Appendix A Ecological Effects - Methamidophos

Ecological Effects Toxicity Assessment

a. Toxicity to Terrestrial Animals

i. Birds, Acute and Subacute

An acute oral toxicity study using the technical grade of the active ingredient (TGAI) is required to establish the toxicity of methamidophos to birds. The preferred test species is either mallard duck (a waterfowl) or bobwhite quail (an upland gamebird). Results of this test are tabulated below.

Avian Acute Oral Toxicity

Species	% ai	LD_{50} (mg/kg) (confidence interval)	Toxicity Category (slope)	MRID No. Author/Year	Study Classification (1)
Northern bobwhite quail *(Colinus virginianus)*	75	8 (6.2 – 10.3)	very highly toxic (7.36)	00014094, 00109717 Fletcher, 1971	Supplemental (2)
Northern bobwhite quail *(Colinus virginianus)*	75	10.1 (male) (7.9 – 13.1) 11.0 (female) (8.5 – 14.1)	highly toxic	00041313 Nelson et al, 1979	acceptable
Mallard duck *(Anas platyrhynchos)*	75	8.48 (6.73 – 10.7)	very highly toxic	0016000 Hudson et al 1984	acceptable
Mallard duck *(Anas platyrhynchos)*	75	29.5 (27.3 – 31.9)	highly toxic	00014095, 00109718 Fletcher, 1971	Supplemental (3)
Dark eyed junco (*Junco hyemalis)*	73	8	very highly toxic	ECOTOX # 39519 00093914 Zinkl et al, 1979	Supplemental (4)
Common grackle (*Quiscalur quiscula*)	55	6.7 a.i.(4.1 – 10.9)	very highly toxic	00144428 Lamb, 1972	Supplemental (7)
Starling	75	10 (5.6 – 17.8) (5)	very highly toxic	00146286 Schafer, 1984	Supplemental (6)
Redwing blackbird	75	1.78 (5)	very highly toxic	00146286 Schafer, 1984	Supplemental (6)

(1) Acceptable (study satisfies guideline). Supplemental (study is scientifically sound, but does not satisfy guideline)
(2) Due to age of birds (older), insufficient number of hours birds fasted, insufficient description of study design. Death occurred 8 – 22 hrs after dosing.
(3) Due to poor dose response that precludes development of the best estimate of LD50. Death occurred 1 hr after dose.
(4) Due to post dose observations were only 6 hrs instead of 14 days.
(5) Dermal LD_{50} = 17.8 mg/kg for starling and 31.6 mg/kg for redwing blackbird.
(6) This test is an "up/down" test by FWS. Only two doses were used (3.16 and 1.0 mg/kg) with resulting mortality being 2 out of 2 birds tested and 0 out of 2 birds tested, respectively.
(7) Due to five birds dosed per treatment level and insufficient environmental information. EPA guidelines call for ten birds per treatment level. All mortalities occurred within 24 hrs.

Since the LD_{50} falls in the range of 1 to 50 mg ai/kg, methamidophos is categorized as very highly to highly toxic to avian species on an acute oral basis.

Two subacute dietary studies using the TGAI are required to establish the toxicity of methamidophos to birds. The preferred test species are mallard duck and bobwhite quail. Results of these tests are tabulated below.

Avian Subacute Dietary Toxicity

Species	% ai	5-Day LC_{50} (ppm) (confidence interval)	Toxicity Category (slope)	MRID No. Author/Year	Study Classification
Northern bobwhite quail *(Colinus virginianus)*	74	42 (34 – 52) (1)	very highly toxic (3.4)	00093904 Beavers & Fink,1979	acceptable
Northern bobwhite quail *(Colinus virginianus)*	75	57.5 (40 – 82) (3)	Highly toxic	00014064 Jackson, 1968	Supplemental (2)
Northern bobwhite quail *(Colinus virginianus)*	75	59 (48-72)	highly toxic 6.445	44484404 Thompson-Cowley, 1981	Supplemental
Mallard duck *(Anas platyrhynchos)*	75	1302 (906 – 1872) (1)	slightly toxic	00041658, Nelson et al 1979	acceptable
Mallard duck *(Anas platyrhynchos)*	75	847.7 (600 – 1198) (4)	Moderately toxic Slope = 4.27	00130823, 00014304 00145655, Lamb & Bunke 1977	Supplemental (5)
Mallard duck *(Anas platyrhynchos)*	70	1650 (1138 – 2392)	slightly toxic	44484403 Shapiro, 1981	Supplemental
Japanese Quail	73	92	highly toxic	(6)	Supplemental

(1) Note that birds too sick to eat.
(2) Due to birds being 12 weeks of age instead of 10 – 17 days old.
(3) Observed repellency at 826 ppm. Death occurred at 2 – 7 days after exposure.
(4) Death occurred 1 to 6 days after exposure. There is 60% mortality at 1000 ppm. Birds recover 5 – 8 days post treatment.
(5) Due to 60 gm average weight difference of birds in control to birds in treatment groups at day 0, 4 concentrations used instead of 6 concentrations, and incomplete design.
(6) Smith, G.J., 1987. *Pesticide Use and Toxicology in Relation to Wildlife: Organophorous and Carbamate Compounds*. U.S. Dept. Of Interior, FWS Resource Publication 170. pg. 71.

Since the LC_{50} falls in the range of <50 to 5000 ppm, methamidophos is categorized as slightly toxic to very highly toxic to avian species on a subacute dietary basis

ii. Birds, Chronic

Avian reproduction studies using the TGAI are required for Methamidophos because the birds may be subject to repeated exposure to the pesticide, especially preceding or during the breeding season, field data has indicate that the pesticide is persistent in plant and invertebrate food items in potentially toxic amounts, and information derived from mammalian reproduction studies indicates reproduction in terrestrial vertebrates may be adversely affected by the anticipated use of the product. The preferred test species are mallard duck and bobwhite quail.

The above criteria were developed when the test was primarily used to determine effects of organochlorine pesticides and other persistent chemicals and reflect the concern for pesticides with chronic exposure patterns. The criteria would not necessary trigger a test for pesticides that pose risk of adverse reproductive effects from short term exposure.

Several pesticides have been shown to reduce egg production within days after initiation of dietary exposure (Bennett and Bennett 1990, Bennett et al. 1991). Effects of eggshell quality (Bennett and Bennett 1990, Haegele and Tucker 1974) and incubation and brood rearing behavior (Bennett et al. 1991, Brewer et al. 1988, Busby) have also resulted from short-term pesticide exposures. Results of these tests are tabulated below.

Avian Reproduction

Species/ Study Duration	% ai	NOAEC/LOAEC (ppm)	LOAEC Endpoints	MRID No. Author/Year	Study Classification
Northern bobwhite quail *(Colinus virginianus)*	73	3/5	Eggshell thickness, embryo viability, embryo development, hatchability, survivability of hatchlings.	00014114 Beavers & Fink, 1978	acceptable
Mallard duck *(Anas platyrhynchos)*	73	>15	no effect	00014113 Fink, 1977	supplemental
Northern bobwhite quail *(Colinus virginianus)*	73	5/7.8	Egg production	ECOTOX # 40022 Stromberg, et. al., 1986	Open literature study

Although the mallard study is supplemental, since the quail is a more sensitive species than the mallard, the study need not be repeated.

iii. Mammals, Acute and Chronic

Wild mammal testing is required on a case-by-case basis, depending on the results of lower tier laboratory mammalian studies, intended use pattern and pertinent environmental fate characteristics. In most cases, rat or mouse toxicity values obtained from the Agency's Health Effects Division (HED) substitute for wild mammal testing. These toxicity values are reported below.

Mammalian Toxicity

Species/ Study Duration	% ai	Test Type	Toxicity Value	Affected Endpoints	MRID No. Year
laboratory rat *(Rattus norvegicus)*	95	acute oral	LD_{50}= 15.6 mg/kg (m) LD_{50}= 13.0 mg/kg (f)	mortality	00014044 1968
New Zealand white rabbit	73	primary dermal irritation	tox cateogory I	After exposure to 0.1 ppm of 73% monitor dilution for 24 hrs., 5/9 animals died within 24 hrs	00014220 1979
New Zealand white rabbit	2-76	primary eye irritation	tox cateogory I	0.1 ppm of technical applied to one eye results in death of one animal within 30 minutes	00014221 1977
laboratory mouse *(Mus musculus)*	95	acute oral	LD_{50}= 16.2 mg/kg (f)	mortality	00014047 1968
laboratory mouse *(Mus musculus)*	75	acute oral	LD_{50}= 18 mg/kg (f)	mortality	00014048 1968
laboratory rat *(Rattus norvegicus)*	70.5	2-generation reproductive	NOAEL=10 ppm (1) LOAEL= 33 ppm (1)	Decrease in number of births, pup viability and body weight	00148455 41234301 1984

(1) The study indicates that 10 ppm = 0.5 mg/kg/day and 33 ppm = 1.65 mg/kg/day. 33 ppm was the highest dose tested.

An analysis of the results indicates that Methamidophos is categorized as highly toxic to small mammals on an acute oral and dermal basis. There does not appear to be a palatability problem in the above studies (personal communication Nancy McCarroll, HED, 2/10/98). The 10 ppm NOAEL of the 2-generation reproductive study is acceptable for ecological risk assessment.

iv. Insects

A honey bee acute contact study using the TGAI is required for Methamidophos because its use (potato) will result in honey bee exposure. Results of this test are tabulated below.

Nontarget Insect Acute Contact Toxicity

Species	% ai	LD_{50} (µg/bee)	Toxicity Category	MRID No. Author/Year	Study Classification
Honey bee *(Apis mellifera)*	63	1.37 Slope = 10.32	Highly toxic	00036935 Atkins et al, 1975	acceptable

An analysis of the results indicate that methamidophos is categorized as highly toxic to bees on an acute contact basis.

b. Toxicity to Freshwater Aquatic Animals

i. Freshwater Fish, Acute

Two freshwater fish toxicity studies using the TGAI are required to establish the toxicity of methamidophos to fish. The preferred test species are rainbow trout (a coldwater fish) and bluegill sunfish (a warmwater fish). Results of these tests are tabulated below.

Freshwater Fish Acute Toxicity

Species	% ai	96-hour LC_{50} (ppm)	Toxicity Category	MRID No. Author/Year	Study Classification
Rainbow trout (static) *(Oncorhynchus mykiss)*	74	25 (21-29)	slightly toxic	00041312 Nelson & Roney, 1979	acceptable
Rainbow trout (static) *(Oncorhynchus mykiss)*	71	40 (35-46)	slightly toxic	00144429 Hermann, 1980	not reviewed
Rainbow trout (static) *(Oncorhynchus mykiss)*	40 (1)	37 (28-49)	slightly toxic	00144432 Lamb, 1972	not reviewed
Rainbow trout (static) *(Oncorhynchus mykiss)*	75	51 (36-72)	slightly toxic	00014063 Schoenig, 1968	Supplemental (3)
Bluegill sunfish *(static)* *(Lepomis macrochirus)*	74	34 (30-38)	slightly toxic	00041312 Nelson & Roney, 1979	acceptable
Bluegill sunfish *(static)* *(Lepomis macrochirus)*	40 (1)	31 (21-46)	slightly toxic	00144432 Lamb & Roney, 1972	not reviewed
Bluegill sunfish (static) *(Lepomis macrochirus)*	75.4	45 (35-58)	slightly toxic	44484402 McCann, 1977	Supplemental (4)
Bluegill sunfish (static) *(Lepomis macrochirus)*	75	46 (34-62)	slightly toxic	00014063 Schoenig, 1968	Supplemental (3)
Carp (static) *(Cyprinpus carpio)*	90	68 (2)	slightly toxic	05008361 Chin, 1979	supplemental

(1) Formulation of 40% is in propylene glycol. Author concludes that propylene glycol contributes to bluegill toxicity in the formulation. There was 10% mortality in the negative control and 30% mortality in the solvent control. There was no mortality in the trout controls.
(2) Sublethal doses affect growth rate of carp. Brain and liver AchE activities are depressed at 20 ppm concentrations for 48 hours.
(3) Due to polyethylene liners used in test.
(4) Due to being a static jar study and insufficient environmental information.

Since the LC_{50} falls in the range of 25 to 68 ppm, methamidophos is categorized as slightly toxic to freshwater fish on an acute basis.

ii. Freshwater Fish, Chronic

A freshwater fish early life-stage test using the TGAI is not required for Methamidophos because the EEC in water is less than 0.01 of any acute LC_{50} value.

Since there are no chronic data for freshwater fish, an acute to chronic ratio (ACR) was determined. Methamidophos is an organophosphate insecticide. The EFED database was accessed to derive an acute to chronic ratio of all organophosphate insecticides that have an acute LC50 and an early life stage fish study for rainbow trout. Rainbow trout was chosen since methamidophos has a rainbow trout acute toxicity study. Nineteen chemicals were found that have both an acute and chronic study for rainbow trout. The ACR ranged from 0.28 for oxydemeton-methyl to 511.0 for sulprofos. In order to provide the most conservative estimate for the chronic freshwater fish NOEC for methamidophos, the ACR of 511 will be used to estimate the NOEC for rainbow trout. The estimated chronic NOEC for rainbow trout as derived from and ACR of 511 and a LC50 of 25 is 0.0489 ppm or 48.9 ppb.

iii. Freshwater Invertebrates, Acute

A freshwater aquatic invertebrate toxicity test using the TGAI is required to establish the toxicity of methamidophos to aquatic invertebrates. The preferred test species is *Daphnia magna*. Results of this test are tabulated below.

Freshwater Invertebrate Acute Toxicity

Species	% ai	48-hour LC_{50}/ EC_{50} (ppm)	Toxicity Category	MRID No. Author/Year	Study Classification
Waterflea *(Daphnia magna)*	74	0.026 (0.20–0.034)	Very highly toxic	00041311 Nelson & Roney 1979	acceptable
waterflea *(Daphnia magna)*	72	0.050 (0.040-0.070)	Very highly toxic	00014110 Wheeler 1978	acceptable
waterflea *(Daphnia magna)*	74	0.027 (0.014-0.053)	Very highly toxic	00014305 Nelson & Roney 1977	Supplemental (1)

(1) Due to temperature of 24°C instead of 18 °C.

Previous Methamidophos RED (1998) has a reference for freshwater prawn (*Macrobrachium rosenbergii*) study [1] as being supplemental. This study is not cited in the above study because the study is considered to be an invalid study that does not meet EPA's criteria for acceptability. The study was a static renewal study in which the organisms were handled every 24 hours. During the handling process, mortality occurred. The mortality in the controls ranged from 60% to 80%. EPA's criteria only allows up to 10% mortality in the controls. Furthermore, EPA recognizes that in the FWS Recovery Plan for The California Red-Legged Frog [2], this study is cited as evidence that methamidophos is very highly toxic to aquatic invertebrates.

Since the EC_{50} falls in the range of <1 ppm, methamidophos is categorized as very highly toxic to aquatic invertebrates on an acute basis.

iv. Freshwater Invertebrate, Chronic

A freshwater aquatic invertebrate life-cycle test using the TGAI is required for Methamidophos since the end-use product is expected to be transported to water from the intended use site, and the following conditions have been met: (1) the pesticide is intended for use such that its presence in water is likely to be continuous or recurrent due to several applications, (2) aquatic acute LC_{50} for freshwater prawn is less than 1 mg/L, and (3) the EEC in water is equal to or greater than 0.01 of freshwater prawn acute LC_{50} value. The preferred test species is *Daphnia magna*. Result of the test is tabulated below.

[1] Juarez, L.M., J. Sanchez, 1989. Toxicity of the Organophosphorous Insecticide Methamidophos (O,S-Dimethyl Phosphoramidothioate) to Larvae of the Freshwater Prawn, *Macrobachium rosenbergii* (DeMan) and the Blue Shrimp, *Penaeus stylirostris* Stimpson. Bull. Environ. Contam. Toxicol. (1989) 43:302-309.

[2] U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-Legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, OR. viii + 173 pp.

Freshwater Invertebrate Life Cycle Toxicity

Species/Static or Flow-through	% ai	NOEC	Remarks	MRID No. Author/Year	Study Classification
Waterflea *(Daphnia magna)*	78.5	4.49 ppb (0.0045 ppm)	21-day dry weight NOAEC: 4.49 µg ai/L LOAEC: 5.32 µg ai/L 21-day immobility NOAEC: 4.49 µg ai/L LOAEC: 5.32 µg ai/L 21-day reproduction endpoint NOAEC: 4.49 µg ai/L LOAEC: 5.32 µg ai/L	46554501 Kern et. al., 2005	acceptable

The Daphnid life cycle study has some uncertainty in that the measured concentrations in the study kept increasing every 7 days that the concentrations were measured. Normally in a flow-thru system, the concentrations should remain similar over the time period of the test. However, this raises questions as to what concentration was the daphnids exposed to over to course of the test. Although, there were some questions regarding the concentration levels of study, the reviewer believes that the results are acceptable to use for risk assessment.

c. Toxicity to Estuarine and Marine Animals

i. Estuarine and Marine Fish, Acute

Acute toxicity testing with estuarine/marine fish using the TGAI is required for Methamidophos because the end-use product is intended for direct application to the marine/estuarine environment or the active ingredient is expected to reach this environment because of its use in coastal counties. The preferred test species is sheepshead minnow. Results of these tests are tabulated below.

Estuarine/Marine Fish Acute Toxicity

Species/Static or Flow-through	% ai	96-hour LC_{50} (ppm)	Toxicity Category	MRID No. Author/Year	Study Classification
Sheepshead minnow *(Cyprinodon variegatus)*	70.1	5.63 (4.13-6.89)	Moderately toxic	00144431 Larkin, 1983	acceptable

Since the LC_{50} falls in the range of 1-10 ppm, methamidophos is categorized as moderately toxic to estuarine/marine fish on an acute basis.

ii. Estuarine and Marine Fish, Chronic

An estuarine/marine fish early life-stage test using the TGAI is not required for Methamidophos because the lack of persistence and the EEC in water is less than 0.01 of any acute LC_{50} value.

Since there are no chronic data for estuarine fish, an acute to chronic ratio (ACR) was determined. Methamidophos is an organophosphate insecticide. The EFED database was accessed to derive an acute to chronic ratio of all organophosphate insecticides that have an acute LC50 and an early life stage fish study for sheepshead minnow. Sheepshead minnow was chosen since methamidophos has a sheepshead minnow acute

toxicity study. Seven chemicals were found that have both an acute and chronic study for sheepshead minnow. The ACR ranged from 5.9 for fonofos to 319 for diazinon. In order to provide the most conservative estimate for the chronic freshwater fish NOEC for methamidophos, the ACR of 319 will be used to estimate the NOEC for sheepshead minnow. The estimated chronic NOEC for sheepshead minnow as derived from and ACR of 319 and a LC50 of 5.63 is 0.0176 ppm or 17.6 ppb.

iii. Estuarine and Marine Invertebrates, Acute

Acute toxicity testing with estuarine/marine invertebrates using the TGAI is required for Methamidophos because the active ingredient is expected to reach this environment because of its use of cotton and tomatoes in coastal counties. The preferred test species are mysid shrimp and eastern oyster. Results of these tests are tabulated below.

Estuarine/Marine Invertebrate Acute Toxicity

Species	% ai.	96-hour LC_{50}/EC_{50} (ppm)	Toxicity Category	MRID No. Author/Year	Study Classification
Oyster – shell deposition (*Crassostrea virginica*)	72.9	36 (30-47)	slightly toxic	40088601, 40074701 Surprenant, 1987	Supplemental (1)
Mysid shrimp *(Americamysis bahia)*	technical	1.054 (0.756 – infinity) (2)	Moderately toxic	00144430 Larkin, 1983	acceptable

(1) Due to no raw data.
(2) Of the 5 test concentrations, only the highest concentration showed any mortality and the mortality is 70 percent. Therefore, the confidence level is not very good due to only one concentration having mortality and that it is 70%.

Previous Methamidophos RED (1998) has a reference for blue shrimp (*Penaeus stylirostris*) study [3] as being supplemental. This study is not cited in the above study because the study is considered to be an invalid study that does not meet EPA's criteria for acceptability. The study was a static renewal study in which the organisms were handled every 24 hours. During the handling process, mortality occurred. The mortality in the controls ranged from 60% to 80%. EPA's criteria only allows up to 10% mortality in the controls. Furthermore, EPA recognizes that in the FWS Recovery Plan for The California Red-Legged Frog [4], this study is cited as evidence that methamidophos is very highly toxic to aquatic invertebrates.

Since the LC_{50}/EC_{50} falls in the range of <1 to 100 ppm, methamidophos is categorized as highly toxic to slightly toxic to estuarine/marine invertebrates on an acute basis.

iv. Estuarine and Marine Invertebrate, Chronic

An estuarine/marine invertebrate life-cycle toxicity test using the TGAI is required for Methamidophos because the end-use product is expected to be transported to this

[3] Juarez, L.M., J. Sanchez, 1989. Toxicity of the Organophosphorous Insecticide Methamidophos (O,S-Dimethyl Phosphoramidothioate) to Larvae of the Freshwater Prawn, *Macrobachium rosenbergii* (DeMan) and the Blue Shrimp, *Penaeus stylirostris* Stimpson. Bull. Environ. Contam. Toxicol. (1989) 43:302-309.

[4] U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-Legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, OR. viii + 173 pp.

environment from the intended use site (cotton and tomato), and the following conditions have been met: (1) the pesticide is intended for use such that its presence in water is likely to be recurrent regardless of toxicity due to several applications and (2) aquatic acute LC_{50} for mysid shrimp is 1 mg/L. The preferred test species is Mysid shrimp. Result of the test is tabulated below.

Estuarine/Marine Invertebrate Life Cycle Toxicity

Species/Static or Flow-through	% ai	NOEC	Remarks	MRID No. Author/Year	Study Classification
Mysid shrimp *(Americamysis bahia)*	78.5	0.174 ppm	Young/Repro. Day: 0.360 mg ai/L Larvae Survival: 0.669 mg ai/L Growth 1) length: 0.360 mg ai/L 2) dry weight: 0.174 mg ai/L	466460-01 Blankinship et. al., 2005	acceptable

The endpoints measured were not gender specific.

d. Toxicity to Plants

i. Terrestrial Plants

Currently, terrestrial plant testing is not required for pesticides other than herbicides except on a case-by-case basis (*e.g.*, labeling bears phytotoxicity warnings incident data or literature that demonstrate phytotoxicity). Methamidophos is known to cause phytotoxicity to terrestrial plants. Methamidophos is also a more toxic degradate of methamidophos. There is concern that the methamidophos may be the cause of this phytotoxicity rather than the methamidophos. Therefore, a tier I seedling emergence and vegetative vigor tests (122-1) are needed to assess risk to non-target terrestrial plants.

For seedling emergence and vegetative vigor testing the following plant species and groups should be tested: (1) six species of at least four dicotyledonous families, one species of which is soybean (*Glycine max*) and the second is a root crop, and (2) four species of at least two monocotyledonous families, one of which is corn (*Zea mays*).

Toxicity of Methamidophos to Terrestrial Plants - Tier I Seedling Emergence

Species	*% ai*	*% inhibition length*	*% inhibition weight*	*Maximum Dose*	*MRID No. Author, Year*	*Study Classification*
	42.6			4 lb ai/A	46655802 Christ and Lam, 2005	Not Reviewed
Cabbage		3	0			
Corn		0	0			
Cucumber		2	0			
Lettuce		0	3			
Oat		0	0			
Onion		3	0			
Radish		0	6			
Ryegrass		0	0			
Soybean		2	0			

Tomato		15	0			

Toxicity of Methamidophos to Terrestrial Plants - Tier I Vegetative Vigor

Species	*% ai*	*% inhibition length*	*% inhibition weight*	*Maximum Dose*	*MRID No. Author, Year*	*Study Classification*
	42.6			4 lb ai/A	46655802 Christ and Lam, 2005	Not Reviewed
Cabbage		0	6			
Corn		3	1			
Cucumber		0	1			
Lettuce		5	4			
Oat		4	8			
Onion		1	4			
Radish		6	5			
Ryegrass		0	0			
Soybean		1	4			
Tomato		0	6			

ii. Aquatic Plants

Currently, aquatic plant testing is not required for pesticides other than herbicides and fungicides except on a case-by-case basis (*e.g.*, labeling bears phytotoxicity warnings, incident data or literature that demonstrate phytotoxicity). EFED is not aware of any phytotoxicity of methamidophos to aquatic plants. Therefore, phytotoxicity testing for non-target aquatic plants is not needed at this time.

e. Terrestrial Field Testing and Literature Findings

Menkens, G. et al. 1989. MRID 41548801.

This supplemental residue study is an aerial application made 4 times over 7-9 day interval schedule with application of 1.0 lb ai/A using Monitor 4 on potatoes in Idaho.

Crops	Mean (ppm)	Maximum (ppm)
Potato leaves	82	161
Non-crop foliage (drift)	4	19
Non-crop foliage (overruns)	3.5	15
Non-crop inflorescence (drift and overruns)	4.3	8.5
Soil	1.1	1.3
Flying insects (crop)	18.6	53.0
Flying insects (drift and overruns)	1.1	3.1
Ground insects (crop)	none found	none found
Ground insects (drift and overruns)	0.9	4.2

The study was considered supplemental because of the compositing of samples. The registrant-calculated methamidophos half-life is 2.2 days for field interior sweep net invertebrates and 5.5 days for foliage.

Menkens, G. et al. 1989. MRID 41548802.

This supplemental residue study is an aerial application of Monitor 4 over sugar beets in California with 1.0 lb ai/A with 5 applications on a 14 day spray schedule. The following table provides residue information:

Crops	Mean (ppm)	Maximum (ppm)
Sugar beets leaves	46.4	69
Non-crop foliage (drift)	39.4	80
Non-crop foliage (overruns)	31	126
Non-crop inflorescence (drift and overruns)	15.3	50
Crop inflorescence	49.3	89
Soil (field)	0.54	1.2
Soil (drift)	0.25	0.80
Flying insects (crop)	13	23
Flying insects (drift)	3.6	7.6
Flying insects (overruns)	9.6	13
Ground insects (crop)	23.4	70
Ground insects (drift	23.3	59
Ground insects (overruns)	15.8	53

The author calculated half-lives for the residues, which ranged from 3 days for foliage to 23 days in soil. The study was considered supplemental because the residues were composited.

Perritt, J.E., D.A. Palmer, H. Krueger, and M. Jaber. 1990. MRID 41548803.

This supplemental residue study was an aerial application on cotton of Monitor 4 at 1 lb ai/A with 8 day intervals applied 7 times in Alabama. The following table provides residue information:

Residue Medium	Number of Samples	Mean (ppm)	s.d.	Maximum (ppm)
Crop foliage	581	132	50	452
adjacent foliage	326	35	40	154
Soil invertebrates	156	1.6	3.1	16
Soil invertebrates (crop)	301	1.4	2.5	14
Flying insects	24	20	12	43
Soil	352	0.86	0.78	2.8
Small mammals (fur and skin)	20	>0.10	n/a	2.9 (hisip cotton rat)

Thirty percent of the placed carcasses were found. The half-life residue in the crop foliage is calculated to be 8.2 days and 7.5 days for soil invertebrates. EFED

concluded that thirty-four casualties were found during the study at eight test fields. Ten of the casualties were found during preapplication periods, and six were found post application under circumstances that did not indicate that exposure to Monitor 4 Spray was a potential cause of mortality. Only one casualty was found under circumstances suggesting that it was likely treatment related. Cause of death could not be determined for another seventeen casualties, but exposure to Monitor 4 Spray could not be precluded as a potential cause of mortality and therefore the study is classified as supplemental.

Blus, L.J., C.S. Stanley, C.J. Henny, G.W. Pendleton, T.H. Craig, E.H. Craig, D.K. Halford. 1989. *Effects of organophosphorous Insecticides on Sage Grouse in Southeastern Idaho*. J. Wildl. Manage. 53(4): 1139-1146. ECOTOX # 40025

Die-offs of sage grouse (*Centrocercus urophasiannus*) were noted in 1981 near potato fields sprayed with methamidophos. Five intoxicated sage grouse were collected and inhibition of brain ChE activity ranged from normal to 61%.

Data collected in 1983 show brain ChE depressions of 40-65% in sage grouse collected near potato fields shortly after spraying with methamidophos. Although most of the mortalities occurred from the nearby alfalfa fields, 2 depredated grouse contained 39% and 43% ChE inhibition of which one had 18 μg/g of methamidophos in the crop of the grouse. The authors of the study concluded that since "the 2 depredated sage grouse found in or near the potato field sprayed with methamidophos had brain ChE activity depressed <50%, recent experimental evidence supports the probability that their deaths resulted from the spraying."

This study radioed-collared sage grouse were released near potato and alfalfa fields. Surveys and radio tracking found that the grouse frequented the potato and alfalfa fields as well as the non-cropland sagebrush up to 4 Km away. Many of the grouse were observed using the potato fields extensively. After spraying, the crops of the grouse collected as dead or shot in the potato fields contained foliage of weeds and small amounts of insect materials. Two radio-tagged sage grouse were found in or near a potato field the day it was sprayed with methamidophos. One of the dead grouse was found to contain 18 ppm methamidophos detected in the crop contents. This finding rebukes some of the popular ideas that the odor of methamidophos would offend the birds to cause them to look for alternative sources of food. Predation on the intoxicated sage grouse was noted. Approximately 35% of the intoxicated grouse may have survived if they had not been depredated.

Although methamidophos half-life is <4 days, low levels of methamidophos may persist for several weeks in plants. Thus, intoxicated grouse may be exposed to additional residues when ChE reversal is initiated and the grouse resumes feeding on the contaminated foliage.

According to the authors, these findings suggest that OP insecticides may adversely affect sage grouse populations whose summer range include cropland. The authors also noted that this study may provide some evidence for the claim that pesticides are partly responsible for the declining populations of upland game birds in the U.S. and Europe.

Temple, D. And D. Palmer, 1995. *An Evaluation of the Effects of Monitor 4 Liquid Insecticide on the Nestling Ecology of European Starlings Associated with Cabbage Fields in East-Central Wisconsin*. MRID 43740301.

This study concludes that methamidophos applications (1 lb ai/A) have equal or less adverse impact on avian reproduction than the permethrin insecticide (which is practically not toxic to vertebrates) which was used as the control. This study was limited to the European Starling reproduction and did not address the other species in the area. This study also is designed not to look at acute toxicity but focused on reproductive endpoints. There was some avian mortalities in the study but it is not apparent if these mortalities are chemical related. Fourteen percent of the post application blood samples $\geq$ 50% ChE inhibition. These findings suggest that animals that have greater exposure to contaminated food, or are more sensitive to OP pesticides than are starlings, could die from ChE inhibition.

Hussain, M.A., R.B. Mohamad, P.C. Oloffs. 1985. *Studies on the Toxicity, Metabolism, and Anticholinesterase Properties of Acephate and Methamidophos*. J. Environ. Sci. Health, B20 (1), p. 129-147. (1985). ECOTOX # 37219

Backswimmer (aquatic insect) and rainbow trout have ChE inhibition for 4 hours before recovery begins. This suggests that aquatic insects and fish that are exposed to acephate/methamidophos may not recover by spontaneous reactivation of AchE. Therefore aquatic insects or fish may be stressed for some time because of physiological effects caused by inhibition of AchE. ECOTOX #

Grove, R. A., Buhler, D. R., Henny, C. J., and Drew, A. D. (1998). Declining Ring-Necked Pheasants in the Klamath Basin, California: I. Insecticide Exposure. *Ecotoxicol.* 7: 305-312**.** ECOTOX # 88580

Adult radio-equipped hens were released near potato fields and compared with radio-equipped hens in Tule Lake National wildlife Refuge during the summers of 1990 – 1992. Hens were monitored after methamidophos application to potato fields and later captured. Measurements of Brain AChE were taken. Direct toxicity of the radio- equipped adult hens did not occur. Two juveniles (not radio-equipped) were found dead as a result of methamidophos exposure. Brain AChE activity inhibition in the captured hens ranged from 19% to 62%. Six of the pheasants had inhibition of brain AChE that is greater than 55%. Twenty-five of the 41 adult pheasants captured within 20 days of spray application had detectable methamidophos residues on food items taken from their upper GI tract. Seven of

the adults had food items that ranged from 0.18 to 2.10 ppm (wet basis). Hens captured near potato fields that were sprayed appear to have lost weight when compared to controls. It appears that the application of methamidophos have impacted the availability of food items for the birds and juveniles. None of the radio-equipped hens died as a direct result of methamidophos exposure or predation. In addition, authors concluded that most of the nesting failures of radio-equipped hens occurred prior to insecticide applications.

APPENDIX A1. Supplemental Information Regarding Toxicity Studies not used to calculate RQ's

Toxicity to Terrestrial Plants

Terrestrial plant toxicity data are used to evaluate the potential for methamidophos to affect riparian zone vegetation within the action area for the listed CRLF. Riparian zone effects may result in increased sedimentation, which may impact the assessed CRLF aquatic-phase. Plant toxicity data from both registrant-submitted studies and studies in the scientific literature were reviewed for this assessment. Registrant-submitted studies are conducted under conditions and with species defined in EPA toxicity test guidelines. Sub-lethal endpoints such as plant growth, dry weight, and biomass are evaluated for both monocots and dicots, and effects are evaluated at both seedling emergence and vegetative life stages. Guideline studies generally evaluate toxicity to ten crop species. A drawback to these tests is that they are conducted on herbaceous annual crop species only, and extrapolation of effects to other species, such as the woody shrubs and trees and wild herbaceous species, contributes uncertainty to risk conclusions. Methamidophos is labeled for uses on alfalfa, tomatoes, and potatoes and is applied after the crops have emerged; therefore, effects to plants would not be anticipated at exposure concentrations less than the application rate.

Commercial crop species have been selectively bred, and may be more or less resistant to particular stressors than wild herbs and forbs. The direction of this uncertainty for specific plants and stressors is largely unknown. Homogenous test plant seed lots also lack the genetic variation that occurs in natural populations; therefore, the range of effects seen from these tests is likely to be smaller than would be expected from wild populations.

Based on the results of the submitted terrestrial plant toxicity tests, it appears that seedlings and emerged plants may not be sensitive to methamidophos. Tables 4.1.4.1 and 4.1.4.2 summarize the respective seedling emergence and vegetative vigor terrestrial plant toxicity data.

There is no Tier II multiple dose phytotoxicity tests for methamidophos. There are two single dose maximum-limit Tier I tests (seedling emergence and vegetative vigor) that were submitted by the registrant.

All of the crops were exposed to 4 lb ai/A of methamidophos. The maximum rate of application is 1 lb ai/A. Among the crops tested with methamidophos in Tier I seedling emergence toxicity tests, the range of differences of reduction in dry plant weight from those of the controls are from 0% to 6%. This range is well within the natural variation that one would expect for these crops. For the length reduction among the crops tested, the ranges of differences from those of the controls are from 0% to 3% with the exception of the tomato. The reduction of plant length for the tomato differs from the control by 15%. Although the natural length variation among tomato plants is not known, it is estimated that the limit of natural variation for plant length for tomato is near 15%. The

tomato plants were exposed to four times the maximum application rate with the ensuing effects when compared to the control, being near the limit of natural variation of tomato plant length. It is therefore reasonable to conclude that at the maximum application rate; the differences of length reduction when compared to the controls would fall within the natural variation that one would expect for tomato plant length. Therefore, one concludes that there is no adverse effect to tomato and other crops tested from the exposure to methamidophos at maximum application rate of 1 lb ai/A.

Among the crops tested with methamidophos in Tier I vegetative vigor toxicity tests, the range of differences of reduction in dry plant weight from those of the controls are from 0% to 8%. This range is well within the natural variation that one would expect for these crops. For the length reduction among the crops tested, the ranges of differences from those of the controls are from 0% to 6%. This range is well within the natural variation that one would expect for these crops.

In addition to submitted studies, data were located in the open literature on plants but are less than the selected measures of effect summarized in Table 4.1.

Table 1 Non-target Terrestrial Plant Seedling Emergence Toxicity (Tier I) Data

Surrogate Species	% ai	*% inhibition length*	*% inhibition weight*	MRID No. Author/Year	Study Classification
Cabbage	42.6	3	0	46655802 Christ and Lam, 2005	Not Reviewed
Corn		0	0		
Cucumber		2	0		
Lettuce		0	3		
Oat		0	0		
Onion		3	0		
Radish		0	6		
Ryegrass		0	0		
Soybean		2	0		
Tomato		15	0		

Table 2 Non-target Terrestrial Plant Vegetative Vigor Toxicity (Tier I) Data

Surrogate Species	% ai	*% inhibition length*	*% inhibition weight*	MRID No. Author/Year	Study Classification
Monocot - Corn	42.6	0	6	46655802 Christ and Lam, 2005	Not Reviewed
Monocot - Oat		3	1		
Monocot - Onion		0	1		
Monocot - Ryegrass		5	4		
Dicot - Carrot		4	8		
Dicot - Soybean		1	4		
Dicot - Lettuce		6	5		
Dicot - Cabbage		0	0		
Dicot - Tomato		1	4		
Dicot - Cucumber		0	6		

FIELD STUDIES

Blus, L.J., C.S. Stanley, C.J. Henny, G.W. Pendleton, T.H. Craig, E.H. Craig, D.K. Halford. 1989. *Effects of organophosphorous Insecticides on Sage Grouse in Southeastern Idaho*. J. Wildl. Manage. 53(4): 1139-1146. ECOTOX # 40025.

Die-offs of sage grouse (*Centrocercus urophasiannus*) were noted in 1981 near potato fields sprayed with methamidophos (Blus et al, 1989). Five intoxicated sage grouse were collected and inhibition of brain ChE activity ranged from normal to 61%.

Data collected in 1983 show brain ChE depressions of 40-65% in sage grouse collected near potato fields shortly after spraying with methamidophos. Although most of the mortalities occurred from the nearby alfalfa fields, 2 depredated grouse contained 39% and 43% ChE inhibition of which one had 18 μg/g of methamidophos in the crop of the grouse. The authors of the study concluded that since "the 2 depredated sage grouse found in or near the potato field sprayed with methamidophos had brain ChE activity depressed <50%, recent experimental evidence supports the probability that their deaths resulted from the spraying."

This study radio-collared sage grouse were released near potato and alfalfa fields. Surveys and radio tracking found that the grouse frequented the potato and alfalfa fields as well as the non-cropland sagebrush up to 4 Km away. Many of the grouse were observed using the potato fields extensively. After spraying, the crops of the grouse collected as dead or shot in the potato fields contained foliage of weeds and small amounts of insect materials. Two radio-tagged sage grouse were found in or near a potato field the day it was sprayed with methamidophos. One of the dead grouse was found to contain 18 ppm methamidophos detected in the crop contents. This finding rebukes some of the popular ideas that the odor of methamidophos would offend the birds to cause them to look for alternative sources of food. Predation on the intoxicated sage grouse was noted. Approximately 35% of the intoxicated grouse may have survived if they had not been depredated.
Although methamidophos half-life is <4 days, low levels of methamidophos may persist for several weeks in plants. Thus, intoxicated grouse may be exposed to additional residues when ChE reversal is initiated and the grouse resumes feeding on the contaminated foliage.

According to the authors, these findings suggest that OP insecticides may adversely affect sage grouse populations whose summer range include cropland. The authors also noted that this study may provide some evidence for the claim that pesticides are partly responsible for the declining populations of upland game birds in the U.S. and Europe.

Mammals: Sublethal Effects and Additional Open Literature Information

In one submitted study, (MRID 00014220), the bare skins of New Zealand white rabbits were exposed to 0.1 ppm of 73% monitor dilution for 24 hrs. After initial exposure, 5 out

of 9 animals died within 24 hours. HED has classified methamidophos as Toxicity category I for primary dermal irritation.

Another study submitted to HED (MRID 00014221), 0.1 ppm of the technical active ingredient was applied to one eye resulting in death of one animal within 30 minutes. HED has classified methamidophos as Toxicity category I for primary eye irritation.

Freshwater Invertebrates: Acute Exposure Studies

In addition, there is a literature study (Juarez, 1989) that is classified as ancillary due to different testing protocols used with different stages of the freshwater prawn (*Macrobachium rosenbergii*) tested. The study indicates that LC_{50} is 0.000042 ppm (42 ng/L). However, there are some uncertainties with the study. The study used a static renewal every 24 hours. Each time the organisms were handled, mortality occurred in test samples and control. The life stage most similar to the *Daphnia magna* species' life stage during guideline testing is the post larvae stage. Although the 48-hr. LC_{50} value for the post larvae stage is 30 ppt, the reviewer did not use that value for risk assessment because of the low survival rate in the controls after 24-hr. Therefore the 24 hr. LC_{50} value (42 ppt) for the post larvae stage is used. This study tested Zoea I, IV, VII and post larvae stages with LC_{50} values for 24, 48 and 96 hr. These LC_{50} values range from 0.22 ppt for 96 hr. Zoea IV stage up to 42 ppt for the 24 hr. post larvae stage. The LC_{50} values may be over-estimated due to high mortality every 24 hours from handling the organisms as they are transferred from one vessel to another. Therefore, the results from this study will only be used for confirmation that methamidophos is very highly toxic to aquatic invertebrates.

Freshwater Invertebrates: Chronic Exposure Studies

A submitted freshwater invertebrate life-cycle study (MRID 46554501, Kern, 2005) using *Daphnia magna* was reviewed. The study has some uncertainty in that the concentrations were measured every 7 days with the result that the concentrations were continuously increasing over the time period of the test. Normally in a flow-thru system, the concentrations should remain similar over the time period of the test. However, this raises questions as to what the concentration was that the daphnids were exposed to over the course of the test; was a fresh batch made of the solution at a regular basis; were the measured concentration samples taken before or after the fresh batch was put into the flow-thru system; and how much time was used to equilibrate the flow-thru system? Despite there being some questions regarding the concentration levels of study, the reviewer believes that the results are acceptable enough to use for risk assessment.

The **NOEC is found to be 4.49 µg ai/L (0.045 ppm)** for 21-day dry weight, 21-day immobility, and 21-day reproduction endpoint. The LOEC is 5.32 µg ai/L (0.053 ppm) for all of the above endpoints.

Acute Oral LD_{50}

Based on professional judgment, the lower 95% confidence limit on the **acute oral LD_{50} of 4.1 mg/kg-bw** for the common grackle was selected to evaluate acute oral risks to birds and terrestrial-phase amphibians. The common grackle study was selected because it had the most scientifically sound lowest acute oral value. Though classified as supplemental, the study covered a larger portion of the dose-response curve (i.e., 6 doses) and control results indicated handling and environmental conditions were sound. To address concerns that the results were potentially not as precise as a guideline study because fewer birds were tested the 95% lower confidence limit on the LD_{50} (4.1 mg/kg-bw) was selected for use rather than the mean LD_{50} study result (6.7 mg/kg-bw). (note: however, it is unknown if fewer common grackles would need to be tested to achieve the same precision as with mallards and bobwhite quail in guideline studies). For a more detailed discussion of studies considered but not selected for use in RQ calculations, see Appendix G.

The most sensitive acute oral LD_{50} value is 1.78 mg/kg-bw for the redwing blackbird from a FWS study (MRID 00146286, Schafer, 1984). However in this study, only two doses were tested (3.16 and 1.0 mg/kg), only two birds were exposed at each dose, and there was no control treatment. With such a study design there is no confidence that the result of this test is accurate or that the results are due to the test material alone. Therefore, the results of this study are not acceptable for use in quantitating risk.

The next most sensitive species tested is another songbird, the common grackle (MRID 00144428 Lamb, 1972), with an acute oral LD_{50} of 6.7 mg/kg-bw (95% confidence interval 4.1 – 10.9). However, this 1972 study used only 5 birds per dose level but did include a control and 6 dose levels. This study is considered to be supplemental because the EPA test guidelines call for an experimental test design with 10 birds tested per dose level. This study may potentially result in a less accurate estimate of the acute oral LD_{50}.

Two other species, bobwhite quail (MRID 00014094, 00109717, Fletcher, 1971) and dark eyed junco (MRID 00093914, Zinkl, 1979), have an acute oral LD_{50} of 8.0 mg/kg-bw. There are some uncertainties in using these LD_{50} values because of study design issues. The quail (95% confidence interval 6.2 – 10.3) is supplemental because older birds were tested, birds were fasted for insufficient hours, and there were insufficient description of study design. The junco study is supplemental because the post-dose observations were only 6 hrs instead of 14 days which may result in an underestimate of methamidophos toxicity. With the quail study using older birds (which are typically less sensitive in some cases) and having the birds fast for a shorter period of time than recommended, the toxicity to the quail may also be under-estimated.

The next most sensitive LD_{50} is an acceptable study using the mallard duck (MRID 016000, Hudson, 1984) with an LD_{50} of 8.48 (6.7 – 10.7).

Appendix B. Aquatic Exposure Modeling Runs (PRZM-EXAMS output)

Tomato, Aerial, Non-Irrigated, 4 applications at 7 days, March 1 first application, Standard 5% Drift Assumption

stored as Tomato0301.out
Chemical: methamidophos
PRZM environment: CAtomato_NirrigC.txt modified Tueday, 8 June 2004 at 11:42:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	5.098	4.185	3.323	1.726	1.155	0.2849
1962	5.938	4.899	3.602	1.868	1.248	0.3077
1963	7.321	6.006	4.52	2.495	1.675	0.4131
1964	5.229	4.315	3.434	1.801	1.205	0.2962
1965	7.487	6.054	4.613	2.277	1.522	0.3753
1966	4.862	3.901	3.1	1.567	1.046	0.2579
1967	5.32	4.334	3.588	1.99	1.337	0.3297
1968	5.259	4.269	3.433	1.796	1.201	0.2952
1969	5.316	4.365	3.613	2.105	1.412	0.3482
1970	15.63	12.69	7.75	3.628	2.423	0.5975
1971	5.074	4.137	3.296	1.86	1.268	0.3138
1972	4.577	3.579	2.834	1.438	0.9606	0.2414
1973	6.143	5.1	3.802	1.994	1.332	0.3285
1974	4.946	3.987	3.238	1.779	1.19	0.2933
1975	5.275	4.362	3.476	1.86	1.246	0.3073
1976	5.199	4.279	3.412	1.803	1.206	0.2969
1977	5.447	4.569	3.587	1.824	1.223	0.3015
1978	4.682	3.675	2.997	1.848	1.239	0.3056
1979	4.905	3.923	3.23	1.716	1.146	0.2825
1980	5.118	4.17	3.391	1.764	1.178	0.2897
1981	5.646	4.588	3.517	1.826	1.222	0.3012
1982	7.006	5.827	4.392	2.315	1.55	0.3821
1983	12.1	9.744	6.367	3.282	2.201	0.5427
1984	4.698	3.716	2.948	1.503	1.004	0.2469
1985	5.118	4.185	3.339	1.69	1.128	0.281
1986	14.03	10.97	5.941	2.71	1.809	0.4461
1987	5.252	4.24	3.438	1.741	1.2	0.2964
1988	4.815	3.849	3.058	1.799	1.23	0.3024
1989	6.586	5.235	3.961	2.272	1.521	0.375
1990	4.813	3.846	3.054	1.603	1.104	0.2793
0.1	11.6387	9.375	5.8082	2.6885	1.7956	0.4428

Average of yearly averages: 0.330643333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Tomato0301

Metfile: w93193.dvf
PRZM scenario: CAtomato_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	01-03	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	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none		none, monthly or total(average of entire run)

Tomato, Aerial, Non-Irrigated, 4 applications at 7 days, March 1 first application, Alternative 0% Drift Assumption

stored as TomatoAir4X0drift.out
Chemical: methamidophos
PRZM environment: CAtomato_NirrigC.txt modified Tueday, 8 June 2004 at 11:42:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.07727	0.05981	0.02545	0.01463	0.009823	0.002422
1962	0.713	0.5882	0.2831	0.105	0.07	0.01726
1963	2.968	2.435	1.601	0.7236	0.483	0.1191
1964	0.00377	0.002976	0.001337	0.0005026	0.0003351	8.241e-005
1965	3.911	3.162	1.55	0.634	0.4229	0.1043
1966	7.188e-01	16.62e-011	4.749e-011	2.51e-011	1.729e-011	4.342e-012
1967	0.7732	0.6299	0.3635	0.2425	0.1623	0.04003
1968	0.6483	0.5231	0.3397	0.1736	0.1159	0.02849
1969	1.982	1.56	0.6991	0.3494	0.2343	0.05777

1970	12.83	10.42	5.058	1.959	1.307	0.3223
1971	1.297	1.026	0.4624	0.1838	0.1259	0.03116
1972	0.4286	0.2812	0.08825	0.03112	0.02075	0.005155
1973	0.9976	0.8284	0.4168	0.1578	0.1053	0.02597
1974	0.8007	0.6682	0.3145	0.1491	0.1001	0.02467
1975	0.03038	0.02513	0.01283	0.005084	0.003392	0.0008363
1976	0.04959	0.04081	0.02057	0.008133	0.005428	0.001629
1977	0.51	0.4191	0.2581	0.1018	0.0709	0.01748
1978	2.218	1.748	0.858	0.3796	0.2561	0.06325
1979	0.89	0.7119	0.3355	0.1519	0.1014	0.025
1980	0.4551	0.3777	0.1928	0.07494	0.04998	0.01229
1981	0.8643	0.7024	0.3362	0.161	0.11	0.02713
1982	2.579	2.171	1.214	0.5069	0.3383	0.08342
1983	9.3	7.489	3.712	1.649	1.109	0.2734
1984	3.813e-008	2.937e-008	1.276e-008	4.812e-009	3.213e-009	7.924e-010
1985	0.2015	0.1414	0.04956	0.0176	0.0118	0.004252
1986	9.641	7.538	3.317	1.28	0.8537	0.2105
1987	0.723	0.593	0.3363	0.1434	0.1349	0.03345
1988	1.733	1.346	0.7373	0.2771	0.1853	0.0456
1989	3.273	2.602	1.118	0.767	0.5166	0.1274
1990	0.858	0.6423	0.2518	0.1553	0.1037	0.02557

0.1	8.7611	7.0563	3.1454	1.2287	0.81999	0.20219

Average of yearly averages: 0.0576638903598914

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: TomatoAir4X0drift
Metfile: w93193.dvf
PRZM scenario: CAtomato_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0	fraction of application rate applied to pond	
Application Date	Date	01-03	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			

IPSCND1
UPTKF
Record 18: PLVKRT
PLDKRT
FEXTRC 0.5
Flag for Index Res. Run IR Pond
Flag for runoff calc. RUNOFF none none, monthly or total(average of entire run)

Tomato, Ground, Non-Irrigated, 4 applications at 7 days, March 1 first application, Standard 1% Drift Assumption

stored as TomatoGrdMar1.out
Chemical: methamidophos
PRZM environment: CAtomato_NirrigC.txt modified Tueday, 8 June 2004 at 11:42:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	1.02	0.8516	0.6707	0.355	0.2394	0.05902
1962	1.788	1.475	0.8716	0.4617	0.3085	0.07607
1963	3.964	3.252	2.228	1.101	0.7417	0.1829
1964	1.046	0.863	0.6868	0.3607	0.2412	0.05932
1965	4.6	3.852	2.197	0.9877	0.6605	0.1629
1966	0.9723	0.7802	0.62	0.3134	0.2092	0.05158
1967	1.536	1.252	0.9855	0.5984	0.4041	0.09965
1968	1.509	1.282	0.9189	0.5046	0.3377	0.08304
1969	2.289	1.802	0.9295	0.7099	0.4797	0.1183
1970	13.93	11.31	5.809	2.375	1.585	0.3909
1971	1.4	1.108	0.6708	0.4949	0.3559	0.089
1972	0.9154	0.7158	0.5667	0.2877	0.1921	0.05262
1973	1.921	1.626	1.026	0.5313	0.3552	0.08758
1974	1.335	1.1	0.785	0.4809	0.3222	0.07944
1975	1.065	0.8812	0.705	0.3764	0.2521	0.06217
1976	1.045	0.8604	0.6919	0.3674	0.2458	0.06074
1977	1.406	1.183	0.8907	0.4472	0.304	0.07503
1978	2.606	2.053	1.074	0.6874	0.4635	0.1144
1979	1.488	1.19	0.8703	0.471	0.3145	0.07755
1980	1.128	0.9191	0.7888	0.4158	0.2777	0.06829
1981	1.655	1.364	0.9323	0.5007	0.3369	0.08308
1982	3.573	2.994	1.857	0.8878	0.5948	0.1467
1983	10.26	8.258	4.401	2.046	1.374	0.3389
1984	0.9396	0.7433	0.5896	0.3007	0.2008	0.04938
1985	1.037	0.8482	0.6846	0.3446	0.23	0.05978
1986	10.93	8.543	3.932	1.619	1.081	0.2665
1987	1.367	1.103	0.9504	0.4689	0.3525	0.08744
1988	1.832	1.423	0.7855	0.5583	0.4019	0.09888
1989	4.074	3.238	1.654	1.1	0.7392	0.1823
1990	0.9625	0.7691	0.6109	0.3724	0.2836	0.07739
0.1	9.694	7.8174	3.7616	1.5672	1.04707	0.25814
					Average of yearly averages:	0.114695

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: TomatoGrdMar1
Metfile: w93193.dvf
PRZM scenario: CAtomato_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd Kd		mg/L		
Koc Koc	0.88	mg/L		
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis: pH 7	27	days	Half-life	
Method: CAM 2	integer	See PRZM manual		
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	01-03	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	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none		none, monthly or total(average of entire run)

Tomato, Ground, Non-Irrigated, 4 applications at 7 days, March 1 first application, Alternative 0% Drift Assumption

stored as TomatoGrd4X0drift.out
Chemical: methamidophos
PRZM environment: CAtomato_NirrigC.txt modified Tueday, 8 June 2004 at 11:42:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.08051	0.06232	0.02652	0.01525	0.01024	0.002524
1962	0.743	0.6129	0.295	0.1094	0.07295	0.01799
1963	3.093	2.538	1.669	0.754	0.5033	0.1241
1964	0.00393	0.003101	0.001394	0.0005238	0.0003493	8.588e-005
1965	4.075	3.295	1.615	0.6607	0.4407	0.1087

1966	7.491e-011	6.898e-011	4.949e-011	2.616e-011	1.801e-011	4.525e-012
1967	0.8057	0.6564	0.3788	0.2527	0.1692	0.04172
1968	0.6758	0.5452	0.3541	0.181	0.1208	0.0297
1969	2.065	1.626	0.7286	0.3642	0.2442	0.06022
1970	13.37	10.86	5.271	2.041	1.362	0.3358
1971	1.351	1.069	0.4818	0.1915	0.1312	0.03247
1972	0.4467	0.2931	0.09196	0.03243	0.02162	0.005372
1973	1.04	0.8633	0.4344	0.1644	0.1098	0.02707
1974	0.8343	0.6963	0.3277	0.1553	0.1043	0.02571
1975	0.03167	0.02619	0.01337	0.005298	0.003535	0.0008716
1976	0.0517	0.04255	0.02144	0.008479	0.005658	0.001698
1977	0.5315	0.4368	0.269	0.1061	0.07388	0.01822
1978	2.312	1.821	0.8941	0.3956	0.2669	0.06591
1979	0.9275	0.7419	0.3496	0.1583	0.1057	0.02605
1980	0.4743	0.3937	0.2009	0.0781	0.05209	0.01281
1981	0.9006	0.7319	0.3503	0.1678	0.1146	0.02827
1982	2.687	2.263	1.265	0.5282	0.3525	0.08693
1983	9.695	7.807	3.87	1.719	1.156	0.285
1984	3.973e-008	3.06e-008	1.33e-008	5.014e-009	3.348e-009	8.257e-010
1985	0.21	0.1473	0.05165	0.01844	0.01229	0.00443
1986	10.05	7.856	3.457	1.334	0.8898	0.2194
1987	0.753	0.6177	0.3502	0.1493	0.1405	0.03485
1988	1.806	1.403	0.7683	0.2887	0.193	0.04751
1989	3.411	2.711	1.165	0.7993	0.5384	0.1328
1990	0.894	0.6692	0.2624	0.1618	0.1081	0.02665

0.1	9.133	7.3558	3.2782	1.28053	0.85466	0.21074

Average of yearly averages: 0.0600953826943408

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: TomatoGrd4X0drift
Metfile: w93193.dvf
PRZM scenario: CAtomato_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0	fraction of application rate applied to pond	
Application Date	Date	01-03	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	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

Potato, Aerial, Non-Irrigated, 4 applications at 7 days, March 1 first application, Standard 5% Drift Assumption

stored as potatoAir4XMar1.out
Chemical: methamidophos
PRZM environment: CAPotato no_irrig.txt modified Monday, 16 April 2007 at 08:57:34
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w23155.dvf modified Wedday, 3 July 2002 at 09:04:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	4.941	3.99	3.173	1.616	1.079	0.266
1962	5.111	4.182	3.328	1.693	1.13	0.2787
1963	4.952	4.003	3.183	1.662	1.112	0.2741
1964	4.984	4.039	3.212	1.651	1.103	0.2712
1965	4.856	3.891	3.098	1.696	1.134	0.2796
1966	4.777	3.806	3.021	1.517	1.012	0.2495
1967	4.934	3.983	3.167	1.714	1.15	0.2836
1968	4.605	3.611	2.86	1.436	0.958	0.2356
1969	4.876	3.917	3.113	1.661	1.11	0.2737
1970	4.673	3.687	2.924	1.493	0.9974	0.2459
1971	4.74	3.764	2.987	1.521	1.029	0.2578
1972	4.375	3.348	2.64	1.32	0.8811	0.2178
1973	5.134	4.182	3.421	1.73	1.154	0.2847
1974	9.794	7.713	4.961	2.241	1.496	0.3688
1975	4.814	3.847	3.056	1.58	1.056	0.2604
1976	4.799	3.83	3.041	1.556	1.039	0.2555
1977	5.406	4.495	3.515	1.864	1.244	0.3068
1978	4.467	3.452	2.735	1.386	0.9254	0.2282
1979	4.828	3.836	3.025	1.534	1.024	0.2524
1980	4.999	4.045	3.257	1.667	1.113	0.2737
1981	4.82	3.854	3.061	1.548	1.033	0.2547
1982	5.09	4.047	3.186	1.602	1.069	0.2636
1983	5.256	4.392	3.68	2.08	1.39	0.3428
1984	4.813	3.847	3.055	1.577	1.054	0.2591
1985	5.074	4.14	3.294	1.671	1.115	0.2751
1986	4.746	3.753	2.987	1.519	1.015	0.2502
1987	4.851	3.889	3.09	1.552	1.035	0.2553
1988	4.702	3.72	2.951	1.494	0.9974	0.2453
1989	4.624	3.633	2.879	1.433	0.9557	0.2357
1990	4.711	3.731	2.96	1.486	0.9914	0.2445
0.1	5.2438	4.371	3.5056	1.8506	1.235	0.30459

Average of yearly averages: 0.266343333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: potatoAir4XMar1
Metfile: w23155.dvf
PRZM scenario: CAPotato no_irrig.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd Kd		mg/L		
Koc Koc	0.88	mg/L		
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	01-03	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	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

Potato, Aerial, Non-Irrigated, 4 applications at 7 days, March 1 first application, Alternative 0% Drift Assumption

stored as potatoAir4XMar1Drft0.out
Chemical: methamidophos
PRZM environment: CAPotato no_irrig.txt modified Monday, 16 April 2007 at 08:57:34
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w23155.dvf modified Wedday, 3 July 2002 at 09:04:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	1.113e-019	7.412e-020	2.128e-020	7.77e-021	5.209e-021	1.285e-021
1964	1.404e-023	1.199e-023	7.005e-024	3.118e-024	2.096e-024	5.157e-025

1965	0.9045	0.7003	0.3051	0.1175	0.0786	0.01938
1966	1.634e-011	1.488e-011	1.033e-011	5.333e-012	3.667e-012	9.079e-013
1967	0.194	0.1597	0.08236	0.03247	0.02165	0.005339
1968	2.381e-012	2.173e-012	1.515e-012	7.572e-013	5.161e-013	1.274e-013
1969	0.647	0.4944	0.2063	0.0755	0.05033	0.01241
1970	2.701e-012	2.426e-012	1.613e-012	7.996e-013	5.483e-013	1.359e-013
1971	0.4951	0.3646	0.1241	0.04378	0.02919	0.007196
1972	0.1044	0.06592	0.0196	0.00689	0.004593	0.001129
1973	0.3706	0.3019	0.1479	0.05667	0.03778	0.009317
1974	5.83	4.591	2.058	0.772	0.5147	0.1269
1975	6.531e-012	6.018e-012	4.31e-012	2.224e-012	1.525e-012	3.78e-013
1976	5.216e-021	4.779e-021	3.43e-021	1.836e-021	1.275e-021	3.166e-022
1977	1.784	1.449	0.6353	0.2309	0.1539	0.03795
1978	0.056	0.04327	0.01853	0.006889	0.004593	0.001133
1979	0.1187	0.09433	0.04281	0.0159	0.0106	0.002613
1980	0.2003	0.1621	0.07797	0.0299	0.01994	0.004903
1981	5.137e-013	4.646e-013	3.151e-013	1.582e-013	1.087e-013	2.692e-014
1982	0.6075	0.4831	0.2206	0.08197	0.05465	0.01348
1983	2.456	1.981	0.9436	0.4393	0.2934	0.07236
1984	8.36e-012	7.738e-012	5.599e-012	2.955e-012	2.039e-012	5.044e-013
1985	9.612e-021	9.008e-021	6.878e-021	3.865e-021	2.703e-021	6.728e-022
1986	0.1169	0.09247	0.04458	0.01698	0.01132	0.002792
1987	6.313e-013	5.839e-013	4.23e-013	2.219e-013	1.525e-013	3.776e-014
1988	9.136e-022	8.412e-022	6.119e-022	3.319e-022	2.305e-022	5.719e-023
1989	2.528e-030	2.356e-030	1.771e-030	9.936e-031	6.917e-031	1.718e-031
1990	1e-038	9.2e-039	6.679e-039	3.683e-039	2.569e-039	6.376e-040

0.1	1.69605	1.37413	0.60228	0.21956	0.14637	0.036093

Average of yearly averages: 0.0105634000000706

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: potatoAir4XMar1Drft0
Metfile: w23155.dvf
PRZM scenario: CAPotato no_irrig.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable	Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol		
Henry's Law Const.		henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr		
Solubility	sol	200000	mg/L		
Kd	Kd		mg/L		
Koc	Koc	0.88	mg/L		
Photolysis half-life		kdp	200	days	Half-life
Aerobic Aquatic Metabolism		kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	19.4	days	Halfife
Aerobic Soil Metabolism		asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life	
Method: CAM	2	integer	See PRZM manual		
Incorporation Depth:		DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha		
Application Efficiency:		APPEFF	0.95	fraction	
Spray Drift	DRFT	0	fraction of application rate applied to pond		
Application Date	Date	01-03	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	1				
UPTKF					
Record 18:	PLVKRT				
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)	

Potato, Ground, Non-Irrigated, 4 applications at 7 days, March 1 first application, Standard 1% Drift Assumption

stored as potatoGrd4XMar1.out
Chemical: methamidophos
PRZM environment: CAPotato no_irrig.txt modified Monday, 16 April 2007 at 08:57:34
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w23155.dvf modified Wedday, 3 July 2002 at 09:04:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.9881	0.7981	0.6345	0.3231	0.2158	0.0532
1962	1.022	0.8364	0.6655	0.3386	0.226	0.05573
1963	0.9903	0.8005	0.6365	0.3324	0.2223	0.05482
1964	0.9968	0.8079	0.6425	0.3302	0.2206	0.05424
1965	1.175	0.91	0.6307	0.4364	0.293	0.07225
1966	0.9554	0.7611	0.6043	0.3033	0.2024	0.0499
1967	0.9868	0.7966	0.6333	0.3683	0.2482	0.06121
1968	0.921	0.7221	0.572	0.2871	0.1916	0.04712
1969	0.9751	0.7834	0.6225	0.3945	0.2644	0.06519
1970	0.9345	0.7375	0.5848	0.2987	0.1995	0.04919
1971	0.948	0.7527	0.5974	0.3043	0.2169	0.05761
1972	0.8749	0.6696	0.528	0.264	0.1762	0.04451
1973	1.211	0.9868	0.8087	0.3936	0.2627	0.06478
1974	6.868	5.408	2.726	1.098	0.7325	0.1806
1975	0.9628	0.7694	0.6111	0.316	0.2112	0.05207
1976	0.9597	0.766	0.6083	0.3112	0.2078	0.0511
1977	2.584	2.099	1.117	0.5666	0.3785	0.09333
1978	0.8976	0.6936	0.5562	0.2829	0.1889	0.04659
1979	1.035	0.8225	0.6327	0.3201	0.2137	0.05269
1980	1.029	0.8323	0.704	0.3585	0.2394	0.05887
1981	0.9639	0.7707	0.6122	0.3095	0.2066	0.05094
1982	1.346	1.071	0.7925	0.3894	0.2599	0.06409
1983	3.12	2.516	1.516	0.7859	0.5252	0.1295
1984	0.9627	0.7693	0.611	0.3153	0.2107	0.05182
1985	1.015	0.8281	0.6588	0.3343	0.2231	0.05501
1986	1.019	0.8057	0.6318	0.3181	0.2125	0.05239
1987	0.9703	0.7779	0.618	0.3104	0.2071	0.05107
1988	0.9403	0.744	0.5902	0.2988	0.1995	0.04905
1989	0.9249	0.7265	0.5757	0.2865	0.1911	0.04713
1990	0.9422	0.7462	0.592	0.2971	0.1983	0.04889

0.1	2.4602	1.9962	1.08617	0.55358	0.36995	0.091222

Average of yearly averages: 0.062163

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: potatoGrd4XMar1
Metfile: w23155.dvf
PRZM scenario: CAPotato no_irrig.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	01-03	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	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none		none, monthly or total(average of entire run)

Potato, Ground, Non-Irrigated, 4 applications at 7 days, March 1 first application, Alternative 0% Drift Assumption

stored as potatoGrd4XMar1Drft0.out
Chemical: methamidophos
PRZM environment: CAPotato no_irrig.txt modified Monday, 16 April 2007 at 08:57:34
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w23155.dvf modified Wedday, 3 July 2002 at 09:04:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0

1962	0	0	0	0	0	0
1963	1.16e-019	7.725e-020	2.218e-020	8.098e-021	5.429e-021	1.34e-021
1964	1.463e-023	1.25e-023	7.301e-024	3.249e-024	2.185e-024	5.375e-025
1965	0.9426	0.7298	0.318	0.1224	0.08192	0.0202
1966	1.702e-011	1.551e-011	1.077e-011	5.557e-012	3.822e-012	9.462e-013
1967	0.2021	0.1665	0.08583	0.03384	0.02256	0.005564
1968	2.481e-012	2.265e-012	1.579e-012	7.891e-013	5.379e-013	1.328e-013
1969	0.6745	0.5155	0.2151	0.07871	0.0524 7	0.01294
1970	2.816e-012	2.529e-012	1.681e-012	8.335e-013	5.716e-013	1.417e-013
1971	0.516	0.3799	0.1293	0.04562	0.03041	0.007499
1972	0.1088	0.0687	0.02042	0.00718	0.004787	0.001177
1973	0.3862	0.3146	0.1541	0.05905	0.03938	0.009709
1974	6.075	4.784	2.145	0.8044	0.5363	0.1322
1975	6.805e-012	6.27e-012	4.491e-012	2.317e-012	1.589e-012	3.939e-013
1976	5.482e-021	5.023e-021	3.605e-021	1.93e-021	1.34e-021	3.327e-022
1977	1.859	1.51	0.6622	0.2406	0.1604	0.03956
1978	0.05835	0.04509	0.01931	0.007178	0.004786	0.00118
1979	0.1237	0.09831	0.04461	0.01657	0.01104	0.002723
1980	0.2087	0.1689	0.08124	0.03115	0.02078	0.005109
1981	5.352e-013	4.841e-013	3.283e-013	1.648e-013	1.132e-013	2.805e-014
1982	0.6335	0.5037	0.2301	0.08548	0.05699	0.01405
1983	2.56	2.064	0.9834	0.4578	0.3058	0.07541
1984	8.713e-012	8.065e-012	5.835e-012	3.08e-012	2.125e-012	5.257e-013
1985	9.919e-021	9.295e-021	7.097e-021	3.989e-021	2.79e-021	6.942e-022
1986	0.1218	0.09636	0.04645	0.0177	0.0118	0.00291
1987	6.579e-013	6.084e-013	4.408e-013	2.312e-013	1.589e-013	3.935e-014
1988	9.639e-022	8.876e-022	6.456e-022	3.502e-022	2.433e-022	6.034e-023
1989	2.667e-030	2.485e-030	1.869e-030	1.048e-030	7.298e-031	1.813e-031
1990	1.055e-038	9.707e-039	7.046e-039	3.886e-039	2.71e-039	6.74e-040

0.1	1.76736	1.43198	0.62778	0.22878	0.152552	0.037624

Average of yearly averages: 0.0110077000000736

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: potatoGrd4XMar1Drft0
Metfile: w23155.dvf
PRZM scenario: CAPotato no_irrig.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	

Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0	fraction of application rate applied to pond	
Application Date	Date	01-03	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	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

Alfalfa for Seed, Aerial, Non-Irrigated, 1 application, March 1 first application, Standard 5% Drift Assumption

stored as AlfalfaAirMar1.out
Chemical: methamidophos
PRZM environment: CAalfalfa_NirrigOP.txt modified Tueday, 8 June 2004 at 08:02:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.75	2.248	1.112	0.4368	0.2919	0.07446
1962	2.75	2.269	1.15	0.4633	0.3091	0.07659
1963	2.75	2.256	1.226	0.5669	0.3796	0.09361
1964	2.75	2.269	1.152	0.4554	0.3039	0.07571
1965	3.529	2.854	1.85	0.8177	0.5458	0.1346
1966	2.75	2.207	1.038	0.3961	0.2641	0.06986
1967	2.75	2.241	1.26	0.5225	0.3492	0.08649
1968	2.75	2.219	1.15	0.4638	0.3095	0.07735
1969	2.75	2.258	1.184	0.507	0.339	0.08373
1970	15.18	12.34	6.005	2.326	1.552	0.3849
1971	2.75	2.242	1.121	0.4887	0.3339	0.08276
1972	2.75	2.15	0.9473	0.3548	0.2366	0.06421
1973	2.75	2.283	1.201	0.5048	0.3368	0.08334
1974	2.75	2.434	1.229	0.4869	0.3249	0.08052
1975	2.75	2.274	1.185	0.4737	0.3163	0.07818
1976	2.75	2.375	1.211	0.4783	0.3192	0.08004
1977	2.75	2.26	1.163	0.4664	0.3124	0.07818
1978	2.83	2.402	1.286	0.4932	0.3291	0.0815
1979	3.584	2.867	1.345	0.5169	0.3447	0.08511
1980	2.928	2.559	1.473	0.5783	0.3857	0.09489
1981	3.276	2.662	1.316	0.526	0.351	0.08658
1982	2.878	2.376	1.288	0.5294	0.3533	0.08714
1983	11.68	9.215	4.386	1.693	1.13	0.2785
1984	2.75	2.175	0.9867	0.373	0.2487	0.06239
1985	2.75	2.249	1.12	0.4354	0.2903	0.07231
1986	2.75	2.15	1.117	0.432	0.2881	0.07118
1987	3.362	2.736	1.661	0.6539	0.4379	0.1081
1988	2.76	2.206	1.027	0.4801	0.3296	0.08128

1989	6.757	5.37	2.561	1.01	0.6744	0.1664
1990	2.75	2.202	1.029	0.4068	0.2789	0.07023
0.1	6.4397	5.1197	2.4899	0.99077	0.66154	0.16322

Average of yearly averages: 0.101671333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: AlfalfaAirMar1
Metfile: w93193.dvf
PRZM scenario: CAalfalfa_NirrigOP.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable	Name	Value	Units	Comments
Molecular weight		mwt	141.13	g/mol	
Henry's Law Const.		henry	1.62E-11		atm-m^3/mol
Vapor Pressure		vapr	1.73E-5	torr	
Solubility		sol	200000	mg/L	
Kd	Kd			mg/L	
Koc	Koc	0.88		mg/L	
Photolysis half-life		kdp	200	days	Half-life
Aerobic Aquatic Metabolism		kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	19.4	days	Halfife
Aerobic Soil Metabolism		asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life	
Method: CAM	2	integer	See PRZM manual		
Incorporation Depth:		DEPI	0	cm	
Application Rate:		TAPP	1.10	kg/ha	
Application Efficiency:		APPEFF	0.95	fraction	
Spray Drift		DRFT	0.05	fraction of application rate applied to pond	
Application Date		Date	01-03	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:		FILTRA			
	IPSCND	1			
	UPTKF				
Record 18:		PLVKRT			
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none		none, monthly or total(average of entire run)

Alfalfa for Seed, Aerial, Non-Irrigated, 1 application, March 1 first application, Alternative 0% Drift Assumption

stored as AlfalfaAirMar1Drft0.out
Chemical: methamidophos
PRZM environment: CAalfalfa_NirrigOP.txt modified Tueday, 8 June 2004 at 08:02:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.06965	0.05774	0.03529	0.01508	0.01006	0.003154
1962	0.076	0.0627	0.03018	0.01119	0.007479	0.002229
1963	0.4648	0.3813	0.2642	0.1252	0.08356	0.02061

1964	0.03917	0.02898	0.01469	0.005987	0.004002	0.00104
1965	2.717	2.196	1.057	0.4066	0.2712	0.0669
1966	0.1054	0.09292	0.05476	0.02881	0.0192	0.004736
1967	0.5089	0.4147	0.2163	0.0929	0.06203	0.01568
1968	0.3047	0.2479	0.1262	0.05672	0.03787	0.01056
1969	0.305	0.2401	0.1076	0.06406	0.04291	0.01071
1970	12.43	10.12	4.935	1.912	1.275	0.3168
1971	0.4513	0.357	0.1609	0.06857	0.04855	0.0122
1972	0.1598	0.1049	0.05332	0.02476	0.01651	0.006019
1973	0.225	0.1868	0.09399	0.03616	0.02414	0.006241
1974	0.4557	0.3674	0.1753	0.0805	0.05378	0.01366
1975	0.04318	0.03571	0.02602	0.01096	0.007317	0.002004
1976	0.1724	0.1419	0.07152	0.02821	0.01882	0.006185
1977	0.1359	0.1116	0.06191	0.02432	0.017	0.005327
1978	0.9523	0.7475	0.3339	0.1322	0.08826	0.02213
1979	0.834	0.6671	0.3193	0.1257	0.08382	0.02078
1980	0.7893	0.643	0.3874	0.1519	0.1013	0.02495
1981	0.526	0.4275	0.228	0.105	0.07022	0.01735
1982	0.2948	0.2616	0.1436	0.07261	0.04854	0.01199
1983	8.93	7.191	3.435	1.327	0.8855	0.2183
1984	0.03222	0.02628	0.01353	0.006297	0.005	0.001263
1985	0.02222	0.01817	0.009044	0.003535	0.002448	0.001286
1986	0.5146	0.4068	0.2053	0.07758	0.05173	0.0129
1987	1.603	1.316	0.6428	0.2473	0.1668	0.04122
1988	0.5775	0.4486	0.2754	0.1027	0.0694	0.0173
1989	4.318	3.432	1.576	0.6302	0.4213	0.104
1990	0.2154	0.1612	0.06321	0.03549	0.02391	0.006306

0.1	4.1579	3.3084	1.5241	0.60784	0.40629	0.10029

Average of yearly averages: 0.033461

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: AlfalfaAirMar1Drft0
Metfile: w93193.dvf
PRZM scenario: CAalfalfa_NirrigOP.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	141.13	g/mol		
Henry's Law Const.	henry	1.62E-11	atm-m^3/mol		
Vapor Pressure	vapr	1.73E-5	torr		
Solubility	sol	200000	mg/L		
Kd	Kd		mg/L		
Koc	Koc	0.88	mg/L		
Photolysis half-life	kdp	200	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife	
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife	
Aerobic Soil Metabolism	asm	1.75	days	Halfife	
Hydrolysis:	pH 7	27	days	Half-life	
Method: CAM	2	integer	See PRZM manual		
Incorporation Depth:	DEPI	0	cm		
Application Rate:	TAPP	1.10	kg/ha		
Application Efficiency:	APPEFF	0.95	fraction		

Spray Drift	DRFT	0	fraction of application rate applied to pond		
Application Date	Date	01-03	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA				
IPSCND	1				
UPTKF					
Record 18:	PLVKRT				
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

Alfalfa for Seed, Ground, Non-Irrigated, 1 application, March 1 first application, Standard 1% Drift Assumption

stored as AlfalfaGrdMar1.out
Chemical: methamidophos
PRZM environment: CAalfalfa_NirrigOP.txt modified Tueday, 8 June 2004 at 08:02:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.55	0.4496	0.2226	0.09017	0.06068	0.01755
1962	0.55	0.4537	0.2301	0.1021	0.0681	0.0172
1963	0.6019	0.4938	0.3287	0.2172	0.1463	0.03608
1964	0.55	0.4538	0.2303	0.09136	0.06096	0.01602
1965	2.994	2.421	1.165	0.5054	0.3375	0.08326
1966	0.55	0.4413	0.2076	0.07922	0.05282	0.01796
1967	0.7005	0.5707	0.389	0.1822	0.1221	0.0305
1968	0.55	0.4437	0.3074	0.1404	0.09378	0.02436
1969	0.55	0.4516	0.2826	0.1545	0.1039	0.02577
1970	13.5	10.99	5.355	2.075	1.384	0.3436
1971	0.55	0.4484	0.2421	0.1482	0.107	0.02683
1972	0.55	0.43	0.1895	0.07097	0.04733	0.01791
1973	0.55	0.4567	0.2581	0.1313	0.08769	0.02192
1974	0.9142	0.737	0.3913	0.1652	0.1103	0.02761
1975	0.55	0.4549	0.2566	0.104	0.06941	0.01732
1976	0.6768	0.569	0.3015	0.1194	0.07969	0.02122
1977	0.55	0.452	0.257	0.1129	0.07674	0.02012
1978	1.368	1.074	0.5313	0.21	0.1401	0.03493
1979	1.419	1.135	0.5379	0.2092	0.1395	0.03451
1980	1.181	1.03	0.6105	0.2436	0.1625	0.04
1981	1.098	0.8927	0.4552	0.1937	0.1294	0.03194
1982	0.683	0.5639	0.3703	0.167	0.1115	0.02752
1983	9.855	7.936	3.789	1.464	0.9767	0.2408
1984	0.55	0.435	0.1977	0.07476	0.04986	0.01354
1985	0.55	0.4497	0.2298	0.08996	0.06	0.01554
1986	0.7078	0.5581	0.3669	0.1517	0.1012	0.02509
1987	2.022	1.656	0.8378	0.339	0.228	0.05633
1988	0.6033	0.4686	0.288	0.1719	0.1244	0.03083
1989	4.988	3.964	1.824	0.7326	0.4897	0.1209
1990	0.55	0.4441	0.2114	0.09655	0.07238	0.01935

0.1	4.7886	3.8097	1.7581	0.70988	0.47448	0.117136

Average of yearly averages: 0.0485503333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: AlfalfaGrdMar1
Metfile: w93193.dvf
PRZM scenario: CAalfalfa_NirrigOP.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.10	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	01-03	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:	FILTRA			
	IPSCND	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

Alfalfa for Seed, Ground, Non-Irrigated, 1 application, March 1 first application, Alternative 0% Drift Assumption

stored as AlfalfaGrdMar1Drft0.out
Chemical: methamidophos
PRZM environment: CAalfalfa_NirrigOP.txt modified Tueday, 8 June 2004 at 08:02:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0726	0.06018	0.03679	0.01572	0.01048	0.003287
1962	0.0792	0.06534	0.03145	0.01166	0.007794	0.002323
1963	0.4844	0.3974	0.2753	0.1304	0.08708	0.02147
1964	0.04082	0.0302	0.0153	0.006239	0.004171	0.001084
1965	2.831	2.289	1.102	0.4237	0.2826	0.06972
1966	0.1099	0.09683	0.05706	0.03002	0.02001	0.004936

1967	0.5304	0.4321	0.2254	0.09682	0.06464	0.01634
1968	0.3175	0.2583	0.1315	0.05911	0.03946	0.01101
1969	0.3179	0.2503	0.1122	0.06675	0.04472	0.01116
1970	12.95	10.54	5.141	1.992	1.329	0.33
1971	0.4703	0.3721	0.1677	0.07145	0.0506	0.01272
1972	0.1665	0.1093	0.05558	0.02581	0.01721	0.006273
1973	0.2344	0.1947	0.09794	0.03768	0.02516	0.006503
1974	0.475	0.3829	0.1827	0.0839	0.05605	0.01424
1975	0.045	0.03721	0.02712	0.01142	0.007625	0.002089
1976	0.1797	0.1479	0.07452	0.0294	0.01962	0.006446
1977	0.1416	0.1163	0.06451	0.02534	0.01771	0.00555
1978	0.9924	0.7789	0.3479	0.1378	0.09197	0.02306
1979	0.869	0.6951	0.3327	0.1309	0.08733	0.02165
1980	0.8227	0.6702	0.4038	0.1584	0.1056	0.02601
1981	0.5485	0.4458	0.2377	0.1095	0.07322	0.01809
1982	0.3072	0.2726	0.1497	0.07566	0.05058	0.01249
1983	9.305	7.493	3.579	1.383	0.9227	0.2275
1984	0.03357	0.02739	0.0141	0.006562	0.00521	0.001316
1985	0.02316	0.01894	0.00942	0.003684	0.002551	0.00134
1986	0.536	0.4238	0.2138	0.08081	0.05389	0.01344
1987	1.671	1.372	0.6698	0.2577	0.1738	0.04296
1988	0.602	0.4676	0.2871	0.1071	0.07234	0.01804
1989	4.5	3.577	1.642	0.6567	0.4391	0.1084
1990	0.2244	0.168	0.06587	0.03698	0.02491	0.006571

0.1	4.3331	3.4482	1.588	0.6334	0.42345	0.104532

Average of yearly averages: 0.0348672666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: AlfalfaGrdMar1Drft0
Metfile: w93193.dvf
PRZM scenario: CAalfalfa_NirrigOP.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.10	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0	fraction of application rate applied to pond	
Application Date	Date	01-03	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:	FILTRA			

IPSCND1
UPTKF
Record 18: PLVKRT
PLDKRT
FEXTRC 0.5
Flag for Index Res. Run IR Pond
Flag for runoff calc. RUNOFF none none, monthly or total(average of entire run)

Cotton, Aerial, Non-Irrigated, 2 applications at 7 days, March 1 first application, Standard 5% Drift Assumption

stored as CottonAirMar1.out
Chemical: methamidophos
PRZM environment: Cacotton_NirrigC.txt modified Thuday, 17 June 2004 at 08:14:24
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	4.144	3.387	2.111	0.8783	0.5861	0.1445
1962	4.191	3.457	2.177	0.9141	0.6098	0.1504
1963	4.162	3.415	2.15	0.9112	0.6085	0.1501
1964	4.192	3.459	2.179	0.9219	0.6154	0.1513
1965	5.645	4.565	2.906	1.282	0.8558	0.211
1966	4.052	3.251	1.986	0.8029	0.5355	0.132
1967	4.127	3.461	2.279	0.9744	0.6511	0.1606
1968	4.078	3.29	2.114	0.8766	0.5848	0.1438
1969	4.309	3.775	2.331	0.9874	0.659	0.1625
1970	16.27	13.21	7.347	2.897	1.933	0.4766
1971	4.13	3.367	2.098	0.8735	0.5831	0.1438
1972	3.933	3.075	1.828	0.7221	0.4816	0.1184
1973	4.228	3.51	2.227	0.9489	0.6332	0.1561
1974	4.196	3.383	2.096	0.8571	0.5719	0.141
1975	4.204	3.477	2.199	0.9416	0.629	0.1551
1976	4.203	3.459	2.178	0.9204	0.6144	0.1511
1977	4.171	3.427	2.153	0.8984	0.5992	0.1478
1978	4.072	3.35	1.995	0.795	0.5304	0.1308
1979	4.489	3.591	2.349	0.941	0.6277	0.1548
1980	4.406	3.59	2.27	0.9371	0.6252	0.1537
1981	4.142	3.366	2.094	0.8626	0.5754	0.1419
1982	4.195	3.468	2.201	0.9363	0.625	0.1541
1983	12.64	10.18	5.835	2.307	1.539	0.3795
1984	3.985	3.152	1.896	0.758	0.5056	0.1243
1985	4.145	3.4	2.127	0.8797	0.5867	0.1447
1986	3.933	3.295	1.974	0.7852	0.5237	0.1291
1987	4.559	3.68	2.273	0.9252	0.617	0.1521
1988	4.042	3.23	1.968	0.7953	0.5306	0.1305
1989	5.299	4.212	2.884	1.137	0.7579	0.1869
1990	4.032	3.222	1.959	0.7884	0.5258	0.1296
0.1	5.6104	4.5297	2.9038	1.2675	0.84601	0.20859

Average of yearly averages: 0.166936666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: CottonAirMar1
Metfile: w93193.dvf
PRZM scenario: Cacotton_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	01-03	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.
Record 17:	FILTRA			
	IPSCND	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none		none, monthly or total(average of entire run)

Cotton, Aerial, Non-Irrigated, 2 applications at 7 days, March 1 first application, Alternative 0% Drift Assumption

stored as CottonAirMar1Drft0.out
Chemical: methamidophos
PRZM environment: Cacotton_NirrigC.txt modified Thuday, 17 June 2004 at 08:14:24
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001925	0.0001574	7.4e-005	2.767e-005	1.845e-005	4.549e-006
1962	0.00204	0.001683	0.0008099	0.0003004	0.0002003	4.939e-005
1963	0.06415	0.05263	0.02627	0.01023	0.006822	0.001682
1964	7.97e-009	6.282e-009	2.823e-009	1.061e-009	7.075e-010	1.741e-010
1965	3.02	2.442	1.172	0.447	0.2981	0.07351
1966	4.367e-011	4.022e-011	2.886e-011	1.526e-011	1.051e-011	2.601e-012
1967	0.5874	0.4786	0.2502	0.09882	0.06593	0.01626
1968	0.3417	0.2765	0.1326	0.0503	0.03354	0.008248
1969	0.5485	0.4504	0.2254	0.08767	0.05847	0.01442

1970	13.47	10.94	5.306	2.055	1.371	0.338
1971	0.02002	0.01632	0.008009	0.003088	0.00206	0.0005078
1972	2.81e-013	2.612e-013	1.928e-013	1.018e-013	6.964e-014	1.72e-014
1973	0.004891	0.004061	0.002284	0.001156	0.0007716	0.0001902
1974	0.2127	0.1715	0.08169	0.03146	0.02098	0.005174
1975	0.01122	0.009279	0.004739	0.001907	0.001272	0.0003137
1976	0.04416	0.03635	0.01832	0.007224	0.00482	0.001185
1977	0.0207	0.01701	0.008511	0.003184	0.002123	0.0005235
1978	0.3546	0.2788	0.1518	0.05975	0.03986	0.009828
1979	1.025	0.8202	0.3841	0.1467	0.09781	0.02412
1980	0.4565	0.3754	0.1878	0.07292	0.04864	0.01196
1981	0.05885	0.04783	0.02377	0.009598	0.006402	0.001579
1982	0.05923	0.04949	0.02635	0.0106	0.007069	0.001743
1983	9.84	7.924	3.826	1.483	0.9896	0.244
1984	2.474e-011	2.289e-011	1.654e-011	8.715e-012	6.003e-012	1.484e-012
1985	0.04454	0.03642	0.01802	0.006817	0.004545	0.001121
1986	0.5	0.3911	0.1726	0.06439	0.04293	0.01059
1987	0.6525	0.5365	0.2657	0.102	0.06799	0.01677
1988	0.02085	0.01666	0.007758	0.002958	0.001973	0.0004851
1989	2.657	2.112	0.9695	0.3669	0.2446	0.06032
1990	1.392e-008	1.042e-008	4.085e-009	1.475e-009	9.834e-010	2.43e-010

0.1	2.9837	2.409	1.15175	0.43899	0.29275	0.072191

Average of yearly averages: 0.0280861413140401

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: CottonAirMar1Drft0
Metfile: w93193.dvf
PRZM scenario: Cacotton_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11	atm-m^3/mol	
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0	fraction of application rate applied to pond	
Application Date	Date	01-03	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.

Record 17: FILTRA
IPSCND 1
UPTKF
Record 18: PLVKRT

	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

Cotton, Ground, Non-Irrigated, 2 applications at 7 days, March 1 first application, Standard 1% Drift Assumption

stored as CottonGrdMar1.out
Chemical: methamidophos
PRZM environment: Cacotton_NirrigC.txt modified Thuday, 17 June 2004 at 08:14:24
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.8287	0.6775	0.4223	0.1757	0.1172	0.02891
1962	0.8381	0.6914	0.4354	0.1831	0.1221	0.03011
1963	0.8324	0.6829	0.4416	0.1908	0.1275	0.03143
1964	0.8384	0.6918	0.4358	0.1844	0.1231	0.03027
1965	3.673	2.97	1.466	0.6324	0.4222	0.1041
1966	0.8103	0.6502	0.3971	0.1606	0.1071	0.02641
1967	1.151	0.9847	0.6166	0.2778	0.1858	0.0458
1968	0.8218	0.6638	0.5011	0.2176	0.1452	0.03571
1969	1.324	1.087	0.6242	0.2712	0.181	0.04464
1970	14.59	11.85	5.937	2.31	1.541	0.3799
1971	0.8259	0.6733	0.4245	0.1773	0.1184	0.02918
1972	0.7866	0.615	0.3657	0.1444	0.09633	0.02369
1973	0.8476	0.7037	0.4467	0.1908	0.1273	0.03139
1974	0.9412	0.7588	0.4862	0.1979	0.132	0.03256
1975	0.8408	0.6957	0.4426	0.1899	0.1269	0.03128
1976	0.8608	0.7085	0.4508	0.1902	0.1269	0.03122
1977	0.8341	0.6854	0.4343	0.1823	0.1216	0.02999
1978	1.065	0.8809	0.5212	0.2093	0.1396	0.03443
1979	1.628	1.303	0.7932	0.3117	0.2079	0.05126
1980	1.117	0.9098	0.6076	0.2488	0.166	0.04082
1981	0.8516	0.6921	0.4389	0.1806	0.1205	0.02971
1982	0.8391	0.6972	0.4555	0.1962	0.131	0.03229
1983	10.81	8.709	4.39	1.711	1.141	0.2814
1984	0.7969	0.6304	0.3792	0.1516	0.1011	0.02486
1985	0.829	0.6889	0.437	0.1817	0.1212	0.02988
1986	1.128	0.8824	0.5173	0.2112	0.1409	0.03474
1987	1.315	1.061	0.6637	0.2708	0.1806	0.04454
1988	0.8161	0.6523	0.4001	0.1616	0.1078	0.0265
1989	3.266	2.596	1.384	0.5363	0.3576	0.08818
1990	0.8064	0.6444	0.3918	0.1577	0.1052	0.02593
0.1	3.6323	2.9326	1.4578	0.62279	0.41574	0.102508

Average of yearly averages: 0.0570376666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: CottonGrdMar1

Metfile: w93193.dvf
PRZM scenario: Cacotton_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	01-03	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.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none		none, monthly or total(average of entire run)

Cotton, Ground, Non-Irrigated, 2 applications at 7 days, March 1 first application, Alternative 0% Drift Assumption

stored as CottonGrdMar1Drft0.out
Chemical: methamidophos
PRZM environment: Cacotton_NirrigC.txt modified Thuday, 17 June 2004 at 08:14:24
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w93193.dvf modified Wedday, 3 July 2002 at 09:04:24
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0002006	0.000164	7.711e-005	2.883e-005	1.923e-005	4.741e-006
1962	0.002126	0.001754	0.0008441	0.000313	0.0002087	5.147e-005
1963	0.06685	0.05484	0.02737	0.01066	0.007109	0.001753
1964	8.305e-009	6.546e-009	2.941e-009	1.106e-009	7.373e-010	1.814e-010
1965	3.148	2.545	1.222	0.4659	0.3107	0.07661
1966	4.552e-011	4.192e-011	3.008e-011	1.59e-011	1.095e-011	2.711e-012
1967	0.6122	0.4988	0.2608	0.103	0.06871	0.01694
1968	0.3561	0.2881	0.1382	0.05241	0.03495	0.008594
1969	0.5715	0.4692	0.2349	0.09134	0.06092	0.01502
1970	14.03	11.4	5.529	2.141	1.428	0.3522
1971	0.02086	0.01701	0.008347	0.003218	0.002146	0.0005293

1972	2.928e-013	2.722e-013	2.009e-013	1.061e-013	7.257e-014	1.792e-014
1973	0.005097	0.004233	0.002381	0.001205	0.0008041	0.0001983
1974	0.2217	0.1787	0.08513	0.03278	0.02187	0.005392
1975	0.01169	0.009669	0.004938	0.001987	0.001326	0.0003269
1976	0.04602	0.03788	0.01909	0.007529	0.005023	0.001235
1977	0.02157	0.01773	0.008869	0.003318	0.002212	0.0005455
1978	0.3695	0.2906	0.1582	0.06227	0.04154	0.01024
1979	1.068	0.8546	0.4002	0.1528	0.1019	0.02513
1980	0.4757	0.3912	0.1957	0.07599	0.05068	0.01246
1981	0.06135	0.04986	0.02478	0.01001	0.006674	0.001646
1982	0.06172	0.05157	0.02746	0.01104	0.007367	0.001816
1983	10.25	8.258	3.988	1.546	1.031	0.2543
1984	2.579e-011	2.386e-011	1.723e-011	9.082e-012	6.256e-012	1.547e-012
1985	0.04641	0.03795	0.01878	0.007104	0.004736	0.001168
1986	0.521	0.4076	0.1798	0.0671	0.04474	0.01103
1987	0.6795	0.5587	0.2767	0.1062	0.07081	0.01746
1988	0.02173	0.01737	0.008085	0.003083	0.002056	0.0005056
1989	2.769	2.201	1.01	0.3824	0.255	0.06287
1990	1.45e-008	1.086e-008	4.257e-009	1.537e-009	1.025e-009	2.532e-010

0.1	3.1101	2.5106	1.2008	0.45755	0.30513	0.075236

Average of yearly averages: 0.0292675270479625

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: CottonGrdMar1Drft0
Metfile: w93193.dvf
PRZM scenario: Cacotton_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: methamidophos

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	141.13	g/mol	
Henry's Law Const.	henry	1.62E-11		atm-m^3/mol
Vapor Pressure	vapr	1.73E-5	torr	
Solubility	sol	200000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	0.88	mg/L	
Photolysis half-life	kdp	200	days	Half-life
Aerobic Aquatic Metabolism	kbacw	3.5	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	19.4	days	Halfife
Aerobic Soil Metabolism	asm	1.75	days	Halfife
Hydrolysis:	pH 7	27	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0	fraction of application rate applied to pond	
Application Date	Date	01-03	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.
Record 17:	FILTRA			
	IPSCND	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			

FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

Appendix C. Terrestrial Model Runs (TREX) Appendix C. Terrestrial Modeling Runs (T-REX)

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	Methamidophos
Use	Tomato
Formulation	Monitor
Application Rate	1 lbs a.i./acre
Half-life	6.5 days
Application Interval	7 days
Maximum # Apps./Year	4
Length of Simulation	1 year

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be noted as <0.01 in your assessment. This is due to rounding and significant figure issues in Excel.

Endpoints			
Avian	Grackle	LD50 (mg/kg-bw)	4.10
	Bobwhite quail	LC50 (mg/kg-diet)	42.00
	Mallard duck	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	3.00
Mammals		LD50 (mg/kg-bw)	7.90
		LC50 (mg/kg-diet)	0.00
		NOAEL (mg/kg-bw)	0.50
		NOAEC (mg/kg-diet)	10.00

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	433.27
Tall Grass	198.58
Broadleaf plants/sm Insects	243.71
Fruits/pods/seeds/lg insects	27.08

Avian Results

Avian Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	20	5	23	114	2.28E-02
Mid	100	13	65	65	6.49E-02
Large	1000	58	291	29	2.91E-01

Avian Body Weight (g)	Adjusted LD50 (mg/kg-bw)
20	3.67
100	4.67
1000	6.60

Dose-based EECs (mg/kg-bw)	Avian Classes and Body Weights		
	small 20 g	mid 100 g	large 1000 g
Short Grass	493.45	281.38	125.98
Tall Grass	226.16	128.97	57.74
Broadleaf plants/sm Insects	277.56	158.28	70.86
Fruits/pods/seeds/lg insects	30.84	17.59	7.87

Dose-based RQs (Dose-based EEC/adjusted LD50)	Avian Acute RQs		
	20 g	100 g	1000 g
Short Grass	134.52	60.26	19.10
Tall Grass	61.66	27.62	8.75
Broadleaf plants/sm insects	75.67	33.89	10.74
Fruits/pods/seeds/lg insects	8.41	3.77	1.19

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	RQs	
	Acute	Chronic
Short Grass	10.32	144.42
Tall Grass	4.73	66.19
Broadleaf plants/sm Insects	5.80	81.24
Fruits/pods/seeds/lg insects	0.64	9.03

Note: To provide risk management with the maximum possible information, it is recommended that both the dose-based and concentration-based RQs be calculated when data are available

Mammalian Results

Mammalian Class	Body Weight	Ingestion (Fdry) (g bwt/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Herbivores/ insectivores	15	3	14	95	1.43E-02
	35	5	23	66	2.31E-02
	1000	31	153	15	1.53E-01
Grainvores	15	3	3	21	3.18E-03
	35	5	5	15	5.13E-03
	1000	31	34	3	3.40E-02

Mammalian Class	Body Weight	Adjusted LD50	Adjusted NOAEL
Herbivores/ insectivores	15	17.36	1.10
	35	14.05	0.89
	1000	6.08	0.38
Grainvores	15	17.36	1.10
	35	14.05	0.89
	1000	6.08	0.38

Dose-Based EECs (mg/kg-bw)	Mammalian Classes and Body weight					
	Herbivores/ insectivores			Granivores		
	15 g	35 g	1000 g	15 g	35 g	1000 g
Short Grass	413.09	285.50	66.19			
Tall Grass	189.33	130.85	30.34			
Broadleaf plants/sm Insects	232.36	160.59	37.23			

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	Methamidophos
Use	cotton
Formulation	Monitor
Application Rate	1 lbs a.i./acre
Half-life	6.5 days
Application Interval	3 days
Maximum # Apps./Year	2
Length of Simulation	1 year

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be noted as <0.01 in your assessment. This is due to rounding and significant figure issues in Excel.

Endpoints			
Avian	Grackle	LD50 (mg/kg-bw)	4.10
	Bobwhite quail	LC50 (mg/kg-diet)	42.00
	Mallard duck	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	3.00
Mammals		LD50 (mg/kg-bw)	7.90
		LC50 (mg/kg-diet)	0.00
		NOAEL (mg/kg-bw)	0.50
		NOAEC (mg/kg-diet)	10.00

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	414.29
Tall Grass	189.88
Broadleaf plants/sm Insects	233.04
Fruits/pods/seeds/lg insects	25.89

Avian Results

Avian Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	20	5	23	114	2.28E-02
Mid	100	13	65	65	6.49E-02
Large	1000	58	291	29	2.91E-01

Avian Body Weight (g)	Adjusted LD50 (mg/kg-bw)
20	3.67
100	4.67
1000	6.60

Dose-based EECs (mg/kg-bw)	Avian Classes and Body Weights		
	small 20 g	mid 100 g	large 1000 g
Short Grass	471.84	269.06	120.46
Tall Grass	216.26	123.32	55.21
Broadleaf plants/sm Insects	265.41	151.35	67.76
Fruits/pods/seeds/lg insects	29.49	16.82	7.53

Dose-based RQs (Dose-based EEC/adjusted LD50)	Avian Acute RQs		
	20 g	100 g	1000 g
Short Grass	128.63	57.62	18.26
Tall Grass	58.96	26.41	8.37
Broadleaf plants/sm insects	72.35	32.41	10.27
Fruits/pods/seeds/lg insects	8.04	3.60	1.14

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	RQs	
	Acute	Chronic
Short Grass	9.86	138.10
Tall Grass	4.52	63.29
Broadleaf plants/sm Insects	5.55	77.68
Fruits/pods/seeds/lg insects	0.62	8.63

Note: To provide risk management with the maximum possible information, it is recommended that both the dose-based and concentration-based RQs be calculated when data are available

Methamidophos cotton Upper bound Kenaga Residues

Mammalian Results

Mammalian Class	Body Weight	Ingestion (Fdry) (g bwt/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Herbivores/ insectivores	15	3	14	95	1.43E-02
	35	5	23	66	2.31E-02
	1000	31	153	15	1.53E-01
Grainvores	15	3	3	21	3.18E-03
	35	5	5	15	5.13E-03
	1000	31	34	3	3.40E-02

Mammalian Class	Body Weight	Adjusted LD50	Adjusted NOAEL
Herbivores/ insectivores	15	17.36	1.10
	35	14.05	0.89
	1000	6.08	0.38
Grainvores	15	17.36	1.10
	35	14.05	0.89
	1000	6.08	0.38

Dose-Based EECs (mg/kg-bw)	Mammalian Classes and Body weight					
	Herbivores/ insectivores			Granivores		
	15 g	35 g	1000 g	15 g	35 g	1000 g
Short Grass	394.99	272.99	63.29			
Tall Grass	181.04	125.12	29.01			
Broadleaf plants/sm Insects	222.18	153.56	35.60			

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	Methamidophos
Use	Alfalfa
Formulation	Monitor
Application Rate	1 lbs a.i./acre
Half-life	6.5 days
Application Interval	365 days
Maximum # Apps./Year	1
Length of Simulation	1 year

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be noted as <0.01 in your assessment. This is due to rounding and significant figure issues in Excel.

Endpoints

Avian	Grackle	LD50 (mg/kg-bw)	4.10
	Bobwhite quail	LC50 (mg/kg-diet)	42.00
	Mallard duck	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	3.00
Mammals		LD50 (mg/kg-bw)	7.90
		LC50 (mg/kg-diet)	0.00
		NOAEL (mg/kg-bw)	0.50
		NOAEC (mg/kg-diet)	10.00

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	240.00
Tall Grass	110.00
Broadleaf plants/sm Insects	135.00
Fruits/pods/seeds/lg insects	15.00

Avian Results

Avian Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	20	5	23	114	2.28E-02
Mid	100	13	65	65	6.49E-02
Large	1000	58	291	29	2.91E-01

Avian Body Weight (g)	Adjusted LD50 (mg/kg-bw)
20	3.67
100	4.67
1000	6.60

Dose-based EECs (mg/kg-bw)	Avian Classes and Body Weights		
	small 20 g	mid 100 g	large 1000 g
Short Grass	273.34	155.87	69.78
Tall Grass	125.28	71.44	31.98
Broadleaf plants/sm Insects	153.75	87.68	39.25
Fruits/pods/seeds/lg insects	17.08	9.74	4.36

Dose-based RQs (Dose-based EEC/adjusted LD50)	Avian Acute RQs		
	20 g	100 g	1000 g
Short Grass	74.52	33.38	10.58
Tall Grass	34.15	15.30	4.85
Broadleaf plants/sm insects	41.91	18.78	5.95
Fruits/pods/seeds/lg insects	4.66	2.09	0.66

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	RQs	
	Acute	Chronic
Short Grass	5.71	80.00
Tall Grass	2.62	36.67
Broadleaf plants/sm Insects	3.21	45.00
Fruits/pods/seeds/lg insects	0.36	5.00

Note: To provide risk management with the maximum possible information, it is recommended that both the dose-based and concentration-based RQs be calculated when data are available

Methamidophos Alfalfa Upper bound Kenaga Residues

Mammalian Results

Mammalian Class	Body Weight	Ingestion (Fdry) (g bwt/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Herbivores/ insectivores	15	3	14	95	1.43E-02
	35	5	23	66	2.31E-02
	1000	31	153	15	1.53E-01
Grainvores	15	3	3	21	3.18E-03
	35	5	5	15	5.13E-03
	1000	31	34	3	3.40E-02

Mammalian Class	Body Weight	Adjusted LD50	Adjusted NOAEL
Herbivores/ insectivores	15	17.36	1.10
	35	14.05	0.89
	1000	6.08	0.38
Grainvores	15	17.36	1.10
	35	14.05	0.89
	1000	6.08	0.38

Dose-Based EECs (mg/kg-bw)	Mammalian Classes and Body weight					
	Herbivores/ insectivores			Granivores		
	15 g	35 g	1000 g	15 g	35 g	1000 g
Short Grass	228.82	158.15	36.67			
Tall Grass	104.88	72.48	16.81			
Broadleaf plants/sm Insects	128.71	88.96	20.63			

Appendix D Terrestrial Modeling Runs (THERPS)

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	Methamidophos
Use	Cotton
Formulation	Monitor 4 Liquid
Application Rate	1 lbs a.i./acre
Half-life	6.5 days
Application Interval	3 days
Maximum # Apps./Year	2
Length of Simulation	1 year

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be noted as <0.01 in your assessment. This is due to rounding and significant figure issues in Excel.

Endpoints

Avian	Bobwhite quail	LD50 (mg/kg-bw)	4.10
	Bobwhite quail	LC50 (mg/kg-diet)	42.00
	Bobwhite quail	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	3.00

Toxicity adjustments not based on standard assumed test animal body weight

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	414.29
Tall Grass	189.88
Broadleaf plants/sm Insects	233.04
Fruits/pods/seeds/lg insects	25.89
Small herbivore mammals	272.99
Small insectivore mammals	17.06
Small terrestrial phase amphibians	8.09

Terrestrial Herpetofauna Results

Weight Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	1.4	0.017	0.1	3.9	5.44E-05
Mid	37	0.212	1.4	3.8	1.41E-03
Large	238	0.893	6.0	2.5	5.96E-03

Body Weight (g)	Adjusted LD50 (mg/kg-bw)
1.4	1.98
37	3.24
238	4.28

NOTE:Toxicity adjustments not based on standard assumed test animal body weight
NOTE:Toxicity adjustments not based on standard assumed test animal body weight
NOTE:Toxicity adjustments not based on standard assumed test animal body weight

Dose-based EECs (mg/kg-bw)	Herpetofaunal Size Classes and Body Weights		
	small (g)	mid (g)	large (g)
	1.4	37	238
Short Grass	16.10	15.82	10.37
Tall Grass	7.38	7.25	4.75
Broadleaf plants/sm Insects	9.05	8.90	5.83
Fruits/pods/seeds/lg insects	1.01	0.99	0.65
Small herbivore mammals	N/A	258.24	40.15
Small insectivore mammals	N/A	16.14	2.51
Small terrestrial phase amphibian	N/A	0.31	0.20

Dose-based RQs (Dose-based EEC/adjusted LD50)	Amphibian/Reptile Acute RQs for Small, Medium, and Large Species (grams)		
	1.4	37	238
Short Grass	8.12	4.88	2.42
Tall Grass	3.72	2.24	1.11
Broadleaf plants/sm insects	4.57	2.75	1.36
Fruits/pods/seeds/lg insects	0.51	0.31	0.15
Small herbivore mammals	N/A	79.72	9.37
Small insectivore mammals	N/A	4.98	0.59
Small terrestrial phase amphibian	N/A	0.10	0.05

Dietary-based RQs (Dietary-based EEC/LC50 or	RQs	
	Acute	Chronic
Short Grass	9.86	138.10
Tall Grass	4.52	63.29
Broadleaf plants/sm Insects	5.55	77.68
Fruits/pods/seeds/lg insects	0.62	8.63
Small herbivore mammals	6.50	91.00
Small insectivore mammals	0.41	5.69
Small terrestrial phase amphibian	0.19	2.70

Note: To provide risk management with the maximum possible information, it is recommended that both the dose-based and concentration-based RQs be calculated when data are available

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	Methamidophos
Use	Tomato
Formulation	Monitor 4 Liquid
Application Rate	1 lbs a.i./acre
Half-life	6.5 days
Application Interval	7 days
Maximum # Apps./Year	4
Length of Simulation	1 year

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be noted as <0.01 in your assessment. This is due to rounding and significant figure issues in Excel.

Endpoints

Avian	Bobwhite quail	LD50 (mg/kg-bw)	4.10
	Bobwhite quail	LC50 (mg/kg-diet)	42.00
	Bobwhite quail	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	3.00

Toxicity adjustments not based on standard assumed test animal body weight

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	433.27
Tall Grass	198.58
Broadleaf plants/sm Insects	243.71
Fruits/pods/seeds/lg insects	27.08
Small herbivore mammals	285.50
Small insectivore mammals	17.84
Small terrestrial phase amphibians	8.46

Terrestrial Herpetofauna Results

Weight Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	1.4	0.017	0.1	3.9	5.44E-05
Mid	37	0.212	1.4	3.8	1.41E-03
Large	238	0.893	6.0	2.5	5.96E-03

Body Weight (g)	Adjusted LD50 (mg/kg-bw)
1.4	1.98
37	3.24
238	4.28

NOTE:Toxicity adjustments not based on standard assumed test animal body weight
NOTE:Toxicity adjustments not based on standard assumed test animal body weight
NOTE:Toxicity adjustments not based on standard assumed test animal body weight

Dose-based EECs (mg/kg-bw)	Herpetofaunal Size Classes and Body Weights		
	small (g)	mid (g)	large (g)
	1.4	37	238
Short Grass	16.83	16.54	10.84
Tall Grass	7.72	7.58	4.97
Broadleaf plants/sm Insects	9.47	9.31	6.10
Fruits/pods/seeds/lg insects	1.05	1.03	0.68
Small herbivore mammals	N/A	270.07	41.98
Small insectivore mammals	N/A	16.88	2.62
Small terrestrial phase amphibian	N/A	0.32	0.21

Dose-based RQs (Dose-based EEC/adjusted LD50)	Amphibian/Reptile Acute RQs for Small, Medium, and Large Species (grams)		
	1.4	37	238
Short Grass	8.49	5.11	2.53
Tall Grass	3.89	2.34	1.16
Broadleaf plants/sm insects	4.78	2.87	1.42
Fruits/pods/seeds/lg insects	0.53	0.32	0.16
Small herbivore mammals	N/A	83.37	9.80
Small insectivore mammals	N/A	5.21	0.61
Small terrestrial phase amphibian	N/A	0.10	0.05

Dietary-based RQs (Dietary-based EEC/LC50 or	RQs	
	Acute	Chronic
Short Grass	10.32	144.42
Tall Grass	4.73	66.19
Broadleaf plants/sm Insects	5.80	81.24
Fruits/pods/seeds/lg insects	0.64	9.03
Small herbivore mammals	6.80	95.17
Small insectivore mammals	0.42	5.95
Small terrestrial phase amphibian	0.20	2.82

Note: To provide risk management with the maximum possible information, it is recommended that both the dose-based and concentration-based RQs be calculated when data are available

Upper Bound Kenaga Residues For RQ Calculation

Chemical Name:	Methamidophos
Use	Alfalfa
Formulation	Monitor 4 Liquid
Application Rate	1 lbs a.i./acre
Half-life	6.5 days
Application Interval	365 days
Maximum # Apps./Year	1
Length of Simulation	1 year

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be noted as <0.01 in your assessment. This is due to rounding and significant figure issues in Excel.

Endpoints

Avian	Bobwhite quail	LD50 (mg/kg-bw)	4.10
	Bobwhite quail	LC50 (mg/kg-diet)	42.00
	Bobwhite quail	NOAEL(mg/kg-bw)	0.00
	Bobwhite quail	NOAEC (mg/kg-diet)	3.00

Toxicity adjustments not based on standard assumed test animal body weight

Dietary-based EECs (ppm)	Kenaga Values
Short Grass	240.00
Tall Grass	110.00
Broadleaf plants/sm Insects	135.00
Fruits/pods/seeds/lg insects	15.00
Small herbivore mammals	158.15
Small insectivore mammals	9.88
Small terrestrial phase amphibians	4.69

Terrestrial Herpetofauna Results

Weight Class	Body Weight (g)	Ingestion (Fdry) (g bw/day)	Ingestion (Fwet) (g/day)	% body wgt consumed	FI (kg-diet/day)
Small	1.4	0.017	0.1	3.9	5.44E-05
Mid	37	0.212	1.4	3.8	1.41E-03
Large	238	0.893	6.0	2.5	5.96E-03

Body Weight (g)	Adjusted LD50 (mg/kg-bw)
1.4	1.98
37	3.24
238	4.28

NOTE:Toxicity adjustments not based on standard assumed test animal body weight
NOTE:Toxicity adjustments not based on standard assumed test animal body weight
NOTE:Toxicity adjustments not based on standard assumed test animal body weight

Dose-based EECs (mg/kg-bw)	Herpetofaunal Size Classes and Body Weights		
	small (g)	mid (g)	large (g)
	1.4	37	238
Short Grass	9.32	9.16	6.01
Tall Grass	4.27	4.20	2.75
Broadleaf plants/sm Insects	5.24	5.15	3.38
Fruits/pods/seeds/lg insects	0.58	0.57	0.38
Small herbivore mammals	N/A	149.60	23.26
Small insectivore mammals	N/A	9.35	1.45
Small terrestrial phase amphibian	N/A	0.18	0.12

Dose-based RQs (Dose-based EEC/adjusted LD50)	Amphibian/Reptile Acute RQs for Small, Medium, and Large Species (grams)		
	1.4	37	238
Short Grass	4.70	2.83	1.40
Tall Grass	2.16	1.30	0.64
Broadleaf plants/sm insects	2.65	1.59	0.79
Fruits/pods/seeds/lg insects	0.29	0.18	0.09
Small herbivore mammals	N/A	46.18	5.43
Small insectivore mammals	N/A	2.89	0.34
Small terrestrial phase amphibian	N/A	0.06	0.03

Dietary-based RQs (Dietary-based EEC/LC50 or	RQs	
	Acute	Chronic
Short Grass	5.71	80.00
Tall Grass	2.62	36.67
Broadleaf plants/sm Insects	3.21	45.00
Fruits/pods/seeds/lg insects	0.36	5.00
Small herbivore mammals	3.77	52.72
Small insectivore mammals	0.24	3.29
Small terrestrial phase amphibian	0.11	1.56

Note: To provide risk management with the maximum possible information, it is recommended that both the dose-based and concentration-based RQs be calculated when data are available

Appendix E
Additional Incident Database Information on Methamidophos

Incidents Reported to EPA

The following incidents were reported following applications of methamidophos.

I002680-001. California Dept. of Fish and Game reports in 10/27/87 that 4 California quail were found dead in a farm yard near a broccoli field. Methamidophos and oxydem-methyl were found as residues on broccoli leaves in the crops of the dead birds. The nearby broccoli field was sprayed with the above chemicals.

B0000-400-23. An incident was reported to EFED by the Wisconsin Dept. of Agriculture, Trade and Consumer Protection concerning a cabbage field. On July, 1980, nine dead starlings and house sparrows were found dead in a residential yard. Further search of the residential area revealed another 4 house sparrows, a killdeer and a barn swallow. A cabbage field nearby was sprayed with Monitor 4. Lab analysis showed methamidophos residues in 4 sparrows and a killdeer. Foliage samples were taken and methamidophos residues were detected on the following plants: willow tree leaves (0.075 ppm) 80-100 feet from cabbage field, maple leaves (1.3 ppm) 150 feet from field, six other samples within and around the edges of the field (ranges from 0.08 to 24.0 ppm), grass (up to 57 ppm), and walnut leaves (11 ppm) of methamidophos. The application was made at 6:30 pm with wind speeds measured at 3.5 to 6 mph. There was also a cat found dead in the field from exposure to methamidophos. Brain ChE inhibitions in the birds were found to range from 39% to 76% with 0.6 to 3.8 ppm residues in the brain.

1985. Chevron Chemical Co. reported an incident concerning a cauliflower field sprayed with Monitor 4 in 4/24/85. Approximately 100 to 200 starlings were died from ingesting invertebrates from soil and foliage contaminated with methamidophos. The digestive tracts contained 5.1 ppm of methamidophos residues. The forty acre cauliflower field was sprayed by ground application.

I005980-002. In Los Banos, CA, during the summer of 1997, more than 700 colonies of bees were damaged or destroyed from alfalfa sprayed with Monitor, Dorsban, and Dibrom. Residues were not collected from the bees due to urgency of getting the trucks to move the colonies out of harms way by the beekeepers. By the time that bees were collected for analysis, the residues were not detectable.

I014341-010 and -018. There was an incident in Grant County, Washington State in 1997 in which bee colonies were adversely impacted from the use of methamidophos on nearby potato fields that spray drifted on to nearby alfalfa fields. Methamidophos residues on bees were detected on one of these incidents in concentrations up to 0.098 ppm. Apiary losses ranged up to $10,000.

I010875-002. In 2000, alfalfa field was sprayed in morning before bees become active. Bees came into contact shortly after application. Less than 4 boards of honey bees and 5 to 6 leaf cutter bee hives died. Registrant says that the product was applied off label and should have been applied at night after the bees were off the alfalfa.

I0144409-067. In 1992 at Washington State, Franklin County, 48 bee colonies were affected from bee kills. Acephate and methamidophos were detected in the dead bees. Treatment site not named.

I0144409-068. In 1992 at Washington State, Franklin County, 40 bee colonies were affected from bee kills. Acephate and methamidophos were detected in the dead bees. Treatment site not named.

I0144409-069. In 1992 at Washington State, Franklin County, 60 bee colonies were affected from bee kills. Methamidophos was detected in the dead bees. Treatment site not named.

I013884-010. In 1998 at Grant County, Washington State, alleged fixed wing aircraft dumped tank waste ground next to honey bee yard. About 500 hives were affected from the bee kill. Residues of methamidophos found in hive and bees.

I014341-032. In 1999 at Grant County, Washington State, a mixture of methamidophos, chlorotalonil, and dimethoate was aerially applied over potato and alfalfa fields. About 150 bee hives were affected. Four samples were tested and methamidophos was found as a trace in two samples, 0.021 ppm in one sample, and 0.45 ppm in another sample.

I014341-033, I014341-034. In 1999 at Grant County, Washington State, 200 and 30 bee hives were affected by exposure to a mixture of methamidophos, chlorotalonil, and carbofuran. Methamidophos was detected at 0.16 ppm in both instances.

I007109-001. In 1998 at the Edisto Beach State Park, Charleston County, South Carolina, several grackles were observed falling to the ground from trees. Park officials report that diazinon and an Ortho powder have been recently applied to the ground for fire ant control. Twenty-four dead boat-tailed grackles were examined. Trace amounts of methamidophos was detected in pooled upper intestinal contents from eight of the grackles examined. Brain CHe activity was significantly depressed by 65%.

I014409-061. In 1992 in Walla Walla, Washington State, leafcutter bees were killed from off-target movement of methamidophos.

I013587-12. In Grant County, WA, during 1999, a mixture of methamidophos, chlorothalonil, and dimethoate was applied aerially on seed alfalfa and potatoes. The spray drifted over to 150 hives, resulting in bee kills. Application was made after sunrise when bees would be foraging. This is considered to be a violation of label restriction.

I013587-13. In 1999 in Adams County, WA, potatoes was sprayed with methamidophos. Damage occurred to the field of potatoes. Complainant alleges that someone put a herbicide in his tank while his plane and mixer were unattended at the airport. Glyphosate and 2,4-D residues were found on the damaged potato foliage. Apparently methamidophos may not have been the contributor to this incident.

I006793-006 and -009. Litigation filed in Dade County, FL in 9/4/1998. Methamidophos spray drift damaged jalapeno pepper crop by leaving residue in excess of FDA limit of 1.0 ppm. About 30 acres were affected and 1.2 million pounds of peppers. This incident shows no damage to the pepper plant.

I012587-013. Incident occurred 7/16/1999 in Adams County, WA. Potato field was aerially sprayed with Monitor. Potato injury was observed in field. Complainant alleged that someone put herbicides in his spray tank at airport during break from thunderstorm. WSDA lab detected glyphosate and 2,4-D on potato foliage and tubers. It appears that Monitor may not have adversely affected potato crop and that glyphosate and 2,4-D may have affected the potatoes.

APPENDIX F: 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) LC_{50} (fish and birds), (2) LD_{50} (birds and mammals), (3) EC_{50} (aquatic plants and aquatic invertebrates), and (4) EC_{25} (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 F-1.

Table F-1: Risk Presumptions and LOCs

Risk Presumption	RQ	LOC
Birds[1]		
Acute Risk	EEC/LC_{50} or LD_{50}/sqft or LD_{50}/day	0.5
Acute Restricted Use	EEC/LC_{50} or LD_{50}/sqft or LD_{50}/day (or LD_{50} < 50 mg/kg)	0.2
Acute Endangered Species	EEC/LC_{50} or LD_{50}/sqft or LD_{50}/day	0.1
Chronic Risk	EEC/NOEC	1
Wild Mammals[1]		
Acute Risk	EEC/LC_{50} or LD_{50}/sqft or LD_{50}/day	0.5
Acute Restricted Use	EEC/LC_{50} or LD_{50}/sqft or LD_{50}/day (or LD_{50} < 50 mg/kg)	0.2
Acute Endangered Species	EEC/LC_{50} or LD_{50}/sqft or LD_{50}/day	0.1
Chronic Risk	EEC/NOEC	1
Aquatic Animals[2]		
Acute Risk	EEC/LC_{50} or EC_{50}	0.5
Acute Restricted Use	EEC/LC_{50} or EC_{50}	0.1
Acute Endangered Species	EEC/LC_{50} or EC_{50}	0.05
Chronic Risk	EEC/NOEC	1
Terrestrial and Semi-Aquatic Plants		
Acute Risk	EEC/EC_{25}	1
Acute Endangered Species	EEC/EC_{05} or NOEC	1
Aquatic Plants[2]		
Acute Risk	EEC/EC_{50}	1
Acute Endangered Species	EEC/EC_{05} or NOEC	1

[1] LD_{50}/sqft = (mg/sqft) / (LD_{50} * wt. of animal)
LD_{50}/day = (mg of toxicant consumed/day) / (LD_{50} * wt. of animal)

[2] EEC = (ppm or ppb) in water

Appendix G: Bibliography of ECOTOX Open Literature Not Evaluated

Acceptable for ECOTOX and OPP

Ackley, J. A., Wilson, H. P., and Hines, T. E. (1996). Weed Management Programs in Potato (Solanum tuberosum) with Rimsulfuron. *Weed Technol.* 10: 354-358.

EcoReference No.: 73746
User Define 2: WASH
Chemical of Concern: AZ,MTL,RIM,LNR,MBZ,DMT,MTM; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(DMT), efficacy.

Ali, M. I. and Karim, M. A. (1993). Biological Efficacy of Some Chemical Insecticides Against the Cotton Jassid, Amrasca devastans (Dist.). *Bangladesh J.Zool.* 21: 161-167.

EcoReference No.: 74700
Chemical of Concern: CBF,DMT,BFT,MTM; Habitat: T; Effect Codes: POP; Rejection Code: OK TARGET(DMT), efficacy.

Amer, S. M. and Farah, O. R. (1985). Cytological Effects of Pesticides XV. Effect of the Insecticide Methamidophos on Root-Mitosis of Vicia faba. *Cytologia* 50: 521-526 .

EcoReference No.: 88484
Chemical of Concern: MTM; Habitat: T; Effect Codes: CEL; Rejection Code: LITE EVAL CODED(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Amer, S. M. and Sayed, M. A. (1987). Cytogenetic Effects of the Insecticide Methamidophos in Mouse Bone Marrow and Cultured Mouse Spleen Cells. *Z.naturforsch.* 42: 21-30.

EcoReference No.: 88455
Chemical of Concern: MTM; Habitat: T; Effect Codes: PHY,CEL; Rejection Code: LITE EVAL CODED(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Asmatullah and Aslam, T. (1999). Toxicity of Methamidophos in Pregnant Mice and Developing Fetuses. *Punjab Univ.J.Zool.* 14: 141-151.

EcoReference No.: 88389
Chemical of Concern: MTM; Habitat: T; Effect Codes: MOR,REP,GRO; Rejection Code: LITE EVAL CODED(MTM) developmental endpoints cannot be cannot be quantitatively linked to the selected assessment endpoints.

Asmatullah and Khan, A. R. (2000). Teratogenic Effects of Sublethal Doses of Methamidophos in Mice. *Punjab Univ.J.Zool.* 15: 35-43.

EcoReference No.: 88390
Chemical of Concern: MTM; Habitat: T; Effect Codes: REP,GRO; Rejection Code: LITE EVAL CODED(MTM) cancer endpoints cannot be qualitatively linked to the selected assessment endpoints.

Burruel, V. R., Raabe, O. G., Overstreet, J. W., Wilson, B. W., and Wiley, L. M. (2000). Paternal Effects From Methamidophos Administration in Mice. *Toxicol.Appl.Pharmacol.* 165: 148-157.

EcoReference No.: 88459
Chemical of Concern: MTM; Habitat: T; Effect Codes: REP,MOR,CEL,BCM; Rejection Code: LITE EVAL CODED(MTM) Less sensitive endpoint.

Carson, W. G., White, K. K., and Trumble, J. T. (1994). Impact of Insecticides on Insects on Tomatoes, 1993. *Insectic.Acaric.Tests* 19: 148-149 (ABS.No.114E).

EcoReference No.: 82731
Chemical of Concern: DKGNa,MOM,AZD,ABM,MTM,TUZ; Habitat: T; Effect Codes: POP,PHY; Rejection Code: LITE EVAL, efficacy.

Chalfant, R. B. (1997). Laboratory Bioassays of Insecticides Against the Cabbage Looper. *In: C.R.Saxena, Arthropod Management Tests, Entomol.Soc.of Am., Lanham, MD* 22: 413.

EcoReference No.: 82480
Chemical of Concern: DKGNa,CYH,ACP,MOM,CPY,DKGNa,MTM,EFV,ES,PMR; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL, Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints and efficacy.

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), Less sensitive endpoints.

de Castro, V. L., Chiorato, S. H., and Pinto, N. F. (2000). Biological Monitoring of Embrio-Fetal Exposure to Methamidophos or Chlorothalonil on Rat Development. *Vet.Hum.Toxicol.* 42: 361-365.

EcoReference No.: 88391
Chemical of Concern: MTM,CTN; Habitat: T; Effect Codes: GRO; Rejection Code: LITE EVAL CODED(MTM,CTN), Less sensitive endpoint.

de Castro, V. L., Chiorato, S. H., and Pinto, N. F. (2000). Relevance of Developmental Testing of Exposure to Methamidophos During Gestation to Its Toxicology Evaluation. *Toxicol.Lett.* 118: 93-102.

EcoReference No.: 88460
Chemical of Concern: MTM; Habitat: T; Effect Codes: REP,BEH,GRO; Rejection Code: LITE EVAL CODED(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Eastman, C. E., Oloumi Sadeghi, H., and Randell, R. (1991). Control of Lepidopterous Pests and Thrips on Cabbage 1990. *In: J.H.Thomas (Ed.), Insecticide and Acaricide Tests, Entomol.Soc.of Am., Lanham, MD* 16: 56-59.

EcoReference No.: 82472
Chemical of Concern: DKGNa,PMR,MTM; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(MTM,DKGNa,PMR), efficacy.

El-Zalabani, I. M., Soliman, A. A., Osman, A. I., Wagih, I. M., and Bassiouni, B. A. (1979). Effect of Organophosphorus Insecticides on Pregnant Rabbits. *Bull.Alexandria Fac.Med.* 15: 113-118.

EcoReference No.: 88599

Chemical of Concern: MTM,DMT; Habitat: T; Effect Codes: CEL,REP,GRO; Rejection Code: LITE EVAL CODED(MTM),OK(DMT)less sensitive endpoint.

Garcia-de la Parra, L. M., Bautista-Covarrubias, J. C., Rivera-de la Rosa, N., Betancourt-Lozano, M., and Guilhermino, L. (2006). Effects of Methamidophos on Acetylcholinesterase Activity, Behavior, and Feeding Rate of the White Shrimp (Litopenaeus vannamei). *Ecotoxicol.Environ.Saf.* 65: 372-380.

EcoReference No.: 88461
Chemical of Concern: MTM; Habitat: A; Effect Codes: BEH,BCM,PHY,MOR; Rejection Code: LITE EVAL CODED, Less sensitive endpoint (MTM).

Gray, A. J., Thompson, C. M., and Fukuto, T. R. (1982). Distribution and Excretion of [14CH3S]Methamidophos after Intravenous Administration of a Toxic Dose and the Relationship with Anticholinesterase Activity. *Pesti.Biochem.Physiol.* 18: 28-37.

EcoReference No.: 35188
Chemical of Concern: MTM; Habitat: T; Effect Codes: MOR,BCM,ACC; Rejection Code: LITE EVAL CODED(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Hanafy, M. S. M., Arbid, M. S., and Afify, M. M. H. (1991). Biochemical and Histopathological Effects of the Organophosphorus Insecticide (Tamaron) in Rats. *Indian J.Anim.Sci.* 61: 43-47.

EcoReference No.: 88578
Chemical of Concern: MTM; Habitat: T; Effect Codes: BCM,BEH,PHY; Rejection Code: LITE EVAL CODED(MTM) Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Haque, A. and Ebing, W. (1983). Toxicity Determination of Pesticides to Earthworms in the Soil Substrate. *J.Plant Dis.Prot.* 90: 395-408 (OECDG Data File).

EcoReference No.: 40493
Chemical of Concern:
BMY,Captan,Cn,Maneb,Folpet,TDF,ATZ,PAQT,CQTC,ADC,CBF,ES,HCCH,MTM,MDT,PPX,TBO; Habitat: T; Effect Codes: MOR,GRO,POP,BEH; Rejection Code: LITE EVAL, endpoint and organism not useful for assessment since not part of frog diet.

Hegazi, E. M., El-Gayar, F. H., Rawash, I. A., and Kares, E. A. (1982). Oral and Residual Toxicities of Some Insecticides to the Adults and Full Grown Larvae of Two Parasites of the Cotton Leafworm Spodoptera littoralis (Boisd.). *Acta Phytopathol.Acad.Sci.Hung.* 17: 301-309.

EcoReference No.: 37061
Chemical of Concern: MTM; Habitat: T; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(MTM), efficacy.

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; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: LITE EVAL, Less sensitive endpoint.

Hussain, M. A. (1987). Anticholinesterase Properties of Methamidophos and Acephate in Insects and Mammals. *Bull.Environ.Contam.Toxicol.* 38: 131-138.

EcoReference No.: 88590
Chemical of Concern: MTM,ACP; Habitat: T; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(MTM),NO ENDPOINT(ACP).

Hussain, M. A., Mohamad, R. B., and Oloffs, P. C. (1985). Studies on the Toxicity, Metabolism, and Anticholinesterase Properties of Acephate and Methamidophos. *J.Environ.Sci.Health* 20B: 129-147.

EcoReference No.: 37219
Chemical of Concern: ACP,MTM; Habitat: AT; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL, efficacy CODED(ACP,ADC),OK(MTM).

Juarez, L. M. and Sanchez, J. (1989). Toxicity of the Organophosphorous Insecticide Metamidophos (O,S-Dimethyl Phosphoramidothioate) to Larvae of the Freshwater Prawn Macrobrachium rosenbergii (De Man) and the Blue Shrimp Penaeus stylirostris Stimpson. *Bull.Environ.Contam.Toxicol.* 43: 302-309.

EcoReference No.: 784
Chemical of Concern: MTM; Habitat: A; Effect Codes: MOR,POP; Rejection Code: LITE EVAL CODED, high mortality in controls, lack of data (MTM).

Karabay, N. U. and Oguz, M. G. (2005). Cytogenetic and Genotoxic Effects of the Insecticides, Imidacloprid and Methamidophos. *Genet.Mol.Res.* 4: 653-662.

EcoReference No.: 88579
Chemical of Concern: MTM,IMC; Habitat: T; Effect Codes: CEL; Rejection Code: LITE EVAL CODED(MTM),OK(IMC), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Liang, J. and Zhou, Q. (2003). Single and Binary-Combined Toxicity of Methamidophos, Acetochlor and Copper Acting on Earthworms Eisenia foelide. *Bull.Environ.Contam.Toxicol.* 71: 1158-1166.

EcoReference No.: 73641
Chemical of Concern: ACO,Cu,MTM,CuS; Habitat: T; Effect Codes: GRO,MOR; Rejection Code: LITE EVAL, endpoint and organism not useful for this assessment since not a part of frog diet.

Lotti, M., Moretto, A., Bertolazzi, M., Peraica, M., and Fioroni, F. (1995). Organophosphate Polyneuropathy and Neuropathy Target Esterase: Studies with Methamidophos and Its Resolved Optical Isomers. *Arch Toxicol.* 69: 330-336.

EcoReference No.: 40113
Chemical of Concern: MTM; Habitat: T; Effect Codes: BCM,PHY; Rejection Code: LITE EVAL CODED(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Mahajna, M., Quistad, G. B., and Casida, J. E. (1997). Acephate Insecticide Toxicity: Safety Conferred by Inhibition of the Bioactivating Carboxyamidase by the Metabolite Methamidophos. *Chem.Res.Toxicol.* 10: 64-69.

EcoReference No.: 74946
Chemical of Concern: DMT,ACP,MTM; Habitat: T; Effect Codes: ACC,PHY,MOR; Rejection Code: LITE EVAL CODED(ACP),NO ENDPOINT(DMT),

Mingjing, Q., Zhaojun, H., Xinjun, X., and lina, Y. (2003). Triazophos Resistance Mechanisms in the Rice Stem Borer (Chilo suppressalis Walker). *Pestic.Biochem.Physiol.* 77: 99-105.

EcoReference No.: 73601
User Define 2: WASHT
Chemical of Concern: MOM,MTM,FPN; Habitat: T; Effect Codes: MOR; Rejection Code: OK., efficacy

Moser, V. C. (1999). Comparison of Aldicarb and Methamidophos Neurotoxicity at Different Ages in the Rat: Behavioral and Biochemical Parameters. *Toxicol.Appl.Pharmacol.* 157: 94-106.

EcoReference No.: 86743
Chemical of Concern: ADC,MTM; Habitat: T; Effect Codes: BCM,GRO,BEH,MOR,PHY; Rejection Code: LITE EVAL CODED(MTM),OK(ADC), Less sensitive endpoint.

Noetzel, D. M., Wiersma, J., and Preston, D. (1987). Potato Yields with Soil Systemic Plus Foliars and Foliars Alone, 1985. *Insectic.Acaric.Tests* 12: 143 (No. 163).

EcoReference No.: 88643
Chemical of Concern: FNV,ADC,MTM; Habitat: T; Effect Codes: POP; Rejection Code: LITE EVAL CODED(MTM),OK(FNV),NO MIXTURE(ADC), efficacy.

Otoidobiga, L. C., Vincent, C., and Stewart, R. K. (2003). Susceptibility of Field Populations of Adult Bemisia tabaci Gennadius (Homoptera: Aleyrodidae) and Eretmocerus sp (Hymenoptera: Aphelinidae) to Cotton Insecticides in Burkina Faso (West Africa). *Pest Manag.Sci.* 59: 97-106.

EcoReference No.: 71999
Chemical of Concern: ES,MTM,CYP; Habitat: T; Effect Codes: MOR,POP; Rejection Code: TARGET(CYP), efficacy.

Panemangalore, M. and Bebe, F. N. (2000). Dermal Exposure to Pesticides Modifies Antioxidant Enzymes in Tissues of Rats. *J.Environ.Sci.Health Part B* 35: 399-416.

EcoReference No.: 88457
Chemical of Concern: MTM,ACP,NCTN; Habitat: T; Effect Codes: CEL,PHY; Rejection Code: LITE EVAL CODED(MTM),OK(ACP,NCTN), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Peiris, L. D. C., Jayatunga, Y. N. A., and Ratnasooriya, W. D. (1994). Analgesic and Sedative Effects of Methamidophos in Rats . *Med.Sci.Res.* 22: 293-295.

EcoReference No.: 88506
Chemical of Concern: MTM; Habitat: T; Effect Codes: PHY,BEH,GRO; Rejection Code: LITE EVAL CODED(MTM) Endpoints cannot be quantitatively linked to the selected assessment endpoints.

Perez, C. J., Alvarado, P., Narvaez, C., Miranda, F., Hernandez, L., Vanegas, H., Hruska, A., and Shelton, A. M. (2000). Assessment of Insecticide Resistance in Five Insect Pests Attacking Field and Vegetable Crops in Nicaragua. *J.Econ.Entomol.* 93: 1779-1787.

EcoReference No.: 59602
Chemical of Concern: MOM,DM,MTM,CPY,ES,CYP; Habitat: T; Effect Codes: MOR; Rejection Code: OK(MOM),TARGET(CYP), efficacy.

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, efficacy, NO CONTROL

Ratchford, K., Graves, J. B., Pavloff, A. M., and Burris, G. (1987). Efficacy of Foliar Insecticides on Early Season Thrips and Aphids and Mid-Season Aphids in Cotton, 1986. *Insectic.Acaric.Tests* 12: 237-238 (No. 276).

EcoReference No.: 88773
Chemical of Concern: SPS,ACP,FVL,DMT,ADC,MTM,CYH,MLN,CYP,DCTP,TLM,CPY,BFT; Habitat: T; Effect Codes: POP,GRO; Rejection Code: LITE EVAL, efficacy.

Robinson, C. P. and Beiergrohslein, D. (1980). Cholinesterase Inhibition by Methamidophos and Its Subsequent Reactivation. *Pestic.Biochem.Physiol.* 13: 267-273.

EcoReference No.: 88575
Chemical of Concern: MTM; Habitat: T; Effect Codes: BCM,MOR; Rejection Code: LITE EVAL CODED(MTM) Less sensitive endpoint.

Santos, R. P., Cavaliere, M. J., Puga, F. R., Narciso, E. S., Pelegrino, J. R., and Calore, E. E. (2002). Protective Effect of Early and Late Administration of Pralidoxime Against Organophosphate Muscle Necrosis. *Ecotoxicol.Environ.Saf.* 53: 48-51.

EcoReference No.: 88462
Chemical of Concern: MTM; Habitat: T; Effect Codes: BIO,CEL,PHY; Rejection Code: LITE EVAL CODED(MTM) Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Sanz, P., Moreno, E., Blasco, R., and Repetto, M. (1990). Study of Delayed Neurotoxicity Caused by Fatty Acid Anilides in Hens. *Vet.Hum.Toxicol.* 32: 422-427.

EcoReference No.: 88576
Chemical of Concern: MTM; Habitat: T; Effect Codes: GRO,BCM; Rejection Code: LITE EVAL CODED(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Satar, S., Satar, D., Kirim, S., and Leventerler, H. (2005). Effects of Acute Organophosphate Poisoning on Thyroid Hormones in Rats. *Am.J.Therapeut.* 12: 238-242 .

EcoReference No.: 88598
Chemical of Concern: MTM; Habitat: T; Effect Codes: BCM; Rejection Code: LITE EVAL CODED(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

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Satar, S., Satar, D., Mete, U. O., Suchard, J. R., Topal, M., and Kaya, M. (2005). Ultrastructural Effects of Acute Organophosphate Poisoning on Rat Kidney. *Renal failure* 27: 623-627.

EcoReference No.: 88423
Chemical of Concern: MTM; Habitat: T; Effect Codes: PHY,BCM,CEL; Rejection Code: LITE EVAL CODED(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Schuster, D. J. (1994). Life-Stage Specific Toxicity of Insecticides to Parasitoids of Liriomyza trifolii (Burgess) (Diptera: Agromyzidae). *Int.J.Pest Manag.* 40: 191-194.

EcoReference No.: 74151
User Define 2: WASHT
Chemical of Concern: CYR,TDC,FNV,MOM,PMR,MTM,ES; Habitat: T; Effect Codes: MOR; Rejection Code: efficacy.

Sheets, L. P., Hamilton, B. F., Sangha, G. K., and Thyssen, J. H. (1997). Subchronic Neurotoxicity Screening Studies with Six Organophosphate Insecticides: An Assessment of Behavior and Morphology Relative to Cholinesterase Inhibition. *Fundam.Appl.Toxicol.* 35: 101-119.

EcoReference No.: 87452
Chemical of Concern: SPS,TCF,DS,AZ,MTM; Habitat: T; Effect Codes: BEH,GRO,PHY; Rejection Code: LITE EVAL CODED(MTM),OK(SPS,TCF,DS,AZ), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Spassova, D., White, T., and Singh, A. K. (2000). Acute Effects of Acephate and Methamidophos on Acetylcholinesterase Activity, Endocrine System and Amino Acid Concentrations in Rats. *Comp.Biochem.Physiol.C* 126: 79-89.

EcoReference No.: 54406
Chemical of Concern: ACP,MTM; Habitat: T; Effect Codes: PHY,BCM,ACC; Rejection Code: LITE EVAL CODED(ACP), OK(MTM), Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Stromborg, K. L. (1986). Reproduction of Bobwhites fed Different Dietary Concentrations of an Organophosphate Insecticide, Methamidophos. *Arch.Environ.Contam.Toxicol.* 15: 143-147.

EcoReference No.: 40022
Chemical of Concern: MTM; Habitat: T; Effect Codes: MOR,BEH,PHY,REP,GRO; Rejection Code: LITE EVAL CODED(MTM), Less sensitive endpoint.

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, no data on controls or treatment, not a 96-hr test, tap water use.

Verma, S. R., Kumar, V., and Dalela, R. C. (1981). Acute Toxicity of Three Newly Formulated Pesticides to Fish Mystus vittatus. *Indian J.Environ.Health* 23: 215-221.

EcoReference No.: 16590
Chemical of Concern: ACP,MTM,EFV; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(ACP,MTM),OK(EFV), Less sensitive endpoint .

Verschoyle, R. D. and Cabral, J. R. P. (1982). Investigation of the Acute Toxicity of Some Trimethyl and Triethyl Phosphorothioates with Particular Reference to Those Causing Lung Damage. *Arch.Toxicol.* 51: 221-231.

EcoReference No.: 88589

Chemical of Concern: MTM; Habitat: T; Effect Codes: MOR,GRO,PHY,CEL; Rejection Code: LITE EVAL CODED(MTM) less sensitive endpoint.

Wilson, B. W., Henderson, J. D., Kellner, T. P., McEuen, S. F., Griffis, L. C., and J.C.Lai (1990). Acetylcholinesterase and Neuropathy Target Esterase in Chickens Treated with Acephate. *Neurotoxicology* 11: 483-492.

EcoReference No.: 81003
Chemical of Concern: ACP,MTM; Habitat: T; Effect Codes: MOR,ACC,PHY; Rejection Code: LITE EVAL CODED(ACP),OK(ALL CHEMS) Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Zayed, S. M. A. D., Fakhr, I. M. I., and el-Magraby, S. (1984). Some Toxicological Aspects of Methamidophos Exposure in Mice. *J.Environ.Sci.Health Part B* 19: 467-478 .

EcoReference No.: 88392
Chemical of Concern: MTM; Habitat: T; Effect Codes: GRO,BCM; Rejection Code: LITE EVAL CODED(MTM), Less sensitive endpoint.

Zinkl, J. G., Roberts, R. B., Shea, P. J., and Lasmanis, J. (1981). Toxicity of Acephate and Methamidophos to Dark-Eyed Juncos. *Arch.Environ.Contam.Toxicol.* 10: 185-192.

EcoReference No.: 39519
Chemical of Concern: ACP,MTM; Habitat: T; Effect Codes: PHY,MOR,ACC,GRO; Rejection Code: LITE EVAL CODED (ACP,MTM). Less sensitive endpoint.

Zinkl, J. G., Shea, P. J., Nakamoto, R. J., and Callman, J. (1987). Effects of Cholinesterases of Rainbow Trout Exposed to Acephate and Methamidophos. *Bull.Environ.Contam.Toxicol.* 38: 22-28.

EcoReference No.: 12398
Chemical of Concern: ACP,MTM; Habitat: A; Effect Codes: BCM,ACC; Rejection Code: LITE EVAL CODED(ACP,MTM) Biochemical enzymatic endpoints cannot be quantitatively linked to the selected assessment endpoints.

Acceptable for ECOTOX but not OPP

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).

Ali, M. I. and Karim, M. A. (1993). Biological Efficacy of Some Chemical Insecticides Against the Cotton Jassid, Amrasca devastans (Dist.). *Bangladesh J.Zool.* 21: 161-167.

EcoReference No.: 74700
Chemical of Concern: CBF,DMT,BFT,MTM; Habitat: T; Effect Codes: POP; Rejection Code: OK TARGET(DMT),TARGET(BFT,MTM).

Antonious, G. F. (1995). Analysis and Fate of Acephate and Its Metabolite, Methamidophos, in Pepper and Cucumber. *J.Environ.Sci.Health Part B* 30: 377-399.

EcoReference No.: 72875
Chemical of Concern: ACP,MTM; Habitat: T; Effect Codes: ACC; Rejection Code: NO

CONTROL,ENDPOINT(ALL CHEMS).

Antonious, G. F. and Snyder, J. C. (1994). Residues and Half-Lives of Acephate, Methamidophos, and Pirimiphos-Methyl in Leaves and Fruit of Greenhouse-Grown Tomatoes. *Bull.Environ.Contam.Toxicol.* 52: 141-148.

EcoReference No.: 88591
Chemical of Concern: PIRM,ACP,MTM; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT(MTM,PIRM,ACP).

Archer, T. E. and Gauer, W. O. (1985). Residues of Five Pesticides in Field-Treated Alfalfa Seeds and Alfalfa Sprouts. *J.Environ.Sci.Health Part B* 20: 445-456.

EcoReference No.: 64050
Chemical of Concern: ADC,CTN,CPY,MTM,PPG; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT(ALL CHEMS).

Blus, L. J., Staley, C. S., Henny, C. J., Pendleton, G. W., Craig, T. H., Craig, E. H., and Halford, D. K. (1989). Effects of Organophosphorus Insecticides on Sage Grouse in Southeastern Idaho. *J.Wildl.Manag.* 53: 1139-1146.

EcoReference No.: 40025
Chemical of Concern: MTM,DMT; Habitat: T; Effect Codes: MOR,BCM; Rejection Code: NO ENDPOINT(MTM,DMT).

Bull, D. L. (1979). Fate and Efficacy of Acephate After Application to Plants and Insects. *J.Agric.Food Chem.* 27: 268-272.

EcoReference No.: 47883
Chemical of Concern: ACP,MTM,PRN; Habitat: T; Effect Codes: ACC,MOR; Rejection Code: OK TARGET(ACP,MTM),OK(PRN).

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).

Elzen, G. W. (1992). Cotton Aphid Control, 1990 . *Insecticide Acaricide Tests* 221-222 (58F).

EcoReference No.: 79272
Chemical of Concern: MP,ES,CPY,DS,CYF,MTM,BFT,ACP,EFV,OXD; Habitat: T; Effect Codes: POP; Rejection Code: OK(ALL CHEMS),OK TARGET(MTM,OXD).

Espinosa, P. J., Bielza, P., Contreras, J., and Lacasa, A. (2002). Field and Laboratory Selection of Frankliniella occidentalis (Pergande) for Resistance to Insecticides. *Pest Manag.Sci.* 58: 920-927.

EcoReference No.: 70971
Chemical of Concern: ES,DM,MTM; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(MTM).

Espinosa, P. J., Bielza, P., Contreras, J., and Lacasa, A. (2002). Insecticide Resistance in Field Populations of Frankliniella occidentalis (Pergande) in Murcia (South-East Spain). *Pest Manag.Sci.* 58: 967-

971.

EcoReference No.: 70970
Chemical of Concern: ES,DM,MTM; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(MTM).

Fiedler, L. (1987). Assessment of Chronic Toxicity of Selected Insecticides to Honeybees. *J.Apic.Res.* 26: 115-122.

EcoReference No.: 79198
Chemical of Concern: DMT,OMT,PRM,MTM,ACE; Habitat: T; Effect Codes: MOR,BEH; Rejection Code: TARGET(DMT,MTM),OK(ALL CHEMS).

Gary, N. E. and Lorenzen, K. (1989). Effect of Methamidophos on Honey Bees (Hymenoptera: Apidae) During Alfalfa Pollination. *J.Econ.Entomol.* 82: 1067-1072.

EcoReference No.: 39537
Chemical of Concern: MTM; Habitat: T; Effect Codes: BEH; Rejection Code: NO ENDPOINT(MTM).

Geen, G. H., Hussain, M. A., Oloffs, P. C., and McKeown, B. A. (1981). Fate and Toxicity of Acephate (Orthene) Added to a Coastal B. C. Stream. *J.Environ.Sci.Health* B16: 253-271.

EcoReference No.: 15677
Chemical of Concern: ACP,MTM; Habitat: A; Effect Codes: ACC; Rejection Code: LITE EVAL CODED(ACP),NO METABOLISM(MTM).

Geen, G. H., McKeown, B. A., and Oloffs, P. C. (1984). Acephate in Rainbow Trout (Salmo gairdneri): Acute Toxicity, Uptake, Elimination. *J.Environ.Sci.Health Part B* 19: 131-155.

EcoReference No.: 11133
Chemical of Concern: ACP,MTM; Habitat: A; Effect Codes: ACC,MOR; Rejection Code: LITE EVAL CODED(ACP),NO METABOLISM(MTM).

Glickman, A. H., Wing, K. D., and Casida, J. E. (1984). Profenofos Insecticide Bioactivation in Relation to Antidote Action and the Stereospecificity of Acetylcholinesterase Inhibition, Reactivation, and Aging. *Toxicol.Appl.Pharmacol.* 73: 16-22.

EcoReference No.: 36814
Chemical of Concern: PFF,MTM; Habitat: T; Effect Codes: BCM,MOR,BEH; Rejection Code: OK(PFF),NO ENDPOINT(MTM).

Grove, R. A., Buhler, D. R., Henny, C. J., and Drew, A. D. (1998). Declining Ring-Necked Pheasants in the Klamath Basin, California: I. Insecticide Exposure. *Ecotoxicol.* 7: 305-312.

EcoReference No.: 88580
Chemical of Concern: MTM; Habitat: T; Effect Codes: BCM,ACC; Rejection Code: NO ENDPOINT(MTM).

Hadjidemetriou, D. G., Iwata, Y., and Gunther, F. A. (1985). Analysis and Dissipation of Dislodgable Residues of Acephate Dimethoate and Formetanate Hydrochloride on Citrus Foliage. *Pestic.Sci.* 16: 302-310.

EcoReference No.: 75958
Chemical of Concern: DMT,MTM,FTTCl,ACP; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT(ALL CHEMS).

Hussain, M. A., Mohamad, R. B., and Oloffs, P. C. (1985). Studies on the Toxicity, Metabolism, and Anticholinesterase Properties of Acephate and Methamidophos. *J.Environ.Sci.Health* 20B: 129-147.

EcoReference No.: 37219
Chemical of Concern: ACP,MTM; Habitat: AT; Effect Codes: MOR,BCM; Rejection Code: LITE EVAL CODED(ACP),NO IN VITRO(MTM).

Ishaaya, I., Mendelson, Z., Ascher, K. R. S., and Casida, J. E. (1987). Cypermethrin Synergism by Pyrethroid Esterase Inhibitors in Adults of the Whitefly Bemisia tabaci. *Pestic.Biochem.Physiol.* 28: 155-162.

EcoReference No.: 88388
Chemical of Concern: CYP,MTM; Habitat: T; Effect Codes: MOR; Rejection Code: OK(CYP),TARGET(MTM).

Jett, D. A. (1986). Cholinesterase Inhibition in Meadow Voles (Microtus pennsylvanicus) Following Field Applications of Orthene. *Environ.Toxicol.Chem.* 5: 255-259.

EcoReference No.: 40065
Chemical of Concern: ACP,MTM; Habitat: T; Effect Codes: PHY,BCM,ACC; Rejection Code: LITE EVAL CODED(ACP),NO ENDPOINT(MTM).

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 PUBLAS(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).

Kalkan, S., Ergur, B. U., Akgun, A., Kaplan, Y. C., Kinay, A. O., and Tuncok, Y. (2005). Efficacy of an Adenosine A1 Receptor Agonist Compared with Atropine and Pralidoxime in a Rat Model of Organophosphate Poisoning. *Hum.Exp.Toxicol.* 24: 369-375 .

EcoReference No.: 88594
Chemical of Concern: MTM; Habitat: T; Effect Codes: MOR,BEH,CEL,BCM; Rejection Code: NO CONTROL(MTM).

Karner, M., Ewing, S., Kelley, M., and Goodson, J. (1992). Cotton Aphid Control, 1991. *Insectic.Acaric.Tests* 17: 229-230.

EcoReference No.: 82244
Chemical of Concern: DMT,CYF,TDC,MOM,EFV,MTM,CYP,CPY,BFT,DCTP,CYH,ACP,ES; Habitat: T; Effect Codes: POP; Rejection Code: OK(ALL CHEMS),NO COC(DKG),OK TARGET(TDC,ACP,MTM).

Kellner, T., Sanborn, J., and Wilson, B. (2000). In Vitro and In Vivo Assessment of the Effect of Impurities and Chirality on Methamidophos-Induced Neuropathy Target Esterase Aging. *Toxicol.Sci.* 54: 408-415.

EcoReference No.: 88492
Chemical of Concern: MTM; Habitat: T; Effect Codes: BCM; Rejection Code: NO ENDPOINT(MTM).

Khasawinah, A. M. A., March, R. B., and Fukuto, T. R. (1978). Insecticidal Properties, Antiesterase Activities, and Metabolism of Methamidophos. *Pestic.Biochem.Physiol.* 9: 211-221.

EcoReference No.: 88585
Chemical of Concern: MTM; Habitat: T; Effect Codes: ACC; Rejection Code: OK TARGET(MTM).

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).

Larson, L. L. (1976). The Selective Toxicity of Orthene. *Ph.D Thesis, UMI Order No.76-12-654* 296 p.

EcoReference No.: 88764
Chemical of Concern: ACP,MTM; Habitat: T; Effect Codes: MOR,REP,GRO,PHY,BCM; Rejection Code: OK(ACP),OK TARGET(MTM).

Ledieu, M. S. (1978). Candidate Insecticides for the Control of Larvae of Mamestra brassicae (Lepidoptera) (Noctuidae). *Ann.Appl.Biol.* 88: 251-255.

EcoReference No.: 14081
Chemical of Concern: ES,CPYM,ACP,MTM,CPY,MOM,FNT; Habitat: T; Effect Codes: MOR; Rejection Code: OK TARGET(CBL),NO ENDPOINT(ES,CPYM,CPY,MOM,FNT,TARGET-ACP,MTM).

Mahajna, M., Quistad, G. B., and Casida, J. E. (1997). Acephate Insecticide Toxicity: Safety Conferred by Inhibition of the Bioactivating Carboxyamidase by the Metabolite Methamidophos. *Chem.Res.Toxicol.* 10: 64-69.

EcoReference No.: 74946
Chemical of Concern: DMT,ACP,MTM; Habitat: T; Effect Codes: ACC,PHY,MOR; Rejection Code: LITE EVAL CODED(ACP),NO ENDPOINT(DMT),NO MIXTURE(TARGET-MTM).

Mayer, D. F., Johansen, C. A., Lunden, J. D., and Rathbone, L. (1987). Bee Hazard of Insecticides Combined with Chemical Stickers. *Am.Bee J.* 127: 493-495.

EcoReference No.: 88509
Chemical of Concern: ES,HCCH,FVL,CYP,CYH,ACP,CPY,DZ,MLN,MTM,Naled,OXD,TCF,MOM,OML,TDC,BFT,CYF,PMR; Habitat: T; Effect Codes: MOR; Rejection Code: NO ENDPOINT(ALL CHEMS),TARGET(TDC).

Mingjing, Q., Zhaojun, H., Xinjun, X., and lina, Y. (2003). Triazophos Resistance Mechanisms in the Rice Stem Borer (Chilo suppressalis Walker). *Pestic.Biochem.Physiol.* 77: 99-105.

EcoReference No.: 73601
Chemical of Concern: MOM,MTM,FPN,ABM; Habitat: T; Effect Codes: MOR; Rejection Code: OK(ABM),OK TARGET(FPN,MTM,MOM).

Moretto, A., Bertolazzi, M., Capodicasa, E., Peraica, M., Richardson, R. J., Scapellato, M. L., and Lotti, M. (1992). Phenylmethanesulfonyl Fluoride Elicits and Intensifies the Clinical Expression of Neuropathic Insults. *Arch.Toxicol.* 66: 67-72.

EcoReference No.: 88587
Chemical of Concern: MTM; Habitat: T; Effect Codes: BCM,PHY; Rejection Code: NO ENDPOINT(MTM).

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).

Nigg, H. N., Reinert, J. A., Stamper, J. H., and Fitzpatrick, G. E. (1981). Disappearance of Acephate, Methamidophos, and Malathion from Citrus Foliage. *Bull.Environ.Contam.Toxicol.* 26: 267-272.

EcoReference No.: 88588
Chemical of Concern: MTM,MLN,ACP; Habitat: T; Effect Codes: ACC; Rejection Code: NO ENDPOINT(MTM,MLN,ACP).

Noetzel, D. M., Ricard, M., Holen, C., Holder, B., and Preston, D. (1988). Control of Pyrethroid Resistant Colorado Potato Beetle - Trial 2, 1986. *Insectic.Acaric.Tests* 13: 153 (No. 81E).

EcoReference No.: 88820
Chemical of Concern: CYF,PMR,FNV,CYH,EFV,PPHD,ADC,MTM,AZ; Habitat: T; Effect Codes: POP; Rejection Code: NO CONTROL(ALL CHEMS).

Noetzel, D. M., Wiersma, J., and Preston, D. (1987). CPB Defoliation and Potato Yields with Temik, Five Foliar and One Biological Insecticide, 1985. *Insectic.Acaric.Tests* 12: 142-143 (No. 162).

EcoReference No.: 88638
Chemical of Concern: BFT,CYH,ADC,FNV,CYF,MTM; Habitat: T; Effect Codes: POP; Rejection Code: NO CONTROL(ALL CHEMS).

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,PM

R,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).

Otoidobiga, L. C., Vincent, C., and Stewart, R. K. (2003). Susceptibility of Field Populations of Adult Bemisia tabaci Gennadius (Homoptera: Aleyrodidae) and Eretmocerus sp (Hymenoptera: Aphelinidae) to Cotton Insecticides in Burkina Faso (West Africa). *Pest Manag.Sci.* 59: 97-106.

EcoReference No.: 71999
Chemical of Concern: ES,MTM,CYP; Habitat: T; Effect Codes: MOR,POP; Rejection Code: TARGET(CYP,MTM).

Pan, D. Y. and Liang, X. M. (1993). Safety Study of Pesticides on Bog Frog, a Predatory Natural Enemy of Pest in Paddy Field. *J.Hunan Agricult.Coll.* 19: 47-54 (CHI) (ENG ABS).

EcoReference No.: 16056
Chemical of Concern:
FNT,ANZ,DDVP,DLD,24DXY,CBF,CPY,CTN,DMT,DZ,HCCH,MLN,MLT,MP,MTM,PMT,TBC,DM,EFV,BPZ,PPN,OMT,PCH,MLT,FPP,NaPCP,CaPS,OMT,Zn,DDT,Zineb,PPHD,FNV,CYH,BTC,TDF,Ni; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN(ALL CHEMS).

Perez, C. J., Alvarado, P., Narvaez, C., Miranda, F., Hernandez, L., Vanegas, H., Hruska, A., and Shelton, A. M. (2000). Assessment of Insecticide Resistance in Five Insect Pests Attacking Field and Vegetable Crops in Nicaragua. *J.Econ.Entomol.* 93: 1779-1787.

EcoReference No.: 59602
Chemical of Concern: MOM,DM,MTM,CPY,ES,CYP; Habitat: T; Effect Codes: MOR; Rejection Code: OK TARGET(MOM),TARGET(CYP,MTM).

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).

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) .

Reed, J. T. and Grant, R. R. (1988). Evaluation of Insecticides for Early Season Thrips Control in the Mississippi Delta, 1987. *Insectic.Acaric.Tests* 13: 255 (No. 99F) .

EcoReference No.: 88810
Chemical of Concern: DCTP,TBO,AZ,MTM,ACP,OML,PRT,ADC; Habitat: T; Effect Codes: POP; Rejection Code: OK(ALL CHEMS),OK(TARGET-MTM).

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).

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) .

Schuster, D. J. (1994). Life-Stage Specific Toxicity of Insecticides to Parasitoids of Liriomyza trifolii (Burgess) (Diptera: Agromyzidae). *Int.J.Pest Manag.* 40: 191-194.

EcoReference No.: 74151
Chemical of Concern: CYR,TDC,FNV,MOM,PMR,MTM,ES; Habitat: T; Effect Codes: MOR; Rejection Code: OK(MOM),TARGET(TDC,MTM,MOM).

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).

Sewell, G. H. and Storch, R. H. (1986). Irish Potato, Control of Potato Infesting Aphids, 1985. *Insectic.Acaric.Tests* 11: 167 (No. 226).

EcoReference No.: 88767
Chemical of Concern: ADC,MTM; Habitat: T; Effect Codes: POP; Rejection Code: OK TARGET(MTM),OK(ADC).

Sewell, G. H. and Storch, R. H. (1988). Irish Potato, Control of Potato Infesting Aphids, 1986. *Insectic.Acaric.Tests* 13: 164 (No. 94E).

EcoReference No.: 88818
Chemical of Concern: BFT,MTM,ADC; Habitat: T; Effect Codes: POP; Rejection Code: NO CONTROL(TARGET-BFT,MTM,ADC).

Sewell, G. H. and Storch, R. H. (1988). Irish Potato, Control of Potato Infesting Aphids, 1987. *Insectic.Acaric.Tests* 13: 162 (No. 92E).

EcoReference No.: 88819
Chemical of Concern: MTM,BFT,ADC; Habitat: T; Effect Codes: POP; Rejection Code: NO CONTROL(TARGET-MTM,BFT,ADC).

Sharaf, N. S. and Allawi, T. F. (1980). Studies on Whiteflies on Tomato in the Jordan Valley. III. Laboratory and Field Experiments on the Control of Whitefly (Bemisia tabaci Genn., Homoptera: Aleyrodidae) Populations with Organophosphorus Insecticides and the Incidence of the Tomato Yellow Leaf Curl Virus. *Z.Pflanzenkr.Pflanzenschutz* 87: 176-184.

EcoReference No.: 72038
Chemical of Concern: AZ,MTM,MP; Habitat: T; Effect Codes: MOR; Rejection Code:

TARGET(AZ,MTM).

Smilowitz, Z., Wallace, J., Gurecki, T., Rebarchak, P., and Yocum, J. O. (1986). Foliar Insecticide Efficacy Trial, 1984. *Insectic.Acaric.Tests* 11: 174-178 (No. 230).

EcoReference No.: 88766
Chemical of Concern: ADC,PMR,MTM,CYT,FNV; Habitat: T; Effect Codes: POP; Rejection Code: OK(ADC,PMR,CYT,FNV),OK TARGET(MTM).

Sosa-Gomez, D. R., Corso, I. C., and Morales, L. (2001). Insecticide Resistance to Endosulfan, Monocrotophos and Metamidophos in the Neotropical Brown Stink Bug, Euschistus heros (F.). *Neotrop.Entomol.* 30: 317-320.

EcoReference No.: 88458
Chemical of Concern: MTM,ES; Habitat: T; Effect Codes: MOR; Rejection Code: OK(ES),OK TARGET(MTM),NO COC(MTAS).

Symington, C. A. and Horne, P. A. (1998). Relative Toxicity of Pesticides to Pest and Beneficial Insects in Potato Crops in Victoria, Australia. *In: P.T.Haskell and P.McEwen (Eds.), Ecotoxicology: Pesticides and Beneficial Organisms, Chapter 29, Kluwer Acad.Publ., London* 279-286.

EcoReference No.: 73144
Chemical of Concern: ES,MTM,TDC; Habitat: T; Effect Codes: MOR; Rejection Code: TARGET(TDC,MTM).

Warkentin, D., Harris, M., and Begley, J. (1987). Evaluation of Aphid Cleanup Materials on Ready to Ship Hibiscus, 1986. *Insectic.Acaric.Tests* 12: 342 (No. 422).

EcoReference No.: 88785
Chemical of Concern: CBF,MTM,OML,ADC; Habitat: T; Effect Codes: POP; Rejection Code: OK(CBF,OML),OK TARGET(MTM,ADC).

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).

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).

Wu, G. and Miyata, T. (2005). Susceptibilities to Methamidophos and Enzymatic Characteristics in 18 Species of Pest Insects and Their Natural Enemies in Crucifer Vegetable Crops. *Pestic.Biochem.Physiol.* 82: 79-93.

EcoReference No.: 80288
Chemical of Concern: PPB,MTM,CBF; Habitat: T; Effect Codes: MOR,PHY,BCM; Rejection Code: OK(CBF,PPB),OK TARGET(MTM).

Wu, J.-C., Xu, J.-X., Yuan, S.-Z., Liu, J.-L., Jiang, Y.-H., and Xu, J.-F. (2001). Pesticide-Induced Susceptibility of Rice to Brown Planthopper Nilaparvata lugens. *Entomol.Exp.Appl.* 100: 119-

126.

EcoReference No.: 88456
Chemical of Concern: MTM; Habitat: T; Effect Codes: POP,GRO,BCM; Rejection Code: OK TARGET(MTM).

Wu, J.-Y., Chang, P.-A., Li, M., Li, Y.-X., and Li, W. (2003). Effect of Tri-O-Cresyl Phosphate and Methamidophos on 45Ca Uptake by Brain Synaptosomes in Hens. *Pestic.Biochem.Physiol.* 77: 18-23.

EcoReference No.: 88474
Chemical of Concern: MTM; Habitat: T; Rejection Code: NO IN VITRO(MTM).

Wu, Y., Shu, X., Ying, J., Yang, Y., and Wu, J. (1984). Toxic Effects of Methamidophos on Grass Carp (Ctenopharynagodon idellus), Silver Carp (Hypophthalmichthys molitrix) and Nile Tilapia (Tilapia nilotica). *C.A.Sel.-Environ.Pollut.15 (101): 3: (ENG ABS) Huanjing Kexue 5(2):* 1-5 (CHI).

EcoReference No.: 11752
Chemical of Concern: MTM; Habitat: A; Rejection Code: NO FOREIGN(MTM).

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).

Zakia, M. A., Fawzia, A. E., Zakia, A. A. E. K, and Iman, A. E. S. (1990). Alterations in Nucleic Acids, Protein Content and Mitotic Division of Vicia faba Root Tip Cells as Affected by Malathion and Tamaron Insecticides. *Cytologia* 55: 349-355 .

EcoReference No.: 44280
Chemical of Concern: MLN,MTM; Habitat: T; Effect Codes: BCM,CEL,MOR; Rejection Code: NO ENDPOINT(ALL CHEMS).

Zayed, S. M. A. D. and Mahdi, F. M. (1987). Methylation of Guanine In Vivo by the Organophosphorus Insecticide Methamidophos. *Z.naturforsch.* 42C: 17-20.

EcoReference No.: 88596
Chemical of Concern: MTM; Habitat: T; Effect Codes: ACC,CEL,BCM; Rejection Code: NO CONTROL(MTM).

Zhou, P.-J., Shen, H., Lin, J., Song, L.-R., Liu, Y.-D., and Wu, Z.-B. (2004). Kinetic Studies on the Effects of Organophosphorus Pesticides on the Growth of Microcystis aeruginosa and Uptake of the Phosphorus Forms. *Bull.Environ.Contam.Toxicol.* 72: 791-797.

EcoReference No.: 74231
Chemical of Concern: MTM; Habitat: A; Effect Codes: POP,PHY; Rejection Code: NO ENDPOINT(MTM).

Zinkl, J. G., Mack, P. D., Mount, M. E., and Shea, P. J. (1984). Brain Cholinesterase Activity and Brain and Liver Residues in Wild Birds of a Forest Sprayed with Acephate. *Environ.Toxicol.Chem.* 3: 79-88.

EcoReference No.: 39516

Chemical of Concern: ACP,MTM; Habitat: T; Effect Codes: ACC,BCM; Rejection Code: LITE EVAL CODED(ACP),NO SURVEY(MTM).

Zinkl, J. G., Roberts, R. B., Henny, C. J., and Lenhart, D. J. (1980). Inhibition of Brain Cholinesterase Activity in Forest Birds and Squirrels Exposed to Aerially Applied Acephate. *Bull.Environ.Contam.Toxicol.* 24: 676-683.

EcoReference No.: 39518
Chemical of Concern: ACP,MTM; Habitat: T; Effect Codes: PHY,ACC; Rejection Code: NO ENDPOINT(ACP).

METHAMIDOPHOS
Papers that Were Excluded from ECOTOX

Cause-Specific Mortality Among Employees of the Chevron Chemical Company Facility at Richmond With Cover Letter Dated 020884. *Epa/ots; doc #fyi-ax-0284-0295*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

1991). Determination of Insecticides in Water by the Inhibition of Cholinesterase Au - Beutler H-O. *Dechema congress on biotechnology, frankfurt am main, germany, may 1990. Z wasser-abwasser- forsch* 24: 26-29.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS, NO EFFECT.

Did You Know the Health Hazards of Organophosphorus Pesticides? *Ministry of manpower, occupational health department, 18 havelock road #05-01, singapore 059764, republic of singapore, [c2000]. 6p. Illus.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA, HUMAN HEALTH.

1990). In Vitro Inhibition of Acetylcholinesterase by Acephate and Methamidophos. Au - Mohamad Rb. *J plant prot trop* 7: 55-62.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

1992). Pesticide chemicals manufacturing category effluent limitations guidelines, pretreatment standards, and new source performance standards. *Federal Register* 57: 12560-601.
Chem Codes: Chemical of Concern: DZM Rejection Code: NO TOX DATA.

Abdullah, A. R., Bajet, C. M., Matin, M. A., Nhan, D. D., and Sulaiman, A. H. (1997). Ecotoxicology of Pesticides in the Tropical Paddy Field Ecosystem. *Environ.Toxicol.Chem.* 16: 59-70.
Chem Codes: EcoReference No.: 77547
Chemical of Concern: CYP,MTM

Abdullah, W. Y. Wan, Aminuddin, B. Y., and Zulkifli, M (2005). Modelling Pesticide and Nutrient Transport in the Cameron Highlands, Malaysia Agro-Ecosystems. *Water, Air, & Soil Pollution: Focus* 5: 115-123.
Chem Codes: Chemical of Concern: DZM Rejection Code: FATE.

Abou-Donia, M. B. (1995). Organophosphorus Pesticides. *Chang, l. W. And r. S. Dyer (ed.). Neurological disease and therapy, vol. 36. Handbook of neurotoxicology. Xxi+1103p. Marcel dekker, inc.: New york, new york, usa* Basel, switzerland. Isbn 0-8247-8873-7.; 0: 419-473.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Agostini, M. and Bianchin, A. (Acute Renal Failure From Organophospate Poisoning: a Case of Success With Haemofiltration. *Hum exp toxicol. 2003, mar; 22(3):165-7. [Human & experimental toxicology.]: Hum Exp Toxicol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Agu(dieresis)era, A., Contreras, M., Crespo, J., and Ferna(acute)ndez-Alba, A. R. (2002). Multiresidue Method for the Analysis of Multiclass Pesticides in Agricultural Products by Gas Chromatography-Tandem Mass Spectrometry. *Analyst, 127 (3) pp. 347-354, 2002*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Aguera, A., Contreras, M., and Fernandez-Alba, A. R. (1993). Gas Chromatographic Analysis of Organophosphorus Pesticides of Horticultural Concern. *Journal of chromatography a* 655: 293-300.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Aguilera-del Real, A, Valverde-Garcia, A, and Camacho-Ferre, F (1999). Behavior of Methamidophos Residues in Peppers, Cucumbers, and Cherry Tomatoes Grown in a Greenhouse: Evaluation by Decline Curves. *Journal Of Agricultural And Food Chemistry* 47: 3355-3358.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, MODELING.

Ahmad, N., Bugueno, G., Guo, L., and Marolt, R. (1999). Determination of Organochlorine and Organophosphate Pesticide Residues in Fruits, Vegetables and Sediments. *Journal of environmental science and health part b pesticides food contaminants and agricultural wastes* 34: 829-848.
Chem Codes : Chemical of Concern: MTM Rejection Code: METHODS.

Akiyama, Y., Yano, M., Mitsuhashi, T., Takeda, N., and Tsjuji, M. (1996). Simultaneous Determination of Pesticides in Agricultural Products by Solid-Phase Extraction and Gas Chromatography-Mass Spectrometry. *Journal of the food hygienic society of japan* 37: 351-362.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Akiyama, Y., Yoshioka, N., Yano, M., Mitsuhashi, T., Takeda, N., Tsuji, M., and Matsushita, S. (1997). Pesticide Residues in Agricultural Products F.y. 1994-1996. *Journal of the food hygienic society of japan* 38: 381-389.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Al Hussein I Aa, Luebke, M., and Wetzel, T. (1990). Side Effects of Insecticides on Staphylinids (Coleoptera, Staphylinidae) in Winter Wheat Fields. *J appl entomol* 109: 226-232.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Al Hussein Ia, Heyer, W., and Wetzel, T. (1991). Investigations Into the Occurrence of Spiders (Araneae) in Winter Wheat and the Influence of Some Insecticides. *Arch phytopathol pflanzenschutz* 27: 219-228.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Al Hussein Ia, Luebke, M., and Wetzel, T. (1991). Investigations on the Influence of Insecticides on the Density of Activity of Carabid Beetles (Col., Carabidae) in Winter Wheat. *J appl entomol* 112: 499-504.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Al Hussein Ia and Wetzel, T. (1989). Investigations Into the Resistance of the Apple Grain Aphid (Rhopalosiphum Padi) (L.) To Insecticides. *Arch phytopathol pflanzenschutz* 25: 555-562 .
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Al-Rifai, J. and Akeel, N. (1997). Determination of Pesticide Residues in Imported and Locally Produced Honey in Jordan. *Journal of apicultural research* 36: 155-161.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Albertson, T. E. and Cross, C. E. (1993). Pesticides in the Workplace a Worldwide Issue. *Archives of environmental health* 48: 364-365.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Alho, C. Jr and Vieira, L. M. (1997). Fish and Wildlife Resources in the Pantanal Wetlands of Brazil and Potential Disturbances From the Release of Environmental Contaminants. *Environmental toxicology and chemistry* 16: 71-74.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Ali, S., Haq, R., Khaliq, M., and Shakoori, A. R. (1997). Use of Ultra-Violet Spectrophotometry for Determination of Insecticides and Aromatic Hydrocarbon Pollutants. *Punjab university journal of zoology* 12: 31-34.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Ali, S. S., Ali, N. S., Rashid, S., and Shakoori, A. R. (2000). Toxicity of Baythroid Hematological Effects in Growing Chicks of Gallus Domesticus. *Punjab Univ.J.Zool.* 15: 151-160.
Chem Codes: Chemical of Concern: CYF,MTM Rejection Code: MIXTURE.

Ali, S. S., Ali, N. S., Rashid, S., and Shakoori, A. R. (2000). Toxicity of Baythroid Hematological Effects in Growing Chicks of Gallus domesticus. *Punjab Univ.J.Zool.* 15: 151-160.
Chem Codes: Chemical of Concern: CYF,MTM Rejection Code: MIXTURE.

Ali, S. S., Ali, N. S., Rashid, S., and Shakoori, A. R. (2000). Toxicity of Baythroid-Tm: Hematological Effects in Growing Chicks of Gallus Domesticus. *Punjab University Journal of Zoology [Punjab Univ. J. Zool.]. Vol. 15, pp. 151-160. 2000.*
Chem Codes: Chemical of Concern: MTM Rejection Code: MIXTURE.

Ali, S. S., Mujeeb, K. A., Saleem, M. A., Rashid, S., and Shakoori, A. R. (2001). Toxicity of Baythroid on Various Biochemical Components of Blood in Growing Chicks of Gallus domesticus. *Punjab Univ.J.Zool.* 16: 115-125.
Chem Codes: Chemical of Concern: CYF,MTM Rejection Code: MIXTURE.

Ali, S. S., Mujeeb, K. A., Saleem, M. A., Rashid, S., and Shakoori, A. R. (2001). Toxicity of Baythroid on Various Biochemical Components of Blood in Growing Chicks of Gallus domesticus. *Punjab Univ.J.Zool.* 16: 115-125.
Chem Codes: Chemical of Concern: CYF,MTM Rejection Code: MIXTURE.

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.
Chem Codes: Chemical of Concern: DZM Rejection Code: SURVEY.

Allender, W. J., Major, E. J., and Cresswell, G. C. (1992). Measurement of Acephate and Its Principal Metabolites in Leaves by Gas-Liquid Chromatography. *Pestic sci* 35: 91-94.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Altstein, M., Segev, G., Aharonson, N., Ben-Aziz, O., Turniansky, A., and Avnir, D. (1998). Sol-Gel-Entrapped Cholinesterases: a Microtiter Plate Method for Monitoring Anti-Cholinesterase Compounds. *Journal of agricultural and food chemistry* 46: 3318-3324.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Anklam, E., Berg, H., Mathiasson, L., Sharman, M., and Ulberth, F. (1998). Supercritical Fluid Extraction Sef in Food Analysis a Review. *Food additives and contaminants* 15: 729-750.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, METHODS.

Anon (Methamidophos. *In: epa chemical profiles, united states environmental protection agency, washington d.c. 20460, usa, dec. 1985. 4p.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NO SPECIES, NO TOX DATA.

Archer, T. E. and Gauer, W. O. (1985). Residues of 5 Pesticides in Field-Treated Alfalfa Seeds and Alfalfa Sprouts. *J environ sci health part b pestic food contam agric wastes* 20: 445-456.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Archibald, S. O. and Winter, C. K. (1990). Pesticides in Our Food Assessing the Risks. *Winter, c. K., J. N. Seiber and c. F. Nuckton (ed.). Chemicals in the human food chain. Xv+276p. Van nostrand reinhold: florence, kentucky, usa* London, england, uk. Illus. Maps. Isbn 0-442-00421-4.; 0: 1-50.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Armishaw, P. and Millar, R. (A Natural Matrix (Pureed Tomato) Candidate Reference Material Containing Residue Concentrations of Pesticide Chemicals. *Fresenius j anal chem. 2001, jun; 370(2-3):291-6. [Fresenius' journal of analytical chemistry.]: Fresenius J Anal Chem.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, NO TOX DATA.

Arrebola, F. J., Martinez Vidal, J. L., Mateu-Sanchez, M., and Alvarez-Castellon, F. J (2003). Determination of 81 multiclass pesticides in fresh foodstuffs by a single injection analysis using gas chromatography-chemical ionization and electron ionization tandem mass spectrometry. *Analytica Chimica Acta* 484: 167-180.
Chem Codes: Chemical of Concern: TCZ Rejection Code: CHEM METHODS.

Athanasopoulos, Panagiotis E., Pappas, Christos, Kyriakidis, Nikolaos V., and Thanos, A. (2005). Degradation of Methamidophos on Soultanina Grapes on the Vines and During Refrigerated Storage. *Food Chemistry* 91: 235-240.
Chem Codes: Chemical of Concern: MTM Rejection Code: FOOD.

Atkinson, R. (1990). Atmospheric Reaction Pathways and Lifetimes for Organophosphorus Compounds Au - Winer Am. *Kurtz, d. A. (Ed.). Long range transport of pesticides* 195th national meeting of the american chemical society held jointly with the third chemical congress of north america, toronto, ontario, canada, june 1988. Xv+462p. Lewis publishers, inc.: Chelsea, michigan, usa. Illus. Maps. Isbn 0-87371-168-8.; 0: 115-126.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Baker, F. C., Bautista, A. V., Rose, J. E., and Rose, A. F. (1997). Detection of Acephate Metabolites in a Complex Matrix. *213th national meeting of the american chemical society, san francisco, california, usa, april 13-17, 1997. Abstracts of papers american chemical society* 213: Agro 83.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT, METHODS.

BAKER FC, BAUTISTA AV, ROSE JE, and ROSE AF (1997). DETECTION OF ACEPHATE METABOLITES IN A COMPLEX MATRIX. *213TH NATIONAL MEETING OF THE AMERICAN CHEMICAL SOCIETY, SAN FRANCISCO, CALIFORNIA, USA, APRIL 13-17, 1997. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 213* AGRO 83.
Chem Codes: Chemical of Concern: ACP Rejection Code: METHODS.

Baker, G. J. and Kovaliski, J. (1999). Detection of insecticide resistance in Plutella xylostella (L.) (Lepidoptera: Plutellidae) populations in South Australian crucifer crops. *Australian journal of entomology [aust. J. Entomol.]* 38: 132-134.
Chem Codes: Chemical of Concern: MOM Rejection Code: SURVEY.

Balabaskaran, S. and Ganendran, A. (Clinical Significance of Pyridine 2 Aldoxime Methiodide as a Reactivator of Organo Phosphate Inhibited Human Cholin Esterases. *Clin chem; 21 (7). 1975 1020*.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT, HUMAN HEALTH.

Barril, J, Tormo, N, Diaz-Alejo, N, and Vilanova, E (1995). Organophosphorus Inhibition and Heat Inactivation Kinetics of Particulate and Soluble Forms of Peripheral Nerve Neuropathy Target Esterase. *Journal Of Biochemical Toxicology* 10: 211-218.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO, METABOLISM.

Barril, J. and Vilanova, E. (1997). Reversible Inhibition Can Profoundly Mislead Studies on Progressive Inhibition of Enzymes: the Interaction of Paraoxon With Soluble Neuropathy Target Esterase. *Chemico-Biological Interactions* 108: 19-25.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Barril, Jose, Villaamil, Edda, Cespedes, Virtudes, Escudero, Ma. Angeles, Sogorb, Miguel A., and Vilanova, Eugenio (1996). Paraoxon Is a Powerful Reversible Inhibitor of S-Nte and Other Esterases in the Soluble Fraction of Peripheral Nerve. *Toxicology Letters* 88: 10.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Battershill, J. M., Edwards, P. M., and Johnson, M. K. (2004). Toxicological Assessment of Isomeric Pesticides: a Strategy for Testing of Chiral Organophosphorus (Op) Compounds for Delayed Polyneuropathy in a Regulatory Setting. *Food and Chemical Toxicology [Food Chem. Toxicol.]. Vol. 42, no. 8, pp. 1279-1285. Aug 2004.*
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, MODELING.

Beach, E. D., Fernandez-Cornejo, J., Huang, W. Y., and Uri, N. D. (1995). The Potential Risks of Groundwater and Surface Water Contamination by Agricultural Chemicals Used in Vegetable Production. *Journal of environmental science and health part a environmental science and engineering & toxic and hazardous substance control* 30: 1295-1325.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO EFFECT, FATE, HUMAN HEALTH.

Beitz, H., Schmidt, H. H., Hoernicke, E., and Schmidt, H. (Communications From the Federal Biological Institute for Agriculture and Forestry Berlin-Dahlem No. 274. First Results of an Analysis of the Use of Plant Protection Products and Their Ecological Chemical and Toxicological Effects in the Former Gdr. *Beitz, h., H. H. Schmidt, e. Hoernicke and h. Schmidt. Mitteilungen aus der biologischen bundesanstalt fuer land- und forstwirtschaft berlin-dahlem, heft 274. Erste ergebnisse der analyse zur anwendung von pflanzenschutzmitteln und ihren oekologisch-chemischen und toxikologischen auswirkungen in der ehemaligen ddr; (communications from the federal biological institute for agriculture and forestry berlin-dahlem, no. 274. First results of an analysis of the use of plant protection products and their ecological, chemical and toxicological effects in the former gdr). 123p. Kommissionsverlag paul parey: berlin, germany. Illus. Paper. Isbn 3-489-27400-8.; 0 (0). 1991. 123p.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Belisle, A. A. and Swineford, D. M. (1988). Simple Specific Analysis of Organophosphorus and Carbamate Pesticides in Sediments Using Column Extraction and Gas Chromatography. *Environ toxicol chem* 7: 749-752.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Below, S. and Kaempfe, L. (1988). Model Studies of Carbamate Tolerance and Resistance in Rhabditis-Oxycerca De Man 1895 Nematoda. *Arch phytopathol pflanzenschutz* 24: 45-53.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Bentur, Y., Nutenko, I., Tsipiniuk, A., Raikhlin-Eisenkraft, B., and Taitelman, U. (Pharmacokinetics of Obidoxime in Organophosphate Poisoning Associated With Renal Failure. *J toxicol clin toxicol. 1993; 31(2):315-22. [Journal of toxicology. Clinical toxicology.]: J Toxicol Clin Toxicol.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Berry, M. R., Johnson, L. S., Jones, J. W., Rader, J. I., Kendall, D. C., and Sheldon, L. S. (1997). Dietary

Characterizations in a Study of Human Exposures in the Lower Rio Grande Valley: I. Foods and Beverages. *Environment international* 23: 675-692.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Berteau, P. E. and Chiles, R. E. (Studies on the Inhalation Toxicity of Two Phosphoramidothiate Insecticides to Rodents and Quail. *Toxicol. Appl. Pharmacol. 45(1): 232 1978*.
Chem Codes: Chemical of Concern: MTM Rejection Code: INHALE.

Bertolazzi, M., Caroldi, S., Moretto, A., and Lotti, M. (Interaction of Methamidophos With Hen and Human Acetylcholinesterase and Neuropathy Target Esterase. *Arch toxicol. 1991; 65(7):580-5. [Archives of toxicology.]: Arch Toxicol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Bhat, R. V. and Moy, G. G. (1997). Monitoring and Assessment of Dietary Exposure to Chemical Contaminants. *World health statistics quarterly* 50: 132-149.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Blaha, J. J. and Jackson, P. J. (1985). Multiresidue Method for Quantitative Determination of Organophosphorus Pesticides in Foods. *J assoc off anal chem* 68: 1095-1099.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Blasco, R, Moreno, E, Sanz, P, and Repetto, M (1990). In Vitro Modifications of Rat Nte and Other Esterases by Chemicals Which Induce Delayed Neurotoxicity in Vivo. *Veterinary And Human Toxicology* 32: 435-439.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Bleicher, E., Viana, J. M., and Coutinho, R. Sb (1993). Cotton Boll Weevil, Anthonomus Grandis Boheman, 1843 Control With Chemical Products (Coleoptera, Curculionidae). *An soc entomol bras* 2: 91-97.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Bolognesi, C., Merlo, F., Rabboni, R., Roggieri, P., Reggiardo, G., and Abbondandolo, A. (1995). Genotoxic Risk From Occupational Exposure to Pesticides in Floriculture. *Clinical chemistry* 41: 1919-1922.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Bolognesi, Claudia, Landini, Eleonora, Perrone, Emanuela, and Roggieri, Paola (2004). Cytogenetic biomonitoring of a floriculturist population in Italy: micronucleus analysis by fluorescence in situ hybridization (FISH) with an all-chromosome centromeric probe. *Mutation Research* 557: 109-117.
Chem Codes: Chemical of Concern: DZM Rejection Code: HUMAN HEALTH.

Bombosch, S. and Dedek, W. (1994). Integrated Pest Control Against Ips Typographus (L.): Combined Use of Pheromones and the Systemic Insecticide Methamidophos (Ipidex). *Zeitschrift fuer pflanzenkrankheiten und pflanzenschutz* 101: 508-518.

Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Bourgeois, D., Gaudet, J., Deveau, P., and Mallet, V. N. (1993). Microextraction of Organophosphorus Pesticides From Environmental Water and Analysis by Gas Chromatography. *Bull environ contam toxicol* 50: 433-440.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Bowman, B. T. and Sans, W. W. (1983). Further Water Solubility Determinations of Insecticidal Compounds. *J environ sci health part b pestic food contam agric wastes* 18: 221-228.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Brooks, G. T. (1986). Insecticide Metabolism and Selective Toxicity. *Issx (international society for the study of xenobiotics) first european meeting on foreign compound metabolism, malta, italy, 1985. Xenobiotica* 16: 989-1002.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING.

Brouwer, D. H., De Haan M, Leenheers, L. H., De Vreede S Af, and Van Hemmen Jj (1997). Half-Lives of Pesticides on Greenhouse Crops. *Bulletin of environmental contamination and toxicology* 58: 976-984.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, MODELING.

Brown, M. A. and Brix, K. A. (1998). Review of Health Consequences for High-, Intermediate- and Low-Level Exposure to Organophosphorus Nerve Agents. *Journal of applied toxicology* 18: 393-408.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Brunetto, R., Burguera, M., and Burguera, J. L. (Organophosphorus pesticide residues in some watercourses from Merida, Venezuela. *Science of the Total Environment [SCI. TOTAL ENVIRON.], vol. 114, pp. 195-204, 1992*.
Chem Codes: Chemical of Concern: DMT Rejection Code: NO SPECIES.

Brunetto, R., Burguera, M., and Burguera, J. L. (1992). Organophosphorus Pesticide Residues in Some Watercourses From Merida, Venezuela. *Sci total environ* 114: 195-204.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO EFFECT.

Brunetto, Rosario, Burguera, M., and Burguera, J. L. (1992). Organophosphorus pesticide residues in some watercourses from Merida, Venezuela. *The Science of The Total Environment* 114: 195-204.
Chem Codes: Chemical of Concern: DZ Rejection Code: FATE.

Burridge, L. E. and Haya, K. (1987). The Use of a Fugacity Model to Assess Risk to Aquatic Animals of Agricultural Pesticides Uses on Prince Edward Island Canada. *Thirteenth annual aquatic toxicity workshop, moncton, new brunswick, canada, november 12-14, 1986. Can tech rep fish aquat sci* 0: 136-140.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING.

Byrne, C. D. (1988). Selection of Substances Requiring Priority Action. *Richardson, m. L. (Ed.). Risk assessment of chemicals in the environment* Third european conference, guilford, england, uk, july 11-14, 1988. Xxi+579p. Royal society of chemistry: london, england, uk. Illus. Maps. Isbn 0-85186-118-0.; 0: 414-434.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Cabras, P., Angioni, A., Garau, V. L., Pirisi, F. M., Cabitza, F., and Pala, M. (Acephate and Buprofezin Residues in Olives and Olive Oil. *Food addit contam. 2000, oct; 17(10):855-8. [Food additives and contaminants.]: Food Addit Contam*.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Cabras, P., Angioni, A., Melis, M., Minelli, E. V., and Pirisi, F. M. (1997). Simplified Multiresidue Method for the Determination of Organophosphorus Insecticides in Olive Oil. *Journal of chromatography a* 761: 327-331.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Caetano, W., Bertoldo, N., Carlessi, L. R., Heineck, M. A., and Eick, V. L. (1987). Insecticide Assay on Controlling the Empoasca-Kraemeri Ross and Moore 1957 Homoptera Cicadellidae of Bean Crop. *Agron sulriograndense* 23: 103-108.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Cahill, M., Denholm, I., Ross, G., Gorman, K., and Johnston, D. (1996). Relationship Between Bioassay Data and the Simulated Field Performance of Insecticides Against Susceptible and Resistant Adult Bemisia Tabaci (Homoptera: Aleyrodidae). *Bulletin of entomological research* 86: 109-116.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING.

Cairns, T., Chiu, K. S., Navarro, D., and Siegmund, E. (1993). Multiresidue Pesticide Analysis by Ion-Trap Mass Spectrometry. *Rapid communications in mass spectrometry* 7: 971-988.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Camara, A L, Braga, M F, Rocha, E S, Santos, M D, Cortes, W S, Cintra, W M, Aracava, Y, Maelicke, A, and Albuguergue, E X (1997). Methamidophos: an Anticholinesterase Without Significant Effects on Postsynaptic Receptors or Transmitter Release. *Neurotoxicology* 18: 589-602.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Camara, A. L., Braga, M. F. M., Rocha, E. S., Santos, M. D., Cortes, W. S., Cintra, W. M., Aracava, Y., Maelicke, A., and Albuquerque, E. X. (1997). Methamidophos: An Anticholinesterase Without Significant Effects on Postsynaptic Receptors or Transmitter Release. *Neurotoxicology* 18: 589-602.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Camel, V. (1997). The Determination of Pesticide Residues and Metabolites Using Supercritical Fluid Extraction. *Trends in analytical chemistry* 16: 351-369.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Camel, V. (1998). Supercritical Fluid Extraction as a Useful Method for Pesticides Determination. *Analusis* 26: M99-m111.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Carazo, Elizabeth, Constenla, Manuel A., Fuentes, Gilbert, and Moza, Pran Nath (1984). Studies of Methamidophos-C-14 in Costa Rican Vegetables and Soils. *Chemosphere* 13: 939-946.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Carbonell, E., Valbuena, A., Xamena, N., Creus, A., and Marcos, R. (1995). Temporary Variations in Chromosomal Aberrations in a Group of Agricultural Workers Exposed to Pesticides. *Mutation research* 344: 127-134.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Casida, J. E. (1998). ORGANOPHOSPHORUS INSECTICIDE TOXICOLOGY. *Crisp Data Base National Institutes Of Health*.
Chem Codes: Chemical of Concern:DMT Rejection Code: chicken/CRISP/DNA damage/environmental toxicology/Esterase/human subject/insecticide biological effect/laboratory mouse/laboratory rat/neurotoxicology/organophosphorus insecticide/phlebotomy/Phosphine/Radiotracer/RPROJ/tissue /cell culture/toxin metabolism/NO TOX DATA.

Castellari, P. L. (1988). Studies on the Leaf Rollers Pandemis-Cerasana Hb. Equals Pandemis-Ribeana Hb. Archips-Podanus Scop. Archips-Rosanus L. And Argyrotaenia-Pulchellana Haw. Lepidoptera Tortricidae and a Method to Control Them. *Boll ist entomol univ stud bologna* 42: 139-174.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Castillo, L. E., De, L. A. Cruz E, and Ruepert, C. (1997). Ecotoxicology and Pesticides in Tropical Aquatic Ecosystems of Central America. *Environmental toxicology and chemistry* 16: 41-51.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Castro, N. G., Santos, M. D., Camara, A. L., Almeida, L. Ef, Braga, M. Fm, Cintra, W. M., Aracava, Y., and Albuquerque, E. X. (1996). METHAMIDOPHOS BUT NOT ALDICARB IS A PURE CHOLINESTERASE INHIBITOR. *26th Annual Meeting of the Society for Neuroscience, Washington, D.c., Usa, November 16-21, 1996. Society for Neuroscience Abstracts* 22 : 1265.
Chem Codes: Chemical of Concern: ADC Rejection Code: ABSTRACT.

Castro, N. G., Santos, M. D., Camara, A. L., Almeida, L. Ef, Braga, M. Fm, Cintra, W. M., Aracava, Y., and Albuquerque, E. X. (1996). Methamidophos but Not Aldicarb Is a Pure Cholinesterase Inhibitor. *26th annual meeting of the society for neuroscience, washington, d.c., Usa, november 16-21, 1996. Society for neuroscience abstracts* 22: 1265.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT.

CHAE MY, POSTULA JF, and RAUSHEL FM (1994). Stereospecific enzymatic hydrolysis of phosphorus-sulfur bonds in chiral organophosphate triesters. *BIOORGANIC & MEDICINAL CHEMISTRY LETTERS; 4* 1473-1478.
Chem Codes: Chemical of Concern: ACP Rejection Code: NO TOX DATA.

Chae, Myeong Yun, Postula, Joseph F., and Raushel, Frank M. (1994). Stereospcific enzymatic hydrolysis of phosphorus-sulfur bonds in chiral organophosphate triesters. *Bioorganic & Medicinal Chemistry Letters* 4: 1473-1478.
Chem Codes: Chemical of Concern: ACP Rejection Code: NO TOX DATA.

Chae, Myeong Yun, Postula, Joseph F., and Raushel, Frank M. (1994). Stereospcific Enzymatic Hydrolysis of Phosphorus-Sulfur Bonds in Chiral Organophosphate Triesters. *Bioorganic & Medicinal Chemistry Letters* 4: 1473-1478.
Chem Codes: Chemical of Concern: MTM Rejection Code: BACTERIA, METABOLISM.

Chan, T. Y. (Vegetable-Borne Methamidophos Poisoning. *J toxicol clin toxicol. 2001; 39(4):337-8. [Journal of toxicology. Clinical toxicology.]: J Toxicol Clin Toxicol.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Chan, T. Y. and Critchley, J. A. (The Spectrum of Poisonings in Hong Kong: an Overview. *Vet hum toxicol. 1994, apr; 36(2):135-7. [Veterinary and human toxicology.]: Vet Hum Toxicol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Chan, T. Y. K. and Critchley JAJH (1996). An Estimate of the Incidence of Pesticide Poisoning in Hong Kong. *Veterinary and Human Toxicology [VET. HUM. TOXICOL.]. Vol. 38, no. 5, pp. 362-364. Oct 1996.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Chan, T. Yk (1998). Childhood Poisoning: the Scope for Prevention. *Veterinary and human toxicology* 40: 361-363.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Chan, T. Yk, Critchley, J. A Jh, and Chan, A. Yw (1996). An Estimate of the Incidence of Pesticide Poisoning in Hong Kong. *Veterinary and human toxicology* 38: 362-364.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Chellemi, D. O., Olson, S. M., Vandekerckhove, G. A., and Funderburk, J. E. (1994). Impact of Insecticides on the Temporal and Spatial Dynamics of Flower-Inhabiting Thrips and Tomato Spotted Wilt Virus. *Annual meeting of the american phytopathological society, albuquerque, new mexico, usa, august 6-10, 1994. Phytopathology* 84: 1073.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT.

Chen, Dan, Shi, Nian, Li, Tao, and Wang, Bin (2004). The Toxic Effect of Methamidophos and Acephate on Intracellular Free Ca2+ and Camp Concentration in Rat Brain Tissue. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi = Zhonghua Laodong Weisheng Zhiyebing Zazhi = Chinese Journal Of Industrial Hygiene And Occupational Diseases* 22: 279-280.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, IN VITRO.

Chen, H H, Sirianni, S R, and Huang, C C (1982). Sister-Chromatid Exchanges and Cell-Cycle Delay in Chinese Hamster V79 Cells Treated With 9 Organophosphorus Compounds (8 Pesticides and 1 Defoliant). *Mutation Research* 103: 307-313.

Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Chen, H. H., Sirianni, S. R., and Huang, C. C. (Sister Chromatid Exchanges in Chinese Hamster Cells Treated With Seventeen Organophosphorus Compounds in the Presence of a Metabolic Activation System. *Environmental mutagenesis, vol. 4, no. 5, pages 621-624, 9 references, 19821982*.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Chen, S., Zhang, Z., He, F., Yao, P., Wu, Y., Sun, J., Liu, L., and Li, Q. (1991). An Epidemiological Study on Occupational Acute Pyrethroid Poisoning in Cotton Farmers. *Br j ind med* 48: 77-81.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Chen, W. Y., Su, S. J., and Lu, S. T. (1990). Chemical Control of Tobacco Powdery Mildew in Field. *Bull taiwan tob res inst taiwan tob wine monop bur* 0: 47-52.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Chester, G., Adam, A. V., Inkmann Koch, A., Litchfield, M. H., and Tuinman, C. P. (Field Evaluation of Protective Equipment for Pesticide Operators in a Tropical Climate. *Medicina del lavoro nov.-Dec. 1990, vol.81, No.6, P.480-488. 3 ref.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, NO TOX DATA.

Chou, C. P., Wong, S. S., and Chien, H. P. (1998). Comparison of the Methamidophos Residues on the Cabbages. *Plant protection bulletin (taichung)* 40: 89-93.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Clegg, D. J. (Animal Reproduction and Carcinogenicity Studies in Relation to Human Safety Evaluation. *Dev toxicol environ sci 4:45-59,1979: DEV TOXICOL ENVIRON SCI*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Close, M. E. (1993). Assessment of Pesticide Contamination of Groundwater in New Zealand: 1. Ranking of Regions for Potential Contamination. *N z j mar freshwater res* 27: 257-266.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Cohen, S., Svrjcek, A., Durborow, T., and Barnes, N. L. (1999). Water Quality Impacts by Golf Courses. *Journal of environmental quality* 28: 798-809.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, NO EFFECT.

Cole, D. C., Carpio, F., Julian, J., and Leon, N. (1998). Assessment of Peripheral Nerve Function in an Ecuadorian Rural Population Exposed to Pesticides. *Journal of toxicology and environmental health part a* 55: 77-91.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Cole, D. C., Carpio, F., Julian, J., Leon, N., Carbotte, R., and De Almeida H (1997). Neurobehavioral Outcomes Among Farm and Nonfarm Rural Ecuadorians. *Neurotoxicology and teratology* 19: 277-286.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Comm Pestic Formulation Disinfect Usa (1991). General Referee Reports Committee on Pesticide Formulations and Disinfectants 104th Aoac Annual International Meeting New Orleans Louisiana Usa September 9-13 1990. *J assoc off anal chem* 74: 107-110.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Comm Residues (1993). General Referee Reports Committee on Residues Aoac International Annual Meeting Cincinnati Ohio Usa August 31-September 2 1992. *J aoac (assoc off anal chem) int* 76: 142-149.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Cook, J., Engel, M., Wylie, P., and Quimby, B. (1999). Multiresidue Screening of Pesticides in Foods Using Retention Time Locking, Gc-Aed, Database Search, and Gc-Ms Identification. *Journal of aoac international* 82: 313-326.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

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.
Chem Codes: Chemical of Concern: DZM Rejection Code: NO TOX DATA.

Copeland, A. R. (1988). Organophosphate Related Fatalities a Violational Biohazard. *Forensic sci int* 39: 155-162.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Coulibaly, K. and Jeon, I. J. (1996). An Overview of Solid-Phase Extraction of Food Flavor Compounds and Chemical Residues. *Food reviews international* 12: 131-151.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, METHODS.

Crisp, C E and Look, M (1982). Effect of Esterification and Side-Chain Alkylation on Alteration of Translocation Characteristics of Methamidophos. *Xenobiotica; The Fate Of Foreign Compounds In Biological Systems* 12: 469-479.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Dai Jianchang, Zhao Jinnian, Zhang Guoxian, Chen Xingzhi, Wu Zhongliang, and Bao Lifang (1998). Study on the Chemical Control of Monochamus Alternatus. *Forest research* 11: 412-416.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Dai Jiayin, Zheng Weiyun, and Wang Shuhong (1997). Joints Toxicities of Heavy Metals and Pesticides to Pagrosomus Major and Rhabdosargus Sarba Larvae. *Huanjing kexue* 18: 44-46, 54, 93-94.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Dai, Y. (1991). The Preventive and Curing Effect of Insecticide "Baichongdi" Compound Made of Natural Substances on Paddy Rice Insects. *Acta sci nat univ norm hunanensis* 14: 340-345.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Davies, J. E. (Changing Profile of Pesticide Poisoning. *New england journal of medicine, vol. 316, no. 13, pages 807-808, 9 references, 19871987*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Davies, J. E. (1990). Neurotoxic Concerns of Human Pesticide Exposures. *Technical workshop of the conference on agricultural occupational and environmental health: policy strategies for the future, iowa city, iowa, usa* Des moines, iowa, usa, september 17-30, 1988. Am j ind med; 18: 327-332.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Davila, G. H. (1987). Regional Program on Chemical Safety Rpcs Document Presented to the Xxii Pan American Sanitary Conference. *Pan am health organ environ ser* 0: I-iv, 1-36.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Davis, A. C., Bourke, J. B., and Kuhr, R. J. (Disappearance of Monitor Residues From Cole Crops. *J. Econ. Entomol. 67(6): 766-768* 1974.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

De Haro, L., Arditti, J., David, J. M., and Jouglard, J. ([Methamidophos Intoxication: Immediate and Late Neurological Toxicity; Two Case Reports]. *Acta clin belg suppl. 1999; 1:64-7. [Acta clinica belgica. Supplementum.]: Acta Clin Belg Suppl*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

de Jong, L P, Wolring, G Z, and Benschop, H P (1982). Reactivation of Acetylcholinesterase Inhibited by Methamidophos and Analogous (Di)Methylphosphoramidates. *Archives Of Toxicology* 49: 175-183.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM, IN VITRO.

De Oliveira Marques, P. R., Nunes, G. S., Dos Santos, T. C., Andreescu, S., and Marty, J. L. (Comparative Investigation Between Acetylcholinesterase Obtained From Commercial Sources and Genetically Modified Drosophila Melanogaster: Application in Amperometric Biosensors for Methamidophos Pesticide Detection. *Biosens bioelectron. 2004, nov 1; 20(4):825-32. [Biosensors & bioelectronics.]: Biosens Bioelectron*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Dedek, W, Grahl, R, Mothes, B, and Schwarz, H (1986). Degradation and Excretion of 32p-Methamidophos After Oral Administration in Lactating Cattle. *Archiv Fur Experimentelle Veterinarmedizin* 40: 621-626.
Chem Codes: Chemical of Concern: MTM Rejection Code: CHEM METABOLISM.

Dedek, W., Pape, J., and Koerner, H. J. (Environmentally Safe Control of Ips-Typographus by Combining Pheromones With the Systemic Insecticide Methamidophos Using the Sapstream Method on Spruce. *Wulf, a. And r. Kehr (ed.). Mitteilungen aus der biologischen bundesanstalt fuer land- und forstwirtschaft berlin-dahlem, heft 267. Borkenkaefer-gefahren nach sturmschaeden: moeglichkeiten und grenzen einer integrierten bekaempfung; (communications from the federal biological institute for agriculture and forestry, berlin-dahlem, no. 267. Bark beetle hazards following storm damage: possibilities and limits of integrated control); colloquium,*

braunschweig, germany, october 30-31, 1990. 227p. Biologische bundesanstalt fuer land- und forstwirtschaft berlin-dahlem: berlin, germany. Illus. Paper. Isbn 3-489-26700-1.; 0 (0). 1991. 118-125.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Dedek, W., Wenzel, K. D., Luft, F., Oberlaender, H., and Mothes, B. (1987). Preconcentration of Hydrophilic Pesticides From Aqueous Solutions and Extraction of Residues Using the Polymeric Sorbent Wofatit Y77 I. Preconcentration of Hydrophilic Pesticides From Water. *Fresenius z anal chem* 328: 484-486.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Dedek, W., Wenzel, K. D., Oberlaender, H., Mothes, B., and Maennig, J. (1991). Preconcentration of hydrophilic and hydrophobic pesticides from aqueous solutions and extraction of residues using the polymeric sorbent Wofatit Y 77: II. Extension of the studies to hydrophobic pesticides: Aqueous extraction of pesticides from plant material and soil. *Fresenius' J Anal Chem* 339 : 201-206.
Chem Codes: Chemical of Concern: SZ ,DMT Rejection Code: SURVEY.

Dedek, W., Wenzel, K. D., Oberlaender, H., Mothes, B., and Maennig, J. (1991). Preconcentration of Hydrophilic and Hydrophobic Pesticides From Aqueous Solutions and Extraction of Residues Using the Polymeric Sorbent Wofatit Y 77: Ii. Extension of the Studies to Hydrophobic Pesticides: Aqueous Extraction of Pesticides From Plant Material and Soil. *Fresenius' j anal chem* 339: 201-206.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Del Bene G and Rumine, P. (Chromotropic Traps as Monitoring Tools for Liriomyza-Trifolii Burgess Diptera Agromyzidae and Its Biological Behavior in Greenhouses. *Redia; 68 (0). 1985 (recd. 1987). 177-188.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Di Angelantonio, Silvia, Bernardi, Giorgio, and Mercuri, Nicola B (2004). Donepezil Modulates Nicotinic Receptors of Substantia Nigra Dopaminergic Neurones. *British Journal Of Pharmacology* 141: 644-652.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Di Angelantonio, Silvia, Bernardi, Giorgio, and Mercuri, Nicola B (2004). Methamidophos Transiently Inhibits Neuronal Nicotinic Receptors of Rat Substantia Nigra Dopaminergic Neurons Via Open Channel Block. *Neuroscience Letters* 369: 208-213.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO, METABOLISM.

Di, H. J. and Aylmore, L. Ag (1997). Modeling the Probabilities of Groundwater Contamination by Pesticides. *Soil science society of america journal* 61: 17-23.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Dierksmeier, G. (1996). Pesticide Contamination in the Cuban Agricultural Environment. *Trends in analytical chemistry* 15: 154-159.
Chem Codes: Chemical of Concern: MTM Rejection Code: SURVEY.

Dieter, H. H. (1992). German Drinking Water Regulations Pesticides and Axiom of Concern. *Environ manage* 16: 21-32.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Dikshit, A. K., Handa, S. K., and Verma, S. (1986). Residues of Methamidophos and Effect of Washing and Cooking in Cauliflower Brassica-Oleracea-Var-Botrytis Cultivar Snowball Cabbage Brassica-Oleracea-Var-Capitata Cultivar Early-Drum-Head and Indian Colza Brassica-Napus-Var-Glauca Cultivar Pusa-Bold. *Indian j agric sci* 56: 661-666.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Dillard, H. R., Wicks, T. J., and Philip, B. (1993). A Grower Surgery of Diseases, Invertebrate Pests, and Pesticide Use on Potatoes Grown in Australia. *Australian journal of experimental agriculture* 33: 653-661.
Chem Codes: Chemical of Concern: MTM Rejection Code: SURVEY.

Dogheim, S. M., Mohamed, E. Z., Alla, S. Ag, El-Saied, S., Emel, S. Y., Mohsen, A. M., and Fahmy, S. M. (1996). Monitoring Of Pesticide Residues In Human Milk, Soil, Water, And Food Samples Collected From Kafr El-Zayat Governorate. 79: 111-116.
Chem Codes: Chemical of Concern: CHLOR ,DMT Rejection Code: CHEM METHOD.

Dogheim, S. M., Mohamed, E. Z., Alla, S. Ag, El-Saied, S., Emel, S. Y., Mohsen, A. M., and Fahmy, S. M. (1996). Monitoring of Pesticide Residues in Human Milk, Soil, Water, and Food Samples Collected From Kafr El-Zayat Governorate. *Journal of aoac international* 79: 111-116.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Doong, R. A. and Chang, W. H. (1998). Photoassisted Iron Compound Catalytic Degradation of Organophosphorous Pesticides With Hydrogen Peroxide. *Chemosphere* 37: 2563-2572.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE, METHODS.

Doong, Ruey-an and Chang, Wen-huei (1998). Photoassisted Iron Compound Catalytic Degradation of Organophosphorous Pesticides With Hydrogen Peroxide. *Chemosphere* 37: 2563-2572.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Dourson, M. L. and Lu, F. C. (1995). Safety/Risk Assessment of Chemicals Compared for Different Expert Groups. *Biomedical and environmental sciences* 8: 1-13.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Dowla, H. A., Panemangalore, M. *., and Byers, M. E. (1996). Comparative inhibition of enzymes of human erythrocytes and plasma in vitro by agricultural chemicals. *Archives of Environmental Contamination and Toxicology. Vol. 31, no. 1, pp. 107-114. Jul 1996.*
Chem Codes: Chemical of Concern: NCTN Rejection Code: HUMAN HEALTH.

Dowla, H. A., Panemangalore, M., and Byers, M. E. (Comparative Inhibition of Enzymes of Human Erythrocytes and Plasma in Vitro by Agricultural Chemicals. *Archives of environmental contamination and toxicology, vol. 31, no. 1, pages 107-114, 33 references, 1996*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, IN VITRO.

Dowling, K. C. and Lemley, A. T. (1991). Evaluation of Organophosphate Insecticide Hydrolytic Detoxification by Conventional Means and Reactive Ion Exchange. *Fourth chemical congress of north america, new york, new york, usa, august 25-30, 1991. Abstr pap am chem soc* 202: Agro 124.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Dowling, K C and Lemley, A T (1995). Organophosphate Insecticide Degradation by Non-Amended and Cupric Ion-Amended Fenton's Reagent in Aqueous Solution. *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 30: 585-604.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Dowling, K. C. and Lemley, A. T. (1992). Susceptibility of Organophosphorous Insecticides to Degradation by Cupric and Ferrous-Ferric Ion Systems. *203rd acs (american chemical society) national meeting, san francisco, california, usa, april 5-10, 1992. Abstr pap am chem soc* 203: Agro116.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE, METHODS.

Drescher, W. and Fiedler, L. (1983). Method for Identification of Residues of the Insecticides Acephate Dimethoate Methamidophos and Omethoate in Small Amounts of Nectar. *Chemosphere* 12: 1605-1610.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Drescher, Wilhelm and Fiedler, Lothar (1983). Methode zum nachweis von ruckstanden der insektizide acephat, dimethoat, methamidophos und omethoat in kleinen nektarmengen. *Chemosphere* 12: 1605-1610.
Chem Codes: Chemical of Concern: ACP Rejection Code: NON-ENGLISH.

Drescher, Wilhelm and Fiedler, Lothar (1983). Methode Zum Nachweis Von Ruckstanden Der Insektizide Acephat, Dimethoat, Methamidophos Und Omethoat in Kleinen Nektarmengen. *Chemosphere* 12: 1605-1610.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Eatock, R. A. and Ruesch, A. (1997). Developmental Changes in the Physiology of Hair Cells. *Seminars in cell & developmental biology* 8: 265-275.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Ebing, W. (Communications From the Federal Biological Institute for Agriculture and Forestry Berlin-Dahlem No. 236. Gas Chromatography of Pesticides Tabular Literature Abstracts Series Xv. *Ebing, w. Mitteilungen aus der biologischen bundesanstalt fuer land- und forstwirtschaft berlin-dahlem, heft 236. Gaschromatographie der pflanzenschutzmittel: tabellarische literaturreferate: xv; (communications from the federal biological institute for agriculture and forestry berlin-dahlem, no. 236. Gas chromatography of pesticides: tabular literature abstracts: series xv). 30p. Kommissionsverlag paul parey: berlin, west germany. Illus. Paper. Isbn 3-489-23600-9.; 0 (0). 1987. 30p. Ab - biosis copyright: biol abs. Rrm book.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Ecobichon, D. J. and Joy, R. M. (1994). Pesticides and Neurological Diseases 2nd Edition. *Ecobichon, d. J. And r. M. Joy. Pesticides and neurological diseases, 2nd edition. Xi+381p. Crc press, inc.: Boca raton, florida, usa* London, england, uk. Isbn 0-8493-4361-5.; 0: Xi+381p.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Edelmann, B., Dedek, W., Weil, L., and Niessner, R. (1992). Preconcentration of Insecticides in Water Using the New Polymeric Sorbent Wofatit Y77. *13th international conference on biochemical analysis, munich, germany, may 5-8, 1992. Fresenius' j anal chem* 343: 148-149.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Edmiston, S. and Maddy, K. T. (1987). Summary of Illnesses and Injuries Reported in California Usa by Physicians in 1986 as Potentially Related to Pesticides. *Vet hum toxicol* 29: 391-397.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Edwards, C. A. and Bohlen, P. J. (1992). The Effects of Toxic Chemicals on Earthworms. *Ware, g. W. (Ed.). Reviews of environmental contamination and toxicology, vol. 125. Ix+186p. Springer-verlag new york, inc.: New york, new york, usa* Berlin, germany. Illus. Maps. Isbn 0-387-97762-7; isbn 3-540-97762-7.; 0: 23-99.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Edwards, P. J. and Coulson, J. M. (1992). Choice of Earthworm Species for Laboratory Tests. *In: P.W.Greig-Smith et al.(Eds.), Ecotoxicology of Earthworms, Intercept Ltd.Hants, UK* 36-43.
Chem Codes: Chemical of Concern: MTM Rejection Code: REFS CHECKED/REVIEW.

Egea Gonz&Aacute, Lez, F. J., Mart&Iacute, Nez Vidal, J. L., Castro Cano, M. L., Mart&Iacute , and Nez Galera, M. (Levels of Metamidophos in Air and Vegetables After Greenhouse Applications by Gas Chromatography. *J chromatogr a. 1998, dec 31; 829(1-2):251-8. [Journal of chromatography. A.]: J Chromatogr A.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Egea Gonzalez, F. J., Martinez Vidal, J. L., Castro Cano, M. L., and MartinezGalera, M. (1998). Levels of Metamidophos in Air and Vegetables After Greenhouse Applications by Gas Chromatography. *Journal of Chromatography A, 829 (1-2) pp. 251-258, 1998.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Egea Gonzalez Fj, Martinez Bidal Jl, Castro Cano Ml, and Martinez Galera M (1998). Levels of Metamidophos in Air and Vegetables After Greenhouse Applications by Gas Chromatography. *Journal of chromatography a* 829: 251-258.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Elhanany, E., Ordentlich, A., Dgany, O., Kaplan, D., Segall, Y., Barak, R., Velan, B., and Shafferman, A. (Resolving Pathways of Interaction of Covalent Inhibitors With the Active Site of Acetylcholinesterases: Maldi-Tof/Ms Analysis of Various Nerve Agent Phosphyl Adducts. *Chem res toxicol. 2001, jul; 14(7):912-8. [Chemical research in toxicology.]: Chem Res Toxicol.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, METABOLISM.

Elliott, J E., Wilson, L. K., Langelier, K. M., Mineau, P., and Sinclair, P. H. (1997). Secondary Poisoning

of Birds of Prey by the Organophosphorus Insecticide, Phorate. *Ecotoxicology* 6: 219-231.
Chem Codes: Chemical of Concern: PRT,MTM Rejection Code: NO CONC/NO DURATION/SURVEY.

Elliott, M. (1980). The Future for Insecticides. *Locke, m. And d. S. Smith (ed.). Insect biology in the future: "vbw 80". Xv+977p. Academic press, inc.: New york, n.y., Usa* London, england. Illus. Isbn 0-12-454340-5.; 0: P879-904.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Endo, S. (1997). Differences in Insecticide Susceptibility Between Adult and Larval Cnaphalocrocis Medinalis Guenee (Lepidoptera: Pyralidae). *Japanese journal of applied entomology and zoology* 41: 27-31.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Eray, D., Kamer, U. M., and Ozden, A. (1995). Organophosphate-Induced Delayed Polyneuropathy. *Journal of tropical pediatrics* 41: 189.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

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.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Erney, D. R. (1995). Determination of Organophosphorus Pesticides in Whole-Chocolate-Skim-Milk and Infant Formula Using Solid-Phase Extraction With Capillary Gas Chromatography-Flame Photometric Detection. *Hrc journal of high resolution chromatography* 18: 59-62.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Erney, D. R. and Poole, C. F. (1993). A Study of Single Compound Additives to Minimize the Matrix Induced Chromatographic Response Enhancement Observed in the Gas Chromatography of Pesticide Residues. *Hrc (journal of high resolution chromatography)* 16: 501-503.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Erney, D. R., Poole, C. F., and Pawlowski, T. M. (1997). Matrix-Induced Peak Enhancement of Pesticides in Gas Chromatography: Is There a Solution? *Hrc journal of high resolution chromatography* 20: 375-384.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Espigares, M., Coca, C., Fernandez-Crehuet, M., Moreno, O., Bueno, A., and Galvez, R. (1997). Pesticide Concentrations in the Waters From a Section of the Guadalquivir River Basin, Spain. *Environmental toxicology and water quality* 12: 249-256.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO EFFECT.

Espinosa, Pedro J, Contreras, Josefina, Quinto, Vicente, Gravalos, Carolina, Fernandez, Esther, and Bielza, Pablo (2005). Metabolic Mechanisms of Insecticide Resistance in the Western Flower Thrips, Frankliniella Occidentalis (Pergande). *Pest Management Science* 61: 1009-1015.
Chem Codes: Chemical of Concern: MTM Rejection Code: MIXTURE, METABOLISM.

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.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Eto, M. (1990). Biochemical Mechanisms of Insecticidal Activities. *Bahadir, m., P. Boeger, h. Buchenauer, m. Eto, m. A. Q. Khan, g. Pfister and g. Sandmann. Chemistry of plant protection, vol. 6. Controlled release, biochemical effects of pesticides, inhibition of plant pathogenic fungi. Ix+312p. Springer-verlag: berlin, west germany* New york, new york, usa. Illus. Isbn 3-540-51316-7; isbn 0-387-51316-7.; 0: 65-108.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Eto, M. (1997). Functions of Phosphorus Moiety in Agrochemical Molecules. *Bioscience biotechnology and biochemistry* 61: 1-11.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Eto, Morifusa, Okabe, Sachiko, Ozoe, Yoshihisa, and Maekawa, Kazuyuki (1977). Oxidative Activation of O,S-Dimethyl Phosphoramidothiolate. *Pesticide Biochemistry and Physiology* 7: 367-377.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Etter, G. E. and Tissier, J. (Insecticidal Properties of 2 New Phosphoramidothioates: Re 9006 and Re 12420. *Meded fac landbouwwet rijksuniv gent; 38 (3 (part 2)). 1973 (recd 1974) 1145-1166*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Fan, A. M. and Jackson, R. J. (1989). Pesticides and Food Safety. *Regul toxicol pharmacol* 9: 158-174.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

FAO and World Health Organization (1986). Methamidophos. *In: FAO Plant Production and Protection Paper* 72: 103-115.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Feng, H. T. (1986). Relative Toxicity of Several Insecticides to the Green Peach Aphid Myzus-Persicae and the Turnip Aphid Lipaphis-Erysimi. *Plant prot bull* 28: 163-170.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Fernandes, M. D. and Queiroz, M. Ls (1999). Measurement of the Respiratory Burst and Chemotaxis in Polymorphonuclear Leukocytes From Anti-Che Insecticides-Exposed Workers. *Immunopharmacology and immunotoxicology* 21: 621-633.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Fernandes, O. A., Busoli, A. C., and Osakabe, M. (1987). Vegetable Leafminer Liriomyza-Sp Milk 1894 Diptera Agromyzidae Control in Watermelon Crop Citrullus-Lanatus Schrad. *Cientifica (jaboticabal)* 15: 93-100.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Fernandez-Alba, A. R., Aguera, A., Contreras, M., Penuela, G., Ferrer, I., and Barcelo, D. (1998). Comparison of Various Sample Handling and Analytical Procedures for the Monitoring of Pesticides and Metabolites in Ground Waters. *Journal of chromatography a* 823: 35-47.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Fila, F. and Schiessendoppler, E. (1989). Studies on the Correlation Between the Degradation of Systemic Insecticides and Their Efficacy Against Vectors. *Pflanzenschutzberichte* 50: 64-81.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Finizio, A., Vighi, M., and Sandroni, D. (1997). Determination of N-Octanol/Water Partition Coefficient (Kow) of Pesticide Critical Review and Comparison of Methods. *Chemosphere* 34: 131-161.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, METHODS.

Finkelman, J. (1996). Chemical Safety and Health in Latin America an Overview. *Science of the total environment* 188: S3-s29.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Fischer, Reiner, Erdelen, Christoph, and Bretschneider, Thomas (20011004). Synergistic insecticidal and acaricidal compositions containing dihydrofuranone derivatives. 49 pp.
Chem Codes: Chemical of Concern: SPM Rejection Code: CHEM METHODS.

Fitzpatrick, G E and Bogan, M D (1980). Residue Dynamics of Acephate and Methamidophos in Urban Dooryard Citrus Foliage, Pompano Beach, Florida--August-September 1978. *Pesticides Monitoring Journal* 14: 3-6.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Focht, D. D. and Joseph, H. (Microbial Activity in Soils Treated With Acephate and Monitor. *J. Environ. Qual. 3(4): 327-328* 1974..
Chem Codes: Chemical of Concern: MTM Rejection Code: BACTERIA.

Fodor-Csorba, K. (1992). Chromatographic Methods for the Determination of Pesticides in Foods. *J chromatogr* 624: 353-367.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, METHODS.

Foerster, L. A. and Matioli, J. C. (Insecticide Lures and Chemical Control of the Soybean Stem Borer Epinotia-Aporema Walsingham 1914 Lepidoptera Tortricidae. *An soc entomol bras; 15 (2). 1986 (recd. 1987). 361-370.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Font, G., Manes, J., Molto, J. C., and Pico, Y. (1993). Solid-Phase Extraction in Multi-Residue Pesticide Analysis of Water. *J chromatogr* 642: 135-161.
Chem Codes: Chemical of Concern: MTM Rejection Code: CHEM METHODS.

Frank, R., Braun, H. E., Suda, P., Ripley, B. D., Clegg, B. S., Beyaert, R. P., and Zilkey, B. F. (1987). Pesticide Residues and Metal Contents in Flue-Cured Tobacco and Tobacco Soils of Southern

Ontario Canada 1980-85. *Tob sci* 31: 40-45.
Chem Codes: Chemical of Concern: MTM Rejection Code: FOOD.

Frank, R. and Logan, L. (1988). Pesticide and Industrial Chemical Residues at the Mouth of the Grand Saugeen and Thames Rivers Ontario Canada 1981-1985. *Arch environ contam toxicol* 17: 741-754.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO SPECIES.

Frank, R., Logan, L., and Clegg, B. S. (1991). Pesticide and Polychlorinated Biphenyl Residues in Waters at the Mouth of the Grand, Saugeen, and Thames Rivers, Ontario, Canada, 1986-1990. *Arch environ contam toxicol* 21: 585-595.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO EFFECT.

Freitas Junior Jb and Rigitano, R. L Do (1994). Dissipation of Methamidophos Residues on/in Tomato Fruits (Lycopersicon Esculentum Mill). *Ciencia e pratica* 18: 37-41.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, FATE.

Fuh, C. Bor and Wu, M. L. (1999). Impurity Analysis of Methamidophos With Chromatographic Methods. *Analytica chimica acta* 395: 257-263.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Fukuto, T. R. (1985). A Trojan Horse for Pests How to Turn Chemicals That Pests Eat Into Ones That Eat Pests. *Chemtech* 15: 362-367.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

G&Uuml, Ven, M., Bayram, F., Unl&Uuml, Hizarci, K., Kele&#351, and Timur, F. (Endocrine Changes in Patients With Acute Organophosphate Poisoning. *Hum exp toxicol. 1999, oct; 18(10):598-601. [Human & experimental toxicology.]: Hum Exp Toxicol*.
Chem Codes : Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

G&Uuml, Ven, M., Unl&Uuml, Hizarci, K., G&Ouml , Kta&#351, Z, Kurto&#287, and Lu, S. (Intravenous Organophosphate Injection: an Unusual Way of Intoxication. *Hum exp toxicol. 1997, may; 16(5):279-80. [Human & experimental toxicology.]: Hum Exp Toxicol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Gabrielides, G. P. (1995). Pollution of the Mediterranean Sea. *Water science and technology* 32: 1-10.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO EFFECT.

Gandrass, J., Bormann, G., and Wilken, R. D. (1995). N-P-Pesticides in the Czech and Germ Part of the River Elbe-Analytical Methods and Trends of Pollution. *Fresenius' journal of analytical chemistry* 353: 70-74.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Garcia-Repetto, R., Soria, M. L., Gimenez, M. P. , Menendez, M., and Repetto, M. (1998). Deaths From Pesticide Poisoning in Spain From 1991 to 1996. *Veterinary and human toxicology* 40: 166-168.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Garrido Frenich, A., Martinez Vidal, J. L., Pablos Espada, M. C., Gil Garcia, M. D., and Arrebola, F. J. (2000). Comparison of gas chromatography with NPD, MS, and tandem MS-MS in the multiresidue analysis of pesticides in environmental waters. *Chromatographia* 52: 614-620.
Chem Codes: Chemical of Concern: DMT Rejection Code: CHEM METHOD.

Geen, G. H., Hussain, M. A., Oloffs, P. C., and McKeown, B. A. (1981). Fate and Toxicity of Acephate (Orthene super(R)) Added to a Coastal B. C. Stream. *Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes. Vol. 16, no. 3, pp. 253-271. 1981.*
Chem Codes: Chemical of Concern: ACP Rejection Code: FATE.

Geen, G. H., McKeown, B. A., and Oloffs, P. C. (1984). Acephate in rainbow trout (Salmo gairdneri): Acute toxicity, uptake, elimination. *Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes. Vol. 19B, no. 2, pp. 131-155. 1984.*
Chem Codes: Chemical of Concern: C8OH Rejection Code: NO COC.

Genzen, Jonathan R and McGehee, Daniel S (2003). Short- and Long-Term Enhancement of Excitatory Transmission in the Spinal Cord Dorsal Horn by Nicotinic Acetylcholine Receptors. *Proceedings Of The National Academy Of Sciences Of The United States Of America* 100: 6807-6812.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Georghiou, G. P. (1990). The Effect of Agrochemicals on Vector Populations. *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: 183-202.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Gillespie, A. M., Daly, S. L., Gilvydis, D. M., Schneider, F., and Walters, S. M. (1995). Multicolumn Solid-Phase Extraction Cleanup of Organophosphorus and Organochlorine Pesticide Residues in Vegetable Oils and Butterfat. *Journal of aoac international* 78: 431-437.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Gillespie, A. M. and Walters, S. M. (1991). Rapid Clean-up of Fat Extracts for Organophosphorus Pesticide Residue Determination Using Carbon-18 Solid-Phase Extraction Cartridges. *Anal chim acta* 245: 259-266.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Gillespie, A. M. and Walters, S. M. (1989). Semi-Preparative Reverse Phase Hplc Fractionation of Pesticides From Edible Fats and Oils. *J liq chromatogr* 12: 1687-1704.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Gilsbach, W., Thier, H. P., and Specht, W. (1994). Multicenter Study of the Study Group Pesticides on the Quality Assurance of Residue Testing Laboratories. *Lebensmittelchemie* 48: 74-77.

Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Goedicke, H. J. (1989). Exposure to Pesticide Residues on Leaf Surfaces Following the Use of Organophosphorus Insecticides in High-Intensity Apple Growing. *Z gesamte hyg grenzgeb* 35: 533-535.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Goedicke, H. J. (1988). Residues of Plant-Protecting Agents at Plant Surfaces. *Z gesamte hyg grenzgeb* 34: 279-282.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, REVIEW, HUMAN HEALTH.

Goedicke, H. J. (1987). Residues of Plant-Protecting Agents on Surfaces of Plants as Source for Intoxications and Possibilities of the Standardization of Exposure. *Z gesamte hyg grenzgeb* 33: 339-342.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Goedicke, H J, Hermes, H, and Wagner, R (1989). Exposure to residues on plant surfaces following the use of plant pesticides in the greenhouse. *Zeitschrift Fur Die Gesamte Hygiene Und Ihre Grenzgebiete* 35: 531-533.
Chem Codes: Chemical of Concern: ADC ,DMT Rejection Code: FL.

Goh, K. T., Yew, F. S., Ong, K. H., and Tan, I. K. (Acute Organophosphorus Food Poisoning Caused by Contaminated Green Leafy Vegetables. *Arch environ health. 1990 may-jun; 45(3):180-4. [Archives of environmental health.]: Arch Environ Health*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Gomez-Arroyo, S., Noriega-Aldana, N., Osorio, A. , Galicia, F., Ling, S., and Villalobos-Pietrini, R. (1992). Sister-Chromatid Exchange Analysis in a Rural Population of Mexico Exposed to Pesticides. *Mutat res* 281: 173-179.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Gonzalez, F. J. Egea, Granero, A. Mena, Glass, C. R., Frenich, A. Garrido, and Vidal, J. L. Martinez (2004). Screening method for pesticides in air by gas chromatography/tandem mass spectrometry. *Rapid Communications in Mass Spectrometry* 18: 537-543.
Chem Codes: Chemical of Concern: TCZ,DCNA Rejection Code: CHEM METHODS.

Goodrich, J. A., Lykins, B. W Jr, and Clark, R. M. (1991). Drinking Water From Agriculturally Contaminated Groundwater. *J environ qual* 20: 707-717.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO EFFECT.

Grayson, B. T. and Kleier, D. A. (1990). Phloem Mobility of Xenobiotics: Iv. Modelling of Pesticide Movement in Plants. *Pestic sci* 30: 67-80.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING.

Greenup, L. R., Singh, D., Ahmad, N., Baker, J., Higginson, F. R., 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: 403-405.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Grout, T. G. and Stephen, P. R. (2005). Use of an Inexpensive Technique to Compare Systemic Insecticides Applied Through Drip Irrigation Systems in Citrus. *African Entomology, 13 (2) pp. 353-358, 2005*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Grue, C. E., Gibert, P. L., and Seeley, M. E. (1997). Neurophysiological and Behavioral Changes in Non-Target Wildlife Exposed to Organophosphate and Carbamate Pesticides: Thermoregulation, Food Consumption, and Reproduction. *American zoologist* 37: 369-388.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Guenthner, J. F., Wiese, M. V., Pavlista, A. D., Sieczka, J. B., and Wyman, J. (Assessment of pesticide use in the U.S. potato industry. *American Journal of Potato Research, 76 (1) pp. 25-29, 1999*.
Chem Codes: Chemical of Concern: EFV Rejection Code: SURVEY.

Guenthner, J. F., Wiese, M. V., Pavlista, A. D., Sieczka, J. B., and Wyman, J. (1999). Assessment of Pesticide Use in the U.s. Potato Industry. *American Journal of Potato Research, 76 (1) pp. 25-29, 1999*.
Chem Codes: Chemical of Concern: MTM Rejection Code: SURVEY,HUMAN HEALTH.

Gueven, M., Uenluehizarci, K., Goektas, Z., and Kurtoglu, S. (1997). Intravenous Organophosphate Injection: an Unusual Way of Intoxication. *Human and Experimental Toxicology [HUM. EXP. TOXICOL.]. Vol. 16, no. 5, pp. 279-280. May 1997.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Gunderson, E. L. (1995). Dietary Intake of Pesticides, Selected Elements, and Other Chemicals: Fda Total Diet Study, June 1984-April 1986. *Journal of aoac international* 78: 910-921.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Gunderson, E. L. (1995). Fda Total Diet Study, July 1986-April 1991, Dietary Intakes of Pesticides, Selected Elements, and Other Chemicals. *Journal of aoac international* 78: 1353-1363.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Guo, Y. L., Wang, B. J., Lee, C. C., and Wang, J. D. (Prevalence of Dermatoses and Skin Sensitisation Associated With Use of Pesticides in Fruit Farmers of Southern Taiwan. *Occupational and environmental medicine, vol. 53, no. 6, pages 427-431, 15 references, 1996*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Gutsche, V. and Rossberg, D. (1997). Synops 1.1: A Model to Assess and to Compare the Environmental

Risk Potential of Active Ingredients in Plant Protection Products. *Agriculture ecosystems & environment* 64: 181-188.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING.

Guven, M., Unluhizarci, K., Goktas, Z., and Kurtoglu, S. (Intravenous Organophosphate Injection: an Unusual Way of Intoxication.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Hailin, G., Ho, O. L., and Xinhao, Y. (1997). Analysis of Pesticides Using a Polypyrrole Modified Electrode. *Environmental monitoring and assessment* 44: 361-367.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Hajjar, N. P. and Hodgson, E. (Flavin Adenine Dinucleotide-Dependent Monooxygenase: Its Role in the Sulfoxidation of Pesticides in Mammals. *Science 209(4461): 1134-1136 1980 (15 references).*
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Hajslova, J., Holadova, K., Kocourek, V., Poustka, J., Godula, M., Cuhra, P., and Kempny, M. (1998). Matrix-Induced Effects: a Critical Point in the Gas Chromatographic Analysis of Pesticide Residues. *Journal of chromatography a* 800: 283-295.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Hall, G. L., Whitehead, W. E., Mourer, C. R., and Shibamoto, T. (1986). A New Gas Chromatographic Retention Index for Pesticides and Related Compounds. *J high resolut chromatogr chromatogr commun* 9: 266-271.
Chem Codes: Chemical of Concern: MTM Rejection Code: CHEM METHODS.

Hammann, I. (Tamaron, a New Insecticide and Acaricide. *Pflanzenschutz-nachrichten, vol. 23, no. 2, pages 133-143, 6 references, 19701970* .
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Hanks, A. (1992). Liquid Chromatographic Method for Determination of Methamidophos in Technical Products and Pesticide Formulations: Cipac Collaborative Study. *J aoac (assoc off anal chem) int* 75: 698-700.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Hardt, I. H., Wolf, C., Gehrcke, B., Hochmuth, D. H., Pfaffenberger, B., and Huehnerfuss, H. (1994). Gas Chromatographic Enantiomer Separation of Agrochemicals and Polychlorinated Biphenyls Pcbs Using Modified Cyclodextrins. *Hrc journal of high resolution chromatography* 17: 859-864 .
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Hatrik, S. and Tekel, J. (1996). Extraction Methodology and Chromatography for the Determination of Residual Pesticides in Water . *Journal of chromatography a* 733: 217-233.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

He, F., Xu, H., Qin, F., Xu, L., Huang, J., and He, X. (1998). Intermediate Myasthenia Syndrome

Following Acute Organophosphates Poisoning: an Analysis of 21 Cases. *Human & experimental toxicology* 17: 40-45.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

He, F., Zhang, Z., Chen, S., Sun, J., Yao, P., Liu, L., and Li, Q. (Effects of Combined Exposure to Pyrethroids and Methamidophos on Sprayers. *Archives of complex environmental studies mar. 1990, vol.2, No.1, P.31-36. 9 ref.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, MIXTURE.

He, Fengsheng, Chen, Shuyang, Tang, Xiaoyong, Gan, Wenqi, Tao, Bingeng, and Wen, Baoyuan (2002). Biological Monitoring of Combined Exposure to Organophosphates and Pyrethroids. *Toxicology Letters* 134: 119-124.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

He, W., Liu, A., Bao, H., and Chen, Y. (1982). Effects of 7 Pesticides on Chromosome Aberration, Sister-Chromatid Exchange and Cell-Cycle Kinetics Change in Cultured Red Muntjac Cells. *Zool res* 3: 129-136.
Chem Codes : Chemical of Concern: MTM Rejection Code: IN VITRO.

He, W., Liu, A., Bao, H., and Chen, Y. (Effects of Seven Pesticides on Chromosome Aberration, Sister-Chromatid Exchangeand Cell-Cycle Kinetics Change in Cultured Red Muntjac Cells. *Dongwuxue yanjiu (zool res) 3:129-135,1982: DONGWUXUE YANJIU (ZOOL RES).*
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Heong, K. L., Escalada, M. M., and Mai, V. O. (1994). An Analysis of Insecticide Use in Rice: Case Studies in the Philippines and Vietnam. *International journal of pest management* 40: 173-178.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

HEONG KL, ESCALADA MM, and MAI VO (1994). An analysis of insecticide use in rice: Case studies in the Philippines and Vietnam. *INTERNATIONAL JOURNAL OF PEST MANAGEMENT; 40* 173-178.
Chem Codes: Chemical of Concern: EFV Rejection Code: SURVEY.

HEONG KL, ESCALADA MM, and MAI VO (1994). An analysis of insecticide use in rice: Case studies in the Philippines and Vietnam. *INTERNATIONAL JOURNAL OF PEST MANAGEMENT; 40* 173-178.
Chem Codes: Chemical of Concern: DZ Rejection Code: SURVEY.

HEONG KL, ESCALADA MM, and MAI VO (1994). An analysis of insecticide use in rice: Case studies in the Philippines and Vietnam. *INTERNATIONAL JOURNAL OF PEST MANAGEMENT; 40* 173-178.
Chem Codes: Chemical of Concern: AZ Rejection Code: SURVEY.

Hern&Aacute, Ndez, A. F., Pla, A., and Villanueva, E. (Lack of Inhibition of Glycolytic Enzymes by the Neurotoxic Organophosphorus Compounds Mipafox and Methamidofos. *Arch toxicol. 1988; 61(4):330-1. [Archives of toxicology.]: Arch Toxicol*.

Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM, NO SPECIES.

Hern&Aacute, Ndez Torres, M. E., Egea Gonz&Aacute, Lez, F. J., Castro Cano, M. L., Moreno Fr&Iacute, As, M., Mart&Iacute, and Nez Vidal, J. L. (Residues of Methamidofos, Malathion, and Methiocarb in Greenhouse Crops. *J agric food chem. 2002, feb 27; 50(5):1172-7. [Journal of agricultural and food chemistry.]: J Agric Food Chem*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Hernandez, A F, Pla, A, and Villanueva, E (1988). Lack of Inhibition of Glycolytic Enzymes by the Neurotoxic Organophosphorus Compounds Mipafox and Methamidofos. *Archives Of Toxicology* 61: 330-331.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO SPECIES.

Heungens, A. and Buysse, G. (1999). Curative Control of Western Flower Thrips (Frankliniella Occidentalis) With Systemic Insecticides in Hydroponic Culture of Hoya Plants (Hoya Multiflora). *Parasitica [Parasitica]. Vol. 54, no. 1. May 1999.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Heungens, A., De Clercq R, and Dejonckheere, W. (1992). Phytotoxicity Experiments With Insecticides and Nematicides of Pseudo-Hydroponically Cultivated Azaleas. *International symposium on crop protection, gent, belgium, may 5, 1992. Meded fac landbouwwet rijksuniv gent* 57: 1289-1303.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Heungens, A., De Clercq R, and Dejonckheere, W. (1991). Phytotoxicity Experiments With Insecticides and Nematicides on Pseudo-Hydroponically Cultivated Hothouse Ornamental Plants. *Forty-third international symposium on crop protection, part iv. Meded fac landbouwwet rijksuniv gent* 56: 1343-1363.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Hirahara, Y., Narita, M., Okamoto, K., Miyoshi, T., Miyata, M., Koiguchi, S., Hasegawa, M., Kamakura, K., Yamana, T., and Tonogai, Y. (1994). Simple and Rapid Simultaneous Determination of Various Pesticides of Polished Rice by Gas Chromatography. *Journal of the food hygienic society of japan* 35: 517-524.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Hirai, S., Onji, Y., and Sasaki, M. (1995). Simple Determination of Organophosphorus Pesticides in Agricultural Products by Using a Graphitized Carbon Black Cartridge. *Journal of the food hygienic society of japan* 36: 635-638.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Hiskia, A. E., Atmajidou, M. E., and Tsipi, D. F. (1998). Determination of Organophosphorus Pesticide Residues in Greek Virgin Olive Oil by Capillary Gas Chromatography. *Journal of agricultural and food chemistry* 46: 570-574.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, NO TOX DATA.

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Chem Codes: Chemical of Concern: FVL, RSM SPM,CaPS Rejection Code: NO TOX DATA.

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). **<04 Article Title>.** <25 Page(s)>.

Chemical of Concern: FVL, RSM, SPM; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Chem Codes: Chemical of Concern: SPM,BDL Rejection Code: NO TOX DATA.

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Chem Codes: Chemical of Concern: AZD,SPM Rejection Code: NO TOX DATA.

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Chem Codes: Chemical of Concern: RTN, SPM Rejection Code: NO TOX DATA.

Holland, P. T., Mcnaughton, D. E., and Malcolm, C. P. (1994). Multiresidue Analysis of Pesticides in Wines by Solid-Phase Extraction. *Journal of aoac international* 77: 79-86.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Holstege, D. M., Scharberg, D. L., Tor, E. R., Hart, L. C., and Galey, F. D. (1994). A Rapid Multiresidue Screen for Organophosphorus, Organochlorine, and N-Methyl Carbamate Insecticides in Plant and Animal Tissues. *Journal of aoac international* 77: 1263-1274.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Hommes, M. (Insecticide Resistance in the Glasshouse Whitefly Trialeurodes-Vaporariorum Westw. To Synthetic Pyrethroids. *Biological institute for agriculture and forestry. Mitteilungen aus der biologischen bundesanstalt fuer land- und forstwirtschaft berlin-dahlem, heft 232. 45. Deutsche pflanzenschutz-tagung; (communications from the federal biological institute for agriculture and forestry berlin-dahlem, no. 232. 45th german plant protection meeting); kiel, west germany, october 6-10, 1986. Xxxviii+431p. Kommissionsverlag paul parey: berlin, west germany. Illus. Paper. Isbn 3-489-23200-3.; 0 (0). 1986. 377.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Horler, D. F., Lubkowitz, J. A., Revilla, A. P., Baruel, J., and Cermeli, M. M. (Uptake and Degradation of Monitor by Tomato Plants. *Coulston, frederick and friedhelm korte (ed.). Environmental quality and safety supplement, vol. Iii. Pesticides. International union of pure and applied chemistry third international congress. Helsinki, finland, july 3-9, 1974. Xvi+880p. Illus. George thieme publishers: stuttgart, west germany. Isbn 3-13-517001-2.; 1975 (recd 1976) 151-156.*
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Horowitz, A. R. and Ishaaya, I. (1996). Chemical Control of Bemesia Management and Application. *In: D.Gerling and R.T.Mayer (Eds.), Bemisia: 1995, Taxonomy, Biology, Damage, Control and Management, Intercept Ltd., Andover, England* 537-556.
Chem Codes: Chemical of Concern: PRT,ES,ACP,AZ,CPY,MDT,PL,CYP,DM,FPP,PMR,BZ,ACP,DMT,MTM,MOM,CYF,EFV,AV
Rejection Code: REVIEW.

Hoyos, L. S., Carvajal, S., Solano, L., Rodriguez, J., Orozco, L., Lopez, Y., and Au, W. W. (1996). Cytogenetic Monitoring of Farmers Exposed to Pesticides in Colombia. *Environmental health perspectives* 104: 535-538.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Hrdy, I., Kremheller, H. T., Kuldova, J., Luders, W., and Sula, J. (1986). Resistance to Insecticides of the Hop Aphid Phorodon-Humuli in Bohemian Czechoslovakia Bavarian and Baden-Wuerttembergian West Germany Hop Growing Areas. *Acta entomol bohemoslov* 83: 1-9.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

HUANG, N. and CHEN, R. (1993). THE REPORT OF USING TRADESCANTIA-STAMEN HAIR MUTATION TO TEST 9 INSECTICIDES. . *ENVIRON MOL MUTAGEN; 21* 30.
Chem Codes: Chemical of Concern: OMT Rejection Code: ABSTRACT.

Huang, N. and Chen, R. (1993). The Report of Using Tradescantia-Stamen Hair Mutation to Test 9 Insecticides. *24th annual scientific meeting of the environmental mutagen society, norfolk, virginia, usa, april 17-22, 1993. Environ mol mutagen* 21: 30.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT.

Huang, X. S. (1983). Preventing Chemical Damage to Germ Cells. *Am ind hyg assoc j* 44: 699-703.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Huang, Y. and others (1995). Enzyme Ticket and Chromophoric Substrate Ticket for the Convenient and Rapid Detection of Organophosphorus Pesticides. *Huanjing kexue* 16: Iv, 52-54.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Huber, A., Bach, M., and Frede, H. G. (1998). Modeling Pesticide Losses With Surface Runoff in Germany. *Science of the total environment* 223: 177-191.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, MODELING.

Hughes, Kenneth Andrew, Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (20040812). Preparation of cyano anthranilamide insecticides. 63 pp.
Chem Codes: Chemical of Concern: SPM,MAL,AZD,RTN Rejection Code: CHEM METHODS.

Hung, D. Q., Wohlers, J., and Thiemann, W. (The Mineralisation of Methamidophos Using Ionised an Air Water Treatment Pilot System and Ultraviolet Irradiation. *Water res. 2002, jul; 36(12):2959-66. [Water research.]: Water Res*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, FATE.

Hussein, I. Aa and Wetzel, T. (1990). Influence of the Insecticides Decis (Deltamethrin), Filitox (Methamidophos) and Bi 58 Ec (Dimethoate) on Insect Pests and Their Antagonists in the Ground Vegetation of a Winter Wheat Field. *Arch phytopathol pflanzenschutz* 26: 557-568.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Iannacone, O. J., Caballero, R. C., and Alvarino, F. L. (2002). Employing the Freshwater Snail Physa Venustula Gould as an Ecotoxicological Tool for Environmental Risk Assessments by Pesticides (Empleo Del Caracol De Agua Dulce Physa Venustula Gould Como Herramienta Ecotoxicologia Para La Evaluacion De Riesgos Ambientales Por Plaguicidas). *Agric.Tec.* 62: 7 p. (SPA) (ENG ABS).
Chem Codes: Chemical of Concern: HCCH,CPY,MTM Rejection Code: NON-ENGLISH.

Imenes, S. Dl, Bergmann, E. C., Takematsu, A. P. , Hojo, H., and Campos, T. Bd (1990). Insecticide Action on Myzus Persicae (Sulzer, 1776) and Its Parasitoids in Tomato (Lycopersicon Esculentum). *An soc entomol bras* 19: 291-300.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Intari, S. E. (1988). An Experiment on the Efficacy of Insecticides on Crab Sesarma-Sp a Pest of Mangrove Seedlings at Pamanukan West Java Indonesia. *Bul penelitian hutan* 0: 27-34.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Intari, S. E. and Tw, T. H. (1990). Efficacy of Some Systemic Insecticides on Xyleborus Destruens Bldf Ambrosia Beetles Attacking Trunks of Teak Stands at Jember, East Java (Indonesia). *Bul penelitian hutan* 0: 25-34.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Ishaaya, Isaac, Mendelson, Zmira, Ascher, K. R. Simon, and Casida, John E. (1987). Cypermethrin Synergism by Pyrethroid Esterase Inhibitors in Adults of the Whitefly Bemisia Tabaci. *Pesticide Biochemistry and Physiology* 28: 155-162.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM, IN VITRO.

Ismai, B. S., Enoma, A. O., Cheah, U. B., Lum, K. Y., and Malik, Z. (Adsorption, Desorption, and Mobility of Two Insecticides in Malaysian Agricultural Soil. *J environ sci health b. 2002, jul; 37(4):355-64. [Journal of environmental science and health. Part. B, pesticides, food contaminants, and agricultural wastes.]: J Environ Sci Health B.*
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Ismail, B S, Cheah, U B, Enoma, A O S, Lum, K Y, and Malik, Z (2002). Movement and Persistence of Methamidophos in Vegetable Agroecosystem. *Bulletin Of Environmental Contamination And Toxicology* 69: 444-451.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Ismail, B. S., Enoma, A. O. S., Cheah, U. B., Lum, K. Y., and Malik, Z. (2002). Adsorption, Desorption, and Mobility of Two Insecticides in Malaysian Agricultural Soil. *Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants and Agricultural Wastes [J. Environ.*

Sci. Health, Pt. B: Pestic., Food Contam., Agric. Wastes]. Vol. B37, no. 4, pp. 355-364. 2002.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Ismail, B. S., Razak-Hamid, A., and Omar, O. (1999). Effects of Methamidophos on Cellulolytic Activity in Three Soils. *Cytobios* 99: 27-38.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Itoyama, T., Sekiguchi, Y., Koiguchi, S., Hirahara, Y., Ohta, M., Kimura, M., Miyoshi, T., Narita, M., Hasegawa, M., Miyata, M., Kamakura, K., Maeda, K., Yamana, T., and Tonogai, Y. (1995). Simple and Rapid Systemic Determination of Various Pesticides in Brown Rice by Gas Chromatography. *Journal of the food hygienic society of japan* 36: 516-524.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Jeang, C. L. and Li, G. C. (1980). Screening of Pesticides for Mutagenicity in the Microbial System: 2. With Mammalian Microsomal Activation. *Natl sci counc mon* 8: 551-559.
Chem Codes: Chemical of Concern: MTM Rejection Code: BACTERIA, IN VITRO.

Jeang, C. L. and Li, G. C. (Screening of Pesticides for Mutagenicity in the Microbial Systems. *K'o hsueh fa chan yueh k'an(progress in sciences) 6:780-788,1978: K'O HSUEH FA CHAN YUEH K'AN(PROGRESS IN SCIENCES).*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, BACTERIA.

Jensen, A. F., Petersen, A., and Granby, K. (2003). Cumulative Risk Assessment of the Intake of Organophosphorus and Carbamate Pesticides in the Danish Diet. *Food Additives and Contaminants [Food Addit. Contam.]. Vol. 20, no. 8, pp. 776-785. Aug 2003.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Jetten, J., De Kruijf N, and Van, D. E. N. Berg F (1994). Polyethylene Terephthalate Bottles (Prbs): a Health and Safety Assessment. Au - Feron Vj. *Food additives and contaminants* 11: 571-594.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Jeyaratnam, J. and Maroni, M. (1994). Health Surveillance of Pesticide Workers a Manual for Occupational Health Professionals Organophosphorous Compounds. *Toxicology* 91: 15-17.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Jin, B., Rosen, R. T., Meyer, R., and Rosen, J. D. (1997). DETERMINATION OF DIFFICULT TO ANALYZE PESTICIDES IN LETTUCE AND TOMATOES. *214th American Chemical Society National Meeting, Las Vegas, Nevada, Usa, September 7-11, 1997. Abstracts of Papers American Chemical Society* 214 : Agro 104.
Chem Codes: Chemical of Concern: MOM,ADC Rejection Code: NO TOX DATA.

Jin, B., Rosen, R. T., Meyer, R., and Rosen, J. D. (1997). Determination of Difficult to Analyze Pesticides in Lettuce and Tomatoes. *214th american chemical society national meeting, las vegas, nevada, usa, september 7-11, 1997. Abstracts of papers american chemical society* 214: Agro 104.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT, METHODS.

JIN, B., ROSEN RT, MEYER, R., and ROSEN JD (1997). DETERMINATION OF DIFFICULT TO ANALYZE PESTICIDES IN LETTUCE AND TOMATOES. *214TH AMERICAN CHEMICAL SOCIETY NATIONAL MEETING, LAS VEGAS, NEVADA, USA, SEPTEMBER 7-11, 1997. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 214* AGRO 104.
Chem Codes: Chemical of Concern: ACP Rejection Code: METHODS.

Jing, W., Jiebin, Y., Chunru, H., Liewan, C., Xibin, L., Bukkens, S. G. F., and Paoletti, M. G. (1999). Pesticide Residues in Agricultural Produce in Hubei Province, Pr China. *Critical Reviews in Plant Sciences, 18 (3) pp. 403-416, 1999*.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Jinxiu, S., Bo, C., and Peipei, Y. (2005). Assessment on Acute Toxicity of Combined Pesticides. *J.Hyg.Res.(Wei Sheng Yan Jiu)* 29: 65-68 (CHI) (ENG ABS).
Chem Codes: Chemical of Concern: MOM,OMT,ACYP,DM,MP,DDVP,MTM,PFF,MLN
Rejection Code: NON-ENGLISH.

Johnson, B. L. (1990). Advances in Neurobehavioral Toxicology Applications in Environmental and Occupational Health Third International Symposium on Neurobehavioral Methods in Environmental and Occupational Health Washington D.c. Usa December 14-17 1988. *Johnson, b. L. (Ed.). Advances in neurobehavioral toxicology: applications in environmental and occupational health* Third international symposium on neurobehavioral methods in environmental and occupational health, washington, d.c., Usa, december 14-17, 1988. Xviii+512p. Lewis publishers, inc.: Chelsea, michigan, usa. Illus. Isbn 0-87371-374-5.; 0: Xviii+512p.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Johnson, J. C., Van Emon Jm, Pullman, D. R., and Keeper, K. R. (1998). Development and Evaluation of Antisera for Detection of the O,O-Diethyl Phosphorothionate and Phosphorothionothiolate Organophosphorus Pesticides by Immunoassay. *Journal of agricultural and food chemistry* 46: 3116-3123.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Johnson, M. K. (1990). Organophosphates and Delayed Neuropathy Is Nte Alive and Well. *Toxicol appl pharmacol* 102: 385-399.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Johnson, M. K. and Senanayake, N. (1982). Acute Polyneuropathy After Poisoning by a New Organophosphate Insecticide. *New England Journal of Medicine [N. ENGL. J. MED.]. Vol. 306, no. 3, pp. 155-157. 1982.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, SURVEY.

Jokanovic, M and Johnson, M K (1993). Interactions in Vitro of Some Organophosphoramidates With Neuropathy Target Esterase and Acetylcholinesterase of Hen Brain. *Journal Of Biochemical Toxicology* 8: 19-31.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO, METABOLISM.

JOKANOVIC, M. and JOHNSON MK (1993). Interactions in vitro of some organophosphoramidates with neuropathy target esterase and acetylcholinesterase of hen brain. *J BIOCHEM TOXICOL; 8* 19-31.

Chem Codes: Chemical of Concern: MCPP1 Rejection Code: DRUG.

Jones, K. H., Sanderson, D. M., and Noakes, D. N. (1968). Acute Toxicity Data for Pesticides (1968). *World Rev.Pest Control* 7: 135-143.

Juhler, R. K. (1997). Optimized Method for the Determination of Organophosphorus Pesticides in Meat and Fatty Matrices. *Journal of chromatography a* 786: 145-153.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Juhler, R. K., Larsen, S. B., Meyer, O., Jensen, N. D., Spano, M., Giwercman, A., and Bonde, J. P. (1999). Human Semen Quality in Relation to Dietary Pesticide Exposure and Organic Diet. *Archives of environmental contamination and toxicology* 37: 415-423.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Juhler, R. K., Lauridsen, M. Green, Christensen, M. Rindom, and Hilbert, G. (1999). Pesticide Residues in Selected Food Commodities: Results From the Danish National Pesticide Monitoring Program 1995-1996. *Journal of aoac international* 82: 337-358.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, METHODS.

Kalinova, G. and Izmirova, N. (Minimum Time for Safe Work With Tamaron Under Field Conditions. *Khig zdraveopaz; 29 (5). 1986 (recd. 1987). 25-28.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Kan-Do Office and Pesticides Team (1995). Accumulated Pesticide and Industrial Chemical Findings From a Ten-Year Study of Ready-to-Eat Foods. *Journal of aoac international* 78: 614-630.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Kang, J., Zettel, V. H., and Ward, N. I. (1995). The Organophosphate Pesticides. *Journal of nutritional & environmental medicine (abingdon)* 5: 325-339.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Kao, Teh-Show and Fukuto, T. R. (1977). Metabolism of O,S-Dimethyl Propionyl- and Hexanoylphosphoramidothioate in the House Fly and White Mouse. *Pesticide Biochemistry and Physiology* 7: 83-95.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Karalliedde, L. (Neurotoxic Effects of Organophosphorus Insecticides: Intermediate Syndrome Au - Senanayake N. *N. Engl. J. Med.* Vol 316 iss mar 26 1987, p761-763.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Karalliedde, L. and Senanayake, N. (Acute Organophosphorus Insecticide Poisoning in Sri Lanka. *Forensic science international, vol. 36, nos. 1/2, pages 97-100, 9 references, 19881988.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Karalliedde, L., Senanayake, N., and Ariaratnam, A. (Acute Organophosphorus Insecticide Poisoning During Pregnancy. *Hum toxicol. 1988, jul; 7(4):363-4. [Human toxicology.]: Hum Toxicol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Karu, A. E. (1993). Monoclonal Antibodies and Their Use in Measurement of Environmental Contaminants. *Saxena, j. (Ed.). Hazard assessment of chemicals, vol. 8. Xii+332p. Taylor & francis inc.: Bristol, pennsylvania, usa* London, england, uk. Isbn 1-56032-271-3.; 0: 205-321.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Kasagami, Takeo, Miyamoto, Toru, and Yamamoto, Izuru (2002). Activated Transformations of Organophosphorus Insecticides in the Case of Non-Ache Inhibitory Oxons. *Pest Management Science* 58: 1107-1117.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Kawasaki, M., Fukuhara, K., and Uchiyama, S. (1994). Gas Chromatographic-Mass Spectrometric (Gc) Screening of Pesticides./Growth & Development. *Journal of the food hygienic society of japan* 35: 479-496.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Keifer, M. C., Pacheco, F., and Mcconnell, R. (1992). PESTICIDE POISONINGS IN NICARAGUA 1986-1990. *8th International Symposium on Epidemiology in Occupational Health, Paris, France, September 10-12, 1991. Rev Epidemiol Sante Publique* 40 : S150.
Chem Codes: CBF Rejection Code: ABSTRACT/HUMAN HEALTH.

Keifer, M. C., Pacheco, F., and Mcconnell, R. (1992). Pesticide Poisonings in Nicaragua 1986-1990. *8th international symposium on epidemiology in occupational health, paris, france, september 10-12, 1991. Rev epidemiol sante publique* 40: S150.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT, HUMAN HEALTH.

Kennedy, E. R., Abell, M. T., Reynolds, J., and Wickman, D. (A Sampling and Analytical Method for the Simultaneous Determination of Multiple Organophosphorus Pesticides in Air. *American industrial hygiene association journal, vol. 55, no. 12, pages 1172-1177, 18 references, 1994*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Kientz, C. E., Langenberg, J. P., De Jong Gj, and Brinkman, U. At (1991). Microcolumn Liquid Chromatography of the Enantiomers of Organophosphorus Pesticides With Thermionic and Uv Detection. *Hrc (j high resolut chromatogr)* 14: 460-464.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Kishi, M., Hirschhorn, N., Djajadisastra, M., Satterlee, L. N., Strowman, S., and Dilts, R. (1995). Relationship of Pesticide Spraying to Signs and Symptoms in Indonesian Farmers. *Scandinavian journal of work environment & health* 21: 124-133.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Kitos, P. A. and Suntornwat, O. (1992). Teratogenic Effects of Organophosphorus Compounds. *IN: Organophosphates: Chemistry, Fate, and Effects* 387-417.

Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Kjolholt, J. (1990). Distribution of Pesticides and Potential Exposure of Non-target Organisms Following Application. *In: L.Somerville and C.H.Walker (Eds.), Pesticide Effects on Terrestrial Wildlife,Taylor and Francis, London, England, UK* 33-63.
Chem Codes: EcoReference No.: 65049
Chemical of Concern: SZ,MTM Rejection Code: REFS CHECKED/REVIEW.

Klassen, W. and Schwartz, P. H Jr (1985). Agricultural Research Service Usa Research Program in Chemical Insect Control. *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: 267-292.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

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.
Chem Codes: Chemical of Concern: FZS,DSP Rejection Code: CHEM METHODS.

Kniehase, U. and Zoebelein, G. (1990). Testing the Effects of Pesticides on the Predator Mite Phytoseiulus Persimilis Ath.-Hen. By Means of a New Laboratory Method Approaching to the Practice. *Anz schaedlingskd pflanzenschutz umweltschutz* 63: 105-113.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Kobayashi, M., Nagayama, T., Hashimoto, T., Haneishi, N., Ito, M., Tamura, Y., and Tomomatsu, T. (1998). Survey of Pesticides Residues in Vegetable Products Collected From 1994 Through 1997. *Journal of the food hygienic society of japan* 39: 233-239.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Kocourek, V., Hajslova, J., Holadova, K., and Poustka, J. (1998). Stability of Pesticides in Plant Extracts Used as Calibrants in the Gas Chromatographic Analysis of Residues. *Journal of chromatography a* 800: 297-304.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Koeber, R. and Niessner, R. (1996). Screening of Pesticide-Contaminated Soil by Supercritical Fluid Extraction (Sfe) and High-Performance Thin-Layer Chromatography With Automated Multiple Development (Hptlc). *Fresenius' journal of analytical chemistry* 354: 464-469.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Koenig, W. A., Icheln, D., Runge, T., Pfaffenberger, B., Ludwig, P., and Huehnerfuss, H. (1991). Gas Chromatographic Enantiomer Separation of Agrochemicals Using Modified Cyclodextrins. *Hrc (j high resolut chromatogr)* 14: 530-536.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

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.

Chem Codes: Chemical of Concern: DZM Rejection Code: IN VITRO.

Kokshareva, N. V., Kagan, Y. U. S, and Tkachenko, I. I. (1990). Problem of the Late Neurotoxic Action of Organophosphorus Pesticides Review. *Gig sanit* 0: 62-67.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, REVIEW, HUMAN HEALTH.

Kroening, P. M. and Mucha, R. (Update on the Independent Radiation Monitor. *Ajr (am j roentgenol); 127 (2). 1976 355*.
Chem Codes : Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

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.
Chem Codes: Chemical of Concern: AZ,CBL,DMT,MLN,ADC,DZ,Captan,ATZ,MTM,ACP,MZB,PCB Rejection Code: REVIEW.

Kuchen, A., Muller, F., Farine, M., Zimmermann, H., Blaser, O., and Wuthrich, C. (1999). Pesticides and Other Chemical Residues in Swiss Total Diet Samples. *Mitteilungen aus lebensmitteluntersuchung und hygiene* 90: 78-107.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Kunkel, G. (1988). Warding Off Damage From Wireworms in Newly Sown Grassland. *Arch phytopathol pflanzenschutz* 24: 221-227.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Kurtz, D. A. (1990). Long Range Transport of Pesticides 195th National Meeting of the American Chemical Society Held Jointly With the Third Chemical Congress of North America Toronto Ontario Canada June 1988. *Kurtz, d. A. (Ed.). Long range transport of pesticides* 195th national meeting of the american chemical society held jointly with the third chemical congress of north america, toronto, ontario, canada, june 1988. Xv+462p. Lewis publishers, inc.: Chelsea, michigan, usa. Illus. Maps. Isbn 0-87371-168-8.; 0: Xv+462p.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Lacorte, S., Molina, C., and Barcelo, D. (Temperature and Extraction Voltage Effect on Fragmentation of Organophosphorus Pesticides in Liquid Chromatography-Atmospheric Pressure Chemical Ionization Mass Spectrometry.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lahm, George Philip, McCann, Stephen Frederick, Patel, Kanu Maganbhai, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). **<04 Article Title>.** <25 Page(s)>.

Chemical of Concern: FVL, SPM,MAL; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

Lahm, George Philip, McCann, Stephen Frederick, Patel, Kanu Maganbhai, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). Method for controlling particular insect pests by applying

anthranilamide compounds. 150 pp.
Chem Codes: Chemical of Concern: AZD,SPM Rejection Code: CHEM METHODS.

Lahm, George Philip, McCann, Stephen Frederick, Patel, Kanu Maganbhai, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). Method for controlling particular insect pests by applying anthranilamide compounds. 150 pp.
Chem Codes: Chemical of Concern: RTN, SPM Rejection Code: CHEM METHODS.

Lahm, George Philip, McCann, Stephen Frederick, Patel, Kanu Maganbhai, Selby, Thomas Paul, and Stevenson, Thomas Martin (2003). Method for controlling particular insect pests by applying anthranilamide compounds. 150 pp.
Chem Codes: Chemical of Concern: SPM,MAL Rejection Code: CHEM METHODS.

Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). **<04 Article Title>.** <25 Page(s)>.

Chemical of Concern: FVL, SPM,MAL; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). Arthropodicidal anthranilamides. 82 pp.
Chem Codes: Chemical of Concern: AZD,SPM Rejection Code: BACTERIA.

Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). Arthropodicidal anthranilamides. 82 pp.
Chem Codes: Chemical of Concern: RTN, SPM Rejection Code: BACTERIA.

Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (2003). Arthropodicidal anthranilamides. 82 pp.
Chem Codes: Chemical of Concern: SPM,MAL Rejection Code: BACTERIA.

Lal, R. (1982). Accumulation Metabolism and Effects of Organo Phosphorus Insecticides on Microorganisms. *Laskin, a. I. (Ed.). Advances in applied microbiology, vol. 28. Xi+282p. Academic press: new york, n.y., Usa: london, england. Illus. Isbn 0-12-002628-7.* 0: P149-200.
Chem Codes: Chemical of Concern: MTM Rejection Code: BACTERIA.

Lande, S. S. (Identification and Description of Chemical Deactivation Detoxification Methods for the Safe Disposal of Selected Pesticides. *Us ntis pb rep. Pb-285,208: 188 p. 1978 (178 references)*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Langenberg, J P, De Jong, L P, Otto, M F, and Benschop, H P (1988). Spontaneous and Oxime-Induced Reactivation of Acetylcholinesterase Inhibited by Phosphoramidates. *Archives Of Toxicology* 62: 305-310.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM, IN VITRO.

Langenberg, J. P., De Jong, L. P. A., Otto, M. F., and Benschop, H. P. (Spontaneous and Oxime-Induced Reactivation of Acetylcholinesterase Inhibited by Phosphoramidates. *Archives of toxicology, vol.*

62, no. 4, pages 305-310, 22 reference, 19881988.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Lau, P. H. and Sudderuddin, K. I. (Junl). Studies on Insecticide Resistance in a Malaysian Strain of Musca Domestica L. *Southeast Asian Journal of Tropical Medicine & Public Health [SOUTHEAST ASIAN J. TROP. MED. PUBLIC HEALTH.]. Vol. 12, no. 2, pp. 213-221. Junl.*
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Leary, J. B. Jr (Gas Chromatographic Determination of Monitor (O,S-Dimethyl Phosphoramidothioate) Residues in Crops. *J. Ass. Offic. Anal. Chem.; 54(6): 1396-1398 1971.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lee, Jae Koo, Ahn, Ki Chang, Stoutamire, Donald W, Gee, Shirley J, and Hammock, Bruce D (2003). Development of an Enzyme-Linked Immunosorbent Assay for the Detection of the Organophosphorus Insecticide Acephate. *Journal Of Agricultural And Food Chemistry* 51: 3695-3703.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lee, W. C., Yang, C. C., and Deng, J. F. (1997). The Clinical Implications of Acute Pancreatitis in Organophosphate Poisoning. *Annual meeting of the north american congress of clinical toxicology, st. Louis, missouri, usa, september 11-16, 1997. Journal of toxicology clinical toxicology* 35: 516.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT, HUMAN HEALTH.

Lee, W. O., Law, M. L-M, and Wong, S. K. (1996). Determination of Methamidophos Residues in Food Remnants. *Food additives and contaminants* 13: 687-693.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, NO TOX DATA.

Lee, Y. H. (1981). The Effect of Pesticides Used on Rice Fields on the Growth of Other Crops. Au - Li G-C. *Natl sci counc mon* 9: 495-506.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lehotay, S. J. (1997). Supercritical Fluid Extraction of Pesticides in Foods. *Journal of chromatography a* 785: 289-312.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lehotay, S. J. and Eller, K. I. (1995). Development of a Method of Analysis for 46 Pesticides in Fruits and Vegetables by Supercritical Fluid Extraction and Gas Chromatographyon Trap Mass Spectrometry. *Journal of aoac international* 78: 821-830.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lehotay, S. J. and Lee, C. H. (1997). Evaluation of a Fibrous Cellulose Drying Agent in Supercritical Fluid Extraction and Pressurized Liquid Extraction of Diverse Pesticides. *Journal of chromatography a* 785: 313-327.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lehotay, S. J. 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.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lehotay, Steven J (Determination of pesticide residues in nonfatty foods by supercritical fluid extraction and gas chromatography/mass spectrometry: collaborative study. *Journal Of AOAC International* 85: 1148-1166.
Rejection Code: METHODS/NO TOX DATA.

Leidy, R. B. and Sheets, T. J. (Residues From Two Formulations of Acephate on Flue-Cured Tobacco. *Tob. Sci. 22:77-80 1978 (8 references).*
Chem Codes: Chemical of Concern: MTM Rejection Code: FOOD.

Leiteritz, R. (Vine Protection. *Posner, g. (Ed.). Weinbau: eine einfuehrung; (viticulture: an introduction). 392p. Deutscher landwirtschaftsverlag: berlin, germany. Illus. Isbn 3-331-00496-0.; 0 (0). 1991. 259-291.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Leoni, V., Caricchia, A. M., and Chiavarini, S. (1992). Multiresidue Method for Quantitation of Organophosphorus Pesticides in Vegetable and Animal Foods. *J aoac (assoc off anal chem) int* 75: 511-518.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, METHODS.

Leoni, V., Caricchia, A. M., Comi, R., Martini, F., Rodolico, S., and Vitali, M. (1995). Risk Assessment of Organophosphorus Pesticide Dietary Intake for the Population of the City of Rome Italy. *Bulletin of environmental contamination and toxicology* 54: 870-877 .
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Leslie, D. R., Beaudry, W. T., Szafraniec, L. L. , and Rohrbaugh, D. K. (1991). Mechanistic Implications of Pyrophosphate Formation in the Oxidation of O S Dimethylphosphoramidothioate. *J org chem* 56: 3459-3462.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Li, Fei and Han, Zhaojun (2004). Mutations in Acetylcholinesterase Associated With Insecticide Resistance in the Cotton Aphid, Aphis Gossypii Glover. *Insect Biochemistry And Molecular Biology* 34: 397-405.
Chem Codes : Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Li, G. (1992). Tardive Peripheral Nerve Disorder by Tamaron (a Clinical Analysis of 11 Cases). *Acta acad med hubei* 13: 274-275.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Li, Gwo-Chen, Wong, Sue-San, and Tsai, Mei-Chen (2002). **<04 Article Title>.** *Yaowu Shipin Fenxi* 10: <25 Page(s)>.

Chemical of Concern: FVL, TCZ; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

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.
Chem Codes: Chemical of Concern: TCZ,DCNA Rejection Code: HUMAN HEALTH.

Li, Xinyu, Zhang, Huiwen, Zhang, Jing, Su, Zhencheng, and Zhang, Chenggang (2005). Effects of Acetochlor and Methamidophos on Culturable Fungal Population and Community Structure in Black Soil. *Ying Yong Sheng Tai Xue Bao = The Journal Of Applied Ecology / Zhongguo Sheng Tai Xue Xue Hui, Zhongguo Ke Xue Yuan Shenyang Ying Yong Sheng Tai Yan Jiu Suo Zhu Ban* 16: 1099-1103.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Li Xiuzhen, Zeng Yiliang, and Ren Liankui (1995). The Contact Toxicity of Different Kinds of Insecticides to Cotton Bollworm Helicoverpa Armigera and Armyworm Mythimna Separata. *Sinozoologia* 0: 75-79.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Li Zhongwu, Wang Zhenzhong and others (1997). Simulating Toxicity Tests of Methamidophos Pesticide to Soil Animals. *Huanjing kexue* 18: 45-49, 94.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Liang, Jidong and Zhou, Qixing (2003). Single and Binary-Combined Toxicity of Methamidophos, Acetochlor and Cu on Earthworm Eisenia Foetida. *Ying Yong Sheng Tai Xue Bao = The Journal Of Applied Ecology / Zhongguo Sheng Tai Xue Xue Hui, Zhongguo Ke Xue Yuan Shenyang Ying Yong Sheng Tai Yan Jiu Suo Zhu Ban* 14: 593-596.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Lienig, K. (1991). Studies of the Effect of Fungicides, Antibiotics and Other Xenobiotics on the Stages of the Two-Spotted Spider Mite, Tetranychus Urticae Koch. *Arch phytopathol pflanzenschutz* 27: 395-402.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Lin, Q., Cai, G., Lin, J., and Dai, Y. (1993). Studies on Bionomics and Control of Oligochroa Atriquamella Hampson. *Forest research* 6: 431-436.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Liu, B, Zhao, Y, Chao, Y, Xie, Y, and Wang, Y (2001). Degradation of Methamidophos by Saccharomyces Rouxii Wy-3. *Huan Jing Ke Xue= Huanjing Kexue / [Bian Ji, Zhongguo Ke Xue Yuan Huan Jing Ke Xue Wei Yuan Hui "Huan Jing Ke Xue" Bian Ji Wei Yuan Hui.]* 22: 37-41.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE, YEAST.

Liu, C. H., Cheng, C. L., Shih, S. J., Yen, G. C., and Chou, S. S. (1996). Studies on Multiresidue Determination of Pesticides in Fruits and Vegetables by Gas Chromatography/Mass Spectrometry. *Journal of food and drug analysis* 4: 89-98.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Liu Feng and others (1996). Pretreatment and Detection of Organophosphorus Pesticide Residue in Environmental Sample. *Huanjing kexue* 17: 69-70, 87, 95.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Liu, T. S. and Wang, Y. S. (1992). Screening for Insecticides and the Application of Yellow Sticky Card in the Control of American Leafminer Liriomyza Trifolii Burgess. *Bulletin of taichung district agricultural improvement station* 0: 7-16.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Liu, T. X., Stansly, P. A., and Chortyk, O. T. (1996). Insecticidal Activity of Natural and Synthetic Sugar Esters Against Bemisia Argentifolii (Homoptera: Aleyrodidae). *Journal of economic entomology* 89: 1233-1239.
Chem Codes: Chemical of Concern: MTM Rejection Code: MIXTURE.

Liu, X., Wang, Y., Zhao, Y., and Liu, A. (1995). Neurophysiological Effects of Imidacloprid and Dimehypo on the Central Nervous System in the American Cockroach, Periplaneta Americana. *Acta entomologica sinica* 38: 129-133.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, MIXTURE.

Liu, Yuhuan and Zhong, Yingchang (Degradation of organophosphate insecticide (Dimethoate) by Aspergillus sp. Z58. 20: 95-99 CODEN: HKXUDL; ISSN: 0253-2468.
Chem Codes: Chemical of Concern: CU ,DMT Rejection Code: MICROBE.

Liu, Z. W., Han, Z. J., and Zhang, L. C. (2002). Cross Resistance of Methamidophos Resistant Strain of Brown Planthopper and the Biochemical Mechanism Responsible. *Acta Entomol.Sin.* 45: 447-452 (CHI) (ENG ABS).
Chem Codes: Chemical of Concern: DZ, MTM Rejection Code: NON-ENGLISH.

Liu, Zhi, Zhang, Xiaozhou, and Li, Shunpeng (2003). Use of Methyl Parathion (Mp)-Degrading Strain Dll-E4 (Pseudomonas Sp.) To Remove Mp Residue on the Surface of Agricultural Products. *Ying Yong Sheng Tai Xue Bao = The Journal Of Applied Ecology / Zhongguo Sheng Tai Xue Xue Hui, Zhongguo Ke Xue Yuan Shenyang Ying Yong Sheng Tai Yan Jiu Suo Zhu Ban* 14: 1770-1774.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Lonsway, J. A., Byers, M. E., Dowla, H. A., Panemangalore, M., and Antonious, G. F. (1997). Dermal and Respiratory Exposure of Mixers-Sprayers to Acephate Methamidophos and Endosulfan During Tobacco Production. *Bulletin of environmental contamination and toxicology* 59: 179-186.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Lotti, M., Becker, C. E., and Aminoff, M. J. (1984). Organo Phosphate Poly Neuropathy Pathogenesis and Prevention. *Neurology* 34: 658-662.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Lotti, M and Moretto, A (1993). The Search for the Physiological Functions of Nte; Is Nte a Receptor? *Chemico-Biological Interactions* 87: 407-416.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Lotti, M., Moretto, A., Bertolazzi, M., Peraica, M., and Fioroni, F. (1995). Organophosphate polyneuropathy and neuropathy target esterase: Studies with methamidophos and its resolved optical isomers. *Archives of Toxicology [ARCH. TOXICOL.]. Vol. 69, no. 5, pp. 330-336. 1995.*
Chem Codes: Chemical of Concern: MCPP1 Rejection Code: METHODS.

Lotti, M, Moretto, A, Capodicasa, E, Bertolazzi, M, Peraica, M, and Scapellato, M L (1993). Interactions Between Neuropathy Target Esterase and Its Inhibitors and the Development of Polyneuropathy. *Toxicology And Applied Pharmacology* 122: 165-171.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Lu, R. and Xu, T. (1992). Studies on the Bionomics of Aphrophora Horizontalis Kato and Its Control. *For res* 5: 687-692.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Lubkowitz, J. A. and Galobardes, J. (The Evaluation of a Radio Gas-Chromatographic System for the Detection of Trace Amounts of Labelled Insecticides. *J. Environ. Sci. Health bll(1): 49-65* 1976..
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lubkowitz, J. A. and Petit, L. R. (Determination of Metamidophos and Acetamidophos in Formulations by Reversed-Phase High-Pressure Liquid Chromatography. *J chromatogr; 121 (1). 1976 161-164.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lui, J., Guenther, A., Bilitewski, U., Lee, H. K., and Wong, M. K. (eds) (1997). Detection of Methamidophos in Vegetables Using a Photometric Flow Injection System.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lui, J., Gunther, A., and Bilitewski, U. (1997). Detection of Methamidophos in Vegetables Using a Photometric Flow Injection System. *Environmental monitoring and assessment* 44: 375-382.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lui, J., Tan, M., Liang, C., and Ying, K. B. (1996). Immobilized Enzyme Modulator Microassay (Iemma) for the Detection of Pesticide in Fresh Produce. *Analytica chimica acta* 329: 297-304.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Lui, Jacqueline, Tan, Michelle, Liang, Cynthia, and Ying, Khoo Bee (1996). Immobilized Enzyme Modulator Microassay (Iemma) for the Detection of Pesticide in Fresh Produce. *Analytica Chimica Acta* 329: 297-304.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Luke, M A and Doose, G M (1983). A Modification of the Luke Multiresidue Procedure for Low Moisture, Nonfatty Products. *Bulletin Of Environmental Contamination And Toxicology* 30: 110-116.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Luke, M. A., Langham, W. S., Kodama, D. M., Masumoto, H. T., Froberg, J. E., and Doose, G. M. (1991). Current and Future Status of Pesticide Multiresidue Methodology. *Frehse, h. (Ed.). Pesticide*

chemistry: advances in international research, development, and legislation Seventh international congress of pesticide chemistry, hamburg, germany, august 5-10, 1990. Xiv+666p. Vch verlagsgesellschaft mbh: weinheim, germany; vch publishers inc.: New york, new york, usa. Illus. Isbn 3-527-28111-8; isbn 0-89573-975-5.; 0: 373-382.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Luttik, R. and Aldenberg, T. (1997). Extrapolation Factors for Small Samples of Pesticide Toxicity Data: Special Focus on Ld50 Values for Birds and Mammals. *Environmental toxicology and chemistry* 16: 1785-1788.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING.

Maddy, K. T., Edmiston, S., and Richmond, D. (1990). Illness Injuries and Deaths From Pesticide Exposures in California Usa 1949-1988. *Ware, g. W. (Ed.). Reviews of environmental contamination and toxicology, vol. 114. Ix+171p. Springer-verlag new york inc.: New york, new york, usa* Berlin, west germany. Illus. Isbn 0-387-97207-2; isbn 3-540-97207-2.; 0: 57-124.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Magnotti, R. A Jr, Dowling, K., Eberly, J. P., and Mcconnell, R. S. (1988). Field Measurement of Plasma and Erythrocyte Cholinesterases. *Clin chim acta* 176: 315-332.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Mahajna, M and Casida, J E (1998). Oxidative Bioactivation of Methamidophos Insecticide: Synthesis of N-Hydroxymethamidophos (a Candidate Metabolite) and Its Proposed Alternative Reactions Involving N-->O Rearrangement or Fragmentation Through a Metaphosphate Analogue. *Chemical Research In Toxicology* 11: 26-34.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Mahajna, M. and Casida, J. E. *. (1998). Oxidative Bioactivation of Methamidophos Insecticide: Synthesis of N-Hydroxymethamidophos (a Candidate Metabolite) and Its Proposed Alternative Reactions Involving N Arrow Right O Rearrangement or Fragmentation Through a Metaphosphate Analogue. *Chemical Research in Toxicology [CHEM. RES. TOXICOL.]. Vol. 11, no. 1, pp. 26-34. Jan 1998.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

MAHAJNA, M., QUISTAD GB, and CASIDA JE (1997). Acephate insecticide toxicity: Safety conferred by inhibition of bioactivating carboxyamidase by the metabolite methamidophos. *CHEMICAL RESEARCH IN TOXICOLOGY; 10* 64-69.
Chem Codes: Chemical of Concern: ACP Rejection Code: HUMAN HEALTH.

Makhaeva, G. F., Malygin, V. V., and Martynov, I. V. (1987). Delayed Neurotoxicity Induced by Organophosphorus Pesticides. *Agrokhimiya* 0: 103-126.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Malato, S., Blanco, J., Richter, C., Milow, B., and Maldonado, M. I. (1999). Solar Photocatalytic Mineralization of Commercial Pesticides: Methamidophos. *Chemosphere* 38: 1145-1156.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO SPECIES.

Mansvelder, H. D., Keath, J. R., and Mcgehee, D. S. (Synaptic Mechanisms Underlie Nicotine-Induced Excitability of Brain Reward Areas. *Neuron. 2002, mar 14; 33(6):905-19. [Neuron.]: Neuron.*
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO, METABOLISM.

Maroni, M., Catanacci, G., Galli, D., Cavallo, D., and Ravazzani, G. (1990). Biological Monitoring of Human Exposure to Acephate. *Arch environ contam toxicol* 19: 782-788.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Maroni, M., Catenacci, G., Galli, D., Cavallo, D., and Ravazzani, G. (Biological Monitoring of Human Exposure to Acephate. *Archives of environmental contamination and toxicology, vol. 19, no. 5, pages 782-788, 19 references, 1990.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Maroni, M. and Fait, A. (1993). Health Effects in Man From Long-Term Exposure to Pesticides a Review of the 1975-1991 Literature. *Toxicology* 78: V-xiii, 1-180.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Martinetz, D., Wenzel, K. D., Weissflog, L., and Dedek, W. (Biological Availability of Methamidophos Fate of the Insecticide Phosphorus-32 Methamidophos Thiophosphoric-Acid O S Dimethylester Amide in a Terrestrial Laboratory Micro-Ecosystem. *Z gesamte hyg grenzgeb; 31 (11). 1985 (recd. 1986). 644-646.*
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Martinetz, D, Wenzel, K D, Weissflog, L, and Dedek, W (1985). Biological Availability of Methamidophos. Studies on the Fate of the Insecticide 32p-Methamidophos (Thiophosphoric Acid-0,S-Dimethylester Amide) in a Terrestrial Laboratory Micro-Ecosystem Model. *Zeitschrift Fur Die Gesamte Hygiene Und Ihre Grenzgebiete* 31: 644-646.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, FATE.

Martos-T, A. and Sariento-M, J. (1986). Seven Insecticides Against Spodoptera-Eridania Larvae. *Rev peru entomol* 29: 41-44.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Martos-T, A. and Sarmiento-M, J. (1987). Insecticides Against Adults and Larvae of Potato Leaf-Miner. *Rev peru entomol* 30: 54-57.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Mastovska, Katerina and Lehotay, Steven J (2004). Evaluation of Common Organic Solvents for Gas Chromatographic Analysis and Stability of Multiclass Pesticide Residues. *Journal Of Chromatography. A* 1040: 259-272.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Masud, S. Z. and Hasan, N. (1992). Pesticide Residues in Foodstuffs in Pakistan: Organochlorine, Organophosphorus and Pyrethroid Insecticides in Fruits and Vegetables. *Pak j sci ind res* 35: 499-504.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Masud, S. Z. and Hasan, N. (1995). Study of Fruits and Vegetables in Nwfp Islamabad and Balochistan for Organochlorine Organophosphorus and Pyrethroid Pesticide Residues. *Pakistan journal of scientific and industrial research* 38: 74-80.
Chem Codes: Chemical of Concern: MTM Rejection Code: FOOD.

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.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Mayer, J. R. and Elkins, N. R. (1990). Potential for Agricultural Pesticide Runoff to a Puget Sound Estuary Padilla Bay Washington Usa. *Bull environ contam toxicol* 45: 215-222.
Chem Codes: Chemical of Concern: MTM Rejection Code: SURVEY.

Mcconnell, R., Delgado-T&Eacute, Llez, E., Cuadra, R., T&Oacute, Rres, E., Keifer, M., Almend&Aacute, Rez, J., Miranda, J., El-Fawal, H. A., Wolff, M., Simpson, D., and Lundberg, I. (Organophosphate Neuropathy Due to Methamidophos: Biochemical and Neurophysiological Markers. *Arch toxicol. 1999, aug; 73(6):296-300. [Archives of toxicology.]: Arch Toxicol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Mcconnell, R., Delgado-Tellez, E., Cuadra, R., Torres, E., Keifer, M., Almendarez, J., Miranda, J., El-Fawal, H. An, Wolff, M., Simpson, D., and Lundberg, I. (1999). Organophosphate Neuropathy Due to Methamidophos: Biochemical and Neurophysiological Markers. *Archives of toxicology* 73: 296-300.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Mcconnell, R. and Hruska, A. J. (An Epidemic of Pesticide Poisoning in Nicaragua: Implications for Prevention in Developing Countries. *American journal of public health, vol. 83, no. 11, pages 1559-1562, 15 references, 1993*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Mcconnell, R. and Hruska, A. J. (1993). An epidemic of pesticide poisoning in Nicaragua: Implications for prevention in developing countries. *American Journal of Public Health* 83 : 1559-1562.
Chem Codes: CBF Rejection Code: HUMAN HEALTH.

Mcconnell, R., Keifer, M., and Rosenstock, L. (Elevated Quantitative Vibrotactile Threshold Among Workers Previously Poisoned With Methamidophos and Other Organophosphate Pesticides. *American journal of industrial medicine, vol. 25, no. 3, grant no. K01-oh-00123, pages 325-334, 39 references, 1994*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Mcconnell, R., Pacheco Anton Af, and Magnotti, R. (1990). Crop Duster Aviation Mechanics: High Risk for Pesticide Poisoning. *Am j public health* 80: 1236-1239.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Mcewen, F. L., Ritcey, G., Braun, H., Frank, R., and Ripley, B. D. (Foliar Pesticide Residues in Relation

to Worker Re-Entry. *Pestic. Sci. 11(6): 643-650 1980 (17 references).*
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

McLeay, M. J. and Hall, K. J. (1999). Monitoring Agricultural Drainage Ditches and the Receiving Water (Nicomekl River, Surrey, B.C.) for Toxicity to Ceriodaphnia dubia and Probable Cause due to Organophosphate Contamination. *Water Qual.Res.J.Can.* 34: 423-453.
Chem Codes: Chemical of Concern: DZ,MTM Rejection Code : EFFLUENT.

Melluso, G., Esposito, A., Guida, M., Maurano, F., Trieff, N. M., and Pagano, G. (1994). Distribution of Inorganic and Organic Pollutants in River Sediments in Campania Italy. *Bulletin of environmental contamination and toxicology* 52: 13-18.
Chem Codes: Chemical of Concern: MTM Rejection Code: EFFLUENT.

Mey, W. (1988). Laboratory Trials on the Toxicity of Insecticides and Acaricides to Parasitoids of Lepidopterous Leaf Miners. *Arch phytopathol pflanzenschutz* 24: 237-243.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Milatovic, D., Moretto, A., Osman, K. A., and Lotti, M. (1997). Phenyl Valerate Esterases Other Than Neuropathy Target Esterase and the Promotion of Organophosphate Polyneuropathy. *Chemical research in toxicology* 10: 1045-1048.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Mileson, B. E., Chambers, J. E., Chen, W. L., Dettbarn, W., Ehrich, M., Eldefrawi, A. T., Gaylor, D. W., Hamernik, K., Hodgson, E., Karczmar, A. G., Padilla, S., Pope, C. N., Richardson, R. J., Saunders, D. R., Sheets, L. P., Sultatos, L. G., and Wallace, K. B. (1998). Common Mechanism of Toxicity: A Case Study of Organophosphorus Pesticides. *Toxicol.Sci.* 41: 8-20.
Chem Codes: EcoReference No.: 88809
Chemical of Concern: MTM Rejection Code: REVIEW.

Mineau, P., Boersma, D. C., and Collins, B. (1994). An Analysis of Avian Reproduction Studies Submitted for Pesticide Registration. *Ecotoxicology and environmental safety* 29: 304-329.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Mineau, P., Fletcher, M. R., Glaser, L. C., Thomas, N. J., Brassard, C., Wilson, L. K., Elliott, J. E., Lyon, L. A., Henny, C. J., Bollinger, T., and Porter, S. L. (1999). Poisoning of Raptors With Organophosphorus and Carbamate Pesticides With Emphasis on Canada, U.s. And U.k. *Journal of raptor research* 33: 1-37.
Chem Codes: Chemical of Concern: MTM Rejection Code: SURVEY, INCIDENT.

Mingjing, Qu, Zhaojun, Han, Xinjun, Xu, and lina, Yue (2003). Triazophos Resistance Mechanisms in the Rice Stem Borer (Chilo Suppressalis Walker). *Pesticide Biochemistry and Physiology* 77: 99-105.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO, METABOLISM.

Minyard, J. P Jr and Roberts, W. E. (1991). State Findings on Pesticide Residues in Foods: 1988 and 1989. *J assoc off anal chem* 74: 438-452.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Miyata, M., Hirahara, Y., Narita, M., Kimura, M., Watanabe, Y., Ito, S., Takeda, H., Kobayashi, A., Tonogai, Y., Nakamura, Y., Tsumura, Y., and Shibata, T. (1996). Comparison for the Simultaneous Determination of Pesticides Residues in Foods by Gc and Gc-Ms. *Journal of the food hygienic society of japan* 37: 158-164.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Miyazaki, A., Nakamura, T., Kawaradani, M., and Marumo, S. (1988). Resolution and biological activity of both enantiomers of methamidophos and acephate. *Journal of Agricultural and Food Chemistry [J. AGRIC. FOOD CHEM.]. Vol. 36, no. 4, pp. 835-837. 1988.*
Chem Codes: Chemical of Concern: MCPP1 Rejection Code: METHODS.

Miyazaki, A., Nakamura, T., Kawaradani, M., and Marumo, S. (1988). Resolution and Biological Activity of Both Enantiomers of Methamidophos and Acephate. *J agric food chem* 36: 835-837.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Moffett, J. O., Wilson, W. T., Stoner, A., and Wardecker, A. (1979). Effect of Fifteen Combinations of Four Management Methods on Losses of Honeybees Caused by Spraying Insecticides on Cotton. *J econ entomol* 72: 453-455.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Mol, H. Gj, Althuizen, M., Janssen, H. G., Cramers, C. A., and Brinkman, U. At (1996). Environmental Applications of Large Volume Injection in Capillary Gc Using Ptv Injectors. *Hrc journal of high resolution chromatography* 19: 69-79.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Mol, H. Gj, Janssen, H. G., Cramers, C. A., and Brinkman, U. At (1996). Large-Volume Injection in Gas Chromatographic Trace Analysis Using Temperature-Programmable Ptv Injectors. *Trends in analytical chemistry* 15: 206-214.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, HUMAN HEALTH.

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.
Chem Codes: Chemical of Concern: DMT Rejection Code: METHODS/NO TOX DATA/FOOD.

Moretto, A. (1998). Experimental and Clinical Toxicology of Anticholinesterase Agents. *Toxicology letters (shannon)* 102-103: 509-513.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Moretto, A. and Lotti, M. (Promotion of Peripheral Axonopathies by Certain Esterase Inhibitors. *Toxicology and industrial health, vol. 9, no. 6, pages 1037-1046, 20 references, 1993.*
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Mouratidis, S. and Thier, H. P. (1995). Solid Phase Extraction for the Confirmation of Results in Polar

Pesticides Residue Analysis by Hptlc. *Zeitschrift fuer lebensmittel-untersuchung und -forschung* 201: 327-330.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Mowry, T. M. (2005). Insecticidal Reduction of Potato Leafroll Virus Transmission by Myzus Persicae. *Annals of Applied Biology, 146 (1) pp. 81-88, 2005*.
Chem Codes: Chemical of Concern: MTM Rejection Code: VIRUS.

Mueller, A. Cw and Sula, J. (1991). Carboxylesterase Polymorphism of Resistant Inbreeding Lines of the Two-Spotted Spider Mite Tetranychus-Urticae. *Dusbabek, f. And v. Bukva (ed.). Modern acarology, vol. Ii* Viii international congress of acarology, ceske budejovice, czechoslovakia, august 6-11, 1990. Ix+779p. Spb academic publishing bv: the hague, netherlands. Illus. Maps. Isbn 90-5103-054-1.; 0: 415-418.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Mueller, S., Efer, J., Wennrich, L., Engewald, W., and Levsen, K. (Gas Chromatographic Trace Analysis of Methamidophos and Buminafos in Drinking Water Influence of Parameters on Ptv Injection of Large Sample Volumes. *Fachgruppe wasserchemie in der gesellschaft deutscher chemiker (ed.). Vom wasser, band 81; (water, vol. 81); fifty-ninth annual meeting of fachgruppe wasserchemie in der gesellschaft deutscher chemiker (the water chemistry section of the german chemists society), badenweiler, germany, may 1993. Xvii+413p. Vch verlagsgesellschaft mbh: weinheim, germany. Isbn 3-527-28566-0.; 0 (0). 1993. 135-150.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Murphy, M. J. (Residues and Maximum Residue Levels. *British crop protection council. Brighton crop protection conference: pests and diseases, 1990, vols. 1, 2 and 3; international conference, brighton, england, uk, november 19-22, 1990. Xxii+396p.(Vol. 1); xxii+482p.(Vol. 2); xxii+386p.(Vol. 3) british crop protection: farnham, england, uk. Illus. Maps. Paper. Isbn 0-948404-46-9(vol. 1); isbn 0-948404-47-4(vol. 2); isbn 0-948404-48-8(vol. 3); isbn 0-948404-45-0(set).; 0 (0). 1990. 1087-1096.*
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW,FOOD.

Nakamura, Y., Tonogai, Y., Sekiguchi, Y., Tsumura, Y., Nishida, N., Takakura, K., Isechi, M., Yuasa, K., Nakamura, M., Kifune, N., Yamamoto, K., Terasawa, S., Oshima, T., Miyata, M., Kamakura, K., and Ito, Y. (1994). Multiresidue Analysis of 48 Pesticides in Agricultural Products by Capillary Gas Chromatography. *Journal of agricultural and food chemistry* 42: 2508-2518.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Natskova, V. and Karadzhova, O. (1990). Efficiency of Some Preparations on the Imagoes and Larvae of Liriomyza Trifolii and Liriomyza Bryoniae (Diptera: Agromyzidae). *Rasteniev"d nauki* 27: 96-101.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Navarro Garcia S, Camara, M. A., Barba, A., Toledano, R., and Luna, A. (1992). Incidence of Residual Levels of Organophosphorus Insecticides in Farm Produce in the Region of Murcia, Spain: Comparison of Intake in the 1985-86 and 1989 Campaigns. *J appl toxicol* 12: 251-254.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Nee, H. H., Hsu, E. L., and Li, G. C. (1992). Resistance of Green Peach Aphid Myzus Persicae (Sulzer) From Tobacco to Four Organophosphorus Insecticides in Taiwan. *Bull taiwan tob res inst taiwan tob wine monop bur* 0: 37-47 .
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Neidert, E. and Saschenbrecker, P. W. (1996). Occurrence of Pesticide Residues in Selected Agricultural Food Commodities Available in Canada. *Journal of aoac international* 79: 549-566.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Nesbitt, H. J., Hickery, A., and Phirum, I. (1996). ADULTERATED PESTICIDES IN CAMBODIA. *International Rice Research Notes* 21 : 51.
Chem Codes: MOM,CBF Rejection Code: NO TOX DATA, ABSTRACT.

Nicholas, A. H. and Van, D. E. N. Berghe H (Sister Chromatid Exchange and Pesticides, With Emphasis on Organophosphates, in: Sister Chromatid Exchange. *Prog top cytogenet 2:327-354,1982: PROG TOP CYTOGENET.*
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Nigg, H N, Reinert, J A, and Fitzpatrick, G E (1979). Acephate and Methamidophos Residue Behavior in Florida Citrus, 1976. *Pesticides Monitoring Journal* 12: 167-171.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Nunes, Gilvanda Silva, Montesinos, Thierry, Marques, Paulo Brasil O., Fournier, Didier, and Marty, Jean Louis (2001). Acetylcholine Enzyme Sensor for Determining Methamidophos Insecticide: Evaluation of Some Genetically Modified Acetylcholinesterases From Drosophila Melanogaster. *Analytica Chimica Acta* 434: 1-8.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

O'connor, R. J. and Boone, R. B. (A Retrospective Study of Agricultural Bird Populations in North America. *Mckenzie, d. H., D. E. Hyatt and v. J. Mcdonald (ed.). Ecological indicators, vols. 1 and 2; international symposium, fort lauderdale, florida, usa, october 16-19, 1990. Xxv+810p.(Vol. 1); xv+756p.(Vol. 2) elsevier science publishers ltd.: London, england, uk; new york, new york, usa. Isbn 1-85166-722-9(set); isbn 1-85166-711-3(vol. 1); isbn 1-85166-721-0(vol. 2).; 0 (0). 1992. 1165-1184.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

O'malley, M. (1997). Clinical Evaluation of Pesticide Exposure and Poisonings. *Lancet (north american edition)* 349: 1161-1166.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Obana, H., Okihashi, M., Kakimoto, S., and Hori, S. (1997). Determination of Acephate and Methamidophos in Foods Using Super-Absorbent Polymer. *Analytical communications* 34: 253-256.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Obana, H., Okihashi, M., Kitagawa, M., Hori, S., and Minami, H. (1998). Automated Analysis of

Organophosphorus Pesticide Residues in Foods Using Supercritical Fluid Extraction. *Journal of the food hygienic society of japan* 39: 172-177.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Obst, U. (1991). Dechema Congress on Biotechnology Frankfurt Am Main Germany May 1990. *Z wasser-abwasser- forsch* 24: 1-45.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, BACTERIA.

Ogawa, M., Sakai, T., Ohkuma, K., Matsumoto, T., Hisamatsu, Y., and Nakazawa, H. (Rapid Determination of Multiple Pesticide Residues in Agricultural Products by Gpc Clean-up and Gc-Sim./Growth & Development.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Ogawa, T., Okamoto, N., Taniguchi, K., Yamashita, K., Nishida, S., and Higuchi, H. (1997). Analysis of Acephate and Methamidophos in Agricultural Products by Gc. *Journal of the food hygienic society of japan* 38: 204-210.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

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: 87-152.
Chem Codes: Chemical of Concern: MTM Rejection Code: FOOD.

Oliveira, M. L. and Machado-Neto, J. G. (Permeability of Two Types of Cotton Fabric Used in Personal Protective Clothing to the Insecticide Methamidophos. *Bull environ contam toxicol. 2005, dec; 75(6):1156-62. [Bulletin of environmental contamination and toxicology.]: Bull Environ Contam Toxicol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Oomen, P. A. (1986). A Sequential Scheme for Evaluating the Hazard of Pesticides to Bees, Apis mellifera. *Meddedelingen van de Fakulteit Landbouwwetenshupen Rijksuniversitiet Gent* 51.
Chem Codes: Chemical of Concern: MOM,CYP,DOD,MTM Rejection Code: REVIEW.

Osuna, I., Lopez, D., Galindo, J. G., and Riva, M. C. (1997). Toxicological Evaluation of Methyl Parathion, Methyl Azinfos, Chlorpyrifos, Diazinon, and Methamidophos to the Shrimps From Genus Penaeus Sp (Evaluacion Toxicologica De Metil Paration, Metil Azinfos, Clorpirifos, Diazinon, Y Metamidofos, En Camarones Del Genero Penaeus Sp). *Bol.INTEXTER Inst.Invest.Text.Coop.Ind.* 111: 65-71.
Chem Codes: Chemical of Concern: DZ,CPY,AZ,MP,MTM Rejection Code: NON-ENGLISH.

Otto, D. A., Soliman, S., Svendsgaard, D., Soffar, A., and Ahmed, N. (1990). Neurobehavioral Assessment of Workers Exposed to Organophosphorus Pesticides. *Johnson, b. L. (Ed.). Advances in neurobehavioral toxicology: applications in environmental and occupational health* Third international symposium on neurobehavioral methods in environmental and occupational health, washington, d.c., Usa, december 14-17, 1988. Xviii+512p. Lewis publishers, inc.: Chelsea, michigan, usa. Illus. Isbn 0-87371-374-5.; 0: 305-322.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Oudejans, J. Hm (1999). Wageningen Agricultural University Papers, 99. 1. Studies on Ipm Policy in Se Asia: Two Centuries of Plant Protection in Indonesia, Malaysia and Thailand. *Oudejans, j. H. M. Wageningen agricultural university papers, 99. 1. Studies on ipm policy in se asia: two centuries of plant protection in indonesia, malaysia and thailand. Xviii+316p.+++Wageningen agricultural university: wageningen, netherlands. Isbn 90-5782-020-x.* 99: Xviii+316p.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Padilla, S., Sung, H. J., and Moser, V. C. (2004). Further assessment of an in vitro screen that may help identify organophosphorus pesticides that are more acutely toxic to the young. *Journal of Toxicology and Environmental Health, Part A: Current Issues [J. Toxicol. Environ. Health, A: Curr. Iss.]. Vol. 67, no. 18, pp. 1477-1489. 24 Sep 2004.*
Chem Codes: Chemical of Concern: DZ Rejection Code: IN VITRO.

Padilla, S, Sung, H-J, and Moser, V C (2004). Further Assessment of an in Vitro Screen That May Help Identify Organophosphorus Pesticides That Are More Acutely Toxic to the Young. *Journal Of Toxicology And Environmental Health. Part A* 67: 1477-1489.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO, METHODS.

Padungtod, C., Hassold, T. J., Millie, E., Ryan, L. M., Savitz, D. A., Christiani, D. C., and Xu, X. (Sperm Aneuploidy Among Chinese Pesticide Factory Workers: Scoring by the Fish Method. *Am j ind med. 1999, aug; 36(2):230-8. [American journal of industrial medicine.]: Am J Ind Med*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Padungtod, C., Lasley, B. L., Christiani, D. C., Ryan, L. M., and Xu, X. (Reproductive Hormone Profile Among Pesticide Factory Workers. *J occup environ med. 1998, dec; 40(12):1038-47. [Journal of occupational and environmental medicine / american college of occupational and environmental medicine.]: J Occup Environ Med*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Padungtod, C., Niu, T., Wang, Z., Savitz, D. A., Christiani, D. C., Ryan, L. M., and Xu, X. (Paraoxonase Polymorphism and Its Effect on Male Reproductive Outcomes Among Chinese Pesticide Factory Workers. *American journal of industrial medicine sep. 1999, vol.36, No.3, P.379-387. 29 ref.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Padungtod, C., Savitz, D. A., Overstreet, J. W., Christiani, D. C., Ryan, L. M., and Xu, X. (Occupational Pesticide Exposure and Semen Quality Among Chinese Workers. *J occup environ med. 2000, oct; 42(10):982-92. [Journal of occupational and environmental medicine / american college of occupational and environmental medicine.]: J Occup Environ Med*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Pan, D. Y. and Liang, X. M. (1993). Safety Study of Pesticides on Bog Frog, a Predatory Natural Enemy of Pest in Paddy Field. *J.Hunan Agricult.Coll.* 19: 47-54 (CHI) (ENG ABS).

EcoReference No.: 16056
Chemical of Concern:
24DXY,CaPS,CBF,CPY,CTN,DMT,DZ,HCCH,MLN,MLT,MP,MTM,PMT,TBC,DM,EFV,BPZ, FPP,OMT,NaPCP,Zn; Habitat: A; Effect Codes: MOR; Rejection Code: NO FOREIGN.

Pan Dao-Yi and Liang Xue-Ming (1996). The Susceptibility of Marsh Frog (Tadpole) and Spiders to Pesticides and Classification of Acute Toxicity. *Acta zoologica sinica* 42: 154-160.

Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Panemangalore, M. and Bebe, F. N. (2000). Dermal exposure to pesticides modifies antioxidant enzymes in tissues of rats. *Journal of Environmental Science and Health, Part B: Pesticides, Food Contaminants and Agricultural Wastes [J. Environ. Sci. Health, Pt. B: Pestic., Food Contam., Agric. Wastes]. Vol. B35, no. 4, pp. 399-416. 2000.*
Chem Codes: Chemical of Concern: NCTN Rejection Code: HUMAN HEALTH.

Panemangalore, M. and Bebe, F. N. (1999). Effect of Dermal Exposure to a Mixture of Pesticides on the Status of Antioxidant Enzymes in the Tissues of Rats. *Annual meeting of the professional research scientists for experimental biology 99, washington, d.c., Usa, april 17-21, 1999. Faseb journal* 13: A602.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT.

PANEMANGALORE, M. and BEBE FN (1999). Effect of dermal exposure to a mixture of pesticides on the status of antioxidant enzymes in the tissues of rats. *ANNUAL MEETING OF THE PROFESSIONAL RESEARCH SCIENTISTS FOR EXPERIMENTAL BIOLOGY 99, WASHINGTON, D.C., USA, APRIL 17-21, 1999. FASEB JOURNAL; 13* A602.
Chem Codes: Chemical of Concern: ACP Rejection Code: MIXTURE.

Parfitt, C. H. (1994). Wide-Bore Capillary Gas Chromatographic Determination of Organophosphorus Pesticide Residues in Foods: Interlaboratory Trial. *Journal of aoac international* 77: 92-101.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Parron, T., Hernandez, A. F., Pla, A., and Villanueva, E. (1996). Clinical and Biochemical Changes in Greenhouse Sprayers Chronically Exposed to Pesticides. *Human & experimental toxicology* 15: 957-963.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Parveen, Z., Afridi, I. A. K., Masud, S. Z., and Baig, M. M. H. (1996). Monitoring of Multiple Pesticide Residues in Cotton Seeds During Three Crop Seasons. *Pak.J.Sci.Ind.Res.* 39: 146-149 .
Chem Codes: Chemical of Concern: CYP,AND,HCCH,CPY,CYF,DCF,DLD,DMT,DDT,ES,FYT,MTM,MP,PIRM,PFF Rejection Code: NO CONC/NO DURATION/SURVEY.

Parveen, Z., Afridi, I. Ak, and Masud, S. Z. (1994). A Multi-Residue Method for Quantitation of Organochlorine Organophosphorus and Synthetic Pyrethroid Pesticides in Cotton Seeds. *Pakistan journal of scientific and industrial research* 37: 536-540.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Pauluhn, J. and Machemer, L. (1986). Lung Function Tests for the Investigation of Local Acetylcholinesterase Inhibition in the Lung After Acute Exposure of Rats to Organophosphates and Carbamates. *Fourth international congress of toxicology, tokyo, japan, july 21-25, 1986. Toxicol lett (amst)* 31: 90.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT.

Pauluhn, J, Machemer, L, and Kimmerle, G (1987). Effects of Inhaled Cholinesterase Inhibitors on Bronchial Tonus and on Plasma and Erythrocyte Acetylcholine Esterase Activity in Rats. *Toxicology* 46: 177-190.
Chem Codes: Chemical of Concern: MTM Rejection Code: INHALE.

Pelikan, J. (1989). A New Improved Pest of Greenhouse Plants, Western Flower Thrips, Frankliniella Occidentalis (Pergande, 1895). *Sb uvtiz (ustav vedeckotech inf zemed) ochr rostl* 25: 271-278.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Peluso, M., Merlo, F., Munnia, A., Bolognesi, C., Puntoni, R., and Parodi, S. (1996). 32p-Postlabeling Detection of Dna Adducts in Peripheral White Blood Cells of Greenhouse Floriculturists From Western Liguria, Italy. *Cancer epidemiology biomarkers & prevention* 5: 361-369.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Penttila, P. L. and Siivinen, K. (1996). Control and Intake of Pesticide Residues During 1981-1993 in Finland. *Food additives and contaminants* 13: 609-621.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Pham Binh Quyen, Dan, D. U. C. Nhan, and Nguyen, V. A. N. San (1995). Environmental Pollution in Vietnam Analytical Estimation and Environmental Priorities. *Trends in analytical chemistry* 14: 383-388.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO EFFECT.

Plapp, F. W Jr, Magaro, J. J., and Edelson, J. V. (Diamondback Moth in South Texas a Technique for Resistance Monitoring in the Field. *Talekar, n. S. (Ed.). Diamondback moth and other crucifer pests; second international workshop, tainan, taiwan, december 10-14, 1990. 603p. Asian vegetable research and development center (avrdc): shanhua, taiwan. Isbn 92-9058-054-2.; 0 (0). 1992. 443-446.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Poggi-Varaldo, H. M., Estrada-Vazquez, C., and Rinderknecht-Seijas, N. (1998). Agricultural Wastes. *Water environment research* 70: 601-620.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Pollard, G. V. (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.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Pommer, G. and Lepschy, J. (Studies on the Contents of Winter Wheat and Carrots Produced and Marketed in Various Fashions. *Bayer landwirtsch jahrb; 62 (5). 1985 (recd. 1986). 549-564.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Popper, R., Andino, K., Bustamante, M., Hernandez, B., and Rodas, L. (1996). Knowledge and Beliefs Regarding Agricultural Pesticides in Rural Guatemala. *Environmental management* 20: 241-248.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Porrini, C., Celli, G., and Radeghieri, P. (1998). Monitoring of Pesticides Through the Use of Honeybees as

Bioindicators of the Emilia-Romagna Coastline (1995-1996). *Annali di chimica* 88: 243-252.
Chem Codes: Chemical of Concern: MTM Rejection Code: INCIDENT/SURVEY.

Prieto, A., Molero, D., GonzÁlez, G., Buscema, I., Ettiene, G., and Medina, D. (Persistence of Methamidophos, Diazinon, and Malathion in Tomatoes. *Bull environ contam toxicol. 2002, oct; 69(4):479-85. [Bulletin of environmental contamination and toxicology.]: Bull Environ Contam Toxicol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Prieto, A., Molero, D., Gonzalez, G., Buscema, I., Ettiene, G., and Medina, D. (2002). Persistence of Methamidophos, Diazinon, and Malathion in Tomatoes. *Bulletin of Environmental Contamination and Toxicology [Bull. Environ. Contam. Toxicol.]. Vol. 69, no. 4, pp. 479-485. 2002.*
Chem Codes: Chemical of Concern: DZ Rejection Code: FATE.

Prieto, A., Molero, D., Gonzalez, G., Buscema, I., Ettiene, G., and Medina, D. (2002). Persistence of Methamidophos, Diazinon, and Malathion in Tomatoes. *Bulletin of Environmental Contamination and Toxicology [Bull. Environ. Contam. Toxicol.]. Vol. 69, no. 4, pp. 479-485. 2002.*
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Prinsloo, S. M. and De Beer Pr (1985). Gas Chromatographic Relative Retention Data for Pesticides on Nine Packed Columns I. Organophosphorus Pesticides Using Flame Photometric Detection. *J assoc off anal chem* 68: 1100-1108.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Puelschen, L., Kaske, R., and Sauerborn, S. (1994). Pesticide Use in Egypt, Its Ecological Impact and Mitigative Measures. *Zeitschrift fuer pflanzenkrankheiten und pflanzenschutz* 101: 303-315.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA, METHODS.

Queiroz, M. Ls, Fernandes, M. D., and Valadares, M. C. (1999). Neutrophil Function in Workers Exposed to Organophosphate and Carbamate Insecticides. *International journal of immunopharmacology* 21: 263-270.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Quistad, G B, Sparks, S E, and Casida, J E (2001). Fatty Acid Amide Hydrolase Inhibition by Neurotoxic Organophosphorus Pesticides. *Toxicology And Applied Pharmacology* 173: 48-55.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Quistad, Gary B., Sparks, Susan E., and Casida, John E. (2001). Fatty Acid Amide Hydrolase Inhibition by Neurotoxic Organophosphorus Pesticides. *Toxicology and Applied Pharmacology* 173: 48-55.
Chem Codes: Chemical of Concern: DZ Rejection Code: IN VITRO.

Rasi, F., Neri, W., Accurti, I., Angelini, C., Di Piazza, P., and Mordenti, I. ([Peripheral Neuropathy and Attempted Suicide]. *Riv neurobiol. 1984 apr-sep; 30(2-3):343-50. [Rivista di neurobiologia : organo ufficiale della societa dei neurologi, neuroradiologi e neurochirurghi ospedalieri.]: Riv Neurobiol*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN

HEALTH.

Recena, Maria Celina Piazza, Pires, Dario Xavier, and Caldas, Eloisa Dutra (2006). Acute Poisoning With Pesticides in the State of Mato Grosso Do Sul, Brazil. *Science of The Total Environment* 357: 88-95.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Richard, M. (1998). Pesticides-Friend or Foe? *Water science and technology* 37: 19-25.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Richmond, C. E., Crisp, C. E., Larson, J. E., and Pieper, G. R. (Simple Method for Assessing Acephate and Methamidophos Residues in Plant Tissue. *Bull. Environ. Contam. Toxicol. 22(4-5): 512-516 1979 (6 references).*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Richter, E. D., Gasteyer, S., Haj, S. E., Jaqhabir, M., and Safi, J. (Agricultural Sustainability Pesticide Exposures and Health Risks Israel the Palestinian National Authority and Jordan. *Bingham, e. And d. P. Rall (ed.). Annals of the new york academy of sciences, vol. 837. Preventive strategies for living in a chemical world: a symposium in honor of irving j. Selikoff; international symposium, washington, d.c., Usa, november 2-5, 1995. Xv+588p. New york academy of sciences: new york, new york, usa. Isbn 1-57331-074-3(cloth); isbn 1-57331-075-1(paper).; 837 (0). 1997. 269-290.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Riegert, P. W., Ewen, A. B., and Lockwood, J. A. (1997). A History of Chemical Control of Grasshoppers and Locusts 1940-1990. *Gangwere, s. K., M. C. Muralirangan and m. Muralirangan (ed.). The bionomics of grasshoppers, katydids and their kin. Xiii+529p. Cab international: wallingford, england, uk. Isbn 0-85199-141-6.* 0: 385-405.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Ripley, B. D. and Braun, H. E. (1983). Retention Time Data for Organochlorine, Organophosphorus and Organonitrogen Pesticides on Se-30 Capillary Column and Application of Capillary Gas Chromatography to Pesticide Residue Analysis. *J assoc off anal chem* 66: 1084-1095.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Ritter, W. F. (1990). Pesticide Contamination of Ground Water in the Usa a Review. *J environ sci health part b pestic food contam agric wastes* 25: 1-30.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, NO EFFECT.

Robinson, C., Beiergrohslein, D., Smith, P., and Crane, C. (Spontaneous and Pralidoxime Induced Reactivation of Methamidophos Inhibited Cholin Esterases. *Pharmacologist; 17 (2). 1975 249.*
Chem Codes: Chemical of Concern: MTM Rejection Code: CHEM METABOLISM.

Robinson, C. P. and Beiergrohslein, D. (Inhibition of Human Erythrocyte and Plasma Cholinesterases by Methamidophos. *Journal of applied toxicology, vol. 2, no. 4, pages 217-218, 6 references, 19821982.*

Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO, METABOLISM, HUMAN HEALTH.

Robinson, C. P. and Beiergronslein, D. (Cholinesterase Inhibition by Methamidophos and Its Subsequent Reactivation. *Pestic. Biochem. Physiol. 13(3): 267-273 1980 (19 references).*
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Robinson Vargas, M. and Alejandrina Ubillo, F. (2001). Toxicity of Pesticides on Natural Enemies of Agricultural Pests (Toxicidad De Pesticidas Sobre Enemigos Naturales De Plagas Agricolas). *Agric.Tec.* 61: 4 p. (SPA) (ENG ABS).
Chem Codes : Chemical of Concern: MTM,MOM,IML,CPY,FTT,PMR Rejection Code: NON-ENGLISH.

Roslavtseva, S. A. (1988). World Distribution of Arthropod Populations Resistant to Insecto-Acaricides. *Agrokhimiya* 0: 121-136.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, REVIEW.

Roslavtseva, S. A. and Eremina, O. Yu (1989). Study of the Effect of Pesticides on Entomophages and Acariphages. *Agrokhimiya* 0: 123-136.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, REVIEW.

Rossberg, D. (1995). Detailed Representation of the Effects of Insecticides by Population Models-Shown by the Stimulation Model for Colorado Beetle. *Zeitschrift fuer pflanzenkrankheiten und pflanzenschutz* 102: 128-135.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, MODELING.

Roush, R. T. and Tabashnik, B. E. (1990). Pesticide Resistance in Arthropods. *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: Ix+303p.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Roy, R R, Albert, R H, Wilson, P, Laski, R R, Roberts, J I, Hoffmann, T J, Bong, R L, Bohannon, B O, and Yess, N J (U.s. Food and Drug Administration Pesticide Program: Incidence/Level Monitoring of Domestic and Imported Pears and Tomatoes. *Journal Of AOAC International* 78: 930-940.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Rueegg, Willy T (20040812). Synergistic herbicidal compositions comprising insecticides. 380 pp.
Chem Codes: Chemical of Concern: CYP FVL, RSM SPM,CaPS Rejection Code: NON-ENGLISH.

Rueegg, Willy T (20040812). **<04 Article Title>.** <25 Page(s)>.

Chemical of Concern: FVL, RSM, SPM; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

Rueegg, Willy T (20040812). Synergistic herbicidal compositions comprising insecticides. 380 pp.

Chem Codes: Chemical of Concern: AZD,SPM Rejection Code: NON-ENGLISH.

Rueegg, Willy T (20040930). Synergistic herbicidal compositions comprising isoxazolinylsulfonylbenzoylpyrazole derivs. in combination with insecticides. 49 pp.
Chem Codes: Chemical of Concern: RSM, SPM Rejection Code: NO TOX DATA.

Ruegg, Willy T (20040923). Selective synergistic herbicidal compositions. 524 pp.
Chem Codes: Chemical of Concern: RTN, SPM Rejection Code: NON-ENGLISH.

Saito, I., Yamada, S., Oshima, H., and Hayakawa, J. (1995). Multi Residue Method for Determination of Pesticides Using Luke Method Extraction, Gel Permeation Chromatography and Gas Chromatography. *Journal of pesticide science* 20: 109-118.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

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*.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Salazar, E. R. and Araya, J. E. (2001). Tomato Moth, Tuta Absoluta (Meyrick) Response to Insecticides in Arica, Chile (Respuesta De La Polilla Del Tomate, Tuta Absoluta (Meyrick), a Insecticidas En Arica) . *Agric.Tec.* 61: 4 p. (SPA) (ENG ABS).
Chem Codes: Chemical of Concern: MTM,MVP,DM,EDV,GCYH Rejection Code: NON-ENGLISH.

Sallam, M. and El-Ghawaby, S. H. (Problem of Pesticides in Egypt. *Proceedings of the vii international congress of rural medicine, salt lake city, utah, september 17-21, 1978, international association of agricultural medicine, grant no. R13-oh-00694, pages 299-301, 19781978*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, REVIEW.

Sallam, M. and El-Ghawaby, S. H. (Safety in the Use of Pesticides. *J. Environ. Sci. Health b 15(6): 677-681 1980*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Sances, F. V., Toscano, N. C., and Gaston, L. K. (1992). Minimization of Pesticide Residues on Head Lettuce: Within-Head Residue Distribution of Selected Insecticides. *J econ entomol* 85: 202-207.
Chem Codes: Chemical of Concern: MTM Rejection Code: FOOD,SURVEY.

Santana, L., Santiago, B., Negrao, L., Carramate, J., Goncalves, F., Pimentel, J., and Cunha, L. (1997). Delayed Polyneuropathy After Intoxication With Organophosphorus Description of Five Cases. *Xvi world congress of neurology, buenos aires, argentina, september 14-19, 1997. Journal of the neurological sciences* 150: S60.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Sartorelli, P, Aprea, C, Cenni, A, Novelli, M T, Orsi, D, Palmi, S, and Matteucci, G (1998). Prediction of Percutaneous Absorption From Physicochemical Data: a Model Based on Data of in Vitro

Experiments. *The Annals Of Occupational Hygiene* 42: 267-276.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING, FATE, IN VITRO.

Sartorelli, Pietro, Aprea, Cristina, Cenni, Anna, Novelli, Maria Teresa, Orsi, Daniela, Palmi, Silvana, and Matteucci, Giacomo (Prediction of percutaneous absorption from physicochemical data: a model based on data of in vitro experiments. 42: 267-276 CODEN: AOHYA3; ISSN: 0003-4878.
Chem Codes: Chemical of Concern: CHLOR ,DMT, OMT Rejection Code: MODEL, IN VITRO.

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 toxicology* 9: 343-352.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Schardein, J. L. (Pesticides. *Chemically induced birth defects 1993;2:675-721: Chemically Induced Birth Defects*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Schattenberg, H. J Iii, Geno, P. W., Hsu, J. P., Fry, W. G., and Parker, R. P. (1996). Effect of Household Preparation on Levels of Pesticide Residues in Produce. *Journal of aoac international* 79: 1447-1453.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

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: 925-933.
Chem Codes: Chemical of Concern: MTM Rejection Code: SURVEY.

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.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Schilter, B. and Huggett, A. C. (1998). The Adi as a Basis to Establish Standards for Pesticide Residues in Food Products for Infants and Children. *Food additives and contaminants* 15: 83-89.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Schnabel, R., Elstner, P., Taglich, H. J., Hubald, M., and Hofmann, P. (1990). Special Events in Handling Poisons in Gdr (East Germany), 1980 to 1988: Environmental Effects. *Z gesamte hyg grenzgeb* 36: 522-525.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH, SURVEY.

Schulten, H. R. and Sun, S. E. (Field Desorption Mass Spectrometry of Standard Organophosphorus Pesticides and Their Identification in Waste Water.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Senanayake, N. (1998). Organophosphorus Insecticide Poisoning. *Ceylon medical journal* 43: 22-29.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, REVIEW.

Senanayake, N. (1985). Polyneuropathy Following Insecticide Poisoning a Clinical and Electrophysiological Study. *13th world congress of neurology, hamburg, west germany, sept. 1-6, 1985. J neurol* 232: 203.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH, ABSTRACT.

Senanayake, N. and Johnson, M. K. (Acute Polyneuropathy After Poisoning by a New Organophosphate Insecticide. *New england journal of medicine 21 jan. 1982, vol.306, No.3, P.155-157. 7 ref.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Senanayake, N. and Karalliedde, L. (Neurotoxic Effects of Organophosphorus Insecticides: an Intermediate Syndrome. *New england journal of medicine, vol. 316, no. 13, pages 761-763, 16 references, 19871987*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Senanayake, N. and Peiris, H. (1995). Mortality Due to Poisoning in a Developing Agricultural Country: Trends Over 20 Years. *Human & experimental toxicology* 14: 808-811.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Servin, R., Martinez, J. L., Troyo-Diguez, E., and Ortega, A. (1995). Toxicological Assays in Bemisia Tabaci Genn. From Cabbage Plots in La Paz Baja California Sur Mexico. *92nd annual meeting of the american society for horticultural science and the 40th annual congress of the canadian society for horticultural science, montreal, quebec, canada, july 30-august 3, 1995. Hortscience* 30: 830.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT.

Servin-Villegas, R., Martinez, J. L., Troyo-Dieguez, E., and Ortega-Rubio, A. (1997). Susceptibility of Adults of Bemisia Argentifolii (Bellows and Perring) to Commonly Used Insecticides in Baja California Sur, Mexico. *Southwestern entomologist* 22: 91-101.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Shafik, T. M. (1980). Analytical Approaches for Determining Human Exposure to Pesticides. *International symposium on hazards of pesticides to the environment and human health, alexandria, egypt, nov. 1-3, 1978. J environ sci health pestic food contam agric wastes* 15: 1023-1058.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE, METHODS, HUMAN HEALTH.

Sharma, C. B Sr and Panneerselvam, N. (1990). Genetic Toxicology of Pesticides in Higher Plant Systems. *Crit rev plant sci* 9: 409-442.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Sheets, L. P., Hoss, H. E., and Lake, S. G. (Developmental Neurotoxicity (Dnt) Studies With Tribufos (Def) and Methamidophos. *Toxicologist 2002 mar;66(1-s):133: Toxicologist*.

Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT.

Shelton, A. M., Wyman, J. A., Cushing, N. L., Apfelbeck, K., Dennehy, T. J., Mahr, S. E. R., and Eigenbrode, S. D. (1993). Insecticide resistance of diamondback moth (Lepidoptera: Plutellidae) in North America. *Journal of economic entomology [j. Econ. Entomol.]* 86: 11-19.
Chem Codes: Chemical of Concern: MOM Rejection Code: NO TOX DATA.

Shen, B. and Shen, Q. (1991). Pesticide Pollution. *J.Environ.Sci.(China)* 3: 31-48.
Chem Codes: Chemical of Concern:
DDT,TCF,HCCH,DZ,ACP,MLN,DDVP,PPHD,PRN,FNT,FNTH,DEM,DMT,MTM,DS,MLT
Rejection Code: REFS CHECKED/REVIEW.

Shen, B. and Shen, Q. (1991). Pesticide Pollution. *J.Environ.Sci.(China)* 3: 31-48.
Chem Codes: Chemical of Concern:
DDT,TCF,HCCH,DZ,ACP,MLN,DDVP,PPHD,PRN,FNT,FNTH,DEM,DMT,MTM,DS,MLT
Rejection Code: REFS CHECKED/REVIEW.

Shen, B. and Shen, Q. (1991). Pesticide Pollution. *J.Environ.Sci.(China)* 3: 31-48.
Chem Codes: Chemical of Concern:
DDT,TCF,HCCH,DZ,ACP,MLN,DDVP,PPHD,PRN,FNT,FNTH,DEM,DMT,MTM,DS,MLT
Rejection Code: REFS CHECKED/REVIEW.

Sherma, J. (1991). Pesticides. *Anal chem* 63: 118r-130r.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, METHODS.

Sicbaldi, F., Sarra, A., and Copeta, G. L. (1997). Diatomaceous Earth-Assisted Extraction for the Multiresidue Determination of Pesticides. *Journal of chromatography a* 765: 23-30.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Sinclair, Chris J. and Boxall, Alistair B. A (2003). Assessing the Ecotoxicity of Pesticide Transformation Products. *Environmental Science and Technology* 37: 4617-4625.
Chem Codes: Chemical of Concern: DZM Rejection Code: QSAR.

Singh, A K (2002). Acute Effects of Acephate and Methamidophos and Interleukin-1 on Corticotropin-Releasing Factor (Crf) Synthesis in and Release From the Hypothalamus in Vitro. *Comparative Biochemistry And Physiology. Toxicology & Pharmacology: CBP* 132: 9-24.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Singh, A. K. (Improved Analysis of Acephate and Methamidophos in Biological Samples by Selective Ion Monitoring Gas Chromatography-Mass Spectrometry. *J chromatogr. 1984, oct 5; 301(2):465-9. [Journal of chromatography.]: J Chromatogr*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS, HUMAN HEALTH.

Singh, A K (1986). Kinetic Analysis of Acetylcholinesterase Inhibition by Combinations of Acephate and Methamidophos. *Toxicology* 42: 143-156.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Singh, A K (1985). Kinetic Analysis of Inhibition of Brain and Red Blood Cell Acetylcholinesterase and Plasma Cholinesterase by Acephate or Methamidophos. *Toxicology And Applied Pharmacology* 81: 302-309.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO, NO SPECIES.

Singh, A K (1990). Molecular Properties and Inhibition Kinetics of Acetylcholinesterase Obtained From Rat Brain and Cockroach Ganglion. *Toxicology And Industrial Health* 6: 551-570.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Singh, A K (1999). Quantitative Structure-Activity Relationships for Phosphoramidothioate Toxicity in Housefly. *Comparative Biochemistry And Physiology. Part C, Pharmacology, Toxicology & Endocrinology* 123: 241-255.
Chem Codes: Chemical of Concern: MTM Rejection Code: QSAR.

Singh, A. K., Mishra, U., and Ashraf, M. (1988). Inhibition of Cholinesterase by Acephate and Methamidophos Evidence for the Binding of Acephate to a Modulatory Allosteric Site. *Med sci res* 16: 727-728.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Singh, A K, White, T, Spassova, D, and Jiang, Y (1998). Physicochemical, Molecular-Orbital and Electronic Properties of Acephate and Methamidophos. *Comparative Biochemistry And Physiology. Part C, Pharmacology, Toxicology & Endocrinology* 119: 107-117.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEATH.

SINGH AK (1990). Molecular properties and inhibition kinetics of acetylcholinesterase obtained from rat brain and cockroach ganglion. *TOXICOL IND HEALTH; 6* 551-570.
Chem Codes: Chemical of Concern: ACP Rejection Code: NO TOX DATA.

Singh, Ashok K. (1986). Kinetic analysis of acetylcholinesterase inhibition by combinations of acephate and methamidophos. *Toxicology* 42: 143-156.
Chem Codes: Chemical of Concern: ACP Rejection Code: IN VITRO.

Singh, Ashok K. (1985). Kinetic analysis of inhibition of brain and red blood cell acetylcholinesterase and plasma cholinesterase by acephate or methamidophos. *Toxicology and Applied Pharmacology* 81: 302-309.
Chem Codes: Chemical of Concern: ACP Rejection Code: IN VITRO.

Singh, Ashok K., White, Tom, Spassova, Dina, and Jiang, Yin (1998). Physicochemical, Molecular-Orbital and Electronic Properties of Acephate and Methamidophos. *Comparative Biochemistry and Physiology Part C: Pharmacology, Toxicology and Endocrinology* 119: 107-117.
Chem Codes: Chemical of Concern: ACP Rejection Code: NO TOX DATA.

Singh, S. P. and Jalali, S. K. (1998). Impact of Pesticides on Natural Enemies of Agricultural Pests. *In: G.S.Dhaliwal, N.S.Randhawa, R.Arora, and A.K.Dhawan (Eds.), Ecological Agriculture and Sustainable Development, Volume 2, Proc.of Int.Conf.on Ecological Agriculture: Towards Sustainable Development, Nov.15-17, 1997, Indian Ecol.Soc., Ludhiana, India* 162-175.

Chem Codes: Chemical of Concern:

Sippola, E., David, F., and Sandra, P. (1995). Comparison of Polydimethyl Siloxane Stationary Phases With 5 Percent and 50 Percent Phenyl Substitution for the Separation of Organophosphorus and Organonitrogen Pesticides Under Optimized Gas Chromatographic Conditions. *Hrc journal of high resolution chromatography* 18: 111-116.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Sogorb, M. A., D&Iacute, Az-Alejo, N., Pell&Iacute, N, M. C., and Vilanova, E. (Inhibition and Aging of Neuropathy Target Esterase by the Stereoisomers of a Phosphoramidate Related to Methamidophos. *Toxicol lett. 1997, dec; 93(2-3):95-102. [Toxicology letters.]: Toxicol Lett*.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Sogorb, M. A., Diaz-Alejo, N., Pellin, M. C., and Vilanova, E. (1997). Inhibition and Aging of Neuropathy Target Esterase by the Stereoisomers of a Phosphoramidate Related to Methamidophos. *Toxicol.Lett.* 93: 95-102.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Sonder, K., Basedow, T., Sauerborn, J., and Espinoza-Gonzales, J. (1997). The Frequency of Invertebrates in Fields of Potatoes and Carrots Grown Under Intense Conditions in a Highland Area of Panama. *Zeitschrift fuer pflanzenkrankheiten und pflanzenschutz* 104: 96-101.
Chem Codes: Chemical of Concern: MTM Rejection Code: MIXTURE.

Song, C. Y. and Zhang, B. Z. (1993). Toxicokinetics of Methamidophos in Rabbits and the Application of Pharmacokinetic-Pharmacodynamic Simultaneous Model. *Zhongguo yaolixue yu dulixue zazhi* 7: 222-226.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METABOLISM.

Sosa-Gomez, D. R., Takachi, C. Y., and Moscardi, F. (1993). Determination of Synergism and Differential Susceptibility of Nezara Viridula (L.) And Euschistus Heros (F.) (Hemiptera: Pentatomidae) to Insecticides Used in Mixture With Sodium Chloride. *Anais da sociedade entomologica do brasil* 22: 569-576.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Spassova, D. P. and Singh, A. K. (Qsar for Acetylcholinesterase Inhibition and Toxicity of Two Classes of Phosphoramidothioates. *Sar qsar environ res. 2001, feb; 11(5-6):453-71. [Sar and qsar in environmental research.]: SAR QSAR Environ Res*.
Chem Codes: Chemical of Concern: MTM Rejection Code: QSAR.

Specht, W., Pelz, S., and Gilsbach, W. (1995). Gas-Chromatographic Determination of Pesticide Residues After Clean-up by Gel-Permeation Chromatography and Mini-Silica Gel-Column Chromatography 6. Communication Replacement of Dichloromethane by Ethyl Acetate-Cyclohexane in Liquid-Liquid Partition and Simplified Conditions for Extraction and Liquid-Liquid Partition. *Fresenius' journal of analytical chemistry* 353: 183-190.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Stan, H. J. and Kellner, G. (1989). Confirmation of Organophosphorus Pesticide Residues in Food Applying Gas Chromatography-Mass Spectrometry With Chemical Ionization and Pulsed Positive

Negative Detection. *Biomed environ mass spectrom* 18: 645-651.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

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.
Chem Codes: Chemical of Concern: DZM Rejection Code: METHODS.

Stan, Hans-Jurgen (2000). **<04 Article Title>.** *Journal of Chromatography, A* 892: <25 Page(s)>.

Chemical of Concern: FVL, TCZ,RSM; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

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.
Chem Codes: Chemical of Concern: TCZ,DCNA Rejection Code : CHEM METHODS.

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.
Chem Codes: Chemical of Concern: DZM Rejection Code: METHODS.

Steenland, K. (1996). Chronic Neurological Effects of Organophosphate Pesticides. *British medical journal* 312: 1312-1313.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Stefani, R., Buzzi, M., and Grazzi, R. (1997). Supercritical Fluid Extraction of Pesticide Residues in Fortified Apple Matrices . *Journal of chromatography a* 782: 123-132.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Stefanov, S. and Dimitrov, Y. (1986). Effective Chemicals for Cotton Thrips Thrips-Tabaci and Leaf Aphid Aphis-Gossypii Protection. *Rasteniev'd nauki* 23: 72-75.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Steurbaut, W., Dejonckheere, W., and Drieghe, S. (Pesticide residues after aerial application in greenhouses. 60: 599-609 CODEN: MFLBER.
Rejection Code: NO TOX DATA.

Steurbaut, W., Dejonckheere, W., and Drieghe, S. (1995). Pesticide residues after aerial application in greenhouses. *Mededelingen Faculteit Landbouwkundige En Toegepaste Biologische Wetenschappen Universiteit Gent* 60 : 599-609.
Chem Codes: Chemical of Concern: MOM Rejection Code: NO TOX DATA.

Steurbaut, W., Dejonckheere, W., and Drieghe, S. (1995). Pesticide Residues After Aerial Application in Greenhouses. *Mededelingen faculteit landbouwkundige en toegepaste biologische wetenschappen universiteit gent* 60: 599-609.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Stimmann, M. W. and Ferguson, M. P. (1990). Progress Report Vice President's Task Force on Pest Control Alternatives Potential Pesticide Use Cancellations in California Usa. *Calif agric* 44: 12-16.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Stoeber, I. (1985). European Economic Community Directive Concerning Water Pollution by Dangerous Substances and Its Application. *Niemitz, w. Vom wasser, band 64. (Water, vol. 64. The 64th annual meeting of the water chemistry section of the german chemists society), bad homburg, west germany, 1984. Xii+330p. Vch verlagsgesellschaft mbh: weinheim, west germany. Illus.* 0: 83-92.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Suess, A. (1991). Investigations Into Dose-Effect Relations of Some Insecticides Against the Summer Fruit Tortrix (Adoxophyes Reticulana Hbn.) As a Basis for Lowering Insecticidal Doses. *Arch phytopathol pflanzenschutz* 27: 403-410.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Sun, D. H., Zhou, H. D., and Xue, S. Z. (Epidemiologic Survey on Organophosphate-Induced Delayed Polyneuropathy (Opidp) Among Patients Recovered From Methamidophos Poisoning. *Med lav. 1998; 89 suppl 2:s123-8. [La medicina del lavoro.]: Med Lav*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Sun, J, Chen, B, and Yao, P (2000). Assessment on Acute Toxicity of Combined Pesticides. *Wei Sheng Yan Jiu = Journal Of Hygiene Research* 29: 65-68.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Sun, X. M. and Huang, X. S. (1988). Reproductive Toxicity of Methamidophos on Male Mice. *Zhongguo yaolixue yu dulixue zazhi* 2: 142-147.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Sundaram, K. Ms (1993). Partitioning and Fate of Acephate and Its Metabolite, Methamidophos, From White Spruce Cones Into Soil and Water. *J environ sci health part b pestic food contam agric wastes* 28: 29-66.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Sundaram, K. Ms and Nott, R. (1992). Gas Chromatographic Method for Simultaneous Determination of Acephate and Methamidophos in Bark, Cone and Seed Samples of Conifers. *J chromatogr* 627: 300-304.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Szarapinska-Kwaszewska, J. and Rozalska, M. (Study of Environmental Carcinogens. 1.mutagenic Activity of Organophosphate Pesticides. *Bromatol chem toksykol 15:89-93,1982: BROMATOL*

CHEM TOKSYKOL.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Szarapinska-Kwaszewska, J., Sobis, M., Dudkiewicz, B., Nawrot, E., Rozalska, M., Bakuniak, E., and Mikucki, J. (1988). Studies on Mutagenicity of New Chemical Compounds Using Bacterial Ames Test. *Genet pol* 29: 227-236.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

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.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Szeto, S. Y., Yee, J., Brown, M. J., and Oloffs, P. C. (1982). Simplified Method for Determining Acephate and Methamidophos Residues in Several Substrates. *J chromatogr* 240: 526-531.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Tafuri, J. and Roberts, J. (1987). Organophosphate Poisoning. *Ann emerg med* 16: 193-202.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Tan, Y. and Li, W. A. ([The Method of Removing Methamidophos From Contaminated Vegetables]. *Wei sheng yan jiu. 1998, jan; 27(1):62-5. [Wei sheng yan jiu = journal of hygiene research.]: Wei Sheng Yan Jiu*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Tayaputch, N. (1996). Present Aspects and Environmental Impacts of Pesticide Use in Thailand. *Journal of pesticide science* 21: 132-135.
Chem Codes: Chemical of Concern: MTM Rejection Code: SURVEY,HUMAN HEALTH.

Tenenbein, M. (Poisoning in Pregnancy. *Maternal-fetal toxicology: a clinician's guide 1994;2:223-52: Maternal-Fetal Toxicology: a Clinician's Guide*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Thier, H. P. and Zeumer, H. (1987). Manual of Pesticide Residue Analysis Vol. 1. *Thier, h.-P. And h. Zeumer (ed.). Manual of pesticide residue analysis, vol. 1. Xvi+432p. Vch publishers, inc.: New york, new york, usa* Weinheim, west germany. Illus. Isbn 0-89573-592-x; isbn 3-527-27010-8.; 0: Xvi+432p.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Thompson, C. M., Castellino, S., and Fukuto, T. R. (1984). A Carbon-13 Nmr Study on an Organophosphate: Formation and Characterization of Methamidophos (O,S-Dimethyl Phosphoramidothioate) S-Oxide. *J org chem* 49: 1696-1699.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Thompson, C. M., Frick, J. A., Natke, B. C., and Hansen, L. K. (1989). Preparation, Analysis, and

Anticholinesterase Properties of O,O-Dimethylphosphorothioate Isomerides. *Chem res toxicol* 2: 386-391.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Thompson, C. M. and Fukuto, T. R. (1982). Mechanism of Cholinesterase Inhibition by Methamidophos. *J agric food chem* 30: 282-284.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Tice, Colin M (2002). Selecting the right compounds for screening: use of surface-area parameters. *Pest Management Science* 58: 219-233.
Chem Codes: Chemical of Concern:PCZ,FZS,DSP,PYZ,RTN,RSM Rejection Code: CHEM METHODS.

Tice, Colin M (2002). Selecting the right compounds for screening: use of surface-area parameters. *Pest Management Science* 58: 219-233.
Chem Codes: Chemical of Concern: DMB, FVL, FZS,DSP,PYZ,RSM Rejection Code: CHEM METHODS.

Tiefenbach, B and Wichner, S (1985). Dose Dependence and Mechanism of the Acute Effect of Methamidophos on the Immune System of the Mouse. *Zeitschrift Fur Die Gesamte Hygiene Und Ihre Grenzgebiete* 31: 228-231.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Timur, Suna and Telefoncu, Azmi (2004). Acetylcholinesterase (Ache) Electrodes Based on Gelatin and Chitosan Matrices for the Pesticide Detection. *Artificial Cells, Blood Substitutes, And Immobilization Biotechnology* 32: 427-442.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Ting, S. M., Chan, T. Yk, Wong, W. Kk, and Chan, A. Yw (1993). Acute Methamidophos Poisoning Caused by Contaminated Green Leafy Vegetables. *Southeast asian journal of tropical medicine and public health* 24: 402-403.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Ting, Ying-ping, Su, Yian-ling, and Huo, Shu-hua (2005). The Effect of Pyraloxime Methylchloride to Myocardial Tissue Induced by Methamidophos Poisoning in Rats. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi = Zhonghua Laodong Weisheng Zhiyebing Zazhi = Chinese Journal Of Industrial Hygiene And Occupational Diseases* 23: 381-382.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Tinoco-Ojanguren, R. and Halperin, D. C. (1998). Poverty, Production, and Health: Inhibition of Erythrocyte Cholinesterase Via Occupational Exposure to Organophosphate Insecticides in Chiapas, Mexico. *Archives of environmental health* 53: 29-35.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Todhunter, J. A. (1985). Review Agents Before Opting for Chemigation Some Crop Protection Mixtures Aren't Appropriate for Chemigation. *Agrichem age* 29: 20, 44.
Chem Codes : Chemical of Concern: MTM Rejection Code: NO SPECIES.

Tomaszewska, E. and Hebert, V. R. (Analysis of O,S-Dimethyl Hydrogen Phosphorothioate in Urine, a Specific Biomarker for Methamidophos. *J agric food chem. 2003, oct 8; 51(21):6103-9. [Journal of agricultural and food chemistry.]: J Agric Food Chem*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Tondeur, R., Schiffers, B. C., and Verstraeten, C. (1990). Differential Susceptibility of Eupulvinaria-Hydrangeae Homoptera Coccidae to 22 Insecticides. *International symposium on crop protection. Meded fac landbouwwet rijksuniv gent* 55: 637-646.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Tsai, C. F., Chou, S. S., and Shyu, Y. T. (1997). Removal of Methamidophos and Carbofuran Residue in Broccoli During Freezing Processing. *Journal of food and drug analysis* 5: 217-223.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Tsai, Ming-Yi, Elgethun, Kai, Ramaprasad, Jaya, Yost, Michael G., Felsot, Allan S., Hebert, Vincent R., and Fenske, Richard A. (2005). The Washington Aerial Spray Drift Study: Modeling Pesticide Spray Drift Deposition From an Aerial Application. *Atmospheric Environment* 39: 6194-6203.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING.

Tucker, J. D., Auletta, A., Cimino, M. C., Dearfield, K. L., Jacobson-Kram, D., Tice, R. R., and Carrano, A. V. (Sister-Chromatid Exchange: Second Report of the Gene-Tox Program. *Mutat res 1993 sep;297(2):101-80: Mutat Res*.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Tuzimski, Tomasz and Soczewinski, Edward (2002). Chemometric characterization of the RF values of pesticides in thin-layer chromatography on silica with mobile phases comprising a weakly polar diluent and a polar modifier. Part V. *Journal of Planar Chromatography--Modern TLC* 15: 164-168.
Chem Codes: Chemical of Concern: DZM Rejection Code: METHODS.

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.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Unsal, M. (1995). Usage of Pesticides and Pcbs in Cukurova Region, Turkey and Their Impact on the Environment. *Turkish journal of zoology* 19: 199-205.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO SPECIES, NO TOX DATA.

Valverde-Garcia, A., Fernandez-Alba, A. R., Aguera, A., and Contreras, M. (1995). Extraction of Methamidophos Residues From Vegetables With Supercritical Fluid Carbon Dioxide. *Journal of aoac international* 78: 867-873.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Van, D. E. N. Neucker K, Vanderstraeten, G., De Muynck M, and De Wilde V (1991). The Neurophysiologic Examination in Organophosphate Ester Poisoning Case Report and Review of

the Literature. *Electromyogr clin neurophysiol* 31: 507-511.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Van Hemmen Jj and Brouwer, D. H. (1997). Exposure Assessment for Pesticides: Operators and Harvesters Risk Evaluation and Risk Management. *Mededelingen faculteit landbouwkundige en toegepaste biologische wetenschappen universiteit gent* 62: 113-131.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Venegas, W., Zapata, I., Carbonell, E., and Marcos, R. (1998). Micronuclei Analysis in Lymphocytes of Pesticide Sprayers From Concepcion, Chile. *Teratogenesis carcinogenesis and mutagenesis* 18: 123-129.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Vidair, C. A. (2004). Age Dependence of Organophosphate and Carbamate Neurotoxicity in the Postnatal Rat: Extrapolation to the Human. *Toxicology and Applied Pharmacology [Toxicol. Appl. Pharmacol.]. Vol. 196, no. 2, pp. 287-302. 15 Apr 2004.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Vieira, R. J., Trape, A. Z., Nucci, A., and Martins, L. C. (2005). Organophosphorus Induced Delayed Neuropathy (Opidn). Report on Eight Cases. *Clinical Toxicology [Clin. Toxicol.]. Vol. 43, no. 5, pp. 495-496. 2005.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Vilanova, E., Barril, J., and Carrera, V. (1993). Biochemical Properties and Possible Toxicological Significance of Various Forms of NTE. *Chem.-Biol.Interact.* 87: 369-381.
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Vilanova, E., Johnson, M. K., and Vicedo, J. L. (1987). Interaction of Some Unsubstituted Phosphoramidate Analogs of Methamidophos (O,S-Dimethyl Phosphorothioamidate) With Acetylcholinesterase and Neuropathy Target Esterase of Hen Brain. *Pesticide Biochemistry and Physiology* 28: 224-238.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Vilanova, E., Johnson, M. K., and Vicedo, J. L. (Interaction of Some Unsubstituted Phosphoramidate Analogs of Methamidophos (O,S-Dimethyl Phosphorothioamidate) With Acetylcholinesterase and Neuropathy Target Esterase in Hen Brain. *Pesticide biochemistry and physiology, vol. 28, no. 2, pages 224-238, 33 references, 19871987.*
Chem Codes: Chemical of Concern: MTM Rejection Code: IN VITRO.

Vilanova, E. and Sogorb, M. A. (1999). The Role of Phosphotriesterases in the Detoxication of Organophosphorus Compounds. *Critical reviews in toxicology* 29: 21-57.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Vlyssides, Apostolos, Arapoglou, Dimitris, Mai, Sofia, and Barampouti, Elli Maria (2005). Electrochemical Detoxification of Four Phosphorothioate Obsolete Pesticides Stocks. *Chemosphere* 58: 439-447.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Vongbuddhapitak, Amara, Atisook, Kanokporn, Thoophom, Gobthong, Sungwaranond, Boonpai, Lertreungdej, Yuwadee, Suntudrob, Jitpaka, and Kaewklapanyachareon, Ladda (Dietary exposure of Thais to pesticides during 1989-1996. *Journal Of AOAC International* 85: 134-140.
Chem Codes: Chemical of Concern: DMT Rejection Code: HUMAN HEALTH.

Vongbuddhapitak, Amara, Atisook, Kanokporn, Thoophom, Gobthong, Sungwaranond, Boonpai, Lertreungdej, Yuwadee, Suntudrob, Jitpaka, and Kaewklapanyachareon, Ladda (Dietary Exposure of Thais to Pesticides During 1989-1996. *Journal Of AOAC International* 85: 134-140.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Wagner, R. and Hermes, H. (1987). Exposure of Gardeners During and After Application of Dichlorvos Methamidophos and Aldicarb in Hothouses. *Z gesamte hyg grenzgeb* 33: 255-257.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Wagner, R. and Hermes, H. ([Exposure of Gardeners During and After Use of Dichlorvos, Methamidophos and Aldicarb in Greenhouses]. *Z gesamte hyg. 1987, may; 33(5):255-7. [Zeitschrift fur die gesamte hygiene und ihre grenzgebiete.]: Z Gesamte Hyg*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Wagner, R and Hermes, H (1987). Exposure of gardeners during and after use of dichlorvos, methamidophos and aldicarb in greenhouses. *Zeitschrift Fur Die Gesamte Hygiene Und Ihre Grenzgebiete* 33: 255-257.
Chem Codes: Chemical of Concern: ADC Rejection Code: FL /HUMAN HEALTH.

Waliszewski Kubiak Sm and Pardio Sedas Vt (1995). Delayed Neurotoxicity of Organophosphatic Compounds. *Ciencia (mexico city)* 46: 103-112.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Waliszewski, S. M. and Waliszewski, K. N. (1986). Gas Chromatographic Determination of Acephate Methamidophos and Terbufos in Tobacco. *Fresenius z anal chem* 325: 394.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Walter, Harald, Corsi, Camilla, Ehrenfreund, Josef, Lamberth, Clemens, and Tobler, Hans (20060413). Synergistic fungicidal compositions comprising pyrazole derivatives. *(Syngenta Participations AG, Switz.)* 142 pp.
Chem Codes: Chemical of Concern: FPC Rejection Code: NO TOX DATA.

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.
Chem Codes: Chemical of Concern: FPC Rejection Code: NO TOX DATA.

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.
Chem Codes: Chemical of Concern: FPC Rejection Code: NO TOX DATA .

Walters, S. M. (1990). Clean-up Techniques for Pesticides in Fatty Foods. *Anal chim acta* 236: 77-82.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Wan, Weiguo, Xu, Mailing, Zou, Hejian, Lu, Ailing, Shen, Xinyu, and Chen, Yuming (2002). The Activity of Blood Cholinesterase in Rats Exposed to Dimehypo. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi = Zhonghua Laodong Weisheng Zhiyebing Zazhi = Chinese Journal Of Industrial Hygiene And Occupational Diseases* 20: 416-418.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Wang, H., Xu, T., and Wang, G. (1994). Development of Insecticide-Injection Technique Against Otidognathus Davidis Fair on Bamboos. *Forest research* 7: 103-108.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Wang, H., Xu, T., Zheng, G., Wang, G., and Hua, Z. (1993). Studies on the Effect of Methamidophos on Otidognathus Davidis. *For res* 6: 337-340.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Wang, Meng-Cheng, Gong, Ming, Zang, Hong-Bing, Hua, Xiao-Mei, Yao, Jian, Pang, Yan-Jun, and Yang, Yong-Hua (2006). Effect of Methamidophos and Urea Application on Microbial Communities in Soils as Determined by Microbial Biomass and Community Level Physiological Profiles. *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 41: 399-413.
Chem Codes: Chemical of Concern: MTM Rejection Code: BACTERIA.

Wang, S. and Huang, X. S. (Behavioral Toxicity in the Offspring of Mice Following Maternal Exposure to Mathamidophos. *Zhongguo yaolixue yu dulixue zazhi (chin j pharmacol toxicol) 1:371-375,1987: ZHONGGUO YAOLIXUE YU DULIXUE ZAZHI (CHIN J PHARMACOL TOXICOL).*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Wang, Xiao-Fei and Zhou, Qi-Xing (2005). Joint Toxicity of Methamidophos and Cadmium Acting on Abelmoschus Manihot. *Journal Of Environmental Sciences (China)* 17: 379-383.
Chem Codes: Chemical of Concern: MTM Rejection Code: MIXTURE.

Wang, Y., Bian, S., and Wu, D. (1995). A Simplified Method for Measuring Dilute Emulsion Stability. *Pesticide science* 44: 202-203.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Wang Yinchang, Li Guoqing, Deng, X. I., Din Shiyin, and Su Jiankun (1997). Susceptibility to Insecticides of Brown Planthopper Nilaparvata Lugens in the Lower Yangtze Valley. *International rice research notes* 22: 41-42.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING.

Ware, G. W. (1991). Reviews of Environmental Contamination and Toxicology Vol. 118. *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: Ix+158p.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW.

Wei, C., Huang, S. N., Fan, X. L., Sun, X. P., Wang, W. L., Liu, Z. W., and Chen, G. Q. (1988). A Study on the Resistance of Grain Aphid Sitobion-Avenae Fab. To Pesticides. *Acta entomol sin* 31: 148-156.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Weinbaum, Z., Schenker, M. B., Gold, E. B., Samuels, S. J., and O'malley, M. A. (Risk Factors for Systemic Illnesses Following Agricultural Exposures to Restricted Organophosphates in California, 1984-1988. *American journal of industrial medicine, vol. 31, no. 5, pages 572-579, 29 references, 1997*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Weinbaum, Z., Schenker, M. B., O'malley, M. A., Gold, E. B., and Samuels, S. J. (1995). Determinants of Disability in Illnesses Related to Agricultural Use of Organophosphates (Ops) in California. *American journal of industrial medicine* 28: 257-274.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Weir, R. J. (1993). Organic Phosphates. *Clayton, g. D. And f. E. Clayton (ed.). Patty's industrial hygiene and toxicology, vol. Ii, part a: toxicology, 4th edition. Xvii+945p. John wiley and sons, inc.: New york, new york, usa* Chichester, england, uk. Isbn 0-471-54724-7.; 0: 711-753.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Weisz, R., Saunders, M., Smilowitz, Z., Huang, H., and Christ, B. (1994). Knowledge-Based Reasoning in Integrated Resistance Management: the Colorado Potato Beetle (Coleoptera: Chrysomelidae). *Journal of economic entomology* 87: 1384-1399.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, METHODS.

Wenzel, K D, Weissflog, L, Martinetz, D, and Dedek, W (1985). Evaporation and Erosion of Methamidophos From Various Soils. Studies on the Fate of the Insecticide 32p-Methamidophos (Thiophosphoric Acid-O,S-Dimethylester Amide) in a Terrestrial Laboratory Micro-Ecosystem Model. *Zeitschrift Fur Die Gesamte Hygiene Und Ihre Grenzgebiete* 31: 647-648.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, FATE.

Wenzel, K. D., Weissflog, L., Martinetz, D., and Dedek, W. (Volatilization and Leachability of Methamidophos From Several Soils Fate of the Insecticide Phosphorus-32 Methamidophos Thiophosphoric-Acid O S Dimethyl Ester Amide in a Terrestrial Laboratory Microecosystem. *Z gesamte hyg grenzgeb; 31 (11). 1985 (recd. 1986). 647-648.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, FATE.

Wenzel, K. D., Weissflog, L., Martinetz, D., Grahl, R., Kumpf, W., Lohs, K., Dedek, W., and Hermann, M. (1988). Biochemical Behavior of Methamidophos in Different Soils. *Z pflanzenernaehr bodenkd* 151: 205-209.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, BACTERIA.

White, L. M., Ernst, W. R., Julien, G., Garron, C., and Leger, M. (2006). Ambient Air Concentrations of Pesticides Used in Potato Cultivation in Prince Edward Island, Canada. *Pest Management Science, 62 (2) pp. 126-136, 2006.*
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOXICANT.

White, Louise M, Ernst, William R, Julien, Gary, Garron, Christine, and Leger, Martin (2006). Ambient Air Concentrations of Pesticides Used in Potato Cultivation in Prince Edward Island, Canada. *Pest Management Science* 62: 126-136.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOXICANT.

Who Genev Switzerland (Pesticide Residues in Food. *Who tech. Rep. Ser. 612: 35pp. 1977 (36 references).*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Wilson, B. W., Sanborn, J. R., O'malley, M. A., Henderson, J. D., and Billitti, J. R. (1997). Monitoring the Pesticide-Exposed Worker. *Occupational medicine (philadelphia)* 12: 347-363.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Wing, K. D., Glickman, A. H., and Casida, J. E. (1983). Oxidative Bio Activation of S Alkyl Phosphorothiolate Pesticides Stereospecificity of Profenofos Insecticide Activation. *Science (wash d c)* 219: 63-65.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Wing, K. D., Glickman, A. H., and Casida, J. E. (1984). Phosphorothiolate Pesticides and Related Compounds: Oxidative Bioactivation and Aging of the Inhibited Acetylcholinesterase. *Pestic biochem physiol* 21: 22-30.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM, IN VITRO.

WOREK, F., KIRCHNER, T., BAECKER, M., and SZINICZ, L. (1996). Reactivation by various oximes of human erythrocyte acetylcholinesterase inhibited by different organophosphorus compounds. *ARCHIVES OF TOXICOLOGY;* 70: 497-503.
Chem Codes: Chemical of Concern: OMT Rejection Code: HUMAN HEALTH.

Worek, F., Kirchner, T., Baecker, M., and Szinicz, L. (1996). Reactivation by Various Oximes of Human Erythrocyte Acetylcholinesterase Inhibited by Different Organophosphorus Compounds. *Archives of toxicology* 70: 497-503.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Wu, M. L., Deng, J. F., Tsai, W. J., Ger, J., Wong, S. S., and Li, H. P. (Food Poisoning Due to Methamidophos-Contaminated Vegetables. *J toxicol clin toxicol. 2001; 39(4):333-6. [Journal of toxicology. Clinical toxicology.]: J Toxicol Clin Toxicol.*
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Wu Ming-Ling, Deng Jou-Fang, Tsai Wei-Jen, Ger Jiin, Wong Sue-Sun, and Li Hong-Ping (2001). Food Poisoning Due to Methamidophos-Contaminated Vegetables. *Journal of Toxicology: Clinical Toxicology [J. Toxicol.: Clin. Toxicol.]. Vol. 39, no. 4, pp. 333-336. 2001.*

Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Wu, Neng, Hu, Yin-an, and Tan, Yi (2003). Study on the Degradation of Residual Insecticides on and in the Vegetables and Washing Off Method. *Wei Sheng Yan Jiu = Journal Of Hygiene Research* 32: 32-36.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, FATE, METHODS.

Wu, Z (1993). Histopathology and Ultrastructural Changes of the Musculature and Nerves During Methamidophos Toxication in Chicken. *Zhonghua Bing Li Xue Za Zhi Chinese Journal Of Pathology* 22: 83-85.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Wu, Z. S. ([Clinical and Ultrastructural Studies on 8 Cases of Methamidophos Toxicologic Myopathy]. *Zhonghua bing li xue za zhi. 1990, dec; 19(4):303-5. [Zhonghua bing li xue za zhi chinese journal of pathology.]: Zhonghua Bing Li Xue Za Zhi*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Wuchner, K. and Grob, R. (1995). Application of Supercritical Fluid Extraction in Water Analysis. *Analusis* 23: 227-229.
Chem Codes: Chemical of Concern: MTM Rejection Code: CHEM METHODS.

Wylie, P. L. and Uchiyama, K. (Improved Gas Chromatographic Analysis of Organophosphorus Pesticides With Pulsed Splitless Injection.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Xue, S. Z. (Acute Anticholinesterase Poisoning in China. *Clinical and experimental toxicology of organophosphates and carbamates, b. Ballantyne and t. C. Marrs, editors; butterworth-heinemann, ltd., Oxford, england, pages 502-510, 57 references, 1992*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Xue, S. Z. (Health Effects of Pesticides: a Review of Epidemiologic Research From the Perspective of Developing Nations. *American journal of industrial medicine, vol. 12, no. 3, pages 269-279, 60 references, 19871987*.
Chem Codes: Chemical of Concern: MTM Rejection Code: REVIEW, HUMAN HEALTH.

Yan Qingpi, Zheng Tianling, Chen Jincai, and Lin Liangmu (1998). Application of biotoxicity by MICROTOX method. *Journal of Oceanography in Taiwan Strait/Taiwan Haixia [J. Oceanogr. Taiwan Strait/Taiwan Haixia]. Vol. 17, no. 2, pp. 190-194*.
Chem Codes: Chemical of Concern: DMT Rejection Code: BACTERIA.

Yang, C. C., Deng, J. F., Wu, M. L., Ger, J., Lin, H. C., Chang, F. Y., and Lee, S. D. (1998). The Clinical Significance of Hyperamylasemia in Organophosphate Poisoning. Au - Lee W-C. *Journal of toxicology clinical toxicology* 36: 673-681.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Yang, S. (1997). Study on the Toxicities of Pollutant to Pagrosomus Major and Rhabdosargus Sarba Juvenile and Raditapes Philippinarum. *214th american chemical society national meeting, las vegas, nevada, usa, september 7-11, 1997. Abstracts of papers american chemical society* 214: Anyl 72.
Chem Codes: Chemical of Concern: MTM Rejection Code: ABSTRACT.

Yao, Hongwei, Jiang, Caiying, Ye, Gongyin, and Cheng, Jiaan (2002). Insecticide Resistance of Different Populations of White-Backed Planthopper, Sogatella Furcifera (Horvath) (Homoptera:Delphacidae). *Ying Yong Sheng Tai Xue Bao = The Journal Of Applied Ecology / Zhongguo Sheng Tai Xue Xue Hui, Zhongguo Ke Xue Yuan Shenyang Ying Yong Sheng Tai Yan Jiu Suo Zhu Ban* 13: 101-105.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Yao, J., Wang, Z., Jiao, S., Zheng, Y., Zhao, J. , Gao, X., and Liang, T. T. (1992). A Complete Set of Procedure for Determination of Multiresidue of Pesticides in Vegetables. *J environ sci (china)* 4: 106-116.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Yen, Jui-Hung, Lin, Kuo-Hsiung, and Wang, Yei-Shung (2000). Potential of the Insecticides Acephate and Methamidophos to Contaminate Groundwater. *Ecotoxicology and Environmental Safety* 45: 79-86.
Chem Codes: Chemical of Concern: ACP Rejection Code: FATE.

Yen, Jui-Hung, Lin, Kuo-Hsiung, and Wang, Yei-Shung (2000). Potential of the Insecticides Acephate and Methamidophos to Contaminate Groundwater. *Ecotoxicology and Environmental Safety* 45: 79-86.
Chem Codes: Chemical of Concern: MTM Rejection Code: MODELING, FATE.

Yess, N. J. (1988). Fda Pesticide Program Residues in Foods 1987. *J assoc off anal chem* 71: 156a-174a.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO TOX DATA.

Yess, N. J. (1992). Us Food and Drug Administration Pesticide Program Residues in Foods 1991. *J aoac (assoc off anal chem) int* 75: 135a-157a.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Yess, N. J., Gunderson, E. L., and Roy, R. R. (1993). U.s. Food and Drug Administration Monitoring of Pesticide Residues in Infant Foods and Adult Foods Eaten by Infants/Children. *J aoac int* 76: 492-507.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Yilmazlar, A. and Ozyurt, G. (Brain Involvement in Organophosphate Poisoning. *Environmental research, vol. 74, no. 2, pages 104-109, 23 references, 1997* .
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Ying S.H. (1988). Contact Toxicity of Some Insecticides to Certain Hymenopterous Parasitoids. *Acta entomol sin* 31: 20-25.

Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Yu, Jya-Jyun (2002). Removal of organophosphate pesticides from wastewater by supercritical carbon dioxide extraction. *Water Research* 36: 1095-1101.
Chem Codes: Chemical of Concern: DZ Rejection Code: METHODS.

Yu, Jya-Jyun (2002). Removal of organophosphate pesticides from wastewater by supercritical carbon dioxide extraction. *Water Research* 36: 1095-1101.
Chem Codes: Chemical of Concern: ACP Rejection Code: EFFLUENT.

Yu, Jya-Jyun (2002). Removal of Organophosphate Pesticides From Wastewater by Supercritical Carbon Dioxide Extraction. *Water Research* 36: 1095-1101.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Yu, L., Wang, D., Su, L., Luo, Y., Sun, L., and Xue, C. (2005). Hydrolysis Activities of the Particle of Agarose-Ce Super(4+) Complex for Compounds Containing Phosphodiester or Peptide Bonds. *Journal of Ocean University of China [J. Ocean Univ. China]. Vol. 4, no. 3, pp. 272-275. 2005.*
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Yu, S. J. (1982). Host Plant Induction of Glutathione S-Transferase in the Fall Armyworm. *Pesticide Biochemistry and Physiology* 18: 101-106.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Yu, S. J. (1982). Induction of microsomal oxidases by host plants in the fall armyworm, Spodoptera frugiperda (J. E. Smith). *Pesticide Biochemistry and Physiology* 17: 59-67.
Chem Codes: Chemical of Concern: ACP Rejection Code: NO TOX DATA.

Yu, S. J. (1982). Induction of Microsomal Oxidases by Host Plants in the Fall Armyworm, Spodoptera Frugiperda (J. E. Smith). *Pesticide Biochemistry and Physiology* 17: 59-67.
Chem Codes: Chemical of Concern: MTM Rejection Code: METABOLISM.

Yu, S. J. (1996). Insect Glutathione S-Transferases. *Zoological studies* 35: 9-19.
Chem Codes : Chemical of Concern: MTM Rejection Code: METABOLISM.

Yu, Y. and Zhou, Q. (2003). Effect of methamidophos on sorption-desorption behavior of copper in soils. *Bulletin of environmental contamination and toxicology, 2003 nov, 71(5):979-87.*
Chem Codes: Chemical of Concern: Cu Rejection Code: FATE.

Yu, Y and Zhou, Q (2003). Effect of Methamidophos on Sorption-Desorption Behavior of Copper in Soils. *Bulletin Of Environmental Contamination And Toxicology* 71: 979-987.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Yu, Ying and Zhou, Qi-Xing (2005). Adsorption Characteristics of Pesticides Methamidophos and Glyphosate by Two Soils. *Chemosphere* 58: 811-816.

Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Yu, Ying and Zhou, Qixing (2005). Degradation-Detoxification Behavior of Methamidophos in Phaiozem and Burozem Rhizosphere. *Ying Yong Sheng Tai Xue Bao = The Journal Of Applied Ecology / Zhongguo Sheng Tai Xue Xue Hui, Zhongguo Ke Xue Yuan Shenyang Ying Yong Sheng Tai Yan Jiu Suo Zhu Ban* 16: 1761-1764.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, FATE.

Yu, Ying, Zhou, Qixing, and He, Zhenli (2005). Effects of Methamidophos and Glyphosate on Copper Sorption-Desorption Behavior in Soils. *Science In China. Series C, Life Sciences / Chinese Academy Of Sciences* 48: 67-75.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Yuki, V. A., Costa, A. S., Bulisani, E. A., and Nardo, E. A Bd (1989). Early Reduction of Bean Golden Mosaic Virus Spread and Yield Increase Obtained Through the Application of Insecticides That Control the Whitefly Vector. *Summa phytopathol* 15: 139-144.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Zalom, F. G., Weakley, C. V., Hoffmann, M. P., Wilson, L. T., Grieshop, J. I., and Miyao, G. (1990). Monitoring Tomato Fruitworm Eggs in Processing Tomatoes. *Calif agric* 44: 12-15.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Zapata-F, M. A. and Castillo-C, P. (1988). Omiodes-Indicata Lepidoptera Pyralidae in Tumbes Peru Chemical Control in Soybean. *Rev peru entomol* 31: 126-128.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Zhang, C. ([The Report of Organophosphorus Pesticides Cause Delayed Nervous System Diseases (143 Cases)]. *Zhonghua shen jing jing shen ke za zhi. 1991, dec; 24(6):336-8, 383. [Zhonghua shen jing jing shen ke za zhi = chinese journal of neurology and psychiatry.]: Zhonghua Shen Jing Jing Shen Ke Za Zhi*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Zhang, G., Ding, Z., Luo, J., and Hong, W. (1992). A Study of Eriococcus Rugosus. *For res* 5: 429-435.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Zhang, H., Zhang, Q., Zhou, Q., and Zhang, C. (2003). Binary-joint effects of acetochlor, methamidophos, and copper on soil microbial population. *Bulletin of environmental contamination and toxicology, 2003 oct, 71(4):746-54*.
Chem Codes: Chemical of Concern: Cu Rejection Code: BACTERIA.

Zhang, H., Zhang, Q., Zhou, Q., and Zhang, C. (2003). Binary-Joint Effects of Acetochlor, Methamidophos, and Copper on Soil Microbial Population. *Bull.Environ.Contam.Toxicol.* 71: 746-754.
Chem Codes: Chemical of Concern: ACO,MTM Rejection Code: BACTERIA.

Zhang, Hui-wen, Zhou, Qi-xing, Zhang, Qian-ru, and Zhang, Cheng-gang (2004). Toxic-Effects of

Acetochlor, Methamidophos and Their Combination on Bacterial Amount and Population Richness at Molecular Levels in Agricultural Black Soils. *Huan Jing Ke Xue= Huanjing Kexue / [Bian Ji, Zhongguo Ke Xue Yuan Huan Jing Ke Xue Wei Yuan Hui "Huan Jing Ke Xue" Bian Ji Wei Yuan Hui.]* 25: 143-148.
Chem Codes: Chemical of Concern: MTM Rejection Code: BACTERIA.

Zhang, Huiwen, Zhou, Qixing, Zhang, Qianru, and Zhang, Chenggang (2005). Impacts of Methamidophos, Copper, and Their Combinations on Bacterial Community Structure and Function in Black Soil. *Science In China. Series C, Life Sciences / Chinese Academy Of Sciences* 48: 14-25.
Chem Codes: Chemical of Concern: MTM Rejection Code: BACTERIA.

Zhang, S., Yi, J., Ye, J., Zheng, W., Cai, X., and Gong, Z. ([Determination of Buprofezin, Methamidophos, Acephate, and Triazophos Residues in Chinese Tea Samples by Gas Chromatography]. *Se pu. 2004, mar; 22(2):154-7. [Se pu = chinese journal of chromatography / zhongguo hua xue hui.]: Se Pu*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Zhang, Z, Dai, M, Hong, H, Zhou, J L, and Yu, G (2002). Dissolved insecticides and polychlorinated biphenyls in the Pearl River Estuary and South China Sea. *Journal Of Environmental Monitoring: JEM* 4: 922-928.
Chem Codes: Chemical of Concern: DMT,OMT Rejection Code: NO SPECIES.

Zhang, Z, Dai, M, Hong, H, Zhou, J L, and Yu, G (2002). Dissolved Insecticides and Polychlorinated Biphenyls in the Pearl River Estuary and South China Sea. *Journal Of Environmental Monitoring: JEM* 4: 922-928.
Chem Codes: Chemical of Concern: MTM Rejection Code: NO EFFECT, FATE.

Zhang, Z., Sun, J., Chen, S., Wu, Y., and He, F. (Levels of Exposure and Biological Monitoring of Pyrethroids in Spraymen. *British journal of industrial medicine, vol. 48, no. 2, pages 82-86, 6 references, 1991*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Zhang, Z. W., Sun, J. X., Chen, S. Y., Wu, Y. Q., and He, F. S. (Levels of Exposure and Biological Monitoring of Pyrethroids in Spraymen. *Br j ind med. 1991, feb; 48(2):82-6. [British journal of industrial medicine.]: Br J Ind Med*.
Chem Codes: Chemical of Concern: MTM Rejection Code: HUMAN HEALTH.

Zhao, S. Q., Sun, Y. M., Zhang, C. Y., Huang, X. Y., Zhang, H. R., and Zhu, Z. Y. (Studies on Purification of Methamidophos Monoclonal Antibodies and Comparative Immunoactivity of Purified Antibodies. *Biomed environ sci. 2003, jun; 16(2):119-25. [Biomedical and environmental sciences : bes.]: Biomed Environ Sci*.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Zhao, Su-qing, Cai, Yan-fei, Lei, Hong-tao, Sun, Yuan-ming, Huang, Xiao-yu, Zhang, Hou-rui, and Zhu, Zhen-yu (2004). Study on Spectral Identification of Methamidophos Artificial Antigen. *Guang Pu Xue Yu Guang Pu Fen Xi = Guang Pu* 24: 207-209.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, METHODS.

Zhao, Xiu-lan, Han, Xiao-ying, Yu, Li-hua, Zhu, Zhen-ping, and Xie, Ke-qin (2005). Alterations of Neurofilament Proteins in Sciatic Nerve of Hens Induced the Delayed Neurotoxicity by Methamidophos. *Zhonghua Yu Fang Yi Xue Za Zhi [Chinese Journal Of Preventive Medicine]* 39: 171-174.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Zhao, Xiu-lan, Xie, Ke-qin, Han, Xiao-ying, Yu, Li-hua, Zhu, Zhen-ping, Zhang, Tian-liang, and Zhang, Cui-li (2005). Effects of Methamidophos on Microtubule and Microfilament Proteins in Sciatic Nerve of Hens. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi = Zhonghua Laodong Weisheng Zhiyebing Zazhi = Chinese Journal Of Industrial Hygiene And Occupational Diseases* 23: 102-104.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Zheng, R. Y. ([Clinical Features of Delayed Polyneuropathy Induced by Acute Methamidophos Toxicosis in 74 Cases]. *Zhonghua nei ke za zhi. 1990, feb; 29(2):79-82, 125. [Zhonghua nei ke za zhi [chinese journal of internal medicine].]: Zhonghua Nei Ke Za Zhi*.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH, HUMAN HEALTH.

Zhou, Z. (1991). A Study on the Biology and Control Methods of Erionota Sp. *For res* 4: 701-704.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Zhuo, X, Shen, B, and Sun, Y (1998). Decomposition Kinetics of Methamidophos in Preserved Blood of Rabbit. *Fa Yi Xue Za Zhi* 14: 6-7, 61.
Chem Codes: Chemical of Concern: MTM Rejection Code: NON-ENGLISH.

Zoebelein, G. (1990). Twenty-Three Year Surveillance of Development of Insecticide Resistance in Diamondback Moth From Thailand Plutella-Xylostella L. Lepidoptera Plutellidae. *International symposium on crop protection. Meded fac landbouwwet rijksuniv gent* 55: 313-322.
Chem Codes: Chemical of Concern: MTM Rejection Code: SURVEY.

Zoun, P. Ef and Spierenburg, T. J. (1989). Determination of Cholinesterase-Inhibiting Pesticides and Some of Their Metabolites in Cases of Animal Poisoning Using Thin-Layer Chromatography. *J Chromatogr* 462: 448-453.
Chem Codes: Chemical of Concern: MTM Rejection Code: METHODS.

Zulin, Z., Huasheng, H., Xinhong, W., Jianqing, L., Weiqi, C., and Li, X. (2002). Determination and Load of Organophosphorus and Organochlorine Pesticides at Water From Jiulong River Estuary, China. *Marine Pollution Bulletin [Mar. Pollut. Bull.]. Vol. 45, no. 1-12, pp. 397-402. 2002.*
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Zulin, Zhang, Huasheng, Hong, Xinhong, Wang, Jianqing, Lin, Weiqi, Chen, and Li, Xu (2002). Determination and Load of Organophosphorus and Organochlorine Pesticides at Water From Jiulong River Estuary, China. *Marine Pollution Bulletin* 45: 397-402.
Chem Codes: Chemical of Concern: MTM Rejection Code: FATE.

Appendix H

Methamidophos

Use List

The following use list is derived from label use information. It is used as a basis for terrestrial and aquatic pesticide use area determination.

Table 1 Use list from labels

Category	Use
Agriculture	Alfalfa for Seed, Cotton, Tomato, Potato

Terrestrial Use Determination

Sources and Methods

Base mapping layers for the terrestrial analysis component were obtained from the National Land-cover Dataset (NLCD 2001) for the majority of land use types and the California GAP data (6/98) for the orchards and vineyard uses. The NLCD is a recently released national land use dataset and the GAP is from the Biogeography Lab from UCLA-Santa Barbara. These raster files were converted to vector and used in the analysis. Table 2 shows the land-cover sources used.

Table 2 Land-cover data sources

Land-cover Data Sources			
Layer name	**Base source**	**Description**	**non-NASS**
Cultivated Crops	NLCD	82: Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total vegetation. This class also includes all land being actively tilled.	No
Developed, High Intensity	NLCD	24: Includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80 to100 percent of the total cover.	Yes
Developed, Low Intensity	NLCD	22: Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-49 percent of total cover. These areas most commonly include single-family housing units.	Yes
Developed, Medium Intensity	NLCD	23: Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50-79 percent of the total cover. These areas most commonly include single-family housing units.	Yes
Developed, Open Space	NLCD	21: Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing	Yes

Land-cover Data Sources			
Layer name	**Base source**	**Description**	**non-NASS**
		units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.	
Forest	NLCD	Union of 41,42,43: Deciduous, evergreen and mixed. Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover.	Yes
Open Water	NLCD	11: All areas of open water, generally with less than 25% cover of vegetation or soil.	Yes
Orchards and vineyards	CA GAP	A union of 11210, 11211 and 11212. This is the only CA GAP reference.	No
Pasture/Hay	NLCD	81: Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20 percent of total vegetation.	No
Wetlands	NLCD	Union of 90, 95: Woody wetlands and emergent herbaceous.	Yes

U.S. Department of Agriculture's National Agriculture Statistics Service (NASS) census dataset, 2002 was used to determine whether a crop was grown in a particular county. This census dataset provides survey information over five years on agricultural practices and is used mainly for cultivated or agriculture crops. Chemical labeled uses were matched to NASS uses; an agriculture use match would result in a mapped area for one or more counties. For uses that are not agricultural, the use is assumed to occur in every county where that particular land-cover occurs within California (*i.e.* a 'forestry' labeled use is assumed to potentially occur in all California counties where NLCD indicates there is forest land-cover).

The 'Initial Area of Concern' represents the use type and its occurrence in the NASS or NLCD datasets. These are the areas where the pesticide has potential to be applied. The 'Action Area' represents the 'Initial Area of Concern' plus a buffer distance. There may not always be a buffer distance in which case the 'Action Area' is the same as the 'Initial Area of Concern'. The overlap of the 'Action Area' with CRLF habitat areas is named 'Overlapping Area' and is the target of spatial analysis. The ratio of Overlapping Area to CRLF habitat area is reported for each of eight Recovery Units (RU1 to RU8).

There are three types of CRLF habitat areas considered in this assessment: Critical Habitat (CH); Core Areas; and California Natural Diversity Database (CNDDB) occurrence sections (EPA Region 9). Critical habitat areas were obtained from the U.S. Fish and Wildlife Service's (USFWS) final designation of critical habitat for the CRLF (USFWS 2006). Core areas were obtained from USFWS's Recovery Plan for the CRLF (USFWS 2002). The occurrence sections represent an EPA-derived subset of occurrences noted in the CNDDB. They are generalized by the Meridian Range and Township Section (MTRS) one square mile units so that individual habitat areas are obfuscated. As such, only occurrence section counts are provided and not the area potentially affected.

Table 3 Terrestrial spatial summary results for Methamidophos agriculture uses with a 7241 ft buffer.

Measure	RU1	RU2	RU3	RU4	RU5	RU6	RU7	RU8	Total
Initial Area of Concern (no buffer)									66,524 sq km
Action Area – Initial area of concern + buffer									105,492 sq km
Established species range area (sq km)	3654	2742	1323	3279	3650	5306	4917	3326	28,197
Overlapping area (sq km)	560	344	219	1175	1734	1647	2104	773	8,556
Percent area affected	*15%*	*13%*	*17%*	*36%*	*48%*	*31%*	*43%*	*23%*	*30%*
# Occurrence Sections	3	2	21	171	228	75	76	25	601

Aquatic Uses Determination

The aquatic analysis uses a downstream dilution model to determine the downstream extent of exposure in streams and rivers. The downstream component, combined with the initial area of concern, define the aquatic action area. The downstream extent includes the area where the EEC could potentially be above levels that would exceed the most sensitive LOC. The model calculates two values, the dilution factor (DF) and the threshold Percent Cropped Area (PCA). The dilution factor (DF) is the maximum RQ/LOC, and the threshold PCA is the inverse value represented as a percent.

The dilution model uses the NHDPlus data set (http://www.horizon-systems.com/nhdplus/) as the framework for the downstream analysis. The NHDPlus includes several pieces of information that can be used to analyze downstream effects. For each stream reach in the hydrography network, the data provide a tally of the total area in each NLCD land cover class for the upstream cumulative area contributing to the given stream reach. Using the cumulative land cover data provided by the NHDPlus, an aggregated use class is created based on the classes listed in Table 2. A cumulative PCA is calculated for each stream reach based on the aggregate use class (divided by the total upstream contribution area).

The dilution model traverses downstream from each stream segment within the initial area of concern. At each downstream node, the threshold PCA is compared to the aggregate cumulative PCA. If the cumulative PCA exceeds the threshold then the stream segment is included in the downstream extent. The model continues traversing downstream until the cumulative PCA no longer exceeds the threshold. The additional stream length by the downstream analysis is presented in Table 4.

Table 4 Aquatic spatial quantitative results for agriculture areas.

Measure	Total
Total California stream kilometers	332,962
Total stream kilometers in initial area of concern	53,784
Total stream kilometers added downstream	115
Total stream kilometers in final action area	53,899

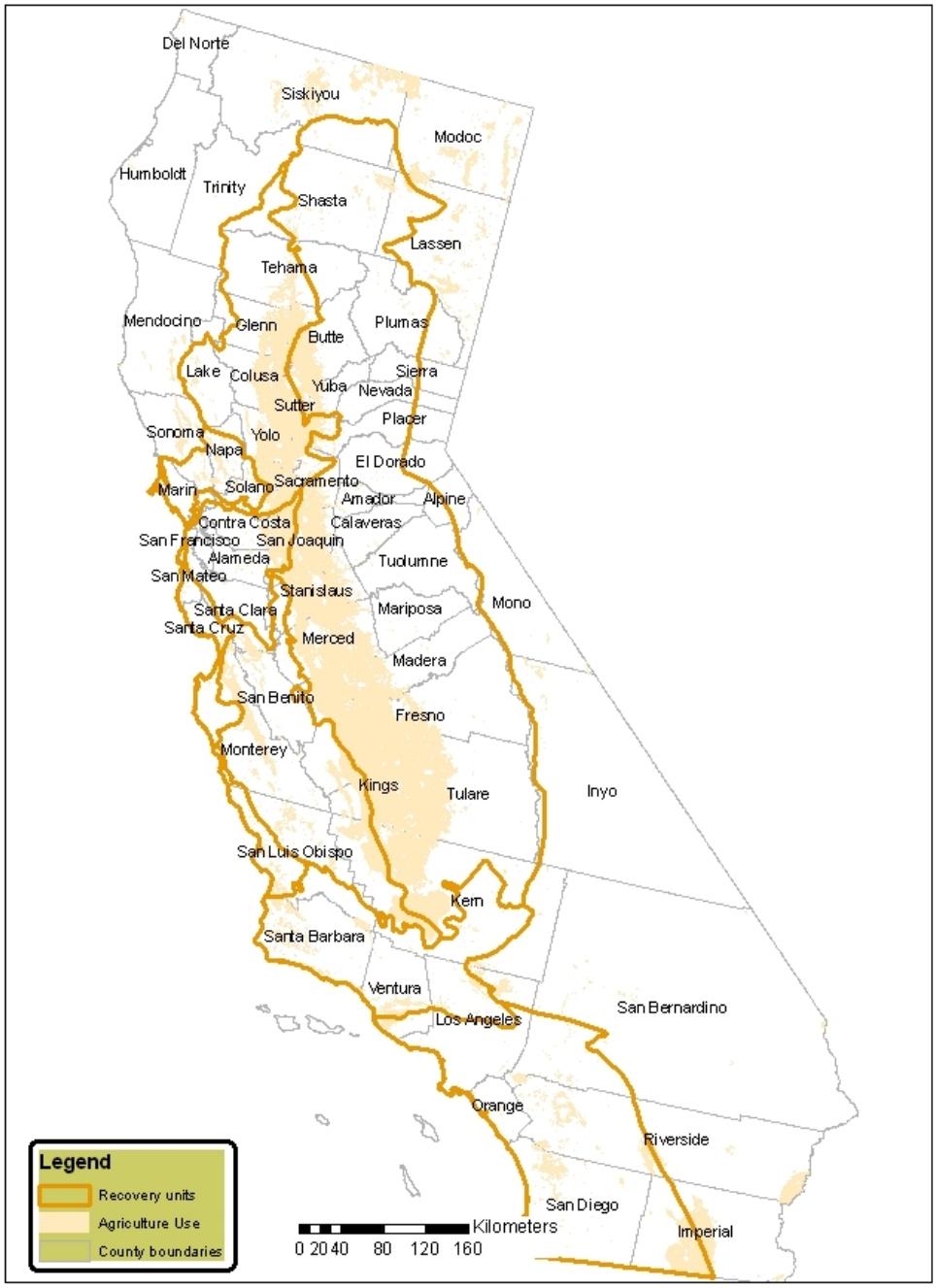
A Note on Limitations and Constraints of Tabular and Geospatial Sources

The geographic data sets used in this analysis are limited with respect to their accuracy and timeliness. The NASS Census of Agriculture (NASS 2002) contains adjusted survey data collected prior to 2002. Small use sites, and minor uses (e.g., specialty crops) tend to be underrepresented in this dataset. The National Land Cover Dataset (NLCD 2001) represents the best comprehensive collection of national land use and land cover information for the United States representing a range of years from 1994 – 1998. Because the NLCD does not explicitly include a class to represent orchard and vineyard landcover, California Gap Analysis Project data (CaGAP 1998) were overlaid with the NCLD and used to identify these areas.

Hydrographic data are from the NHDPlus dataset (http://www.horizon-systems.com/nhdplus/). NHDPlus contains the most current and accurate nationwide representation of hydrologic data. In some isolated instances, there are, however, errors in the data including missing or disconnected stream segments and incorrect assignment of flow direction. Spatial data describing the recovery zones and core areas are from the US Fish and Wildlife Service. The data depicting survey sections in which the species has been found in past surveys is from the California Natural Diversity Database (http://www.dfg.ca.gov/bdb/html/cnddb.html).

The relatively coarse spatial scale of these datasets precludes use of the data for highly localized studies, therefore, tabular information presented here is limited to the scale of individual Recovery Units. Additionally, some labeled uses are not possible to map precisely due to the lack of appropriate spatial data in NLCD on the location of these areas. To account for these uncertainties, the spatial analysis presented here is conservative, and may overestimate the areal extent of actual pesticide use in California.

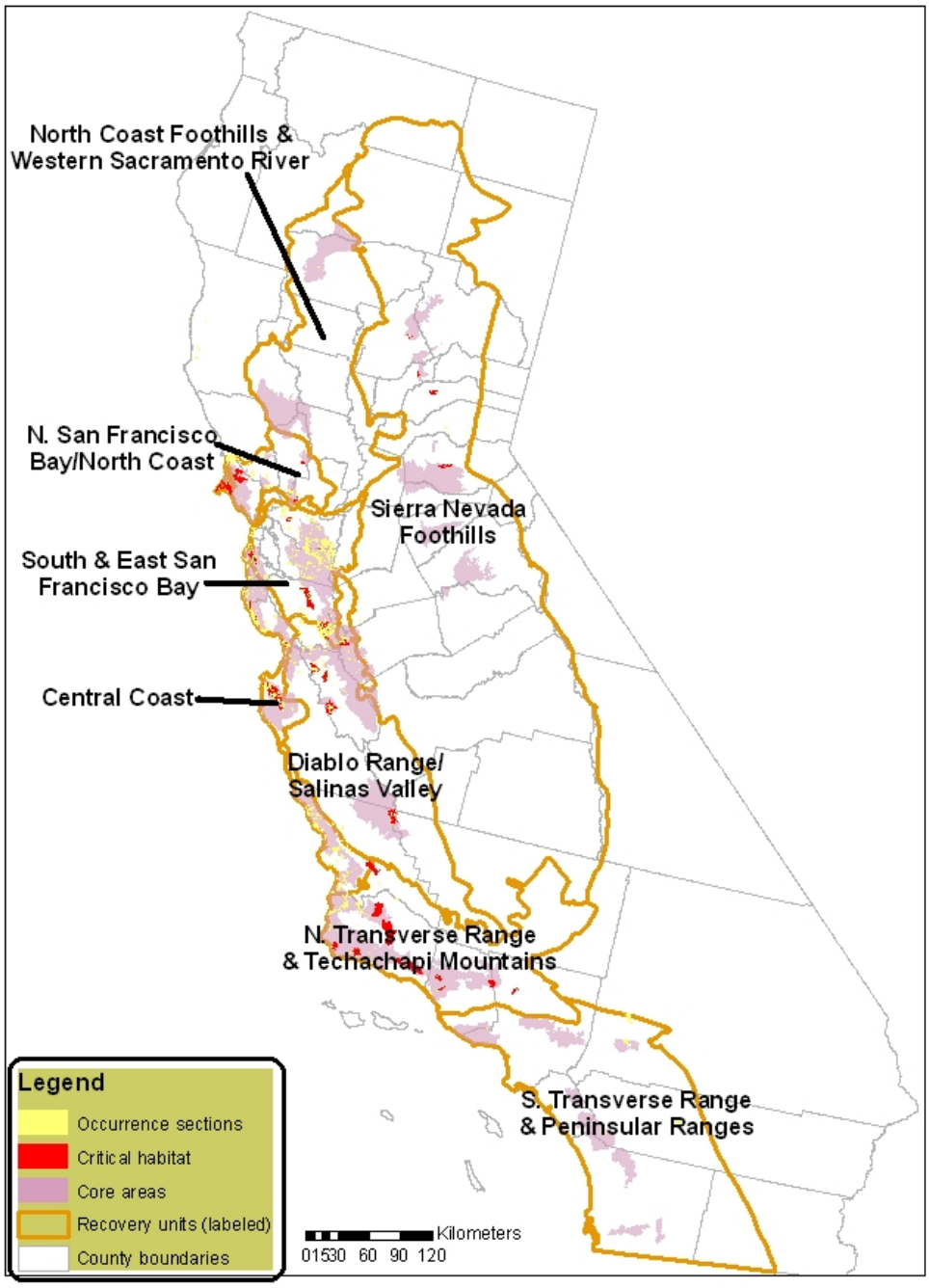
Methamidophos Use Map



Compiled from California County boundaries (ESRI, 2002), USDA National Agriculture Statistical Service (NASS, 2002) Gap Analysis Program Orchard/ Vineyard Landcover (GAP) National Land Cover Database (NLCD) (MRLC, 2001)

Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

CRLF Habitat Areas



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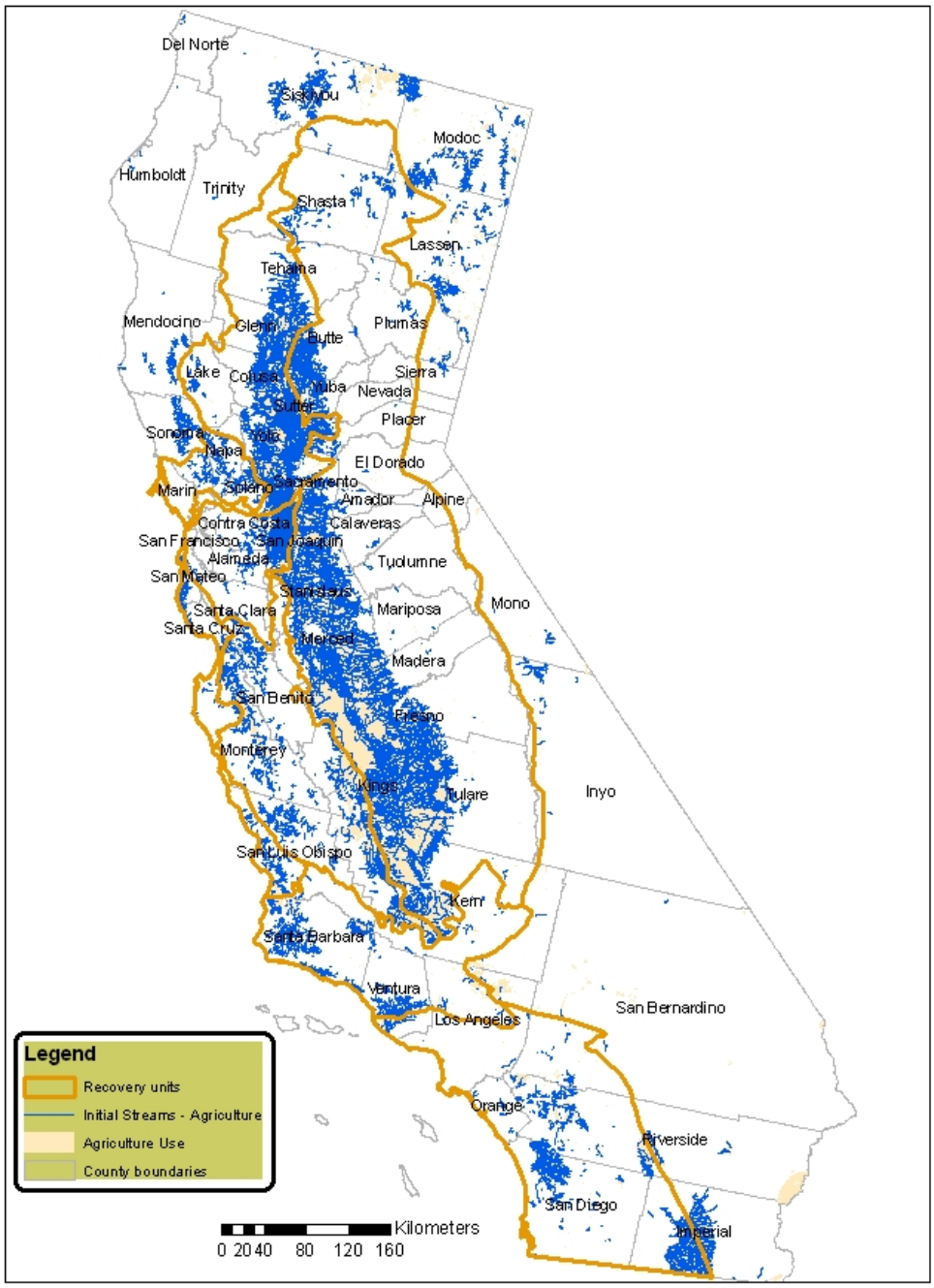
Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June 15, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

Methamidophos Agriculture - Initial Area of Concern



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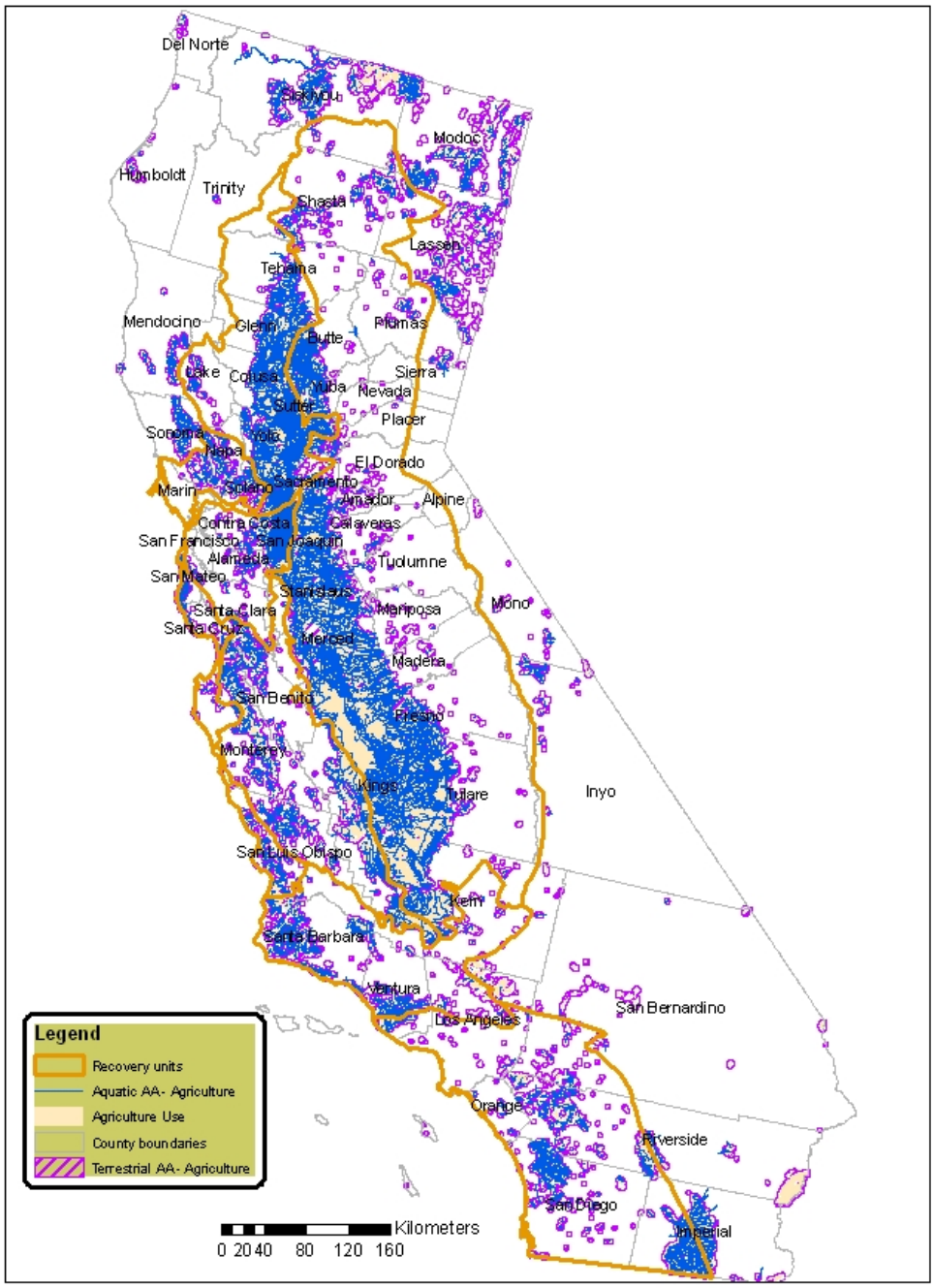
Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

Methamidophos Agriculture - Action Area (AA)



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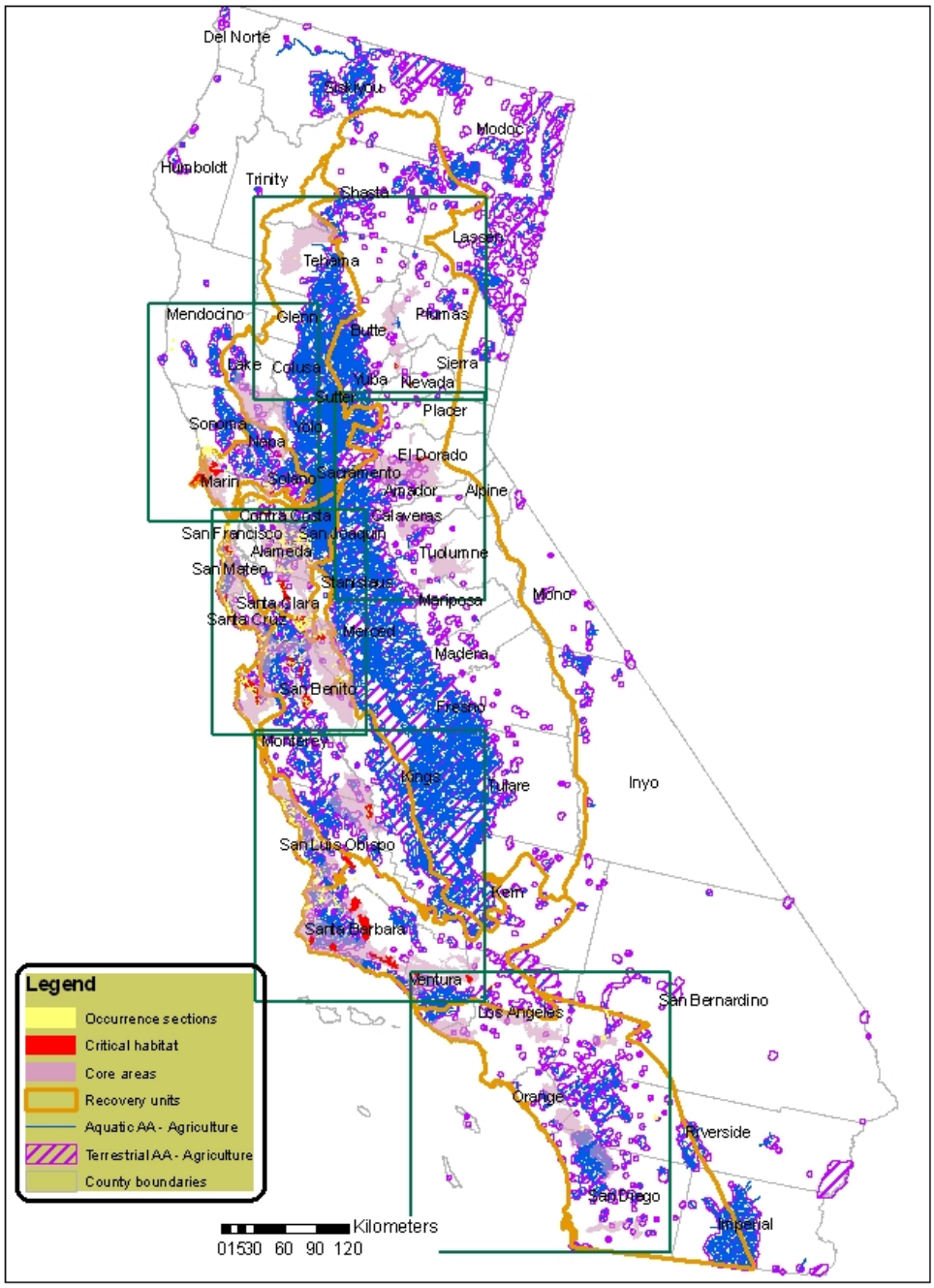
Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

Methamidophos Agriculture - Action Area & CRLF Habitat



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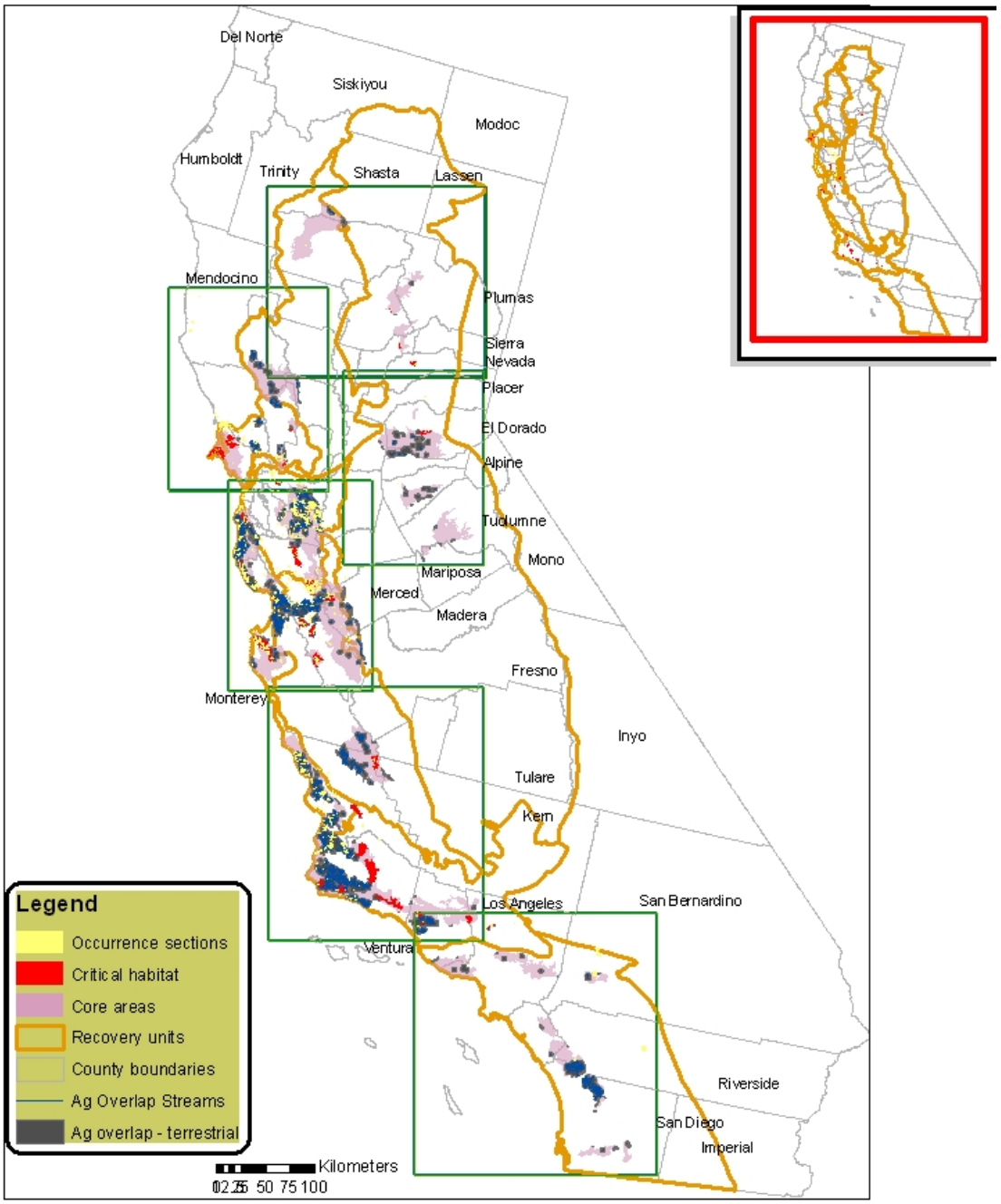
Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

Methamidophos Agriculture - AA & CRLF Overlap Statewide



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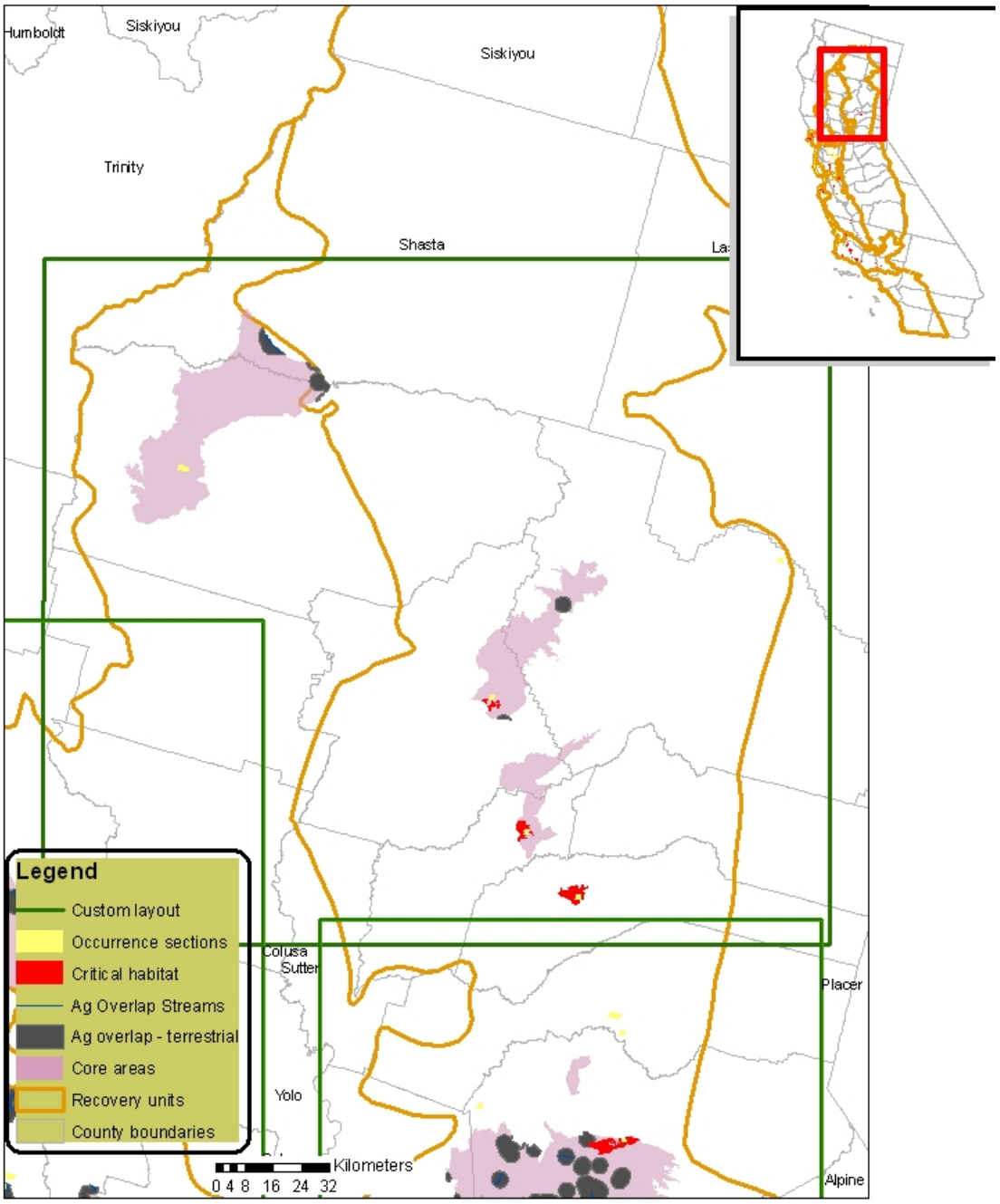
Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

Methamidophos Agriculture - AA & CRLF Overlap 1



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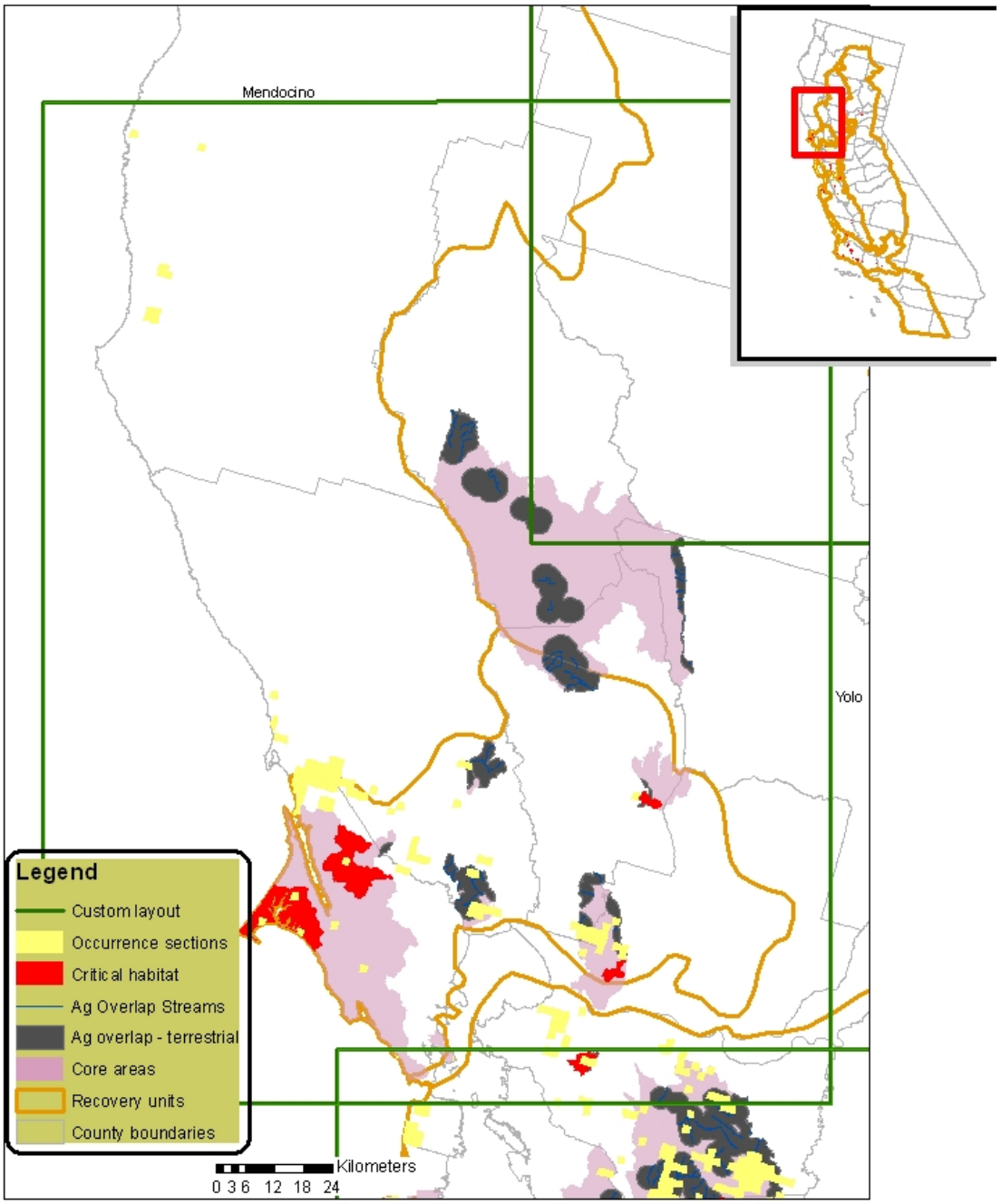
Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

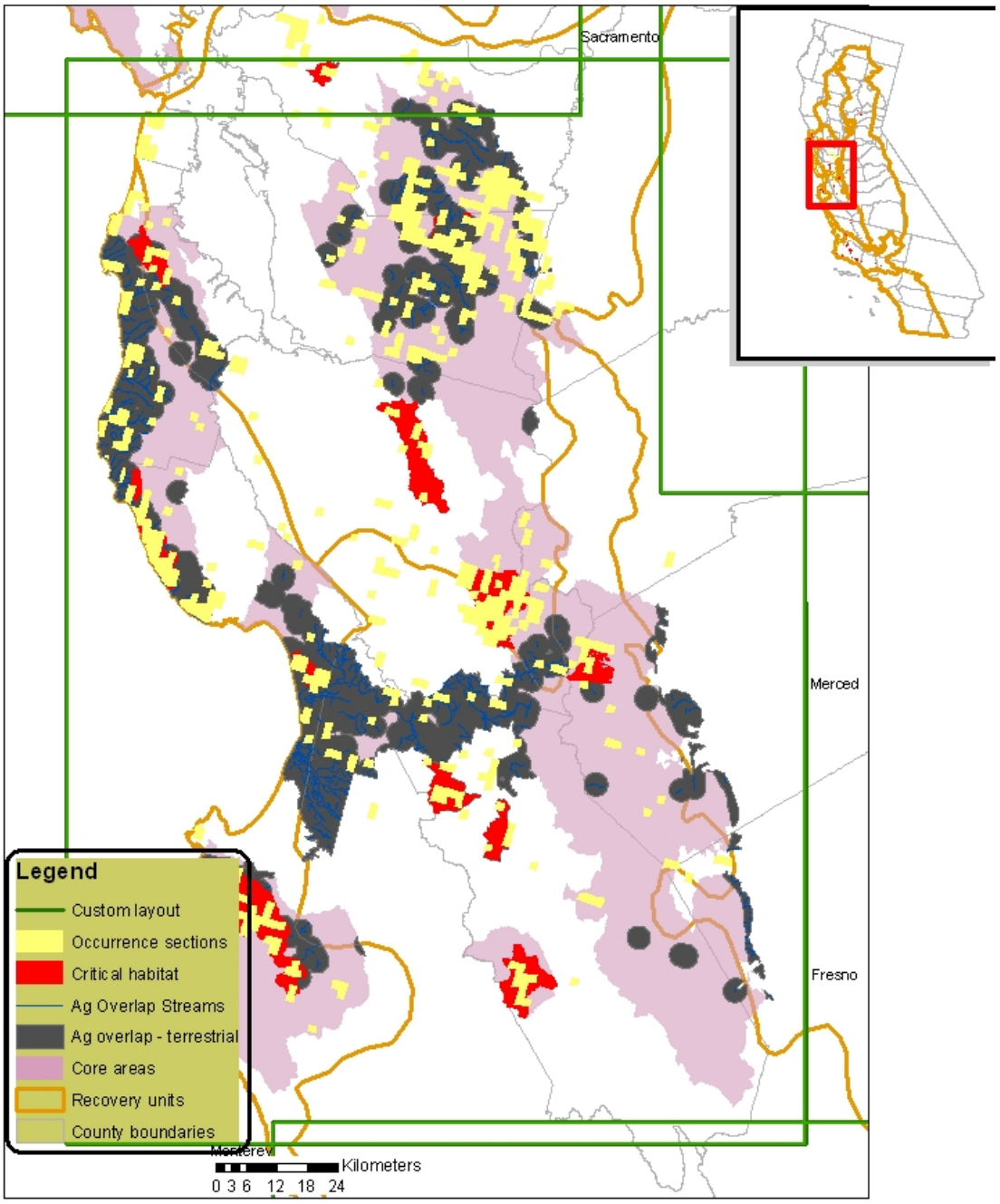
Methamidophos Agriculture - AA & CRLF Overlap 2



Compiled from California County boundaries (ESRI, 2002), USDA National Agriculture Statistical Service (NASS, 2002) Gap Analysis Program Orchard/ Vineyard Landcover (GAP) National Land Cover Database (NLCD) (MRLC, 2001)

Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

Methamidophos Agriculture - AA & CRLF Overlap 3



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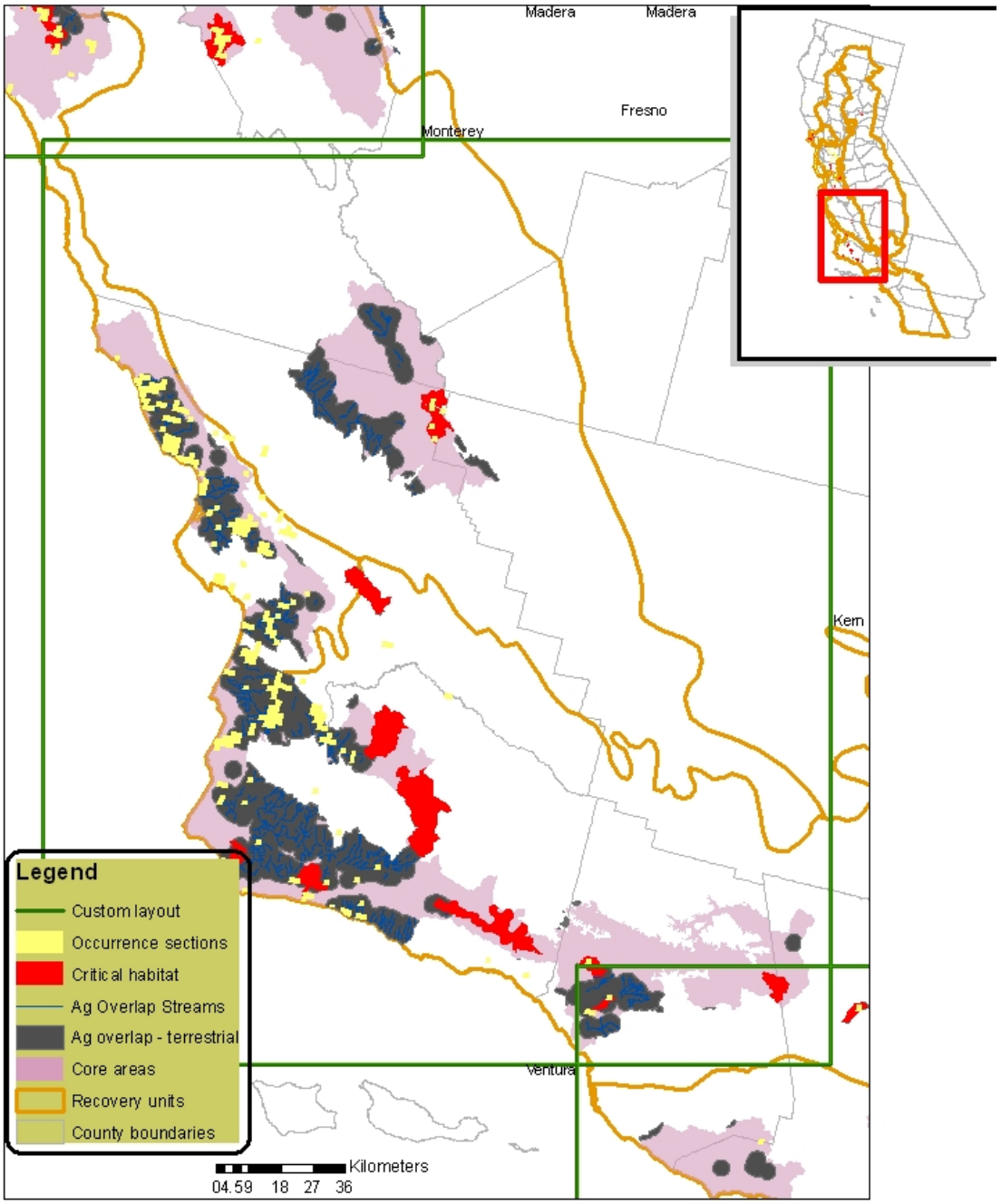
Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

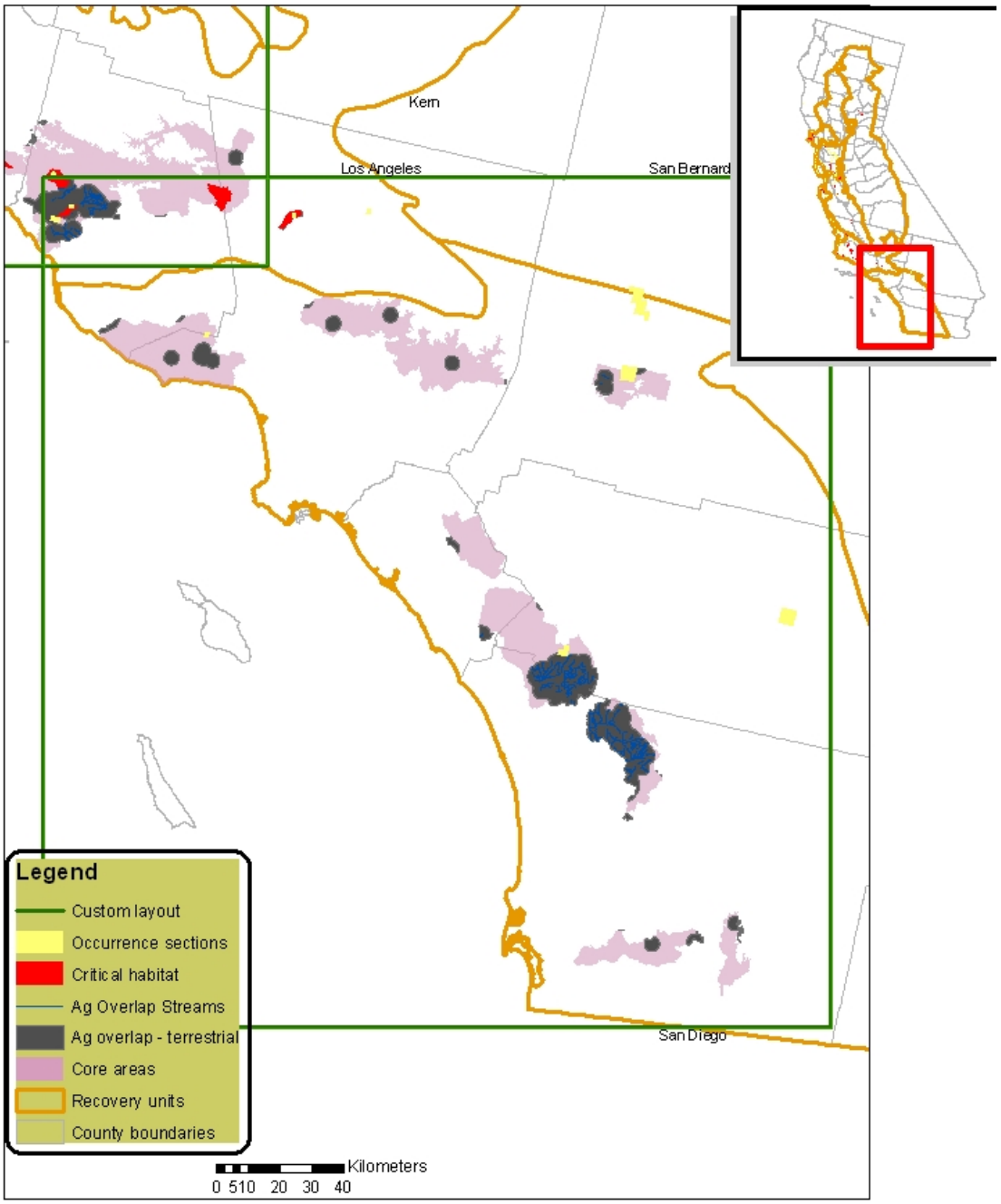
Methamidophos Agriculture - AA & CRLF Overlap 4



Compiled from California County boundaries (ESRI, 2002), USDA National Agriculture Statistical Service (NASS, 2002) Gap Analysis Program Orchard/ Vineyard Landcover (GAP) National Land Cover Database (NLCD) (MRLC, 2001)

Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

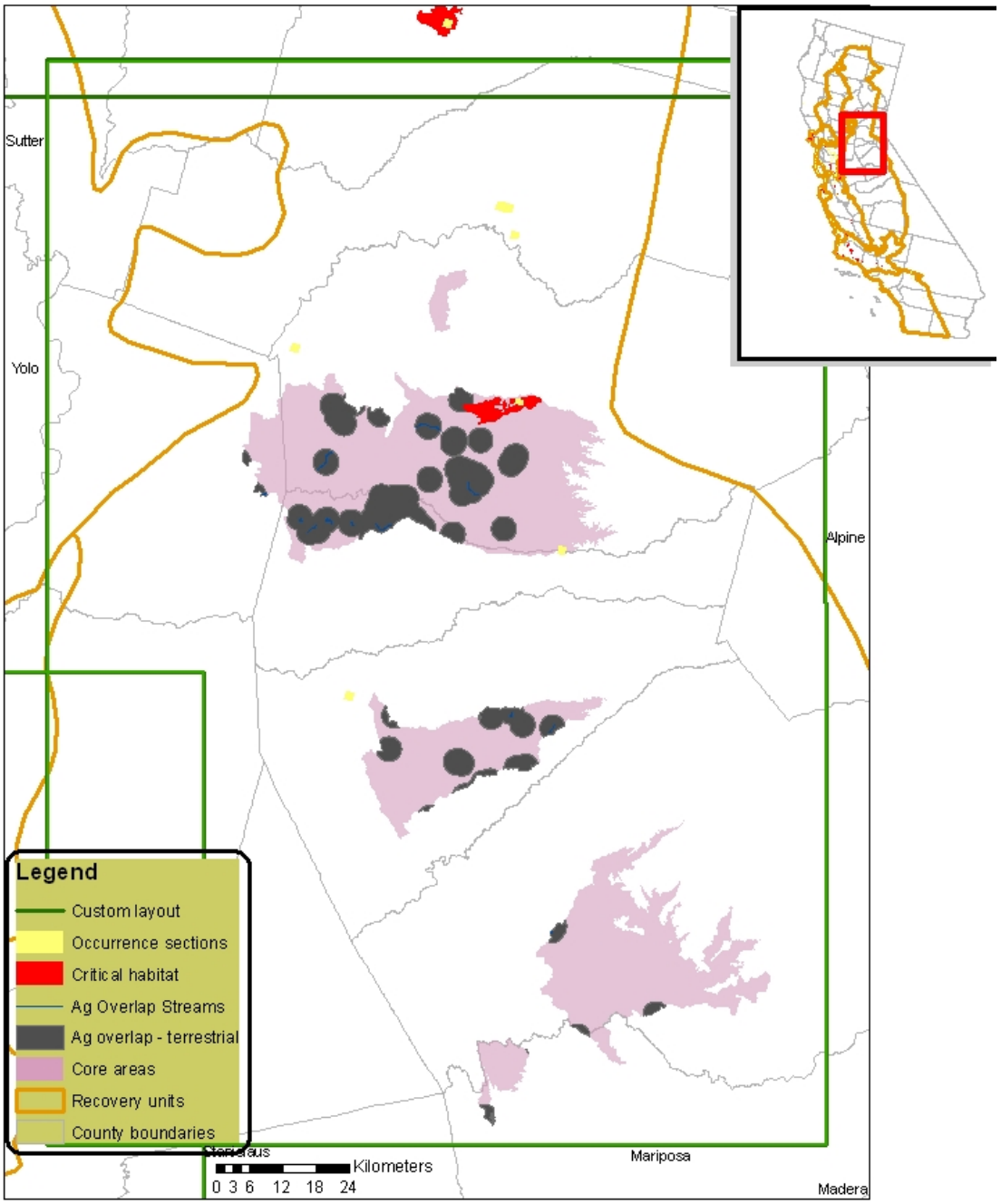
Methamidophos Agriculture - AA & CRLF Overlap 5



Compiled from California County boundaries (ESRI, 2002), USDA National Agriculture Statistical Service (NASS, 2002) Gap Analysis Program Orchard/ Vineyard Landcover (GAP) National Land Cover Database (NLCD) (MRLC, 2001)

Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)

Methamidophos Agriculture - AA & CRLF Overlap 6



Compiled from California County boundaries (ESRI, 2002), USDA National Agriculture Statistical Service (NASS, 2002) Gap Analysis Program Orchard/ Vineyard Landcover (GAP) National Land Cover Database (NLCD) (MRLC, 2001)

Map created by US Environmental Protection Agency, Office of Pesticides Programs, Environmental Fate and Effects Division. June XX, 2007. Projection: Albers Equal Area Conic USGS, North American Datum of 1983 (NAD 1983)