACTS, AND MODELING. XXIII+530P. SOIL SCIENCE SOCIETY OF AMERICA, INC.: MADISON, WISCONSIN, USA. ILLUS. ISBN 0-89118-791-X.; 0 (0). 1990. 79-102.*
Rejection Code: MODELING.

723. GREENUP LR, SINGH, D., AHMAD, N., BAKER, J., HIGGINSON FR, and HOCKING, D. (1989). PESTICIDE USE AND RESIDUE MONITORING IN FRESH FRUIT AND VEGETABLES. *RESEARCH AND DEVELOPMENT CONFERENCE ON VEGETABLES, THE MARKET AND THE PRODUCER, RICHMOND, NEW SOUTH WALES, AUSTRALIA, JULY 11-15, 1988. ACTA HORTIC (WAGENINGEN); 0 (247). 1989. 403-405.*
Rejection Code: SURVEY.

724. Greve, P. A., Freudenthal, J., and Wit, S. L. (Potentially hazardous substances in surface waters. 2. Cholinesterase inhibitors in Dutch surface waters. *Science of the Total Environment [Sci. Total Environ.]. Vol. 1, no. 3, pp. 253-265. 1972.*
Rejection Code: NO SPECIES.

725. Greve, P. A., Freudenthal, J., and Wit, S. L. (1972). Potentially hazardous substances in surface waters. 2. Cholinesterase inhibitors in Dutch surface waters. *Science of the Total Environment [Sci. Total Environ.]. Vol. 1, no. 3, pp. 253-265. 1972.*
Rejection Code: SURVEY.

726. Greve, P. A., Freudenthal, J., and Wit, S. L. (1972). Potentially hazardous substances in surface waters. 2. Cholinesterase inhibitors in Dutch surface waters. *Science of the Total Environment [Sci. Total Environ.]. Vol. 1, no. 3, pp. 253-265. 1972.*
Rejection Code: SURVEY.

727. Grie[beta]hammer, Rainer, Schneider, Hans Peter, Winter, Werner, and Rieker, Anton (1979). Basenkatalysierte oxygenierung 4-arylsubstituierter 1-naphtholderivate rontgenstrukturanalyse eines epoxynaphthochinols. *Tetrahedron Letters* 20: 3941-3944.
Rejection Code: METHODS.

728. GRIFFIN EC, AIYAR, N., SLIVJAK MJ, and SMITH, E. F. III (1992). Effect of endotoxicosis on plasma and tissue levels of calcitonin gene-related peptide. *CIRC SHOCK; 38* 50-54 .
Rejection Code: IN VITRO.

729. Grijseels, H. and de Blaey, C. J. (1981). Dissolution at porous interfaces. *International Journal of Pharmaceutics* 9: 337-347.
Rejection Code: NO TOX DATA.

730. GROSJEAN, E., RASMUSSEN RA, and GROSJEAN, D. (1998). Ambient levels of gas phase pollutants in Porto Alegre, Brazil. *ATMOSPHERIC ENVIRONMENT; 32* 3371-3379.

Rejection Code: SURVEY.

731. Grosse, Pierre Yves, Pinguet, Frederic, Joulia, Jean Michel, Astre, Cecile, and Bressolle, Francoise (1997). High-performance liquid chromatographic assay for methyl-[beta]-cyclodextrin in plasma and cell lysate. *Journal of Chromatography B: Biomedical Sciences and Applications* 694: 219-226.
Rejection Code: METHODS.

732. Grossman, J. C. and Khan, M. A. Q. (1979). Metabolism of naphthalene by pigeon liver microsomes. *Comparative Biochemistry and Physiology Part C: Comparative Pharmacology* 63: 251-260.
Rejection Code: METABOLISM.

733. Gruber, S. J. and Munn, M. D. (1998). Organophosphate and Carbamate Insecticides in Agricultural Waters and Cholinesterase (ChE) Inhibition in Common Carp (Cyprinus carpio). *Arch.Environ.Contam.Toxicol.* 35: 391-396.
Rejection Code: MIXTURE.

734. Gschaidmeier, Harald and Bock, Karl Walter (1994). Radiation inactivation analysis of microsomal UDP-glucuronosyltransferases catalysing mono-and diglucuronide formation of 3,6-dihydroxybenzo(a)pyrene and 3,6-dihydroxychrysene. *Biochemical Pharmacology* 48: 1545-1549.
Rejection Code: METHODS.

735. Gu, Weiqiang and Weiss, Richard G. (2000). Mediation of Photochemical Reactions of 1-Naphthyl Phenylacylates by Polyolefin Films. A `Radical Clock' to Measure Rates of Radical-Pair Cage Recombinations in `Viscous Space'. *Tetrahedron* 56: 6913-6925.
Rejection Code: METHODS.

736. Guenette, Suzanne, Prichard, Roger K., Klein, Ronald D., and Matlashewski, Greg (1991). Characterization of a [beta]-tubulin gene and [beta]-tubulin gene products of Brugia pahangi. *Molecular and Biochemical Parasitology* 44: 153-164.
Rejection Code: NO TOX DATA.

737. GUERTLER RE , SCHWEIGMANN NJ, CECERE MC, CHUIT, R., and WISNIVESKY-COLLI, C. (1993). Comparison of two sampling methods for domestic populations of Triatoma infestans in northwest Argentina.
Rejection Code: METHODS.

738. Guiberteau, A., Diaz, T. Galeano, Salinas, F., and Ortiz, J. M. (1995). Indirect voltammetric determination of carbaryl and carbofuran using partial least squares calibration: Fifth European Conference on Electroanalysis. *Analytica Chimica Acta* 305: 219-226.
Rejection Code: METHODS.

739. Guiberteau, A., Galeano Diaz T, Salinas, F., and Ortiz, J. M. (1995). INDIRECT VOLTAMMETRIC DETERMINATION OF CARBARYL AND CARBOFURAN USING PARTIAL LEAST SQUARES CALIBRATION. *Analytica Chimica Acta* 305 : 219-226.
Rejection Code: METHODS.

740. Guilbault, G. G., Sadar, M. H., Kuan, S., and Casey, D. (1970). Effect of Pesticides on Liver Cholinesterases from Rabbit, Pigeon, Chicken, Sheep and Pig. *Anal.Chim.Acta* 51: 83-93.
Rejection Code: IN VITRO.

741. GUNDEL, M., LEISNER, H., and PENZLIN, H. (1992). INHIBITORY EFFECTS OF INSECTICIDES ON THE OXYGEN UPTAKE OF ISOLATED COCKROACH GANGLIA. *OTTO, D. AND B. WEBER (ED.). INSECTICIDES: MECHANISM OF ACTION AND RESISTANCE; SECOND SYMPOSIUM, REINHARDSBRUN, GERMANY. XVIII+499P. INTERCEPT LTD: ANDOVER, ENGLAND, UK. ISBN 0-946707-38-3.; 0 (0). 1992. 257-262.*
Rejection Code: IN VITRO.

742. GUNTHER AJ, DAVIS JA, HARDIN DD, GOLD, J., BELL, D., CRICK JR, SCELFO GM, SERICANO, J., and STEPHENSON, M. (1999). Long-term bioaccumulation monitoring with transplanted bivalves in the San Francisco Estuary. *MARINE POLLUTION BULLETIN; 38* 170-181.
Rejection Code: SURVEY.

743. Gupta, A. and Singhal, G. S. (1996). Effect of Heavy Metals on Phycobiliproteins of Anacystis nidulans. *Photosynthetica (Prague)* 32: 545-548.
Rejection Code: IN VITRO.

744. Gupta, I. D., Sahai, R., Sharma, A., and Vijh, R. K. (1991). EVALUATION OF CERTAIN ORGANOCHLORINE AND CARBAMATE PESTICIDES BY MICRONUCLEUS TEST. *Indian J Anim Sci* 61 : 1200-1201.
Rejection Code: IN VITRO.

745. Gupta, S. L. (1985). Influence of Inorganic Nitrogen-Nutrients on Copper Toxicity in Anacystis nidulans and Cyanophage AS-I Resistant Mutant. *Bull.Bot.Surv.India* 27: 142-144.
Rejection Code: NO DURATION.

746. Gurrieri, S. and Siracusa, G. (1971). Coordination compounds of 1-nitroso-2-naphthol and 2-nitroso-1-naphthol. *Inorganica Chimica Acta* 5: 650-654.
Rejection Code: METHODS.

747. Gworek, B. (1992). Inactivation of Cadmium in Contaminated Soils Using Synthetic Zeolites. *Environ.Pollut.* 75: 269-272.
Rejection Code: NO CONC.

748. Haider, G. (1988). Histopathologische Veranderungen in der Muskulatur von Regenbogenforellen nach Langzeiteinwirkung von Zink. *Fischer.Teichwirt.* 39: 181-186 (GER).
Rejection Code: NON-ENGLISH.

749. HALEY TJ (1987). ABSORPTION DISTRIBUTION BIOTRANSFORMATION CONJUGATION AND EXCRETION OF XENOBIOTICS. *HALEY, T. J. AND W. O. BERNDT (ED.). HANDBOOK OF TOXICOLOGY. XIV+697P. HEMISPHERE PUBLISHING CORP.: NEW YORK, NEW YORK, USA; CAMBRIDGE, ENGLAND, UK. ILLUS. ISBN 0-89116-403-0.; 0 (0). 1987. 20-43.*
Rejection Code: FATE.

750. HALVANKAR GB and PATIL VP (1984). EFFECTS OF AGRO-CHEMICALS ON MITOTIC CHROMOSOME BEHAVIOR IN TETRAPLOID AND HEXAPLOID WHEATS. *INDIAN J GENET PLANT BREED; 44 (3). 1984 (1985) (RECD. 1986). 438-446.*
Rejection Code : IN VITRO.

751. Hammer, Barbara O. and Schmidlin, Thomas W. (2000). Vehicle-occupant deaths caused by tornadoes in the United States, 1900-1998. *Global Environmental Change Part B: Environmental Hazards* 2: 105-118.
Rejection Code: NO TOX DATA.

752. HANAZATO, T. (1997). Pesticide effects on structure of zooplankton community and functioning of lake ecosystem. *ACTA HYDROBIOLOGICA SINICA; 21* 22-28.
Rejection Code: SURVEY.

753. Hanazato, T. and Yasuno, M. (1988). Effects of a Carbamate Insecticide, Carbaryl, on the Zooplankton Communities in Ponds. 2. Experiment in the Cold Season. *Res.Rep.Natl.Inst.Environ.Stud./Kokuritsu Kogai Kenkyusho Kenkyo Hokoku 114:49-57 (JPN) (ENG ABS) (Publ As 8962).*
Rejection Code: NON-ENGLISH/QSAR.

754. Hanazato, Takayuki and Yasuno, Masayuki (1990). Influence of persistence period of an insecticide on recovery patterns of a zooplankton community in experimental ponds. *Environmental Pollution* 67: 109-122.
Rejection Code: FATE.

755. HANELT, M., GAREIS, M., and KOLLARCZIK, B. (1994). Cytotoxicity of mycotoxins evaluated by the MTT-cell culture assay. *MYCOPATHOLOGIA; 128* 167-174.
Rejection Code: IN VITRO.

756. Hansen, L. G. and Hodgson, Ernest (1971). Metabolism of naphthalene and 1-naphthol by enzyme preparations from the housefly, Musca domestica. *Pesticide Biochemistry and Physiology* 1: 464-471.
Rejection Code: METABOLISM.

757. HARNER, T. and BIDLEMAN TF (1997). Polychlorinated naphthalenes in urban air. *ATMOSPHERIC ENVIRONMENT; 31* 4009-4016.
Rejection Code: SURVEY.

758. Harrington, Timothy B. and Bluhm, Andrew A. (2001). Tree regeneration responses to microsite characteristics following a severe tornado in the Georgia Piedmont, USA. *Forest Ecology and Management* 140: 265-275.
Rejection Code: NO TOX DATA.

759. Harris, C. R. and Svec, H. J. (1970). Laboratory Studies on the Contact Toxicity of Some Insecticides to Honeybees. *Pestic.Prog.* 8: 25-28.

; Habitat: T; Effect Codes: MOR

760. Harris, Larrel W., Talbot, Brian G., Lennox, Willard J., and Anderson, Dana R. (1989). The relationship between oxime-induced reactivation of carbamylated acetylcholinesterase and antidotal efficacy against carbamate intoxication. *Toxicology and Applied Pharmacology* 98: 128-133.
Rejection Code: IN VITRO.

761. HASEMAN JK and LOCKHART, A. (1994). The relationship between use of the maximum tolerated dose and study sensitivity for detecting rodent carcinogenicity. *FUNDAMENTAL AND APPLIED TOXICOLOGY; 22* 382-391.
Rejection Code: REVIEW, MODELING.

762. Hashimoto, Y. and Nishiuchi, Y. (1981). Establishment of Bioassay Methods for the Evaluation of Acute Toxicity of Pesticides to Aquatic Organisms. *J.Pestic.Sci.* 6: 257-264 (JPN) (ENG ABS).

; Habitat: A; Effect Codes: MOR

763. Hassan, A., Zayed, S. M. A. D., and Abdel-Hamid, F. M. (1966). Metabolism of carbamate drugs--I : Metabolism of 1-naphthyl-N-methyl carbamate (Sevin) in the rat. *Biochemical Pharmacology* 15: 2045-2055.
Rejection Code: IN VITRO.

764. Hassan, Saad S. M., Mahmoud, Wagiha H., Elmosallamy, Mohamed A. F., and Othman, Abdel Hammeed M. (1999). Determination of metformin in pharmaceutical preparations using potentiometry, spectrofluorimetry and UV-visible spectrophotometry. *Analytica Chimica Acta* 378: 299-311.
Rejection Code: METHODS.

765. HASTINGS FL , WERNER RA, SHEA PJ, and HOLSTEN EH (1998). Persistence of carbaryl within boreal, temperate and Mediterranean ecosystems. *JOURNAL OF ECONOMIC ENTOMOLOGY; 91* 665-670.
Rejection Code: FATE.

766. Hatch, R. C. (1988). Poisons Causing Nervous Stimulation or Depression. *In: N.H.Booth and L.E.McDonald (Eds.), Vet.Pharmacol.Theraput., 6th Edition, Iowa State Univ.Press, Ames, Iowa* 1053-1101.
Rejection Code: REVIEW.

767. Hattenschwiler, S. and Schafellner, C. (1999). Opposing Effects of Elevated CO2 and N Deposition on Lymantria monacha Larvae Feeding on Spruce Trees. *Oecologia* 118: 210-217.
Rejection Code: NO TOXICANT.

768. Hatzell, H. H. (Pesticides In Surface Water From Three Agricultural Basins In South-Central Georgia, 1993-95.
Rejection Code: SURVEY.

769. HATZINGER PB and STEVENS JL (1989). RAT KIDNEY PROXIMAL TUBULE CELLS IN DEFINED MEDIUM THE ROLES OF CHOLERA TOXIN EXTRACELLULAR CALCIUM AND SERUM IN CELL GROWTH AND EXPRESSION OF GAMMA GLUTAMYLTRANSFERASE. *IN VITRO CELL DEV BIOL; 25* 205-212.
Rejection Code: IN VITRO.

770. HAUNERLAND NH and BOWERS WS (1986). BINDING OF INSECTICIDES TO LIPOPHORIN AND ARYLPHORIN TWO HEMOLYMPH PROTEINS OF HELIOTHIS-ZEA. *ARCH INSECT BIOCHEM PHYSIOL; 3* 87-96.
Rejection Code: METABOLISM.

771. Hauschild, J. E. and Tomasek, P. H. (1993). TWO POLYPEPTIDE ASSOCIATED WITH ACHROMOBACTER CARBOFURAN HYDROLASE INTERACT TO PRODUCE THREE ACTIVE FORMS OF THE DIMERIC ENZYME. *93rd General Meeting of the American Society for Microbiology, Atlanta, Georgia, Usa, May 16-20, 1993. Abstr Gen Meet Am Soc Microbiol* 93 : 366.
Rejection Code: ABSTRACT.

772. HAUSCHILD JE and TOMASEK PH (1993). TWO POLYPEPTIDE ASSOCIATED WITH ACHROMOBACTER CARBOFURAN HYDROLASE INTERACT TO PRODUCE THREE ACTIVE FORMS OF THE DIMERIC ENZYME. *93RD GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, ATLANTA, GEORGIA, USA, MAY 16-20, 1993. ABSTR GEN MEET AM SOC MICROBIOL; 93* 366.
Rejection Code: BACTERIA.

773. Haven, D., Castagna, M., Chanley, P., Wass, M., and Whitcomb, J. (1966). Effects of the Treatment of an Oyster Bed with Polystream and Sevin. *Chesapeake Sci.* 7: 179-188.
Rejection Code: MIXTURE.

774. Havens, K. E. (1993). The Effects of Two Chemical Stressors on the Freshwater Zooplankton: A Mesocosm Study. *Ohio J.Sci.* 93: 47 p.
Rejection Code: ABSTRACT.

775. Haverty, M. I. and Wood, J. R. (1981). Residual Toxicity of Eleven Insecticide Formulations to the Mountain Pine Cone Beetle, Conophthorus monticolae Hopkins. *J.Ga.Entomol.Soc.* 16: 77-83.

; Habitat: T; Effect Codes: MOR

776. Hawkes, Richard (1982). Identification of concanavalin A-binding proteins after sodium dodecyl sulfate-gel electrophoresis and protein blotting. *Analytical Biochemistry* 123: 143-146.
Rejection Code: METHODS.

777. HAYATSU, M. and NAGATA, T. (1993). Purification and characterization of carbaryl hydrolase from Blastobacter sp. strain M501. *APPL ENVIRON MICROBIOL; 59* 2121-2125.
Rejection Code: BACTERIA.

778. Hazelton, George A., Hjelle, Jerry J., and Klaassen, Curtis D. (1985). Effects of butylated hydroxyanisole on hepatic glucuronidation capacity in mice. *Toxicology and Applied Pharmacology* 78: 280-290.
Rejection Code: METABOLISM.

779. HAZEN TC and FLIERMANS CB (1993). Rapid screening for bacteria capable of degrading toxic organic compounds. AU - GORDEN RW. *JOURNAL OF MICROBIOLOGICAL METHODS; 18* 339-347.
Rejection Code: BACTERIA, METABOLISM.

780. Heenan, M. P. and Smith, J. N. (1967). Conjugation of 1-naphthol and -nitrophenol in flies: Formation of glucoside-6-phosphates. *Life Sciences* 6: 1753-1757.
Rejection Code: METABOLISM.

781. HEGG CC and MILETIC, V. (1997). Chronic exposure to inorganic lead increases high-threshold voltage-gated calcium currents in rat pheochromocytoma (PC12) cells. *BRAIN RESEARCH; 772* 63-70.
Rejection Code: IN VITRO.

782. Heinisch, E., Beitz, H., Seefeld, F., Hartisch, J., Dunsing, M., and Reifenstein, H. (1971). Residues of Crop Protectives on the Harvested Crop after Unintentional Treatment (Pflanzenschutzmittelruckstande an Pflanzlichem Erntegut nach Nicht Beabsichtigten Mitbehandlungen) . *Nachrichtenbl.Pflanzenschutzdienst DDR* 25: 141-146 (GER) (ENG ABS).
Rejection Code: NON-ENGLISH.

783. Heinz Dotz, Karl, Muhlemeier, Jochen, schubert, Ulrich, and Orama, Olli (1983). Reaktionen von komplexliganden : XXIV. synthese von naphthol-derivaten aus carbonyl-carben-komplexen und alkinen: regioselektiver einbau des alkins in das napththalin-gerust. *Journal of Organometallic Chemistry* 247: 187-201.
Rejection Code: METHODS.

784. Heisler, Charles R. and Yang, H. Y. (1966). Non-stoichiometric sulfhydryl loss with vitamin K5.

Biochemical and Biophysical Research Communications 23: 660-665.
Rejection Code: METHODS.

785. Helal, M., Baibagyshew, E., and Saber, S. (1998). Uptake of Cd and Ni by Spinach, Spinacea oleracea (L.) from Polluted Soil Under Field Conditions as Affected by Salt Water Irrigation. *Agronomie* 18: 443-448.
Rejection Code: MIXTURE.

786. HELKE CJ, CHARLTON CG, and WILEY RG (1985). SPINAL CORD SUBSTANCE P RECEPTORS ARE PRESENT ON AUTONOMIC AND SOMATIC MOTOR NEURONS STUDIES WITH SUICIDE TRANSPORT MEDULLARY LESIONS AND NEUROTOXINS. *15TH ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, PART 2, DALLAS, TEX., USA, OCT. 20-25, 1985. SOC NEUROSCI ABSTR; 11* 903.
Rejection Code: HUMAN HEALTH.

787. HEMMINGER TE and MASON BJ (1994). SUBSURFACE MOVEMENT OF POLYCHLORINATED BIPHENYLS. *ADRIANO, D. C., A. K. ISKANDAR AND I. P. MURARKA (ED.). ADVANCES IN ENVIRONMENTAL SCIENCE: CONTAMINATION OF GROUNDWATERS. XI+525P. SCIENCE REVIEWS LTD.: NORTHWOOD, ENGLAND, UK. ISBN 0-905927-44-3.; 0 (0). 1994. 477-519.*
Rejection Code: FATE.

788. HENDRIKS AJ (1995). Modeling response of species to microcontaminants: Comparative ecotoxicology by (Sub)lethal body burdens as a function of species size and partition ratio of chemicals. *ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY; 32* 103-130.
Rejection Code: MODELING.

789. Hengen, Paul N. (1997). Methods and reagents : Degraded DNA and gel tornados. *Trends in Biochemical Sciences* 22: 138-139.
Rejection Code: METHODS.

790. HENRY MJ (1996). APPLICATION OF MODE OF ACTION RESEARCH TO FUNGICIDE DISCOVERY AND OPTIMIZATION. *212TH AMERICAN CHEMICAL SOCIETY NATIONAL MEETING, ORLANDO, FLORIDA, USA, AUGUST 25-29, 1996. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 212* AGRO 63.
Rejection Code: ABSTRACT.

791. Henzell, R. F., Skinner, R. A., and Clements, R. O. (1983). Insecticides for Control of Adult Grass Grub, Costelytra zealandica (White). V. Screening and Behaviour of Insecticides in Soil Bioassays. *N.Z.J.Agric.Res.* 26: 129-133 .

; Habitat: T; Effect Codes: MOR

792. Hermann, G. (1975). Routine Testing of New Bayer Pesticides for Fish Toxicity, as Part of the Product Development Programme Pflanzenschutz-Nachr. 28: 197-209.
Rejection Code: METHODS.

793. Herrera, M. C., Prados-Rosales, R. C., Luque-Garcia, J. L., and Luque de Castro, M. D. (2002). Static-dynamic pressurized hot water extraction coupled to on-line filtration-solid-phase extraction-high-performance liquid chromatography-post-column derivatization-fluorescence detection for the analysis of N-methylcarbamates in foods. *Analytica Chimica Acta* 463: 189-197.
Rejection Code: NO TOX DATA/METHODS.

794. Herve, J. J. (1985). Agricultural, Public Health and Animal Health Usage. *In: J.P.Leahey (Ed.), The Pyrethroid Insecticides, Chapter 6, Taylor and Francis, London* 343-425.
Rejection Code: REVIEW.

795. Heungens, A. (1969). L'Influence de la Fumure et des Pesticides aldrine, Carbaryl et DBCP sur la Faune du sol dans la Culture des Azales. *Rev.Ecol.Biol.Sol.* 6: 131-145 (FRE) (ENG ABS).
Rejection Code: NON-ENGLISH.

796. Heurtaux, T., Benani, A., Bianchi, A., Moindrot, A., Gradinaru, D., Magdalou, J., Netter, P., and Minn, A. (2004). Redox state alteration modulates astrocyte glucuronidation. *Free Radical Biology and Medicine* 37: 1051-1063.
Rejection Code: IN VITRO, METABOLISM.

797. Hickey, C. W., Roper, D. S., and Buckland, S. J. (1995). Metal Concentrations of Resident and Transplanted Freshwater Mussels Hyridella menziesi (Unionacea: Hyriidae) and Sediments in the Waikato River, New Zealand. *Sci Total Environ* 175: 163-177.
Rejection Code: SEDIMENT/SURVEY.

798. HIGASHIMOTO, M., YAMAMOTO, T., HANDA, T. KY, MATSUMOTO, H., and OHNISHI, Y. (1995). Mutagenicity of soy sauce treated with nitrite in the presence of ethanol or alcoholic beverages. *MUTATION RESEARCH; 345* 155-166.
Rejection Code: BACTERIA.

799. Hill R. H., Head S. L., Baker S., Gregg M., Shealy D. B., Bailey S. L., Williams C. C., Sampson E. J., and Needham L. L. (1995). Pesticide Residues in Urine of Adults Living in the United States: Reference Range Concentrations. *Environmental Research* 71: 99-108.
Rejection Code: HUMAN HEALTH.

800. Hilliard, Lisa J., Foulk, D. Steven, Gold, Harvey S., and Rechsteiner, Carl E. (1981). Effects of solute-solvent interactions on electronic spectra: a predictive analysis. *Analytica Chimica Acta* 133: 319-327.
Rejection Code: METHODS.

801. Hiltibran, R. C. (1982). Effects of Insecticides on the Metal-Activated Hydrolysis of Adenosine Triphosphate by Bluegill Liver Mitochondria. *Arch.Environ.Contam.Toxicol.* 11: 709-717.
Rejection Code: IN VITRO.

802. Hilton, Andrew C. E. (1992). Oil, energy and capital : A coming crunch? *Energy Policy* 20: 963-972.
Rejection Code: NO TOX DATA.

803. Hinderer, Robert K. and Menzer, Robert E. (1976). Comparative enzyme activities and cytochrome P-450 levels of some rat tissues with respect to their metabolism of several pesticides. *Pesticide Biochemistry and Physiology* 6: 148-160.
Rejection Code: IN VITRO, METABOLISM.

804. Hinderer, Robert K. and Menzer, Robert E. (1976). Enzyme activities and cytochrome P-450 levels of some Japanese quail tissues with respect to their metabolism of several pesticides. *Pesticide Biochemistry and Physiology* 6: 161-169.
Rejection Code: IN VITRO, METABOLISM.

805. Hippe, D. J., Wangsness, D. J., Frick, E. A., and Garrett, J. W. (1994). Water quality of the Apalachicola-Chattahoochee-Flint and Ocmulgee River basins related to flooding from

tropical storm Alberto; pesticides in urban and agricultural watersheds; and nitrate and pesticides in ground water, Georgia, Alabama, and Florida.
Rejection Code : HUMAN HEALTH.

806. Hirai, Y. (1991). Major Pests of Maize and Control Measures in Japan. *JARQ* 25: 12-16.
Rejection Code: REVIEW.

807. Hirakoso, S. (1969). Inactivating Effects of Micro-organisms on Insecticidal Activity of Dursban. *Jpn.J.Exp.Med.* 39: 17-20.
Rejection Code: BACTERIA.

808. Hirakoso, S. (1968). Inactivation of Some Insecticides by Bacteria in Mosquito Breeding Polluted Water. *Jpn.J.Exp.Med.* 38: 327-334.
Rejection Code: BACTERIA.

809. Hirose, K. and Kitsukawa, M. (1976). Acute Toxicity of Agricultural Chemicals to Seawater Teleosts, with Special Respect to TLM and the Vertebral Abnormality. *Bull.Tokai Reg.Fish.Res.Lab.(Tokai-Ku Suisan Kenkyusho Kenkyo Hokoku)* 84: 11-20 (JPN) (ENG ABS).

; Habitat: A; Effect Codes: MOR,GRO

810. Hislop, R. G. and Prokopy, R. J. (1981). Integrated Management of Phytophagous Mites in Massachusetts (U.S.A.) Apple Orchards. 2. Influence of Pesticides on the Predator Amblyseius fallacis (Acarina: Phytoseiidae) Under Laboratory and Field Conditions. *Prot.Ecol.* 3: 157-172.

; Habitat: T; Effect Codes: MOR,REP,POP

811. Hoagland R. E. and Zablotowicz R. M. (1995). Rhizobacteria with Exceptionally High Aryl Acylamidase Activity. *Pesticide Biochemistry and Physiology* 52: 190-200.
Rejection Code: IN VITRO.

812. HODGE VF, STETZENBACH KJ, and JOHANNESSON KH (1998). Similarities in the chemical composition of carbonate groundwaters and seawater. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 32* 2481-2486.
Rejection Code: SURVEY.

813. HODGSON, E. , BEND JR, and PHILPOT RM (1988). REVIEWS IN BIOCHEMICAL TOXICOLOGY VOL. 9. *HODGSON, E., J. R. BEND AND R. M. PHILPOT (ED.). REVIEWS IN BIOCHEMICAL TOXICOLOGY, VOL. 9. XVII+347P. ELSEVIER SCIENCE PUBLISHING CO., INC.: NEW YORK, NEW YORK, USA; AMSTERDAM, NETHERLANDS. ILLUS. ISBN 0-444-01321-0.; 0 (0). 1988. XVII+347P.*
Rejection Code: REVIEW.

814. Hodgson, E. and Rose, R. L. (2005). Human metabolism and metabolic interactions of deployment-related chemicals. *Drug Metabolism Reviews [Drug Metab. Rev.]. Vol. 37, no. 1, pp. 1-39. 2005.*
Rejection Code: HUMAN HEALTH.

815. Hoffman, R. S., Capel, P. D., and Larson, S. J. (2000). Comparison of pesticides in eight U.S. urban streams. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 19, no. 9, pp. 2249-2258. Aug 2000.*
Rejection Code: SURVEY.

816. Hoffman, R. S., Capel, P. D., and Larson, S. J. (2000). Comparison of pesticides in eight U.S. urban streams. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 19, no. 9, pp. 2249-2258. Aug 2000.*
Rejection Code: SURVEY.

817. Hoffman, Ryan S., Capel, Paul D., and Larson, Steven J (2000). Comparison of pesticides in eight U.S. urban streams. *Environmental Toxicology and Chemistry* 19: 2249-2258.
Rejection Code: SURVEY.

818. Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Rejection Code: NO TOX DATA.

819. Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). **<04 Article Title>.** <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

820. Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Rejection Code: NO TOX DATA.

821. Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Rejection Code: NO TOX DATA.

822. Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Rejection Code: NO TOX DATA.

823. HOFNUNG, M. and QUILLARDET, P. (1986). RECENT DEVELOPMENTS IN BACTERIAL SHORT-TERM TESTS FOR THE DETECTION OF GENOTOXIC AGENTS. *MUTAGENESIS; 1* 319-330.
Rejection Code: METHODS.

824. Holloway, P. J. and Stock, D. (1990). Factors Affecting the Activation of Foliar Uptake of Agrochemicals by Surfactants. *In: D.R.Karsa (Ed.), Symp., Royal Soc.of Chem.Spec.Publ.No.77, Industrial Applications of Surfactants II, Apr.19-20, 1989, Cambridge, England, CRC Press Inc., Boca Raton, FL* 303-337.
Rejection Code: REFS CHECKED/REVIEW.

825. Holman, R. E., Leidy, R. B., and Walker, A. E. (2000). Evaluation of selected pesticides in North Carolina surface water supplies: Intake study. *Journal of the american water resources association [j. Am. Water resour. Assoc.]. Vol. 36, no. 1, pp. 75-86. Feb 2000.*
Rejection Code: NO SPECIES.

826. Holman, R. E., Leidy, R. B., and Walker, A. E. (2000). Evaluation of selected pesticides in North Carolina surface water supplies: Intake study. *Journal of the American Water Resources Association [J. Am. Water Resour. Assoc.]. Vol. 36, no. 1, pp. 75-86. Feb 2000.*
Rejection Code: SURVEY.

827. Hong, C. C. , Shimomura-Shimizu, M., Muroi, M., and Tanamoto, K. I. (2004). Effect of Endocrine Disrupting Chemicals on Lipopolysaccharide-Induced Tumor Necrosis Factor-alpha and Nitric Oxide Production by Mouse Macrophages. *Biological & Pharmaceutical Bulletin [Biol. Pharm. Bull.]. Vol. 27, no. 7, pp. 1136-1139. Jul 2004.*
Rejection Code: IN VITRO.

828. Hong, C. C. , Shimomura-Shimizu, M., Muroi, M., and Tanamoto, K. I. (2004). Effect of Endocrine Disrupting Chemicals on Lipopolysaccharide-Induced Tumor Necrosis Factor-alpha and Nitric Oxide Production by Mouse Macrophages. *Biological & Pharmaceutical Bulletin [Biol. Pharm. Bull.]. Vol. 27, no. 7, pp. 1136-1139. Jul 2004.*
Rejection Code: BIOLOGICAL TOXICANT.

829. Hooda, P. S. and Alloway, B. J. (1996). The Effect of Liming on Heavy Metal Concentrations in Wheat, Carrots and Spinach Grown on Previously Sludge-Applied Soils. *J.Agric.Sci.* 127: 289-294.
Rejection Code: MIXTURE/SURVEY.

830. HORNBUCKLE KC and EISENREICH SJ (1996). Dynamics of gaseous semivolatile organic compounds in a terrestrial ecosystem: Effects of diurnal and seasonal climate variations. *ATMOSPHERIC ENVIRONMENT; 30* 3935-3945.
Rejection Code: SURVEY.

831. Hou, Li-Xiang and Vollmer, Sara (1994). The activity of S-thiomethyl modified creatine kinase is due to the regeneration of free thiol at the active site. *Biochimica et Biophysica Acta (BBA) - Protein Structure and Molecular Enzymology* 1205: 83-88.
Rejection Code: IN VITRO, METABOLISM.

832. Houen, G. and Leonardsen, L. (1992). A specific peroxidase-coupled activity stain for diamine oxidases. *Analytical Biochemistry* 204: 296-299.
Rejection Code: METHODS.

833. HOUK VS, SCHLAKOWSKY, S., and CLAXTON LD (1989). DEVELOPMENT AND VALIDATION OF THE SPIRAL SALMONELLA ASSAY AN AUTOMATED APPROACH TO BACTERIAL MUTAGENICITY TESTING. *MUTAT RES; 223* 49-64.
Rejection Code: BACTERIA.

834. Hoy, Marjorie A. (1986). Use of genetic improvement in biological control. *Agriculture, Ecosystems & Environment* 15: 109-119.
Rejection Code: METHODS.

835. Hoye, Thomas R., Chen, Minzhang, Mi, Liang, and Priest, Owen P. (1994). Total synthesis of Michellamines A-C: Important anti-HIV agents. *Tetrahedron Letters* 35: 8747-8750.
Rejection Code: METHODS.

836. Hu, Chunling, Zhang, Peng, Liu, Xin, Qi, Yipeng, Zou, Tingting, and Xu, Qin (2004). Characterization of a region involved in binding of measles virus H protein and its receptor SLAM (CD150). *Biochemical and Biophysical Research Communications* 316: 698-704.
Rejection Code: VIRUS.

837. HU J-Y, AIZAWA, T., ASAMI, M., and MAGARA, Y. (1998). Analysis of thermolabile and polar pesticides in environmental water with capillary chromatography-frit-fast atom bombardment mass spectrometry. *WATER SCIENCE AND TECHNOLOGY; 38* 169-177.
Rejection Code: METHODS.

838. HU J-Y, AIZAWA, T., and MAGARA, Y. (1997). Evaluation of adsorbability of pesticides in water on powdered activated carbon using octanol-water partition coefficient. *WATER SCIENCE AND TECHNOLOGY; 35* 219-226.
Rejection Code: METHODS.

839. Hu, Jian-ying, Aizawa, Takako, and Magara, Yasumoto (1997). Evaluation of adsorbability of pesticides in water on powdered activated carbon using octanol-water partition coefficient. *Water Science and Technology* 35: 219-226.
Rejection Code: NO SPECIES.

840. Hu, Jian-ying, Aizawa, Takako, and Magara, Yasumoto (1997). Evaluation of adsorbability of pesticides in water on powdered activated carbon using octanol-water partition coefficient: Selected Proceedings of the 1st International Specialized Conference on Adsorption in the Water Environment and Treatment Processes. *Water Science and Technology* 35: 219-226.
Rejection Code: FATE.

841. HUANG C-L, HARRISON BK, MADURA, J., and DOLFING, J. (1996). Gibbs free energies of formation of PCDDS: Evaluation of estimation methods and application for predicting dehalogenation pathways. *ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY; 15* 824-836.
Rejection Code: METHODS.

842. Huertas-Perez, J. F., Garcia-Campana, A. M., Gamiz-Gracia, L., Gonzalez-Casado, A., and Iruela, M. N. (2004). Sensitive determination of carbaryl in vegetal food and natural waters by flow-injection analysis based on the luminol chemiluminescence reaction. *Analytica Chimica Acta [Anal. Chim. Acta]. Vol. 524, no. 1-2, pp. 161-166. Oct 2004.*
Rejection Code: SURVEY, HUMAN HEALTH.

843. Huertas-Perez, Jose Fernando, Garcia-Campana, Ana M., Gamiz-Gracia, Laura, Gonzalez-Casado, Antonio, and Iruela, Monsalud del Olmo (2004). Sensitive determination of carbaryl in vegetal food and natural waters by flow-injection analysis based on the luminol chemiluminescence reaction: Papers presented at the VIIIth International Symposium on Analytical Methodology in the Environmental Field and XIIIth Meeting of the Spanish Society of Analytical Chemistry, University of A Coruna, Spain - 21-24 October 2003. *Analytica Chimica Acta* 524: 161-166.
Rejection Code: METHODS.

844. HUESKES, R. and LEVSEN, K. (1997). Pesticides in rain. *CHEMOSPHERE; 35* 3013-3024.
Rejection Code: SURVEY.

845. Hulina, N. and Dumija, L. (1999). Ability of Reynoutria japonica Houtt. (Polygonaceae) to Accumulate Heavy Metals . *Period.Biol.* 101: 233-235.
Rejection Code: MIXTURE.

846. HULL SR, PETERS, E., COX, C., and MONTGOMERY, R. (1996). Composition of corn steep water during experimental steeping. *JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY; 44* 3521-3527.
Rejection Code: NO TOX DATA.

847. Hunter, D. L. and Padilla, S. (1999). Influence of storage conditions on the stability of cholinesterase activity in plasma and brain tissue taken from carbamate or organophosphorus pesticide-treated rats. *Toxicology Methods [Toxicol. Meth.]. Vol. 9, no. 3, pp. 189-199. Jul 1999.*
Rejection Code : IN VITRO, METHODS.

848. Hurej, M. and Dutcher, J. D. (1994). Indirect Effect of Insecticides on Convergent Lady Beetle (Coleoptera: Coccinellidae) in Pecan Orchards. *J.Econ.Entomol.* 87: 1632-1635.
Rejection Code: NO CONC.

849. Hurej, M. and Dutcher, J. D. (1994). Indirect Effect of Insecticides on Convergent Lady Beetle (Coleoptera: Coccinellidae) in Pecan Orchards. *J.Econ.Entomol.* 87: 1632-1635.
Rejection Code: NO CONC.

850. HUSAIN, L. (1990). Chemical characterization of acid precipitation in Albany, New York (USA). AU - KHWAJA HA . *ATMOS ENVIRON PART A GEN TOP; 24* 1869-1882.
Rejection Code: SURVEY.

851. HUSTON DH, LOGAN CJ, and TAYLOR, B. (1991). The metabolism in the rat of the herbicidally active isomer (R)-flamprop-methyl in comparison with the racemic form. *PESTIC SCI; 31* 151-162.
Rejection Code: METABOLISM.

852. Innes, J. R. M., Ulland, B. M., Valerio, M. G., Petrucelli, L., Fishbein, L., Hart, E. R., Pallotta, A. J., Bates, R. R., Falk, H. L., Gart, J. J., Klein, M., Mitchell, I., and Peters, J. (1969). Bioassay of Pesticides and Industrial Chemicals for Tumorigenicity in Mice: A Preliminary Note. *J.Natl.Cancer Inst.* 42: 1101-1114.

; Habitat: T; Effect Codes: CEL

853. Inoue, Hiroki, Yokota, Hiroshi, Taniyama, Hiroyuki, Kuwahara, Atsukazu, Ogawa, Hiroshi, Kato, Seiyu, and Yuasa, Akira (1999). 1-Naphthol [beta]-D-glucuronide formed intraluminally in rat small intestine mucosa and absorbed into the colon. *Life Sciences* 65: 1579-1588.
Rejection Code: FATE.

854. Inoue, K. (1987). (A-III) Insecticides: Fruit Trees. *Jpn.Pestic.Inf.* 50: 28-29.
Rejection Code: REFS CHECKED/REVIEW.

855. IRMSCHER, G., FUSENIG NE, and BOCK KW (1986). INDUCTION OF UDP-GLUCURONYLTRANSFERASE AND ARYL HYDROCARBON HYDROXYLASE ACTIVITY IN MOUSE SKIN AND IN NORMAL AND TRANSFORMED SKIN CELLS IN CULTURE AU - LILIENBLUM W. *BIOCHEM PHARMACOL; 35* 1517-1520.
Rejection Code: IN VITRO.

856. ISHIDATE, M. JR, HARNOIS MC, and SOFUNI, T. (1988). A COMPARATIVE ANALYSIS OF DATA ON THE CLASTOGENICITY OF 951 CHEMICAL SUBSTANCES TESTED IN MAMMALIAN CELL CULTURES. *MUTAT RES; 195* 151-213.
Rejection Code: IN VITRO.

857. Ishii, H., Hanaoka, T., Asaka, T., Harada, Y., and Ikeda, N. (1976). Oxidation with Fremy's salt--VIII : Peri-effect of a group located at the C5 position of 1-naphthol and related compounds. *Tetrahedron* 32: 2693-2698.
Rejection Code: METHODS.

858. Ishizuki, T., Wada, H., Kodama, K., and Nakagawa, G. (1985). Synthesis of 2-[2-(8-hydroxyquinolyl)azo]-1-naphthol and its use in the spectrophotometric determination of calcium in potable water. *Analytica Chimica Acta* 176: 63-70.
Rejection Code: METHODS.

859. ISKANDER FY , VEGA-CARRILLO HR, and MANZANARES-ACUNA, E. (1997). Elemental analysis of air dust from Zacatecas City, Mexico. *ENVIRONMENT INTERNATIONAL; 23* 497-506.
Rejection Code: SURVEY.

860. Itak, J. A. , Olson, E. G., Fleeker, J. R., and Herzog, D. P. (1993). Validation of a paramagnetic particle-based ELISA for the quantitative determination of carbaryl in water. *Bulletin of Environmental Contamination and Toxicology [BULL. ENVIRON. CONTAM. TOXICOL.]. Vol. 51, no. 2, pp. 260-267. 1993.*
Rejection Code: METHODS.

861. ITO, N., IMAIDA, K., HASEGAWA, R., TSUDA, H., and COHEN SM (1989). RAPID BIOASSAY METHODS FOR CARCINOGENS AND MODIFIERS OF HEPATOCARCINOGENESIS. *CRIT REV TOXICOL; 19* 385-415.
Rejection Code: METHODS.

862. IVAN, M., VEIRA DM, and KELLEHER CA (1986). The alleviation of chronic copper toxicity in sheep by ciliate protozoa. *BR J NUTR; 55* 361-368.
Rejection Code: BIOLOGICAL TOXICANT.

863. Ivanov, Ch. P. and Mondeshka, D. M. (1973). Dehydration of 3- and 4-aryl- substituted 3-hydroxy acids in acetic anhydride in presence of zinc chloride. *Tetrahedron* 29: 1745-1750.
Rejection Code: METHODS.

864. Iwano, Hidetomo, Yokota, Hiroshi, Ohgiya, Satoru, and Yuasa, Akira (1999). The Significance of Amino Acid Residue Asp446 for Enzymatic Stability of Rat UDP-Glucuronosyltransferase UGT1A6. *Archives of Biochemistry and Biophysics* 363: 116-120.
Rejection Code: NO TOX DATA.

865. Iwano, Hidetomo, Yotsumoto, Naomi, Yokota, Hiroshi, and Yuasa, Akira (2001). cDNA cloning and expression of a bovine phenol UDP-glucuronosyltransferase, BovUGT1A6. *Life Sciences* 68: 2131-2139.
Rejection Code: NO TOX DATA, METABOLISM.

866. Jablonska, J. and Brzezinski, J. (1990). The influence of carbaryl on the uptake of (super(3)H)-noradrenaline (super(3)H)-NA by rat hypothalamic slices. *Archives of Toxicology [ARCH. TOXICOL.]. Vol. 64, no. 5, pp. 417-419. 1990.*
Rejection Code: IN VITRO.

867. JABLONSKA, J. and BRZEZINSKI, J. (1990). The influence of carbaryl on the uptake of tritiated noradrenaline by rat hypothalamic slices. *ARCH TOXICOL; 64* 417-419.
Rejection Code: IN VITRO.

868. JACKSON LJ, CARPENTER SR, MANCHESTER-NEESVIG, J., and STOW CA (1998). Current concentrations of PCBs in Lake Michigan invertebrates, a prediction test, and corroboration of hindcast concentrations. *JOURNAL OF GREAT LAKES RESEARCH; 24* 808-821.
Rejection Code: SURVEY.

869. Jacob, J., Schmoldt, A., Hamann, M., Raab, G., and Grimmer, G. (1987). Monooxygenase Induction by Various Xenobiotics and Its Influence on Rat Liver Microsomal Metabolism of Chrysene in Comparison to Benz[a]anthracene. *Cancer Lett.* 34: 91-102.
Rejection Code: METABOLISM.

870. JACOBS, G., MARTENS, M., and MOSSELMANS, G. (1987). PROPOSAL OF LIMIT CONCENTRATIONS FOR SKIN IRRITATION WITHIN THE CONTEXT OF A NEW EEC DIRECTIVE ON THE CLASSIFICATION AND LABELING OF PREPARATIONS. *REGUL TOXICOL PHARMACOL; 7* 370-378.
Rejection Code: HUMAN HEALTH.

871. JACOBSEN BJ , HARLIN KS, SWANSON SP, LAMBERT RJ, BEASLEY VR, SINCLAIR JB, and WEI LS (1995). Occurrence of Fungi and Mycotoxins Associated with Field Mold Damaged Soybeans in the Midwest. *PLANT DISEASE; 79* 86-89.
Rejection Code: SURVEY.

872. Jadhav, S., Sontakke, Y. B., and Lomte, V. S. (1995). Effect of Pesticides on Amylase Activity in Digestive Gland of Fresh Water Bivalve Corbicula striatella. *Indian J.Comp.Anim.Physiol.* 13: 27-29.

; Habitat: A; Effect Codes: BCM,MOR

873. Jagadeesan, V. and Oesch, F. (1988). Effects of dietary zinc deficiency on the activity of enzymes associated with phase I and II of drug metabolism in Fischer-344 rats: Activities of drug metabolising enzymes in zinc deficiency. *DRUG-NUTR. INTERACTIONS. Vol. 5, no. 4, pp. 403-413. 1988.*
Rejection Code: METABOLISM.

874. James, D. G. (2003). Pesticide Susceptibility of Two Coccinellids (Stethorus punctum picipes and Harmonia axyridis) Important in Biological Control of Mites and Aphids in Washington Hops. *Biocontrol Sci.Technol.* 13: 253-259.

; Habitat: T; Effect Codes: MOR

875. James, D. G. and Rayner, M. (1995). Toxicity of Viticultural Pesticides to the Predatory Mites Amblyseius victoriensis and Typhlodromus doreenae. *Plant Prot.Q.* 10: 99-102.

; Habitat: T; Effect Codes: MOR

876. Jamnback, H. and Frempong-Boadu, J. (1966). Testing Blackfly Larvicides in the Laboratory and in Streams. *Bull.W.H.O.* 34: 405-421.

; Habitat: A; Effect Codes: BEH,POP

877. JANA TK and DAS, B. (1997). SORPTION OF CARBARYL 1-NAPTHYL N-METHYL CARBAMATE BY SOIL. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 59* 65-71.
Rejection Code: FATE.

878. Jancar, Ludek and Wegscheider, Wolfhard (1991). Effect of scaling regimes on the prediction of analytical results from multivariate calibration. *Analytica Chimica Acta* 248: 459-472.
Rejection Code: METHODS.

879. Janzowski, C, Klein, R, and Preussmann, R (1980). Formation of N-nitroso compounds of the pesticides atrazine, simazine and carbaryl with nitrogen oxides. *IARC Scientific Publications* 329-339.
Rejection Code: CHEM METHOD.

880. JARMAN WM, NORSTROM RJ, MUIR, D. CG, ROSENBERG, B., SIMON, M., and BAIRD RW (1996). Levels of organochlorine compounds, including PCDDS and PCDFS, in the blubber of cetaceans from the West Coast of North America. *MARINE POLLUTION BULLETIN; 32* 426-436.
Rejection Code: SURVEY.

881. Jean-Pierre, Lechaire, Gisele, Nicolas, Martin, Muller, Theo, Muller, and Francoise, Gaill (1993). Tem structure of collagen gels after slam of high pressure freezing. *Biology of the Cell*

79: 88.
Rejection Code: METHODS.

882. Jeleniewicz, K. and Szczepaniak, S. (1987). Effect of carbaryl on in vitro transamination reactions. Part I. Reactions with pyruvate. *Bromatologia i Chemia Toksykologiczna [BROMATOL. CHEM. TOKSYKOL.]. Vol. 20, no. 3-4, pp. 272-279. 1987.*
Rejection Code: IN VITRO.

883. Jeleniewicz, K. and Szczepaniak, S. (1987). Effect of carbaryl on in vitro transamination reactions. Part II. Reactions with alpha-ketoglutarate. *Bromatologia i Chemia Toksykologiczna [BROMATOL. CHEM. TOKSYKOL.]. Vol. 20, no. 3-4, pp. 280-286. 1987.*
Rejection Code: IN VITRO.

884. Jena, P. K., Adhya, T. K., and Rao, V. R. (1987). Influence of Carbaryl on Nitrogenase Activity and Combinations of Butachlor and Carbofuran on Nitrogen-Fixing Microorganisms in Paddy Soils. *Pestic.Sci.* 19: 179-184.
Rejection Code: BACTERIA.

885. Jena, P. K., Adhya, T. K., and Rao, V. R. (1987). Influence of Carbaryl on Nitrogenase Activity and Combinations of Butachlor and Carbofuran on Nitrogen-Fixing Microorganisms in Paddy Soils. *Pestic.Sci.* 19: 179-184.
Rejection Code: BACTERIA.

886. Jenkins, D., Klein, S. A., Yang, M. S., Wagenet, R. J., and Biggar, J. W. (1978). The Accumulation, Translocation and Degradation of Biocides at Land Wastewater Disposal Sites: the Fate of Malathion, Carbaryl, Diazinon and 2,4-D Butoxyethyl Ester. *Water Res.* 12: 713-723.
Rejection Code: NO SPECIES.

887. Jenkins, David, Klein, Stephen A., Yang, M. S., Wagenet, R. J., and Biggar, James W. (1978). The accumulation, translocation and degradation of biocides at land wastewater disposal sites: the fate of malathion, carbaryl, diazinon and 2,4-D butoxyethyl ester. *Water Research* 12: 713-723.
Rejection Code: FATE.

888. Jenkins, K. D. (1991). Metal Adaptation in the Polychaete Neanthes arenaceodentata. Annual Report, Year 2. *Rep.No.DOE/ER/60495-T2, National Inst.of Standards and Technology, Gaithersburg, MD, Ionizing Radiation Div., U.S.Dep.Energy* 14.
Rejection Code: PUBL AS.

889. Jeong, M. Lee and Chesney, D. J. (1999). Determination of N-methylcarbamate pesticides from spiked matrices using supercritical fluid extraction. *Analytica Chimica Acta* 389 : 53-57.
Rejection Code: METHODS.

890. Jespers, Laurent, Jenne, Stephane, Lasters, Ignace, and Collen, Desire (1997). Epitope mapping by negative selection of randomized antigen libraries displayed on filamentous phage. *Journal of Molecular Biology* 269: 704-718.
Rejection Code: METHODS.

891. Jiji, R. D. , Cooper, G. A., and Booksh, K. S. (1999). Excitation-emission matrix fluorescence based determination of carbamate pesticides and polycyclic aromatic hydrocarbons. *Analytica Chimica Acta* 397 : 61-72.
Rejection Code: METHODS.

892. JiJi, Renee D., Cooper, Gary A., and Booksh, Karl S. (1999). Excitation-emission matrix

fluorescence based determination of carbamate pesticides and polycyclic aromatic hydrocarbons. *Analytica Chimica Acta* 397: 61-72.
Rejection Code: METHODS.

893. JIMENEZ, M. , HUERTA, T., and MATEO, R. (1997). Mycotoxin production by Fusarium species isolated from bananas. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 364-369.
Rejection Code: BACTERIA.

894. Jin, Shengye, Xu, Zhaochao, Chen, Jiping, Liang, Xinmiao, Wu, Yongning, and Qian, Xuhong (2004). Determination of organophosphate and carbamate pesticides based on enzyme inhibition using a pH-sensitive fluorescence probe. *Analytica Chimica Acta* 523: 117-123.
Rejection Code: METHODS.

895. Jo Chang, Dong and Ser Park, Bong (2001). Highly efficient photoinduced rearrangement of benzobicyclo[3.1.0]hexenones to 1-naphthols. *Tetrahedron Letters* 42: 711-713.
Rejection Code: METHODS.

896. JOHNSON, L. , WILLIAMS, L. AD, and ROBERTS EV (1997). An insecticidal and acaricidal polysulfide metabolite from the roots of Petiveria alliacea. *PESTICIDE SCIENCE; 50* 228-232.
Rejection Code: BIOLOGICAL TOXICANT.

897. Johnson, N. C. and Pfleger, F. L. (1992). Vesicular-Arbuscular Mycorrhizae and Cultural Stresses. *In: G.J.Bethlenfalvay and R.G.Linderman (Eds.), ASA (Am.Soc.of Agron.), Spec.Publ.No.54, Oct.31, 1991, Denver, CO, Am.Soc.of Agron.Inc., Crop Sci.Soc.of Am.Inc., Soil Sci.Soc.of Am.Inc., Madison, WI* 71-99.
Rejection Code: REFS CHECKED/REVIEW.

898. JOHNSON PC, KEMBLOWSKI MW, and COLTHART JD (1990). Quantitative analysis for the cleanup of hydrocarbon-contaminated soils by in-situ soil venting. *GROUND WATER; 28* 413-429.
Rejection Code: METHODS.

899. Johnson, W. W. and Finley, M. T. (1980). Handbook of Acute Toxicity of Chemicals to Fish and Aquatic Invertebrates. *Resour.Publ.137, Fish Wildl.Serv., U.S.D.I., Washington, D.C* 98 p. (OECDG Data File) (Publ As 6797).
Rejection Code: PUBL AS.

900. Johnson, W. W. and Finley, M. T. (1980). Handbook of Acute Toxicity of Chemicals to Fish and Aquatic Invertebrates. *Resour.Publ.137, Fish Wildl.Serv., U.S.D.I., Washington, D.C* 98 p. (OECDG Data File) (Publ As 6797).
Rejection Code: PUBL AS.

901. Johnston, G. and Vittozzi, L. (ed) (1995). The study of interactive effects of pollutants: A biomarker approach.
Rejection Code: METHODS.

902. Johnston G. , Walker C. H., and Dawson A. (1994). Potentiation of Carbaryl Toxicity to the Hybrid Red-Legged Partridge Following Exposure to Malathion. *Pesticide Biochemistry and Physiology* 49: 198-208.
Rejection Code: IN VITRO.

903. Johnston, Gail (1995). The study of interactive effects of pollutants: a biomarker approach:

Environmental Toxicology: Hazards to the Environment and Man in the Mediterranean Region. *Science of The Total Environment* 171: 205-212.
Rejection Code: METHODS.

904. Jones, K. H., Sanderson, D. M., and Noakes, D. N. (1968). Acute Toxicity Data for Pesticides (1968). *World Rev.Pest Control* 7: 135-143.

; Habitat: T; Effect Codes: MOR

905. JONES TD and EASTERLY CE (1996). A RASH analysis of national toxicology program data: Predictions for 30 compounds to be tested in rodent carcinogenesis experiments. *ENVIRONMENTAL HEALTH PERSPECTIVES; 104* 1017-1030.
Rejection Code: METHODS.

906. Jones, Troyce D. and Easterly, Clay E (1996). A RASH analysis of national toxicology program data: Predictions for 30 compounds to be tested in rodent carcinogenesis experiments. *Environmental Health Perspectives Supplements* 104: 1017-1030.
Rejection Code: MODELING.

907. Jorquera, M., Camano, A., Mondaca, M. A., and Riquelme, C. (1999). Tolerance Levels to Copper (Cu+2) in Vibrionaceae Associated to Argopecten purpuratus (Lamarck, 1819) (Niveles de Tolerancia a Cobre (Cu+2) en Vibrionaceas Asociadas al Bivalvo Agropecten purpuratus (Lamarck, 1819)). *Rev.Biol.Mar.Oceanogr.* 34: 315-324 (SPA) (ENG ABS).
Rejection Code: NON-ENGLISH.

908. Josting, Dorothee, Winne, Dietrich, and Bock, Karl Walter (1976). Glucuronidation of paracetamol, morphine and 1-naphthol in the rat intestinal loop. *Biochemical Pharmacology* 25: 613-616 .
Rejection Code: METABOLISM.

909. Jubb, G. L. Jr. (1984). Patterns of Pesticide Use on 'Concord' Grapes in Erie County, Pennsylvania: 1970-1982. *Melsheimer Entomol.Ser.* 34: 1-11.
Rejection Code: NO TOX DATA.

910. Jurkowska, H. and Rogoz, A. (1988). Content of Mineral Nutrients in Plants of Oats as Depending on the Dose and Form of the Copper Fertilizer Part II. Microelements (Zawartosc Skladnikow Mineralnych w Roslinach owsa w Zaleznosci od Dawki i Formy Nawozu Miedziowego). *Acta Agrar.Silvestria* 27: 155-166 (POL) (ENG ABS).
Rejection Code: NON-ENGLISH.

911. Juvonen, Risto, Laitinen, Matti, Hietanen, Eino, and Nieminen, Mauri (1984). Glucuronidation in the reindeer: dietary modification in the udp-glucuronosyltransferase activity with 4-nitrophenol, 1-naphthol and phenolphthalein as acceptors. *International Journal of Biochemistry* 16: 1083-1086.
Rejection Code: IN VITRO, METABOLISM.

912. Kadir, Habsah A. and Knowles, Charles O. (1981). Inhibition of rat brain monoamine oxidase by insecticides, acaricides and related compounds. *General Pharmacology: The Vascular System* 12: 239-247.
Rejection Code: IN VITRO.

913. Kale, S. P. , Murthy, N. Bk, and Raghu, K. (1989). EFFECT OF CARBOFURAN CARBARYL AND THEIR METABOLITES ON THE GROWTH OF RHIZOBIUM-SP AND AZOTOBACTER-CHROOCOCCUM. *Bull Environ Contam Toxicol* 42 : 769-772.
Rejection Code: BACTERIA.

914. KALIA AK and SINGH SP (1998). Horse dung as a partial substitute for cattle dung for operating family-size biogas plants in a hilly region. *BIORESOURCE TECHNOLOGY; 64* 63-66.
Rejection Code: NO TOX DATA.

915. Kalyanasundaram, M., Rajagopalan, K., and Swaminathan, S. (1980). Base catalyzed rearrangement of some bicyclic ketol acetates. *Tetrahedron Letters* 21: 4391-4394.
Rejection Code: METHODS.

916. KAMAL AM (1997). Effect of sevin on kinetic parameters of camel retina acetylcholinesterase. *BIOCHEMISTRY AND MOLECULAR BIOLOGY INTERNATIONAL; 42* 235-246.
Rejection Code: IN VITRO.

917. Kanan, M. C., Kanan, S. M., Austin, R. N., and Patterson, H. H. (2003). Photodecomposition of Carbaryl in the Presence of Silver-Doped Zeolite Y and Suwannee River Natural Organic Matter. *Environmental Science & Technology [Environ. Sci. Technol.]. Vol. 37, no. 10, pp. 2280-2285. 15 May 2003.*
Rejection Code: SURVEY.

918. Kanazawa, J. (1981). Bioconcentration Potential of Pesticides by Aquatic Organisms. *Jpn.Pestic.Inf.* 39: 12-74.

; Habitat: A; Effect Codes: ACC,GRO

919. Kanazawa, J. (1983). In Vitro and In Vivo Effects of Organophosphorus and Carbamate Insecticides on Brain Acetylcholinesterase Activity of Fresh-Water Fish, Topmouth gudgeon. *Bull.Natl.Inst.Agric.Sci.Sect.C* 37: 19-30.

; Habitat: A; Effect Codes: BCM,MOR,BEH,PHY

920. Kanazawa, J. (1981). Measurement of the Bioconcentration Factors of Pesticides by Freshwater Fish and Their Correlation with Physicochemical Properties or Acute Toxicities. *Pestic.Sci.* 12: 417-424.

; Habitat: A; Effect Codes: MOR,ACC

921. Kanazawa, J. (1983). A Method of Predicting the Bioconcentration Potential of Pesticides by Using Fish. *J.A.R.Q.(Jpn.Agric.Res.Q.)* 17: 173-179.

; Habitat: A; Effect Codes: ACC,BCM,PHY

922. Kanazawa, J. (1980). Prediction of Biological Concentration Potential of Pesticides in Aquatic Organisms. *Rev.Plant Prot.Res.* 13: 27-74.

; Habitat: A; Effect Codes: ACC,MOR

923. Kanazawa, J. (1975). Uptake and excretion of organophosphorus and carbamate insecticides by fresh water fish, Motsugo, Pseudorasbora parva. *Bull. Environ. Contam. Toxicol. Vol. 14, no. 3, pp. 346-352. 1975.*
Rejection Code: METABOLISM.

924. Kanazawa, J., Isensee, A. R., and Kearney, P. C. (1975). Distribution of carbaryl and 3,5-xylyl methylcarbamate in an aquatic model ecosystem. *J. Agric. Food. Chem. Vol. 23, no. 4, pp. 760-763. 1975.*
Rejection Code: FATE.

925. KANAZAWA, Y., YOSHIDA, T., and KOJIMA, K. (1999). Structure-activity relationships in allergic contact dermatitis induced by methacrylates. Studies of the influence of side-chain length of methacrylates. *CONTACT DERMATITIS; 40* 19-23.
Rejection Code: MODELING.

926. KANG J-W, PARK H-S, WANG R-Y, KOGA, M., KODOKAMI, K., KIM H-Y, LEE E-T, and OH S-M (1997). Effect of ozonation for treatment of micropollutants present in drinking water source. *WATER SCIENCE AND TECHNOLOGY; 36* 299-307.
Rejection Code: EFFLUENT.

927. KANT, R. and SRIVASTAVA PK (1992-1993). Dissipation of carbaryl residues from green beans. *Z ANGEW ZOOL; 79* 193-198.
Rejection Code: FATE.

928. KANTA, K., NARULA, N., RABBI, S., and GUPTA KG (1987). DEVELOPMENT OF RESISTANCE TO PESTICIDES IN RHIZOBIA. *ZENTRALBL MIKROBIOL; 142* 167-173.
Rejection Code: BIOLOGICAL TOXICANT.

929. Kapoor, M., Anand, N., Koul, S., Chimni, S. S., Manhas, K. S., Raina, C., Parshad, R., Taneja, S. C., and Qazi, G. N. (2003). Kinetic resolution of 1-chloro-3-(1-naphthyloxy)-2-propanol, an intermediate in the synthesis of [beta]-adrenergic receptor blockers. *Bioorganic Chemistry* 31: 259-269.
Rejection Code: FATE.

930. Karinen, J. F., Lamberton, J. G., Stewart, N. E., and Terriere, L. C. (1967). Persistence of Carbaryl in the Marine Estuarine Environment. *J.Agric.Food Chem.* 15: 148-156.
Rejection Code: NO EFFECT.

931. Karousos, Nikolaos G., Aouabdi, Sihem, Way, Allan S., and Reddy, Subrayal M. (2002). Quartz crystal microbalance determination of organophosphorus and carbamate pesticides. *Analytica Chimica Acta* 469: 189-196.
Rejection Code: METHODS.

932. KASEMSUPAYA, V., YASHIMA, M., TSUBOTA, H., and NOZAKI, Y. (1989). Comparative behavior of lead-210 and radium isotopes in the waters of Tokyo Bay (Japan) and Osaka Bay mixing zones. *GEOCHEM J; 23* 129-138.
Rejection Code: SURVEY.

933. Kasprzak, Kazimierz S., Diwan, Bhalchandra A., and Rice, Jerry M. (1994). Iron accelerates while magnesium inhibits nickel-induced carcinogenesis in the rat kidney. *Toxicology* 90: 129-140.
Rejection Code: MIXTURE, NO COC.

934. Kataoka, Yasutaka, Miyai, Jiro, Tezuka, Makoto, Takai, Kazuhiko, Oshima, Koichiro, and Utimoto, Kiitiro (1990). Preparation of 1-naphthols from acetylenes and o-phthalaldehyde using low-valent tantalum and niobium. *Tetrahedron Letters* 31: 369-372.
Rejection Code: METHODS.

935. KATHURIA PC, JAND SK, SINGH, N., and SANDHU KS (1993). Toxicological screening of fungi and detection of aflatoxins from poultry litter used as ruminant feed. *INDIAN J ANIM SCI; 63* 668-670.
Rejection Code: METHODS.

936. Katsoudas, E and Abdelmesseh, H H (2000). Enzyme inhibition and enzyme-linked immunosorbent assay methods for carbamate pesticide residue analysis in fresh produce. *Journal Of Food Protection* 63: 1758-1760.
Rejection Code: NO TOX DATA/FOOD/METHODS.

937. KATSUDA, Y. (1999). Development of and future prospects for pyrethroid chemistry.
Rejection Code: METHODS.

938. Kaufman, D. D. (1977). Biodegradation and persistence of several acetamide, acylanilide, azide, carbamate, and organophosphate pesticide combinations. *Soil Biology and Biochemistry* 9: 49-57.
Rejection Code: FATE.

939. Kaufman, D. D. (1977). Biodegradation and persistence of several acetamide, acylanilide, azide, carbamate, and organophosphate pesticide combinations. *Soil Biology and Biochemistry* 9: 49-57.
Rejection Code: FATE.

940. KAUFMAN DD, KATAN, Y., EDWARDS DF, and JORDAN EG (1985). MICROBIAL ADAPTATION AND METABOLISM OF PESTICIDES. *HILTON, J. L. (ED.). BELTSVILLE SYMPOSIA IN AGRICULTURAL RESEARCH, VOL. 8. AGRICULTURAL CHEMICALS OF THE FUTURE; MEETING, BELTSVILLE, MD., USA, MAY 16-19, 1983. XV+464P. ROWMAN AND ALLANHELD PUBLISHERS: TOTOWA, N.J., USA. ILLUS. ISBN 0-86598-138-8.; 0 (0). 1985. 437-452.*
Rejection Code: BACTERIA.

941. Kaur, K. and Dhawan, A. (1996). Effect of carbaryl on tissue composition, maturation, and breeding potential of Cirrhina mrigala (Ham.). *Bulletin of Environmental Contamination and Toxicology. Vol. 57, no. 3, pp. 480-486. 1996.*
Rejection Code: IN VITRO.

942. KAWABE, M., TAKABA, K., YOSHIDA, Y., and HIROSE, M. (1994). Effects of combined treatment with phenolic compounds and sodium nitrite on two-stage carcinogenesis and cell proliferation in the rat stomach. *JAPANESE JOURNAL OF CANCER RESEARCH; 85* 17-25.
Rejection Code: MIXTURE, NO COC.

943. Kawakubo, Susumu, Fukasawa, Tsutomu, and Mizuike, Atsushi (1983). Rapid microdiffusion--photometric determination of nanogram quantities of ammonia. *Analytica Chimica Acta* 149: 363-367.
Rejection Code: METHODS.

944. Kawase, Akira (1972). Spectrophotometric reactions of copper and zinc with 2-(2-quinolylazo)-1-naphthol. *Analytica Chimica Acta* 58: 311-322.
Rejection Code: METHODS.

945. Kay-Shoemake, J. L., Watwood, M. E., Sojka, R. E., and Lentz, R. D. (2000). Soil amidase activity in polyacrylamide-treated soils and potential activity toward common amide-containing pesticides. *Biology and Fertility of Soils, 31 (2) pp. 183-186, 2000*.
Rejection Code: METHODS.

946. Kay-Shoemake, J. L., Watwood, M. E., Sojka, R. E., and Lentz, R. D. (2000). Soil amidase activity in polyacrylamide-treated soils and potential activity toward common amide-containing pesticides. *Biology and Fertility of Soils, 31 (2) pp. 183-186, 2000*.
Rejection Code: SURVEY.

947. KEIVER KM, DRAPER HH, and RONALD, K. (1988). VITAMIN D METABOLISM IN THE HOODED SEAL CYSTOPHORA-CRISTATA. *J NUTR; 118* 332-341.
Rejection Code: METABOLISM, NO TOXICANT.

948. KEMP JC and BARRETT GW (1989). SPATIAL PATTERNING IMPACT OF UNCULTIVATED CORRIDORS ON ARTHROPOD POPULATIONS WITHIN SOYBEAN AGROECOSYSTEMS. *ECOLOGY; 70* 114-128.

949. Kemper, B. (1976). Inactivation of Parathyroid Hormone mRNA by Treatment with Periodate and Aniline. *Nature* 262: 321-323.
Rejection Code: NO CONC/NO DURATION.

950. Kennedy, E. R., Lin, J. J., Reynolds, J. M., and Perkisn, J. B. (1997). A sampling and analytical method for the simultaneous determination of multiple organonitrogen pesticides in air. *American Industrial Hygiene Association Journal* 58 : 720-725.
Rejection Code: SURVEY.

951. Kennett, Roger H., Leunk, Robert, Meyer, Barbara, and Silenzio, Vincent (1985). Detection of E. coli colonies expressing the v-sis oncogene product with monoclonal antibodies made against synthetic peptides. *Journal of Immunological Methods* 85: 169-182.
Rejection Code: METHODS, BACTERIA.

952. Keplinger, M. L. and Deichmann, William B. (1967). Acute toxicity of combinations of pesticides. *Toxicology and Applied Pharmacology* 10: 586-595.
Rejection Code: MIXTURE.

953. Kesavan, R. , Easwaramoorthy, S., and Santhalakshmi, G. (2003). Evaluation of Different Formulations of Bacillus thuringiensis against Sugarcane Early Shoot Borer Chilo infuscatellus Snellen. *Sugar Tech, 5 (1-2) pp. 51-55, 2003*.
Rejection Code: BACTERIA.

954. KESERU GM, BALOGH, G., CZUDOR, I., KARANCSI, T., FEHER, A., and BERTOK, B. (1999). Chemical models of cytochrome P450 catalyzed insecticide metabolism: Application to the oxidative metabolism of carbamate insecticides. *JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY; 47* 762-769.
Rejection Code: MODELING.

955. KEY BD, HOWELL RD, and CRIDDLE CS (1997). Fluorinated organics in the biosphere. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 31* 2445-2454.
Rejection Code: SURVEY.

956. Khafagy, Mostafa M., Abd El-Wahab, Ashraf H. F., Eid, Fathy A., and El-Agrody, Ahmed M. (2002). Synthesis of halogen derivatives of benzo[h]chromene and benzo[a]anthracene with promising antimicrobial activities. *Il Farmaco* 57: 715-722.
Rejection Code: NO SPECIES, NO TOX DATA.

957. Khalaf, Karim D., Morales-Rubio, A., and de la Guardia, M. (1993). Simple and rapid flow-injection spectrophotometric determination of carbaryl after liquid-liquid extraction. *Analytica Chimica Acta* 280: 231-238.
Rejection Code: METHODS.

958. KHAMISS, O., LERY, X., BELAL MH, BADAWY HA, GIANOTTI, J., and ABOL-ELA SM (1998). Effects of some insecticides on the division of a Spodoptera littoralis cell line and on the replication of Sl baculovirus (NPV). *APPLIED ENTOMOLOGY AND*

ZOOLOGY; 33 349-355.
Rejection Code: IN VITRO.

959. Khan, M. A. Q. and Matsumura, F. (1972). Induction of mixed-function oxidase and protein synthesis by DDT and dieldrin in German and American cockroaches. *Pesticide Biochemistry and Physiology* 2: 236-243.
Rejection Code: MIXTURE.

960. khan, M. H. and Srivastava, S. C. (1987). Control of ixodid ticks by chemicals. II. Bioassay tests against Hyalomma (Hyalomma) anatolicum anatolicum Koch. *Indian Journal of Animal Health [INDIAN J. ANIM. HEALTH.]. Vol. 26, no. 2, pp. 99-103. 1987.*
Rejection Code: IN VITRO.

961. Khan, M. H. and Srivastava, S. C. (1988). Control of ixodid ticks by chemicals. IV. Bioassay tests against Rhipicephalus H. haemaphysaloides Supino. *Indian Journal of Animal Health. Vol. 27, no. 2, pp. 91-94. 1988.*
Rejection Code: IN VITRO.

962. Khandaker, N. R. and Young, J. C. (1997). Kinetic assessment of the effect of carbamate insecticides on anaerobic transformation of co-substrate reactions. *Journal of Environmental Science and Health Part B Pesticides Food Contaminants and Agricultural Wastes* 32 : 107-125.
Rejection Code: BACTERIA.

963. KHANDAKER NR and YOUNG JC (1997). Kinetic assessment of the effect of carbamate insecticides on anaerobic transformation of co-substrate reactions. *JOURNAL OF ENVIRONMENTAL SCIENCE AND HEALTH PART B PESTICIDES FOOD CONTAMINANTS AND AGRICULTURAL WASTES; 32* 107-125.
Rejection Code: IN VITRO.

964. Khazraji, A. L., Al-Iraqi, R. A., and Al-Saffar, Z. Y. (1984). The Relative Susceptibility of Culex pipiens molestus Forskal to Certain Insecticides in Nineva District, Iraq. *J.Biol.Sci.Res.* 15: 7-12.
Rejection Code: NO DURATION.

965. Khemani, S., Khemani, L. D., and Pant, M. C. (1990). Toxicological Effects of Selected Pesticides on Brain Acethylcholinesterase AChE Activity in Rats. *Indian J.Environ.Health* 32: 39-44.
Rejection Code: NO CONC.

966. Khmelevskii, V. N. (1969). Data on Experimental Therapy in Sevin Poisoning of Chickens. *Veterinariia* 46: 63-64 (RUS).
Rejection Code: NON-ENGLISH.

967. Kido, Horacio, Maquieira, Angel, and Hammock, Bruce D. (2000). Disc-based immunoassay microarrays. *Analytica Chimica Acta* 411: 1-11.
Rejection Code: METHODS.

968. Kido, Horacio, Maquieira, Angel, and Hammock, Bruce D. (2000). Disc-based immunoassay microarrays. *Analytica Chimica Acta* 411: 1-11.
Rejection Code: METHODS.

969. Kiel, Mark J., Yilmaz, x00d6 mer H., Iwashita, Toshihide, Yilmaz, Osman H., Terhorst, Cox, and Morrison, Sean J. (2005). SLAM Family Receptors Distinguish Hematopoietic Stem and Progenitor Cells and Reveal Endothelial Niches for Stem Cells. *Cell* 121: 1109-1121.

Rejection Code: IN VITRO.

970. Kiene, R. P. and Capone, D. G. (1986). Stimulation of methanogenesis by aldicarb and several other N-methyl carbamate pesticides. *Applied and environmental microbiology [appl. Environ. Microbiol.]* 51: 1247-1251.
Rejection Code: BACTERIA.

971. Kieszak, S. M., Naeher, L. P., Rubin, C. S., Needham, L. L., Backer, L., Barr, D., and McGeehin, M. (2002). Investigation of the relation between self-reported food consumption and household chemical exposures with urinary levels of selected nonpersistent pesticides. *Journal of Exposure Analysis and Environmental Epidemiology [J. Exposure Anal. Environ. Epidemiol.]. Vol. 12, no. 6, pp. 404-408. Nov 2002.*
Rejection Code: HUMAN HEALTH.

972. KIM DG and RIGGS RD (1998). Effects of some pesticides on the growth of ARF18 and its pathogenicity to Heterodera glycines. *JOURNAL OF NEMATOLOGY; 30* 201-205.
Rejection Code: IN VITRO.

973. 1994).
Rejection Code: NO SPECIES.

974. Kimbrough, R. A., Litke, D. W., Klein, K. C., and Williams, D. J. (eds) (1994). Pesticide occurrence in a small urban and a small agricultural basin, South Platte River Basin, April through December 1993.
Rejection Code: SURVEY.

975. Kimura, T. and Keegan, H. L. (1966). Toxicity of Some Insecticides and Molluscicides for the Asian Blood Sucking Leech, Hirudo nipponia Whitman. *Am.J.Trop.Med.Hyg.* 15: 113-115.

; Habitat: A; Effect Codes: MOR,PHY

976. Kimura, Yasuhiro, Nagata, Yasuo, and Buddington, Randal K. (2004). Diets supplemented with fiber do not increase accumulation of 1-naphthol. *Nutrition Research* 24: 945-958.
Rejection Code: METABOLISM.

977. King, C. M. and Kriek, E. (1965). The differential reactivity of the oxidation products of o-aminophenols towards protein and nucleic acid. *Biochimica et Biophysica Acta (BBA) - General Subjects* 111: 147-153.
Rejection Code: IN VITRO.

978. King, Jerry W and Zhang, Zhouyao (2002). Derivatization reactions of carbamate pesticides in supercritical carbon dioxide. *Analytical And Bioanalytical Chemistry* 374: 88-92.
Rejection Code: METHODS/NO SPECIES.

979. KINGERY HE (1985). THE NESTING SEASON JUNE 1-JULY 31 1985 MOUNTAIN WEST REGION USA. *AM BIRDS; 39 (5). 1985 (RECD. 1986). 942-945.*
Rejection Code: SURVEY.

980. Kirby, Anthony J. and Percy, Jonathan M. (1988). Exceptional reactivity of the aromatic ring in 8-substituted 1-naphthol derivatives. Ready reduction to tetralins. *Tetrahedron* 44: 6911-6919.
Rejection Code: METHODS.

981. Kirby, Arthur H. M. and Warman, T. M (1968). Influence of magnesium sulfate on some physico-

chemical properties of standard orchard pesticides. *Annual Report, East Malling Research Station, Kent* 177-80.
Rejection Code: FATE.

982. Kirchmann, R., Fagniart, E., and Van Puymbroeck, S. (1966). Studies on Foliar Contamination by Radiocaesium and Radiostrontium. *In: Radioecological Concentration Process, Proc.of an Internat.Sympos.,Stockholm, April 25-29* 475-483.
Rejection Code: MIXTURE.

983. KISHORE, P. (1996). Evolving management strategies for pests of millets in India. *JOURNAL OF ENTOMOLOGICAL RESEARCH (NEW DELHI); 20 (4). 1996. 287-297.*
Rejection Code: SURVEY.

984. Kiso, Yoshiaki, Jung, Yong-Jun, Kuzawa, Kazumichi, Seko, Yasunori, Saito, Yoshihiro, Yamada, Toshiro, and Nagai, Masahiro (2006). Visual determination of nitrite and nitrate in waters by color band formation method. *Chemosphere* 64: 1949-1954.
Rejection Code: METHODS.

985. KIZIROGLU, F. and GORCZYNSKI RM (1993). INHIBITION OF GRAFT REJECTION IN MULTIPLE MINOR INCOMPATIBLE STRAIN COMBINATIONS BY LPS BLASTS IS INEFFECTIVE WITH PRESENSITIZED ANIMALS. *JOINT MEETING OF THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS AND THE CLINICAL IMMUNOLOGY SOCIETY, DENVER, COLORADO, USA, MAY 21-25, 1993. J IMMUNOL; 150* 191A.
Rejection Code: NO TOX DATA.

986. Klass, M. C. and Olson, J. K. (1985). The Effects of Selected Rice and Soybean Pesticides on the Eggs of Psorophora columbiae. *J.Am.Mosq.Control Assoc.* 1: 458-462.
Rejection Code: NO CONC.

987. Klein, Jeannette and Alder, Lutz (2003). Applicability of gradient liquid chromatography with tandem mass spectrometry to the simultaneous screening for about 100 pesticides in crops. *Journal of AOAC International* 86: 1015-1037 .
Rejection Code: CHEM METHODS.

988. Klein, S. and Gebhardt, R. (1997). Sensitive detection of growth stimulating tumour promoters in perifused primary rat hepatocyte cultures: International Workshop on In Vitro Toxicology. *Toxicology in Vitro* 11: 543-547.
Rejection Code: IN VITRO.

989. Kline, E. R., Mattson, V. R., Pickering, Q. H., Spehar, D. L., and Stephan, C. E. (1987). Effects of Pollution on Freshwater Organisms. *J.Water Pollut.Control Fed.* 59: 539-572.
Rejection Code: REFS CHECKED/REVIEW.

990. Kline, E. R., Mattson, V. R., Pickering, Q. H., Spehar, D. L., and Stephan, C. E. (1987). Effects of Pollution on Freshwater Organisms. *J.Water Pollut.Control Fed.* 59: 539-572.
Rejection Code: REFS CHECKED/REVIEW.

991. Kline, E. R., Mattson, V. R., Pickering, Q. H., Spehar, D. L., and Stephan, C. E. (1987). Effects of Pollution on Freshwater Organisms. *J.Water Pollut.Control Fed.* 59: 539-572.
Rejection Code: REFS CHECKED/REVIEW.

992. KLOPMAN, G. , FRIERSON MR, and ROSENKRANZ HS (1990). The structural basis of the mutagenicity of chemicals in Salmonella typhimurium: The Gene-Tox data base. *MUTAT RES; 228* 1-50.

Rejection Code: BACTERIA, QSAR.

993. Klotz, D. M., Arnold, S. F., and Mclachlan, J. A. (1997). Inhibition of 17 beta-estradiol and progesterone activity in human breast and endometrial cancer cells by carbamate insecticides. *Life Sciences* 60 : 1467-1475.
Rejection Code: HUMAN HEALTH.

994. Kneifel, H. , Elmendorff, K., Hegewald, E., and Soeder, C. J. (1997). Biotransformation of 1-naphthalenesulfonic acid by the green alga Scenedesmus obliquees. *Archives of Microbiology, 167 (1) pp. 32-37, 1997*.
Rejection Code: FATE, METABOLISM.

995. Knochenmuss, Richard and Fischer, Ingo (2002). Excited-state proton transfer in naphthol/solvent clusters: the current state of affairs. *International Journal of Mass Spectrometry* 220: 343-357.
Rejection Code: METHODS.

996. KNOPPEL, H. and SCHAUENBURG, H. (1989). SCREENING OF HOUSEHOLD PRODUCTS FOR THE EMISSION OF VOLATILE ORGANIC COMPOUNDS. *FOURTH INTERNATIONAL CONFERENCE ON INDOOR AIR QUALITY AND CLIMATE, WEST BERLIN, WEST GERMANY, AUGUST 17-21, 1987. ENVIRON INT; 15* 413-418.
Rejection Code: HUMAN HEALTH.

997. Kobayashi, Ryoji and Tashima, Yohtalou (1989). Visualization of antigen on nitrocellulose membrane by the oxidative coupling reaction of N,N'-dimethyl-p-phenylendiamine and 4-chloro-1-naphthol. *Analytical Biochemistry* 183: 9-12.
Rejection Code: METHODS.

998. Kobayashi, Tsutomu, Tatano, Aiko, Yokota, Hiroshi, Onaga, Takenori, Watanabe, Toshihiro, and Yuasa, Akira (1999). Small Intestinal UDP-Glucuronosyltransferase sheUGT1A07: Partial Purification and cDNA Cloning from Sheep Small Intestine. *Archives of Biochemistry and Biophysics* 364: 143-152.
Rejection Code: METHODS.

999. Koch, Henry G. and Popham, Thomas W. (1987). Evaluation of acaricide-impregnated plastic collars for control of lone star ticks, Amblyomma americanum (L.) (Acari: Ixodidae) on domestic dogs in Oklahoma, U.S.A. *Preventive Veterinary Medicine* 5: 63-67.
Rejection Code: METHODS.

1000. Koeppen, Arnulf H. (1969). A modified assay procedure for carboxylic ester hydrolases. *Clinica Chimica Acta* 26: 71-76.
Rejection Code: METHODS.

1001. Kojima, Hiroyuki, Katsura, Eiji, Takeuchi, Shinji, Niiyama, Kazuhito, and Kobayashi, Kunihiko (2004). Screening for estrogen and androgen receptor activities in 200 pesticides by in vitro reporter gene assays using chinese hamster ovary cells. *Environmental Health Perspectives* 112: 524-531.
Rejection Code: IN VITRO.

1002. Kok, Fatma N and Hasirci, Vasif (2004). Determination of binary pesticide mixtures by an acetylcholinesterase-choline oxidase biosensor. *Biosensors & Bioelectronics* 19: 661-665.
Rejection Code: METHODS.

1003. Kok, Fatma N. and Hasirci, Vasif (2004). Determination of binary pesticide mixtures by an

acetylcholinesterase-choline oxidase biosensor. *Biosensors and Bioelectronics* 19: 661-665.
Rejection Code: METHODS.

1004. KOLPIN DW, BARBASH JE, and GILLIOM RJ (1998). Occurrence of pesticides in shallow groundwater of the United States: Initial results from the National Water-Quality Assessment Program. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 32* 558-566.
Rejection Code: SURVEY.

1005. Koltunov, Konstantin Yu., Surya Prakash, G. K., Rasul, Golam, and Olah, George A. (2002). Superacid catalyzed reactions of 5-amino-1-naphthol with benzene and cyclohexane. *Tetrahedron* 58: 5423-5426.
Rejection Code: METHODS.

1006. KOMATSU, S., MASUDA, T., and HISAMICHI, S. (1991). Effect of calcium on rat gastric carcinogenesis induced by N-methyl-N'-nitro-N-nitrosoguanidine. *TOHOKU J EXP MED; 165* 291-297.
Rejection Code: MIXTURE.

1007. KOMEIL AA, ABDALLA MA, YOUNIS HM, and MOSTAFA MA (1988). TERATOGENICITY OF THREE DIFFERENT INSECTICIDES IN PREGNANT MICE. *16TH CONFERENCE OF THE EUROPEAN TERATOLOGY SOCIETY, BAVENO, ITALY, SEPTEMBER 19-22, 1988. TERATOLOGY; 38* 21A.
Rejection Code: ABSTRACT.

1008. Kongkathip, Boonsong, Sangma, Chak, Kirtikara, Kanyawim, Luangkamin, Suwaporn, Hasitapan, Komkrit , Jongkon, Nipa, Hannongbua, Supa, and Kongkathip, Ngampong (2005). Inhibitory effects of 2-substituted-1-naphthol derivatives on cyclooxygenase I and II. *Bioorganic & Medicinal Chemistry* 13: 2167-2175.
Rejection Code: MODELING.

1009. Konno, T. and Kajihara, O. (1985). Synergism of Pirimicarb and Organophosphorus Insecticides Against the Resistant Rice Stem Borer, Chilo suppressalis Walker (Lepidoptera: Pyralidae). *Appl.Entomol.Zool.* 20: 403-410.

; Habitat: T; Effect Codes: MOR

1010. Kore, A. M., Jeffery, E. H., and Wallig, M. A. *. (1993). Effects of 1-isothiocyanato-3-(methylsulfinyl)propane on xenobiotic metabolizing enzymes in rats. *Food and Chemical Toxicology [FOOD CHEM. TOXICOL.]. Vol. 31, no. 10, pp. 723-729. 1993.*
Rejection Code: METABOLISM.

1011. Korpalski, S., Bruce, E., Holden, L., Klonne, D., and Johnson, D. (2005). Dislodgeable foliar residues are lognormally distributed for agricultural re-entry studies. *Journal of Exposure Analysis and Environmental Epidemiology, 15 (2) pp. 160-163, 2005.*
Rejection Code: SURVEY.

1012. Koster, Andrees Sj., Frankhuijzen-Sierevogel, Ank C., and Noordhoek, Jan (1985). Distribution of glucuronidation capacity (1-naphthol and morphine) along the rat intestine. *Biochemical Pharmacology* 34: 3527-3532.
Rejection Code: FATE, IN VITRO.

1013. Koster, Andries S. and Noordhoek, Jan (1983). Kinetic properties of the rat intestinal microsomal 1-naphthol: UDP-glucuronosyl transferase : Inhibition by UDP and UDP-N-acetylglucosamine. *Biochimica et Biophysica Acta (BBA) - General Subjects* 761: 76-85.

Rejection Code: IN VITRO.

1014. Koster, Andries Sj., Nieuwenhuis, Leo, and Frankhuijzen-Sierevogel, Ank C. (1989). Comparison of microsomal drug-metabolizing enzymes in 14 rat inbred strains. *Biochemical Pharmacology* 38: 759-765.
Rejection Code: METABOLISM, IN VITRO.

1015. Koster, Andries Sj. and Noordhoek, Jan (1983). Glucuronidation in the rat intestinal wall : Comparison of isolated mucosal cells, latent microsomes and activated microsomes. *Biochemical Pharmacology* 32: 895-900.
Rejection Code: IN VITRO, METABOLISM.

1016. Koster, Andries Sj., Schirmer, Gerhard, and Bock, Karl Walter (1986). Immunochemical and functional characterization of UDP-glucuronosyltransferases from rat liver, intestine and kidney. *Biochemical Pharmacology* 35: 3971-3975.
Rejection Code: IN VITRO, METABOLISM.

1017. Kozumbo, W. J., Agarwal, S., and Koren, H. S. (1992). Breakage and binding of DNA by reaction products of hypochlorous acid with aniline, 1-naphthylamine, or 1-naphthol. *Toxicology and Applied Pharmacology [TOXICOL. APPL. PHARMACOL.]. Vol. 115, no. 1, pp. 107-115. 1992.*
Rejection Code: IN VITRO.

1018. Kozumbo, W. J., Agarwal, S., and Koren, H. S. (1990). Induction of DNA damage in cultured lung cells by 1-naphthylamine and 1-naphthol exposed to hypochlorous acid (HOCL). *Free Radical Biology and Medicine* 9: 50.
Rejection Code: IN VITRO.

1019. KRALJ-KLOBUCAR, N. (1993). Lead intake in the juvenile and adult carp (Cyprinus carpio L.). *VETERINARSKI ARHIV; 63* 95-105.
Rejection Code: NO COC.

1020. KRAPCHO KJ, KRAL RM, JOHNSON JH, VANWAGENEN BC, DELMAR, E., EPPLER, K., MORGAN, T., FULLER, F., TROVATO, R. and others (1994). INSECTICIDAL PEPTIDE TOXINS FROM DIGUETIA CANITIES CHEMISTRY TOXICOLOGY MOLECULAR BIOLOGY AND APPLICATION IN A RECOMBINANT BACULOVIRUS. *208TH NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY, WASHINGTON, D.C., USA, AUGUST 21-25, 1994. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 208* AGRO 63.
Rejection Code: IN VITRO.

1021. Krause, R. T. (1985). LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE INSECTICIDES AND METABOLITES IN CROPS 2. ANALYTICAL CHARACTERISTICS AND RESIDUE FINDINGS. *J Assoc Off Anal Chem* 68 : 734-741.
Rejection Code: CHEM METHODS.

1022. Krause, R T and August, E M (1983). Applicability of a carbamate insecticide multiresidue method for determining additional types of pesticides in fruits and vegetables. *Journal-Association Of Official Analytical Chemists* 66: 234-240.
Rejection Code: METHODS/NO TOX DATA/FOOD.

1023. Krause, R. T. and August, E. M. (1983). Applicability of a carbamate insecticide multiresidue method for determining additional types of pesticides in fruits and vegetables. *Journal of the Association of Official Analytical Chemists [J. ASSOC. OFF. ANAL. CHEM.]. Vol.*

66, no. 2, pp. 234-240. 1983.
Rejection Code : NO COC.

1024. Krause, R. T. and August, E. M. (1983). Applicability of a carbamate insecticide multiresidue method for determining additional types of pesticides in fruits and vegetables. *Journal of the Association of Official Analytical Chemists [J. ASSOC. OFF. ANAL. CHEM.]. Vol. 66, no. 2, pp. 234-240. 1983.*
Rejection Code: METHODS.

1025. Krause, R. T. and August, E. M. (1983). Applicability of a carbamate insecticide multiresidue method for determining additional types of pesticides in fruits and vegetables. *Journal of the Association of Official Analytical Chemists [J. ASSOC. OFF. ANAL. CHEM.]. Vol. 66, no. 2, pp. 234-240. 1983.*
Rejection Code: METHODS.

1026. Krcmery, Maria and Zakim, David (1993). Effects of oleoyl-CoA on the activity and functional state of UDP-glucuronosyltransferase. *Biochemical Pharmacology* 46: 897-904.
Rejection Code: METABOLISM.

1027. Krechniak, J. and Englot, B. (1994). Interaction of Lindane and Carbaryl on Cholinesterase Activity in Rats. *Toxicol.Lett.* 74: 44-45.
Rejection Code: ABSTRACT.

1028. Krijnen, C. J. and Boyd, E. M. (1971). The Influence of Diets Containing from 0 to 81 per Cent of Protein on Tolerated Doses of Pesticides. *Comp.Gen.Pharmacol.* 2: 373-376.
Rejection Code: NO DURATION.

1029. Krijnen, C. J. and Boyd, E. M. (1970). Susceptibility to Captan Pesticide of Albino Rats Fed from Weaning on Diets Containing Various Levels of Protein. *Food Cosmet.Toxicol.* 8: 35-42.

; Habitat: T; Effect Codes: MOR,GRO

1030. Kroes, R., Galli, C., Munro, I., Schilter, B., Tran, L. A., Walker, R., and Wurtzen, G. (2000). Threshold of Toxicological Concern for Chemical Substances Present in the Diet: a Practical Tool for Assessing the Need for Toxicity Testing. *Food Chem.Toxicol.* 38: 255-312.
Rejection Code: REVIEW.

1031. Kroes, R., Galli, C., Munro, I., Schilter, B., Tran, L. A., Walker, R., and Wurtzen, G. (2000). Threshold of Toxicological Concern for Chemical Substances Present in the Diet: A Practical Tool for Assessing the Need for Toxicity Testing. *Food Chem.Toxicol.* 38: 255-312 .
Rejection Code: REVIEW.

1032. KRONVANG, B., HOFFMANN, C., SVENDSEN LM, WINDOLF, J., JENSEN JP, and DORGE, J. (1999). Retention of nutrients in river basins. *AQUATIC ECOLOGY; 33* 29-40.
Rejection Code: SURVEY.

1033. KRUPA SV (1996). THE ROLE OF ATMOSPHERIC CHEMISTRY IN THE ASSESSMENT OF CROP GROWTH AND PRODUCTIVITY. *YUNUS, M. AND M. IQBAL (ED.). PLANT RESPONSE TO AIR POLLUTION. XII+545P. JOHN WILEY AND SONS LTD.: CHICHESTER, ENGLAND, UK; NEW YORK, NEW YORK, USA. ISBN 0-471-96061-6.; 0 (0). 1996. 35-73.*
Rejection Code: NO TOXICANT.

1034. Krynski, A., Kaluzinski, J., Delong, A., Dutkiewicz, M., and Labudzki, L. (1982). Polychloride and carbamate insecticide contamination of roe deer inhabiting fields and forests. *Acta Theriologica [ACTA THERIOL.]. Vol. 27, no. 34, pp. 489-497. 1982.*
Rejection Code: SURVEY.

1035. Kulkarni, G. H., Naik, R. H., Tandel, S. K., and Rajappa, S. (1991). Contra-thermodynamic trans-esteripication of carbamates by counter-attack strategy: A viable non-phosgene, non-mic route to carbamate pesticides. *Tetrahedron* 47: 1249-1256.
Rejection Code: METHODS, BACTERIA.

1036. Kulys, Juozas and Vidziunaite, Regina (2003). Amperometric biosensors based on recombinant laccases for phenols determination. *Biosensors and Bioelectronics* 18: 319-325.
Rejection Code: METHODS.

1037. Kulys, Juozas, Vidziunaite, Regina, and Schneider, Palle (2003). Laccase-catalyzed oxidation of naphthol in the presence of soluble polymers. *Enzyme and Microbial Technology* 32: 455-463 .
Rejection Code: METABOLISM, NO TOX DATA.

1038. KUMAR, R. and GUPTA PP (1994). Effect of seed borne pathogenic fungi (Alternaria spp.) on the disease intensity and yield of crucifers. *INTERNATIONAL JOURNAL OF TROPICAL AGRICULTURE; 12* 131-135.
Rejection Code: BIOLOGICAL TOXICANT.

1039. Kumar Ray, Subir and Kanti Poddar, Mrinal (1990). Interaction of central serotonin and dopamine in the regulation of carbaryl-iduced tremor. *European Journal of Pharmacology* 181: 159-166.
Rejection Code: METHODS.

1040. Kumar, S. S. and Wyman Dorough, H. (1975). Glucosylation by housefly microsomes and effect of monoamine oxidase inhibitors. *Insect Biochemistry* 5: 265-273.
Rejection Code: IN VITRO.

1041. Kumaran, S. and Tran-Minh, C. (1992). Determination of organophosphorous and carbamate insecticides by flow injection analysis. *Anal Biochem* 200 : 187-194.
Rejection Code: CHEM METHODS.

1042. Kumaran, S. and Tran-Minh, C. (1992). Insecticide determination with enzyme electrodes using different enzyme immobilization techniques. *Electroanalysis* 4 : 949-954.
Rejection Code: METHODS.

1043. Kumaran, Satish and Tran-Minh, C. (1992). Determination of organophosphorous and carbamate insecticides by flow injection analysis. *Analytical Biochemistry* 200: 187-194.
Rejection Code: NO TOX DATA, NO EFFECT.

1044. Kumaran, Satish and Tran-Minh, C. (1992). Determination of organophosphorous and carbamate insecticides by flow injection analysis. *Analytical Biochemistry* 200: 187-194.
Rejection Code: METHODS.

1045. Kuo, W. S. and Regan, R. W Sr (1998). Aerobic carbamate bioremediation aided by compost residuals from the mushroom industry: Laboratory studies. *Compost Science & Utilization* 6 : 19-29.
Rejection Code: FATE/BACTERIA.

1046. Kuo, W. S. and Regan, R. W Sr (1999). Removal of pesticides from rinsate by adsorption using

agricultural residuals as medium. *Journal of Environmental Science and Health Part B Pesticides Food Contaminants and Agricultural Wastes* 34 : 431-447.
Rejection Code: NO TOX DATA.

1047. KURAN, P. and SOJAK, L. (1996). Environmental analysis of volatile organic compounds in water and sediment by gas chromatography. *JOURNAL OF CHROMATOGRAPHY A; 733* 119-141.
Rejection Code: METHODS.

1048. KUSNECOV AW, FOWLER, H., and RABIN BS (1992). SUPPRESSION AND ENHANCEMENT OF THE IMMUNE RESPONSE TO CHOLERA TOXIN. *22ND ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, ANAHEIM, CALIFORNIA, USA, OCTOBER 25-30, 1992. SOC NEUROSCI ABSTR; 18* 679.
Rejection Code: BIOLOGICAL TOXICANT.

1049. Kuusk, Edith and Rinken, Toonika (2004). Transient phase calibration of tyrosinase-based carbaryl biosensor. *Enzyme and Microbial Technology* 34: 657-661.
Rejection Code: METHODS.

1050. Kuwabara, K., Nakamura, A., and Kashimoto, T. (1980). Effect of Petroleum Oil, Pesticides, PCBs and Other Environmental Contaminants on the Hatchability of Artemia salina Dry Eggs. *Bull.Environ.Contam.Toxicol.* 25: 69-74.

; Habitat: A; Effect Codes: MOR

1051. La Rosa, C., Pariente, F., Hernandez, L., and Lorenzo, E. (1995). Amperometric flow-through biosensor for the determination of pesticides: Papers Presented at the Sixth International Conference on Flow Analysis. *Analytica Chimica Acta* 308: 129-136.
Rejection Code: METHODS.

1052. La Rosa, C., Pariente, F., Hernandez, L., and Lorenzo, E. (1994). Determination of organophosphorus and carbamic pesticides with an acetylcholinesterase amperometric biosensor using 4-aminophenyl acetate as substrate. *Analytica Chimica Acta* 295: 273-282.
Rejection Code: METHODS.

1053. LaBonde, J. (1996). Toxic Disorders. *In: W.J.Rosskopf and R.W.Woerpel (Eds.), Disease of Cage and Aviary Birds, 3rd Edition, Williams and Wilkins Co., Baltimore, MD* 511-522.
Rejection Code: REFS CHECKED/REVIEW.

1054. LABONDE, J. (1996). TOXIC DISORDERS. *ROSSKOPF, W. J. AND R. W. WOERPEL (ED.). DISEASES OF CAGE AND AVIARY BIRDS, THIRD EDITION. XV+1088P. WILLIAMS AND WILKINS CO.: BALTIMORE, MARYLAND, USA; LONDON, ENGLAND, UK. ISBN 0-683-07382-6.; 0 (0). 1996. 511-522.*
Rejection Code: NO TOX DATA.

1055. LACKO, N., BUX, F., and KASAN HC (1999). Survey of filamentous bacteria in activated sludge plants in KwaZulu-Natal. *WATER S A (PRETORIA); 25 (1). 1999. 63-68.*
Rejection Code: SURVEY.

1056. Lahmy, S., Salmon, J. M., and Viallet, P. (1988). Influence of longterm treatment with 3-methylcholanthrene or carbaryl on mixed-function oxidase activity in 3T3 fibroblasts: Studies by microspectrofluorimetry on single cells. *Cell Biochemistry and Function [CELL BIOCHEM. FUNCT.]. Vol. 6, no. 4, pp. 275-282. 1988.*
Rejection Code: IN VITRO.

1057. LAITINEN, M. and WATKINS, J. B. III (1986). MUCOSAL BIOTRANSFORMATIONS. *ROZMAN, K. AND O. HANNINEN (ED.). GASTROINTESTINAL TOXICOLOGY. XXIV+606P. ELSEVIER SCIENCE PUBLISHERS B.V.: AMSTERDAM, NETHERLANDS (DIST. IN THE USA AND CANADA BY ELSEVIER SCIENCE PUBLISHING CO. INC.: NEW YORK, NEW YORK, USA). ILLUS. ISBN 0-444-90424-7.; 0 (0). 1986. 169-192.*
Rejection Code: REVIEW.

1058. LAMMERS, J. H. CM and KULIG BM (1997). Multivariate time of peak effects assessment for use in selecting time of testing in acute neurotoxicity studies. *NEUROTOXICOLOGY (LITTLE ROCK); 18* 1079-1084.
Rejection Code: METHODS.

1059. Lan, N. T. , Yamaguchi, R., Kawabata, A., Uchida, K., Kai, K., Sugano, S., and Tateyama, S. (Stability of canine distemper virus (CDV) after 20 passages in Vero-DST cells expressing the receptor protein for CDV. *Veterinary Microbiology* In Press, Corrected Proof.
Rejection Code: VIRUS.

1060. Lan, N. T., Yamaguchi, R., Uchida, K., Sugano, S., and Tateyama, S. (2005). Growth Profiles of Recent Canine Distemper Isolates on Vero Cells Expressing Canine Signalling Lymphocyte Activation Molecule (SLAM). *Journal of Comparative Pathology* 133: 77-81.
Rejection Code: IN VITRO.

1061. Lancas, F. M., Rissato, S. R., and Galhiane, M. S. (1996). ANALYSIS OF CARBARYL AND CARBOFURAN IN TOBACCO SAMPLES BY HRGC HPLC AND CZE. *Hrc Journal of High Resolution Chromatography* 19 : 200-206.
Rejection Code: CHEM METHODS.

1062. Land, L. F. and Brown, M. F. (Water-Quality Assessment of the Trinity River Basin, Texas-Pesticides in Streams Draining an Urban and an Agricultural Area, 1993-95.
Rejection Code: HUMAN HEALTH.

1063. LANGE CR and LANGE SR (1997). BIOMONITORING. *WATER ENVIRONMENT RESEARCH; 69* 900-915.
Rejection Code: SURVEY.

1064. Larkin, M. J. (1988). The specificity of 1-naphthol oxygenases from three bacterial isolates, Pseudomonas spp. (NCIB 12042 and 12043) and Rhodococcus sp. (NCIB 12038) isolated from garden oil. *FEMS Microbiology Letters* 52: 173-176.
Rejection Code: BACTERIA, FATE.

1065. Larkin, M. J. and Day, M. J. (1979). Direct fluorimetric determination of carbaryl insecticide and its hydrolysis product 1-naphthol. *Analytica Chimica Acta* 108: 425-427.
Rejection Code: METHODS, FATE.

1066. Larson, R. A., Schlauch, M. B., Ellis, D. D., Marley, K. A., and Ju, H. L. (1988). Light-sensitized decontamination of groundwater hazardous chemicals.
Rejection Code: SURVEY.

1067. LARSON RA and MARLEY KA (1994). OXIDATIVE MECHANISMS OF PHOTOTOXICITY. *NRIAGU, J. O. AND M. S. SIMMONS (ED.). ADVANCES IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY, VOL. 28. ENVIRONMENTAL OXIDANTS. XVIII+630P. JOHN WILEY AND SONS, INC.: NEW YORK, NEW YORK, USA; CHICHESTER, ENGLAND, UK. ISBN 0-471-57928-9.; 0 (0). 1994. 269-317.*

Rejection Code: METABOLISM.

1068. LARSSON, P., OKLA, L., and CRONBERG, G. (1998). Turnover of polychlorinated biphenyls in an oligotrophic and an eutrophic lake in relation to internal lake processes and atmospheric fallout. *CANADIAN JOURNAL OF FISHERIES AND AQUATIC SCIENCES; 55* 1926-1937.
Rejection Code: SURVEY.

1069. Lasat, M. M., Baker, A. J. M., and Kochian, L. V. (1996). Physiological characterization of root Zn2+ absorption and translocation to shoots in Zn hyperaccumulator and nonaccumulator species of Thlaspi. *Plant Physiology.* 112: 1715-1722.
Rejection Code: NO TOXICANT.

1070. Lauterbach, Fritz, Czekay, Ralf-Peter, and Sund, Reidar Bredo (1993). Compartmentation of intestinal drug sulphoconjugation : Incorporation of luminal and contraluminal [35S]sulphate into 1-naphthol by the isolated mucosa of guinea pig jejunum and colon. *Biochemical Pharmacology* 46: 1339-1347.
Rejection Code: FATE.

1071. Lavy, T. L., Dewell, R. A., Beard, C. R., Mattice, J. D., and Skulman, B. W. (1996). Environmental Implications of Pesticides in Rice Production. *Ark.Agric.Exp.Stn.Res.Ser.* 453: 61-69.
Rejection Code: NO SPECIES.

1072. Layiwola, P. J., Linnecar, D. F. C., and Knights, B. (1983). The biotransformation of three super(14)C-labelled phenolic compounds in twelve species of freshwater fish. *Xenobiotica. Vol. 13, no. 2, pp. 107-113. 1983.*
Rejection Code: METABOLISM.

1073. Layton, D. W., Mallon, B. J., Rosenblatt, D. H., and Small, M. J (1987). Deriving allowable daily intakes for systemic toxicants lacking chronic toxicity data. *Regulatory Toxicology and Pharmacology* 7: 96-112.
Rejection Code: HUMAN HEALTH.

1074. Le, Hau T. and Franklin, Michael R. (1997). Selective induction of phase II drug metabolizing enzyme activities by quinolines and isoquinolines. *Chemico-Biological Interactions* 103: 167-178.
Rejection Code: METABOLISM.

1075. Lear, L., Nation, R. L., and Stupans, I. (1992). Effects of cyclophosphamide and adriamycin on rat hepatic microsomal glucuronidation and lipid peroxidation. *Biochemical Pharmacology* 44: 747-753.
Rejection Code: METABOLISM.

1076. Lech, J. J., Pepple, S. K., and Statham, C. N. (1973). Fish bile analysis: a possible aid in monitoring water quality. *Toxicology and Applied Pharmacology [Toxicol. Appl. Pharmacol.]. Vol. 25, no. 3, pp. 430-434. 1973.*
Rejection Code: METABOLISM.

1077. Lechner, D. W. and Abdel-Rahman, M. S. (1985). Alterations in rat liver microsomal enzymes following exposure to carbaryl and malathion in combination. *Archives of Environmental Contamination and Toxicology [ARCH. ENVIRON. CONTAM. TOXICOL.]. Vol. 14, no. 4, pp. 451-457. 1985.*
Rejection Code: IN VITRO.

1078. Lechner, D. W. and Abdel-Rahman, M. S. (1986). The effect of carbaryl and malathion in combination on gamma -glutamyl transpeptidase and glutathione S-alkyltransferase activity in vitro. *Archives of Environmental Contamination and Toxicology [ARCH. ENVIRON. CONTAM. TOXICOL.]. Vol. 15, no. 6, pp. 647-651. 1986.*
Rejection Code: IN VITRO.

1079. Ledirac, N., Delescluse, C., De Sousa, G., Pralavorio, M., Lesca, P., Amichot, M., Berge, J. B., and Rahmani, R. *. (1997). Carbaryl induces CYP1A1 gene expression in HepG2 and HaCaT cells but is not a ligand of the human hepatic Ah receptor. *Toxicology and Applied Pharmacology [TOXICOL. APPL. PHARMACOL.]. Vol. 144, no. 1, pp. 177-182. May 1997.*
Rejection Code: HUMAN HEALTH.

1080. Lee, C. Y., Lee, L. C., Ang, B. H., and Chong, N. L. (1999). Insecticide Resistance in Blattella germanica (L.) (Dictyoptera: Blattellidae) from Hotels and Restaurants in Malaysia. *In: W.H.Robinson, R.Rettich, and G.Rambo (Eds.), Proc.3rd Int.Conf.on Urban Pests, Graficke Zavody Hronov, Czech Republic* 171-182.

; Habitat: T; Effect Codes: MOR

1081. Lee Jeong, Mijeong and Chesney, David J. (1999). Determination of N-methylcarbamate pesticides from spiked matrices using supercritical fluid extraction. *Analytica Chimica Acta* 389: 53-57.
Rejection Code: METHODS.

1082. Lee, Kenneth Ka-Hong and Wong, Wing-Tak (1997). Syntheses and molecular structures of mononuclear ruthenium carbonyl complexes containing 2,1-naphthoquinone-2-oximato ligands. *Journal of Organometallic Chemistry* 547: 329-335.
Rejection Code: METHODS.

1083. LEE YT and FISHER JF (1993). The mechanism of adduct formation between reduced flavins and arene epoxides. *J ORG CHEM; 58* 3712-3721.
Rejection Code: METHODS.

1084. Lehotay, S J (Analysis of pesticide residues in mixed fruit and vegetable extracts by direct sample introduction/gas chromatography/tandem mass spectrometry. *Journal Of AOAC International* 83: 680-697.
Rejection Code: METHODS/NO TOX DATA.

1085. LEHOTAY SJ , HARMAN-FETCHO JA, and MCCONNELL LL (1998). Agricultural pesticide residues in oysters and water from two Chesapeake Bay Tributaries. *MARINE POLLUTION BULLETIN; 37* 32-44.
Rejection Code: SURVEY.

1086. LEHOTAY SJ and VALVERDE-GARCIA, A. (1997). Evaluation of different solid-phase traps for automated collection and clean-up in the analysis of multiple pesticides in fruits and vegetables after supercritical fluid extraction. *JOURNAL OF CHROMATOGRAPHY A; 765* 69-84.
Rejection Code: METHODS.

1087. Lehr, W. J., Overstreet, R., Jones, R., and Watabayashi, G. (1992). ADIOS-automated data inquiry for oil spills.
Rejection Code: INCIDENT.

1088. Lehr, William, Jones, Robert, Evans, Mary, Simecek-Beatty, Debra, and Overstreet, Roy (2002).

Revisions of the ADIOS oil spill model. *Environmental Modelling & Software* 17: 189-197.
Rejection Code: MODELING.

1089. Leigh, G. J. (1997). ISBN 0-471-95687-2F. Mathey and A. Sevin, The Molecular Chemistry of the Transition Elements [UK pound]18.99, John Wiley and Sons, London (1996) [UK pound]18.99. *Journal of Organometallic Chemistry* 543: 265-266.
Rejection Code: NO TOX DATA.

1090. Lekovac, V. (1983). Influence of carbaryl and pyramin on the respiration of bakers' yeast. *Mikrobiologija* 20: 63-70.
Rejection Code: YEAST.

1091. Lemke, L. A. and Kissam, J. B. (1987). Evaluation of Various Insecticides and Home Remedies for Control of Individual Red Imported Fire Ant Colonies. *J.Entomol.Sci.* 22: 275-281.

1092. LETCHER RJ , NORSTROM RJ, and MUIR, D. CG (1998). Biotransformation versus bioaccumulation: Sources of methyl sulfone PCB and 4,4-DDE metabolites in the polar bear food chain. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 32* 1656-1661.
Rejection Code: SURVEY.

1093. Lett, Elisabeth, Kriszt, William, De Sandro, Virginie, Ducrotoy, Gerard, and Richert, Lysiane (1992). Optimal detergent activation of rat liver microsomal UDP-glucuronosyl transferases toward morphine and 1-naphthol: contribution to induction and latency studies. *Biochemical Pharmacology* 43: 1649-1653.
Rejection Code: METABOLISM.

1094. Li, G. C. and Chen, C. Y. (1981). Study on the Acute Toxicities of Commonly Used Pesticides to Two Kinds of Fish . *K'O Hsueh Fa Chan Yueh K'an* 9: 146-152(CHI)(ENG ABS).

; Habitat: A; Effect Codes: PHY

1095. Li, Gwo-Chen, Wong, Sue-San, and Tsai, Mei-Chen (2002). **<04 Article Title>.** *Yaowu Shipin Fenxi* 10: <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1096. Li, Gwo-Chen, Wong, Sue-San, and Tsai, Mei-Chen (2002). Safety evaluation and regulatory control of pesticide residues in Taiwan. *Yaowu Shipin Fenxi* 10: 269-277.
Rejection Code: HUMAN HEALTH.

1097. Li, Y and Wang, X (1997). Study on the determination of N-methylcarbamate insecticides in milk by HPLC. *Wei Sheng Yan Jiu = Journal Of Hygiene Research* 26: 278-282.
Rejection Code: FL/METHODS/NO TOX DATA/FOOD.

1098. LICHT, D., ARVIN, E., and AHRING BK (1997). Effects of cations, temperature, and creosote on degradation of indole by Desulfobacterium indolicum (DSM 3383). *ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY; 16* 202-206.
Rejection Code: BACTERIA.

1099. Lightwood, Daniel John, Carrington, Bruce, Henry, Alistair J., McKnight, Andrew J., Crook, Kenneth, Cromie, Karen, and Lawson, Alastair D. G. (Antibody generation through B cell panning on antigen followed by in situ culture and direct RT-PCR on cells harvested en masse from antigen-positive wells. *Journal of Immunological Methods* In Press, Uncorrected Proof.

Rejection Code: IN VITRO.

1100. Lilienblum, Werner, Irmscher, Gerhard, Fusenig, Norbert E., and Bock, Karl Walter (1986). Induction of UDP-glucuronyltransferase and arylhydrocarbon hydroxylase activity in mouse skin and in normal and transformed skin cells in culture. *Biochemical Pharmacology* 35: 1517-1520.
Rejection Code: IN VITRO.

1101. Lilienblum, Werner, Walli, Autar K., and BocK, Karl Walter (1982). Differential induction of rat liver microsomal UDP-glucuronosyltransferase activities by various inducing agents. *Biochemical Pharmacology* 31: 907-913.
Rejection Code: IN VITRO, METABOLISM.

1102. Lillie, Thomas H., Livingston, James M., and Hamilton, Mark A (1981). Recommendations for selecting and decontaminating pesticide applicator clothing. *Bulletin of Environmental Contamination and Toxicology* 27: 716-23.
Rejection Code: HUMAN HEALTH.

1103. Lilly, J. H., Mohiyudden, S., Prabhuswamy, H. P., Samuel, J. C., and Shetty, S. V. R. (1969). Effects of Insecticide-Treated Rice Plants and Paddy Water on Vertebrate Animals. *Mysore J.Agric.Res.* 3: 371-379.

; Habitat: AT; Effect Codes: MOR

1104. LIN, Z., COHEN, P., NISSAN, A., ALLWEIS TM, FREUND HR, and HANANI, M. (1998). Bacterial wall lipopolysaccharide as a cause of intussusception in mice. *JPGN; 27* 301-305.
Rejection Code: HUMAN HEALTH.

1105. LINDBERG AA (1991). SPECIFICITIES OF MONOCLONAL ANTIBODIES BINDING TO THE POLYSACCHARIDE CHAINS OF CELL ENVELOPE LIPOPOLYSACCHARIDES OF SALMONELLA AND SHIGELLA BACTERIA. *FOURTH CHEMICAL CONGRESS OF NORTH AMERICA, NEW YORK, NEW YORK, USA, AUGUST 25-30, 1991. ABSTR PAP AM CHEM SOC; 202* CARB 17.
Rejection Code: BACTERIA.

1106. LINDBERG, B. (1991). STUDIES ON VIBRIO-CHOLERAE POLYSACCHARIDES. *FOURTH CHEMICAL CONGRESS OF NORTH AMERICA, NEW YORK, NEW YORK, USA, AUGUST 25-30, 1991. ABSTR PAP AM CHEM SOC; 202* CARB 16.
Rejection Code: BACTERIA.

1107. Lindgren, Bjoern, Lindgren, Gerd, Artursson, Elisabeth, Puu, Gertrud, Fredriksson, Jan, and Andersson, Maine (1985). Acetylcholinesterase inhibition by sulfur and selenium heterosubstituted isomers of N,N-diethylcarbamylcholine and carbaryl. *Journal of Enzyme Inhibition* 1: 1-11.
Rejection Code: IN VITRO.

1108. LING, Y. (1992). Experimental production of amyloidosis in ducks. *AVIAN PATHOL; 21* 141-145.
Rejection Code: BACTERIA.

1109. Lippe, C., Bellantuono, V., Valenti, G., and Ardizzone, C. (1992). The nature of Cl- secretion, induced by carbaryl, across the isolated skin of Rana esculenta. *Comparative Biochemistry and Physiology Part C: Comparative Pharmacology* 103: 387-389.
Rejection Code: IN VITRO.

1110. Lippe, C., Bellantuono, V., Valenti, G., and Ardizzone, C. (1992). The nature of Cl super(-) secretion, induced by carbaryl, across the isolated skin of Rana esculenta). *Comparative Biochemistry and Physiology, C [COMP. BIOCHEM. PHYSIOL., C.]. Vol. 103C, no. 2, pp. 387-389. 1992.*
Rejection Code: IN VITRO.

1111. Lisi, Paolo, Caraffini, Stefano, and Assalve, Danilo (1986). A test series for pesticide dermatitis. *Contact Dermatitis* 15: 266-9.
Rejection Code: HUMAN HEALTH.

1112. Lissi, E. A., Pizarro, M., Aspee, A., and Romay, C. (2000). Kinetics of phycocyanine bilin groups destruction by peroxyl radicals. *Free Radical Biology and Medicine* 28: 1051-1055.
Rejection Code: NO TOX DATA, FATE.

1113. Liu, Changxiang, Glitzenstein, Jeff S., Harcombe, Paul A., and Knox, Robert G. (1997). Tornado and fire effects on tree species composition in a savanna in the Big Thicket National Preserve, southeast Texas, USA. *Forest Ecology and Management* 91: 279-289.
Rejection Code: NO TOX DATA.

1114. Liu, D., Maguire, R. J. *., Lau, Y. L., Pacepavicius, G. J., Okamura, H., Aoyama, I., and Slabbert, L. (ed) (2000). Factors affecting chemical biodegradation. *Environmental Toxicology [Environ. Toxicol.]. Vol. 15, no. 5, pp. 476-483. 2000.*
Rejection Code: FATE.

1115. Liu, Jun, Reedy, Mary C., Goldman, Yale E., Franzini-Armstrong, Clara, Sasaki, Hiroyuki, Tregear, Richard T., Lucaveche, Carmen, Winkler, Hanspeter, Baumann, Bruce A. J., and Squire, John M. (2004). Electron tomography of fast frozen, stretched rigor fibers reveals elastic distortions in the myosin crossbridges: Time-Resolved Imaging of Macromolecular Processes and Interactions. *Journal of Structural Biology* 147: 268-282.
Rejection Code: METHODS.

1116. LIU L-Y, SUN, B., TIAN, Y., LU B-Z, and WANG, J. (1993). Changes of pulmonary glucocorticoid receptor and phospholipase A2 in sheep with acute lung injury after high dose endotoxin infusion. *AMERICAN REVIEW OF RESPIRATORY DISEASE; 48* 878-881.
Rejection Code: BIOLOGICAL TOXICANT.

1117. Liu, M., Hashi, Y., Song, Y., and Lin, J. M. (2005-). Simultaneous Determination of Carbamate and Organophosphorus Pesticides in Fruits and Vegetables by Liquid Chromatography-Mass Spectrometry. *J.Chromatogr.A* 1097: 183-187.
Rejection Code: METHODS.

1118. Liu, S. Y. and Bollag, J. M. (1971). Carbaryl decomposition to 1-naphthyl carbamate by Aspergillus terreus. *Pesticide Biochemistry and Physiology* 1: 366-372.
Rejection Code: METABOLISM.

1119. LO CC and LEE TL (1989). EFFECTS OF ADJUVANTS ON PESTICIDE COMBINATIONS WATER QUALITY ON PHYSICAL COMPATIBILITY. *CHOW, P. N. P. (ED.). ADJUVANTS AND AGROCHEMICALS, VOL. II. RECENT DEVELOPMENT, APPLICATION, AND BIBLIOGRAPHY OF AGRO-ADJUVANTS; FIRST INTERNATIONAL SYMPOSIUM, BRANDON, MANITOBA, CANADA, AUGUST 5-7, 1986. XIII+222P. CRC PRESS, INC.: BOCA RATON, FLORIDA, USA. ILLUS. ISBN 0-8493-6532-5; ISBN 0-8493-6533-3.; 0 (0). 1989. 111-120.*
Rejection Code : NO TOX DATA.

1120. Lockridge, O. and Masson, P. (2000). Pesticides and susceptible populations: People with butyrylcholinesterase genetic variants may be at risk. *Neurotoxicology [Neurotoxicology]. Vol. 21, no. 1-2, pp. 113-126. Feb-Apr 2000.*
Rejection Code: HUMAN HEALTH.

1121. Loeb, H. A. and Kelly, W. H. (1963). Acute Oral Toxicity of 1,496 Chemicals Force-fed to Carp. *U.S.Fish.Wildl.Serv., Sp.Sci.Rep.-Fish.No.471, Washington, D.C.* 124 p.

; Habitat: A; Effect Codes: MOR,BEH

1122. Loewy, M., Kirs, V., Carvajal, G., Venturino, A., and Pechen, D. E. D'angelo Am (1999). Groundwater contamination by azinphos methyl in the Northern Patagonic Region (Argentina). *Science of the Total Environment* 225 : 211-218.
Rejection Code: FATE/EFFLUENT.

1123. Loewy, Miriam, Kirs, Veronica, Carvajal, Gabriela, Venturino, Andres, and Pechen de D'Angelo, Ana M. (1999). Groundwater contamination by azinphos methyl in the Northern Patagonic Region (Argentina). *The Science of The Total Environment* 225: 211-218.
Rejection Code: EFFLUENT.

1124. Loewy, Miriam, Kirs, Veronica, Carvajal, Gabriela, Venturino, Andres, and Pechen de D'Angelo, Ana M. (1999). Groundwater contamination by azinphos methyl in the Northern Patagonic Region (Argentina). *The Science of The Total Environment* 225: 211-218.
Rejection Code: SURVEY.

1125. LOFFLER FE , CHAMPINE JE, RITALAHTI KM, SPRAGUE SJ, and TIEDJE JM (1997). Complete reductive dechlorination of 1,2-dichloropropane by anaerobic bacteria. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 2870-2875.
Rejection Code: BACTERIA.

1126. LONDERSHAUSEN, M. (1996). Approaches to new parasiticides. *PESTICIDE SCIENCE; 48* 269-292.
Rejection Code: REVIEW.

1127. Long, H., Kirrane, B., Nelson, L. S., and Hoffman, R. S. (2003). Carbaryl inhibition of plasma cholinesterase activity. *Journal of Toxicology: Clinical Toxicology [J. Toxicol.: Clin. Toxicol.]. Vol. 41, no. 5, p. 737. Aug 2003.*
Rejection Code: IN VITRO.

1128. LONG, J. LA, HOUSE WA, PARKER, A., and RAE JE (1998). Micro-organic compounds associated with sediments in the Humber rivers. *SCIENCE OF THE TOTAL ENVIRONMENT; 210-211* 229-253.
Rejection Code: SURVEY.

1129. Lopez-Avila, V. and Jones, T. L. (1993). Interlaboratory study of a thermospray-liquid chromatographic/mass spectrometric method for selected N-methyl carbamates, N-methyl carbamoyloximes, and substituted urea pesticides. *Journal of Aoac International* 76 : 1329-1343.
Rejection Code: METHODS.

1130. LOPEZ-MALO, A., ALZAMORA SM, and ARGAIZ, A. (1997). Effect of vanillin concentration, pH and incubation temperature on Aspergillus flavus, Aspergillus niger, Aspergillus ochraceus and Aspergillus parasiticus growth. *FOOD MICROBIOLOGY (LONDON); 14 (2). 1997. 117-124.*
Rejection Code: BACTERIA.

1131. Los, M. and Mighell, A. D. (1965). The acid-catalysed rearrangement of 4,4a,5,6,7,8-hexahydro-5-hydroxy-4a-methyl-2(3)-naphthalenone. *Tetrahedron* 21: 2297-2303.
Rejection Code: METHODS .

1132. Lotufo, G. R., Farrar, J. D., and Bridges, T. S. (2000). Effects of Exposure Source, Worm Density, and Sex on DDT Bioaccumuluation and Toxicity in the Marine Polychaete Neanthes arenaceodentata. *Environ.Toxicol.Chem.* 19: 472-484.
Rejection Code: SEDIMENT.

1133. Lourens, J. H. M. and Lyaruu, D. M. (1979). Susceptibility of Some East African Strains of Rhipicephalus appendiculatus to Cholinesterase Inhibiting Acaricides. *PANS (Pest Artic.News Summ.)* 25: 135-142.

; Habitat: T; Effect Codes: MOR

1134. Lown, J. W. and Moser, J. P. (1970). Reaction of 3-aroylaziridines with 2-nitroso-1-naphthol. *Tetrahedron Letters* 11: 3019-3022.
Rejection Code: METHODS.

1135. Lucena, J. J., Hernandez, L. E., Olmos, S., Carpena-Ruiz, R. O., Fragoso, M. A. C., and Van, Beusichem M. L. (1993). Micronutrient content in graminaceous and leguminous plants contaminated with mercury. <Book> developments in plant and soil sciences; optimization of plant nutrition. *Dev.Plant Soil Sci.* 531-537.
Rejection Code: MIXTURE/NO DURATION/SURVEY.

1136. Lucero, H. A., Andreo, C. S., and Vallejos, R. H. (1976). Sulphydryl Groups in Photosynthetic Energy Conservation III. Inhibition of Photophosphorylation in Spinach Chloroplasts by CdCl2 . *Plant Sci.Lett.* 6: 309-313.
Rejection Code: IN VITRO.

1137. Lucier, G. , McDaniel, O., Brubaker, P., and Klein, R. (1972). Effects of methylmercury hydroxide on rat liver microsomal enzymes. *Chemico-Biological Interactions* 4: 265-280.
Rejection Code: METABOLISM.

1138. Lucier, G. W., McDaniel, O. S., and Matthews, H. B. (1971). Microsomal rat liver UDP glucuronyltransferase: Effects of piperonyl butoxide and other factors on enzyme activity. *Archives of Biochemistry and Biophysics* 145: 520-530.
Rejection Code: IN VITRO.

1139. Lucier, George W. and McDaniel, Otelia S. (1977). Steroid and non-steroid UDP glucuronyltransferase: Glucuronidation of synthetic estrogens as steroids. *Journal of Steroid Biochemistry* 8: 867-872.
Rejection Code: METABOLISM, NO TOX DATA.

1140. Lum, Mien Wei and Leong, Weng Kee (2003). Reactions of the triosmium cluster Os3([mu]-H)([mu]-OH)(CO)10 with naphthols. *Journal of Organometallic Chemistry* 687: 203-208.
Rejection Code: NO TOX DATA.

1141. LUND, B., HANSEN, A., and LEWIS MJ (1989). THE INFLUENCE OF DOUGH YIELD ON ACIDIFICATION AND PRODUCTION OF VOLATILES IN SOURDOUGHS. *LEBENSM-WISS TECHNOL; 22* 150-153.
Rejection Code: HUMAN HEALTH.

1142. Lupetti, P., Marsili, L., Focardi, S., and Dallai, R. (1994). Organochlorine Compounds in Litter-Dwelling Arthropods: Collembola (Insecta Apterygota) from Central Italy. *Acta Zool.Fenn.* 94-97.
Rejection Code: NO CONC/SURVEY .

1143. LUTHER, M. and SOEDER CJ (1987). SOME NAPHTHALENESULFONIC ACIDS AS SULFUR SOURCES FOR THE GREEN MICROALGA SCENEDESMUS-OBLIQUUS. *CHEMOSPHERE; 16* 1565-1578.
Rejection Code: METABOLISM.

1144. Maas, J. L. (1982). Toxicity of Pesticides. *Rep.No.82, Lab.for Ecotoxicol., Inst.for Inland Water Manag.and Waste Water Treatment* 15: 4 p.(DUT).

; Habitat: A; Effect Codes: MOR

1145. Mabury, S. A. and Crosby, D. G. (Pesticide reactivity toward hydroxyl and its relationship to field persistence.
Rejection Code: FATE.

1146. MacCrimmon, H. R., Wren, C. D., and Gots, B. L. (1983). Mercury Uptake by Lake Trout, Salvelinus namaycush, Relative to Age, Growth, and Diet in Tadenac Lake with Comparative Data from Other Precambrian Shield Lakes. *Can J Fish Aquat Sci* 40: 114-120.
Rejection Code: SURVEY.

1147. MacDonald, Robert C., MacDonald, Ruby I., Menco, Bert Ph. M., Takeshita, Keizo, Subbarao, Nanda K., and Hu, Lan-rong (1991). Small-volume extrusion apparatus for preparation of large, unilamellar vesicles. *Biochimica et Biophysica Acta (BBA) - Biomembranes* 1061: 297-303.
Rejection Code: METHODS.

1148. Macek, J., Cencelj, J., Dorer, M., and Milharcic, L. (1974). Contamination of Potato Field Soil and Potato Tubers with Residuals of Carbaryl DDT and Lindane in Slovenia (Kontaminacija Zemlje iz Krompirisc in Gomoljev Krompirja z Residui Carbarila, Diklordifeniltrikloretana in Lindana v Sloveniji). *Zb.Bioteh.Fak.Univ.Ljublj.Kmetijstvo.* 23: 57-68 (POL).
Rejection Code: NON-ENGLISH.

1149. Macek, J. and Ilc, T. (1991). Weed Control Trials with Some Herbicides in Medicinal Herbs (Echinacea purpurea L. and Plantago afra L.) (Versuche zur Unkrautbekampfung in Heilpflanzen (Echinacea pupurea L. und Plantago afra L.) mit Einigen Herbiziden). *Med.Fac.Landbouwwet.Rijksuniv.Gent* 56: 665-671 (GER) (ENG ABS).
Rejection Code: NON-ENGLISH.

1150. MacKenzie, K. E. and Winston, M. L. (1989). The Effects of Sublethal Exposure to Diazinon, Carbaryl and Resmethrin on Longevity and Foraging in Apis mellifera L. *Apidologie* 20: 29-40.

; Habitat: T; Effect Codes: MOR,BEH

1151. Mackenzie, Peter I. and Hanninen, Osmo (1980). A sensitive kinetic assay for UDPGlucuronosyltransferase using l-naphthol as substrate. *Analytical Biochemistry* 109: 362-368.
Rejection Code: METHODS.

1152. Mackenzie, Peter I., Hjelmeland, Leonard M., and Owens, Ida S. (1984). Purification and immunochemical characterization of a low-pI form of UDP glucuronosyltransferase from mouse liver. *Archives of Biochemistry and Biophysics* 231: 487-497.
Rejection Code: METHODS.

1153. Mackenzie, Peter I., Joffe, Marshall M., Munson, Peter J., and Owens, Ida S. (1985). Separation of different UDP glucuronosyltransferase activities according to charge heterogeneity by chromatofocusing using mouse liver microsomes : Three major types of aglycones. *Biochemical Pharmacology* 34: 737-746.
Rejection Code: METABOLISM, IN VITRO.

1154. Mackenzie, Peter I., Vaisanen, Matti, and Hanninen, Osmo (1982). Differential induction of UDP glucuronosyltransferase activities towards various substrates after polycyclic aromatic hydrocarbon administration to rats. *Toxicology Letters* 12: 259-263.
Rejection Code: METABOLISM.

1155. MACPHAIL RC, PEELE DB, and CROFTON KM (1989). MOTOR ACTIVITY AND SCREENING NEUROTOXICITY. *SYMPOSIUM ON SCREENING FOR NEUROTOXICITY: PRINCIPLES AND PRACTICES, RALEIGH, NORTH CAROLINA, USA, APRIL 28-29, 1988. J AM COLL TOXICOL; 8* 117-126.
Rejection Code: METHODS.

1156. MacPhee, C. and Ruelle, R. (1969). Lethal Effects of 1888 Chemicals upon Four Species of Fish From Western North America. *Bull.No.3, Forest, Wildl.and Range Exp.Stn., Univ.of Idaho, Moscow, ID* 112 p.

; Habitat: A; Effect Codes: MOR,BEH

1157. Macpherson, S. E., Scott, R. C., Rawlins, M. D., and Williams, F. M. (1989). Carbaryl Metabolism by Rat Skin and Liver. *In: Joint Meet.of the Br.Toxicol.Soc.and Inst.of Biol., Sept.22-23, 1988, Oxford, England, U.K., Hum.Toxicol.* 8: 67-68.
Rejection Code: IN VITRO.

1158. MacPherson, S. E., Scott, R. C., and Williams, F. M. (1991). Fate of carbaryl in rat skin. *Archives of Toxicology [ARCH. TOXICOL.]. Vol. 65, no. 7, pp. 594-598. 1991.*
Rejection Code: FATE.

1159. Madhukar, B. V. and Matsumura, F. (1979). Comparison of Induction Patterns of Rat Hepatic Microsomal Mixed-Function Oxidases by Pesticides and Related Chemicals. *Pestic.Biochem.Physiol.* 11: 301-308.

; Habitat: T; Effect Codes: BCM

1160. Magdalou, Jacques, Totis, Muriel, Boiteux-Antoine, Anne-Francoise, Fournel-Glgleux, Sylvie, Siest, Gerard, Schladt, Ludwig, and Oesch, Franz (1988). Effect of 1-benzylimidazole on cytochromes P-450 induction and on the activities of epoxide hydrolases and UDP-glucuronosyltransferases in rat liver. *Biochemical Pharmacology* 37: 3297-3304.
Rejection Code: METABOLISM.

1161. Maheshwari, D. K., Gupta, M., Sawhney, R., and Khandelwal, A. (1993). Dual Behaviour of Carbaryl and 2,4-Dichlorophenoxyacetic Acid in Rhizobium leguminosarum 2005 Under Explanta Conditions. *Zentralbl Mikrobiol* 148: 588-592.
Rejection Code: BACTERIA.

1162. Maheshwari, D. K. and Saraf, M. (1994). Effect of carbaryl and 2,4-D to nitrogenase and uptake

hydrogenase in agar cultures and root nodules formed by Rhizobium leguminosarum. *Journal of General and Applied Microbiology, 40 (6) pp. 569-574, 1994.*
Rejection Code: BACTERIA.

1163. Mahlberg, A. (1990). Heavy Metals in Soils, Plants, Running Waters and Their Sediments in the Banana Cultivation Region of Baru, Panama (Schwermetalle in Boeden, Pflanzen, Fliessgewaessern und Ihren Sedimenten im Bananenanbaugebiet Baru, Panama). *Gov.Rep.Announce.Index* 24.
Rejection Code: NO DURATION/SURVEY.

1164. Mahmood, T. and Yousuf, M. (1985). Effect of some insecticides on the haemocytes of Gryllus bimaculatus . *Pakistan Journal of Zoology [PAK. J. ZOOL.]. Vol. 17, no. 1, pp. 77-84. 1985.*
Rejection Code: IN VITRO.

1165. MAHMOOD, T. and YOUSUF, M. (1986). Effect of some insecticides on the hemocytes of Gryllus bimaculatus. *PAK J ZOOL; 17* 77-84.
Rejection Code: IN VITRO.

1166. Maier-Bode, H. (1972). Verhalten von Herbiziden in Wasser, Schlamm und Fischen nach Applikation in Fischteichen. *Schriftenkeihe des Vereins* 37: 67-75 (GER).
Rejection Code: NON-ENGLISH.

1167. Maine Forest Serv., Dep. of Conservation (1980). Effects of Carbaryl (Sevin) on Brook Trout in Streams Receiving Drift from Spraying of Nearby Forests. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1979 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 1-300.
Rejection Code: REVIEW.

1168. Maine Forest Serv., Dep. of Conservation (1978). Effects of Sevin, a Spruce Budworm Insecticide on Fish and Invertebrates in the Mattawamkeag River in 1976. *In: K.G.Stratton (Ed.), Environ.Monit.of Cooperative Spruce Budworm Control Projects, Maine 1976 and 1977, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 1-242.
Rejection Code: REVIEW.

1169. Maine Forest Serv., Dep. of Conservation (1984). A Study of Leaf-Processing Disruption in Streams Within Spruce Budworm Supprjession Project Carbaryl Spray Blocks. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1983 Maine Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 1-113.
Rejection Code: REFS CHECKED/REVIEW.

1170. Makihata, N., Kawamoto, T., and Teranishi, K. (2003Apr). Simultaneous analysis of carbamate pesticides in tap and raw water by LC/ESI/MS. *Anal Sci 2003 Apr;19(4):543-9.* 19: 543-9.
Rejection Code: METHODS.

1171. Makitie, O. and Saarinen, H. (1970). Formation of Zn and Cd chelates of nitrosonaphthols in aqueous solution--IV 2-nitroso-1-naphthol-7-sulphonic acid as a new ligand. *Journal of Inorganic and Nuclear Chemistry* 32: 2800-2802.
Rejection Code: NO SPECIES.

1172. Makra, Ferenc, Rohloff, John C., Muehldorf, A. V., and Link, John O. (1995). General Preparation of 3-Alkyl-1-Naphthols. *Tetrahedron Letters* 36: 6815-6818.
Rejection Code: METHODS.

1173. Mali, B. D., Garad, M. V., and Padalikar, S. V. (1991). COMPARATIVE STUDY OF DAPSONE AS A SPRAY REAGENT FOR THE DETECTION OF CARBAMATE INSECTICIDES. *J Planar Chromatogr Mod Tlc* 4 : 266-267.
Rejection Code: METHODS.

1174. Malley, D. F. (1996). Cadmium Whole-Lake Experiment at the Experimental Lakes Area - An Anachronism. *Can J Fish Aquat Sci* 53: 1862-1870.
Rejection Code: REVIEW.

1175. MANCHESTER-NEESVIG JB, ANDREN AW, and EDGINGTON DN (1996). Patterns of mass sedimentation and of deposition of sediment contaminated by PCBs in Green Bay. *JOURNAL OF GREAT LAKES RESEARCH; 22* 444-462.
Rejection Code: SURVEY.

1176. MANDAL AK and ADHIKARI, M. (1995). ROLE OF ORGANIC MATTER AND SESQUIOXIDES IN THE ADSORPTION OF PESTICIDES ON SOILS. *JOURNAL OF THE INDIAN SOCIETY OF SOIL SCIENCE; 43* 561-567.
Rejection Code: FATE.

1177. MANDGE AS, DATAR VV, and SONTAKKE MB (1992). Chemical management of bacterial leaf spots and thrips of chilli. *J MAHARASHTRA AGRIC UNIV; 17* 280-281.
Rejection Code: BACTERIA.

1178. Mani, M. (1992). Contact toxicity of different pesticides to the encyrtid parasitoids, Aenasius advena and Blepyrus insularis of the striped mealybug, Ferrisia virgata . *TROP. PEST MANAGE. Vol. 38, no. 4, pp. 386-390. 1992.*
Rejection Code: BIOLOGICAL TOXICANT.

1179. Manning, Bradford W. and Franklin, Michael R. (1990). Induction of rat UDP-glucuronosyltransferase and glutathione S-transferase activities by without induction of cytochrome P-450. *Toxicology* 65: 149-159.
Rejection Code: METABOLISM.

1180. Manorik, A. V., Vasil'chenko, V. F., Mandrovskaya, N. M., and Malichenko, S. M. (1968). Inactivation of Herbicides of the 1,3,5-Triazine Series by Soil Microorganisms. *Agrokhimiya* 4: 123-135 (RUS).
Rejection Code: NON-ENGLISH.

1181. Manson, D. (1972). Arylation of thiols by 2-amino-1-naphthol derivatives and related compounds. *Chemico-Biological Interactions* 5: 47-59.
Rejection Code: NO SPECIES.

1182. Mansour, S. A. (1987). Is it Possible to Use the Honey Bee Adult as a Bioindicator for the Detection of Pesticide Residues in Plants? *Acta Biol.Hung.* 38: 69-76.

; Habitat: T; Effect Codes: MOR,ACC

1183. Mansour, S. A., Ali, A. D., and Al-Jalili, M. K. (1984). The Residual Toxicity to Honeybees of Some Insecticides on Clover Flowers: Laboratory Studies. *J.Apic.Res.* 23: 213-216.

; Habitat: T; Effect Codes: MOR

1184. MAO YAHONG and LIU YIGANG (1997). BIOSPHERE EFFECTS OF NATURAL RADIONUCLIDES RELEASED FROM COAL-FIRED POWER PLANTS. *WEI, L., T. SUGAHARA AND Z. TAO (ED.). INTERNATIONAL CONGRESS SERIES, NO. 1136.*

HIGH LEVELS OF NATURAL RADIATION, 1996. RADIATION DOSE AND HEALTH EFFECTS; 4TH INTERNATIONAL CONFERENCE, BEIJING, CHINA, OCTOBER 21-25, 1996. XV+438P. ELSEVIER SCIENCE PUBLISHERS B.V.: AMSTERDAM, NETHERLANDS; NEW YORK, NEW YORK, USA. ISBN 0-444-82630-0.; 0 (1136). 1997. 155-159.
Rejection Code: SURVEY.

1185. Marco, M. P., Gee, S. J., Cheng Hong M, Liang Zeng Y, and Hammock, B. D. *. (1993). Development of an enzyme-linked immunosorbent assay for carbaryl. *Journal of Agricultural and Food Chemistry [J. AGRIC. FOOD CHEM.]. Vol. 41, no. 3, pp. 423-430. 1993.*
Rejection Code: METHODS.

1186. Marco, Maria Pilar, Gee, Shirley J., Cheng, Hong M., Liang, Zeng Y., and Hammock, Bruce D (1993). Development of an enzyme-linked immunosorbent assay for carbaryl. *Journal of Agricultural and Food Chemistry* 41: 423-30.
Rejection Code: NO TOX DATA, METHODS.

1187. MARGESIN, R. and SCHINNER, F. (1997). Efficiency of indigenous and inoculated cold-adapted soil microorganisms for biodegradation of diesel oil in Alpine soils. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 2660-2664.
Rejection Code: BACTERIA.

1188. Maria, P. De and Fini, A. (1977). Thermodynamic functions of proton ionisation of 1-and 2-naphthol. *Tetrahedron* 33: 553-555.
Rejection Code: METHODS.

1189. Marini, R. P. (1996). **<04 Article Title>.** *Horttechnology, 6 (3) pp. 241-246, 1996* <25 Page(s)>;
Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1190. Marini, R. P. (1996). Chemically thinning spur 'delicious' apples with carbaryl, NAA, and ethephon at various stages of fruit development. *HortTechnology, 6 (3) pp. 241-246, 1996*.
Rejection Code: NO COC.

1191. Marini, R. P. (2002). **<04 Article Title>.** *Hortscience, 37 (3) pp. 534-538, 2002* <25 Page(s)>;
Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1192. MARKOVITS, A., CONEJEROS, R., LOPEZ, L., and LUTZ, M. (1992). Evaluation of marine microalga Nannochloropsis sp. as a potential dietary supplement: Chemical, nutritional and short term toxicological evaluation in rats. *NUTR RES; 12* 1273-1284.
Rejection Code: BIOLOGICAL TOXICANT.

1193. Marquez, M., Silva, M., and Perez-Bendito, D. (1990). Kinetic determination of sulphonamides at the millimolar level by the continuous addition of reagent technique. *Analytica Chimica Acta* 237: 353-359.
Rejection Code: METHODS.

1194. Marsh, J. A. P. and Davies, H. A. (1978). The Effect of Herbicides on Respiration and Transformation of Nitrogen in Two Soils. III. Lenacil, Terbacil, Chlorthiamid and 2,4,5-T. *Weed Res.* 18: 57-62.
Rejection Code: NO SPECIES.

1195. Martin-Esteban, A., Fernandez, P., Camara, C., Kramer, G. N., and Maier, E. A. (1999). The preparation of a certified reference material of polar pesticides in freeze-dried water

(CRM 606). *Fresenius' Journal of Analytical Chemistry* 363 : 632-640.
Rejection Code: CHEM METHOD.

1196. Martin-Esteban, A, Fernandez, P, and Camera, C (1997). Baker's yeast biomass (Saccharomyces cerevisae) for selective on-line trace enrichment and liquid chromatography of polar pesticides in water. *Analytical Chemistry* 69: 3267-3271.
Rejection Code: CHEM METHOD.

1197. Martin-Skilton, Rebeca, Coughtrie, Michael W. H., and Porte, Cinta (2006). Sulfotransferase activities towards xenobiotics and estradiol in two marine fish species (Mullus barbatus and Lepidorhombus boscii): Characterization and inhibition by endocrine disrupters. *Aquatic Toxicology* 79: 24-30.
Rejection Code: METABOLISM.

1198. Martinek, V. and Svestka, M. (1968). Recent Experience in the Check and Control of Nun Moth Lymantria-monacha in the USSR (Die Neuesten Eriahrungen mit der Kontrolle und Bekampfung der Nonne Lymantria monacha L. in der CSSR). *Centralbl.Gesamte Forstwes.* 85: 129-141 (GER) .
Rejection Code: NON-ENGLISH.

1199. Martinez, Elena, Martinez, Luis, Treus, Monica, Estevez, Juan C., Estevez, Ramon J., and Castedo, Luis (2000). From Phenylacetylphenylacetic Acids and 1-Benzylisoquinolines to 6,11-Dihydrobenzo[b]naphtho[2,3-d]furan-6,11-diones, 6H-Dibenzo[c,h]chroman-6-ones and 7,12-Dihydro-5H-dibenzo[c,g]chroman-5,7,12-triones via 2-Phenyl-3-hydroxy-1,4-dihydro-1,4-naphthalenediones or 2-Phenyl-1-naphthols. *Tetrahedron* 56: 6023-6030.
Rejection Code: METHODS.

1200. Martinson, Timothy, Williams, III Livy, and English-Loeb, Greg (2001). Compatibility of Chemical Disease and Insect Management Practices Used in New York Vineyards with Biological Control by Anagrus spp. (Hymenoptera: Mymaridae), Parasitoids of Erythroneura Leafhoppers. *Biological Control* 22: 227-234.
Rejection Code: SURVEY.

1201. Marutani, M. and Edirveerasingam, V. (2004). Erratum: Shadecovers affect degradation of carbaryl on field-grown pakchoi (Horttechnology (2003) 13:4 (637-640)). *HortTechnology, 14 (3) pp. 458, 2004.*
Rejection Code: FATE.

1202. Marutani, M. and Endirveersingham, V. (2003). Shadecovers affect degradation of carbaryl on field-grown pakchoi. *HortTechnology, 13 (4) pp. 637-640, 2003.*
Rejection Code: FATE.

1203. Marvin, C. , Brindle, I., Hall, D., and Chiba, M. (1989). DEVELOPMENT OF AN AUTOMATED HPLC METHOD FOR ON-LINE PRE-CONCENTRATION AND DETERMINATION OF TRACE CONCENTRATIONS OF EIGHT PESTICIDES IN DRINKING WATER. *198th Acs (American Chemical Society) National Meeting, Miami Beach, Florida, Usa, September 10-15, 1989. Abstr Pap Am Chem Soc* 198 : Agro 3.
Rejection Code: ABSTRACT/METHODS/NO SPECIES.

1204. Marvin, C. H., Brindle, I. D., Hall, C. D., and Chiba, M. (1990). Automated high-performance liquid chromatography for the determination of pesticides in water using solid phase extraction. *Anal Chem* 62 : 1495-1498.
Rejection Code: METHODS.

1205. Marvin, C. H., Brindle, I. D., Hall, C. D., and Chiba, M. (1990). Development of an automated high-performance liquid chromatographic method for the on-line-pre-concentration and determination of trace concentrations of pesticides in drinking water. *J Chromatogr* 503 : 167-176.
Rejection Code: METHODS.

1206. Marvin, C. H., Brindle, I. D., Singh, R. P., Hall, C. D., and Chiba, M. (1990). SIMULTANEOUS DETERMINATION OF TRACE CONCENTRATIONS OF BENOMYL CARBENDAZIM MBC AND NINE OTHER PESTICIDES IN WATER USING AN AUTOMATED ON-LINE PRE-CONCENTRATION HIGH-PERFORMANCE LIQUID CHROMATOGRAPHIC METHOD. *J Chromatogr* 518 : 242-249.
Rejection Code: METHODS.

1207. Marzouk, S. A. and El-Gendy, K. S. (1998). Some Biological Effects of the Insecticide Carbaryl on Mice. *Toxicol.Lett.* 95: 144.
Rejection Code: ABSTRACT.

1208. Mason, A. Z., Jenkins, K. D., and Sullivan, P. A. (1988). Mechanisms of Trace Metal Accumulation in the Polychaete Neathes arenaceodentata. *J Mar Biol Assoc U K* 68: 61-80.
Rejection Code: MIXTURE.

1209. Mason, Y., Choshen, E., and Rav-Acha, C. (1990). Carbamate insecticides: Removal from water by chlorination and ozonation. *Water Res* 24 : 11-22.
Rejection Code: NO SPECIES.

1210. Mason, Yael Zelicovitz, Choshen, Ehud, and Rav-Acha, Chaim (1990). Carbamate insecticides: Removal from water by chlorination and ozonation. *Water Research* 24: 11-21.
Rejection Code: METHODS.

1211. Massey, J. H., Lavy, T. L., and Fitzgerald, M. (1991). ACTIVATED CHARCOAL FILTRATION OF PESTICIDE WASTES FIELD AND LABORATORY STUDIES. *Fourth Chemical Congress of North America, New York, New York, Usa, August 25-30, 1991. Abstr Pap Am Chem Soc* 202 : Agro 127.
Rejection Code: NO SPECIES.

1212. MASSEY JH, LAVY TL, and FITZGERALD, M. (1991). ACTIVATED CHARCOAL FILTRATION OF PESTICIDE WASTES FIELD AND LABORATORY STUDIES. *FOURTH CHEMICAL CONGRESS OF NORTH AMERICA, NEW YORK, NEW YORK, USA, AUGUST 25-30, 1991. ABSTR PAP AM CHEM SOC; 202* AGRO 127.
Rejection Code: EFFLUENT.

1213. Mattern, G. C., Louis, J. B., and Rosen, J. D. (1991). Multipesticide Determination In Surface Water By Gas Chromatography/Chemical Ionization/Mass Spectrometry/Ion Trap Detection. 74: 982-986.
Rejection Code: CHEM METHODS.

1214. Mattern, G. C., Singer, G. M., Louis, J., Robson, M., and Rosen, J. D. (1990). Determination of Several Pesticides With a Chemical Ionization Ion Trap Detector. *J agric food chem* 38: 402-407.
Rejection Code: METHODS.

1215. MATTHEWS GA (1997). TECHNIQUES TO EVALUATE INSECTICIDE EFFICACY. *DENT, D. R. AND M. P. WALTON (ED.). METHODS IN ECOLOGICAL AND AGRICULTURAL ENTOMOLOGY. XIV+387P. CAB INTERNATIONAL:*

WALLINGFORD, ENGLAND, UK; NEW YORK, NEW YORK, USA. ISBN 0-85199-132-7(PAPER); ISBN 0-85199-131-9(CLOTH).; 0 (0). 1997. 243-269.
Rejection Code: METHODS.

1216. MAYER AS, MITCHELL RJ, CARRIERE, P. PE, HEIN GL, RABIDEAU AJ, and WOJICK CL (1995). GROUNDWATER QUALITY. *WATER ENVIRONMENT RESEARCH; 67* 629-685.
Rejection Code: REVIEW, FATE.

1217. Mayer, F. L. Jr. (1974). Pesticides as Pollutants. *In: B.G.Liptak (Ed.), Environmental Engineer's Handbook, Chilton Book Co., Radnor, PA* 405-418 (Publ in Part As 6797).

; Habitat: A; Effect Codes: MOR

1218. Mayer, F. L. Jr. and Ellersieck, M. R. (1988). Experiences with Single-Species Tests for Acute Toxic Effects on Freshwater Animals. *Ambio* 17: 367-375.
Rejection Code: REFS CHECKED/REVIEW.

1219. Maziasz, T. J., Liu, J., Madhu, C., and Klaassen, C. D. (1991). The differential effects of hepatotoxicants on the sulfation pathway in rats. *Toxicology and Applied Pharmacology* 110: 365-373.
Rejection Code: METABOLISM.

1220. McArtney, S., White, M., Latter, I., and Campbell, J. (2004). Individual and combined effects of shading and thinning chemicals on abscission and dry-matter accumulation of 'Royal Gala' apple fruit. *Journal of horticultural science and biotechnology, 79 (3) pp. 441-448, 2004*.
Rejection Code: NO TOX DATA.

1221. McArtney, S., White, M., Latter, I., and Campbell, J. (2004). **<04 Article Title>.** *Journal of horticultural science and biotechnology, 79 (3) pp. 441-448, 2004* <25 Page(s)>;
Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1222. MCAVOY, Y., BACKSTROM, B., JANHUNEN, K., STEWART, A., and COLE MD (1999). Supercritical fluid chromatography in forensic science: A critical appraisal. *FORENSIC SCIENCE INTERNATIONAL; 99* 107-122.
Rejection Code: HUMAN HEALTH.

1223. MCCABE, M. and NOWAK, M. (1986). SYNERGISTIC MODULATION OF LYMPHOCYTE MITOGENESIS BY CARCINOGENIC XENOBIOTICS. *BULL ENVIRON CONTAM TOXICOL; 37* 187-191.
Rejection Code: IN VITRO.

1224. MCCARROLL NE, SERNAU RE, UPCHURCH ME, CORTINA TA, WILLIAMS PL, and CAVAGNARO, J. (1985). GENETIC TOXICOLOGY STUDIES WITH ISOAMYL ACETATE. *16TH ANNUAL MEETING OF THE ENVIRONMENTAL MUTAGEN SOCIETY, LAS VEGAS, NEV., USA, FEB. 25-MARCH 1, 1985. ENVIRON MUTAGEN; 7* 63.
Rejection Code: BACTERIA.

1225. McCracken, N. W., Blain, P. G., and Williams, F. M. (1993). Nature and Role of Xenobiotic Metabolizing Esterases in Rat Liver, Lung, Skin and Blood. *Biochem.Pharmacol.* 45: 31-36.
Rejection Code: IN VITRO.

1226. McCutchen, C. W., Tice, Lois W., and Luft, John H. (1973). Chatterbox: A vibration monitor to detect chattered sections at the ultramicrotome. *Journal of Ultrastructure Research* 45: 297-302.
Rejection Code: SURVEY.

1227. Mcgarvey, B. D. (1989). LIQUID CHROMATOGRAPHIC DETERMINATION OF N METHYLCARBAMATE PESTICIDES USING A SINGLE-STAGE POST-COLUMN DERIVATIZATION REACTION AND FLUORESCENCE DETECTION. *J Chromatogr* 481 : 445-451.
Rejection Code: CHEM METHODS.

1228. MCGEE DW and MCGHEE JR (1993). CHOLERA TOXIN ENHANCES IL-6 SECRETION BY IEC-6 INTESTINAL EPITHELIAL CELLS AND THIS EFFECT IS AUGMENTED BY INFLAMMATORY CYTOKINES. *JOINT MEETING OF THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS AND THE CLINICAL IMMUNOLOGY SOCIETY, DENVER, COLORADO, USA, MAY 21-25, 1993. J IMMUNOL; 150* 35A.
Rejection Code: IN VITRO.

1229. McKim, J. M. (1977). The Use of Embryo-Larval, Early Juvenile Toxicity Tests with Fish for Estimating Long-Term Toxicity. *J.Fish.Res.Board Can.* 34 : 21 p.
Rejection Code: REVIEW.

1230. McKimm-Breschkin, Jennifer L. (1990). The use of tetramethylbenzidine for solid phase immunoassays. *Journal of Immunological Methods* 135: 277-280.
Rejection Code: METHODS.

1231. MCLAREN GF (1989). Control of oystershell scale Quadraspidiotus ostreaeformis (Curtis) on apples in Central Otago (New Zealand). *N Z J CROP HORTIC SCI; 17* 221-228.
Rejection Code: BACTERIA.

1232. McMillan, C., Chavez, P. I., Plettman, S. G., and Mabry, Tom J. (1975). Systematic implications of the sesquiterpene lactones in the "strumarium" morphological complex (Xanthium strumarium, Asteraceae) of Europe, Asia and Africa. *Biochemical Systematics and Ecology* 2: 181-184.
Rejection Code: SURVEY.

1233. McMillan, Joellyn M., Shaddock, Joseph G., Casciano, Daniel A., Arlotto, Michael P., and Leakey, Julian E. A. (1991). Differential stability of drug-metabolizing enzyme activities in primary rat hepatocytes, cultured in the absence or presence of dexamethasone. *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis* 249: 81-92.
Rejection Code: IN VITRO.

1234. McPherson, Ann K., Abrahamsen, Thomas A., and Journey, C. A (2002). Investigation of water quality and aquatic-community structure in Village and Valley Creeks, City of Birmingham, Jefferson County, Alabama, 2000-01. *Water-Resources Investigations Report (United States Geological Survey).*
Rejection Code: SURVEY.

1235. MEDVEDOVICI, A., DAVID, F., DESMET, G., and SANDRA, P. (1998). Fractionation of nitro and hydroxy polynuclear aromatic hydrocarbons from extracts of air particulates by 8 supercritical fluid chromatography. *JOURNAL OF MICROCOLUMN SEPARATIONS; 10* 89-97.
Rejection Code: METHODS.

1236. Megharaj, M., Rao, A. Prabhakara, Rao, A. S., and Venkateswarlu, K. (1990). Interaction effects

of carbaryl and its hydrolysis product, 1-naphthol, towards three isolates of microalgae from rice soil. *Agriculture, Ecosystems & Environment* 31: 293-300.
Rejection Code: FATE.

1237. Mehendale, H. M. and Dorough, H. Wyman (1971). Glucuronidation mechanisms in the rat and their significance in the metabolism of insecticides. *Pesticide Biochemistry and Physiology* 1: 307-318.
Rejection Code: IN VITRO, METABOLISM.

1238. Mehendale, H. M. and Dorough, H. Wyman (1972). In vitro glucosylation of 1-naphthol by insects. *Journal of Insect Physiology* 18: 981-990.
Rejection Code: IN VITRO.

1239. MELLON JE, COTTY PJ, GODSHALL MA, and ROBERTS, E. (1995). Demonstration of aflatoxin inhibitory activity in a cotton seed coat xylan. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 61* 4409-4412.
Rejection Code: IN VITRO.

1240. Menon, Pramila and Gopal, Madhuban (2003). Dissipation of 14C carbaryl and quinalphos in soil under a groundnut crop (Arachis hypogaea L.) in semi-arid India. *Chemosphere* 53: 1023-1031.
Rejection Code: FATE.

1241. MENTE DC (1987). NONIONIC SURFACTANTS AS ASSOCIATIVE THICKENERS IN AQUEOUS FLOWABLE PESTICIDE FORMULATIONS. *VANDER HOOVEN, D. I. B. AND L. D. SPICER (ED.). ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS) SPECIAL TECHNICAL PUBLICATION, 943. PESTICIDE FORMULATIONS AND APPLICATION SYSTEMS; SIXTH SYMPOSIUM, BAL HARBOUR, FLORIDA, USA, NOVEMBER 6-7, 1985. VIII+193P. ASTM: PHILADELPHIA, PENNSYLVANIA, USA. ILLUS. PAPER. ISBN 0-8031-0943-1* 20-26.
Rejection Code: NO SPECIES.

1242. MENTE DC (1987). NONIONIC SURFACTANTS AS ASSOCIATIVE THICKENERS IN AQUEOUS FLOWABLE PESTICIDE FORMULATIONS. *VANDER HOOVEN, D. I. B. AND L. D. SPICER (ED.). ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS) SPECIAL TECHNICAL PUBLICATION, 943. PESTICIDE FORMULATIONS AND APPLICATION SYSTEMS; SIXTH SYMPOSIUM, BAL HARBOUR, FLORIDA, USA, NOVEMBER 6-7, 1985. VIII+193P. ASTM: PHILADELPHIA, PENNSYLVANIA, USA. ILLUS. PAPER. ISBN 0-8031-0943-1.; 0 (0). 1987. 20-26.*
Rejection Code: METHODS.

1243. Menzel, D. W. and Ryther, J. H. (1959-1960). The annual cycle of primary production in the Sargasso Sea off Bermuda. *Deep Sea Research (1953)* 6: 351-367.
Rejection Code: SURVEY.

1244. Merali, Zeeya (2006). Big crunches wipe the slate clean. *The New Scientist* 191: 12.
Rejection Code: NO TOX DATA.

1245. MERCURIO-ZAPPALA, M., HACK, J., SALVADOR, A., and HOFFMAN RS (1998). CARBARYL POISONING 2-PAM OR NOT 2-PAM. *ANNUAL MEETING OF THE NORTH AMERICAN CONGRESS OF CLINICAL TOXICOLOGY, ORLANDO, FLORIDA, USA, SEPTEMBER 9-15, 1998. JOURNAL OF TOXICOLOGY CLINICAL TOXICOLOGY; 36* 428.
Rejection Code: MODELING.

1246. Merino, G., Vazquez, V., and Soria, S. (1968). Efficacy of 9 Insecticides in the Fight Against Epitrix sp. in Potato Plantations in Ecuador. *Turrialba* 18: 68-70.

; Habitat: T

1247. Messineo, Luigi (1966). Modification of the Sakaguchi reaction: Spectrophotometric determination of arginine in proteins without previous hydrolysis. *Archives of Biochemistry and Biophysics* 117: 534-540.
Rejection Code: METHODS.

1248. Metzger, Henry, Wofsy, Leon, and Singer, S. J. (1963). A specific antibody-hapten reaction with novel spectral properties. *Archives of Biochemistry and Biophysics* 103: 206-215.
Rejection Code: METABOLISM.

1249. MEYER, U., SCHWEIM, P., FRACELLA, F., and RENSING, L. (1995). Close correlation between heat shock response and cytotoxicity in Neurospora crassa treated with aliphatic alcohols and phenols. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 61* 979-984.
Rejection Code: BACTERIA.

1250. Mickova, Barbora, Zrostlikova, Jitka, Hajslova, Jana, Rauch, Pavel, Moreno, Maria Jose, Abad, Antonio, and Montoya, Angel (2003). Correlation study of enzyme-linked immunosorbent assay and high-performance liquid chromatography/tandem mass spectrometry for the determination of N-methylcarbamate insecticides in baby food. *Analytica Chimica Acta* 495: 123-132.
Rejection Code: METHODS/NO TOX DATA/FOOD.

1251. Middleton, G. and Stuckey, R. E. (1956). The absorptiometric determination of traces of cobalt with 1-nitroso-2-naphthol. *Clinica Chimica Acta* 1: 135-142.
Rejection Code: METHODS.

1252. Miles, C. J., Trehy, M., and Yost, R. A. (1988). FATE OF PESTICIDES IN CHLORINATED WATER. *Third Chemical Congress of North America Held at the 195th American Chemical Society Meeting, Toronto, Ontario, Canada, June 5-10, 1988. Abstr Pap Chem Congr North Am* 3 : Envr 139.
Rejection Code: FATE/ABSTRACT.

1253. Miller, B. E., Forcum, D. L., Weeks, K. W., Wheeler, J. R., and Rail, C. D. (1970). An Evaluation of Insecticides for Flea Control on Wild Mammals. *J.Med.Entomol.* 7: 697-702.

; Habitat: T; Effect Codes: POP

1254. Miller, P. L., Chin, Y., and Ohio Sea Grant (2002). Photoinduced degradation of carbaryl in a wetland surface water.
Rejection Code: FATE.

1255. MILLER PL and CHIN, Y. (1997). PHOTOINDUCED DEGRADATION OF AGRICULTURAL POLLUTANTS IN WETLANDS. *213TH NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY, SAN FRANCISCO, CALIFORNIA, USA, APRIL 13-17, 1997. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 213* ENVR 190.
Rejection Code: FATE.

1256. Minero, Claudio, Bono, Francesca, Rubertelli, Francesca, Pavino, Davide, Maurino, Valter, Pelizzetti, Ezio, and Vione, Davide (On the effect of pH in aromatic photonitration upon nitrate photolysis. *Chemosphere* In Press, Corrected Proof.

Rejection Code: NO SPECIES.

1257. Mishra, P. C. and Pradhan, S. C. (1987). Seasonal variation in amylase, invertase, cellulase activity and carbon dioxide evolution in a tropical protected grassland of Orissa, India, sprayed with carbaryl insecticide. *Environmental Pollution* 43: 291-300.
Rejection Code: SURVEY.

1258. Mistric Walter J., Jr. and Smith, Faison Delano (1971). Control of tobacco budworm on flue-cured tobacco with insecticides applied mechanically. *Journal of Economic Entomology* 64: 126-32.
Rejection Code: NO COC.

1259. Mitsuhashi, J., Grace, T. D. C., and Waterhouse, D. F. (1970). Effects of Insecticides on Cultures of Insect Cells. *Entomol.Exp.Appl.* 13: 327-341.

; Habitat: A; Effect Codes: MOR

1260. Miwa, D. W., Malpass, G. R. P., Machado, S. A. S., and Motheo, A. J. (2006). Electrochemical degradation of carbaryl on oxide electrodes. *Water Research* 40: 3281-3289.
Rejection Code: FATE.

1261. Miyashita, K., Tachibana, S., Soma, E., and Nakajima, F. (1966). Studies on Chemical Thinning of Apples. I. Effect of Sevin (1-Naphthyl N-Methylcarbamate) on Thinning Leading Apple Varieties . *Res.Bull.Hokkaido Natl.Agric.Exp.Stn.* 89: 1-14 (JPN) (ENG ABS).
Rejection Code: NON-ENGLISH.

1262. Mizuma, Takashi and Awazu, Shoji (1998). Inhibitory effect of phloridzin and phloretin on glucuronidation of p-nitrophenol, acetaminophen and 1-naphthol: kinetic demonstration of the influence of glucuronidation metabolism on intestinal absorption in rats. *Biochimica et Biophysica Acta (BBA) - General Subjects* 1425: 398-404.
Rejection Code: METABOLISM, FATE.

1263. MLILION, M., FIORAMONTI, J., ZAJAC J-M, and BUENO, L. (1997). Effects of neuropeptide FF on intestinal motility and temperature changes induced by endotoxin and platelet-activating factor. *EUROPEAN JOURNAL OF PHARMACOLOGY; 334* 67-73.
Rejection Code: BIOLOGICAL TOXICANT.

1264. MMOCHI AJ and MBEREK RS (1998). Trends in the types, amounts, and toxicity of pesticides used in Tanzania: Efforts to control pesticide pollution in Zanzibar, Tanzania. *AMBIO; 27* 669-676.
Rejection Code: SURVEY.

1265. MO, K., LORA CO, WANKEN AE, JAVANMARDIAN, M., YANG, X., and KULPA CF (1997). Biodegradation of methyl t-butyl ether by pure bacterial cultures. *APPLIED MICROBIOLOGY AND BIOTECHNOLOGY; 47* 69-72.
Rejection Code: FATE.

1266. Moens, R. and Gigot, J. (1988). Studies on Muskrat (Ondatra zibethicus L.) Control Using a Difenacoum-Based Preparation. *Rev.Agric.(Bruss.)* 41: 999-1007.
Rejection Code: NON-ENGLISH.

1267. Mohamed, A. K. A., Pratt, J. P., and Nelson, F. R. S. (1987). Compatibility of Metarhizium anisopliae var. anisopliae with Chemical Pesticides. *Mycopathologia* 99: 99-105.

; Habitat: T; Effect Codes: POP,REP

1268. Mohammad, A. and Khan, M. Am (1993). New surface-modified sorbent layer for the analysis of toxic metals in seawater and industrial wastewater. *J Chromatogr* 642 : 455-458.
Rejection Code: NO TOX DATA/METHODS.

1269. Molina, M, Perez-Bendito, D, and Silva, M (1999). Multi-residue analysis of N-methylcarbamate pesticides and their hydrolytic metabolites in environmental waters by use of solid-phase extraction and micellar electrokinetic chromatography. *Electrophoresis* 20: 3439-3449.
Rejection Code: METHODS.

1270. Moller, Peter and Wallin, Hakan (2000). Genotoxic hazards of azo pigments and other colorants related to 1-phenylazo-2-hydroxynaphthalene. *Mutation Research/Reviews in Mutation Research* 462: 13-30.
Rejection Code: SURVEY.

1271. Moorefield, Herbert H. and Weiden, Mathias H. J (1964). Influence of the methylenedioxyphenyl structure in synergism of a carbamate insecticide for house flies. *Contributions from Boyce Thompson Institute* 22: 425-33.
Rejection Code: NO EFFECT.

1272. MOORMAN TB (1989). A REVIEW OF PESTICIDE EFFECTS ON MICROORGANISMS AND MICROBIAL PROCESSES RELATED TO SOIL FERTILITY. *J PROD AGRIC; 2* 14-23.
Rejection Code: BACTERIA.

1273. Mora, M. A., Auman, H. J., Ludwig, J. P., Giesy, J. P., Verbrugge, D. A., and Ludwig, M. E. (1993). Polychlorinated Biphenyls and Chlorinated Insecticides in Plasma of Caspian Terns: Relationships with Age, Productivity, and Colony Site Tenacity in the Great Lakes. *Arch.Environ.Contam.Toxicol.* 24: 320-331.
Rejection Code: NO CONC/SURVEY.

1274. Moraes, Solange Leite, Rezende, Maria Olimpia Oliveira, Nakagawa, Lia Emi, and Luchini, Luiz Carlos (2003). Multiresidue screening methods for the determination of pesticides in tomatoes. *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 38: 605-615.
Rejection Code: METHODS/NO TOX DATA/FOOD.

1275. Morais, Sergi, Gonzalez-Martinez, Miguel A., Abad, Antonio, Montoya, Angel, Maquieira, Angel, and Puchades, Rosa (1997). A comparative study by the enzyme-linked immunofiltration asssay of solid phases used in the development of flow immunosensors. *Journal of Immunological Methods* 208: 75-83.
Rejection Code: METHODS.

1276. Morais, Sergi, Maquieira, Angel, and Puchades, Rosa (1999). Selection and characterisation of membranes by means of an immunofiltration assay. Application to the rapid and sensitive determination of the insecticide carbaryl. *Journal of Immunological Methods* 224: 101-109.
Rejection Code: METHODS.

1277. MOREDA JM, ARRANZ, A., FDEZ DE BETONIO S, CID, A., and ARRANZ JF (1998). Determination of PCBs and LABs in sewage, sludge from a wastewater treatment plant. *ENVIRONMENTAL TECHNOLOGY; 19* 913-921.
Rejection Code: EFFLUENT.

1278. MOREL-CHEVILLET, C., PAREKH NR, PAUTREL, D., and FOURNIER J-C (1996). Cross-enhancement of carbofuran biodegradation in soil samples previously treated with

carbamate pesticides. *SOIL BIOLOGY & BIOCHEMISTRY; 28* 1767-1776.
Rejection Code: FATE.

1279. Moreland, D. E. (1999). Biochemical Mechanisms of Action of Herbicides and the Impact of Biotechnology on the Development of Herbicides. *J.Pestic.Sci.* 24: 299-307.
Rejection Code: REFS CHECKED/REVIEW.

1280. Moreland, D. E. and Novitzky, W. P. (1984). Interference by DDT and Cyclodiene Types of Insecticides with Chloroplast-Associated Reactions (Spinach, Spinacea oleracea). *Chem.-Biol.Interact.* 48: 153-168.
Rejection Code: IN VITRO.

1281. MORELAND DE (1999). Biochemical mechanisms of action of herbicides and the impact of biotechnology on the development of herbicides. *JOURNAL OF PESTICIDE SCIENCE; 24* 299-307.
Rejection Code: REVIEW.

1282. MORENO OJ and KANG MS (1999). Aflatoxins in maize: The problem and genetic solutions. *PLANT BREEDING; 118* 1-16.
Rejection Code: BIOLOGICAL TOXICANT.

1283. Morgan, J. E., Richards, S. P. G., and Morgan, A. J. (2001). Stable Strontium Accumulation by Earthworms: A Paradigm for Radiostrontium Interactions with Its Cationic Analogue, Calcium. *Environ.Toxicol.Chem.* 20: 1236-1243.
Rejection Code: NO DURATION/SURVEY.

1284. Morishita, M. (2001). Toxicity of Some Insecticides to Larvae of Flankliniella occidentalis (Pergande) (Thysanoptera: Thripidae) Evaluated by the Petri Dish-Spraying Tower Method. *Appl.Entomol.Zool.* 36: 137-141.

; Habitat: T; Effect Codes: MOR

1285. Morrison, Helen, Young, Peter, and George, Stephen (1985). Conjugation of organic compounds in isolated hepatocytes from a marine fish, the plaice, pleuronectes platessa. *Biochemical Pharmacology* 34: 3933-3938.
Rejection Code: METABOLISM, IN VITRO.

1286. morrison, M. Helen and Hawksworth, Gabrielle M. (1984). Glucuronic acid conjugation by hepatic microsomal fractions isolated from streptozotocin-induced diabetic rats. *Biochemical Pharmacology* 33: 3833-3838.
Rejection Code: METABOLISM, IN VITRO.

1287. Mortensen, S R, Hooper, M J, and Padilla, S (1998). Rat brain acetylcholinesterase activity: developmental profile and maturational sensitivity to carbamate and organophosphorus inhibitors. *Toxicology* 125: 13-19.
Rejection Code: IN VITRO.

1288. Mortensen, S. R., Hooper, M. J., and Padilla, S. (1998). Rat brain acetylcholinesterase activity: developmental profile and maturational sensitivity to carbamate and organophosphorus inhibitors. *Toxicology* 125: 13-19.
Rejection Code: IN VITRO.

1289. Morton, R. , Brayan, J. G., Desmarchelier, J. M., Dilli, S., Haddad, P. R., and Sharp, G. J. (2001). Statistical analysis of decay of organophosphorus and pyrethroid insecticides and carbaryl on paddy rice, maize, sunflowers and field peas. *Journal of Stored Products*

Research, 37 (3) pp. 277-285, 2001.
Rejection Code: METABOLISM.

1290. Moscioni, A. David, Engel, Judith L., and Casida, John E. (1977). Kynurenine formamidase inhibition as a possible mechanism for certain teratogenic effects of organophosphorus and methylcarbamate insecticides in chicken embryos. *Biochemical Pharmacology* 26: 2251-2258.
Rejection Code: REVIEW.

1291. Moser, V. C. (1995). Comparisons of the Acute Effects of Cholinesterase Inhibitors Using a Neurobehavioral Screening Battery in Rats. *Neurotoxicol.Teratol.* 17: 617-625.

; Habitat: T; Effect Codes: BEH,PHY

1292. Moser, Virginia C., McCormick, Jennifer P., Creason, John P., and MacPhail, Robert C. (1988). Comparison of chlordimeform and carbaryl using a functional observational battery. *Fundamental and Applied Toxicology* 11: 189-206.
Rejection Code: METHODS.

1293. MOSS MO (1991). INFLUENCE OF AGRICULTURAL BIOCIDES ON MYCOTOXIN FORMATION IN CEREALS. *CHELKOWSKI, J. (ED.). DEVELOPMENTS IN FOOD SCIENCE, VOL. 26. CEREAL GRAIN: MYCOTOXINS, FUNGI AND QUALITY IN DRYING AND STORAGE. XXII+607P. ELSEVIER SCIENCE PUBLISHERS B.V.: AMSTERDAM, NETHERLANDS; (DIST. IN THE USA AND CANADA BY ELSEVIER SCIENCE PUBLISHING CO., INC.: NEW YORK, NEW YORK, USA). ILLUS. MAPS. ISBN 0-444-88554-4.; 0 (0). 1991. 281-295.*
Rejection Code: HUMAN HEALTH.

1294. Motomizu, Shoji and Toei, Kyoji (1977). A new method of removing excess of reagent from organic phases in the solvent extraction of metal complex anions with quaternary ammonium salts : Spectrophotometric determination of micro amounts of cobalt with 2-nitroso-1-naphthol-4-sulfonic acid. *Analytica Chimica Acta* 89: 167-175.
Rejection Code: METHODS.

1295. Motomizu, Shoji and Toei, Kyoji (1978). Spectrophotometric determination of nickel in iron and steel with 2-nitroso-1-naphthol-4-sulfonic acid : Improvement of sensitivity by extracting excess of reagent. *Analytica Chimica Acta* 97: 335-342.
Rejection Code: METHODS.

1296. Motomizu, Shoji and Toel, Kyoji (1980). Extraction behavior of ion-pairs of azo-dye cations and their analytical applications. *Analytica Chimica Acta* 120: 267-277.
Rejection Code: METHODS.

1297. Moustacchi, E., Carere, A., Morpurgo, G., Ramel, C., and Wurgler, F. E. (1986). Assays for Genetic Changes in Fungi. *In: R.Montesano, et al.(Eds.), IARC (Int.Agency for Res.on Cancer) Sci.Publ.No.83, Long-Term and Short-Term Assays for Carcinogens: A Critical Appraisal, Oxford Univ.Press, New York, NY* 303-350.
Rejection Code: REVIEW.

1298. Mueller, H., Meisel, S., Graller, P., Kahr, G., and Ninaus, W. (1991). Verteilung Und Wanderung Von Radionukliden In Boeden Und Deren Aufnahme In Pflanzen Nach Dem Reaktorunfall In Tschernobyl. (Distribution And Migration Of Radionuclides In Soils And Their Uptake In Plants After The Chernobyl Reactor Accident). *Gov.Rep.Announce.Index*.
Rejection Code: NO SPECIES.

1299. MUELLER, M. (1997). Quantum chemical modelling of soil sorption coefficients: Multiple linear regression models. *CHEMOSPHERE; 35* 365-377.
Rejection Code: MODELING, FATE.

1300. MUELLER W-U, STREFFER, C., and PAMPFER, S. (1994). The question of threshold doses for radiation damage: Malformations induced by radiation exposure of unicellular or multicellular preimplantation stages of the mouse. *RADIATION AND ENVIRONMENTAL BIOPHYSICS; 33* 63-68.
Rejection Code: IN VITRO.

1301. MUKERJEE-DHAR, G., SHIMURA, M., and KIMBARA, K. (1998). Degradation of polychlorinated biphenyl by cells of Rhodococcus opacus strain TSP203 immobilized in alginate and in solution. *ENZYME AND MICROBIAL TECHNOLOGY; 23* 34-41.
Rejection Code: BACTERIA.

1302. MUKERJEE, S., ELLENSON WD, LEWIS RG, STEVENS RK, SOMERVILLE MC, SHADWICK DS, and WILLIS RD (1997). An environmental scoping study in the Lower Rio Grande Valley of Texas: III. Residential microenvironmental monitoring for air, house dust, and soil. *ENVIRONMENT INTERNATIONAL; 23* 657-673.
Rejection Code: SURVEY.

1303. MUKHOPADHYAY, S. and CHATTERJEE, S. (1994). Development of cellular slime mould, Dictyostelium discoideum treated with a carbamate pesticide. *INDIAN JOURNAL OF EXPERIMENTAL BIOLOGY; 32* 465-469.
Rejection Code: IN VITRO.

1304. MULBRY, W. and KEARNEY PC (1991). DEGRADATION OF PESTICIDES BY MICROORGANISMS AND THE POTENTIAL FOR GENETIC MANIPULATION. *CROP PROT; 10* 334-346.
Rejection Code: FATE.

1305. Mulbry, W. W. and Eaton, R. W. (1991). Purification and characterization of the N-methylcarbamate hydrolase from Pseudomonas strain CRL-OK. *Appl Environ Microbiol* 57 : 3679-3682.
Rejection Code: BACTERIA.

1306. MULE, G., LOGRIECO, A., STEA, G., and BOTTALICO, A. (1997). Clustering of trichothecene-producing Fusarium strains determined from 28S ribosomal DNA sequences. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 1843-1846.
Rejection Code: BACTERIA.

1307. Muller, G. (1972). Changes in the Beetle Fauna of the Upper Surface of the Soil of Cultivated Fields After Application of Herbicides (Coleoptera) (Die Veranderungen der Koleopterenfauna der Bodenoberflache von Kulturfeldern nach Herbizideinsatz (Col.)). *Folia Entomol.Hung.* 25: 297-305 (HUN).
Rejection Code: NON-ENGLISH.

1308. Muller, H. Arno J. (2002). Germ Cell Migration: As Slow as Molasses. *Current Biology* 12: R612-R614.
Rejection Code: IN VITRO.

1309. MUNDAY, R. (1994). BIOACTIVATION OF THIOLS BY ONE-ELECTRON OXIDATION. *ANDERS, M. W. AND W. DEKANT (ED.). ADVANCES IN PHARMACOLOGY, VOL. 27. CONJUGATION-DEPENDENT CARCINOGENICITY AND TOXICITY OF FOREIGN COMPOUNDS. XVI+519P. ACADEMIC PRESS, INC.: SAN DIEGO, CALIFORNIA,*

USA; LONDON, ENGLAND, UK. ISBN 0-12-032927-1.; 0 (0). 1994. 237-270.
Rejection Code: BACTERIA.

1310. Munn, M. D. and Gilliom, R. J. (2001). Pesticide Toxicity Index for Freshwater Aquatic Organisms. *Water-Resour.Investig.Rep.No.01-4077, U.S.Geol.Surv., Sacramento, CA* 1-55.
Rejection Code: REFS CHECKED/REVIEW.

1311. Munn, M. D. and Gilliom, R. J. (2001). Pesticide Toxicity Index for Freshwater Aquatic Organisms. *Water-Resour.Investig.Rep.No.01-4077, U.S.Geol.Surv., Sacramento, CA* 1-55.
Rejection Code: REFS CHECKED/REVIEW.

1312. Munn, M. D. and Gilliom, R. J. (2001). Pesticide Toxicity Index for Freshwater Aquatic Organisms. *Water-Resour.Investig.Rep.No.01-4077, U.S.Geol.Surv., Sacramento, CA* 1-55.
Rejection Code: REFS CHECKED/REVIEW.

1313. Murakami, M. and Fukami, J. I. (1986). Relationship Between Specific Molecular Connectivity Indices and Teratogenicity, Carcinogenicity, and Mutagenicity of Carbamate Pesticides. *Bull.Environ.Contam.Toxicol.* 37: 326-329.
Rejection Code: NO CONC/NO DURATION.

1314. MURAYAMA, T., TSAI S-C, ADAMIK, R., MOSS, J., and VAUGHAN, M. (1993). Effects of temperature on ADP-ribosylation factor stimulation of cholera toxin activity. *BIOCHEMISTRY; 32* 561-566.
Rejection Code: IN VITRO.

1315. Murray, H. E. and Guthrie, R. K. (1980). Effects of Carbaryl, Diazinon and Malathion on Native Aquatic Populations of Microorganisms. *Bull.Environ.Contam.Toxicol.* 24: 535-542.

; Habitat: A; Effect Codes: PHY,POP

1316. MURTHY, K. S. RK, SHARMA VK, MANOHAR, V., and RAO MS (1993). Bioefficacy and dissipation of fenvalerate formulations on chilli. *INDIAN JOURNAL OF PLANT PROTECTION; 21* 208-210.
Rejection Code: FATE.

1317. Murthy, N. B. K., Kale, S. P., and Raghu, K. (1991). Mineralization of 14C-labelled rice straw in aerobic and anaerobic clay soils as influenced by insecticide treatments. *Soil Biology and Biochemistry* 23: 857-859.
Rejection Code: FATE/NO TOX DATA.

1318. Murugaverl, B., Voorhees, K. J., and Deluca, S. J. (1993). Utilization of a benchtop mass spectrometer with capillary supercritical fluid chromatography. *J Chromatogr* 633 : 195-205.
Rejection Code: METHODS.

1319. Murugaverl, V. and Voorhees, K. J. (1992). ON-LINE SFE CLEAN-UP SFC-MS OF PESTICIDES IN TISSUES. *203rd Acs (American Chemical Society) National Meeting, San Francisco, California, Usa, April 5-10, 1992. Abstr Pap Am Chem Soc* 203 : Envr183.
Rejection Code: METHODS.

1320. Murugesan, K. and Dhingra, S. (1995). Variability in Resistance Pattern of Various Groups of

Insecticides Evaluated Against Spodoptera litura (Fabricius) During a Period Spanning Over Three Decades. *J.Entomol.Res.(New Delhi)* 19: 313-319.
Rejection Code: NO CONC.

1321. MURUVANDA DA, BEARDSLEY JW, and MITCHELL WC (1986). Insecticidal control of sweet potato weevils (Cylas formicarius elegantulus) (Coleoptera: Curculionidae) in Hawaii (USA). *TROP AGRIC; 63* 155-157, 164.
Rejection Code: SURVEY.

1322. Mwanthi, M. A. (1998). Occurrence Of Three Pesticides In Community Water Supplies Kenya. 60: 601-608.
Rejection Code: NO SPECIES, MIXTURE.

1323. Myhr, Brian C. (1973). Screen for pesticide toxicity to protein and RNA synthesis in HeLa cells. *Journal of Agricultural and Food Chemistry* 21: 362-7.
Rejection Code: IN VITRO.

1324. NAGATA, C. , KODAMA, M., KIMURA, T., and NAKAYAMA, T. (1985). MECHANISM OF METABOLIC ACTIVATION OF CARCINOGENIC AROMATIC AMINES. *TAGASHIRA, Y. AND T. OMURA (ED.). GANN MONOGRAPH ON CANCER RESEARCH, NO. 30. P-450 AND CHEMICAL CARCINOGENESIS: JAPANESE CANCER ASSOCIATION; MEETING, TOKYO, JAPAN, NOV. 21, 1983. XII+175P. JAPANESE SCIENTIFIC SOCIETIES PRESS: TOKYO, JAPAN; PLENUM PRESS: NEW YORK, N.Y., USA. ILLUS. ISBN 4-7622-8433-5.; 0 (0). 1985. 93-110.*
Rejection Code: METABOLISM.

1325. Nakata, Kuniho (2000). Two glycolipids increase in the bioremediation of halogenated aromatic compounds. *Journal of Bioscience and Bioengineering* 89: 577-581.
Rejection Code: BACTERIA.

1326. Nanda, Nisha and Phillips, David R. (2006). Novel targets for antithrombotic drug discovery. *Blood Cells, Molecules, and Diseases* 36: 228-231.
Rejection Code: IN VITRO.

1327. NANDAN, R. and RAISUDDIN, S. (1992). FUNGAL DEGRADATION OF INDUSTRIAL WASTES AND WASTEWATER. *ARORA, D. K., R. P. ELANDER AND K. G. MUKERJI (ED.). HANDBOOK OF APPLIED MYCOLOGY, VOL. 4. FUNGAL BIOTECHNOLOGY. XVII+1114P. MARCEL DEKKER, INC.: NEW YORK, NEW YORK, USA; BASEL, SWITZERLAND. ILLUS. ISBN 0-8247-8501-0.; 0 (0). 1992. 931-961.*
Rejection Code: FATE.

1328. Narayanan, K. S. and Chaudhuri, R. K. (1992). Emulsifiable Concentrate Formulations for Multiple Active Ingredients Using N-Alkylpyrrolidones. *In: L.E.Bode and D.G.Chasin (Eds.), Pesticide Formulations and Application Systems, ASTM STP 1112, Philadelphia, PA* 11: 73-96.
Rejection Code: NO SPECIES/NO TOX DATA.

1329. NARAYANAN KS and CHAUDHURI RK (1993). N ALKYL PYRROLIDONE REQUIREMENT FOR STABLE WATER-BASED MICROEMULSIONS. *DEVISETTY, B. N., D. G. CHASIN AND P. D. BERGER (ED.). ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS) SPECIAL TECHNICAL PUBLICATION, NO. 1146. PESTICIDE FORMULATIONS AND APPLICATION SYSTEMS: 12TH VOLUME; TWELFTH SYMPOSIUM, SAN DIEGO, CALIFORNIA, USA, OCTOBER 16-17, 1991. VIII+381P. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS): PHILADELPHIA, PENNSYLVANIA, USA. ISBN 0-8031-1439-7.; 0 (0). 1993. 85-104.*

Rejection Code: METHODS.

1330. National Library of Medicine (1989). TOXLINE Search on Saltwater, Freshwater, Bioconcentration and Carbaryl. *http://toxnet.nlm.nih.gov* 11 p.
Rejection Code: REVIEW.

1331. Navas, J. M. and Segner, H. (1998). Antiestrogenic Activity of Anthropogenic and Natural Chemicals. *Environ.Sci.Pollut.Res.* 5: 75-82.
Rejection Code: REVIEW.

1332. NAVAS JM and SEGNER, H. (1998). Antiestrogenic activity of anthropogenic and natural chemicals. *ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH INTERNATIONAL; 5* 75-82.
Rejection Code: NO TOX DATA.

1333. Nayak, M. K., Collins, P. J., and Kopittke, R. A. (2003). Residual Toxicities and Persistence of Organophosphorus Insecticides Mixed with Carbaryl as Structural Treatments Against Three Liposcelidid Psocid Species (Psocoptera: Liposcelididae) Infesting Stored Grain. *J.Stored Prod.Res.* 39: 343-353.
Rejection Code: MIXTURE.

1334. Nayak, Manoj K, Collins, Patrick J, and Pavic, Hervoika (2002). Long-term effectiveness of grain protectants and structural treatments against Liposcelis decolor (Pearman) (Psocoptera: Liposcelididae), a pest of stored products. *Pest Management Science* 58: 1223-1228 .
Rejection Code: DEAD.

1335. Naydenova, Z., Urshev, Z., Golovinsky, E., and Grancharov, K. (1996). Influence of pesticides on UDP-glucuronosyltransferase in rat liver microsomes. *Pesticide Science* 47 : 25-30.
Rejection Code: IN VITRO.

1336. NAYDENOVA, Z., URSHEV, Z., GOLOVINSKY, E., and GRANCHAROV, K. (1996). Influence of pesticides on UDP-glucuronosyltransferase in rat liver microsomes. *PESTICIDE SCIENCE; 47* 25-30.
Rejection Code: IN VITRO.

1337. Nebbia, Carlo, Dacasto, Mauro, and Carletti, Monica (2004). Postnatal development of hepatic oxidative, hydrolytic and conjugative drug-metabolizing enzymes in female horses. *Life Sciences* 74: 1605-1619.
Rejection Code: NO TOX DATA.

1338. NEIDERT, E. and SASCHENBRECKER PW (1996). Occurrence of pesticide residues in selected agricultural food commodities available in Canada. *JOURNAL OF AOAC INTERNATIONAL; 79* 549-566.
Rejection Code: SURVEY.

1339. Nemoto, M. , Ohkuro, T., and Xu, B. (1997). The role of weed invasion in controlling sand dune reactivation in abandoned fields in semi-arid Inner Mongolia, China. *Ecological Research, 12 (3) pp. 325-336, 1997*.
Rejection Code: SURVEY.

1340. Nesbitt, H. J., Hickery, A., and Phirum, I. (1996). ADULTERATED PESTICIDES IN CAMBODIA. *International Rice Research Notes* 21 : 51.
Rejection Code: NO TOX DATA, ABSTRACT.

1341. NESBITT HJ , HICKERY, A., and PHIRUM, I. (1996). ADULTERATED PESTICIDES IN

CAMBODIA. *INTERNATIONAL RICE RESEARCH NOTES; 21* 51.
Rejection Code: SURVEY.

1342. Neuhold, J. M. (1987). The Relationship of Life History Attributes to Toxicant Tolerance in Fishes. *Environ.Toxicol.Chem.* 6: 709-716.
Rejection Code: REFS CHECKED/REVIEW.

1343. NEWALL DR and BEEDLES KE (1994). The stem-cell test: A novel in vitro assay for teratogenic potential. *TOXICOLOGY IN VITRO; 8* 697-701.
Rejection Code: IN VITRO.

1344. NEWALL DR and BEEDLES KE (1996). The stem-cell test: An in vitro assay for teratogenic potential. Results of a blind trial with 25 compounds. *TOXICOLOGY IN VITRO; 10* 229-240.
Rejection Code: IN VITRO.

1345. Ni, Yongnian, Qiu, Ping, and Kokot, Serge (2005). Simultaneous voltammetric determination of four carbamate pesticides with the use of chemometrics. *Analytica Chimica Acta* 537: 321-330.
Rejection Code: METHODS.

1346. Nichols, D., Embree, C., Cline, J., and Ju, H. Y. (Blossom and fruitlet thinners affect crop load, fruit weight, seed number, and return bloom of 'Northern Spy' apple. *HortScience, 39 (6) pp. 1309-1312, 2004*.
Rejection Code: MIXTURE.

1347. Niemann, Cornelia, Gauthier, Jean-Charles, Richert, Lysiane, Ivanov, Marie-Agnes, Melcion, Celine, and Cordier, Andre (1991). Rat adult hepatocytes in primary pure and mixed monolayer culture : Comparison of the maintenance of mixed function oxidase and conjugation pathways of drug metabolism. *Biochemical Pharmacology* 42: 373-379.
Rejection Code: IN VITRO, METABOLISM.

1348. NIEMCZYK HD and KRAUSE, A. (1989). DEGRADATION AND MOBILITY OF PESTICIDES APPLIED TO TURFGRASSES INSECTICIDES AND PREEMERGENT HERBICIDES. *198TH ACS (AMERICAN CHEMICAL SOCIETY) NATIONAL MEETING, MIAMI BEACH, FLORIDA, USA, SEPTEMBER 10-15, 1989. ABSTR PAP AM CHEM SOC; 198 (0). 1989. AGRO 130.*
Rejection Code: FATE.

1349. NIEMCZYK HD and KRAUSE, A. (1989). DEGRADATION AND MOBILITY OF PESTICIDES APPLIED TO TURFGRASSES INSECTICIDES AND PREEMERGENT HERBICIDES. *198TH ACS (AMERICAN CHEMICAL SOCIETY) NATIONAL MEETING, MIAMI BEACH, FLORIDA, USA, SEPTEMBER 10-15, 1989. ABSTR PAP AM CHEM SOC; 198 (0). 1989. AGRO 130.*
Rejection Code: FATE.

1350. NIETO SR, MILLER, S. IV, and ACEY RA (1995). BIODEGRADATIVE CAPABILITIES OF A COMMERCIAL BACTERIAL CONSORTIUM. *95TH GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, WASHINGTON, D.C., USA, MAY 21-25, 1995. ABSTRACTS OF THE GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY; 95* 468.
Rejection Code: BACTERIA.

1351. NIJSSEN, B. (1991). OFF-FLAVORS. *MAARSE, H. (ED.). FOOD SCIENCE AND TECHNOLOGY (NEW YORK), VOL. 44. VOLATILE COMPOUNDS IN FOODS AND*

BEVERAGES. XIII+764P. MARCEL DEKKER, INC.: NEW YORK, NEW YORK, USA; BASEL, SWITZERLAND. ILLUS. ISBN 0-8247-8390-5.; 0 (0). 1991. 689-735.
Rejection Code: HUMAN HEALTH.

1352. NIROOMAND, F., SPERBER WH, LEWANDOWSKI VJ, and HOBBS LJ (1998). Fate of bacterial pathogens and indicator organisms in liquid sweeteners.
Rejection Code: BACTERIA.

1353. Nishihara, Tsutomu, Nishikawa, Junichi, Kanayama, Tomohiko, Dakeyama, Fumi, Saito, Koichi, Imagawa, Masayoshi, Takatori, Satoshi, Kitagawa, Yoko, Hori, Shinjiro, and Utsumi, Hideo (2000). Estrogenic activities of 517 chemicals by yeast two-hybrid assay. *Journal of Health Science* 46: 282-298.
Rejection Code: NO SPECIES.

1354. Nishii, Yoshinori and Tanabe, Yoo (1995). Sequential and Regioselective Friedel-Crafts Reactions of gem-Dihalocyclopropanecarbonyl Chlorides with Benzenes for the Synthesis of 4-Aryl-1-naphthol Derivatives. *Tetrahedron Letters* 36: 8803-8806.
Rejection Code: METHODS.

1355. Nishiuchi, Y. (1972). Toxicity of Pesticides to Some Water Organisms. *Bull.Agric.Chem.Insp.Stn.(Noyaku Kensasho Hokoku)* 12: 122-128 (JPN) (ENG TRANSL).

; Habitat: A; Effect Codes: MOR

1356. Nishiuchi, Y. (1972). Toxicity of Pesticides to Some Water Organisms. *Bull.Agric.Chem.Insp.Stn.(Noyaku Kensasho Hokoku)* 12: 122-128 (JPN) (ENG TRANSL).

1357. Nishiuchi, Y. and Asano, K. (1981). Comparison of Pesticide Susceptibility of Colored Carp with Japanese Common Carp. *Bull.Agric.Chem.Insp.Stn.(Noyaku Kensasho Hokoku)* 21: 61-63 (JPN) (ENG ABS).

; Habitat: A; Effect Codes: MOR

1358. Nishiuchi, Y. and Asano, K. (1978). Toxicity of Formulated Agrochemicals to Fresh Water Organisms. LII. *The Aquiculture /Suisan Zoshoku 26(1):26-30 (JPN).*

; Habitat: A; Effect Codes: MOR

1359. Nishiuchi, Y. and Hashimoto, Y. (1967). Toxicity of Pesticide Ingredients to Some Fresh Water Organisms. *Sci.Pest Control (Botyu-Kagaku)* 32: 5-11 (JPN) (ENG ABS) (Author Communication Used).

; Habitat: A; Effect Codes: MOR

1360. Nishiuchi, Y. and Yoshida, K. (1972). Toxicities of Pesticides to Some Fresh Water Snails. *Bull.Agric.Chem.Insp.Stn.* 12: 86-92 (JPN) (ENG ABS) (ENG TRANSL) (Author Communication Used).

; Habitat: A; Effect Codes: PHY,GRO

1361. NKEDI-KIZZA, P. and BROWN KD (1998). Sorption, degradation, and mineralization of carbaryl in soils, for single-pesticide and multiple-pesticide systems. *JOURNAL OF*

ENVIRONMENTAL QUALITY; 27 1318-1324.
Rejection Code: FATE.

1362. Noddegard, E., Hansen, T., and Rasmussen, A. N. (1970). Testing of Fungicides and Insecticides in 1969. *Tidsskr.Planteavl* 74: 618-661.
Rejection Code: NON-ENGLISH.

1363. Noetzel, D. (1988). Control of Striped Cucumber Beetle in Muskmelon, 1987. *Insectic.Acaric.Tests* 13: 105-106 (No. 26E).
Rejection Code: NO DURATION.

1364. Noetzel, D. (1988). Furadan for Control of Striped Cucumber Beetle, 1987. *Insectic.Acaric.Tests* 13: 121-122 (No. 51E).
Rejection Code: NO DURATION.

1365. Nogueira, J. M., Sandra, T., and Sandra, P. (2003May9). Considerations on ultra trace analysis of carbamates in water samples. *J Chromatogr a 2003 May 9;996(1-2):133-40.* 996: 133-40.
Rejection Code: METHODS.

1366. Nogueira, J. M. F., Sandra, Tom, and Sandra, Pat (2004). Multiresidue screening of neutral pesticides in water samples by high performance liquid chromatography-electrospray mass spectrometry. *Analytica Chimica Acta* 505: 209-215.
Rejection Code: NO SPECIES.

1367. Nollenberger, E. L., Neff, W., and Anthony, A. (1981). Cytochemical Analysis of Brain Nucleic Acid Changes in Brook Trout (Salvelinus fontinalis) Exposed to Carbaryl and Parathion Toxication . *In: 57th Annu.Meet.of the Pa.Acad.of Sci., Apr.5-7, 1981, Lancaster, PA, Proc.Pa.Acad.Sci.* 55: 97 (ABS).
Rejection Code: ABSTRACT.

1368. Nolte, T., Harleman, J. H., and Jahn, W. (1995). Histopathology of Chemically Induced Testicular Atrophy in Rats. *Exp.Toxicol.Pathol.* 47: 267-286.
Rejection Code: REFS CHECKED/REVIEW.

1369. NOLTE, T., HARLEMAN JH, and JAHN, W. (1995). HISTOPATHOLOGY OF CHEMICALLY INDUCED TESTICULAR ATROPHY IN RATS. *EXPERIMENTAL AND TOXICOLOGIC PATHOLOGY; 47* 267-286.
Rejection Code: REVIEW.

1370. Norris, L. A., Lorz, H. W., and Gregory, S. V. (1991). Forest Chemicals. *In: W.R.Meehan (Ed.), Am.Fish.Soc.Spec.Publ.No.19, Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats, Chapter 7, Am.Fish.Soc., Bethesda, MD* 207-296.
Rejection Code: REVIEW.

1371. Norsworthy, J. K., Talbert, R. E., and Hoagland, R. E. (1999). Chlorophyll fluorescence evaluation of agrochemical interactions with propanil on propanil-resistant barnyardgrass (Echinochloa crus-galli). *Weed Science, 47 (1) pp. 13-19, 1999.*
Rejection Code: METHODS.

1372. Nostrandt, A. C., Duncan, J. A., and Padilla, S. (1993). A Modified Spectrophotometric Method Appropriate for Measuring Cholinesterase Activity in Tissue from Carbaryl-Treated Animals. *Fundamental and Applied Toxicology* 21: 196-203.
Rejection Code: METHODS.

1373. Novoszad, Michael, Gerzabek, Martin H., Haberhauer, Georg, Jakusch, Michael, Lischka, Hans, Tunega, Daniel, and Kirchmann, Holger (2005). Sorption of naphthalene derivatives to soils from a long-term field experiment. *Chemosphere* 59: 639-647.
Rejection Code: FATE.

1374. Nunes, G. S., Ribeiro, M. L., Polese, L., and Barcelo, D. (1998). Comparison of different clean-up procedures for the determination of N-methylcarbamate insecticides in vegetable matrices by high-performance liquid chromatography with UV detection. *Journal of Chromatography a* 795 : 43-51.
Rejection Code: NO TOX DATA.

1375. Nunes, G. S., Ribeiro, M. L., Polese, L., and Barcelo, D. (1998). Comparison of different clean-up procedures for the determination of N- methylcarbamate insecticides in vegetable matrices by high-performance liquid chromatography with UV detection. *Journal of Chromatography A, 795 (1) pp. 43-51, 1998*.
Rejection Code: METHODS.

1376. Nunes, G. S., Skladal, P., Yamanaka, H., and Barcelo, D. (1998). Determination of Carbamate Residues in Crop Samples by Cholinesterase-Based Biosensors and Chromatographic Techniques. *Anal.Chim.Acta* 362: 59-68.
Rejection Code: IN VITRO/NO DURATION.

1377. NUNES-MAMEDE ML, DE MELLO FG, and MARTINS AR (1990). Effect of p-mercuribenzoate on the subestimation of angiotensin-converting enzyme measurement during chick retina development. *J NEUROSCI METHODS; 31* 7-12.
Rejection Code: IN VITRO.

1378. O'BRIEN PJ (1988). RADICAL FORMATION DURING THE PEROXIDASE CATALYZED METABOLISM OF CARCINOGENS AND XENOBIOTICS THE REACTIVITY OF THESE RADICALS WITH GSH DNA AND UNSATURATED LIPID. *FREE RADICAL BIOL MED; 4* 169-184.
Rejection Code: METABOLISM.

1379. O'Kelley, J. C. and Deason, T. R. (1976). Degradation of pesticides by algae.
Rejection Code: FATE.

1380. Oaks, J. L., Gilbert, M., Virani, M. Z., Watson, R. T., Meteyer, C. U., Rideout, B. A., Shivaprasad, H. L., Ahmed, S., Chaudhry, M. J. I., Arshad, M., Mahmood, S., Ali, A., and Khan, A. A. (2004). Diclofenac Residues as the Cause of Population Decline of Vultures in Pakistan: Supplementary Information. *www.nature.com/nature* 13 p.
Rejection Code: ATTACHED TO.

1381. OBULAKONDAIAH, M., SREENIVASULU, C., and VENKATESWARLU, K. (1993). Nontarget effects of carbaryl and its hydrolysis product, 1-naphthol, towards Anabaena torulosa. *BIOCHEM MOL BIOL INT; 29* 703-710.
Rejection Code: BACTERIA.

1382. ODDY EA, MANCHEE GR, and COUGHTRIE, M. WH (1997). Assessment of rat liver slices as a suitable model system for studying the simultaneous sulphation and glucuronidation of phenolic xenobiotics. *XENOBIOTICA; 27* 369-377.
Rejection Code: MODELING, IN VITRO, METABOLISM.

1383. OEHME FW and BARRETT DS (1986). VETERINARY GASTROINTESTINAL TOXICOLOGY. *ROZMAN, K. AND O. HANNINEN (ED.). GASTROINTESTINAL TOXICOLOGY. XXIV+606P. ELSEVIER SCIENCE PUBLISHERS B.V.: AMSTERDAM,*

NETHERLANDS (DIST. IN THE USA AND CANADA BY ELSEVIER SCIENCE PUBLISHING CO. INC.: NEW YORK, NEW YORK, USA). ILLUS. ISBN 0-444-90424-7.; 0 (0). 1986. 464-513.
Rejection Code: NO TOX DATA.

1384. Oenfelt, A. and Klasterska, I. (1984). Sister-chromatid exchanges and thioguanine resistance in V79 Chinese hamster cells after treatment with the aneuploidy-inducing agent carbaryl plus or minus S9 mix. *Mutation Research [MUTAT. RES.]. Vol. 125, no. 2, pp. 269-274. 1984.*
Rejection Code: IN VITRO.

1385. Oenfelt, A. and Klasterska, I. (1983). Spindle disturbances in mammalian cells: II. Induction of viable aneuploid/polyploid cells and multiple chromatid exchanges after treatment of V79 Chinese hamster cells with carbaryl. Modifying effects of glutathione and S9. *Mutation Research [MUTAT. RES.]. Vol. 119, no. 3-4, pp. 319-330. 1983.*
Rejection Code: IN VITRO .

1386. Oesch, F., Jerina, D. M., Daly, J. W., Lu, A. Y. H., Kuntzman, R., and Conney, A. H. (1972). A reconstituted microsomal enzyme system that converts naphthalene to trans-1,2-dihydroxy-1,2-dihydronaphthalene via naphthalene-1,2-oxide: Presence of epoxide hydrase in cytochrome P-450 and P-448 fractions. *Archives of Biochemistry and Biophysics* 153: 62-67.
Rejection Code: METABOLISM.

1387. Oesch, Franz, Arand, Michael, Coughtrie, Michael W., Burchell, Brian, and Steinberg, Pablo (1992). The distribution of UDP-glucuronosyltransferases in rat liver parenchymal and nonparenchymal cells. *Biochemical Pharmacology* 43: 731-737.
Rejection Code: IN VITRO.

1388. Ogata, Tokutaro, Okamoto, Iwao, Doi, Hirohisa, Kotani, Eiichi, and Takeya, Tetsuya (2003). SnCl4-mediated oxidative reaction for formation of binaphthoquinone and dinaphthofuran frameworks and its application to natural product synthesis. *Tetrahedron Letters* 44: 2041-2044.
Rejection Code: METHODS.

1389. Ogata, Tokutaro, Okamoto, Iwao, Kotani, Eiichi, and Takeya, Tetsuya (2004). Biomimetic synthesis of the dinaphthofuranquinone violet-quinone, utilizing oxidative dimerization with the ZrO2/O2 system. *Tetrahedron* 60: 3941-3948.
Rejection Code: METHODS.

1390. Ogiu, T., Nishimura, M., Watanabe, F., Ukai, H., Ishii-Ohba, H., Shimada, Y., Tsuji, H., Sakurai, J., and Hino, O. (2000). Absence of Linkage Between Radiosensitivity and the Predisposing Atp7b Gene Mutation for Heritable Hepatitis in the LEC Rat. *Radiat.Res.* 154: 113-116.
Rejection Code: NO TOXICANT.

1391. Ohshita, K., Wada, H., and Nakagawa, G. (1982). Sulfonated 1-(2-pyridylazo)-2-naphthols and 2-(2-pyridylazo)-1-naphthols as spectrophotometric reagents : Determination of nickel. *Analytica Chimica Acta* 140: 291-300.
Rejection Code: METHODS.

1392. OHYA, T. and KANNO, S. (1987). FORMATION OF CYANOGEN CHLORIDE DURING THE CHLORINATION OF WATER CONTAINING AROMATIC COMPOUNDS AND AMMONIUM ION. *JOINT JAPAN-USA CONGRESS OF PHARMACEUTICAL SCIENCES, HONOLULU, HAWAII, USA, DECEMBER 2-7, 1987. J PHARM SCI; 76*

S128.
Rejection Code: ABSTRACT.

1393. OKA, N. and BRIMIJOIN, S. (1993). Altered spectrum of retrogradely transported axonal proteins in p-bromophenylacetylurea neuropathy. *NEUROCHEM RES; 18* 675-680.
Rejection Code: METHODS.

1394. Okamoto, Iwao, Doi, Hirohisa, Kotani, Eiichi, and Takeya, Tetsuya (2001). The aryl-aryl coupling reaction of 1-naphthol with SnCl4 for 2,2'-binaphthol synthesis and its application to the biomimetic synthesis of binaphthoquinone isolated from Plumbago zeylanica. *Tetrahedron Letters* 42: 2987-2989.
Rejection Code: METHODS.

1395. OKEY RW and STENSEL HD (1996). A QSAR-based biodegradability model: A QSBR. *WATER RESEARCH; 30* 2206-2214.
Rejection Code: QSAR.

1396. OKUMURA, D., MELNICOE, R., JACKSON, T., DREFS, C., MADDY, K., and WELLS, J. (1991). PESTICIDE RESIDUES IN FOOD CROPS ANALYZED BY THE CALIFORNIA USA DEPARTMENT OF FOOD AND AGRICULTURE IN 1989 . *WARE, G. W. (ED.). REVIEWS OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY, VOL. 118. IX+158P. SPRINGER-VERLAG NEW YORK INC.: NEW YORK, NEW YORK, USA; BERLIN, GERMANY. ILLUS. ISBN 0-387-97447-4; ISBN 3-540-97447-4.; 0 (0). 1991. 87-152.*
Rejection Code: SURVEY.

1397. Olaifa, J. I., Adenuga, A. O., and Kanu, K. M. (1991). Relative Efficacy of a Neem Formulation and Four Conventional Insecticides in the Protection of Some Arable Crops Against Acridoid Grasshoppers. *Discov.Innov.* 3: 115-121.

; Habitat: T; Effect Codes: PHY,POP

1398. Olsen, M., Pettersson, H., Sandholm, K., Visconti, A., and Kiessling, K. H. (1987). Metabolism of zearalenone by sow intestinal mucosa in vitro. *Food and Chemical Toxicology [FOOD CHEM. TOXICOL.]. Vol. 25, no. 9, pp. 681-683. 1987.*
Rejection Code: IN VITRO.

1399. OMATSU, M. , YOSHIDA, M., TAKAYAMA, C., NISHIMURA, K., and FUJITA, T. (1991). Quantitative structure activity studies of pyrethroids: 28. Type differentiation of action-potential changes in crayfish giant axons caused by substituted benzyl chrysanthemates and pyrethrates. *PESTIC BIOCHEM PHYSIOL; 41* 238-249.
Rejection Code: QSAR.

1400. Onfelt, A. (1983). Spindle disturbances in mammalian cells. I. Changes in the quantity of free sulfhydryl groups in relation to survival and C-mitosis in V79 Chinese hamster cells after treatment with colcemid, diamide, carbaryl and methyl mercury. *Chemico-Biological Interactions [CHEM.-BIOL. INTERACTIONS.]. Vol. 46, no. 2, pp. 201-217. 1983.*
Rejection Code: IN VITRO.

1401. Oomen, P. A., Jobsen, J. A., Romeijn, G., and Wiegers, G. L. (1994). Side-Effects of 107 Pesticides on the Whitefly Parasitoid Encarsia formosa, Studies and Evaluated According to EPPO Guideline No. 142. *Bull.OEPP* 24: 89-107.
Rejection Code: NO DURATION.

1402. Oomen, P. A., Jobsen, J. A., Romeijn, G., and Wiegers, G. L. (1994). Side-Effects of 107

Pesticides on the Whitefly Parasitoid Encarsia formosa, Studies and Evaluated According to EPPO Guideline No. 142. *Bull.OEPP* 24: 89-107.
Rejection Code: NO DURATION.

1403. Oomen, P. A., Jobsen, J. A., Romeijn, G., and Wiegers, G. L. (1994). Side-Effects of 107 Pesticides on the Whitefly Parasitoid Encarsia formosa, Studies and Evaluated According to EPPO Guideline No. 142. *Bull.OEPP* 24: 89-107.
Rejection Code: NO DURATION.

1404. Orejuela, Eva and Silva, Manuel (2003). Monitoring some phenoxyl-type N-methylcarbamate pesticide residues in fruit juices using high-performance liquid chromatography with peroxyoxalate-chemiluminescence detection. *Journal Of Chromatography. A* 1007: 197-201.
Rejection Code: NO TOX DATA/METHODS.

1405. OSBORNE MP (1986). INSECT NEUROSECRETORY CELLS STRUCTURAL AND PHYSIOLOGICAL EFFECTS INDUCED BY INSECTICIDES AND RELATED COMPOUNDS. *FORD, M. G., ET AL. (ED.). ELLIS HORWOOD SERIES IN BIOMEDICINE: NEUROPHARMACOLOGY AND PESTICIDE ACTION; NEUROTOX '85, BATH, ENGLAND, 1985. 512P. VCH PUBLISHERS, INC.: NEW YORK, NEW YORK, USA; WEINHEIM, WEST GERMANY; ELLIS HORWOOD LTD.: CHICHESTER, ENGLAND (DIST. IN THE USA AND CANADA BY VCH PUBLISHERS: DEERFIELD BEACH, FLORIDA, USA) ILLUS. ISBN 0-89573-424-9; ISBN 3-527-26340-3.; 0 (0). 1986. 203-243.*
Rejection Code: IN VITRO.

1406. Ostlie, K. R. (1992). Insecticide Performance Against First-Generation European Corn Borer-Liquids vs Granules, 1991. *In: A.K.Burditt,Jr.(Ed.), Insecticide and Acaricide Tests, Volume 17, Entomol.Soc.of Am., Lanham, MD* 215-216.

; Habitat: T; Effect Codes: POP

1407. Otani, Genji, Abou-El-Makarem, Mahmud M., and Walter Bock, Karl (1976). UDP-glucuronyltransferase in perfused rat liver and in microsomes--III. Effects of galactosamine and carbon tetrachloride on the glucuronidation of 1-naphthol and bilirubin. *Biochemical Pharmacology* 25: 1293-1297.
Rejection Code: METABOLISM, IN VITRO.

1408. Otsuka, Tsuyoshi, Okamoto, Iwao, Kotani, Eiichi, and Takeya, Tetsuya (2004). Efficient oxidative dimerization of 1-naphthols to 2,2'-binaphthyls with dioxygen mediated by semiconductors. *Tetrahedron Letters* 45: 2643-2647.
Rejection Code: METHODS.

1409. OWENS RA, KUO DC, and BJORNSON RM (1986). PROTECTION OF ESCHERICHIA-COLI AND SALMONELLA-TYPHIMURIUM BY MICROMOLAR LEVELS OF EXOGENOUS REDUCED GLUTATHIONE. *SEVENTEENTH ANNUAL MEETING OF THE ENVIRONMENTAL MUTAGEN SOCIETY, BALTIMORE, MD., USA, APR. 9-13, 1986. ENVIRON MUTAGEN; 8* 63.
Rejection Code: BACTERIA.

1410. OWUSU EO, HORIIKE, M., and HIRANO, C. (1996). Inhibition by insecticides of partially purified carboxylesterase from Aphis gossypii (Homoptera: Aphididae). *JOURNAL OF ECONOMIC ENTOMOLOGY; 89* 307-310.
Rejection Code: IN VITRO.

1411. OZRETIC, B. and KRAJNOVIC-OZRETIC, M. (1992). Esterase heterogeneity in mussel Mytilus galloprovincialis: Effects of organophosphate and carbamate pesticides in vitro. *COMP BIOCHEM PHYSIOL C COMP PHARMACOL TOXICOL; 103* 221-225.
Rejection Code: IN VITRO.

1412. Pacifici, G. M., Davies, D. S., Whyte, C., and Boobis, A. R. (1982). Tissue differences in the ontogeny of inducibility of drug-metabolizing enzymes by 3-methylcholanthrene in the rabbit. *Xenobiotica. Vol. 12, no. 9, pp. 591-598. 1982.*
Rejection Code: IN VITRO.

1413. Pacioni, Natalia L. and Veglia, Alicia V. (2003). Determination of carbaryl and carbofuran in fruits and tap water by [beta]-cyclodextrin enhanced fluorimetric method. *Analytica Chimica Acta* 488: 193-202.
Rejection Code: METHODS/NO TOX DATA/FOOD.

1414. Pacioni, Natalia L. and Veglia, Alicia V. (2003). Determination of carbaryl and carbofuran in fruits and tap water by [beta]-cyclodextrin enhanced fluorimetric method. *Analytica Chimica Acta* 488: 193-202.
Rejection Code: METHODS.

1415. Padhy, R N (2001). Monitoring of chemical fertilizers on toxicity of two carbamate insecticides to the cyanobacterium Anabaena PCC 7120. *Microbios* 106: 165-175.
Rejection Code: BACTERIA/IN VITRO.

1416. PAGE BD, CONACHER, H. BS, SALMINEN, J., NIXON GR, RIEDEL, G., MORI, B., GAGNON, J., and BROUSSEAU, R. (1993). Survey of bottled drinking water sold in Canada: Part 2. Selected volatile organic compounds. *J AOAC (ASSOC OFF ANAL CHEM) INT; 76 (1). 1993. 26-31.*
Rejection Code: SURVEY.

1417. Pal, A., Acharya, D., Saha, D., and Dhar, T. K. (2004). Development of a Membrane-Based Immunofiltration Assay for the Detection of T-2 Toxin. *Analytical Chemistry (Washington) [Anal. Chem. (Wash.)]. Vol. 76, no. 14, pp. 4237-4240. 15 Jul 2004.*
Rejection Code: METHODS.

1418. Palecek, E., Kizek, R., Havran, L., Billova, S., and Fojta, M. (2002). Electrochemical enzyme-linked immunoassay in a DNA hybridization sensor. *Analytica Chimica Acta* 469: 73-83.
Rejection Code: METHODS.

1419. Pandey, A. , Hassen, A. M., Benedict, D. R., and Fitzpatrick, D. W. (1990). Effect of UDP-glucuronyltransferase induction on zearalenone metabolism. *Toxicology Letters* 51: 203-211.
Rejection Code: METABOLISM.

1420. Panigrahy, K. C. and Padhy, R. N. *. (2000). Toxicity of carbamate pesticides to cells, heterocysts and akinetes of the cyanobacterium Cylindrospermum sp. *Arch. Hydrobiol. (Suppl.) (Algol. Stud.). Vol. 134, pp. 95-115. 2000.*
Rejection Code: IN VITRO.

1421. Papathakis, M. L., Feng, H. M., and Lee, S. M. (1990). ENZYME INHIBITION ASSAY TO SCREEN N METHYLCARBAMATE PESTICIDE RESIDUES IN FRUITS AND VEGETABLES. *200th American Chemical Society National Meeting, Washington, D.c., Usa, August 26-31, 1990. Abstr Pap Am Chem Soc* 200 : Agro 62.
Rejection Code: HUMAN HEALTH.

1422. Parafita, M. A. and Fernandez-Otero, P. (1984). The interaction of carbaryl with the metabolism of isolated hepatocytes: II. Effect on gluconeogenesis. *General Pharmacology [GEN. PHARMACOL.]. Vol. 15, no. 4, pp. 333-337. 1984.*
Rejection Code: IN VITRO.

1423. Pardini, R S, Heidker, J C, Baker, T A, and Payne, B (1980). Toxicology of various pesticides and their decomposition products on mitochondrial electron transport. *Archives Of Environmental Contamination And Toxicology* 9: 87-97.
Rejection Code: IN VITRO.

1424. PAREEK BL and KAVADIA VS (1990). RESIDUES OF SOME INSECTICIDES ON ROUND GOURD. *INDIAN J PLANT PROT;* 18: 281-283.
Rejection Code: NO TOX DATA.

1425. Paris, D. F., Lewis, D. L., Barnett, J. T. Jr., and Baughman, G. L. (1975). Microbial Degradation and Accumulation of Pesticides in Aquatic Systems. *EPA-660/3-75-007, U.S.EPA, Corvallis, OR* 46 p.

; Habitat: A; Effect Codes: GRO

1426. Paris, D. F., Lewis, D. L., Barnett, J. T. Jr, and Baughman, G. L. (1975). Microbial degradation and accumulation of pesticides in aquatic systems.
Rejection Code: FATE.

1427. Paris, D. F., Lewis, D. L., Barnett, J. T. Jr, and Baughman, G. L. (1975). Microbial degradation and accumulation of pesticides in aquatic systems.
Rejection Code: BACTERIA.

1428. Park, B. K. and Leck, J. B. (1982). A Comparison of Vitamin K Antagonism by Warfarin, Difenacoum and Brodifacoum in the Rabbit. *Biochem.Pharmacol.* 31: 3635-3639.
Rejection Code: MIXTURE.

1429. PARKE DV, DHAMI, M. SI, and AFZAL, M. (1997). The effect of nutrition on chemical toxicity. *DRUG METABOLISM AND DRUG INTERACTIONS; 13* 161-193.
Rejection Code: HUMAN HEALTH.

1430. Parris, J. T., Carmichael, W. W., Jones, S. B., International Association of Theoretical and Applied Limnology, (v.p.), and Williams, W. D. (ed) (2001). In vitro inhibition of rainbow trout (Oncorhynchus mykiss) brain cholinesterase activity by anatoxin-a(s), a cyanobacterial neurotoxin: a comparison with dichlorvos and carbaryl.
Rejection Code: IN VITRO.

1431. Passy, Sophia I., Bode, Robert W., Carlson, Douglas M., and Novak, Margaret A (2004). Comparative environmental assessment in the studies of benthic diatom, macroinvertebrate, and fish communities. *International Review of Hydrobiology* 89: 121-138.
Rejection Code: REVIEW,MODELING.

1432. Patel, B. V. and Desai, S. G. (Influence of insecticides on microbial oxidation of elemental sulfur. 12: 32-6 CODEN: CPECDM; ISSN: 0379-0436.
Rejection Code: NO SPECIES.

1433. PATERSON MJ, MUIR, D. CG, ROSENBERG, B., FEE EJ, ANEMA, C., and FRANZIN, W. (1998). Does lake size affect concentrations of atmospherically derived polychlorinated biphenyls in water, sediment, zooplankton, and fish? *CANADIAN JOURNAL OF*

FISHERIES AND AQUATIC SCIENCES; 55 (3). 1998. 544-553. AB - BIOSIS COPYRIGHT: BIOL ABS. Concentrations of 90 polychlorinated biphenyl (PCB) congeners were determined in water, surface sediment, zooplankton, and fish collected from eight remote lakes in northwestern Ontario. The lakes vary in surface area from 0.2 to 4848 km2 and receive PCBs only from atmospheric deposition. Systematic differences with lake size in concentrations of SIGMAPCBs or in congener distributions were not detected in any of the sample sets, except sediments. Concentrations of SIGMAPCBs in surface sediments increased in the largest lakes when expressed on an organic carbon basis because carbon content decreased with lake size. In general, there were few strong correlations among PCB concentrations in water, sediment, or biota and physical, chemical, or biotic conditions at the time of sampling. There was no strong biomagnification of PCBs up the food chain from plankton to piscivorous fish. The results of this study are surprising because many factors that are thought to affect PCB.
Rejection Code: SURVEY.

1434. Patil, N. M., Ghule, B. D., Dhumal, V. S., and Deokar, A. B. (1992). Losses in Seed Yield of Sesamum Caused by the Major Insect-Pests. *J.Maharashtra Agric.Univ.* 17: 479.
Rejection Code: MIXTURE.

1435. Patrick, S. (2004). Marine Invertebrate Cholinesterases: Utilization as Biomarkers of Pesticide Contamination. *Toxicology* 1: 145-151.
Rejection Code: REVIEW.

1436. Patterson, H. H., Bachman, J., and Kanan, S. (1998). KINETICS AND THE INFLUENCE OF DISSOLVED ORGANIC MATTER ON THE PHOTODECOMPOSITION OF THE CARBAMATE PESTICIDES CARBOFURAN. *216th National Meeting of the American Chemical Society, Boston, Massachusetts, Usa, August 23-27, 1998. Abstracts of Papers American Chemical Society* 216 : Envr 55.
Rejection Code: FATE/ABSTRACT.

1437. PATTERSON HH, BACHMAN, J., and KANAN, S. (1998). KINETICS AND THE INFLUENCE OF DISSOLVED ORGANIC MATTER ON THE PHOTODECOMPOSITION OF THE CARBAMATE PESTICIDES CARBOFURAN. *216TH NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY, BOSTON, MASSACHUSETTS, USA, AUGUST 23-27, 1998. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 216* ENVR 55.
Rejection Code: FATE.

1438. Paul, H., Illing, A., and Benford, Diane (1976). Observations on the accessibility of acceptor substrates to the active centre of UDP-glucuronosyltransferase in vitro. *Biochimica et Biophysica Acta (BBA) - Enzymology* 429: 768-779.
Rejection Code: IN VITRO.

1439. Paulson, G. D., Zaylskie, R. G., Zehr, M. V., Portnoy, C. E., and Feil, V. J. (1970). Metabolites of Carbaryl (1-Naphthyl Methylcarbamate) in Chicken Urine. *J.Agric.Food Chem.* 18: 110-115 .
Rejection Code: METABOLISM.

1440. PAYAN JP, BEYDON, D., FABRY JP, BRONDEAU MT, BAN, M., and DE CEAURRIZ J (1993). Urinary thiodiglycolic acid and thioether excretion in male rats dosed with 1,2-dichloroethane. *JOURNAL OF APPLIED TOXICOLOGY; 13* 417-422.
Rejection Code: METABOLISM.

1441. Pekas, J. C. (1983). Intestinal metabolism and absorption of carbaryl studied with a portal fistula. *Pesticide Biochemistry and Physiology [PESTIC. BIOCHEM. PHYSIOL.]. Vol. 19, no. 1, pp. 36-43. 1983.*

Rejection Code: METABOLISM.

1442. Pekas, J. C. (1984). Intestinal uptake, metabolism, and transport of naphthol: In vitro capacity, requirements, and inhibition. *Pesticide Biochemistry and Physiology [PESTIC. BIOCHEM. PHYSIOL.]. Vol. 21, no. 3, pp. 394-402. 1984.*
Rejection Code: IN VITRO.

1443. Pelsy, Frederique, Leroux, Pierre, and Heslot, Henri (1987). Properties of an Aspergillus nidulans propanil hydrolase. *Pesticide Biochemistry and Physiology* 27: 182-188.
Rejection Code: BACTERIA.

1444. Pemberton, R. M., Hart, J. P., and Mottram, T. T. (2001). An electrochemical immunosensor for milk progesterone using a continuous flow system. *Biosensors and Bioelectronics* 16: 715-723 .
Rejection Code: METHODS.

1445. Pemberton, R. M., Hart, J. P., Stoddard, P., and Foulkes, J. A. (1999). A comparison of 1-naphthyl phosphate and 4 aminophenyl phosphate as enzyme substrates for use with a screen-printed amperometric immunosensor for progesterone in cows' milk. *Biosensors and Bioelectronics* 14: 495-503.
Rejection Code: METHODS.

1446. PENNSYLVANIA ACADEMY OF SCIENCE USA (1999). 75th Annual Meeting of the Pennsylvania Academy of Science (Pocono Manor, Pennsylvania, USA; April 9-11, 1999). *JOURNAL OF THE PENNSYLVANIA ACADEMY OF SCIENCE; 72* 148-188.
Rejection Code: ABSTRACT.

1447. PENUELA GA and BARCELO, D. (1998). Photosensitized degradation of organic pollutants in water: Processes and analytical applications. *TRENDS IN ANALYTICAL CHEMISTRY; 17* 605-612.
Rejection Code: FATE.

1448. Perez, J. P. Hervas, Lopez-Cabarcos, E., and Lopez-Ruiz, B. (2006). The application of methacrylate-based polymers to enzyme biosensors. *Biomolecular Engineering* 23: 233-245.
Rejection Code: METHODS.

1449. Perez-Ruiz, Tomas, Lozano, Carmen Martinez, Tomas, Virginia, and Martin, Jesus (2003). Flow injection chemiluminescence determination of carbaryl using photolytic decomposition and photogenerated tris (2,2'-bipyridyl)ruthenium(III). *Analytica Chimica Acta* 476: 141-148.
Rejection Code: METHODS.

1450. Peschek, G. A. (1979). Nitrate and Nitrite Reductase and Hydrogenase in Anacystis nidulans Grown in Fe- and Mo-Deficient Media. *FEMS (Fed.Eur.Microbiol.Soc.) Microbiol.Lett.* 6: 371-374.
Rejection Code: MIXTURE.

1451. Peshney, N. L. (1990). Compatibility of Fungicides with Some Insecticides with Reference to Fungitoxicity and Phytotoxicity. *PKV (Punjabrao Krishi Vidyapeeth) Res.J.* 14: 35-37.
Rejection Code: MIXTURE.

1452. PESHNEY NL (1990). Compatibility of fungicides with some insecticides with reference to fungitoxicity and phytotoxicity. *PKV (PUNJABRAO KRISHI VIDYAPEETH) RES J; 14* 35-37.

Rejection Code: MIXTURE.

1453. Peter, J., Ali, A. S., and Ali, S. A. (1996). Effect of Certain Phenolic Compounds on the Isolated Scale Melanophores of the Fish, Channa punctatus. *Pigment Cell Res.* 68 (No. 188).
Rejection Code: ABSTRACT/IN VITRO.

1454. Peterson, C. J. and Rebertus, A. J. (1997). Tornado damage and initial recovery in three adjacent, lowland temperate forests in Missouri. *Journal of Vegetation Science, 8 (4) pp. 559-564, 1997*.
Rejection Code: SURVEY, NO TOX DATA.

1455. Peterson, Chris J. (2000). Catastrophic wind damage to North American forests and the potential impact of climate change. *The Science of The Total Environment* 262: 287-311.
Rejection Code: SURVEY.

1456. Peterson, Chris J. (2000). Damage and recovery of tree species after two different tornadoes in the same old growth forest: a comparison of infrequent wind disturbances. *Forest Ecology and Management* 135: 237-252.
Rejection Code: NO TOX DATA.

1457. Peterson, Chris J. and Pickett, S. T. A. (1991). Treefall and resprouting following catastrophic windthrow in an old-growth hemlock-hardwoods forest. *Forest Ecology and Management* 42: 205-217.
Rejection Code: NO TOX DATA.

1458. Petrola, R., Poppius, K., Hakkarainen, L., and Makitie, O. (1978). The stability sequence of the trivalent rare earth chelates of 2-nitroso-1-naphthol-8-sulphonic acid in aqueous solution. *Analytica Chimica Acta* 99: 393-396.
Rejection Code: NO TOX DATA.

1459. Pham, Mai-Anh, Magdalou, Jacques, Totis, Muriel, Fournel-Glgleux, Sylvie, Siest, Gerard, and Hammock, Bruce D. (1989). Characterization of distinct forms of cytochromes P-450, epoxide metabolizing enzymes and UDP-glucuronosyltransferases in rat skin. *Biochemical Pharmacology* 38: 2187-2194.
Rejection Code: METABOLISM, IN VITRO.

1460. Phillips, P. J., Eckhardt, D. A., Freehafer, D. A., Wall, G. R., and Ingleston, H. H. (2002). Regional patterns of pesticide concentrations in surface waters of New York in 1997. *Journal of the American Water Resources Association [J.Am.Water Resour.Assoc.].vol.38* of the American Water Resources Association [J. Am. Water Resour. Assoc.]. vol. 38888, no. 3, pp. 731-746. Jun 2002.: 731-746.
Rejection Code: NO SPECIES.

1461. Phillips, P. J., Eckhardt, D. A., Freehafer, D. A., Wall, G. R., and Ingleston, H. H. (2002). Regional patterns of pesticide concentrations in surface waters of New York in 1997. *Journal of the American Water Resources Association [J.Am.Water Resour.Assoc.].vol.38* of the American Water Resources Association [J. Am. Water Resour. Assoc.]. vol. 38888, no. 3, pp. 731-746. Jun 2002.: 731-746.
Rejection Code: NO SPECIES.

1462. Phillips, Patrick J. and Bode, Robert W (2004). Pesticides in surface water runoff in south-eastern New York State, USA: Seasonal and stormflow effects on concentrations. *Pest Management Science* 60: 531-543.
Rejection Code: SURVEY.

1463. Phillips, Patrick J., Eckhardt, David A., Freehafer, Douglas A., Wall, Gary R., and Ingleston, Hannah H (2002). Regional patterns of pesticide concentrations in surface waters of New York in 1997. *Journal of the American Water Resources Association* 38: 731-745.
Rejection Code: METHODS, NO TOX DATA.

1464. Phipps, G. L., Harden, M. J., Leonard, E. N., Roush, T. H., Spehar, D. L., Stephan, C. E., Pickering, Q. H., and Buikema, A. L. J. (1984). Effects of Pollution on Freshwater Organisms. *J.Water Pollut.Control Fed.* 56: 725-758.
Rejection Code: REFS CHECKED/REVIEW.

1465. PILLMOOR JB, WRIGHT, K., and TERRY AS (1993). Natural products as a source of agrochemicals and leads for chemical synthesis. *PESTICIDE SCIENCE; 39* 131-140.
Rejection Code: BIOLOGICAL TOXICANT.

1466. Pitts, J. (1992). Control of Shrimp Infestation on Oyster Beds. *43rd Annu.Meet.of the Pacific Coast Oyster Growers Assoc.and the Natl.Shellfish.Assoc., Sept.17-19, 1992, J.Shellfish Res.* 11: 555.
Rejection Code: ABSTRACT/NO TOX DATA.

1467. Pitts, J. L. (1993). An Integrated Pest Management Plan for the Control of Burrowing Shrimp Populations on Oyster Beds in Southwestern Washington State. *J.Shellfish Res.* 12: 147.
Rejection Code: ABSTRACT.

1468. Plaut, H. N. and Mansour, F. A. (1981). Effects of Photostable Pyrethroids on Spider Mites (Tetranychidae). *Phytoparasitica* 9: 218 (ABS).
Rejection Code: ABSTRACT.

1469. Pogacnik, L. and Franko, M. (1999). Determination of organophosphate and carbamate pesticides in spiked samples of tap water and fruit juices by a biosensor with photothermal detection. *Biosensors & Bioelectronics* 14 : 569-578.
Rejection Code: METHODS/NO TOX DATA/FOOD.

1470. POGGI-VARALDO HM, ESTRADA-VAZQUEZ, C., and RINDERKNECHT-SEIJAS, N. (1998). AGRICULTURAL WASTES. *WATER ENVIRONMENT RESEARCH; 70* 601-620.
Rejection Code: EFFLUENT.

1471. POKHARKAR DS and CHAUDHARY SD (97). **<04 Article Title>.** *INDIAN JOURNAL OF PLANT PROTECTION; 25* <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1472. POLICANSKI, D. (1991). ECOLOGICAL KNOWLEDGE AND ENVIRONMENTAL PROBLEM SOLVING. *FOURTH CHEMICAL CONGRESS OF NORTH AMERICA, NEW YORK, NEW YORK, USA, AUGUST 25-30, 1991. ABSTR PAP AM CHEM SOC; 202* ENVR 63.
Rejection Code: NO TOX DATA.

1473. POLLARD GV (1991). Constraints to IPM development and a strategy for management of tomato and cabbage pests in Trinidad, West Indies. *TROP PEST MANAGE; 37* 59-62.
Rejection Code: SURVEY.

1474. POMPELLA, A., ROMANI, A., FULCERI, R., BENEDETTI, A., and COMPORTI, M. (1988). 4 HYDROXYNONENAL AND OTHER LIPID PEROXIDATION PRODUCTS ARE FORMED IN MOUSE LIVER FOLLOWING INTOXICATION WITH ALLYL ALCOHOL. *BIOCHIM BIOPHYS ACTA; 961* 293-298.

Rejection Code: METABOLISM.

1475. PONTIUS FW (1997). Future directions in water quality regulations. *AMERICAN WATER WORKS ASSOCIATION JOURNAL; 89* 40-54.
Rejection Code: MODELING.

1476. PONTIUS FW (1998). New horizons in federal regulation. *AMERICAN WATER WORKS ASSOCIATION JOURNAL; 90* 38-50.
Rejection Code: HUMAN HEALTH.

1477. Poor, Maria L., Santa, Paula F., and Sittampalam, G. Sitta (1988). Visualization of multiple protein bands on the same nitrocellulose membrane by double immunoblotting. *Analytical Biochemistry* 175: 191-195.
Rejection Code: METHODS.

1478. Poortinga, A. M. and De Kok, L. J. (2000). Sulfate and Thiol Levels in Roots and Shoot of Sulfur-Deprived Spinach Plants as Affected by High Pedospheric Sulfate Levels. *Phyton* 40: 95-102.
Rejection Code: NO TOX DATA.

1479. POPRAWSKI TJ and MAJCHROWICZ, I. (1995). Effects of herbicides on in vitro vegetative growth and sporulation of entomopathogenic fungi. *CROP PROTECTION; 14* 81-87.
Rejection Code: IN VITRO.

1480. Portela, D. C., Pereira, I. M. F., Paiga, P., Delerue-Matos, C., and Vaz MCVF (2003). Amperometric and spectrophotometric determination of carbaryl in natural waters and commercial formulations. *Analytical and Bioanalytical Chemistry [Anal. Bioanal. Chem]. Vol. 377, no. 2, pp. 356-361. Sep 2003.*
Rejection Code: METHODS.

1481. Potter, D. A. (1993). Pesticide and Fertilizer Effects on Beneficial Invertebrates and Consequences for Thatch Degradation and Pest Outbreaks in Turfgrass. *In: K.D.Racke and A.R.Leslie (Eds.), ACS Symp.Ser.No.522, Pesticides in Urban Environments: Fate and Significance, 203rd Natl.Meet.of the Am.Chem.Soc., Apr.5-10, 1992, San Francisco, CA* 331-343.
Rejection Code: REVIEW/FATE.

1482. Powell, Marjorie C. and Bunt, A. C. (1978). The effect of temperature and light on flower development in Pelargonium x domesticum. *Scientia Horticulturae* 8: 75-79.
Rejection Code: NO TOXICANT.

1483. PRAMAURO, E., PREVOT AB, VINCENTI, M., and BRIZZOLESI, G. (1997). Photocatalytic degradation of carbaryl in aqueous solutions containing TiO2 suspensions. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 31* 3126-3131.
Rejection Code: FATE.

1484. Prevot, A. Bianco, Pramauro, E., and de la Guardian, M. (1999). Photocatalytic degradation of carbaryl in aqueous TiO2 suspensions containing surfactants. *Chemosphere* 39: 493-502.
Rejection Code: FATE.

1485. PRITCHARD PH (1988). FATE OF POLLUTANTS. *J WATER POLLUT CONTROL FED; 60* 983-994.
Rejection Code: FATE.

1486. Proctor, N. H., Moscioni, A. D., and Casida, J. E. (1976). Chicken Embryo Nad Levels Lowered by Teratogenic Organophosphorus and Methylcarbamate Insecticidesag.

Biochem.Pharmacol. 25: 757-762.

; Habitat: T; Effect Codes: GRO

1487. PROVINI, A., GALASSI, S., GUZZELLA, L., and VALLI, G. (1995). PCB profiles in sediments of lakes Maggiore, Como and Garda (Italy). *MARINE AND FRESHWATER RESEARCH; 46* 129-136.
Rejection Code: SURVEY.

1488. Przedziecki, Z., Bankowska, J., Komorowska-Malewska, W., and Janicka, T. (1968). Studies on the Short-Period Toxicity of Carbaryl [Badanie Toksycznosci Krotkookresowej Karbarylu]. *Rocz.Panstw.Zakl.Hig.* 19: 675-684 (POL) (ENG ABS).
Rejection Code: NON-ENGLISH.

1489. Pullen, J. S. H. and Rainbow, P. S. (1991). The Composition of Pyrophosphate Heavy Metal Detoxification Granules in Barnacles. *J.Exp.Mar.Biol.Ecol.* 150: 249-266.
Rejection Code: NO TOXICANT.

1490. Purohit, M. S., Shah, A. H., and Raman, S. (1988). ECONOMICS OF THE CHEMICAL CONTROL OF RICE STEM BORER TRYPORYA-INCERTULAS WLK PYRALIDAE LEPIDOPTERA. *Pesticides (Bombay)* 22 : 7-8.
Rejection Code: NO TOX DATA.

1491. PYLYPIW, H. M. JR, MATTINA, M. JI, AGARWAL, V., and HANKIN, L. (1992). Pesticides and alcohol in imported and domestic wine sold in Connecticut. *J FOOD PROT; 55* 220-221.
Rejection Code: HUMAN HEALTH.

1492. Pyy, L., Makela, M., Hakala, E., Kakko, K., Lapinlampi, T., Lisko, A., Yrjanheikki, E., and Vahakangas, K. (1997). Ambient and biological monitoring of exposure to polycyclic aromatic hydrocarbons at a coking plant: Biological Monitoring in Occupational and Environmental Health. *Science of The Total Environment* 199: 151-158.
Rejection Code: HUMAN HEALTH.

1493. QATIBI AI, BENNISSE, R., JANA, M., and GARCIA J-L (1998). Anaerobic degradation of glycerol by Desulfovibrio fructosovorans and D. carbinolicus and evidence for glycerol-dependent utilization of 1,2-propanediol. *CURRENT MICROBIOLOGY; 36* 283-290.
Rejection Code: BACTERIA.

1494. Qiu, W., Watkins, G. A., Sobolik, C. J., and Shearer, S. A. (1998). A feasibility study of direct injection for variable-rate herbicide application. *Transactions of the American Society of Agricultural Engineers, 41 (2) pp. 291-299, 1998.*
Rejection Code: MODELING.

1495. QUAIL MA, ARNOLDI, A., MOORE DJ, GOOSEY MW, and KELLY SL (1993). Ketoconazole-mediated growth inhibition in Botrytis cinerea and Saccharomyces cerevisiae. *PHYTOCHEMISTRY (OXF); 32* 273-280.
Rejection Code: BACTERIA.

1496. Quarles, J. M., Sega, M. W., Schenley, C. K., and Tennant, R. W. (1979May). Rapid screening for chemical carcinogens: transforming activity of selected nitroso compounds detected in a transplacental host-mediated culture system. *Natl Cancer Inst Monogr 1979 May;(51):257-63.* 257-63.
Rejection Code: IN VITRO.

1497. QUILLARDET, P., DE BELLECOMBE C, and HOFNUNG, M. (1985). THE SOS CHROMOTEST A COLORIMETRIC BACTERIAL ASSAY FOR GENOTOXINS VALIDATION STUDY WITH 83 COMPOUNDS. *MUTAT RES; 147* 79-96.
Rejection Code: BACTERIA.

1498. QUIN FS and EDWARDS-JONES, G. (1997). THE USE OF IMPACT RANKING INDICES IN THE REGULATION OF PESTICIDE USE THE CASE OF TAXES. *BRITISH CROP PROTECTION COUNCIL. THE 1997 BRIGHTON CROP PROTECTION CONFERENCE: WEEDS, VOLS. 1-3; INTERNATIONAL CONFERENCE, BRIGHTON, ENGLAND, UK, NOVEMBER 17-20, 1997. XXIV+442P.(VOL. 1); XXIV+451P.(VOL. 2); XXIV+307P.(VOL. 3) BRITISH CROP PROTECTION COUNCIL (BCPC): FARNHAM, ENGLAND, UK. ISBN 1-901396-45-2(SET); ISBN 1-901396-46-0(VOL. 1); ISBN 1-901396-47-9(VOL. 2); ISBN 1-901396-48-7(VOL. 3).; 0 (0). 1997. 469-476.*
Rejection Code: SURVEY.

1499. Quintero, M. C., Silva, M., and Perez-Bendito, D. (1991). Enzymatic determination of N-methylcarbamate pesticides at the nanomolar level by the stopped-flow technique. *Talanta* 38 : 1273-1278.
Rejection Code: METHODS.

1500. RAABE OG (1996). RELATIVE BIOLOGICAL EFFECTIVENESS FOR INDUCTION OF CANCER BY PROTRACTED ALPHA VERSUS BETA INTERNAL IRRADIATION. *FORTY-FIRST ANNUAL MEETING OF THE HEALTH PHYSICS SOCIETY, SEATTLE, WASHINGTON, USA, JULY 21-25, 1996. HEALTH PHYSICS; 70* S8.
Rejection Code: HUMAN HEALTH.

1501. Racke, K. D. and Coats, J. R. (1988). ENHANCED DEGRADATION AND THE COMPARATIVE FATE OF CARBAMATE INSECTICIDES IN SOIL. *J Agric Food Chem* 36 : 1067-1072.
Rejection Code: FATE.

1502. Rai, H. S., Tiwari, R. C., and Shrivastava, R. N. (1995). Comparative Efficacy of Insecticides Against Creontiades sp., a Pest of Niger in Madhya Pradesh. *Geobios* 22: 187-190.

; Habitat: T; Effect Codes: MOR,POP

1503. Raimundo, R. L. G., Guimara(tilde)es, J. r. PR, Almeida-Neto, M., and Pizo, M. A. (2004). The influence of fruit morphology and habitat structure on ant-seed interactions: A study with artificial fruits. *Sociobiology, 44 (2) pp. 261-270, 2004.*
Rejection Code: NO TOX DATA.

1504. Rainbow, P. S. (1987). Heavy Metals in Barnacles. *In: A.J.Southward (Ed.), Crustacean Issues, 5.Barnacle Biology, Rotterdam, Netherlands* 405-417.
Rejection Code: REVIEW.

1505. RAJ HG, SAXENA, M., ALLAMEH, A., and MUKERJI KG (1992). METABOLISM OF FOREIGN COMPOUNDS BY FUNGI. *ARORA, D. K., R. P. ELANDER AND K. G. MUKERJI (ED.). HANDBOOK OF APPLIED MYCOLOGY, VOL. 4. FUNGAL BIOTECHNOLOGY. XVII+1114P. MARCEL DEKKER, INC.: NEW YORK, NEW YORK, USA; BASEL, SWITZERLAND. ILLUS. ISBN 0-8247-8501-0.; 0 (0). 1992. 881-904.*
Rejection Code: METABOLISM.

1506. Rajagopal, B. S., Brahmaprakash, G. P., and Sethunathan, N. (1984). Degradation of carbofuran by enrichment cultures and pure cultures of bacteria from flooded soils. *Environmental Pollution Series A, Ecological and Biological* 36: 61-73.

Rejection Code: BACTERIA/FATE.

1507. Rajagopal, B S, Panda, S, and Sethunathan, N (1986). Accelerated degradation of carbaryl and carbofuran in a flooded soil pretreated with hydrolysis products, 1-naphthol and carbofuran phenol. *Bulletin Of Environmental Contamination And Toxicology* 36: 827-832.
Rejection Code: FATE.

1508. RAJAPAKSE, R. HS and JAYASENA KW (1989). Field pest problems of mungbean Vigna radiata in southern region of Sri Lanka. *ENTOMON; 14* 159-164.
Rejection Code: SURVEY.

1509. Rama, M. J. R., Medina, A. R., and Diaz, A. M. (2003). A Simple and Straightforward Procedure for Monitoring Phenol Compounds in Waters by Using UV Solid Phase Transduction Integrated in a Continuous Flow System. *Mikrochimica Acta [Mikrochim. Acta]. Vol. 141, no. 3-4, pp. 143-148. Mar 2003.*
Rejection Code: METHODS.

1510. RAMACHANDRAN, K. and SUBRAMANIAM, B. (1993). POTENTIAL TOXIC ANGIOSPERMS OF ASIA. *TU, A. T. (ED.). TOXIN-RELATED DISEASES: POISONS ORIGINATING FROM PLANTS, ANIMALS AND SPOILAGE. XI+543P. INTERCEPT LTD.: ANDOVER, ENGLAND, UK. ISBN 0-946707-96-0.; 0 (0). 1993. 17-53.*
Rejection Code: NO TOXICANT.

1511. Ramakrishna, C. and Sethunathan, N. (1983). Inhibition of heterotrophic and autotrophic nitrification in bacterial cultures by carbaryl and 1-naphthol. *Journal of Applied Bacteriology* 54: 191-5.
Rejection Code: BACTERIA.

1512. Ramanand, K., Sharmila, M., and Sethunathan, N. (1988). DEGRADATION OF CARBOFURAN AND CARBARYL BY A SUSPENSION FROM A FLOODED SOIL INCUBATED AT 35 DEGREES C AND RETREATED WITH CARBOFURAN. *Proc Indian Acad Sci Plant Sci* 98 : 299-306.
Rejection Code: FATE.

1513. RAMOS TOMBO GM and BELLUS, D. (1991). Chirality and crop protection.
Rejection Code: REVIEW.

1514. RAMRIEZ JA and DAVIS RH (1998). Application of cross-flow microfiltration with rapid backpulsing to wasterwater treatment. *JOURNAL OF HAZARDOUS MATERIALS; 63* 179-197.
Rejection Code: EFFLUENT.

1515. RAO BN and RAMASUBBAIAH, K. (1988). Dissipation of monocrotophos and carbaryl in tomato Lycopersicon lycopersicum L. *INDIAN J ENTOMOL; 50* 209-214 .
Rejection Code: FATE.

1516. Rao, I. G. and Singh, D. K. (2002). Toxic Effect of Single and Binary Treatments of Synthetic and Plant-Derived Molluscicides Against Achatina fulica. *J.Appl.Toxicol.* 22: 211-215.

; Habitat: T; Effect Codes: MOR

1517. Rao, K. R. S. S. (1987). Combined Toxicity of Carbaryl and Phenthoate on Indian Snakehead, Channa punctatus. *In: K.S.Rao and S.Shrivastava (Eds.), Perspectives of Hydrobiology, Symp., Ujjain, India Feb 8-10, 1986* 119-122 (Publ As 11217).

Rejection Code: PUBL AS.

1518. Rao, K. R. S. S. and Rao, K. V. R. (1988). Synergistic Action of Carbaryl and Phenthoate on the Respiratory Metabolism of Channa punctatus (Bloch). *Faseb J.* 2: 1799 (ABS No. 8730).
Rejection Code: ABSTRACT.

1519. RAO, K. R. SS and RAO, K. VR (1989). EFFECT OF CARBARYL AND PHENTHOATE ON PROTEIN METABOLISM IN THE FISH CHANNA-PUNCTATUS BLOCH. *73RD ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, NEW ORLEANS, LOUISIANA, USA, MARCH 19-23, 1989. FASEB (FED AM SOC EXP BIOL) J;* 3: a417.
Rejection Code: ABSTRACT.

1520. Rao, K. S. P., Basha, S. M., and Rao, K. V. R. (1984). Differential Action of Malathion, Carbaryl and BHC on Acetyl-Cholinesterase Activity of a Teleost, Tilapia mossambica (Peters). *J.Environ.Biol.* 5: 241-247.
Rejection Code: NO DURATION.

1521. RAO MR, KANJI VK, and SEKHAR, V. (1999). Pesticide induced changes of nitric oxide synthase in rat brain in vitro. *DRUG AND CHEMICAL TOXICOLOGY AN INTERNATIONAL JOURNAL FOR RAPID COMMUNICATION; 22* 411-420.
Rejection Code: IN VITRO.

1522. Rao, P. S., Roberts, G. H., Pope, C. N., and Ferguson, P. W. (1994). Comparative Inhibition of Rodent and Human Erythrocyte Acetylcholinesterase by Carbofuran and Carbaryl. *Pestic.Biochem.Physiol.* 48: 79-84.
Rejection Code: HUMAN HEALTH/IN VITRO.

1523. Rao, P. S., Roberts, G. H., Pope, C. N., and Ferguson, P. W. (1994). Comparative Inhibition of Rodent and Human Erythrocyte Acetylcholinesterase by Carbofuran and Carbaryl. *Pestic.Biochem.Physiol.* 48: 79-84.
Rejection Code: HUMAN HEALTH/IN VITRO.

1524. RAO, P. SC, HORNSBY AG, and JESSUP RE (1985). INDICES FOR RANKING THE POTENTIAL FOR PESTICIDE CONTAMINATION OF GROUNDWATER. *44TH ANNUAL MEETING OF THE SOIL AND CROP SCIENCE SOCIETY OF FLORIDA, JACKSONVILLE BEACH, FLA., USA, OCT. 23-25, 1984. SOIL CROP SCI SOC FLA PROC; 44* 1-8.
Rejection Code: SURVEY.

1525. Rao, T. N. , Loo, B. H., Sarada, B. V., Terashima, C., and Fujishima, A. (2002). Electrochemical Detection of Carbamate Pesticides at Conductive Diamond Electrodes. *Analytical Chemistry (Washington) [Anal. Chem. (Wash.)]. Vol. 74, no. 7, pp. 1578-1583. 1 Apr 2002.*
Rejection Code: METHODS.

1526. RAPPAPORT SM, MCDONALD TA, and YEOWELL-O'CONNELL, K. (1996). The use of protein adducts to investigate the disposition of reactive metabolites of benzene. *ENVIRONMENTAL HEALTH PERSPECTIVES; 104* 1235-1237.
Rejection Code: METHODS.

1527. RASHID KA and MUMMA RO (1986). SCREENING PESTICIDES FOR THEIR ABILITY TO DAMAGE BACTERIAL DNA. *J ENVIRON SCI HEALTH PART B PESTIC FOOD CONTAM AGRIC WASTES; 21* 319-334.
Rejection Code: BACTERIA.

1528. Rathore, H. S. and Begum, T. (1993). Thin-layer chromatographic behaviour of carbamate pesticides and related compounds. *J Chromatogr* 643 : 321-329.
Rejection Code: METHODS.

1529. Rathore, H. S. and Sharma, R. (1992). Sequential thin layer chromatography of carbaryl and related compounds. *J Liq Chromatogr* 15 : 1703-1717.
Rejection Code: METHODS.

1530. Rathore, H. S., Sharma, R., and Mital, S. (1997). Spot test analysis of pesticides: Detection of carbaryl and mancozeb in water. *Water, Air, & Soil Pollution [WATER, AIR, SOIL POLLUT.]. Vol. 97, no. 3-4, pp. 431-441. Jul 1997.*
Rejection Code: METHODS.

1531. Raturi, S. , Carroll, M. J., and Hill, R. L. (2003). Turfgrass thatch effects on pesticide leaching: A laboratory and modeling study. *Journal of Environmental Quality, 32 (1) pp. 215-223, 2003*.
Rejection Code: FATE.

1532. Rawlins, S. C. and Mansingh, A. (1978). Patterns of Resistance to Various Acaricides in Some Jamaican Populations of Boophilus microplus. *J.Econ.Entomol.* 71: 956-960.

; Habitat: T; Effect Codes: MOR

1533. RAWLINS SC and MANSINGH, A. (1987). A REVIEW OF TICKS AND SCREWWORMS AFFECTING LIVESTOCK IN THE CARIBBEAN. *INSECT SCI APPL; 8* 259-268.
Rejection Code: REVIEW.

1534. RAY, S., PARANJAPE MA, KOENIG, B., PATERSON, G., METCALFE, T., and METCALFE, C. (1999). Polychlorinated biphenyls and other organochlorine compounds in marine zooplankton off the east coast of Newfoundland, Canada. *MARINE ENVIRONMENTAL RESEARCH; 47* 103-116.
Rejection Code: SURVEY.

1535. RAY SK and PODDAR MK (1985). ACTION OF PENTYLENETETRAZOLE ON LONG-TERM CARBARYL INDUCED CHANGE IN HYPOTHALAMIC SEROTONIN. *TENTH MEETING OF THE INTERNATIONAL SOCIETY FOR NEUROCHEMISTRY, RIVA DEL GARDA, ITALY, MAY 19-24, 1985. J NEUROCHEM; 44 (SUPPL.). 1985 (RECD. 1986). S175.*
Rejection Code: ABSTRACT.

1536. Reddy, G. P. V. and Murthy, M. M. K. (1989). Integrated Pest Management in Rice. *Pesticides* 23: 32F-32I .
Rejection Code: NO TOX DATA.

1537. REDDY GK and DHAR SC (1988). STUDIES ON CARBOHYDRATE MOIETIES OF GLYCOPROTEINS IN ESTABLISHED ADJUVANT INDUCED ARTHRITIS. *AGENTS ACTIONS; 25* 63-70.
Rejection Code: NO TOX DATA.

1538. REDDY NR, FLICK GJ, ARGANOSA GC, and YOUNG RW (1991). Composition and pesticide and herbicide residue analysis of fresh and 40-year-old pasteurized blue crab (Callinectes sapidus) meat. *J FOOD PROT; 54* 298-301.
Rejection Code: SURVEY.

1539. REDEGELD FA, HOFMAN GA, and NOORDHOEK, J. (1988). CONJUGATIVE

CLEARANCE OF 1 NAPHTHOL AND DISPOSITION OF ITS GLUCURONIDE AND SULFATE CONJUGATES IN THE ISOLATED PERFUSED RAT KIDNEY. *J PHARMACOL EXP THER; 244* 263-267.
Rejection Code: METABOLISM.

1540. REED BE, MATSUMOTO MR, JENSEN JN, VIADERO, R. JR, and LIN, W. (1998). PHYSICOCHEMICAL PROCESSES. *WATER ENVIRONMENT RESEARCH; 70* 449-473.
Rejection Code: EFFLUENT.

1541. Regan, R. W Sr (1994). Use of SMS as a compost matrix to degrade pesticide residuals. *Compost Science & Utilization* 2 : 56-62.
Rejection Code: FATE/NO TOX DATA.

1542. REGAN, R. W. SR (1994). Use of SMS as a compost matrix to degrade pesticide residuals. *COMPOST SCIENCE & UTILIZATION; 2* 56-62.
Rejection Code: METHODS.

1543. REID WJ (1986). EXTRACTION AND CLEAN-UP OF CONTAMINANTS AND TOXICANTS FROM FOOD FOR MASS SPECTROMETRIC ANALYSIS A LITERATURE REVIEW. *FOOD ADDIT CONTAM; 3* 1-42.
Rejection Code: METHODS.

1544. REINECCIUS, G. (1991). OFF-FLAVORS IN FOODS. *CRIT REV FOOD SCI NUTR; 29* 381-402.
Rejection Code: HUMAN HEALTH.

1545. REINHARD, M., GOODMAN NL, MCCARTY PL, and ARGO DG (1986). Removing trace organics by reverse osmosis using cellulose acetate and polyamide membranes. *AM WATER WORKS ASSOC J; 78* 163-174.
Rejection Code: METHODS.

1546. Reinhoudt, D. N. and Kouwenhoven, C. G. (1974). A novel route for the synthesis of benzo[b]thiepins. *Tetrahedron* 30: 2431-2436.
Rejection Code: METHODS.

1547. Reish, D. J., Kauwling, T. J., Mearns, A. J., Oshida, P. S., Rossi, S. S., Wilkes, F. G., and Ray, M. J. (Marine And Estuarine Pollution.
Rejection Code: SURVEY.

1548. Relyea, R. A. (2005). The impact of insecticides and herbicides on the biodiversity and productivity of aquatic communities. *Ecological Applications [Ecol. Appl.]. Vol. 15, no. 2, pp. 618-627. Apr 2005.*
Rejection Code: SURVEY.

1549. Renglin, A., Haermaelae-Brasken, A. S., Eriksson, J. E., and Oenfelt, A. *. (1999). Mitotic aberrations induced by carbaryl reflect tyrosine kinase inhibition with coincident up-regulation of serine/threonine protein phosphatase activity: implications for coordination of karyokinesis and cytokinesis. *Mutagenesis [Mutagenesis]. Vol. 14, no. 3, pp. 327-333. May 1999.*
Rejection Code: IN VITRO.

1550. RENGLIN, A., OLSSON, A., WACHTMEISTER CA, and ONFELT, A. (1998). Mitotic disturbance by carbaryl and the metabolite 1-naphthol may involve kinase-mediated phosphorylation of 1-naphthol to the protein phosphatase inhibitor 1-naphthylphosphate.

MUTAGENESIS; 13 345-352.
Rejection Code: IN VITRO.

1551. Rennecker, J. L., Marinas, B. J., Owens, J. H., and Rice, E. W. (1999). Inactivation of Cryptosporidium parvum Oocysts with Ozone. *Water Res.* 33: 2481-2488.
Rejection Code: NO DURATION .

1552. RENZI PM and FLYNN JT (1991). ENHANCED THROMBIN-STIMULATED AND ARACHIDONIC ACID-STIMULATED PGE2 PRODUCTION BY RABBIT MICROVASCULAR ENDOTHELIAL CELLS MECS FOLLOWING ENDOTOXIN TREATMENT. *75TH ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, ATLANTA, GEORGIA, USA, APRIL 21-25, 1991. FASEB (FED AM SOC EXP BIOL) J; 5 (6). 1991. A1502.*
Rejection Code: IN VITRO.

1553. RESNICK MA, MAYER VW, and ZIMMERMANN FK (1986). THE DETECTION OF CHEMICALLY INDUCED ANEUPLOIDY IN SACCHAROMYCES-CEREVISIAE AN ASSESSMENT OF MITOTIC AND MEIOTIC SYSTEMS. *MUTAT RES; 167* 47-60.
Rejection Code: METHODS.

1554. Rettich, F. (1980). Residual Toxicity of Wall-Sprayed Organophosphates, Carbamates and Pyrethroids to Mosquito Culex pipiens molestus Forskal. *J.Hyg.Epidemiol.Microbiol.Immunol.* 24: 110-117.

; Habitat: T; Effect Codes: MOR

1555. Rettich, F. (1977). The Susceptibility of Mosquito Larvae to Eighteen Insecticides in Czechoslovakia. *Mosq.News* 37: 252-257.

; Habitat: A; Effect Codes: MOR

1556. RETZINGER, E. J. JR and MALLORY-SMITH, C. (1997). Classification of herbicides by site of action for weed resistance management strategies. *WEED TECHNOLOGY; 11* 384-393.
Rejection Code: NO TOX DATA.

1557. RICHARD MR , FOX ME, and PICK FR (1997). PCB concentrations and congener composition in macrophytes and sediments in the St. Lawrence River near Cornwall, Ontario. *JOURNAL OF GREAT LAKES RESEARCH; 23* 297-306.
Rejection Code: SURVEY.

1558. RICHARDSON, A. and MCDOUGALL GJ (1998). Identification and partial purification of an oxidase from lignifying xylem of Leyland cypress (X Cupressocyparis leylandii). *TREES (BERLIN); 12* 146-152.
Rejection Code: METHODS.

1559. Richter, A. R. and Fuxa, J. R. (1984). Timing, formulation, and persistence of a nuclear polyhedrosis virus and a microsporidium for control of the velvetbean caterpillar (Lepidoptera: Noctuidae) in soybeans. *Journal of Economic Entomology [J. ECON. ENTOMOL.]. Vol. 77, no. 5, pp. 1299-1306. 1984.*
Rejection Code: VIRUS.

1560. RIPPMANN, F. (1990). Hydrophobicity and tumor promoting activity of phorbol esters. *QUANT STRUCT-ACT RELAT; 9* 1-5.
Rejection Code: IN-VITRO.

1561. RITCHIE, A. IM (1997). In situ determination of thermal conductivity of waste rock dump material. AU - TAN Y. *WATER AIR AND SOIL POLLUTION; 98* 345-359.
Rejection Code: EFFLUENT.

1562. Ritchie, Scott A, Long, Sharron, and Montgomery, Brian (2004). Efficacy of methyl bromide fumigation and insecticidal dips against Aedes eggs on lucky bamboo. *Journal Of The American Mosquito Control Association* 20: 283-285.
Rejection Code: MIXTURE.

1563. Ritter, J. K. and Franklin, M. R. (1987). Induction of hepatic oxidative and conjugative drug metabolism in the hamster by N-substituted imidazoles. *Toxicology Letters [TOXICOL. LETT.]. Vol. 36, no. 1, pp. 51-59. 1987.*
Rejection Code: METABOLISM.

1564. RIVIERE JE (1992). DERMAL ABSORPTION AND METABOLISM OF XENOBIOTICS IN FOOD-PRODUCING ANIMALS. *HUTSON, D. H., ET AL. (ED.). ACS SYMPOSIUM SERIES, 503. XENOBIOTICS AND FOOD-PRODUCING ANIMALS: METABOLISM AND RESIDUES; 202ND NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY, NEW YORK, NEW YORK, USA, AUGUST 25-30, 1991. XII+255P. AMERICAN CHEMICAL SOCIETY: WASHINGTON, DC, USA. ISBN 0-8412-2472-2.; 0 (0). 1992. 88-97.*
Rejection Code: HUMAN HEALTH.

1565. Roberts, B. L. and Dorough, H. W. (1984). Relative Toxicities of Chemicals to the Earthworm Eisenia foetida. *Environ.Toxicol.Chem.* 3: 67-78.

1566. Rocchi, P., Perocco, P., Alberghini, W., Fini, A., and Prodi, G. (1980). Effect of Pesticides on Scheduled and Unscheduled DNA Synthesis of Rat Thymocytes and Human Lymphocytes. *Arch.Toxicol.* 45: 101-108.
Rejection Code: IN VITRO.

1567. ROCHE, M., FRELIN, C., BRUNEAU, P., and MEINARD, C. (1985). INTERACTION OF TRALOMETHRIN TRALOCYTHRIN AND RELATED PYRETHROIDS IN SODIUM CHANNELS OF INSECT AND MAMMALIAN NEURONAL CELLS. *PESTIC BIOCHEM PHYSIOL; 24* 306-316.
Rejection Code: IN VITRO.

1568. Rodgers, K. E., Leung, N., Imamura, T., and Devens, B. H. (1986). Rapid in vitro screening assay for immunotoxic effects of organophosphorus and carbamate insecticides on the generation of cytotoxic T-lymphocyte responses. *Pesticide Biochemistry and Physiology* 26: 292-301.
Rejection Code: IN VITRO.

1569. RODRIGUEZ RE, MISRA, M., and KASPRZAK KS (1990). Effects of nickel on catalase activity in vitro and in vivo. *TOXICOLOGY* 63: 45-52.
Rejection Code: MIXTURE, NO COC.

1570. Rodriguez-Sosa, Miriam, Elizondo, Guillermo, Lopez-Duran, Rosa Maria, Rivera, Irma, Gonzalez, Frank J., and Vega, Libia (2005). Over-production of IFN-[gamma] and IL-12 in AhR-null mice. *FEBS Letters* 579: 6403-6410.
Rejection Code: IN VITRO.

1571. Rogers, Kim R. and Mishra, Nirankar N. (2000). Highly sensitive assay for anticholinesterase compounds using 96 well plate format. 40: 782-784 .

Rejection Code: IN VITRO.

1572. ROGGE WF, HILDEMANN LM, MAZUREK MA, CASS GR, and SIMONEIT, B. RT (1997). Sources of fine organic aerosol. 8. Boilers burning no. 2 distillate fuel oil. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 31* 2731-2737.
Rejection Code: SURVEY, NO TOX DATA.

1573. Roma, Giorgio, Di Braccio, Mario, Grossi, Giancarlo, Marzano, Cristina, Simonato, Morena, and Bordin, Franco (1998). Pyran derivatives XX. 2-Aminochromone benzo-fused derivatives with antiproliferative properties. *Il Farmaco* 53: 494-503.
Rejection Code: IN VITRO.

1574. RONAI ZA, GRADIA, S., EL-BAYOUMY, K., AMIN, S., and HECHT SS (1994). Contrasting incidence of ras mutations in rat mammary and mouse skin tumors induced by anti-benzo-(c)-phenanthrene-3,4-diol-1,2-epoxide. *CARCINOGENESIS (OXFORD); 15* 2113-2116.
Rejection Code: NO COC.

1575. Roques, Marina, Bagrel, Denyse, Magdalou, Jacques, and Siest, Gerard (1991). Expression of arylhydrocarbon hydroxylase, epoxide hydrolases, glutathione S-transferase and UDP-glucuronosyltransferases in H5-6 hepatoma cells. *General Pharmacology: The Vascular System* 22: 677-684.
Rejection Code: IN VITRO.

1576. Rosch, R. and Liese, W. (1970). Ringschalentest Mit Holzzerstorenden Pilzen: I. Pruefung Von Substraten Fuer den Nachweis Von Phenoloxidasen. *Arch.Mikrobiol.* 73: 281-292.
Rejection Code: NON-ENGLISH.

1577. ROSENKRANZ HS and KLOPMAN, G. (1990). IDENTIFICATION OF RODENT CARCINOGENS BY AN EXPERT SYSTEM. *MENDELSOHN, M. L. AND R. J. ALBERTINI (ED.). PROGRESS IN CLINICAL AND BIOLOGICAL RESEARCH, VOL. 340. MUTATION AND THE ENVIRONMENT, PART B: METABOLISM, TESTING METHODS, AND CHROMOSOMES; FIFTH INTERNATIONAL CONFERENCE ON ENVIRONMENTAL MUTAGENS, CLEVELAND, OHIO, USA, JULY 10-15, 1989. XX+496P. WILEY-LISS: NEW YORK, NEW YORK, USA. ILLUS. ISBN 0-471-56792-2.; 0 (0). 1990. 23-48.*
Rejection Code: BACTERIA.

1578. ROSENTHAL WD and HIPP BW (1993). FIELD AND MODEL ESTIMATES OF PESTICIDE RUNOFF FROM TURFGRASS. *RACKE, K. D. AND A. R. LESLIE (ED.). ACS SYMPOSIUM SERIES, 522. PESTICIDES IN URBAN ENVIRONMENTS: FATE AND SIGNIFICANCE; 203RD NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY, SAN FRANCISCO, CALIFORNIA, USA, APRIL 5-10, 1992. XII+378P. AMERICAN CHEMICAL SOCIETY: WASHINGTON, DC, USA. ISBN 0-8412-2627-X.; 0 (0). 1993. 208-213.*
Rejection Code: MODELING.

1579. ROSTAD CE (1997). Concentration and transport of chlordane and nonachlor associated with suspended sediment in the Mississippi River, May 1988 to June 1990. *ARCHIVES OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 33* 369-377.
Rejection Code: FATE.

1580. ROUSH RT and DALY JC (1990). THE ROLE OF POPULATION GENETICS IN RESISTANCE RESEARCH AND MANAGEMENT. *ROUSH, R. T. AND B. E. TABASHNIK (ED.). PESTICIDE RESISTANCE IN ARTHROPODS. IX+303P.*

ROUTLEDGE, CHAPMAN AND HALL: NEW YORK, NEW YORK, USA; LONDON, ENGLAND, UK. ILLUS. MAPS. ISBN 0-412-01971-X.; 0 (0). 1990. 97-152.
Rejection Code: MODELING.

1581. Rozman, K. , Gorski, J. R., Dutton, D., and Parkinson, A. (1987). Effects of vitamin A and/or thyroidectomy on liver microsomal enzymes and their induction in 2,3,7,8-tetrachlorodibenzo-p-dioxin-treated rats. *Toxicology* 46: 107-117 .
Rejection Code: IN VITRO.

1582. ROZUM JJ and MAURER AJ (1997). Microbiological quality of cooked chicken breasts containing commercially available shelf-life extenders. *POULTRY SCIENCE; 76* 908-913.
Rejection Code: NO TOX DATA.

1583. Rubinigg, M., Posthumus, F., Ferschke, M., Elzenga, J. T. M., and Stulen, I. (2003). Effects of NaCl Salinity on 15N-Nitrate Fluxes and Specific Root Length in the Halophyte Plantago maritima L. *Plant Soil* 250: 201-213.
Rejection Code: NO TOXICANT.

1584. Rueegg, Willy T (20040812). Synergistic herbicidal compositions comprising insecticides. 380 pp.
Rejection Code: NON-ENGLISH.

1585. Rueegg, Willy T (20040812). **<04 Article Title>.** <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1586. Rueegg, Willy T (20040812). Synergistic herbicidal compositions comprising insecticides. 380 pp.
Rejection Code: NON-ENGLISH.

1587. Rueegg, Willy T (20040930). Synergistic herbicidal compositions comprising isoxazolinylsulfonylbenzoylpyrazole derivs. in combination with insecticides. 49 pp.
Rejection Code: NO TOX DATA.

1588. Ruegg, Willy T (20040923). Selective synergistic herbicidal compositions. 524 pp.
Rejection Code: NON-ENGLISH.

1589. Ruiz-Leal, M. and George, S. *. (2004). An in vitro procedure for evaluation of early stage oxidative stress in an established fish cell line applied to investigation of PHAH and pesticide toxicity. *Marine environmental research [Mar. Environ. Res.]. Vol. 58, no. 2-5, pp. 631-635. 2004.*
Rejection Code: IN VITRO.

1590. Ruiz-Leal, Maria and George, Stephen (2004). An in vitro procedure for evaluation of early stage oxidative stress in an established fish cell line applied to investigation of PHAH and pesticide toxicity: Twelfth International Symposium on Pollutant Responses in Marine Organisms. *Marine Environmental Research* 58: 631-635.
Rejection Code: IN VITRO.

1591. Ruppel, R. F. and Yun, Y. M. (1965). Ground-Applied Insecticides Against the Cereal Leaf Beetle. *J.Econ.Entomol.* 58: 41-46.

; Habitat: T; Effect Codes: POP,MOR

1592. Rush, Glenn F. and Hook, Jerry B. (1984). Characteristics of renal UDP-glucuronyltransferase.

Life Sciences 35: 145-153.
Rejection Code: METABOLISM, IN VITRO.

1593. Russom, C. L., Bradbury, S. P., Broderius, S. J., Hammermeister, D. E., and Drummond, R. A. (1997). Predicting Modes of Toxic Action from Chemical Structure: Acute Toxicity in the Fathead Minnow (Pimephales promelas). *Environ.Toxicol.Chem.* 16: 948-967.
Rejection Code: METHODS/QSAR.

1594. RUSSOM CL, BRADBURY SP, BRODERIUS SJ, HAMMERMEISTER DE, and DRUMMOND RA (1997). Predicting modes of toxic action from chemical structure: Acute toxicity in the fathead minnow (Pimephales promelas). *ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY; 16* 948-967.
Rejection Code: MODELING.

1595. RYAN JN, ELIMELECH, M., ARD RA, HARVEY RW, and JOHNSON PR (1998). Bacteriophage PRD1 and silica colloid transport and recovery in an iron oxide-coated sand aquifer. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 33* 63-73.
Rejection Code: FATE.

1596. RZAMA, A., BENHARREF, A., ARREGUY, B., and DUFOURC EJ (1995). Volatile compounds of green microalgae grown on reused waste water. *PHYTOCHEMISTRY (OXFORD); 38* 1375-1379.
Rejection Code: EFFLUENT.

1597. SABITHA, R. and JACOB, S. (1994). Bioassay techniques and response of different populations of Amrasca biguttula towards commonly used insecticides in Kerala. *INDIAN JOURNAL OF PLANT PROTECTION; 22* 54-58.
Rejection Code: SURVEY.

1598. SABLJIC, A. and GUESTEN, H. (1990). Predicting the night-time nitrate radical reactivity in the troposphere. *ATMOS ENVIRON PART A GEN TOP; 24* 73-78.
Rejection Code: MODELING.

1599. Sachana, M., Flaskos, J., Alexaki, E., and Hargreaves, A. J. (2003). Inhibition of neurite outgrowth in N2a cells by leptophos and carbaryl: effects on neurofilament heavy chain, GAP-43 and HSP-70. *Toxicology in Vitro* 17: 115-120.
Rejection Code: IN VITRO.

1600. SAEKI, K., OBI, I., OGIKU, N., HAKAMATA, Y., and MATSUMOTO, T. (1998). Characterization of brain-type ryanodine receptor permanently expressed in Chinese hamster ovary cells. *LIFE SCIENCES; 63* 575-588.
Rejection Code: IN VITRO.

1601. Saha, Pratap Kumar and Koner, Subratanath (2004). Novel chromotropism and catalytic activities of Cu(Schiff-base) moiety immobilized in Y-zeolite matrix. *Inorganic Chemistry Communications* 7: 1164-1166.
Rejection Code: METHODS.

1602. Sahay, N. and Agarwal, R. A. (1998). Changes in Transaminase Activity Following Treatment with Pesticide Mixtures. *Acta Hydrochim.Hydrobiol.* 26: 230-234 (OECDG Data File).
Rejection Code: MIXTURE.

1603. SAILLENFAIT AM, BONNET, P., GALLISSOT, F., PELTIER, A., and FABRIES JF (1999). Developmental toxicities of methacrylic acid, ethyl methacrylate, n-butyl methacrylate, and allyl methacrylate in rats following inhalation exposure. *TOXICOLOGICAL*

SCIENCES; 50 136-145.
Rejection Code: INHALE.

1604. Saito, Koichi, Kaneko, Hideo, Sato, Keiko, Yoshitake, Akira, and Yamada, Hirohiko (1991). Hepatic UDP-glucuronyltransferase(s) activity toward thyroid hormones in rats: Induction and effects on serum thyroid hormone levels following treatment with various enzyme inducers. *Toxicology and Applied Pharmacology* 111: 99-106.
Rejection Code: METABOLISM.

1605. Sakamoto, Mitsushi and Tsutsumi, Taizou (2004). **<04 Article Title>.** *Journal of Chromatography, A* 1028: <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1606. SALA LF, SIGNORELLA SR, RIZZOTTO, M., FRASCAROLI MI, and GANDOLFO, F. (1992). Oxidation of L-rhamnose and D-mannose by chromium(VI) in perchloric acid: A comparative study. *CAN J CHEM; 70* 2046-2052.
Rejection Code: FATE.

1607. Salama, A. K., Bakry, N. M., and Abou-Donia, M. B. (A Review Article on Placental Transfer of Pesticides. *Journal of occupational medicine and toxicology 1993;2(4):383-97: Journal of Occupational Medicine and Toxicology.*
Rejection Code: REVIEW, HUMAN HEALTH.

1608. Salgare, S. A. (1988). Stimulatory Effect of Some Herbicides on Pollen Tube Growth of Successive Flowers of Apocynaceae. *Adv.Plant Sci.* 1: 255-261.
Rejection Code: NO TOX DATA.

1609. Salloum, Myrna J., Dudas, Marvin J., and McGill, William B. (2001). Sorption of 1-naphthol to soil and geologic samples with varying diagenetic properties. *Chemosphere* 44: 779-787.
Rejection Code: FATE.

1610. Salunkhe, G. N. (1985). Protection of Sorghum Seeds from Infestation of Rice Weevil. *J.Maharashtra Agric.Univ.* 10: 223 p.
Rejection Code: NO EFFECT.

1611. Salvador, A., De Benzo Za, and De, L. A. Guardia M (1990). Direct derivative spectrophotometric determination of carbaryl and carbofuran in water samples. *Microchem J* 42 : 187-196.
Rejection Code: METHODS.

1612. Samanidou, V., Fytianos, K., Pfister, G., and Bahadir, M. (1988). Photochemical decomposition of carbamate pesticides in natural waters of northern Greece. *The Science of The Total Environment* 76: 85-92.
Rejection Code: FATE.

1613. Samanidou, V., Fytianos, K., Pfister, G., and Bahadir, M. (1988). Photochemical decomposition of carbamate pesticides in natural waters of northern Greece. *The Science of The Total Environment* 76: 85-92.
Rejection Code: SURVEY.

1614. Sammour, A. E. A. (1964). Behaviour of O- hydroxychalcones towards the action of phenylhydrazine, hydroxylamine, primary aliphatic amines and paraformaldehyde. *Tetrahedron* 20: 1067-1071.
Rejection Code: METHODS.

1615. Samsoe-Petersen, L. (1995). Effects of 67 Herbicides and Plant Growth Regulators on the Rove

Beetle Aleochara bilineata (Col.: Staphylinidae) in the Laboratory. *Entomophaga* 40: 95-104.

; Habitat: T; Effect Codes: MOR,REP,GRO

1616. Sanchez-Bayo, F. (2006). Comparative Acute Toxicity of Organic Pollutants and Reference Values for Crustaceans. I. Branchiopoda, Copepoda and Ostracoda. *Environ.Pollut.* 139: 385-420.
Rejection Code: REVIEW.

1617. Sanchez-Brunete, C., Rodriguez, A., and Tadeo, J. L. (2003Jul25). Multiresidue analysis of carbamate pesticides in soil by sonication-assisted extraction in small columns and liquid chromatography. *J Chromatogr a 2003 Jul 25;1007(1-2):85-91.* 1007: 85-91.
Rejection Code: NO SPECIES.

1618. Sanders, H. O. and Cope, O. B. (1966). Toxicities of Several Pesticides to Two Species of Cladocerans. *Trans.Am.Fish.Soc.* 95: 165-169 (Author Communication Used) (Publ in Part As 6797).

; Habitat: A; Effect Codes: PHY

1619. Sanders, H. O., Finley, M. T., and Hunn, J. B. (1983). Acute Toxicity of Six Forest Insecticides to Three Aquatic Invertebrates and Four Fishes. *Tech.Pap.No.110, U.S.Fish Wildl.Serv., Washington, D.C.* 1-5 (Author Communication Used) (Publ in Part As 6797).

1620. Sandoz, Christine, Lesca, Pierre, Narbonne, Jean-Francois, and Carpy, Alain (2000). Molecular Characteristics of Carbaryl, a CYP1A1 Gene Inducer. *Archives of Biochemistry and Biophysics* 373: 275-280.
Rejection Code: NO TOX DATA.

1621. Sangha, G. K. (1971). Environmental Effects of Carbamate Insecticides as Assayed in the "Model Ecosystem" - A Comparison with DDT. *Diss.Abstr.Int.B Sci.Eng.32:4650-B (1972) / Ph.D.Thesis, Univ.of Illinois at Urbana-Champaign, IL* 153 p.
Rejection Code: ABSTRACT.

1622. Sannino, F. and Gianfreda, L. (2001). Pesticide influence on soil enzymatic activities. *Chemosphere* 45: 417-425.
Rejection Code: NO SPECIES.

1623. Santos Delgado, M J, Rubio Barroso, S, Fernandez-Tostado, G T, and Polo-Diez, L M (2001). Stability studies of carbamate pesticides and analysis by gas chromatography with flame ionization and nitrogen-phosphorus detection. *Journal Of Chromatography. A* 921: 287-296.
Rejection Code: METHODS.

1624. Sanusi, A, Millet, M, Mirabe, P, and Wortham, H (2000). Comparison of atmospheric pesticide concentrations measured at three sampling sites: local, regional and long-range transport. *The Science Of The Total Environment* 263: 263-277.
Rejection Code: NO TOXICANT/NO SPECIES.

1625. Sanusi, Astrid, Millet, Maurice, Mirabel, Philippe, and Wortham, Henri (2000). Comparison of atmospheric pesticide concentrations measured at three sampling sites: local, regional and long-range transport. *The Science of The Total Environment* 263: 263-277.
Rejection Code: METHODS.

1626. Sanusi, Astrid, Millet, Maurice, Mirabel, Philippe, and Wortham, Henri (2000). Comparison of atmospheric pesticide concentrations measured at three sampling sites: local, regional and long-range transport. *The Science of The Total Environment* 263: 263-277.
Rejection Code: FATE.

1627. Sanusi, Astrid, Millet, Maurice, Mirabel, Philippe, and Wortham, Henri (1999). Gas-particle partitioning of pesticides in atmospheric samples. *Atmospheric Environment* 33: 4941-4951.
Rejection Code: METHODS/NO TOXICANT.

1628. Sanusi, Astrid, Millet, Maurice, Mirabel, Philippe, and Wortham, Henri (1999). Gas-particle partitioning of pesticides in atmospheric samples. *Atmospheric Environment* 33: 4941-4951.
Rejection Code: METHODS.

1629. Sanusi, Astrid, Millet, Maurice, Mirabel, Philippe, and Wortham, Henri (1999). Gas-particle partitioning of pesticides in atmospheric samples. *Atmospheric Environment* 33: 4941-4951.
Rejection Code: SURVEY.

1630. Saraf, M., Khandelwal, A., Sawhney, R., and Maheshwari, D. K. (1994). Effects of carbaryl and 2,4-D on growth, nitrogenase and uptake hydrogenase activity in agar culture and root nodules formed by Bradyrhizobium japonicum. *Microbiological Research, 149 (4) pp. 401-406, 1994*.
Rejection Code: BACTERIA.

1631. SASAKI, Y. , SHIBAMOTO, T., WEI C-I, and FERNANDO, S. (1987). BIOLOGICAL AND CHEMICAL STUDIES ON OVERHEATED BREWED COFFEE. *FOOD CHEM TOXICOL; 25* 225-228.
Rejection Code: HUMAN HEALTH.

1632. SASAKI, Y. , TAKAGI, T., and KAWAKI, H. (1991). Revised substituent entropy constants sigmaso for di- and tri-substituted benzene derivatives and their applications for substrates having two substituted phenyl rings. *CHEM PHARM BULL (TOKYO); 39 (11). 1991. 2775-2779.*
Rejection Code: MODELING.

1633. Sastry, C. S. P., Vijaya, D., and Rao, K. Ekambareswara (1986). Sensitive spectrophotometric determinations of carbaryl and propoxur in formulations, water, grains and pulses. *Food Chemistry* 20: 157-162.
Rejection Code: METHODS.

1634. Satake, M. and Wang Gen-Feng (1997). Spectrophotometric determination of nitrite in natural waters using diazotization-coupling method with column preconcentration on naphthalene supported with ion-pair of tetradecyldimethylbenzyl-ammonium and iodide. *Fresenius' Journal of Analytical Chemistry [FRESENIUS J. ANAL. CHEM.]. Vol. 357, no. 4, pp. 433-438. 1997.*
Rejection Code : METHODS.

1635. Satapornvanit, K., Baird, D. J., Little, D. C., Milwain, G. K., Van den Brink, P. J., Beltman, W. H. J., Nogueira, A. J. A., Daam, M. A., Domingues, I., Kodithuwakku, S. S., Perera, M. W. P., Yakupitiyage, A., Sureshkumar, S. N., and Taylor, G. J. (2004). Risks of pesticide use in aquatic ecosystems adjacent to mixed vegetable and monocrop fruit growing areas in Thailand. *Australasian Journal of Ecotoxicology [Australas. J. Ecotoxicol.]. Vol. 10, no. 2, pp. 85-95. Jul 2004.*

Rejection Code: SURVEY.

1636. SATOH, E., SHIMIZU, Y., TAMURA, S., and KOMAI, T. (1987). SPECIFIC BINDING OF PHORBOL ESTER TUMOR PROMOTERS OF RAT LIVER. *RES BULL OBIHIRO UNIV SER I; 15* 1-8.
Rejection Code: NO COC, HUMAN HEALTH.

1637. Satoh, M., Karaki, E., Kakehashi, M., Okazaki, E., Gotoh, T., and Oyama, Y. (1999). Heavy-Metal Induced Changes in Nonproteinaceous Thiol Levels and Heavy-Metal Binding Peptide in Tetraselmis tetrathele (Prasinophyceae). *J.Phycol.* 35: 989-994.
Rejection Code: IN VITRO.

1638. SATOH, T., SUZUKI, S., KAWAI, N., NAKAMURA, T., and HOSOKAWA, M. (1999). Toxicological significance in the cleavage of esterase-beta-glucuronidase complex in liver microsomes by organophosphorus compounds. *CHEMICO-BIOLOGICAL INTERACTIONS;* 119-120: 471-478.
Rejection Code: IN VITRO.

1639. Satoh, Tetsuo, Suzuki, Satoshi, Kawai, Naoshi, Nakamura, Toshihiro, and Hosokawa, Masakiyo (1999). Toxicological significance in the cleavage of esterase-[beta]-glucuronidase complex in liver microsomes by organophosphorus compounds. *Chemico-Biological Interactions* 119-120: 471-478.
Rejection Code: IN VITRO.

1640. SATYAVANI, P., PRASAD VD, REDDY, G. PV, and MURTHY, M. MK (1991). COMPARATIVE RESISTANCE OF HELICOVERPA-ARMIGERA POPULATIONS TO SOME CONVENTIONAL INSECTICIDES IN ANDHRA PRADESH INDIA. *INDIAN J PLANT PROT; 19* 85-88.
Rejection Code: SURVEY.

1641. Saul, S. J., Zomer, E., Puopolo, D., and Charm, S. E. (1996). Use of a new rapid bioluminescence method for screening organophosphate and N-methylcarbamate insecticides in processed baby foods. *Journal of Food Protection [J. FOOD PROT.]. Vol. 59, no. 3, pp. 306-311. 1996.*
Rejection Code: METHODS.

1642. SAVARD ME (1991). Deoxynivalenol fatty acid and glucoside conjugates. *J AGRIC FOOD CHEM; 39* 570-574.
Rejection Code: METABOLISM.

1643. SAVARD ME, BLACKWELL BA, and GREENHALGH, R. (1987). A PROTON NMR STUDY OF DERIVATIVES OF 3 HYDROXY-12 13-EPOXYTRICHOTHEC-9-ENES. *CAN J CHEM; 65* 2254-2262.
Rejection Code: HUMAN HEALTH.

1644. SAWATSKY, N., FENG, Y., and DUDAS MJ (1997). Diffusion of 1-naphthol and naphthalene through clay materials: Measurement of apparent exclusion of solute from the pore space. *JOURNAL OF CONTAMINANT HYDROLOGY; 27* 25-41.
Rejection Code: SEDIMENT CONC, FATE.

1645. Sawyer, T. W., Weiss, M. T., and Dickinson, T. (1996). Effect of Metabolism on the Anticholinesterase Activity of Carbamate and Organophosphate Insecticides in Neuron Culture. *In Vitro Toxicol.* 9: 343-352.
Rejection Code: IN VITRO.

1646. SAWYER TW, WEISS MT, and DICKINSON, T. (1996). Effect of metabolism on the anticholinesterase activity of carbamate and organophosphate insecticides in neuron culture. *IN VITRO TOXICOLOGY; 9* 343-352.
Rejection Code: IN VITRO.

1647. Saxena, P. K., Singh, V. P., Kondal, J. K., and Soni, G. L. (1989). Effect of some pesticides on in-vitro lipid and protein synthesis by the liver of the freshwater teleost, Channa punctatus (Bl.). *Environmental Pollution* 58: 273-280.
Rejection Code: IN VITRO.

1648. Schaaf, Gerben J., de Groene, Els M., Maas, Roel F., Commandeur, Jan N. M., and Fink-Gremmels, Johanna (2001). Characterization of biotransformation enzyme activities in primary rat proximal tubular cells. *Chemico-Biological Interactions* 134: 167-190.
Rejection Code: IN VITRO.

1649. SCHAEFFER, A. (1993). PESTICIDE EFFECTS ON ENZYME ACTIVITIES IN THE SOIL ECOSYSTEM. *BOLLAG, J.-M. AND G. STOTZKY (ED.). SOIL BIOCHEMISTRY, VOL. 8. XI+418P. MARCEL DEKKER, INC.: NEW YORK, NEW YORK, USA; BASEL, SWITZERLAND. ISBN 0-8247-9044-8.; 0 (0). 1993. 273-340.*
Rejection Code: BACTERIA.

1650. Schafer, E. W. (1972). The Acute Oral Toxicity of 369 Pesticidal, Pharmaceutical and Other Chemicals to Wild Birds. *Toxicol.Appl.Pharmacol.* 21: 315-330.

; Habitat: T; Effect Codes: MOR

1651. Schafer, E. W. Jr., Bowles, W. A. Jr., and Hurlbut, J. (1983). The Acute Oral Toxicity, Repellency, and Hazard Potential of 998 Chemicals to One or more Species of Wild and Domestic Birds. *Arch.Environ.Contam.Toxicol.* 12: 355-382.

; Habitat: T; Effect Codes: MOR

1652. SCHATTENBERG, H. J. III and HSU J-P (1992). Pesticide residue survey of produce from 1989 to 1991. *J AOAC (ASSOC OFF ANAL CHEM) INT; 75 (5). 1992. 925-933.*
Rejection Code: SURVEY.

1653. SCHEIBE, F., HAUPT, H., and LUDWIG, C. (1992). Intensity-dependent changes in oxygenation of cochlear perilymph during acoustic exposure. *HEAR RES; 63* 19-25.
Rejection Code: NO TOX DATA.

1654. Scheuhammer, A. M. and Wilson, L. K. (1990). Effects of lead and pesticides on delta -aminolevulinic acid dehydratase of ring doves (Streptopelia risoria). *Environmental Toxicology and Chemistry [ENVIRON. TOXICOL. CHEM.]. Vol. 9, no. 11, pp. 1379-1386. 1990.*
Rejection Code: IN VITRO, MIXTURE.

1655. Scheuhammer, A. M. and Wilson, L. K. (1990). Effects of lead and pesticides on delta -aminolevulinic acid dehydratase of ring doves (Streptopelia risoria). *Environmental Toxicology and Chemistry [ENVIRON. TOXICOL. CHEM.]. Vol. 9, no. 11, pp. 1379-1386. 1990.*
Rejection Code: IN VITRO.

1656. Schiewer, U. (1974). Salt Tolerance and the Influence of Increasing NaCl Conentrations on the Contents of Nitrogen, Carbohydrates, Pigments and the Production of Extracellular Carbohydrates in Some Freshwater Bleu-Green Algae. *Arch.Hydrobiol.Suppl.* 46: 171-

184.
Rejection Code: NO TOX DATA.

1657. Schiffman, S S, Suggs, M S, Abou Donia, M B, Erickson, R P, and Nagle, H T (1995). Environmental Pollutants Alter Taste Responses in the Gerbil. *Pharmacology, Biochemistry, And Behavior* 52: 189-194.
Rejection Code: HUMAN HEALTH.

1658. SCHIRRMACHER, K., WIEMANN, M., BINGMANN, D., and BUESSELBERG, D. (1998). Effects of lead, mercury, and methyl mercury on gap junctions and (Ca2+)i in bone cells. *CALCIFIED TISSUE INTERNATIONAL; 63* 134-139.
Rejection Code: IN VITRO.

1659. SCHNEIDER, E., DIETRICH, R., MAERTLBAUER, E., USLEBER, E., and TERPLAN, G. (1991). Detection of aflatoxins, trichothecenes, ochratoxin A and zearalenone by test strip enzyme immunoassay: A rapid method for screening cereals for mycotoxins. *FOOD AGRIC IMMUNOL; 3* 185-193.
Rejection Code: METHODS.

1660. Schneider, M. and Guhne, M. (2000). CYD 3410 - A New Post Emergence Herbicide in Fall and Spring for Control of Broad Leaf Weeds in Cereals (CYD 34103 - Ein Neues Nachauflaufherbizid im Herbst und Fruhjahr zur Bekampfung von Breitblattrigen Unkrautern im Getreide). *Z.Pflanzenkr.Pflanzenschutz* 17: 571-576 (GER) (ENG ABS).
Rejection Code: NON-ENGLISH.

1661. Schoettger, R. A. (1973). Fish-Pesticide Research Laboratory. *In: Resour.Publ.No.121, Prog.Sport Fish.Res., Div.Fish.Res., Bur.Sport Fish.Wildl., U.S.D.I., Washington, D.C.* 2-17.

; Habitat: A; Effect Codes: POP,PHY,ACC,REP,MOR,BCM

1662. SCHONBERG, M., STAPLETON, A., and SAITOH, T. (1985). TRANSDUCING PROTEINS AND THE REGULATION OF ADENYLATE CYCLASE IN APLYSIA NEURONS. *15TH ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, PART 2, DALLAS, TEX., USA, OCT. 20-25, 1985. SOC NEUROSCI ABSTR; 11* 1092.
Rejection Code: NO TOX DATA.

1663. SCHULTZ MK, BURNETT WC, and INN, K. GW (1998). Evaluation of a sequential extraction method for determining actinide fractionation in soils and sediments. *JOURNAL OF ENVIRONMENTAL RADIOACTIVITY; 40* 155-174.
Rejection Code: METHODS.

1664. SCHULTZ TW , LIN DT, and CULBERSON RW (1993). Predicted toxicities of aryl alkanols and related compounds. *JOURNAL OF APPLIED TOXICOLOGY; 13* 429-434.
Rejection Code: MODELING.

1665. SCHULZ-BULL DE, PETRICK, G., BRUHN, R., and DUINKER JC (1998). Chlorobiphenyls (PCB) and PAHs in water masses of the northern North Atlantic. *MARINE CHEMISTRY; 61* 101-114.
Rejection Code: SURVEY.

1666. Schuster, M., Wasserbauer, E., Aversa, G., and Jungbauer, A. (2001). Transmembrane-Sequence-Dependent Overexpression and Secretion of Glycoproteins in Saccharomyces cerevisiae. *Protein Expression and Purification* 21: 1-7.
Rejection Code: IN VITRO.

1667. Schwarze, Reimund (2001). The "Crunch issue" of additional sinks. *Climate Policy* 1: 397-401.
Rejection Code: NO TOX DATA.

1668. Schwenk, Michael, Linz, Christa, and Kobusch, A. B. (1991). Conjugation of 1-naphthol in the gastric mucosa of guinea pigs. *Biochemical Pharmacology* 42: 469-473.
Rejection Code: METABOLISM, IN VITRO.

1669. Schwenk, Michael, Linz, Christa, and Rechkemmer, Gerhard (1992). First pass effect of 1-naphthol in the gastric mucosa : Studies with isolated epithelium and cultured mucous cells of guinea pig. *Biochemical Pharmacology* 43: 771-774.
Rejection Code: IN VITRO.

1670. Scott, G. R. and Sloman, K. A. (2004-). The Effects of Environmental Pollutants on Complex Fish Behaviour: Integrating Behavioural and Physiological Indicators of Toxicity. *Aquat.Toxicol.* 68: 369-392.
Rejection Code: REVIEW.

1671. Scott, P. W. and Fogle, B. (1983). Treatment of Ornamental Koi Carp (Cyprinus carpio) Infected with Anchor Worms (Lernaea cyprinacea). *Vet.Rec.* 113: 421.
Rejection Code: NO TOX DATA.

1672. SCUDAMORE KA and LIVESEY CT (1998). Occurrence and significance of mycotoxins in forage crops and silage: A review. *JOURNAL OF THE SCIENCE OF FOOD AND AGRICULTURE; 77* 1-17.
Rejection Code: REVIEW.

1673. SEATON KA and JOYCE DC (1996). Effect of postharvest dipping in insecticides on the vase life of Geraldton waxflower. *AUSTRALIAN JOURNAL OF EXPERIMENTAL AGRICULTURE;* 36: 373-378.
Rejection Code: NO SPECIES (DEAD).

1674. Segal, L. M. and Fedoroff, S. (1989). The acute and subchronic effects of organophosphorus and carbamate pesticides on cholinesterase activity in aggregate cultures of neural cells from the foetal rat brain. *Toxicology in Vitro* 3: 111-122.
Rejection Code: IN VITRO.

1675. Segal, L. M. and Fedoroff, S. (1989). The acute and subchronic effects of organophosphorus and carbamate pesticides on cholinesterase activity in aggregate cultures of neural cells from the foetal rat brain. *Toxicology in Vitro* 3: 111-122.
Rejection Code: IN VITRO.

1676. Segura-Carretero, A., Cruces-Blanco, C., Canabate-Diaz, B., Fernandez-Sanchez, J. F., and Fernandez-Gutierrez, A. (2000). Heavy-atom induced room-temperature phosphorescence: a straightforward methodology for the determination of organic compounds in solution. *Analytica Chimica Acta* 417: 19-30.
Rejection Code: METHODS.

1677. Segura-Carretero, A., Cruces-Blanco, C., Canabate-Diaz, B., Fernandez-Sanchez, J. F., and Fernandez-Gutierrez, A. (2000). Heavy-atom induced room-temperature phosphorescence: a straightforward methodology for the determination of organic compounds in solution. *Analytica Chimica Acta* 417: 19-30.
Rejection Code: METHODS.

1678. SEKARAN, G., SHANMUGASUNDARAM KA, and MARIAPPAN, M. (1998). Characterization and utilisation of buffing dust generated by the leather industry.

JOURNAL OF HAZARDOUS MATERIALS; 63 53-68.
Rejection Code: NO TOX DATA.

1679. SELIM AA and SOBEIHA AK (1984-1985). EFFECT OF AIR TIGHT STORAGE AND CERTAIN OTHER FACTORS ON PERSISTENCE OF BIOALLETHRIN AND SEVIN. *BULL ENTOMOL SOC EGYPT ECON SER; 0* 1-8.
Rejection Code: FATE.

1680. Sell, P. (1984). Investigations for Testing Effects of Pesticides on the Efficiency of the Predacious Gall Midge Aphidoletes aphidimyza (Rond.) (Diptera, Cecidomyiidae) and Their Progeny (Untersuchungen zur Prufung der Wirkungen von Pflanzenschutzmitteln auf Leistungen der Rauberischen Gallmucke Aphidoletes aphidimyza (Rond.) (Diptera, Cecidomyiidae) und Deren Nachkommen). *Z.Angew.Entomol.* 98: 425-431 (GER) (ENG ABS).
Rejection Code: NON-ENGLISH.

1681. SEMEDO, E. , RAFAEL, A., CALVINHO, P., CARVALHO MT, and CABRITA, A. MS (1999). MORPHOLOGIC EVALUATION OF THE BOWEL IN EXPERIMENTAL DRINKING OF WATER WITH 1-NAPHTHYL N-METHYLCARBAMATE PLUS CHLOROPHYLLINYMEETING ABSTRACT RAT PLANT CHLOROPHYLLIN PESTICIDE FOOD CONTAMINANT BOWEL 1-NAPHTHYL N-METHYLCARBAMATE ABERRANT CRYPTS TOXICOLOGY PESTICIDE CONTAMINATED FOOD DIGESTIVE SYSTEM =63252 =15611435. *ANNUAL MEETING OF THE PROFESSIONAL RESEARCH SCIENTISTS ON EXPERIMENTAL BIOLOGY 99, WASHINGTON, D.C., USA, APRIL 17-21, 1999.YFASEB JOURNAL; 13* A919.
Rejection Code: ABSTRACT.

1682. Semel, M. (1959). Control of the Corn Earworm Attacking Sweet Corn. *J.Econ.Entomol.* 52: 1111-1114.

; Habitat: T; Effect Codes: POP

1683. Semtner, P. J. and Terrill, T. R (1986). Budworm control in the tobacco nursery. *Tobacco International* 188: 54-7.
Rejection Code: NO COC.

1684. Sevalkar, M. T., Patil, V. B., and Katkar, H. N. (1991). Zinc chloride-diphenylamine reagent for thin layer chromatographic detection of some organophosphorus and carbamate insecticides. *J Assoc Off Anal Chem* 74 : 545-546.
Rejection Code: METHODS.

1685. SHAH AH and GUTHRIE FE (1985). ROLE OF POLARITY OF INSECTICIDES IN PENETRATION THROUGH THE ISOLATED MIDGUT OF INSECTS AND MAMMALS. *INDIAN J AGRIC CHEM; 18 (1). 1985 (RECD. 1986). 153-156.*
Rejection Code: IN VITRO.

1686. SHANER DL (1994). EFFECT OF ENVIRONMENT ON PERSISTENCE AND MOVEMENT OF HERBICIDES IN PLANTS. *HEWITT, H. G., ET AL. (ED.). BRITISH CROP PROTECTION COUNCIL MONOGRAPH, NO. 59. COMPARING GLASSHOUSE AND FIELD PESTICIDE PERFORMANCE, II; INTERNATIONAL SYMPOSIUM, CANTERBURY, ENGLAND, UK, APRIL 12-14, 1994. IX+323P. BRITISH CROP PROTECTION COUNCIL (BCPC): FARNHAM, ENGLAND, UK. ISBN 0-948404-76-0.; 0 (0). 1994. 129-138.*
Rejection Code: FATE.

1687. Shanker, J. (1985). CONTROL OF RELEASE AND TOXICITY OF CARBAMATE PESTICIDES THROUGH METAL COMPLEXATION. *Indian J Agric Chem* 18 : 109-122.
Rejection Code: NO TOX DATA.

1688. Sharma, I. D. and Nath, A. (1996). Metabolism of 1-naphthyl-N-methyl carbamate (carbaryl) by bacterial isolates from honey bees and the effect of bacterial inoculations on carbaryl tolerance in bees. *Journal of applied bacteriology. Oxford [J. APPL. BACTERIOL.]. Vol. 81, no. 3, pp. 235-241. 1996.*
Rejection Code: BACTERIA, METABOLISM.

1689. Sharma, I. D. and Nath, A. (1996). Metabolism of 1-naphthyl-N-methyl carbamate (carbaryl) by bacterial isolates from honey bees and the effect of bacterial inoculations on carbaryl tolerance in bees. *Journal of applied bacteriology. Oxford [J. APPL. BACTERIOL.]. Vol. 81, no. 3, pp. 235-241. 1996.*
Rejection Code: IN VITRO.

1690. SHARMA ID and NATH, A. (1996). Metabolism of 1-naphthyl-N-methyl carbamate (carbaryl) by bacterial isolates from honey bees and the effects of bacterial inoculations on carbaryl tolerance in bees. *JOURNAL OF APPLIED BACTERIOLOGY; 81* 235-241.
Rejection Code: IN VITRO.

1691. SHARMA, R. and KALE RK (1993). Effect of radiation on glyoxalase I and glyoxalase II activities in spleen and liver of mice. *INT J RADIAT BIOL; 63* 233-238.
Rejection Code: NO TOXICANT.

1692. Sharma, R. P. and Reddy, R. V. (1987). Toxic Effects of Chemicals on the Immune System. *In: T.J.Haley and W.O.Berndt (Eds.), Handbook of Toxicology, Chapter 15, Hemisphere Publ.Corp., Washington, D.C.* 555-591.
Rejection Code: REFS CHECKED/REVIEW.

1693. Sharma, R. P. and Reddy, R. V. (1987). Toxic Effects of Chemicals on the Immune System. *In: T.J.Haley and W.O.Berndt (Eds.), Handbook of Toxicology, Chapter 15, Hemisphere Publ.Corp., Washington, D.C.* 555-591.
Rejection Code: REFS CHECKED/REVIEW.

1694. Sharma, V. K., Jadhav, R. K., Rao, G. J., Saraf, A. K. , and Chandra, H. (1990). High performance liquid chromatographic method for the analysis of organophosphorus and carbamate pesticides. *Forensic Science International* 48: 21-25.
Rejection Code: METHODS.

1695. Sharma, V K and Kaur, S (1990). Contact sensitization by pesticides in farmers. *Contact Dermatitis* 23: 77-80.
Rejection Code: HUMAN HEALTH.

1696. Sharom, M. S., Miles, J. R. W., Harris, C. R., and McEwen, F. L. (1980). Behaviour of 12 insecticides in soil and aqueous suspensions of soil and sediment. *Water Research* 14: 1095-1100.
Rejection Code: FATE.

1697. Sharom, M. S., Miles, J. R. W., Harris, C. R., and McEwen, F. L. (1980). Behaviour of 12 Insecticides in Soil and Aqueous Suspensions of Soil and Sediment. *Water Res.* 14: 1095-1100.
Rejection Code: FATE.

1698. Sharom, M. S., Miles, J. R. W., Harris, C. R., and McEwen, F. L. (1980). Persistence of 12 insecticides in water. *Water Research* 14: 1089-1093.
Rejection Code: FATE.

1699. Sharom, M. S., Miles, J. R. W., Harris, C. R., and McEwen, F. L. (1980). Persistence of 12 Insecticides in Water . *Water Res.* 14: 1089-1093.
Rejection Code: FATE/NO TOX DATA.

1700. Shaw, R. D., Cook, M., and Carson, R. E. Jr. (1968). Developments in the Resistance Status of the Southern Cattle Tick to Organophosphorus and Carbamate Insecticides. *J.Econ.Entomol.* 61: 1590-1594.

; Habitat: T; Effect Codes: MOR

1701. Shaw, R. D., Thompson, G. E., and Baker, J. A. F. (1967). Resistance to Cholinesterase-Inhibitors in the Blue Tick, Boophilus decoloratus, in South Africa. *Vet.Rec.* 81: 548-549.

; Habitat: T; Effect Codes: MOR

1702. Shea, T. B. (1985). Carbaryl inhibition of interferon synthesis in cultured goldfish cells. *Bulletin of Environmental Contamination and Toxicology. Vol. 34, no. 1, pp. 109-113. 1985.*
Rejection Code: IN VITRO.

1703. Shea, T. B. (1983). Enhancement of goldfish virus-2 in vitro replication by the pesticides carbaryl and toxaphene. *Applied and Environmental Microbiology. Vol. 45, no. 6, pp. 1859-1864. 1983.*
Rejection Code: IN VITRO.

1704. Shea, T. B. and Berry, B. S. (1984). Suppression of Interferon Synthesis by the Pesticide Carbaryl as a Mechanism for Enhancement of Goldfish Virus-2 Replication. *Appl.Environ.* 47: 250-252 .
Rejection Code: IN VITRO.

1705. Shea, T. B. and Berry, E. S. (1983). Toxicity and intracellular localization of carbaryl and 1-naphthol in cell cultures derived from goldfish. *Bulletin of Environmental Contamination and Toxicology. Vol. 30, no. 1, pp. 99-104. 1983.*
Rejection Code: IN VITRO.

1706. Shealy, D. B., Barr, J. R., Ashley, D. L., Patterson, D. G. Jr, Camann, D. E., and Bond, A. E. (1997). Correlation of environmental carbaryl measurements with serum and urinary 1-naphthol measurements in a farmer applicator and his family. *Environmental Health Perspectives. Vol. 105, no. 5, pp. 510-513. May 1997.*
Rejection Code: HUMAN HEALTH.

1707. SHEN W-L, VELA NP, SHEPPARD BS, and CARUSO JA (1991). Evaluation of inductively coupled plasma mass spectrometry as an elemental detector for supercritical fluid chromatography. *ANAL CHEM; 63* 1491-1498.
Rejection Code: METHODS.

1708. Sheppard, P. R., May, E. M., Ort, M. H., Anderson, K. C. , and Elson, M. D. (2005). Dendrochronological responses to the 24 October 1992 tornado at Sunset Crater, northern Arizona. *Canadian Journal of Forest Research, 35 (12) pp. 2911-2919, 2005.*
Rejection Code: NO TOX DATA.

1709. SHIBATA, H., KIRIKAE, M., TANAKA, Y., SAKUMA, T., and HATANO, R. (1998). Proton

budgets of forest ecosystems on volcanogenous regosols in Hokkaido, northern Japan. *WATER AIR AND SOIL POLLUTION; 105* 63-72.
Rejection Code: SURVEY.

1710. Shibata, Shozo (1960). Spectrophotometric determination of indium with 1-(2-pyridylazo)-2-naphthol. *Analytica Chimica Acta* 23: 434-438.
Rejection Code: METHODS.

1711. SHIMOI, K. , KAWABATA, H., and TOMITA, I. (1992). Enhancing effect of heterocyclic amines and beta-carbolines on UV or chemically induced mutagenesis in Escherichia coli. *MUTAT RES; 268* 287-295.
Rejection Code: BACTERIA.

1712. Shimomura-Shimizu, Mifumi, Sugiyama, Kei-ichi, Muroi, Masashi, and Tanamoto, Ken-ichi (2005). Alachlor and carbaryl suppress lipopolysaccharide-induced iNOS expression by differentially inhibiting NF-[kappa]B activation. *Biochemical and Biophysical Research Communications* 332: 793-799.
Rejection Code: IN VITRO.

1713. Shinohara, A., Saito, K., Yamazoe, Y., Kamataki, T., and Kato, R. (1986). Inhibition of Acetyl-coenzyme a Dependent Activation of N-Hydroxyarylamines by Phenolic Compounds. Pentachlorophenol and 1-Nitro-2-Naphthol. *Chem.-Biol.Interact.* 60: 275-285.
Rejection Code: IN VITRO.

1714. SHIRAI, T. (1997). A medium-term rat liver bioassay as a rapid in vitro test for carcinogenic potential: A historical review of model development and summary of results from 291 tests. *TOXICOLOGIC PATHOLOGY; 25* 453-460.
Rejection Code: IN VITRO.

1715. Shirkey, Robin J., Kao, John, Fry, Jeffrey R., and Bridges, James W. (1979). A comparison of xenobiotic metabolism in cells isolated from rat liver and small intestinal mucosa. *Biochemical Pharmacology* 28: 1461-1466.
Rejection Code: METABOLISM, IN VITRO.

1716. Shirkey, Robin S., Chakraborty, Jagadish, and Bridges, James W. (1979). Comparison of the drug metabolising ability of rat intestinal mucosal microsomes with that of liver. *Biochemical Pharmacology* 28: 2835-2839.
Rejection Code: METABOLISM, IN VITRO.

1717. Shukla, D. S. and Misra, A. P. (1972). Effect of Soil Application of Fungicides in Inactivation of Sclerotia of Ozonium texanum var. parasiticum and Incidence of Gram Wilt. *Indian Phytopathol.* 25: 378-386.
Rejection Code: NO TOX DATA.

1718. Siebert, D. and Eisenbrand, G. (1974). Induction of mitotic gene conversion in Saccharomyces cerevisiae by N-nitrosated pesticides. *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis* 22: 121-126.
Rejection Code: BACTERIA.

1719. Siegfried, B. D., Meinke, L. J., Parimi, S., Scharf, M. E., Nowatzki, T. J., Zhou, X., and Chandler, L. D. (2004). Monitoring western corn rootworm (Coleoptera: Chrysomelidae) susceptibility to carbaryl and cucurbitacin baits in the areawide management pilot program. *Journal of Economic Entomology, 97 (5) pp. 1726-1733, 2004.*
Rejection Code: SURVEY.

1720. Sijm, D. T. H. M., Flenner, C. K., and Opperhuizen, A. (1991). The Influence of Biochemical Species Differences on Acute Fish Toxicity of Organic Chemicals. *Comp.Biochem.Physiol.C* 100: 33-35.
Rejection Code: REFS CHECKED/REVIEW.

1721. Silva Nunes, Gilvanda, Jeanty, Gerard, and Marty, Jean-Louis (2004). Enzyme immobilization procedures on screen-printed electrodes used for the detection of anticholinesterase pesticides: Comparative study. *Analytica Chimica Acta* 523: 107-115.
Rejection Code: METHODS.

1722. Silverman, Louis and Seitz, Rachel L. (1959). Determination of microgram amounts of cobalt in sodium metal : 2-Nitroso-r-naphthol spectrophotometric method. *Analytica Chimica Acta* 20: 340-343.
Rejection Code: METHODS.

1723. SIMBAYI LC (1987). EFFECTS OF ANTERIOR BASOLATERAL AMYGDALA LESIONS ON TASTE AVERSIONS PRODUCED BY HIGH AND LOW ORAL DOSES OF LITHIUM CHLORIDE AND LACTOSE IN THE RAT. *BEHAV BRAIN RES; 25* 131-142.
Rejection Code: HUMAN HEALTH, NO COC.

1724. SIMCIK MF, FRANZ TP, ZHANG, H., and EISENREICH SJ (1998). Gas-particle partitioning of PCBs and PAHs in the Chicago urban and adjacent coastal atmosphere: States of equilibrium. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 32* 251-257.
Rejection Code: SURVEY, HUMAN HEALTH.

1725. Simonian, A. L., Efremenko, E. N., and Wild, J. R. (2001). Discriminative detection of neurotoxins in multi-component samples. *Analytica Chimica Acta* 444: 179-186.
Rejection Code: METHODS.

1726. Simov, D. and Stojanov, St. (1973). Electronic spectra and [pi]-electronic structure of some hydroxyazo dyes. *Journal of Molecular Structure* 19: 255-274.
Rejection Code: METHODS, NO SPECIES.

1727. Simwat, G. S. and Dhawan, A. K. (1993). Phytotoxic Effect Of Spraying Mixtures Of Systemic And Contact Insecticides On Upland Cotton (Gossypium Hirsutum). 63: 390-392 .
Rejection Code: MIXTURE.

1728. Simwat, G. S. and Dhawan, A. K. (1993). Phytotoxic Effect of Spraying Mixtures of Systemic and Contact Insecticides on Upland Cotton (Gossypium hirsutum). *Indian J.Agric.Sci.* 63: 390-392.
Rejection Code: MIXTURE.

1729. Sinclair, C. J. and Boxall, A. B. A. (2003). Assessing the Ecotoxicity of Pesticide Transformation Products . *Environ.Sci.Tech.* 37: 4617-4625.
Rejection Code: MODELING.

1730. Sinclair, Chris J. and Boxall, Alistair B. A (2003). Assessing the Ecotoxicity of Pesticide Transformation Products. *Environmental Science and Technology* 37: 4617-4625.
Rejection Code: QSAR.

1731. Singh, A., Singh, A., Misra, T. N., and Agarwal, R. A. (1996). Molluscicides of Plant Origin. *Biol.Agric.Hortic.* 13: 205-252.
Rejection Code: REVIEW.

1732. Singh, A. K. and Spassova, D. (1998). Effects of Hexamethonium, Phenothiazines, Propranolol and Ephedrine on Acetylcholinesterase Carbamylation by Physostigmine, Aldicarb and Carbaryl: Interaction Between the Active Site and the Functionally Distinct Peripheral Sites in Acetylcholinesterase. *Comp.Biochem.Physiol.C* 119: 97-105.
Rejection Code: IN VITRO.

1733. Singh, Ashok K. and Spassova, Dina (1998). Effects of Hexamethonium, Phenothiazines, Propranolol and Ephedrine on Acetylcholinesterase Carbamylation by Physostigmine, Aldicarb and Carbaryl: Interaction between the Active Site and the Functionally Distinct Peripheral Sites in Acetylcholinesterase. *Comparative Biochemistry and Physiology Part C: Pharmacology, Toxicology and Endocrinology* 119: 97-105.
Rejection Code: METABOLISM.

1734. Singh, D. K. and Agarwal, R. A. (1982). In vitro inhibition of acetyl cholinesterase by carbamate and organophosphorous pesticide in the snail Lymnaea acuminata . *Comparative Physiology and Ecology. Vol. 7, no. 3, pp. 191-196. 1982.*
Rejection Code: IN VITRO.

1735. Singh, K. P., Pandey, S. Y., Galhotra, R., Srivastava, O. P., Singh, S., and Paralikar, A. B. (1980). Dissipation of Carbaryl Residues in/on Cabbage. *Journal of Entomological Research [J. ENTOMOL. RES.]. Vol. 4, no. 1, pp. 25-27. 1980.*
Rejection Code: FATE.

1736. Singh, N., Sahoo, A., Misra, D., Rao, V. R., and Sethunathan, N. (1993). Synergistic interaction between two bacterial isolates in the degradation of carbofuran. *Biodegradation* 4 : 115-123.
Rejection Code: BACTERIA.

1737. Singh, R. and Kavadia, V. S. (1989). Effect of environmental factors on the residual toxicity and persistence of insecticides. II. Effect of sunlight on residual toxicity and persistence of insecticides. *Indian Journal of Entomology [INDIAN J. ENTOMOL.]. Vol. 51, no. 3, pp. 300-314. 1989.*
Rejection Code: FATE.

1738. SINGH, R. and KAVADIA VS (1988). Effect of environmental factors on the residual toxicity and persistence of insecticides: I. Effect of rainfall on residual toxicity and dissipation of insecticides. *INDIAN J ENTOMOL; 50* 513-522.
Rejection Code: FATE.

1739. Singh, U. D., Sethunathan, N., and Raghu, K. (1991). Fungal Degradation of Pesticides. *In: D.K.Arora (Ed.), Handbook of Applied Mycology, Chapter 19, Soil and Plants, Marcel Dekker Inc., NY* 1: 541-588.
Rejection Code: REFS CHECKED/REVIEW.

1740. SINGH UD, SETHUNATHAN, N., and RAGHU, K. (1991). FUNGAL DEGRADATION OF PESTICIDES. *ARORA, D. K., ET AL. (ED.). HANDBOOK OF APPLIED MYCOLOGY, VOL. 1. SOIL AND PLANTS. XIII+720P. MARCEL DEKKER, INC.: NEW YORK, NEW YORK, USA; BASEL, SWITZERLAND. ILLUS. ISBN 0-8247-8380-8.; 0 (0). 1991. 541-588.*
Rejection Code: FATE.

1741. Sinha, N., Lal, B., and Singh, T. P. (1993). Effect of Pesticides on Extrathyroidal Conversion of T4 to T3 in the Freshwater Catfish Clarias batrachus. *In: J.J.Stegeman, M.N.Moore, and M.E.Hahn (Eds.), Mar.Environ.Res., 1993, Int.Symp.on Responses of Marine Organisms to Pollutants, Apr.24, 1992, Woods Hole, MA.*

Rejection Code: ABSTRACT.

1742. SIVAK JG and HERBERT KL (1999). Ocular irritancy measures (damage and recovery) using the optical sensitivity of the cultured bovine lens. *CONGRESS ON IN VITRO BIOLOGY, NEW ORLEANS, LOUISIANA, USA, JUNE 5-9, 1999.YIN VITRO CELLULAR & DEVELOPMENTAL BIOLOGY ANIMAL; 35 (3 PART 2). 1999. 25.A.*
Rejection Code: IN VITRO.

1743. Skalsky, H. L. and Guthrie, F. E. (1977). Affinities of Parathion, DDT, Dieldrin and Carbaryl for Macromolecules in the Blood of the Rat and American Cockroach and the Competitive Interactions of Steroids. *Pestic.Biochem.Physiol.* 7: 289-296.
Rejection Code: IN VITRO.

1744. Skladal, P., Nunes, G. S., Yamanaka, H., and Ribeiro, M. L. (1997). Detection of carbamate pesticides in vegetable samples using cholinesterase-based biosensors. *Electroanalysis* 9 : 1083-1087.
Rejection Code: METHODS, NO TOX DATA.

1745. Skladal, Petr (1992). Detection of organophosphate and carbamate pesticides using disposable biosensors based on chemically modified electrodes and immobilized cholinesterase. *Analytica Chimica Acta* 269: 281-287.
Rejection Code: METHODS.

1746. Skladal, Petr and Mascini, Marco (1992). Sensitive detection of pesticides using amperometric sensors based on cobalt phthalocyanine-modified composite electrodes and immobilized cholinesterases. *Biosensors and Bioelectronics* 7: 335-343.
Rejection Code: METHODS.

1747. Smirnova, Adelina, Mawatari, Kazuma, Hibara, Akihide, Proskurnin, Mikhail A., and Kitamori, Takehiko (2006). Micro-multiphase laminar flows for the extraction and detection of carbaryl derivative. *Analytica Chimica Acta* 558: 69-74.
Rejection Code: METHODS.

1748. Smith, C N , Payne, W R Jr, Pope, J D Jr, Winkie, J H, and Parrish, R S (1999). A field study to compare performance of stainless steel research monitoring wells with existing on-farm drinking water wells in measuring pesticide and nitrate concentrations. *Chemosphere* 38: 875-889.
Rejection Code: NO SPECIES.

1749. Smith, Charles N., Payne, Jr. William R., Pope, Jr. John D., Winkie, Jonathan H., and Parrish, Rudolph S. (1999). A field study to compare performance of stainless steel research monitoring wells with existing on-farm drinking water wells in measuring pesticide and nitrate concentrations. *Chemosphere* 38: 875-889.
Rejection Code: SURVEY.

1750. Smith, D. N., King, W. J., Topper, C. P., Mhando, H., and Cooper, J. F. (1997). Studies on Spray Deposition on Cashew Trees in Tanzania with Reference to the Use of Fungicides to Control Oidium anacardii. *Crop Prot.* 16: 313-322.
Rejection Code: NO TOXICANT.

1751. SMITH EA and OEHME FW (1991). A REVIEW OF SELECTED HERBICIDES AND THEIR TOXICITIES. *VET HUM TOXICOL; 33* 596-608.
Rejection Code: REVIEW.

1752. Smith, L. (1965). The excretory system of Panagrellus redivivus (T. Goodey, 1945). *Comparative*

Biochemistry and Physiology 15: 89-90.
Rejection Code: NO TOX DATA.

1753. SMITH RE, MAURER JK, LONG PH, PROCTOR JE, and TORGERSEN JL (1990). Assessment of the influence of sodium fluoride or 1,25-dihydroxyvitamin D3 on the proliferative bone effect of an avian osteopetrosis virus, MAV-2(O). *TOXICOL PATHOL; 18* 380-386.
Rejection Code: VIRUS.

1754. Smulders, Chantal J G M, Bueters, Tjerk J H, Van Kleef, Regina G D M, and Vijverberg, Henk P M (2003). Selective effects of carbamate pesticides on rat neuronal nicotinic acetylcholine receptors and rat brain acetylcholinesterase. *Toxicology And Applied Pharmacology* 193: 139-146.
Rejection Code: IN VITRO.

1755. Snegaroff, Jacques and Jamet, Paul (1985). UDP-glucuronosyltransferase: Fluorometric determination and microcomputer method for bisubstrate kinetics analysis. *Analytical Biochemistry* 148: 37-43.
Rejection Code: METHODS, METABOLISM.

1756. SODERPALM-BERNDES, C. and ONFELT, A. (1988). THE ACTION OF CARBARYL AND ITS METABOLITE ALPHA NAPHTHOL ON MITOSIS IN V79 CHINESE HAMSTER FIBROBLASTS INDICATIONS OF THE INVOLVEMENT OF SOME CHOLINE ESTER IN CELL DIVISION. *MUTAT RES; 201* 349-364.
Rejection Code: IN VITRO.

1757. Soderpalm-Berndes, Cecilia and Onfelt, Agneta (1988). The action of carbaryl and its metabolite [alpha]-naphthol on mitosis in V79 Chinese hamster fibroblasts. Indications of the involvement of some cholinester in cell division. *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis* 201: 349-363.
Rejection Code: IN VITRO.

1758. Sogorb, M. A., Carrera, V., Benabent, M., and Vilanova, E. (2002). Rabbit Serum Albumin Hydrolyzes the Carbamate Carbaryl. *Chemical Research in Toxicology [Chem. Res. Toxicol.]. Vol. 15, no. 4, pp. 520-526. 15 Apr 2002.*
Rejection Code: IN VITRO.

1759. Sogorb, Miguel A., Alvarez-Escalante, Carlos, Carrera, Victoria, and Vilanova, Eugenio (2006). Role of serum albumins in the detoxication of the carbamate carbaryl: Abstracts of the EUROTOX 2006/6 CTDC Congress - 43rd Congress of the European Societies of Toxicology & 6th Congress of Toxicology in Developing Countries. *Toxicology Letters* 164: S65.
Rejection Code: METABOLISM.

1760. SOHRABI, M., BEITOLLAHI MM, LASEMI, Y., and SOBHANI EA (1997). ORIGIN OF A NEW HIGH LEVEL NATURAL RADIATION AREA IN THE HOT SPRING REGION ON MAHALAT CENTRAL IRAN. *WEI, L., T. SUGAHARA AND Z. TAO (ED.). INTERNATIONAL CONGRESS SERIES, NO. 1136. HIGH LEVELS OF NATURAL RADIATION, 1996. RADIATION DOSE AND HEALTH EFFECTS; 4TH INTERNATIONAL CONFERENCE, BEIJING, CHINA, OCTOBER 21-25, 1996. XV+438P. ELSEVIER SCIENCE PUBLISHERS B.V.: AMSTERDAM, NETHERLANDS; NEW YORK, NEW YORK, USA. ISBN 0-444-82630-0.; 0 (1136). 1997. 69-74.*
Rejection Code : SURVEY.

1761. SOHRABI, M., BOLOURCHI, M., BEITOLLAHI MM, and AMIDI, J. (1997). NATURAL

RADIOACTIVITY OF SOIL SAMPLES IN SOME HIGH LEVEL NATURAL RADIATION AREAS OF IRAN. *WEI, L., T. SUGAHARA AND Z. TAO (ED.). INTERNATIONAL CONGRESS SERIES, NO. 1136. HIGH LEVELS OF NATURAL RADIATION, 1996. RADIATION DOSE AND HEALTH EFFECTS; 4TH INTERNATIONAL CONFERENCE, BEIJING, CHINA, OCTOBER 21-25, 1996. XV+438P. ELSEVIER SCIENCE PUBLISHERS B.V.: AMSTERDAM, NETHERLANDS; NEW YORK, NEW YORK, USA. ISBN 0-444-82630-0.; 0 (1136). 1997. 129-132.*
Rejection Code : SURVEY.

1762. Soleas, G. J., Yan, J., Hom, K., and Goldberg, D. M. (Multiresidue analysis of seventeen pesticides in wine by gas chromatography with mass-selective detection. *Journal of Chromatography A, 882 (1-2) pp. 205-212, 2000*.
Rejection Code: METHODS.

1763. Soleas, G. J., Yan, J., Hom, K., and Goldberg, D. M. (Multiresidue analysis of seventeen pesticides in wine by gas chromatography with mass-selective detection. *Journal of Chromatography A, 882 (1-2) pp. 205-212, 2000*.
Rejection Code: SURVEY.

1764. Soleas, G. J., Yan, J., Hom, K., and Goldberg, D. M. (2000). Multiresidue analysis of seventeen pesticides in wine by gas chromatography with mass-selective detection. *Journal of Chromatography A, 882 (1-2) pp. 205-212, 2000*.
Rejection Code: METHODS.

1765. Soleas, G. J., Yan, J., Hom, K., and Goldberg, D. M. (2000). Multiresidue analysis of seventeen pesticides in wine by gas chromatography with mass-selective detection. *Journal of Chromatography A, 882 (1-2) pp. 205-212, 2000*.
Rejection Code: METHODS.

1766. SOMMARUGA, R., OBERNOSTERER, I., HERNDL GJ, and PSENNER, R. (1997). Inhibitory effect of solar radiation on thymidine and leucine incorporation by freshwater and marine bacterioplankton. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 4178-4184.
Rejection Code: BACTERIA.

1767. Son, L. (2004). Effects of hand and chemical thinning on fruit size and quality of 'Priana' and 'Beliana' apricot (Prunus armeniaca) cultivars. *New Zealand Journal of Crop and Horticultural Science, 32 (3) pp. 331-335, 2004*.
Rejection Code: NO COC.

1768. SONE, H., WAKABAYASHI, K., KUSHIDA, H., ENOMOTO, K., MORI, M., TAKEICHI, N., TSUDA, H., SUGIMURA, T., and NAGAO, M. (1996). Hepatocellular carcinoma induction in LEC rats by a low dose of 2-amino-3,8-dimethylimidazo(4,5-f)quinoxaline. *JAPANESE JOURNAL OF CANCER RESEARCH; 87* 25-29.
Rejection Code: HUMAN HEALTH.

1769. Sonnet, P. E., Lye, T. L., and Sackett, R. R. (1978). Effects of Selected Herbicides on the Toxicity of Several Insecticides to Honey Bees. *Environ.Entomol.* 7: 254-256.

; Habitat: T; Effect Codes: MOR

1770. Sopinska, A., Niezgoda, J., and Jamroz, M. (1984). Study on Acute Toxicity of a Suspension Gamakarbatox Preparation in Carp (Cyprinus carpio L.). *Bromatol.Chem.Toksykol.* 17: 131-134 (RUS) (ENG ABS).
Rejection Code: NON-ENGLISH.

1771. Soto-Chinchilla, Jorge Juan, Garcia-Campana, Ana M., Gamiz-Gracia, Laura, Cuadros-Rodriguez, Luis, and Vidal, Jose Luis Martinez (2004). Determination of a N-methylcarbamate pesticide in environmental samples based on the application of photodecomposition and peroxyoxalate chemiluminescent detection: Papers presented at the VIIIth International Symposium on Analytical Methodology in the Environmental Field and XIIIth Meeting of the Spanish Society of Analytical Chemistry, University of A Coruna, Spain - 21-24 October 2003. *Analytica Chimica Acta* 524: 235-240.
Rejection Code: METHODS.

1772. SOUTHWORTH GR and KELLER JL (1986). Hydrophobic sorption of polar organics by low organic carbon soils. *WATER AIR SOIL POLLUT; 28* 239-248.
Rejection Code: FATE.

1773. SPENCE KE, JANE J-L, and POMETTO, A. L. III (1995). Dialdehyde starch and zein plastic: Mechanical properties and biodegradability. *JOURNAL OF ENVIRONMENTAL POLYMER DEGRADATION; 3* 69-74.
Rejection Code: FATE.

1774. Sperelakis, N. (1992). Chemical Agent Actions on Ion Channels and Electrophysiology of the Heart. *In: D.Acosta, Jr.(Ed.), Target Organ Toxicology Ser.: Cardiovascular Toxicology, 2nd Edition, Raven Press, New York, NY* 283-338.
Rejection Code: REVIEW.

1775. SPIELMANN, H., KALWEIT, S., LIEBSCH, M., WIRNSBERGER, T., GERNER, I., BERTRAM-NEIS, E., KRAUSER, K., KREILING, R., MILTENBURGER HG and others (1993). Validation study of alternatives to the draize eye irritation test in Germany: Cytotoxicity testing and HET-CAM test with 136 industrial chemicals. *TOXICOLOGY IN VITRO; 7* 505-510.
Rejection Code: HUMAN HEALTH.

1776. Sriraghavan, Kamaraj and Ramakrishnan, Vayalakkavoor T. (2003). Photo-Fries and Fries reaction of 5,8-dihydro-1-naphthyl esters. *Tetrahedron* 59: 1791-1796.
Rejection Code: METHODS .

1777. Ssekaalo, H. (1970). The use of 2-nitroso-1-naphthol as an extraction and spectrophotometric reagent for cobalt in plant materials. *Analytica Chimica Acta* 51: 516-519.
Rejection Code: METHODS.

1778. STABEL H-H (1998). Chemical composition and drinking water quality of the water from Lake Constance. *ERGEBNISSE DER LIMNOLOGIE; 0* 13-30.
Rejection Code: SURVEY.

1779. Stadnyk, L., Campbell, R. S., and Johnson, B. T. (1971). Pesticide Effect on Growth and C14 Assimilation in a Freshwater Alga. *Bull.Environ.Contam.Toxicol.* 6: 1-8.

; Habitat: A; Effect Codes: PHY

1780. STAFFORD, K. C. III (1997). Pesticide use by licensed applicators for the control of Ixodes scapularis (Acari: Ixodidae) in Connecticut. *JOURNAL OF MEDICAL ENTOMOLOGY; 34* 552-558.
Rejection Code: SURVEY.

1781. STAHNKE LH (1999). Volatiles produced by Staphylococcus xylosus and Staphylococcus carnosus during growth in sausage minces: Part I. Collection and identification. *LEBENSMITTEL-WISSENSCHAFT & TECHNOLOGIE; 32* 357-364.

Rejection Code: BIOLOGICAL TOXICANT.

1782. STAL, P., JOHANSSON, I., INGELMAN-SUNDBERG, M., HAGEN, K., and HULTCRANTZ, R. (1996). Hepatotoxicity induced by iron overload and alcohol: Studies on the role of chelatable iron, cytochrome P450 2E1 and lipid peroxidation. *JOURNAL OF HEPATOLOGY; 25* 538-546.
Rejection Code: HUMAN HEALTH.

1783. STAMER JK and WIECZOREK ME (1996). PESTICIDE DISTRIBUTION IN SURFACE WATER. *AMERICAN WATER WORKS ASSOCIATION JOURNAL; 88* 79-87.
Rejection Code: FATE.

1784. Stan, Hans-Juergen and Linkerhaegner, Manfred (1996). Pesticide residue analysis in foodstuffs applying capillary gas chromatography with atomic emission detection. State-of-the-art use of modified multimethod S19 of the Deutsche Forschungsgemeinschaft and automated large-volume injection with programmed-temperature vaporization and solvent venting. *Journal of Chromatography, A* 750: 369-390.
Rejection Code: METHODS.

1785. Stan, Hans-Jurgen (2000). **<04 Article Title>.** *Journal of Chromatography, A* 892: <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1786. Stan, Hans-Jurgen (2000). Pesticide residue analysis in foodstuffs applying capillary gas chromatography with mass spectrometric detection. State-of-the-art use of modified DFG-multi-method S19 and automated data evaluation. *Journal of Chromatography, A* 892: 347-377.
Rejection Code: CHEM METHODS.

1787. Stan, Hans-Jurgen (2000). Pesticide residue analysis in foodstuffs applying capillary gas chromatography with mass spectrometric detection. State-of-the-art use of modified DFG-multi-method S19 and automated data evaluation. *Journal of Chromatography, A* 892: 347-377.
Rejection Code: METHODS.

1788. Stanley, J. G. and Trial, J. G. (1980). Disappearance Constants of Carbaryl from Streams Contaminated by Forest Spraying. *Bull.Environ.Contam.Toxicol.* 25: 771-776.
Rejection Code: NO SPECIES.

1789. STAUDINGER, J. and ROBERTS PV (1996). A CRITICAL REVIEW OF HENRY'S LAW CONSTANTS FOR ENVIRONMENTAL APPLICATIONS. *CRITICAL REVIEWS IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY; 26* 205-297.
Rejection Code: METHODS.

1790. Stegeman, J. J. and Kaplan, H. B. (1981). Mixed-Function Oxygenase Activity of Benzo(a)pyrene Metabolism in the Barnacle Balanus eburneus (Crustacea, Cirripedia). *Comp.Biochem.Physiol.* 68C: 55-61.
Rejection Code: METABOLISM/NO CONC/SURVEY.

1791. Sterling, G. H., Doukas, P. H., Jackson, C., Caccese, R., O'Neill, K. J., and O'Neill, J. J. (1993). 3-Carbamyl-N-Allylquinuclidinium Bromide: Effects on Cholinergic Activity and Protection Against Soman. *Biochem.Pharmacol.* 45: 465-472.
Rejection Code: MIXTURE.

1792. Stevens, P. J. G., Walker, J. T. S., Shaw, P. W., and Suckling, D. M. (1994). Organosilicone Surfactants: Tools for Horticultural Crop Protection. *In: Brighton Crop Prot.Conf.-*

Pests and Disease, Conf., Nov.21-24, 1994, Brighton, England 1-3: 755-760.
Rejection Code: MIXTURE.

1793. Stevenson, J. H. (1978). The Acute Toxicity of Unformulated Pesticides to Worker Honey Bees (Apis mellifera L.). *Plant Pathol.* 27: 38-40.

; Habitat: T; Effect Codes: MOR

1794. STEWART, J. and MCCRARY JP (1987). COMPARISON OF THE GLUCURONIDATION ABILITY OF LIVER MICROSOMES FROM RATS TREATED WITH 3 METHYLCHOLANTHRENE OR PHENOLIC ANTIOXIDANTS. *XENOBIOTICA; 17* 1039-1046.
Rejection Code: METABOLISM, IN VITRO.

1795. STIMMANN MW and FERGUSON MP (1990). PROGRESS REPORT VICE PRESIDENT'S TASK FORCE ON PEST CONTROL ALTERNATIVES POTENTIAL PESTICIDE USE CANCELLATIONS IN CALIFORNIA USA. *CALIF AGRIC; 44* 12-16.
Rejection Code: SURVEY.

1796. Stover, E., Fargione, M., Risio, R., and Yang, X. (2002). Crop load reduction and fruit size following multi-step thinning of 'Empire' apple. *HortScience, 37 (1) pp. 130-133, 2002*.
Rejection Code: NO COC.

1797. Stover, E., Fargione, M., Risio, R., Yang, X., and Robinson, T. (2001). **<04 Article Title>.** *Hortscience, 36 (6) pp. 1077-1081, 2001* <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

1798. STOVER EW, FARGIONE MJ, RISIO RA, and MULVIHILL CI (1997). EFFECTS OF APPLICATION CONDITIONS AND ADJUVANTS ON CHEMICAL FRUIT THINNING OF APPLE. *94TH ANNUAL INTERNATIONAL CONFERENCE OF THE AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE, SALT LAKE CITY, UTAH, USA, JULY 23-26, 1997. HORTSCIENCE* 32: 524-525.
Rejection Code: ABSTRACT.

1799. STRANDBERG, B., BANDH, C., VAN BAVEL B, BERGQVIST PA, BROMAN, D., NAF, C., PETTERSEN, H., and RAPPE, C. (1998). Concentrations, biomagnification and spatial variation of organochlorine compounds in a pelagic food web in the northern part of the Baltic Sea. *SCIENCE OF THE TOTAL ENVIRONMENT; 217* 143-154.
Rejection Code: SURVEY.

1800. Stratton, G. W. and Corke, C. T. (1981). Interaction of Permethrin with Daphnia magna in the Presence and Absence of Particulate Material. *Environ.Pollut.* 24: 135-144.

; Habitat: A; Effect Codes: MOR

1801. Stroben, E., Brommel, C., Oehlmann, J., and Fioroni, P. (1992). The Genital Systems of Trivia arctica and Trivia monacha (Prosobranchia, Mesogastropoda) and Tributyltin Induced Imposex. *Zool Beitr* 34: 349-374.
Rejection Code: SURVEY.

1802. Struble, C. B., Feil, V. J., Pekas, J. C., and Gerst, J. W. (1983). Biliary secretion of super(14)C and identification of 5,6-dihydro-5,6-dihydroxycarbaryl glucuronide as a biliary metabolite of (super(14)C)carbaryl in the rat. *Pesticide Biochemistry and Physiology [PESTIC. BIOCHEM. PHYSIOL.]. Vol. 19, no. 1, pp. 85-94. 1983.*
Rejection Code: METABOLISM.

1803. Struble, C. B., Pekas, J. C., and Gerst, J. W. (1983). Enterohepatic circulation and biliary secretion of 5,6-dihydro-5,6-dihydroxy(super(14)C)carbaryl glucuronide in the rat. *Pesticide Biochemistry and Physiology [PESTIC. BIOCHEM. PHYSIOL.]. Vol. 19, no. 1, pp. 95-103. 1983.*
Rejection Code: METABOLISM.

1804. Stuart, I A, Ansell, R O, MacLachlan, J, and Bather, P A (1999). Surface partitioning studies of N-methylcarbamate-treated post-harvest crops using SFE-HPLC-postcolumn reaction-fluorescence. *The Analyst* 124: 275-280.
Rejection Code: METHODS.

1805. Su, Xiaodi and O'Shea, Sean J. (2001). Determination of Monoenzyme- and Bienzyme-Stimulated Precipitation by a Cuvette-Based Surface Plasmon Resonance Instrument. *Analytical Biochemistry* 299: 241-246.
Rejection Code: METHODS.

1806. Suchard, Oliver, Kane, Ronan, Roe, Bernard J., Zimmermann, Elmar, Jung, Christian, Waske, Prashant A., Mattay, Jochen, and Oelgemoller, Michael (2006). Photooxygenations of 1-naphthols: an environmentally friendly access to 1,4-naphthoquinones. *Tetrahedron* 62: 1467-1473.
Rejection Code: METHODS.

1807. Suginaka, Kaoru, Hayashi, Yoshiyuki, and Yamamoto, Yukio (1996). Highly selective resolution of secondary alcohols and acetoacetates with lipases and diketene in organic media. *Tetrahedron: Asymmetry* 7: 1153-1158.
Rejection Code: METHODS.

1808. Suleman, Funmilayo G., Abid, Amr, Gradinaru, Daniela, Daval, Jean-Luc, Magdalou, Jacques, and Minn, Alain (1998). Identification of the Uridine Diphosphate Glucuronosyltransferase Isoform UGT1A6 in Rat Brain and in Primary Cultures of Neurons and Astrocytes. *Archives of Biochemistry and Biophysics* 358: 63-67.
Rejection Code: IN VITRO.

1809. Sun, Hui and Fung, Yingsing (2006). Piezoelectric quartz crystal sensor for rapid analysis of pirimicarb residues using molecularly imprinted polymers as recognition elements: Asianalysis VIII - Papers presented at the 8th Asian Conference on Analytical Chemistry (Asianalysis VIII, Taipei, Taiwan, 16-20 October 2005. *Analytica Chimica Acta* 576: 67-76.
Rejection Code: METHODS.

1810. Sun, Y. and Pignatello, J. J. (1993). Activation of hydrogen peroxide by iron (III) chelates for abiotic degradation of herbicides and insecticides in water. *Journal of Agricultural and Food Chemistry [J. AGRIC. FOOD CHEM.]. Vol. 41, no. 2, pp. 308-312. 1993.*
Rejection Code: FATE.

1811. Sundaram, K. M., Szeto, S. Y., and Hindle, R. (1979Sep14). Evaluation of Amberlite XAD-2 as the extractant for carbamate insecticides from natural water. *J Chromatogr 1979 Sep 14;177(1):29-34.* 177: 29-34.
Rejection Code: NO SPECIES.

1812. Sundaram, K. M. S. and Szeto, S. Y. (1987). Distribution and persistence of carbaryl in some terrestrial and aquatic components of a forest environment. *Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes. Vol. B22, no. 5, pp. 579-599. 1987.*
Rejection Code: FATE.

1813. Suski, V. (Protecton Of Fruit Orchards In Poland.
Rejection Code: NO TOX DATA.

1814. SUTTON AL, POWER JF, DAY DL, FONTENOT JP, FORSTER DL, HUBER DM, JONES DD, KELLING KA, MCCASKEY TA, MOORE JA, and SAFLEY, L. M. JR (1996). INTEGRATED ANIMAL WASTE MANAGEMENT. *COUNCIL FOR AGRICULTURAL SCIENCE AND TECHNOLOGY TASK FORCE REPORT; 0* I-VII, 1-83.
Rejection Code: EFFLUENT.

1815. Suzuki, J., Watanabe, T., Sato, K., and Suzuki, S. (1988). Roles of Oxygen in Photochemical Reaction of Naphthols in Aqueous Nitrite Solution and Mutagen Formation. *Chem.Pharm.Bull.* 36: 4567-4575.
Rejection Code: BACTERIA.

1816. Sykut, A. and Ostapczuk, E. (1995). A Study of the Effect of Selected Herbicydes Applied at Different Seasons on Starch Biosynthesis in the Grain of the Koda and Polanka Wheat Varieties (Badania Wplywu Stosowania w Roznych Terminach Wybranych Herbicydow na Biosynteze Skrobi w Ziarnie Pszenicy Ozimej Odmiany Koda i Polanka). *Bromatol.Chem.Toksykol.* 28: 283-285 (POL) (ENG ABS).
Rejection Code: NON-ENGLISH.

1817. Szatmari, Istvan, Lazar, Laszlo, and Fulop, Ferenc (2006). Microwave-assisted, solvent-free synthesis of 1-([alpha]- or [beta]-hydroxynaphthyl)-1,2,3,4-tetrahydroisoquinolines by the Mannich reaction. *Tetrahedron Letters* 47: 3881-3883.
Rejection Code: METHODS.

1818. SZCZYPA, J. (1997). MONITORING OF RADIOACTIVE CONTAMINATION OF THE SHORES OF THE KOLA PENINSULA NOVAYA ZEMLYA AND FRANZ JOSEF LAND. *CRAWFORD, R. M. M. (ED.). NATO ASI SERIES SERIES 2 ENVIRONMENT, VOL. 25. DISTURBANCE AND RECOVERY IN ARCTIC LANDS: AN ECOLOGICAL PERSPECTIVE; NATO ADVANCED WORKSHOP ON DISTURBANCE AND RECOVERY OF ARCTIC TERRESTRIAL ECOSYSTEMS, ROVANIEMI, FINLAND, SEPTEMBER 24-30, 1995. XVII+621P. KLUWER ACADEMIC PUBLISHERS: DORDRECHT, NETHERLANDS; NORWELL, MASSACHUSETTS, USA. ISBN 0-7923-4418-9.; 25 (0). 1997. 391-407.*
Rejection Code: SURVEY.

1819. SZEKELY, I., PAP, L., and BERTOK, B. (1996). MB-599 A NEW SYNERGIST IN PEST CONTROL. *BRITISH CROP PROTECTION COUNCIL. BRIGHTON CROP PROTECTION CONFERENCE: PESTS AND DISEASES, 1996, VOLS. 1-3; INTERNATIONAL CONFERENCE, BRIGHTON, ENGLAND, UK, NOVEMBER 18-21, 1996. XXIV+446P.(VOL. 1); XXIV+311P.(VOL. 2); XXIV+481P.(VOL. 3) BRITISH CROP PROTECTION COUNCIL (BCPC): FARNHAM, ENGLAND, UK. ISBN 0-948404-99-X.; 0 (0). 1996. 473-480.*
Rejection Code: ABSTRACT.

1820. Szeto, S Y , MacCarthy, H R, Oloffs, P C, and Shepherd, R F (1979). The Fate of Acephate and Carbaryl in Water. *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 14: 635-654.
Rejection Code: FATE.

1821. Szeto, S. Y. and Sundaram, K. M. (1980Nov21). Simplified method for the analysis of some carbamate insecticides in foliage, forest soil and fish tissue by direct gas-liquid chromatography. *J Chromatogr 1980 Nov 21;200:179-84* 200: 179-84.
Rejection Code: CHEM METHODS.

1822. Szeto, S. Y. and Wan, M. T. (1996). Hydrolysis Of Azadirachtin In Buffered And Natural Waters. 44: 1160-1163.
Rejection Code: CHEM METHOD.

1823. Tachikawa, M., Sawamura, R., and Okada, S. (1989). The Effects of Environmental Chemical Pollutants on Fish Gills. *Eisei Kagaku* 35: 397-407 (JPN) (ENG ABS).
Rejection Code: REVIEW.

1824. Tachikawa, M., Sawamura, R., and Okada, S. (1989). The Effects of Environmental Chemical Pollutants on Fish Gills. *Eisei Kagaku* 35: 397-407 (JPN) (ENG ABS).
Rejection Code: REVIEW.

1825. Tachikawa, M., Sawamura, R., and Okada, S. (1989). The Effects of Environmental Chemical Pollutants on Fish Gills. *Eisei Kagaku* 35: 397-407 (JPN) (ENG ABS).
Rejection Code: REVIEW.

1826. Taguchi, Goro, Nakamura, Minako, Hayashida, Nobuaki, and Okazaki, Mitsuo (2003). Exogenously added naphthols induce three glucosyltransferases, and are accumulated as glucosides in tobacco cells. *Plant Science* 164: 231-240.
Rejection Code: IN VITRO.

1827. Takahashi, Naohiro, Schreiber, Jorg, Fischer, Volker, and Mason, Ronald P. (1987). Formation of glutathione-conjugated semiquinones by the reaction of quinones with glutathione: An ESR study. *Archives of Biochemistry and Biophysics* 252: 41-48.
Rejection Code: METHODS.

1828. Takamura, Kiyoko and Watanabe, Fumiyo (1976). Polarographic studies of the oxidation of vitamin K5 in aqueous solution. *Analytical Biochemistry* 74: 512-520.
Rejection Code: METHODS.

1829. Takeya, Tetsuya, Doi, Hirohisa, Ogata, Tokutaro, Okamoto, Iwao, and Kotani, Eiichi (2004). Aerobic oxidative dimerization of 1-naphthols to 2,2'-binaphthoquinones mediated by SnCl4 and its application to natural product synthesis. *Tetrahedron* 60: 9049-9060.
Rejection Code: METHODS.

1830. Takeya, Tetsuya, Doi, Hirohisa, Ogata, Tokutaro, Otsuka, Tsuyoshi, Okamoto, Iwao, and Kotani, Eiichi (2004). SnCl4-mediated oxidative biaryl coupling reaction of 1-naphthol and subsequent ring closure of 2,2'-binaphthol to the dinaphthofuran framework. *Tetrahedron* 60: 6295-6310.
Rejection Code: METHODS.

1831. Takeya, Tetsuya, Otsuka, Tsuyoshi, Okamoto, Iwao, and Kotani, Eiichi (2004). Semiconductor-mediated oxidative dimerization of 1-naphthols with dioxygen and O-demethylation of the enol-ethers by SnO2 without dioxygen. *Tetrahedron* 60: 10681-10693.
Rejection Code: METHODS.

1832. TAM S-Y, DEUTCH AY, YANG J-X, BANNON MJ, and ROTH RH (1985). ANXIOGENIC BETA CARBOLINE SELECTIVELY INCREASES MONOAMINE METABOLISM IN THE PREFRONTAL CORTEX AND THE HYPOTHALAMUS. *15TH ANNUAL MEETING OF THE SOCIETY FOR NEUROSCIENCE, PART 2, DALLAS, TEX., USA, OCT. 20-25, 1985. SOC NEUROSCI ABSTR* 11: 1206.
Rejection Code: ABSTRACT.

1833. Tamas, Ladislav, Durcekova, Katarina, Haluskova, L'ubica, Huttova, Jana, Mistrik, Igor, and Olle, Marta (Rhizosphere localized cationic peroxidase from barley roots is strongly activated

by cadmium and correlated with root growth inhibition. *Chemosphere* In Press, Corrected Proof.
Rejection Code: NO TOX DATA.

1834. TAN, S., PESIGAN, M., MARTIN, C., and LAU, K. (1986). EFFECTS OF VITAMIN D 1 25 DIHYDROXYVITAMIN D-3 AND PARATHYROID HORMONE ON INTESTINAL AND RENAL ALUMINUM HANDLING. *MEETING OF THE AMERICAN SOCIETY OF NEPHROLOGY, NEW ORLEANS, LA., USA, DEC. 15-18, 1985. KIDNEY INT* 29: 173.
Rejection Code: ABSTRACT.

1835. TANG L-C and HOU RF (1998). Potential application of the entomopathogenic fungus, Nomuraea rileyi for control of the corn earworm, Helicoverpa Armigera. *ENTOMOLOGIA EXPERIMENTALIS ET APPLICATA; 88* 25-30.
Rejection Code: BIOLOGICAL TOXICANT.

1836. Tang, Zhen-Hua, Wood, Roger J., and Cammack, Sue L. (1990). Acetylcholinesterase activity in organophosphorus and carbamate resistant and susceptible strains of the Culex pipiens complex. *Pesticide Biochemistry and Physiology* 37: 192-199.
Rejection Code: IN VITRO .

1837. Tanoue, Yasuhiro, Sakata, Kazunori, Hashimoto, Mamoru, Morishita, Shin-ich, Hamada, Moritsugu, Kai, Norihisa, and Nagai, Takeshi (2002). A facile synthesis of naturally occurring binaphthoquinones: efficient oxidative dimerization of 4-alkoxy-1-naphthols using silver(II) oxide-40% nitric acid. *Tetrahedron* 58: 99-104.
Rejection Code: METHODS.

1838. Tauberger, G. and Klimmer, O. R. (1963). Animal Experimental Study of Several Cobalt Compounds after Intravenous Injection (Tierexperimentelle Untersuchungen Einiger Kobaltverbindungen nach Intravenoser Injektion). *Arch.Int.Pharmacodyn.* 143: 219-239 (GER).
Rejection Code: NON-ENGLISH.

1839. TAULER, R. , DURAND, G., and BARCELO, D. (1992). Deconvolution and quantitation of unresolved mixtures in liquid chromatographic-diode array detection using evolving factor analysis. *CHROMATOGRAPHIA; 33* 244-254.
Rejection Code: METHODS.

1840. Taylor, K. C. and Bush, P. B. (Influence of postharvest handling on the concentration of pesticide residues in peach peel. *HortScience, 37 (3) pp. 554-558, 2002*.
Rejection Code: NO TOX DATA.

1841. Taylor, K. C. and Bush, P. B. (2002). Influence of postharvest handling on the concentration of pesticide residues in peach peel. *HortScience, 37 (3) pp. 554-558, 2002*.
Rejection Code: SURVEY.

1842. TEIFKE JP and LOEHR CV (1996). Immunohistochemical detection of P53 overexpression in paraffin wax-embedded squamous cell carcinomas of cattle, horses, cats and dogs. *JOURNAL OF COMPARATIVE PATHOLOGY; 114* 205-210.
Rejection Code: IN VITRO.

1843. Tekel, J., Tahotna, S., and Vaverkova, S. (1998). Gas Chromatographic Method for Determination of Uracil Herbicides in Roots of Echinacea angustifolia Moench (Asteraceae). *J.Pharm.Biomed.Anal.* 16: 753-758.
Rejection Code: IN VITRO.

1844. Terao, Yoshito, Satoh, Tetsuya, Miura, Masahiro, and Nomura, Masakatsu (2000). Palladium-Catalyzed Annulation Reaction of o-Bromobenzaldehydes with Carbonyl Compounds to Produce Naphthol and/or Naphthalene Derivatives. *Tetrahedron* 56: 1315-1320.
Rejection Code: METHODS.

1845. Tezuka, Takahiro, Sasaki, Katsunori, and Ando, Setsuo (1987). Base and acid catalyzed reactions of phenylazo 1-naphthyl ether, a new reactive diazoether. Reply to the Kekule's mechanism for the diazo coupling reaction. *Tetrahedron Letters* 28: 4427-4430.
Rejection Code: METHODS.

1846. Tezuka, Takahiro, Tanikawa, Hiroharu, Sasaki, Katsunori, and Tajima, Harumi (1989). The radical coupling mechanism in the diazo coupling reaction. Migration vs. decomposition of phenylazo radical generated from phenylazo 1-naphthyl ether in the solvent cage. *Tetrahedron Letters* 30: 1811-1814.
Rejection Code: METHODS.

1847. Thacker, E. J (1971). Pesticide metabolism in animals. *Int. Symp. Identification Meas. Environ. Pollut., [Proc.]* 92-7.
Rejection Code: METABOLISM.

1848. Thacker, E. J. (1971). Pesticide Metabolism in Animals. *In: Int.Symp.Identification and Measurement of Environmental Pollutants, Campbell Printing, Ottawa* 92-97.
Rejection Code: REVIEW.

1849. THAKUR, N. SA and DEKA TC (1997). BIOEFFICACY AND ECONOMICS OF DIFFERENT INSECTICIDES AGAINST PIERIS BRASSICAE L. ON CABBAGE IN MIDHILLS OF NORTH-EAST INDIA. *INDIAN JOURNAL OF PLANT PROTECTION; 25* 109-114.
Rejection Code: SURVEY.

1850. Thapar, S. , Bhushan, R., and Mathur, R. P. (1995). Degradation of organophosphorus and carbamate pesticides in soils-HPLC determination. *Biomedical Chromatography* 9 : 18-22.
Rejection Code: FATE/METHODS.

1851. Thapar, S. , Bhushan, R., and Mathur, R. P. (1994). Simultaneous determination of a mixture of organophosphorus and carbamate pesticides by high performance liquid chromatography. *Biomedical Chromatography* 8 : 153-157.
Rejection Code: METHODS.

1852. Theisen, Marie Ott, Miller, Glenn C., Cripps, Colleen, de Renobales, Mertxe, and Blomquist, Gary J. (1991). Correlation of carbaryl uptake with hydrocarbon transport to the cuticular surface during development in the cabbage looper, Trichoplusia ni. *Pesticide Biochemistry and Physiology* 40: 111-116.
Rejection Code: FATE.

1853. THIERY, I. , DELECLUSE, A., TAMAYO MC, and ORDUZ, S. (1997). Identification of a gene for Cyt1A-like hemolysin from Bacillus thuringiensis subsp. medellin and expression in a crystal-negative B. thuringiensis strain. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 468-473.
Rejection Code: BACTERIA.

1854. Thomas, M. B. and Sturrock, P. E. (1986). DETERMINATION OF CARBAMATES BY HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY WITH ELECTROCHEMICAL DETECTION USING PULSED-POTENTIAL CLEANING. *J Chromatogr* 357 : 318-

324.
Rejection Code: CHEM METHODS.

1855. Thomas, P. T. and House, R. V. (1989). Pesticide-Induced Modulation of the Immune System. *In: N.N.Ragsdale and R.E.Menzer (Eds.), ACS (Am.Chem.Soc.) Symp.Ser.414, Carcinogenicity and Pesticides: Principles, Issues, and Relationships, 196th Natl.Meet.of the Am.Chem.Soc., Sept.25-30, 1988, Los Angeles, CA, Am.Chem.Soc., Washington, D.C.* 94-106.
Rejection Code: REVIEW.

1856. Thomas, P. T. and House, R. V. (1989). Pesticide-Induced Modulation of the Immune System. *In: N.N.Ragsdale and R.E.Menzer (Eds.), ACS (Am.Chem.Soc.) Symp.Ser.414, Carcinogenicity and Pesticides: Principles, Issues, and Relationships, 196th Natl.Meet.of the Am.Chem.Soc., Sept.25-30, 1988, Los Angeles, CA, Am.Chem.Soc., Washington, D.C.* 94-106.
Rejection Code: REVIEW.

1857. Thomas, S. H. and Saunders, J. L. (1986). JOINT INFLUENCES OF CULTIVATION RESIDUE INCORPORATION AND PESTICIDES ON NEMATODE POPULATIONS UNDER TROPICAL MAIZE MONOCULTURE. *25th Annual Meeting of the Society of Nematologists. J Nematol* 18 : 642.
Rejection Code: ABSTRACT.

1858. THOMASSEN DG (1989). Variable responsiveness of rat tracheal epithelial cells to bovine serum albumin in serum-free culture. *IN VITRO CELL DEV BIOL; 25* 1046-1050.
Rejection Code: IN VITRO.

1859. Thompson, A. R. and Gore, F. L. (1972). Toxicity of Twenty-Nine Insecticides to Folsomia candida: Laboratory Studies. *J.Econ.Entomol.* 65: 1255-1260.

; Habitat: T; Effect Codes: MOR

1860. Thornalley, Paul J., d'Arcy Doherty, Mary, Smith, Martyn T., Bannister, Joe V., and Cohen, Gerald M. (1984). The formation of active oxygen species following activation of 1-naphthol, 1,2- and 1,4-naphthoquinone by rat liver microsomes. *Chemico-Biological Interactions* 48: 195-206.
Rejection Code: IN VITRO, METABOLISM.

1861. Tice, Colin M (2002). Selecting the right compounds for screening: use of surface-area parameters. *Pest Management Science* 58: 219-233.
Rejection Code: CHEM METHODS.

1862. Tice, Colin M (2002). Selecting the right compounds for screening: use of surface-area parameters. *Pest Management Science* 58: 219-233.
Rejection Code: CHEM METHODS.

1863. Tillander, M., Miettinen, J. K., Rissanen, K., Miettinen, V., and Minkkinen, E. (1968). Excreation of Phenyl and Methyl Mercury Nitrate After Oral Administration or Intramuscular Injection in Fish, Mussel, Mollusc and Crayfish (Utsondring av Fenyl och Methlmerkurinitrat Efter Oral Administration Eller Intramuskular Injektion i Fisk, Mussla, Snacka och Krafta). *In: Proc.of the Nordic Symp.on the Problems of Mercury, Oct.10-11, 1968, Lidingo, Sweden* 181-183 (SWE).
Rejection Code: NON-ENGLISH.

1864. TITUS JE and HOOVER DT (1993). Reproduction in two submersed macrophytes declines

progressively at low pH. *FRESHWATER BIOL; 30* 63-72.
Rejection Code: NO TOXICANT.

1865. Tizio, R., Trippi, V. S., Trione, S. O., and Almelapons, G. (1961). Studies on Rooting in Grapevine Cuttings. IV. Action of 2,4-D, 2,4,5-T, NAA and IAA, Alone or in Combination and with or Without Addition of Sucrose, on Rooting Capacity (Estudios Sobre Enraizamiento en vid. IV. Efecto de los Acidos 2,4-Diclorofenoxiacetico, 2,4,5-Triclorofenoxiacetico, Naftalenacetico e indol-3-acetico y Combinaciones de los Mismos y con Sacarosa, Sobre la Capacidad de Enraizamiento). *Phyton (B.Aires)* 17: 15-19.
Rejection Code: NON-ENGLISH.

1866. Tizio, R., Trippi, V. S., Trione, S. O., and Almelapons, G. (1961). Studies on Rooting in Grapevine Cuttings. IV. Action of 2,4-D, 2,4,5-T, NAA and IAA, Alone or in Combination and with or Without Addition of Sucrose, on Rooting Capacity (Estudios Sobre Enraizamiento en vid. IV. Efecto de los Acidos 2,4-Diclorofenoxiacetico, 2,4,5-Triclorofenoxiacetico, Naftalenacetico e indol-3-acetico y Combinaciones de los Mismos y con Sacarosa, Sobre la Capacidad de Enraizamiento). *Phyton (B.Aires)* 17: 15-19.
Rejection Code: NON-ENGLISH.

1867. Todd, S. J., Cain, R. B., and Schmidt, S. (2002). Biotransformation of naphthalene and diaryl ethers by green microalgae. *Biodegradation, 13 (4) pp. 229-238, 2002*.
Rejection Code: METABOLISM, IN VITRO.

1868. Toei, Kyoji, Motomizu, Shoji, and Yokosu, Hirochika (1979). Extraction--spectrophotometric determination of nickel with 4-chloro-2-nitroso-1-naphthol and crystal violet. *Analytica Chimica Acta* 110: 329-334.
Rejection Code: METHODS.

1869. Toor, H. S. and Kaur, K. (1974). Toxicity of Pesticides to the Fish, Cyprinus carpio communis Linn. *Indian J.Exp.Biol.* 12: 334-336 (Used 6722 As Reference).

; Habitat: A; Effect Codes: MOR

1870. Topp, E., Hanson, R. S., Ringleberg, D. B., White, D. C. , and Wheatcroft, R. (1993). Isolation and characterization of an N-methylcarbamate insecticide-degrading methylotrophic bacterium. *Appl Environ Microbiol* 59 : 3339-3349.
Rejection Code: BACTERIA.

1871. Tos-Luty, S., Tokarska-Rodak, M., Latuszynska, J., and Przebirowska, D. (2001). Dermal absorption and distribution of super(14)C carbaryl in Wistar rats. *Annals of Agricultural and Environmental Medicine [Ann. Agric. Environ. Med.]. Vol. 8, no. 1, pp. 47-50. 2001*.
Rejection Code: FATE.

1872. TOTH, S. and SARINGER, G. (1997). Mosquitos of the Lake Balaton and their control. *ACTA PHYTOPATHOLOGICA ET ENTOMOLOGICA HUNGARICA; 32* 377-391.
Rejection Code: SURVEY.

1873. Trachtenberg, S. (1998). A Fast-Freezing Device with a Retractable Environmental Chamber, Suitable for Kinetic Cryo-Electron Microscopy Studies. *Journal of Structural Biology* 123: 45-55.
Rejection Code: METHODS.

1874. Trailovic, S. M., Clark, C. L., Robertson, A. P., and Martin, R. J. (2005). Brief Application of AF2 Produces Long Lasting Potentiation of nAChR Responses in Ascaris suum. *Mol.Biochem.Parasitol.* 139: 51-64.

Rejection Code: IN VITRO.

1875. TRAJENDRAN, N., MATSUDA, O., IMAMURA, N., and URUSHIGAWA, Y. (1992). Variation in microbial biomass and community structure in sediments of eutrophic bays as determined by phospholipid ester-linked fatty acids. *APPL ENVIRON MICROBIOL; 58* 562-571.
Rejection Code: BACTERIA.

1876. Travis, B. V., Dewey, J. E., and Pendleton, R. F. (1968). Comparative Toxicity Data on Pesticides Used for Mosquito Control. *Proc.N.J.Mosq.Exterm.Assoc.* 55: 122-129.
Rejection Code: REVIEW.

1877. TRAVIS CC, WANG LA, and WAEHNER MJ (1991). Quantitative correlation of carcinogenic potency with four different classes of short-term test data. *MUTAGENESIS; 6* 353-360.
Rejection Code: METHODS.

1878. Trebst, A. and Wietoska, H. (1975). Mode of Action and Structure-Activity-Relationships of the Aminotriazinone Herbicide Metribuzin. Inhibition of Photosynthetic Electron Transport in Spinach Chloroplasts by Metribuzin(Wirkungsmechanismus und Struktur-Aktivitatsbeziehungen des Aminotriazinon-Herbizids Metribuzin. Hemmung des Photosynthetischen Elektronentransports von Chloroplasten durch Metribuzin). *Z.Naturforsch.* 30C: 499-504.
Rejection Code: NON-ENGLISH.

1879. Treccani, C. P. (1950). Interazione Dell'Acido Alpha-Naftalenacetico e Miele Nel Radicamento di Talee di Vite. *Riv Fruttic* 12: 133-162.
Rejection Code: NON-ENGLISH.

1880. Tremaine, Larry M., Diamond, Gary L., and Quebbemann, Aloysius J. (1984). In vivo quantification of renal glucuronide and sulfate conjugation of 1-naphthol and p-nitrophenol in the rat. *Biochemical Pharmacology* 33: 419-427.
Rejection Code: METABOLISM.

1881. Tremaine, Larry M., Diamond, Gary L., and Quebbemann, Aloysius J. (1985). Quantitative determination of organ contribution to excretory metabolism. *Journal of Pharmacological Methods* 13: 9-35.
Rejection Code: METHODS, METABOLISM.

1882. TRENHOLM, A. (1998). Identification of PICs in hazardous waste combustion emissions. *WASTE MANAGEMENT; 18* 485-492.
Rejection Code: EFFLUENT.

1883. Trevisan, M., Montepiani, C., Ragozza, L., Bartoletti, C., Ioannilli, E., and Del Re, A. A. M. (1993). Pesticides in rainfall and air in Italy. *Environmental Pollution* 80: 31-39.
Rejection Code: SURVEY.

1884. Trevisan, M., Montepiani, C., Ragozza, L., Bartoletti, C., Ioannilli, E., and Del Re, A. A. M. (1993). Pesticides in rainfall and air in Italy. *Environmental Pollution* 80: 31-39.
Rejection Code: SURVEY.

1885. Trial, J. G. (1983). A Study of Leaf-Processing Disruption in Streams Within Spruce Budworm Suppression Project Carbaryl Spray Blocks. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1983 Maine Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, Augusta, ME* 1-34.
Rejection Code: NO CONC.

1886. Trial, J. G. and Cree, K. L. (1981). The Effectiveness of Upstream Refugia for Promoting Recolonization of Plecoptera Killed by Exposure to Carbaryl. *In: K.G.Stratton (Ed.), Environ.Monit.Rep.from the 1980 Maine Cooperative Spruce Budworm Suppression Project, Maine Forest Serv., Dep.of Conservation, August, ME* 51-62 (Publ As 9787).
Rejection Code: PUBL AS.

1887. Tripathi, Archana Mani and Agarwal, R. A. (1997). Synergism in tertiary mixtures of pesticides. *Chemosphere* 35: 2365-2374.
Rejection Code: MIXTURE.

1888. Tsogas, George Z., Giokas, Dimosthenis L., Nikolakopoulos, Petros G., Vlessidis, Athanasios G., and Evmiridis, Nicholaos P. (2006). Determination of the pesticide carbaryl and its photodegradation kinetics in natural waters by flow injection-direct chemiluminescence detection: Instrumental Methods of Analysis -IMA 2005 - Instrumental Methods of Analysis -IMA 2005. *Analytica Chimica Acta* 573-574: 354-359.
Rejection Code: METHODS.

1889. Tsuchida, S., Hiraoka, M., Sudo, M., and Muramatsu, I. (1995). Hyporesponsiveness to nitrovasodilators in rat aorta incubated with endotoxin and L-arginine. *European Journal of Pharmacology [EUR. J. PHARMACOL.]. Vol. 281, no. 3, pp. 251-254. 1995.*
Rejection Code: IN VITRO.

1890. Tsuchida, Shinya, Sudo, Masakatsu, and Muramatsu, Ikunobu (1996). Stimulatory and inhibitory effects of sodium nitroprusside on soluble guanylate cyclase. *Life Sciences* 58: 829-832.
Rejection Code: NO TOX DATA.

1891. Tsuji, S., Tonogai, Y., Ito, Y., and Kanoh, S. (1986). The Influence of Rearing Temperatures on the Toxicity of Various Environmental Pollutants for Killifish (Oryzias latipes). *J.Hyg.Chem.(Eisei Kagaku)* 32: 46-53 (JPN) (ENG ABS) .

; Habitat: A; Effect Codes: MOR

1892. TTERLIKKIS, D. and SHETTY AS (1985). IN-VITRO ACTION OF CARBARYL ON HEPATIC ISOZYMES OF KYNURENINE FORMAMIDASE FROM 2 INBRED STRAINS OF MICE. *16TH ANNUAL MEETING OF THE ENVIRONMENTAL MUTAGEN SOCIETY, LAS VEGAS, NEV., USA, FEB. 25-MARCH 1, 1985. ENVIRON MUTAGEN; 7* 88.
Rejection Code: IN VITRO.

1893. TUREK JJ and SCHOENLEIN IA (1993). Indomethacin-induced gastrointestinal ulcers in rats: Effects of dietary fatty acids and endotoxin. *PROSTAGLANDINS LEUKOTRIENES ESSENT FATTY ACIDS* 48: 229-232.
Rejection Code: HUMAN HEALTH.

1894. Turner, E. C. Jr (1986). Structural and Litter Pests. *Poult.Sci.* 65: 644-648.
Rejection Code: REVIEW.

1895. Turner, E. C. Jr. (1986). Structural and Litter Pests. *Poult.Sci.* 65: 644-648.
Rejection Code: REVIEW.

1896. Turner, J. C., Shanks, V., Kelly, W. J., and Green, R. S. (1977). The effect of sodium phenobarbital and 3,4-benzpyrene on the glucuronidation of 1-naphthol in rat small intestinal loops in vivo. *General Pharmacology: The Vascular System* 8: 51-53.
Rejection Code: FATE, METABOLISM.

1897. Turner, J. C., Shanks, V., Kelly, W. J., and Green, R. S. (1980). Studies on the conjugation of 1-naphthol and aniline by small intestinal loops of the rat and guinea-pig in vivo. *General Pharmacology: The Vascular System* 11: 165-168.
Rejection Code: FATE.

1898. Twagilimana, L., Bohatier, J., Groliere, C-A., Bonnemoy, F., and Sargos, D. (1998). A New Low-Cost Microbiotest with the ProtozoanSpirostomum teres: Culture Conditions and Assessment of Sensitivity of the Ciliate to 14 Pure Chemicals. *Ecotoxicology and Environmental Safety* 41: 231-244.
Rejection Code: METHODS.

1899. Tyburczyk, W. and Podolak-Majczak, M. (1984). Effect of Joint Action of Sodium Nitrite and Carbaryl on Rat's Organism. Part I. Serotonin Metabolism [Wplyw Skojarzonego Dzialania Azotynu Sodowego I Karbarylu na Organizm Szczura]. *Bromatol.Chem.Toksykol.* 17: 125-130 (POL) (ENG ABS).
Rejection Code: NON-ENGLISH.

1900. Tyers, Mike (2004). Cell cycle goes global. *Current Opinion in Cell Biology* 16: 602-613.
Rejection Code: IN VITRO, NO TOX DATA.

1901. Tzeng, C. C. and Kao, S. S. (1995). Toxicity of Insecticides to Eretmocerus Orientalis and Encarsia Transvena-Parasitoids of Silver Leaf White Fly (Bemisia Argentifolii). *Plant protection bulletin (taichung)* 37: 271-279.
Rejection Code: NON-ENGLISH.

1902. Uhl, Joanne and Newton, Robert C. (1988). Quantitation of related proteins by Western blot analysis. *Journal of Immunological Methods* 110: 79-84.
Rejection Code: METHODS.

1903. Ullrich, D., Fischer, G., Katz, N., and Bock, K. W. (1984). Intralobular distribution of UDP-glucuronosyltrans-ferase in livers from untreated, 3-methylcholanthrene- and phenobarbital-treated rats. *Chemico-Biological Interactions* 48: 181-190.
Rejection Code: FATE, IN VITRO.

1904. Ullrich, Dieter and Bock, Karl Walter (1984). Glucuronide formation of various drugs in liver microsomes and in isolated hepatocytes from phenobarbital- and 3- methylcholanthrene-treated rats. *Biochemical Pharmacology* 33: 97-101.
Rejection Code: IN VITRO, METABOLISM.

1905. Ullrich, Dieter, Munzel, Peter A., Beck-Gschaidmeier, Simone, Schroder, Michael, and Bock, Karl Walter (1997). Drug-Metabolizing Enzymes in Pharyngeal Mucosa and In Oropharyngeal Cancer Tissue. *Biochemical Pharmacology* 54: 1159-1162.
Rejection Code: IN VITRO, METABOLISM.

1906. Ullrich, Rene and Hofrichter, Martin (2005). The haloperoxidase of the agaric fungus Agrocybe aegerita hydroxylates toluene and naphthalene. *FEBS Letters* 579: 6247-6250.
Rejection Code: METABOLISM.

1907. UMECHURUBA CI, OTU KA, and ATAGA AE (1992). The role of seed-borne Aspergillus flavus Link ex Fr., Aspergillus niger Van Tiegh and Macrophomina phaseolina (Tassi) Goid on deterioration of groundnut (Arachis hypogaea L.) seeds. *INT BIODETERIOR BIODEGRAD; 30* 57-63.
Rejection Code: NO TOXICANT.

1908. UNO, Y., TAKASAWA, H., MIYAGAWA, M., INOUE, Y., MURATA, T., and YOSHIKAWA,

K. (1994). An in vivo-in vitro replicative DNA synthesis (RDS) test using rat hepatocytes as an early prediction assay for nongenotoxic hepatocarcinogens screening of 22 known positive and 25 noncarcinogens. *MUTATION RESEARCH; 320* 189-205.
Rejection Code: IN VITRO.

1909. UPADHYAY RR and UPADHYAY, L. (1993). DEVELOPMENT OF MARKED BASOPHILIA IN THE LIVER OF HETEROPNEUSTES FOSSILIS BY SOME SELECTED CHEMICALS. *CURRENT SCIENCE (BANGALORE); 65 (9). 1993. 708-710.*
Rejection Code: IN VITRO.

1910. Utz, C. G. , Drewno, G. W., and Hollis, R. P. (USING NONIONIC SURFACTANTS IN AQUEOUS FORMULATIONS. *Devisetty, B. N., D. G. Chasin and P. D. Berger (Ed.). Astm (American Society for Testing and Materials) Special Technical Publication, No. 1146. Pesticide Formulations and Application Systems: 12th Volume; Twelfth Symposium, San Diego, California, Usa, October 16-17, 1991. Viii+381p. Astm (American Society for Testing and Materials): Philadelphia, Pennsylvania, Usa. Isbn 0-8031-1439-7.; 0 (0). 1993. 133-144.*
Rejection Code: METHODS.

1911. UTZ CG, DREWNO GW, and HOLLIS RP (1993). USING NONIONIC SURFACTANTS IN AQUEOUS FORMULATIONS. *DEVISETTY, B. N., D. G. CHASIN AND P. D. BERGER (ED.). ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS) SPECIAL TECHNICAL PUBLICATION, NO. 1146. PESTICIDE FORMULATIONS AND APPLICATION SYSTEMS: 12TH VOLUME; TWELFTH SYMPOSIUM, SAN DIEGO, CALIFORNIA, USA, OCTOBER 16-17, 1991. VIII+381P. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS): PHILADELPHIA, PENNSYLVANIA, USA. ISBN 0-8031-1439-7.; 0 (0). 1993. 133-144.*
Rejection Code: CHEM METHODS.

1912. UTZ CG, DREWNO GW, and HOLLIS RP (1993). USING NONIONIC SURFACTANTS IN AQUEOUS FORMULATIONS. *DEVISETTY, B. N., D. G. CHASIN AND P. D. BERGER (ED.). ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS) SPECIAL TECHNICAL PUBLICATION, NO. 1146. PESTICIDE FORMULATIONS AND APPLICATION SYSTEMS: 12TH VOLUME; TWELFTH SYMPOSIUM, SAN DIEGO, CALIFORNIA, USA, OCTOBER 16-17, 1991. VIII+381P. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS): PHILADELPHIA, PENNSYLVANIA, USA. ISBN 0-8031-1439-7.; 0 (0). 1993. 133-144.*
Rejection Code: METHODS.

1913. Valbonesi, Paola, Sartor, Giorgio, and Fabbri, Elena (2003). Characterization of cholinesterase activity in three bivalves inhabiting the North Adriatic sea and their possible use as sentinel organisms for biosurveillance programmes. *The Science of The Total Environment* 312: 79-88.
Rejection Code: SURVEY.

1914. Valiulis, D. (1985). GRASSHOPPERS EVERYWHERE. *Agrichem Age* 29 : 22, 24.
Rejection Code: NO TOX DATA.

1915. VAN DEN BRINK NW, VAN FRANEKER JA, and DE RUITER-DIJKMAN EM (1998). Fluctuating concentration of organochlorine pollutants during a breeding season in two Antarctic seabirds: Adelie penguin and southern fulmar. *ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY; 17* 702-709.
Rejection Code: SURVEY.

1916. Van Gestel, C. A. M. (1992). Validation of earthworm toxicity tests by comparison with field studies: A review of benomyl, carbendazim, carbofuran, and carbaryl. *Ecotoxicology*

and Environmental Safety 23: 221-236.
Rejection Code: REVIEW.

1917. Van't Klooster, G. A. E., Woutersen-Van Nijnanten, F. M. A., Blaauboer, B. J., Noordhoek, J., and Van Miert ASJPAM (1994). Applicability of cultured hepatocytes derived from goat, sheep and cattle in comparative drug metabolism studies. *Xenobiotica. Vol. 24, no. 5, pp. 417-428. 1994.*
Rejection Code: IN VITRO.

1918. Vargas, M. and Franklin, M. R. *. (1997). Intestinal UDP-glucuronosyltransferase activities in rat and rabbit. *Xenobiotica. Vol. 27, no. 5, pp. 413-421. May 1997.*
Rejection Code: METABOLISM, IN VITRO.

1919. Varghese, M. D., Manoharadoss, R. S., Nair, A. K. K., and Somvanshi, V. S. (ed) (2004). Impact of square mesh codend on conservation of resources. *Fishery Survey of India* .
Rejection Code: NO TOXICANT.

1920. Vasseur, P., Dive, D., Sokar, Z., and Bonnemain, H. (1988). Interactions between copper and some carbamates used in phytosanitary treatments. *Chemosphere* 17: 767-782.
Rejection Code: METHODS.

1921. Veltman, J. C., Kumar, A., Sanders, R. A., and Watkins, J. B. III* (1998). Effects of aldose reductase inhibitors, AL-4114 and AL-1576, on hepatic biotransformation in rabbit and rat. *International Journal of Toxicology [Int. J. Toxicol.]. Vol. 17, no. 6, pp. 603-617. 1998.*
Rejection Code: METABOLISM.

1922. Venkateswarlu, K, Chendrayan, K, and Sethunathan, N (1980). Persistence and biodegradation of carbaryl in soils. *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 15: 421-429.
Rejection Code: FATE.

1923. Verity, M. Anthony, Caper, R., and Brown, W. Jann (1964). Spectrofluorometric determination of [beta]-glucuronidase activity. *Archives of Biochemistry and Biophysics* 106: 386-393.
Rejection Code: METHODS.

1924. Verity, M. Anthony, Gambell, Janet K., and Brown, W. Jann (1967). Fluorometric determination of N-acetyl-[beta]--glucosaminidase activity. *Archives of Biochemistry and Biophysics* 118: 310-316.
Rejection Code: IN VITRO, METHODS.

1925. Verma, A. N., Sandhu, G. S., and Saramma, P. U. (1967). Relative Efficacy of Different Insecticides as Contact Poisons to the Adults of Singhara-d Beetle Galerucella-birmanica Coleoptera Chrysomellidae trapa-bispinosa-d Mevinphos Carbaryl Bidrin Nicotine Sulfate Parathion Diazinon Phosphamidon DDT Malathion te. *J.Res.Punjab Agric.Univ.* 4: 415-419.

; Habitat: T

1926. Verma, S. K. (2003). Bioefficacy of Pesticides Against Pod Borer Lampides boeticus L. (Lycaenidae: Lepidoptera) in Summer Mung Bean. *Ann.Arid Zone* 42: 75-78.
Rejection Code: NO TOX DATA.

1927. Verma, S. R. and Tonk, I. P. (1984). Biomonitoring of the contamination of water by a sublethal concentration of pesticides. A system analysis approach. *Acta Hydrochimica et*

Hydrobiologica [ACTA HYDROCHIM. HYDROBIOL.]. Vol. 12, no. 4, pp. 399-409. 1984.
Rejection Code: METHODS.

1928. Verma, S. R., Tonk, I. P., Gupta, A. K., and Saxena, M. (1984). Evaluation of an application factor for determining the safe concentration of agricultural and industrial chemicals. *Water Research* 18: 111-115.
Rejection Code: SURVEY.

1929. Verrin, S. M., Begg, S. J., Ross, P. S., and Department of Fisheries and Oceans Canada, Sidney, BC (Canada) Inst. Ocean. Sci. (2004). Pesticide use in British Columbia and the Yukon: an assessment of types, applications and risks to aquatic biota.
Rejection Code : NO TOX DATA.

1930. Verrin, S. M., Begg, S. J., Ross, P. S., and Department of Fisheries and Oceans Canada, Sidney, BC (Canada) Inst. Ocean. Sci. (2004). Pesticide use in British Columbia and the Yukon: an assessment of types, applications and risks to aquatic biota.
Rejection Code : SURVEY.

1931. VICTOR VM, MINANO, M., GUAYERBAS, N., DEL RIO M, MEDINA, S., and DE LA FUENTE M (1998). Effects of endotoxic shock in several functions of murine peritoneal macrophages. *MOLECULAR AND CELLULAR BIOCHEMISTRY; 189* 25-31.
Rejection Code: BIOLOGICAL TOXICANT.

1932. Villanueva, Marco A. and Malek-Hedayat, Shahnaz (1987). Elimination of endogenous peroxidase artifacts in immunoblots of plant extracts. *Plant Science* 52: 141-146.
Rejection Code: METHODS.

1933. VILLARD P-H, HERBER, R., SEREE EM, ATTOLINI, L., MAGDALOU, J., and LACARELLE, B. (1998). Effect of cigarette smoke on UDP-glucuronogyltransferase activity and cytochrome P450 content in liver, lung and kidney microsomes in mice. *PHARMACOLOGY & TOXICOLOGY; 82* 74-79.
Rejection Code: INHALE, METABOLISM.

1934. Ville, P., Roch, P., Cooper, E. L., and Narbonne, J. F. (1997). Immuno-modulator Effects of PCBs, Carbaryl and 2,4 D in the Earthworm Eisenia fetida andrei: The 7th Congress of The International Society of Developmental and Comparative Immunology. *Dev.Comp.Immunol.* 21: 118.
Rejection Code: ABSTRACT.

1935. Vincent, B., Jiracek, J., Noble, F., Loog, M., Roques, B., Dive, V., Vincent, J. P., and Checler, F. (1997). Contribution of Endopeptidase 3.4.24.15 to Central Neurotensin Inactivation. *Eur.J.Pharmacol.* 334: 49-53.
Rejection Code: IN VITRO.

1936. Vittone, Janet, Blackman, Marc R., Busby-Whitehead, Jan, Tsiao, Chris, Stewart, Kerry J., Tobin, Jordan, Stevens, Tom, Bellantoni, Michele F., Rogers, Marc A., and Baumann, Gerhard (1997). Effects of single nightly injections of growth hormone--releasing hormone (GHRH 1-29) in healthy elderly men. *Metabolism* 46: 89-96.
Rejection Code: HUMAN HEALTH.

1937. von Bahr, Christer, Orrenius, Sten, and Sjoqvist, Folke (1971). Interaction of imipramine, desmethylimipramine, nortriptyline and 1-naphthol with microsomal preparations. *Chemico-Biological Interactions* 3: 243-244.
Rejection Code: IN VITRO.

1938. VON DER HUDE W, CARSTENSEN, S., GUERTLER, R., and OBE, G. (1992). Structure-activity relationships of epoxides: Induction of sister-chromatid exchanges in V79 cells by enantiomeric epoxides. *MUTAT RES; 278* 289-297.
Rejection Code: IN VITRO.

1939. VORHEES DJ , CULLEN AC, and ALTSHUL LM (1999). Polychlorinated biphenyls in house dust and yard soil near a superfund site. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 33* 2151-2156.
Rejection Code: SURVEY.

1940. Vosylene, M. (1981). Effect of Sevin on the Content of the Catecholamines in Carp Tissues. *Exp.Water Toxicol.(Eksp.Vodn.Toksikol.)* 2: 104-122 (RUS).
Rejection Code: NON-ENGLISH.

1941. VUKICEVIC, S., KREMPIEN, B., CERVAR, M., CESNJAJ, M., and STAVLJENIC, A. (1987). ALUMINUM-RELATED BONE DISEASE AND VITAMIN D METABOLITES IN GROWING UREMIC RATS. *XXTH EUROPEAN SYMPOSIUM ON CALCIFIED TISSUES, SIRMIONE, ITALY, OCTOBER 4-8, 1987. CALCIF TISSUE INT* 41: 63.
Rejection Code: ABSTRACT.

1942. Vytras, K. , Kalous, J., Kalabova, Z., and Remes, M. (1982). Ion-selective electrodes in titrations involving azo-coupling reactions. *Analytica Chimica Acta* 141: 163-171.
Rejection Code: METHODS.

1943. W HO (1997). EVALUATION OF CERTAIN FOOD ADDITIVES AND CONTAMINANTS. *WHO TECHNICAL REPORT SERIES; 0* I-VIII, 1-69.
Rejection Code: HUMAN HEALTH.

1944. WAALKENS-BERENDSEN DH, VERHAGEN, F. JJ, and BAER, A. (1998). Embryotoxicity and teratogenicity study with gamma-cyclodextrin in rats. *REGULATORY TOXICOLOGY AND PHARMACOLOGY; 27* 166-171.
Rejection Code: NO COC.

1945. WADE HF, YORK AC, MOREY AE, PADMORE JM, and RUDO KM (1998). The impact of pesticide use on groundwater in North Carolina. *JOURNAL OF ENVIRONMENTAL QUALITY; 27* 1018-1026.
Rejection Code: SURVEY.

1946. Wagers, Amy J. (2005). Stem Cell Grand SLAM. *Cell* 121: 967-970.
Rejection Code: IN VITRO, NO TOX DATA.

1947. Wagih, E., Melouk, H., and Sherwood, J. (1994). Mirror image in vivo electroblotting technique, a new technique for visualizing virus particles electrophoretically transferred from infected leaves to nitrocellulose membranes. *Journal of Virological Methods, 48 (2-3) pp. 145-153, 1994*.
Rejection Code: METHODS, VIRUS.

1948. Wagner, H. and Grevel, J. (1982). New Cardioactive Drugs II, Detection and Isolation of Cardiotonic Amines with Ionpair-HPLC (Neue Herzwirksame Drogen II, Nachweis und Isolierung Herzwirksamer Amine Durch Lonenpaar-HPLC. *Planta Med.* 44: 36-40 (GER) (ENG ABS).
Rejection Code: NON-ENGLISH.

1949. Waite, D. T., Grover, R., Westcott, N. D., Irvine, D. G., Kerr, L. A., and Sommerstad, H. (1995). Atmospheric Deposition Of Pesticides In A Small Southern Saskatchewan Watershed.

14: 1171-1175.
Rejection Code: SURVEY.

1950. Waite, D. T., Grover, R., Westcott, N. D., Irvine, D. G., Kerr, L. A., and Sommerstad, H. (1995). Atmospheric Deposition Of Pesticides In A Small Southern Saskatchewan Watershed. 14: 1171-1175.
Rejection Code: SURVEY.

1951. Waite, D. T., Grover, R., Westcott, N. D., Irvine, D. G., Kerr, L. A., and Sommerstad, H. (1995). Atmospheric deposition of pesticides in a small southern Saskatchewan watershed. *Environmental Toxicology and Chemistry* 14 : 1171-1175.
Rejection Code: NO SURVEY.

1952. Waite, D. T., Grover, R., Westcott, N. D., Irvine, D. G., Kerr, L. A., and Sommerstad, H. (1995). Atmospheric deposition of pesticides in a small southern Saskatchewan watershed. *Environmental Toxicology and Chemistry* 14 : 1171-1175.
Rejection Code: NO SURVEY.

1953. Waite, D. T., Grover, R., Westcott, N. D., Irvine, D. G., Kerr, L. A., and Sommerstad, H. (1995). Atmospheric deposition of pesticides in a small southern Saskatchewan watershed. *Environmental Toxicology and Chemistry [ENVIRON. TOXICOL. CHEM.]. Vol. 14, no. 7, pp. 1171-1175. 1995.*
Rejection Code: SURVEY.

1954. Waite, D. T., Grover, R., Westcott, N. D., Sommerstad, H., and Kerr, L. (1992). Pesticides In Ground Water, Surface Water And Spring Runoff In A Small Saskatchewan Watershed. 11: 741-748.
Rejection Code: SURVEY.

1955. Waite, D. T., Grover, R., Westcott, N. D., Sommerstad, H., and Kerr, L. (1992). Pesticides In Ground Water, Surface Water And Spring Runoff In A Small Saskatchewan Watershed. 11: 741-748.
Rejection Code: SURVEY.

1956. Waite, D. T., Grover, R., Westcott, N. D., Sommerstad, H., and Kerr, L. (1992). Pesticides in ground water, surface water and spring runoff in a small Saskatchewan watershed. *Environ Toxicol Chem* 11 : 741-748.
Rejection Code: EFFLUENT/FATE.

1957. Waite, D. T., Grover, R., Westcott, N. D., Sommerstad, H., and Kerr, L. (1992). Pesticides in ground water, surface water and spring runoff in a small Saskatchewan watershed. *Environ Toxicol Chem* 11 : 741-748.
Rejection Code: EFFLUENT/FATE.

1958. WAKABAYASHI, K. and BOEGER, P. (1995). PEROXIDIZING HERBICIDES II STRUCTURE-ACTIVITY RELATIONSHIP AND MOLECULAR DESIGN. *ZEITSCHRIFT FUER NATURFORSCHUNG SECTION C JOURNAL OF BIOSCIENCES; 50* 591-601.
Rejection Code: MODELING.

1959. WAKABAYASHI, K. and SATO, Y. (1992). HERBICIDES AFFECTING THE STRUCTURE AND FUNCTION OF CHLOROPLASTS 1. *JPN PESTIC INF; 0* 25-31.
Rejection Code: IN VITRO.

1960. Walker, A. E., Holman, R. E., and Leidy, R. B. *. (2000). ELISA and GC/MS analysis of pesticide

residues in North Carolina. *Journal of the american water resources association [j. Am. Water resour. Assoc.]. Vol. 36, no. 1, pp. 67-74. Feb 2000.*
Rejection Code: SURVEY.

1961. Walker, A. E., Holman, R. E., and Leidy, R. B. (2000). ELISA and GC/MS analysis of pesticide residues in North Carolina. *Journal of the American Water Resources Association, 36 (1) pp. 67-74, 2000*.
Rejection Code: METHODS.

1962. Walker, C. H. (1998). Biochemical Biomarkers and Potentiation of Toxicity. *Biotherapy* 11: 113-117.
Rejection Code: REVIEW.

1963. WALKER CH (1998). Avian forms of cytochrome P450. *COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY C PHARMACOLOGY TOXICOLOGY & ENDOCRINOLOGY; 121* 65-72.
Rejection Code: METHODS.

1964. Walker, G. (1977). Copper Granules in the Barnacle Balanus balanoides. *Mar Biol* 39: 343-349.
Rejection Code: NO CONC/SURVEY.

1965. WALKER, J. , CHAPALAMADUGU, S., PYENTA, M., and CHAUDHRY GR (1994). CLONING AND CHARACTERIZATION OF A GENE INVOLVED IN THE HYDROLYSIS OF CARBARYL FORM PSEUDOMONAS AERUGINOSA. *94TH GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, LAS VEGAS, NEVADA, USA, MAY 23-27, 1994. ABSTRACTS OF THE GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY; 94* 402.
Rejection Code: BACTERIA, ABSTRACT.

1966. WALKER, J. , CHAPALAMADUGU, S., PYENTA, M., and CHAUDHRY GR (1994). CLONING AND CHARACTERIZATION OF A GENE INVOLVED IN THE HYDROLYSIS OF CARBARYL FORM PSEUDOMONAS AERUGINOSA. *94TH GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, LAS VEGAS, NEVADA, USA, MAY 23-27, 1994. ABSTRACTS OF THE GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY; 94* 402.
Rejection Code: BACTERIA.

1967. WALL GR and PHILLIPS PJ (1998). Pesticides in the Hudson River Basin, 1994-96. *NORTHEASTERN GEOLOGY AND ENVIRONMENTAL SCIENCES; 20* 299-307.
Rejection Code: SURVEY.

1968. Wallace, K., Grover, R., and Westcott, N. (Evaluation Of An Activated Carbon Filter For The Retention Of Selected Pesticide Vapours.
Rejection Code: HUMAN HEALTH.

1969. WALSH DB and CLAXTON LD (1987). COMPUTER-ASSISTED STRUCTURE-ACTIVITY RELATIONSHIPS OF NITROGENOUS CYCLIC COMPOUNDS TESTED IN SALMONELLA ASSAYS FOR MUTAGENICITY. *MUTAT RES; 182* 55-64.
Rejection Code: BACTERIA.

1970. Walter, Harald, Corsi, Camilla, Ehrendfreund, Josef, Lamberth, Clemens, and Tobler, Hans (20060413). Synergistic fungicidal compositions comprising a pyridine derivative. *(Syngenta Participations A.-G., Switz.)* 112 pp.
Rejection Code: NO TOX DATA.

1971. Walter, Harald, Corsi, Camilla, Ehrenfreund, Josef, Lamberth, Clemens, and Tobler, Hans (20060413). Synergistic fungicidal compositions comprising pyrazole derivatives. *(Syngenta Participations AG, Switz.)* 142 pp.
Rejection Code: NO TOX DATA.

1972. Walter, Harald, Corsi, Camilla, Ehrenfreund, Josef, Lamberth, Clemens, and Tobler, Hans (20060413). Synergistic fungicidal compositions comprising a pyrazole derivative. *(Syngenta Participations A.-G., Switz.)* 139 pp.
Rejection Code: NO TOX DATA.

1973. Walter, Harald, Neuenschwander, Urs, Zeun, Ronald, Ehrenfreund, Josef, Tobler, Hans, Corsi, Camilla, and Lamberth, Clemens (20060216). Synergistic fungicidal compositions comprising pyrazole derivatives. *(Syngenta Participations AG, Switz.)* 104 pp.
Rejection Code: NO TOX DATA.

1974. WALTON JD and CASIDA JE (1995). Specific binding of a dichloroacetamide herbicide safener in maize at a site that also binds thiocarbamate and chloroacetanilide herbicides. *PLANT PHYSIOLOGY (ROCKVILLE); 109 (1). 1995. 213-219.*
Rejection Code: METABOLISM.

1975. WANG, G. and BAI, N. (1998). Structure-activity relationships for rat and mouse DL50 of miscellaneous alcohols. *CHEMOSPHERE; 36* 1475-1483.
Rejection Code: MODELING.

1976. Wang, Jih-Pyang, Tsao, Lo-Ti, Shen, Ai-Yu, Raung, Shue-Ling, and Chang, Ling-Chu (1999). 2-hydroxymethyl-1-naphthol diacetate (TAC) suppresses the superoxide anion generation in rat neutrophils. *Free Radical Biology and Medicine* 26: 1010-1018.
Rejection Code: IN VITRO.

1977. WANG, K. and EVERED MD (1993). Endotoxin stimulates drinking in rats without changing dehydrational signals controlling thirst. *AMERICAN JOURNAL OF PHYSIOLOGY; 265* R1043-R1051.
Rejection Code: BIOLOGICAL TOXICANT.

1978. Wang, Qiquan and Lemley, Ann T (2003). Competitive degradation and detoxification of carbamate insecticides by membrane anodic Fenton treatment. *Journal Of Agricultural And Food Chemistry* 51: 5382-5390.
Rejection Code: METHODS/NO TOX DATA.

1979. Wang, Shuo, Zhang, Can, Wang, Junping, and Zhang, Yan (2005). Development of colloidal gold-based flow-through and lateral-flow immunoassays for the rapid detection of the insecticide carbaryl. *Analytica Chimica Acta* 546: 161-166.
Rejection Code: METHODS.

1980. Wang, Shuo , Zhang, Can, and Zhang, Yan (2005). Development of a flow-through enzyme-linked immunosorbent assay and a dipstick assay for the rapid detection of the insecticide carbaryl. *Analytica Chimica Acta* 535: 219-225.
Rejection Code: METHODS.

1981. Ward, S. A., May, D. G., Heath, A. J., and Branch, R. A. (1988). Carbaryl metabolism is inhibited by cimetidine in the isolated perfused rat liver and in man. *Journal of Toxicology: Clinical Toxicology [J. TOXICOL.: CLIN. TOXICOL.]. Vol. 26, no. 5-6, pp. 269-281. 1988.*
Rejection Code: IN VITRO.

1982. WARNER JR, HUGHES TJ, MYERS LE, HOUK VS, and CLAXTON LD (1990). DEVELOPMENT OF AN INDIRECT-ACTING PLUS S9 DATA BASE IN THE AMES SALMONELLA ASSAY TO RANK MUTAGENIC ACTIVITY. *TWENTY-FIRST ANNUAL MEETING OF THE ENVIRONMENTAL MUTAGEN SOCIETY, ALBUQUERQUE, NEW MEXICO, USA, MARCH 25-29, 1990. ENVIRON MOL MUTAGEN SUPPL; 15* 63.
Rejection Code : BACTERIA.

1983. WATANABE, T. (1998). DETERMINATION OF THE CONCENTRATION OF PESTICIDES IN ATMOSPHERE AT HIGH ALTITUDES AFTER AERIAL APPLICATION. *BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 60* 669-676.
Rejection Code: SURVEY.

1984. Watkins, III J. B. and klueber, K. M. (1988). Hepatic phase II biotransformation in C57Bl/KsJ db/db mice: comparison to that in swiss webster and 129 REJ mice. *Comparative Biochemistry and Physiology Part C: Comparative Pharmacology* 90: 417-421.
Rejection Code: METABOLISM.

1985. Watkins, III John B. (1991). Effect of microsomal enzyme inducing agents on hepatic biotransformation in cotton rats (sigmodon hispidus): comparison to that in sprague-dawley rats. *Comparative Biochemistry and Physiology Part C: Comparative Pharmacology* 98: 433-439.
Rejection Code: METABOLISM.

1986. Watkins III, John B., LaFollette, James W., and Sanders, Ruth A. (1995). Biotransformation in Egyptian spiny mouse Acomys cahirinus. *Comparative Biochemistry and Physiology Part C: Pharmacology, Toxicology and Endocrinology* 110: 101-107.
Rejection Code: METABOLISM.

1987. Watkins, III John B. and Mangels, Lori A. (1987). Hepatic biotransformation in lean and obese wistar kyoto rats: Comparison to that in streptozotocin-pretreated sprague-dawley rats. *Comparative Biochemistry and Physiology Part C: Comparative Pharmacology* 88: 159-164.
Rejection Code: METABOLISM.

1988. Watkins, III John B., Sanders, Ruth A., and Beck, Lyle V. (1988). The effect of long-term streptozotocin-induced diabetes on the hepatotoxicity of bromobenzene and carbon tetrachloride and hepatic biotransformation in rats. *Toxicology and Applied Pharmacology* 93: 329-338.
Rejection Code: METABOLISM.

1989. WATKINS, J. B. III and SANDERS RA (1991). THE EFFECTS OF DIABETES ON HEPATOBILIARY FUNCTION. *SIEGERS, C.-P. AND J. B. WATKINS, III (ED.). PROGRESS IN PHARMACOLOGY AND CLINICAL PHARMACOLOGY, VOL. 8. NO. 4. BILIARY EXCRETION OF DRUGS AND OTHER CHEMICALS. XVIII+563P. GUSTAV FISCHER VERLAG: STUTTGART, GERMANY; NEW YORK, NEW YORK, USA. ISBN 3-437-11377-1; ISBN 1-56081-320-2.; 0 (0). 1991. 475-496.*
Rejection Code: METABOLISM, NO TOX DATA.

1990. Watkins, John B., Gregus, Zoltan, Thompson, Thomas N., and Klaassen, Curtis D. (1982). Induction studies on the functional heterogeneity of rat liver UDP-glucuronosyltransferases. *Toxicology and Applied Pharmacology* 64: 439-446.
Rejection Code: METABOLISM.

1991. Watson, D., Foster, P., and Walker, G. (1995). Barnacle Shells as Biomonitoring Material. *Mar Pollut Bull* 31: 111-115.
Rejection Code: NO CONC.

1992. WATSON JE (1996). PESTICIDES AS A SOURCE OF POLLUTION. *PEPPER, I. L., C. P. GERBA AND M. L. BRUSSEAU (ED.). POLLUTION SCIENCE. XXIV+397P. ACADEMIC PRESS, INC.: SAN DIEGO, CALIFORNIA, USA; LONDON, ENGLAND, UK. ISBN 0-12-550660-0.; 0 (0). 1996. 253-266.*
Rejection Code: FATE.

1993. Wauchope, R. D. (1978). The Pesticide Content of Surface Water Draining from Agricultural Fields - A Review. *J.Environ.Qual.* 7: 459-472.
Rejection Code: NO SPECIES/REVIEW.

1994. Wauchope, R. D. (1978). The Pesticide Content of Surface Water Draining from Agricultural Fields - A Review. *J.Environ.Qual.* 7: 459-472.
Rejection Code: NO SPECIES.

1995. Wauchope, R. D. and Haque, R. (1973). Effects of pH, Light and Temperature on Carbaryl in Aqueous Media. *Bull.Environ.Contam.Toxicol.* 9: 257-260.
Rejection Code: NO SPECIES.

1996. Wauchope, R. D. and Haque, R. (1973). Effects of pH, light and temperature on carbaryl in aqueous media. *Bulletin of Environmental Contamination and Toxicology [Bull. Environ. Contam. Toxicol.]. Vol. 9, no. 5, pp. 257-260. 1973.*
Rejection Code: FATE.

1997. WAWRZYNSKI RP and ASCERNO ME (1989). ASH FLOWER GALL WITHIN TREE DISTRIBUTION AND CHEMICAL MANAGEMENT. *J ARBORIC; 15* 215-218.
Rejection Code: FATE.

1998. Weber, F. H. and Rosenberg, F. A. (1984). Interactions of carbaryl with estuarine bacterial communities. *Microbial Ecology [Microb. Ecol.]. Vol. 10, no. 3, pp. 257-269. 1984.*
Rejection Code: BACTERIA.

1999. Weber, F. H. and Rosenberg, F. A. (1984). Interactions of carbaryl with estuarine bacterial communities. *Microbial Ecology [Microb. Ecol.]. Vol. 10, no. 3, pp. 257-269. 1984.*
Rejection Code: BACTERIA.

2000. Weber, F. H., Shea, T. B., and Berry, E. S. (1982). Toxicity of Certain Insecticides to Protozoa. *Bulletin of Environmental Contamination and Toxicology. Vol. 28, no. 5, pp. 628-631. 1982.*
Rejection Code: BACTERIA.

2001. Weber, F. H., Shea, T. B., and Berry, E. S. (1982). Toxicity of Certain Insecticides to Protozoa. *Bulletin of Environmental Contamination and Toxicology. Vol. 28, no. 5, pp. 628-631. 1982.*
Rejection Code: BACTERIA.

2002. Weber, J. B. (1977). The Pesticide Scorecard. Toxicological Effects, Biological Distributions, and the Fate of These Chemicals can be Quantified in a Simplified. *Environ.Sci.Technol.* 11: 756-761.
Rejection Code: REFS CHECKED/REVIEW.

2003. Weber, J. B. (1977). The Pesticide Scorecard. Toxicological Effects, Biological Distributions, and

the Fate of These Chemicals can be Quantified in a Simplified, Straightforward Manner. *Environ.Sci.Technol.* 11: 756-761.
Rejection Code: REFS CHECKED/REVIEW.

2004. Weber, J. B. (1977). The Pesticide Scorecard. Toxicological Effects, Biological Distributions, and the Fate of These Chemicals can be Quantified in a Simplified, Straightforward Manner. *Environ.Sci.Technol.* 11: 756-761.
Rejection Code: REFS CHECKED/REVIEW.

2005. Wedberg, J. and Jensen, B. (1992). USE OF LABELED AND EXPERIMENTAL INSECTICIDES FOR CONTROL OF ALFALFA INSECTS IN WISCONSIN 1991. *Burditt, A. K. Jr. (Ed.). Insecticide and Acaricide Tests, Vol. 17. Ii+421p. Entomological Society of America: Lanham, Maryland, Usa. Illus. Paper.* 0 : 184.
Rejection Code: BOOK ORDERED - BURDITT VOL 17.

2006. Wedzisz, A. (1986). Pesticides in Plants. *In: H.U.Bergmeyer (Ed.), Methods of Enzymatic Analysis, Volume XII, Drugs and Pesticides, 3rd Edition, VCH Verlag., Weinheim, W.Germany* 418-425.
Rejection Code: METHODS.

2007. Wefers, Heribert, Toru Komai, and Sies, Helmut (1984). Generation of low-level chemiluminescence during the metabolism of 1-naphthol by rat liver microsomes. *Biochemical Pharmacology* 33: 4081-4085.
Rejection Code: METABOLISM, METHODS.

2008. WEHRMEIER, A., LENOIR, D., SCHRAMM K-W, ZIMMERMANN, R. , HAHN, K., HENKELMANN, B., and KETTRUP, A. (1998). Patterns of isomers of chlorinated dibenzo-P-dioxins as tool for elucidation of thermal formation mechanisms.
Rejection Code: METHODS, NO TOX DATA.

2009. Weis, J. S. and Weis, P. (1989). Effects of Environmental Pollutants on Early Fish Development. *Rev.Aquat.Sci.* 1: 45-73.
Rejection Code: REVIEW.

2010. Weisburger, John H., Grantham, Preston H., and Weisburger, Elizabeth K. (1963). Metal ion complexing properties of carcinogen metabolites. *Biochemical Pharmacology* 12: 179-191.
Rejection Code: METHODS.

2011. Weiss, C. M. (1958). The Determination of Cholinesterase in the Brain Tissue of Three Species of Freshwater Fish and Its Inactivation In Vivo. *Ecology* 39: 194-198.
Rejection Code: IN VITRO.

2012. WEISSMAN, G., AZAROFF, L., DAVIDSON, S., and DUNHAM, P. (1986). SYNERGY BETWEEN PHORBOL ESTERS 1 OLEYL-2-ACETYLGLYCEROL URUSHIOL AND CALCIUM IONOPHORE IN ELICITING AGGREGATION OF MARINE SPONGE CELLS. *PROC NATL ACAD SCI U S A; 83* 2914-2918.
Rejection Code: IN VITRO.

2013. Weisz, Herbert and Vereno, Ingolf (1977). Applications of the ring oven method in enzymatic analysis. *Analytica Chimica Acta* 91: 229-241.
Rejection Code: METHODS.

2014. Werner, I., Deanovic, L. A., Connor, V., De Vlaming, V., Bailey, H. C., and Hinton, D. E. (2000). Insecticide-caused toxicity to Ceriodaphnia dubia (Cladocera) in the Sacramento-San

Joaquin River Delta, California, USA. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 19, no. 1, pp. 215-227. Jan 2000.*
Rejection Code: SURVEY/EFFLUENT.

2015. Werner, I. , Deanovic, L. A., Connor, V., De Vlaming, V., Bailey, H. C., and Hinton, D. E. (2000). Insecticide-caused toxicity to Ceriodaphnia dubia (Cladocera) in the Sacramento-San Joaquin River Delta, California, USA. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]. Vol. 19, no. 1, pp. 215-227. Jan 2000.*
Rejection Code: SURVEY.

2016. Werner, I. , Deanovic, L. A., Connor, V., De Vlaming, V., Bailey, H. C., and Hinton, D. E. (2000). Insecticide-caused toxicity to Ceriodaphnia dubia (Cladocera) in the Sacramento-San Joaquin River Delta, California, USA. *Environmental Toxicology and Chemistry [Environ. Toxicol. Chem.]* 19: 215-227.
Rejection Code: SURVEY.

2017. Westlake, G. E., Hardy, A. R., and Stevenson, J. H. (1985). Effects of Storage and Pesticide Treatments on Honey Bee Brain Acetyl Cholinesterase Activities. *Bull.Environ.Contam.Toxicol.* 34: 668-675.

; Habitat: T; Effect Codes: BCM

2018. WHITEHEAD CC (1997). DYSCHONDROPLASIA IN POULTRY. *PROCEEDINGS OF THE NUTRITION SOCIETY; 56* 957-966.
Rejection Code: REVIEW.

2019. WHITMAN BE , LUEKING DR, and MIHELCIC JR (1998). Naphthalene uptake by a Pseudomonas fluorescens isolate. *CANADIAN JOURNAL OF MICROBIOLOGY; 44* 1086-1093.
Rejection Code: BACTERIA.

2020. Who Genev Switzerland (Pesticide Residues in Food. *Who tech. Rep. Ser. 612: 35pp. 1977 (36 references).*
Rejection Code: HUMAN HEALTH.

2021. WHYTE LG, BOURBONNIERE, L., and GREER CW (1997). Biodegradation of petroleum hydrocarbons by psychrotrophic Pseudomonas strains possessing both alkane (alk) and naphthalene (nah) catabolic pathways. *APPLIED AND ENVIRONMENTAL MICROBIOLOGY; 63* 3719-3723.
Rejection Code: BACTERIA.

2022. Wigfield, Y. Y., Grant, R., and Snider, N. (1993). Gas chromatographic and mass spectrometric investigation of seven carbamate insecticides and one metabolite. *Journal of Chromatography A* 657: 219-222.
Rejection Code: CHEM METHODS.

2023. WILKIE PJ, HATZIMIHALIS, G., KOUTOUFIDES, P., and CONNOR MA (1996). The contribution of domestic sources to levels of key organic and inorganic pollutants in sewage: The case of Melbourne, Australia. *WATER SCIENCE AND TECHNOLOGY; 34* 63-70.
Rejection Code: EFFLUENT.

2024. Wilkinson, C. F. (1973). Insecticide Synergism. *Chemtech* 492-497.
Rejection Code: REVIEW.

2025. WILLIAMS GM and HIGGO, J. JW (1994). IN SITU AND LABORATORY INVESTIGATIONS INTO CONTAMINANT MIGRATION. *JOURNAL OF HYDROLOGY (AMSTERDAM); 159 (1-4). 1994. 1-25.*
Rejection Code: FATE.

2026. Williams, K. M. and Fallahi, E. (1999). **<04 Article Title>.** *Horttechnology, 9 (3) pp. 323-327, 1999* <25 Page(s)>; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

2027. Williams, K. M. and Fallahi, E. (1999). The effects of exogenous bioregulators and environment on regular cropping of apple. *HortTechnology, 9 (3) pp. 323-327, 1999*.
Rejection Code: NO COC.

2028. Williams, Nigel (2006). Crunch time. *Current Biology* 16: R439-R440.
Rejection Code: NO TOX DATA.

2029. Williams, Nigel (2006). Stem cell crunch time. *Current Biology* 16: R561-R562.
Rejection Code: NO TOX DATA.

2030. Williams, P., Semple, R. L., and Amos, T. G. (1982). Relative toxicity and persistence of one carbamate and three organophosphate insecticides on concrete, wood and iron surfaces for control of grain insects. *GEN. APPL. ENTOMOL. Vol. 14, pp. 35-40. 1982.*
Rejection Code: FATE.

2031. Wills, J. H., Jameson, E., and Coulston, F. (1968). Effects of Oral Doses of Carbaryl on Man. *Clin.Toxicol.* 1: 265-271.
Rejection Code: HUMAN HEALTH.

2032. Wilson, A. S., Davis, C. D., Williams, D. P., Buckpitt, A. R., Pirmohamed, M., and Park, B. K. (1996). Characterisation of the Toxic Metabolite(s) of Naphthalene. *Toxicology* 114: 233-242.
Rejection Code: IN VITRO.

2033. Wilson, Michael S. and Rauh, R. David (2004). Hydroquinone diphosphate: an alkaline phosphatase substrate that does not produce electrode fouling in electrochemical immunoassays: Special Issue in Honour of Professor Pierre Coulet. *Biosensors and Bioelectronics* 20: 276-283.
Rejection Code: METHODS.

2034. WILSON SR and JACOB LA (1986). IODINATION OF ARYLTRIMETHYLSILANES A MILD APPROACH TO IODOPHENYLALANINE. *J ORG CHEM; 51* 4833-4836.
Rejection Code: METHODS.

2035. Windholz, Thomas B., Brown, Ronald D., and Patchett, Arthur A. (1965). Synthesis of 19-norsteroids iii. synthesis and birch reduction of d,1-13-phenyl-18-norestradiol-3-methyl ether. *Steroids* 6: 409-419.
Rejection Code: METHODS.

2036. WINTER, B. and ZIMMERMANN, W. (1992). DEGRADATION OF HALOGENATED AROMATICS BY ACTINOMYCETES. *SIGEL, H. AND A. SIGEL (ED.). METAL IONS IN BIOLOGICAL SYSTEMS, VOL. 28. DEGRADATION OF ENVIRONMENTAL POLLUTANTS BY MICROORGANISMS AND THEIR METALLOENZYMES. XXXII+582P. MARCEL DEKKER, INC.: NEW YORK, NEW YORK, USA; BASEL, SWITZERLAND. ISBN 0-8247-8639-4.; 0 (0). 1992. 157-203.*
Rejection Code: BACTERIA, METABOLISM.

2037. WISCHMANN, H. and STEINHART, H. (1997). The formation of PAH oxidation products in soils and soil/compost mixtures. *CHEMOSPHERE; 35* 1681-1698 .
Rejection Code: FATE.

2038. Wishart, Graham J. and Dutton, G. J. (1977). Precocious development of certain UDP-glucuronyltransferase activities in rat fetuses exposed to glucocorticoids. *Biochemical and Biophysical Research Communications* 75: 125-129.
Rejection Code: IN VITRO.

2039. Witkowski, T. (1973). Significance of Chemical Improvement of the Environment for the Soil Nematodes (Nematoda). Part II. Observations upon Survival of the Soil Nematodes in Aqueous Solutions of Herbicide Substances (Znaczenie Chemizacji Srodowiska Dla Nicieni (Nematoda) Glebowych. Czesc II. Obserwacje Nad Przezywaniem Nicieni Glebowych w Wodnych Roztworach Preparatow Chwastobojczych). *Rocz.Glebozn.* 24: 367-387 (POL) (ENG ABS).
Rejection Code: NON-ENGLISH.

2040. Wojciechowski, J. P., Kaur, P., and Sabharwal, P. S. (1982). Induction of ouabain resistance in V-79 cells by four carbamate pesticides. *Environmental research [environ. Res.]* 29: 48-53.
Rejection Code: IN VITRO.

2041. Wojciechowski, J. P., Kaur, P., and Sabharwal, P. S. (1982). Induction of ouabain resistance in V-79 cells by four carbamate pesticides. *Environmental Research [ENVIRON. RES.]. Vol. 29, no. 1, pp. 48-53. 1982.*
Rejection Code: IN VITRO.

2042. Wollenberg, Peter and Rummel, Walter (1984). Vectorial release of sulfoconjugates in the vascularly perfused mouse small intestine. *Biochemical Pharmacology* 33: 205-208.
Rejection Code: FATE.

2043. Wollenberg, Peter, Ullrich, volker, and Rummel, Walter (1983). Conjugation of 1-naphthol and transport of 1-naphthol-conjugates in the vascularly perfused small intestine of the mouse. *Biochemical Pharmacology* 32: 2103-2107.
Rejection Code: FATE.

2044. WOODGATE LJ, JAMES, S., PARRY EM, and PARRY JM (1995). NEUROTOXINS AND THEIR EFFECT ON THE FIDELITY OF CELL DIVISION. *18TH ANNUAL MEETING OF THE UNITED KINGDOM ENVIRONMENTAL MUTAGEN SOCIETY, HERTFORDSHIRE, ENGLAND, UK, JULY 11-13, 1994. MUTAGENESIS; 10* 77.
Rejection Code: IN VITRO.

2045. WOODROW BN and DORSEY JG (1997). Thermodynamics of micelle-water partitioning in micellar electrokinetic chromatography: Comparisons with 1-octanol-water partitioning and biopartitioning. *ENVIRONMENTAL SCIENCE & TECHNOLOGY; 31* 2812-2820.
Rejection Code: METHODS.

2046. Woodside, M. D. and Ruhl, K. E. (2001). Pesticides in Streams in the Tar-Pamlico Drainage Basin, North Carolina, 1992-94. National Water-Quality Assessment Program.
Rejection Code : SURVEY.

2047. Wortelboer, H. M., De Kruif, C. A., Van Iersel, A. A. J., Falke, H. E., Noordhoek, J., and Blaauboer, B. J. (1992). Acid reaction products of indole-3-carbinol and their effects on cytochrome P450 and phase II enzymes in rat and monkey hepatocytes. *Biochemical Pharmacology* 43: 1439-1447.
Rejection Code: IN VITRO.

2048. Wu, R. S. S., Lam, P. K. S., and Zhou, B. S. (1997). Effects of Two Oil Dispersants on Phototaxis and Swimming Behaviour of Barnacle Larvae. *Hydrobiologia* 352: 9-16.
Rejection Code: MIXTURE/OIL.

2049. Wu, Yijing , Goodrich, K. Craig, Buswell, Henry R., Katzman, Gregory L., and Parker, Dennis L. (2004). High-resolution time-resolved contrast-enhanced 3D MRA by combining SENSE with keyhole and SLAM strategies. *Magnetic Resonance Imaging* 22: 1161-1168.
Rejection Code: METHODS.

2050. Wu, Zhaoyang, Wu, Jian, Wang, Shiping, Shen, Guoli, and Yu, Ruqin (2006). An amplified mass piezoelectric immunosensor for Schistosoma japonicum. *Biosensors and Bioelectronics* 22: 207-212.
Rejection Code: METHODS.

2051. Xavier, Maria P., Vallejo, Begona, Marazuela, Maria D., Moreno-Bondi, Maria C., Baldini, F., and Falai, A. (2000). Fiber optic monitoring of carbamate pesticides using porous glass with covalently bound chlorophenol red. *Biosensors and Bioelectronics* 14: 895-905.
Rejection Code: SURVEY.

2052. XIE HS, HSIAO AI, and QUICK WA (1997). Influence of drought on graminicide phytotoxicity in wild oat (Avena fatua) grown under different temperature and humidity conditions. *JOURNAL OF PLANT GROWTH REGULATION; 16* 233-237.
Rejection Code: NO TOXICANT.

2053. XIE W-H, SHIU W-Y, and MACKAY, D. (1997). A review of the effect of salts on the solubility of organic compounds in seawater. *MARINE ENVIRONMENTAL RESEARCH; 44* 429-444.
Rejection Code: REVIEW.

2054. Xu, F. L., Dawson, R. W., Tao, S., Li, B. G., and Cao, J. (2002). System-Level Responses of Lake Ecosystems to Chemical Stresses Using Energy and Structural Exergy as Ecological Indicators. *Chemosphere* 46: 173-185.
Rejection Code: MODELING/REVIEW.

2055. Xu, F. L., Dawson, R. W., Tao, S., Li, B. G., and Cao, J. (2002). System-Level Responses of Lake Ecosystems to Chemical Stresses Using Energy and Structural Exergy as Ecological Indicators. *Chemosphere* 46: 173-185.
Rejection Code: MODELING/REVIEW.

2056. Xu, Fu-Liu , Dawson, R W, Tao, Shu, Li, Ben-Gang, and Cao, Jun (2002). System-level responses of lake ecosystems to chemical stresses using exergy and structural exergy as ecological indicators. *Chemosphere* 46: 173-185.
Rejection Code: SURVEY.

2057. Xu, Fu-Liu , Dawson, R. W., Tao, Shu, Li, Ben-Gang, and Cao, Jun (2002). System-level responses of lake ecosystems to chemical stresses using exergy and structural exergy as ecological indicators. *Chemosphere* 46: 173-185.
Rejection Code: SURVEY.

2058. XU ZHAOYI, ZHANG QUANXING, WU CHANGLONG, and WANG LIANSHENG (1997). Adsorption of naphthalene derivatives on different macroporous polymeric adsorbents. *CHEMOSPHERE; 35* 2269-2276.
Rejection Code: FATE.

2059. Yadav, Ashok K., Manju, Meera, and Chhinpa, Pukh Raj (2003). Enantioselective cathodic

reduction of some prochiral ketones in the presence of (-)-N,N'-dimethylquininium tetrafluoroborate at mercury cathode. *Tetrahedron: Asymmetry* 14: 1079-1081.
Rejection Code: METHODS.

2060. YAMAMOTO MM, KAWANO, T., YOUNG, M. CM, CHU EP, HARAGUCHI, M., and HIROKI, K. (1996). Molluscicidal activity of three Brazilian plant species. *FITOTERAPIA; 67* 59-62.
Rejection Code: BIOLOGICAL TOXICANT.

2061. Yamashiki, Naoko, Yokota, Hiroshi, Sakamoto, Maiko, and Yuasa, Akira (2002). Presence of phenol UDP-glucuronosyltransferase in bovine alveolar macrophages and bronchial epithelial cells. *Toxicology* 176: 221-227.
Rejection Code: IN VITRO, METHODS.

2062. Yamashita, S. and Yokoi, M. (1974). Anion Inactivation by Quinones. *Jpn.Kokai:377-379 (JPN)*.
Rejection Code: NON-ENGLISH.

2063. Yan, N. D., Mackie, G. L., and Dillon, P. J. (1990). Cadmium Concentrations of Crustacean Zooplankton of Acidified and Nonacidified Canadian Shield Lakes. *Environ.Sci.Technol.* 24: 1367-1372.
Rejection Code: SURVEY.

2064. Yanez-Sedeno, P., Manuel de Villena, J., Pingarron, J. M., and Polo, L. M. (1990). Polarographic determination of pirimicarb. *Analytica Chimica Acta* 234: 309-313.
Rejection Code: METHODS.

2065. YANG CM and CARLSON GP (1991). Glucuronidation and sulfation in subcellular fractions and in the isolated perfused rabbit lung: Influence of ethanol. *PHARMACOLOGY (BASEL); 42* 28-35.
Rejection Code: IN VITRO, METABOLISM.

2066. Yang, Wu, Sun, Kanjun, Lv, Weilian, Bo, Lili, He, Xiaoyan, Suo, Nan, and Gao, Jinzhang (2005). Determination of alpha-naphthol by an oscillating chemical reaction using the analyte pulse perturbation technique. *Analytica Chimica Acta* 554: 218-223.
Rejection Code: METHODS.

2067. Yang, Y. and Li, S. (1993). Frictional transition of pesticides from protective clothing. *Arch Environ Contam Toxicol* 25 : 279-284.
Rejection Code: HUMAN HEALTH.

2068. Yardim, E. N. and Edwards, C. A. (2003). An Economic Comparison of Pesticide Application Regimes for Processing Tomatoes. *Phytoparasitica* 31: 51-60.
Rejection Code: MIXTURE.

2069. Yardim, E. N. and Edwards, C. A. (2003). An Economic Comparison of Pesticide Application Regimes for Processing Tomatoes. *Phytoparasitica* 31: 51-60.
Rejection Code: MIXTURE.

2070. Yardim, E. N. and Edwards, C. A. (1998). The Effects of Chemical Pest, Disease and Weed Management Practices on the Trophic Structure of Nematode Populations in Tomato Agroecosystems. *Appl.Soil Ecol.* 7: 137-147.
Rejection Code: MIXTURE.

2071. Yardim, E. N. and Edwards, C. A. (1998). The Effects of Chemical Pest, Disease and Weed Management Practices on the Trophic Structure of Nematode Populations in Tomato

Agroecosystems. *Appl.Soil Ecol.* 7: 137-147.
Rejection Code: MIXTURE.

2072. Yavari, Issa, Anary-Abbasinejad, Mohammad, and Alizadeh, Abdolali (2002). A novel approach to the synthesis of highly functionalized furans. *Tetrahedron Letters* 43: 4503-4505.
Rejection Code: METHODS.

2073. Yavari, Issa, Anary-Abbasinejad, Mohammad, Alizadeh, Abdolali, and Hossaini, Zinatossadat (2003). A simple and efficient approach to the synthesis of highly functionalized fused benzochromenes. *Tetrahedron* 59: 1289-1292.
Rejection Code: METHODS.

2074. Yavari, Issa and Hossaini, Zinatossadat (2006). Synthesis of fused [alpha]-methylene-[gamma]-butyrolactone derivatives through pyridine-induced addition of phenols to dimethyl acetylenedicarboxylate. *Tetrahedron Letters* 47: 4465-4468.
Rejection Code: METHODS.

2075. YEN J-H, HSIAO F-L, and WANG Y-S (1997). Assessment of the insecticide carbofuran's potential to contaminate groundwater through soils in the subtropics. *ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY; 38* 260-265.
Rejection Code: FATE.

2076. Yenes, Susana and Messeguer, Angel (1999). A study of the reaction of different phenol substrates with nitric oxide and peroxynitrite. *Tetrahedron* 55: 14111-14122.
Rejection Code: METHODS.

2077. YEOMAN, P. and JAMES AL (1987). A POTENTIAL SUBSTITUTE FOR 1 NAPHTHOL IN THE VOGES-PROSKAUER TEST. *FEMS (FED EUR MICROBIOL SOC) MICROBIOL LETT; 44* 299-302.
Rejection Code: BACTERIA.

2078. Yerushalmi, Nitza and Cohen, Ephraim (2002). Acetylcholinesterase of the California red scale Aonidiella aurantii Mask.: Catalysis, inhibition, and reactivation. *Pesticide Biochemistry and Physiology* 72: 133-141.
Rejection Code: IN VITRO.

2079. Yokota, Hiroshi, Hashimoto, Hisahiko, Motoya, Michiyo, and Yuasa, Akira (1988). Enhancement of UDP-glucuronyltransferase, UDP-glucose dehydrogenase, and glutathione S-transferase activities in rat liver by dietary administration of eugenol. *Biochemical Pharmacology* 37: 799-802.
Rejection Code: METABOLISM.

2080. Yokota, Hiroshi, Ikezoe, Hiroshi, Inaba, Takafumi, Sanda, Daisuke, Yuasa, Akira, and Kasai, Noriyuki (1994). Increase of UDP-glucuronosyltransferase activities toward xenobiotics during the development of hereditary hepatitis in LEC rats. *Biochemical Pharmacology* 47: 1091-1093.
Rejection Code: NO TOX DATA.

2081. Yokoyama, T., Saka, H., Fujita, S., and Nishiuchi, Y. (1988). Sensitivity of Japanese Eel, Anguilla japonica, to 68 Kinds of Agricultural Chemicals. *Bull.Agric.Chem.Insp.Stn.* 28: 26-33 (JPN) (ENG ABS).
Rejection Code: NON-ENGLISH.

2082. Yokoyama, T., Saka, H., Fujita, S., and Nishiuchi, Y. (1988). Sensitivity of Japanese Eel, Anguilla japonica, to 68 Kinds of Agricultural Chemicals. *Bull.Agric.Chem.Insp.Stn.* 28: 26-33

(JPN) (ENG ABS).
Rejection Code: NON-ENGLISH.

2083. YONEYAMA, Y., SAWA, R., KUBONOYA, K., SUZUKI, S., OTSUBO, Y., POWER GG, and ARAKI, T. (1998). Evidence for mechanisms of the acute-phase response to endotoxin in late-gestation fetal goats. *AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY* 179: 750-755.
Rejection Code: BIOLOGICAL TOXICANT.

2084. YORK AC (1989). TOMATO PEST MANAGEMENT IN THE MIDWESTERN USA. *GRIGGS, T. D. AND B. T. MCLEAN (ED.). TOMATO AND PEPPER PRODUCTION IN THE TROPICS; INTERNATIONAL SYMPOSIUM ON INTEGRATED MANAGEMENT PRACTICES, TAINAN, TAIWAN, MARCH 21-26, 1988. XI+619P. ASIAN VEGETABLE RESEARCH AND DEVELOPMENT CENTER: TAIPEI, TAIWAN. ILLUS. MAPS. PAPER. ISBN 92-9058-037-2.; 0 (0). 1989. 283-288.*
Rejection Code: SURVEY.

2085. YOSHIDA, M., MURAO, N., TSUDA, S., and SHIRASU, Y. (1991). Effects of mode of exposure on acute inhalation toxicity of chloropicrin vapor in rats. *J PESTIC SCI; 16* 63-70.
Rejection Code: INHALE.

2086. YOUNG SY and ALI, A. (1992). EVALUATION OF BACILLUS-THURINGIENSIS PRODUCTS FOR CONTROL OF CORN EARWORM ON HEADING GRAIN SORGHUM 1990. *BURDITT, A. K. JR. (ED.). INSECTICIDE AND ACARICIDE TESTS, VOL. 17. II+421P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ILLUS. PAPER.; 0 (0). 1992. 259-260.*
Rejection Code: BIOLOGICAL TOXICANT.

2087. YOUNOS TM and WEIGMANN DL (1988). PESTICIDES A CONTINUING DILEMMA. *J WATER POLLUT CONTROL FED; 60* 1199-1205.
Rejection Code: REVIEW.

2088. Yu(dieresis)cel U(dieresis), Ilim, M., and Aslan, N. (2006). ¹⁴C-carbaryl residues in hazelnut. *Journal of Environmental Science and Health - Part B Pesticides, Food Contaminants, and Agricultural Wastes, 41 (5) pp. 585-593, 2006.*
Rejection Code: HUMAN HEALTH.

2089. Yu, S. J. (1991). Insecticide Resistance in the Fall Armyworm, Spodoptera frugiperda (J. E. Smith). *Pestic.Biochem.Physiol.* 39: 84-91.

; Habitat: T; Effect Codes: MOR

2090. Yu, S. J. and Nguyen, S. N. (1992). Detection and biochemical characterization of insecticide resistance in the diamondback moth. *Pesticide Biochemistry and Physiology* 44: 74-81.
Rejection Code: METHODS.

2091. Yu, S. J., Nguyen, S. N., and Abo-Elghar, G. E. (2003). Biochemical characteristics of insecticide resistance in the fall armyworm, Spodoptera frugiperda (J.E. Smith). *Pesticide Biochemistry and Physiology* 77: 1-11.
Rejection Code: SURVEY.

2092. Yurawecz, M. P., Dreifuss, P. A., and Kamps, L. R. (1976). Determination of Hexachloro-1,3-Butadiene in Spinach, Eggs, Fish, and Milk by Electron Capture Gas-Liquid Chromatography. *J.A.O.A.C.(Assoc.Off.Anal.Chem.) Int.* 59: 552-558.

Rejection Code: NO DURATION/SURVEY.

2093. Zablotowicz, R. M., Hoagland, R. E., and Wagner, S. C. (1998). 2-nitroacetanilide as substrate for determination of aryl acylamidase activity in soils. *Soil Biology and Biochemistry* 30: 679-686.
Rejection Code: METHODS.

2094. ZALEWSKI, M., KARPINSKA, M., MNICH, Z., and KAPALA, J. (1998). Radon concentrations in buildings in the north-eastern region of Poland. *JOURNAL OF ENVIRONMENTAL RADIOACTIVITY; 40* 147-154.
Rejection Code: SURVEY.

2095. ZALOM FG, WEAKLEY CV, HOFFMANN MP, WILSON LT, GRIESHOP JI, and MIYAO, G. (1990). MONITORING TOMATO FRUITWORM EGGS IN PROCESSING TOMATOES. *CALIF AGRIC; 44* 12-15.
Rejection Code: SURVEY.

2096. Zayed, S. M. A. D., Hassan, A., and Hussein, T. M. (1966). Metabolism of carbamate drugs--II: Degradation of 1-naphthyl-N-methyl carbamate (Sevin) in adult larva of the cotton leaf worm (Prodenia litura F.). *Biochemical Pharmacology* 15: 2057-2064.
Rejection Code: METABOLISM.

2097. Zayed, S. M. A. D., Hassan, A., and Hussein, T. M. (1966). Metabolism of carbamate drugs--II: Degradation of 1-naphthyl-N-methyl carbamate (Sevin) in adult larva of the cotton leaf worm (Prodenia litura F.). *Biochemical Pharmacology* 15: 2057-2064.
Rejection Code: FATE.

2098. ZEIGER, E. , ANDERSON, B., HAWORTH, S., LAWLOR, T., MORTELMANS, K., and SPECK, W. (1987). SALMONELLA MUTAGENICITY TESTS III. RESULTS FROM THE TESTING OF 255 CHEMICALS. *ENVIRON MUTAGEN; 9* 1-110.
Rejection Code: BACTERIA.

2099. ZENG QINGXING, CHENG XUESHENG, LI YAN, HUANG ZHAOHUI, DENG ZHIHONG, and LIU AIHUA (1997). LEVELS OF 222RN AND ITS DAUGHTERS IN THE ENVIRONMENT OF XINGLONG DISTRICT IN HAINAN PROVINCE. *WEI, L., T. SUGAHARA AND Z. TAO (ED.). INTERNATIONAL CONGRESS SERIES, NO. 1136. HIGH LEVELS OF NATURAL RADIATION, 1996. RADIATION DOSE AND HEALTH EFFECTS; 4TH INTERNATIONAL CONFERENCE, BEIJING, CHINA, OCTOBER 21-25, 1996. XV+438P. ELSEVIER SCIENCE PUBLISHERS B.V.: AMSTERDAM, NETHERLANDS; NEW YORK, NEW YORK, USA. ISBN 0-444-82630-0.; 0 (1136). 1997. 75-79.*
Rejection Code: SURVEY.

2100. Zhang, Hai Rong, Guo, Si Yuan, Li, Lin, and Cai, Miao Yan (2002). Effect of small organic molecules on room temperature phosphorescence properties of naphthol ternary inclusion complexes in [beta]-cyclodextrin. *Analytica Chimica Acta* 463: 135-142.
Rejection Code: NO TOX DATA.

2101. Zhang Qing , Liu Yang, and Liu Yu-Huan (2003). Purification and characterization of a novel carbaryl hydrolase from Aspergillus niger PY168. *FEMS Microbiology Letters* 228: 39-44.
Rejection Code: IN VITRO, METHODS.

2102. Zhang, Yaodong, Muench, Susanne B, Schulze, Holger, Perz, Roland, Yang, Bolun, Schmid, Rolf D, and Bachmann, Till T (2005). Disposable biosensor test for organophosphate and

carbamate insecticides in milk. *Journal Of Agricultural And Food Chemistry* 53: 5110-5115.
Rejection Code: HUMAN HEALTH.

2103. Zhang, Yu-ping, Li, Xiang-jun, and Yuan, Zhuo-bin (2002). Analysis of carbaryl and other pesticides by capillary electrophoresis. *Se Pu = Chinese Journal Of Chromatography / Zhongguo Hua Xue Hui* 20: 341-344.
Rejection Code: CHEM METHOD.

2104. ZHONG, H., HASTINGS FL, HAIN FP, and MONAHAN JF (1995). Carbaryl degradation on tree barks as influenced by temperature and humidity. *JOURNAL OF ECONOMIC ENTOMOLOGY; 88* 558-563.
Rejection Code: FATE.

2105. Zhong He, Hastings, F. L., Hain, F. P., and Monahan, J. F. (1995). Carbaryl degradation on tree bark as influenced by temperature and humidity. *Journal of Economic Entomology, 88 (3) pp. 558-563, 1995*.
Rejection Code: FATE.

2106. Zhou, Hai-Meng and Tsou, Chen-Lu (1987). The presence of reactive SH groups in the enzymatically active dicyano derivative of creatine kinase. *Biochimica et Biophysica Acta (BBA) - Protein Structure and Molecular Enzymology* 911: 136-143.
Rejection Code: METABOLISM.

2107. ZHU BT, ROY, D., and LIEHR JG (1993). The carcinogenic activity of ethinyl estrogens is determined by both their hormonal characteristics and their conversion to catechol metabolites. *ENDOCRINOLOGY; 132* 577-583.
Rejection Code: IN VITRO.

2108. ZHU, L., LI, Y., and ZHANG, J. (1997). Sorption of organobentonites to some organic pollutants in water.
Rejection Code: FATE.

2109. ZIHNIOGLU, F. and TELEFONCU, A. (1995). Preparation and characterization of chitosan-entrapped microsomal UDP-glucuronyl transferase. *ARTIFICIAL CELLS BLOOD SUBSTITUTES AND IMMOBILIZATION BIOTECHNOLOGY; 23* 545-552.
Rejection Code: METHODS, METABOLISM.

2110. ZIHNIOGLU, F. and TELEFONCU, A. (1995). Substrate specificity and the use of chitosan-entrapped rabbit hepatic microsomal UDP-glucuronyl transferase for detoxification. *ARTIFICIAL CELLS BLOOD SUBSTITUTES AND IMMOBILIZATION BIOTECHNOLOGY; 23* 533-543.
Rejection Code: IN VITRO, METABOLISM.

2111. Zihnioglu, Figen and Telefoncu, Azmi (1995). Diffusion characteristics of chitosan-entrapped microsomal UDP-glucuronyl transferase gel beads. *Biochimica et Biophysica Acta (BBA) - General Subjects* 1244: 291-294.
Rejection Code: IN VITRO, METABOLISM.

2112. Zijp, J. P. and Blommers, L. H. M. (2002). Apple sawfly Hoplocampa testudinea (Hym., Tenthredinidae) and its parasitoid Lathrolestes ensator in Dutch apple orchards (Hym., Ichneumonidae, Ctenopelmatinae). *Journal of Applied Entomology, 126 (6) pp. 265-274, 2002*.
Rejection Code: SURVEY.

2113. ZIV, G., SHEM-TOV, M., and ASCHER, F. (1998). Combined effect of ampicillin, colistin and dexamethasone administered intramuscularly to dairy cows on the clinico-pathological course of E. coli-endotoxin mastitis. *VETERINARY RESEARCH (PARIS); 29 (1). 1998. 89-98.*
Rejection Code: BACTERIA.

2114. ZONGMAO, C. and HAIBIN, W. (1997). Degradation of pesticides on plant surfaces and its prediction: A case study on tea plant. *ENVIRONMENTAL MONITORING AND ASSESSMENT; 44* 303-313.
Rejection Code: FATE.

2115. Zrostlikova, Jitka, Hajslova, Jana, Kovalczuk, Tomas, Stepan, Radim, and Poustka, Jan (Determination of seventeen polar/thermolabile pesticides in apples and apricots by liquid chromatography/mass spectrometry. *Journal Of AOAC International* 86: 612-622.
Rejection Code: METHODS/NO TOX DATA/FOOD.

2116. Zwaard, A. W. and Kloosterziel, H. (1982). Isomerization of 1,6-oxido[10]annulene to 1-naphthol by potassium amide. *Tetrahedron Letters* 23: 4151-4154.
Rejection Code: METHODS.

Appendix I. Individual Effect Analysis.

Likelihood of individual acute effects to freshwater invertebrates based on maximum application rate with 26 application per year.

IEC V1 - Individual Effect Chance Model Version 1
Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate

Enter LC_{50} or LD_{50}	220	Note: This is not used in calculation, just serves as a reminder to user
Enter desired threshold	2.52	Note: This is either the RQ fraction of the toxicity endpoint, the EEC or dose fraction of the dose/concentration at tox endpoint, or the LOC
Enter slope of dose-response	6.4	Note: This is the slope of the dose response relationship from the study providing the above endpoint
z score result	2.56896346	z is the standard normal deviate
Probability associated with z	0.99489984	Uses Excel NORMDIST function to estimate P
Chance of individual effect, ~1 in . . .	1.01E+00	Calculated as 1/P rounded to 0 decimals

This is based on the formula $\log LC_k = \log LC_{50}+(z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Probability asociated with z value may be reported as "0". This is due to the inability of Excel to handle extremes in z scores beyond -8.2
In such cases the chance of individual effect is defaulted to 1 in 10^{16}, which is the limit of Excel reporting.

Ed Odenkirchen, May 28, 2003 EFED/OPP/USEPA

Figure I1. Estimation of likelihood on individual mortality based on risk quotients for freshwater fish (RQ=2.52) following 26 applications per year to lawns. Estimated dose-response slope is 6.4.

Likelihood of an individual acute effects to freshwater invertebrates based on maximum application rate and a single application per year.

IEC V1 - Individual Effect Chance Model Version 1
Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate

Enter LC_{50} or LD_{50}	220	Note: This is not used in calculation, just serves as a reminder to user
Enter desired threshold	0.88	Note: This is either the RQ fraction of the toxicity endpoint, the EEC or dose fraction of the dose/concentration at tox endpoint, or the LOC
Enter slope of dose-response	6.4	Note: This is the slope of the dose response relationship from the study providing the above endpoint
z score result	-0.3553109	z is the standard normal deviate
Probability associated with z	0.36117835	Uses Excel NORMDIST function to estimate P
Chance of individual effect, ~1 in . . .	2.77E+00	Calculated as 1/P rounded to 0 decimals

This is based on the formula $\log LC_k = \log LC_{50}+(z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Probability asociated with z value may be reported as "0". This is due to the inability of Excel to handle extremes in z scores beyond -8.2
In such cases the chance of individual effect is defaulted to 1 in 10^{16}, which is the limit of Excel reporting.

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Figure I2. Estimation of likelihood of individual mortality based on risk quotients for freshwater fish (RQ=0.88) following three applications of carbaryl per year to lawns. Estimated dose-response slope is 6.4.

IEC V1 - Individual Effect Chance Model Version 1		
Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate		
Enter LC_{50} or LD_{50}	220	Note: This is not used in calculation, just serves as a reminder to user
Enter desired threshold	0.44	Note: This is either the RQ fraction of the toxicity endpoint, the EEC or dose fraction of the dose/concentration at tox endpoint, or the LOC
Enter slope of dose-response	6.4	Note: This is the slope of the dose response relationship from the study providing the above endpoint
z score result	-2.28190287	z is the standard normal deviate
Probability associated with z	0.01124754	Uses Excel NORMDIST function to estimate P
Chance of individual effect, ~1 in . . .	8.89E+01	Calculated as 1/P rounded to 0 decimals

This is based on the formula $\log LC_k = \log LC_{50}+(z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Probability asociated with z value may be reported as "0". This is due to the inability of Excel to handle extremes in z scores beyond -8.2
In such cases the chance of individual effect is defaulted to 1 in 10^{16}, which is the limit of Excel reporting.

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Figure I3. Estimation of likelihood of individual mortality based on risk quotients for freshwater fish (RQ=0.44) following a single application of carbaryl per year to lawns. Estimated dose-response slope is 6.4.

IEC V1 - Individual Effect Chance Model Version 1		
Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate		
Enter LC_{50} or LD_{50}	1.7	Note: This is not used in calculation, just serves as a reminder to user
Enter desired threshold	314	Note: This is either the RQ fraction of the toxicity endpoint, the EEC or dose fraction of the dose/concentration at tox endpoint, or the LOC
Enter slope of dose-response	4.3	Note: This is the slope of the dose response relationship from the study providing the above endpoint
z score result	10.7367975	z is the standard normal deviate
Probability associated with z	1	Uses Excel NORMDIST function to estimate P
Chance of individual effect, ~1 in . . .	1.00E+00	Calculated as 1/P rounded to 0 decimals

This is based on the formula $\log LC_k = \log LC_{50}+(z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Probability asociated with z value may be reported as "0". This is due to the inability of Excel to handle extremes in z scores beyond -8.2
In such cases the chance of individual effect is defaulted to 1 in 10^{16}, which is the limit of Excel reporting.

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Figure 15. Estimation of likelihood of individual mortality based on risk quotients for freshwater invertebrates (RQ=314) following multiple (26) applications to lawns. Estimated dose-response slope is 4.3.

IEC V1 - Individual Effect Chance Model Version 1

Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate

Enter LC_{50} or LD_{50}	1.7	Note: This is not used in calculation, just serves as a reminder to user
Enter desired threshold	14	Note: This is either the RQ fraction of the toxicity endpoint, the EEC or dose fraction of the dose/concentration at tox endpoint, or the LOC
Enter slope of dose-response	4.3	Note: This is the slope of the dose response relationship from the study providing the above endpoint
z score result	4.92835055	z is the standard normal deviate
Probability associated with z	0.99999959	Uses Excel NORMDIST function to estimate P
Chance of individual effect, ~1 in . . .	1.00E+00	Calculated as 1/P rounded to 0 decimals

This is based on the formula $\log LC_k = \log LC_{50} + (z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Probability asociated with z value may be reported as "0". This is due to the inability of Excel to handle extremes in z scores beyond -8.2
In such cases the chance of individual effect is defaulted to 1 in 10^{16}, which is the limit of Excel reporting.

Ed Odenkirchen, May 28, 2003 EFED/OPP/USEPA

Figure I6. Estimation of likelihood of individual mortality based on risk quotients for freshwater invertebrates (RQ=14) following a single applications to lawns. Estimated dose-response slope is 4.3.

Appendix J. The Generalized Barton Springs Refined Modeling Approach.

J.1 Background

The Barton Springs are supplied predominantly with water discharging from fractures and conduits formed in the Barton Springs Segment of the Edwards Aquifer (BSSEA) as a result of dissolution of the fractured limestone aquifer over time. Slade *et al*. (1986) estimated that approximately 85% of the water that recharges this aquifer infiltrates through the beds of six creeks that cross the recharge zone (Slade *et al*. 1986, Barrett and Charbeneau 1996), with the remaining approximately 15 % of the recharge derived from precipitation and recharge in interbed areas in the recharge zone. In the BSSEA, natural ground water discharge occurs primarily at Barton Springs (Lindgren *et al*., 2004). Recharge features in creek bottoms overlying the recharge zone allow only a limited flow of water during a storm event; therefore, water that is in excess of the flow capacities of recharge features leaves the recharge zone as creek flow. The contributing zone encompasses the watersheds of the upstream portions of the six major creeks that cross the recharge zone and therefore provides the source for most of the water that enters the BSSEA as recharge. These streams gain water, as they flow across the land surface in the contributing zone, from the lower-permeability Glen Rose limestone of the adjacent Trinity aquifer (Lindgren *et al*., 2004). Kuniansky (1989) estimated baseflow discharge from the Trinity aquifer to streams and creeks in this area ranging from 25% to 90% of total flow. In the portion of the Trinity aquifer nearest the contributing zone this was loosely estimated at 30%. The remainder of water in creeks in the contributing zone is derived from precipitation and runoff.

J.2 Model Outline

The refined conceptual model attempts to capture the most important aspects of this unique hydrology. In this regard, the nature of the contributing zone and the recharge zone are distinguished and treated separately. Runoff from the recharge zone is assumed to enter the karst environment directly, whereas runoff from the contributing zone is assumed to mix with stream water prior to entering the karst environment of the recharge zone. The long-term average flow volume in the streams in the contributing zone was assumed to be due 30% to aquifer discharge and 70 % to runoff, as is consistent with Kuniansky (1989). Thus surface runoff in the contributing zone mixes with the aquifer discharge flow prior to flowing into the recharge zone.

Masses and volumes of runoff are determined for this assessment from modeling scenarios developed specifically for the various land uses (*e.g.*, orchards, nurseries, vineyards, residential) found in the Barton Springs Salamander action area. Similar to the Agency's standard ecological risk assessment methodology described above, 30 years of meteorological data were linked to these specific scenarios to estimate 1-in-10-year edge-of-field exposure to potential carbaryl uses.

J.3 Determination of Runoff Concentrations and Volume

As described previously, the contributing zone and the recharge zone are treated differently. Calculations for the contributing zone are described first and these are followed by calculations for the recharge zone.

J.3.1 Contributing Zone

This refined assessment uses the long term average stream flow information to calculate an approximate average daily stream flow in the contributing zone. Because the ratio of runoff flow to base stream flow was given by Kuniansky (1989) to be 70:30, knowing the long-term runoff flow enables an estimate of the long-term average streamflow. The long-term (30 year simulated) runoff volume was calculated for each scenario using PRZM and the respective areas within the contributing zone. The cumulative runoff volume for the contributing zone was calculated according to

$$V_{CZ} = \sum_{t=1}^{n}\left(\sum_{i=1}^{m}\left(V_{CZ,i,t}\right)\right) \qquad \textbf{(J.1)}$$

where V_{CZ} = 30-year simulated cumulative runoff [volume]
$V_{CZ,i,t}$ = runoff from area i on day t [volume]
n = number of days in simulation
m= number of different areas (*e.g.*, crop areas) in simulation

The estimated daily aquifer-driven base flow in the streams within the contributing zone is calculated from the 70:30 ratio as given by Kuniansky (1989):

$$V_{base} = \frac{V_{CZ}}{n}\left(\frac{0.30}{0.70}\right) \qquad \textbf{(J.2)}$$

where V_{base} = the long-term average daily aquifer-driven stream volume [volume]

Daily stream volume was calculated by adding the base stream flow to the daily runoff flows as follows:

$$V_{stream,t} = \sum_{i=1}^{m}\left(V_{CZ,i,t}\right) + V_{base} \qquad \textbf{(J.3)}$$

where $V_{stream,t}$ = the total stream volume on day t [volume]

Daily stream concentrations were calculated directly from the PRZM out put, the area of the scenario, and the stream base flow as follows:

$$C_{stream,t} = \frac{\sum_{i=1}^{n} \left(M_{CZ,i,t}\right) + M_{base}}{V_{stream,t}} \qquad \textbf{(J.4)}$$

where $C_{stream,t}$ = the daily stream concentration [mass/volume]
$M_{CZ,i,t}$ = mass of runoff for scenario i on day t in contributing zone [mass]
M_{base} = daily average mass in stream base flow [mass]

The above calculated stream volume ($V_{stream,t}$) in **equation J.3** along with its associated concentration ($C_{stream,t}$) in **equation J.4** are assumed to be delivered to the recharge zone where they mix with recharge zone runoff as described next.

J.3.2 Recharge Zone

Runoff originating in the recharge zone was determined in a similar manner as for the contributing zone using PRZM output as follows:

$$V_{RZ,t} = \sum_{i=1}^{m} \left(V_{RZ,i,t}\right) \qquad \textbf{(J.5)}$$

where $V_{RZ,t}$ = total daily runoff in recharge zone [volume]
$V_{RZ,i,t}$ = runoff from area i on day t [volume]
m = number of different areas (*e.g.*, crop areas) in simulation

The concentration of runoff in the recharge zone was determined from the PRZM mass output (output as mass/area), the area represented by the scenario, and the volume of runoff in the recharge zone as follows:

$$C_{RZ,t} = \frac{\sum_{i=1}^{n} \left(M_{i,t}\right)}{V_{RZ,t}} \qquad \textbf{(J.6)}$$

where $C_{RZ,t}$ = daily recharge zone runoff concentration [mass/volume]
$M_{RZ,i,t}$ = mass of runoff for scenario i on day t in recharge zone [mass]

J.4 Barton Springs Daily Concentrations

It is assumed that the stream flow from the contributing area and the runoff from the recharge area mix and flow through the Karst and into Barton Springs. The spring concentration is determined from:

$$C_{Barton,t} = \frac{C_{RZ,t}V_{RZ,t} + C_{stream,t}V_{stream,t}}{V_{RZ,t} + V_{stream,t}} \qquad \textbf{(J.7)}$$

where $C_{Barton,t}$ = the daily concentration in Barton Spring [mass/volume]

The daily Springs EECs in the Barton Springs were processed in order to provide durations of exposure. Peak, 14-day, 21-day, 30-day, 60-day, and 90-day average concentrations were calculated across 30 years of daily EEC values. In order to match the standard PRZM/EXAMS output, the maximum values for each of the 30 years of daily and rolling averages were ranked and the 90th percentiles from the rankings were selected as the final 1-in-10-year EECs for use in risk estimation.

J.5 Special Case: Use area hydrologically similar to non-use area

In the case where a pesticide use area has the same hydrological characteristics as the non-use area, a simplification can be made that gives approximately identical results as the more complicated model described above. For example, in the Barton Springs area of interest, the non-crop use area is modeled with a residential PRZM scenario (predominantly characterized by a curve number of 85). If a sole use area is also modeled with the same residential scenario, then runoff would occur from both the use area and the non-use areas in an identical manner.

Consider now, the Barton Springs calculation (**equation J.7** above). This equation can be rewritten as:

$$C_{Barton,t} = \frac{M_{RZ,non-use,t} + M_{RZ,use,t} + M_{CZ,non-use,t} + M_{CZ,use,t} + M_{base,t}}{V_{RZ,non-use,t} + V_{RZ,use,t} + V_{CZ,non-use,t} + V_{CZ,use,t} + V_{base,t}} \qquad \textbf{(J.8)}$$

For the 30-year simulation of the watershed area, less than 9 of the 569 runoff events produced runoff from the area that had a volume of less than 10 times the calculated stream base flow. This means that the volume of the base stream flow is negligible in nearly every event in comparison to runoff volume. In the unlikely case that a high pesticide concentration would occur from one of these rare events (1.6% of runoff events) then such an event would be screened out by the EPA practice of selecting the 90th percentile reoccurrence event. Therefore for practical purposes, the base volume can be eliminated from the above equation. Additionally, since all the runoff volumes are generated from the same scenario with only area differing among them and if base stream concentrations can be assumed to be negligible, then **equation A.8** can be rewritten as

$$C_{Barton,t} = \frac{(M_{A,t})(A_{CZ,use} + A_{RZ,use})}{D_t(A_{CZ,non-use} + A_{CZ,use} + A_{RZ,non-use} + A_{RZ,use})} \qquad \textbf{(J.9)}$$

where $M_{A,t}$ = daily PRZM output for pesticide mass [mass/area]
D_t = daily PRZM output for runoff depth [length]
$A_{CZ,i}$ = extent of i area in contributing zone [area]
$A_{RZ,i}$ = extent of i area in recharge zone [area]

Therefore, the Barton Springs concentration can be determined by the PRZM edge-of-field concentration times the ratio of use area to total area:

$$C_{Barton,t} = C_{edge}\frac{A_{use}}{A_{total}} \qquad \textbf{(J.10)}$$

where C_{edge} = PRZM edge of field concentration [mass/volume]
A_{use} = total use area [area]
A_{total} = total Barton Springs watershed area [area]

The above simplified model equation (**J.10**) can be used where the use and non-use areas can be described by the same PRZM scenario and where background concentrations are not present.

Appendix K. Product Formulations Containing Multiple Active Ingredients

The Agency does not routinely include, in its risk assessments, an evaluation of mixtures of active ingredients, either those mixtures of multiple active ingredients in product formulations or those in the applicator's tank. In the case of the product formulations of active ingredients (that is, a registered product containing more than one active ingredient), each active ingredient is subject to an individual risk assessment for regulatory decision regarding the active ingredient on a particular use site. If effects data are available for a formulated product containing more than one active ingredient, they may be used qualitatively or quantitatively[3] [4].

There are no product LD50 values, with associated 95% Confidence Intervals (CIs) available for carbaryl.

As discussed in USEPA (2000) a quantitative component-based evaluation of mixture toxicity requires data of appropriate quality for each component of a mixture. In this mixture evaluation an LD50 with associated 95% CI is needed for the formulated product. The same quality of data is also required for each component of the mixture. Given that the formulated products for carbaryl do not have LD50 data available it is not possible to undertake a quantitative or qualitative analysis for potential interactive effects. However, because the active ingredients are not expected to have similar mechanisms of action, metabolites, or toxicokinetic behavior, it is reasonable to conclude that an assumption of dose-addition would be inappropriate. Consequently, an assessment based on the toxicity of carbaryl is the only reasonable approach that employs the available data to address the potential acute risks of the formulated products.

[3] Overview of the Ecological Risk Assessment Process in the Office of Pesticide Programs, Environmental Protection Agency (January 2004) (Overview Document).

[4] Memorandum to Office of Prevention, Pesticides and Toxic Substance, US EPA conveying an evaluation by the U.S. Fish and Wildlife Service and National Marine Fisheries Service of an approach to assessing the ecological risks of pesticide products (January 2004).

Pesticide Products Formulated with Carbaryl and Other Pesticide Active Ingredients

CARBARYL PRODUCTS [i] [ii]

			PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT		
PRODUCT/TRADE NAME	EPA Reg.No.	% Carbaryl	LD 50 (mg/kg)	CI (mg/kg)	A.I Adjusted CI (mg/kg)	A.I Adjusted LD50 (mg/kg)	PM
Bonide Vegetable Floral Dust or Spray	00000400029	1.25	ND	ND	ND	ND	
Bonide Fruit Tree Spray	00000400059	0.5	>5000	ND	ND	ND	
Bonide A Complete Fruit Tree Spray	00000400122	0.3	>500	ND	ND	ND	
Bonide Slug, Snail & Sowbug Bait	00000400333	5	ND	ND	ND	ND	
Bonide Snail, Slug & Sowbug Bait	00000400449	5	ND	ND	ND	ND	
Bonide Snail N Slug Plus	00000400450	5	CANCELLED 08/07/07				
Copper Dragon Tomato & Vegetable Dust	00000400458	2	ND	ND	ND	ND	
GET-A-BUG Snail, Slug & Insect Killer	00023902514	5	ND	ND	ND	ND	
Holiday Flea & Tick Stop for Dogs and Cats	00272400750	5	CANCELLED 07/16/07				
Holiday Tick Stop	00272400751	5	CANCELLED 07/16/07				

			PRODUCT		ADJUSTED FOR ACTIVE INGREDIENT		
PRODUCT/TRADE NAME	EPA Reg.No.	% Carbaryl	LD 50 (mg/kg)	CI (mg/kg)	A.I Adjusted CI (mg/kg)	A.I Adjusted LD50 (mg/kg)	PM
Ferti-Lome Home Garden Bug Bait	00740100265	4	ND	ND	ND	ND	
Corry's Slug, Snail & Insect Killer	00811900005	5	ND	ND	ND	ND	
The Andersons GC Bicarb Insecticide + Fertilizer	00919800233	2.3	>5000	ND	ND	ND	
The Andersons Bicarb Insect Killer Granules	00919800234	2.3	>5000	ND	ND	ND	
The Andersons Bicarb Insecticide + Fertilizer	00919800235	2.3	>5000	ND	ND	ND	
ECHO Home Garden Fungicide and Insecticide	06006300015	5	CANCELLED 07/16/07				

[i] From registrant submitted data to support registration. Compiled by Office of Pesticide Programs Health Effects Division.
[ii] Carbaryl LD50= 307 mg/kg; CI= 286.1-329.5 mg/kg