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# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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WASHINGTON, D.C. 20460

MAR 9 2000

Glenda Haage Platte Chemical Company 419 18th Street Greeley, CO 80631-5852

Subject: Carbaryl 50 WP

EPA Registration No. 34704-350 Amendment dated December 27, 1999

Resubmission of Label amendments as per the EPA Letter dated 15 October 1999 regarding GDE dated August 6, 1999.

Dear Ms. Haage:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable provided that you make the labeling changes indicated below before you release the product for shipment bearing the amended labeling:

1. Correct the PHIs for alfalfa and clovers (7 days), carrots and parsnips (7), garden beet roots (7), peas (delete the statement "Do not apply within 3 days of harvest"), sugar beets (28), and almond (14).

A stamped copy of the labeling is enclosed for your records. Submit two copies of your final printed labeling before you release the product for shipment.

Sincerely

George Tompkins, Ph.D., Entomologist Insecticide-Rodenticide Branch

Registration Division (7505C)



# CARBARYL 50 WP

INSECTICIDE

will Comment In EPA Letter Dat d

9 2000

Under the Feneral Insectified Funcicide, and recommend as amended, for the post

# 34704-350

# N-Methyl Carbamate Insecticide For Agricultural or Commercial Use Only.

ACTIVE INGREDIENT:	By Wt.
Carbaryi; 1-Naphthyl N-Methylcarbamate	. 50.0%
INERT INGREDIENTS:	
TOTAL	100.0%

# KEEP OUT OF REACH OF CHILDREN WARNING **AVISO**

Si usted no entiende la etiqueta, busque a algulen para que se la explique a usted en detaile. (If you do not understand this label, find someone to explain it to you in detail.)

See Below for Additional Precautionary Statements

EPA REG. NO. 34704-350

EPA EST. NO. 34704-NB-1 (Lot No. Begins 08) EPA EST. NO. 34704-CO-1 (Lot No. Begins 09) LBS. (\_\_\_ NET WEIGHT

**EXP11Y99** 

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS (& DOMESTIC ANIMALS) WARNING

MAY BE FATAL IF SWALLOWED. MAY BE HARMFUL IF INHALED. OVEREXPOSURE MAY CAUSE: salivation, watery eyes, pinpoint eye pupils, blurred vision, muscle tremors, difficult breathing, excessive sweating, abdominal cramps, nausea, vomiting, diarrhea, weakness, headache. IN SEVERE CASES CONVULSION, UNCONSCIOUSNESS AND RES-PIRATORY FAILURE MAY OCCUR. SIGNS AND SYMPTOMS OF OVER-EXPOSURE OCCUR RAPIDLY FOLLOWING EXPOSURE TO THIS

Avoid breathing of dust and spray mist. Do not take internally, Avoid contact with eyes, skin or clothing. Keep out of reach of children and domestic animals.

Personal Protective Equipment:

Applicators and other handlers must wear: coveralls over shortsleeved shirt and short pants, waterproof gloves, chemical-resistant tootwear plus socks, protective eyewear, chemical-resistant headgear for overhead exposure, and chemical-resistant apron when cleaning equipment, mixing or loading.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering controls statements:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets with requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

# **USER SAFETY RECOMMENDATIONS**

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing Immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. Wash the out side of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

# ANTIDOTE STATEMENT

ATROPINE SULFATE IS HIGHLY EFFECTIVE AS AN ANTIDOTE. Narcotics and other sedatives should not be used. Further, drugs like 2-PAM (pyridine-2-aldoxime methiodide) are not recommended. See NOTE TO PHYSICIAN below.

#### STATEMENT OF PRACTICAL TREATMENT GENERAL

Contact a physician immediately in all cases of suspected poisoning. Transport to a physician or hospital immediately and SHOW A COPY OF THIS LABEL TO THE PHYSICIAN.

IF SWALLOWED: Never give anything by mouth to an unconscious or convulsing person. If conscious and not convulsing, drink 1 to 2 glasses of water and induce vomiting by touching the back of the throat with finger. IF IN EYES: Flush eyes with plenty of water. Get medical attention if irritation persists

IF ON SKIN: Wash thoroughly with soap and water.

IF INHALED: Move from contaminated atmosphere and call a physician. **NOTE TO PHYSICIAN** 

Carbaryl is a carbamate insecticide, which is a cholinesterase inhibitor. Overexposure to this substance may cause toxic signs and symptoms due to stimulation of the cholinergic nervous system. These effects of overexposure are spontaneously and rapidly reversible. Gastric lavage may be used if this product has been swallowed. Carbaryl poisoning may occur rapidly after ingestion and prompt removal of stomach contents is indicated.

Specific treatment consists of parenteral atropine sulfate. Caution should be maintained to prevent overatropinization. Mild cases may be given 1 to 2 mg intramuscularly every 10 minutes until full atropinization has been achieved and repeated thereafter whenever symptoms reappear. Severe cases should be given 2 to 4 mg intravenously every 10 minutes until fully atropinized, then intramuscularly every 30 to 60 minutes to maintain the effect for at least 12 hours. Dosages for children should be appropriately reduced. Complete recovery from overexposure is to be expected within

Narcotics and other sedatives should not be used. Further, drugs like 2-PAM (pyridine-2-aldoxime methiodide) are NOT recommended unless organophosphate intoxication is also suggested.

To aid in confirmation of a diagnosis, urine samples should be obtained within 24 hours of exposure and immediately frozen. FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-800-228-5635, EXT. 136, OR CALL COLLECT, 612-851-8180, EXT. 136.

# **ENVIRONMENTAL HAZARDS**

This product is extremely toxic to aquatic and estuarine invertebrates. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Discharge from rice fields may kill aquatic and estuarine invertebrates. Do not apply when weather conditions favor drift from area treated. Do not contaminate water by cleaning of equipment or disposal of wastes.

# BEE CAUTION

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops and weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Do not use when value of bees as pollinators is more important than insect control. Before applying, warn beekeepers to locate hives beyond bee flight range until one week after application or to take other equally effective precautions.

## **DIRECTIONS FOR USE**

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

# **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls over short-sleeved shirt and short pants, waterproof gloves, chemical-resistant footwear plus socks, protective eyewear and chemical-resistant headgear for overhead exposure.

# **GENERAL INFORMATION**

This product is a dry powder for dispersion in water and application as an insecticide spray. READ THIS LABEL BEFORE USE. STRICTLY OBSERVE LABEL DIRECTIONS AND CAUTIONS, AND APPLICABLE FEDERAL AND STATE REGULATIONS.

# STORAGE AND DISPOSAL

PESTICIDE STORAGE: Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, fold and roll back bags, clamp and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal. In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills.

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

# PRE-HARVEST AND GRAZING USE INFORMATION AND LIMITATIONS

Tolerances established under the Federal Food, Drug and Cosmetic Act permit the sale of crops bearing probable carbaryl residues when carbaryl is used in accordance with label directions. Pre-harvest and grazing use limitations are listed at the end of the directions for each crop use. If this product is used in accordance with label directions, forage and feed crops, including almond hulls, bean vines, carrot tops, citrus pulp, cowpea hay, peanut hay, pea vines, rice straw, soybean hay, and sugar beet tops, may be grazed or harvested for use as feed for dairy and meat animals without resulting in residues in milk or meat.

Do not use reclaimed irrigation water from crops treated with carbaryl on upland crops for which carbaryl tolerances are not established.

# PLANT RESPONSE PRECAUTIONS

To avoid possible injury on tender foliage, do not apply to wet foliage or when rain or high humidity is expected during the next two days. Do not use on Boston Ivy, Virginia creeper and maidenhair fem as injury will result. During early season, it may also injure Virginia and sand pines.

Observe label instructions on apple thinning and on combinations with certain herbicides on rice and soybeans.

# SPRAY PREPARATION

TO ASSURE A UNIFORM SUSPENSION, AGITATE, STIR OR RECIRCULATE ALL OF THIS PRODUCT'S SPRAY MIXTURES PRIOR TO AND DURING USE. Remove oil, rust, scale, pesticides residues and water. Fill spray or mix tank with 1/2 to 1/4 the desired amount of water. Start mechanical or hydraulic agitation. Slowly

add the required amount of this product and then the remaining volume of water. Prepare only as much spray mixture as can be applied on the day of mixing MAINTAIN CONTINUOUS AGITATION DURING MIXING AND APPLICATION TO ASSURE A UNIFORM SUSPENSION. DO NOT STORE SPRAY MIXTURE FOR PROLONGED PERIODS.

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# COMPATIBILITY

This product has been effectively used without plant injury with most common insecticides, miticides, fungicides, nutrients, adjuvants, and with petroleum oif as used on citrus. If compatibility with another product and the resulting crop response is unknown, it should be tested on a small scale. Curdling, precipitation, greasing, layer formation or increased viscosity are symptoms of incompatibility. Incompatibility will reduce insect control and may cause mechanical difficulties or plant injury. Observe all cautions and limitations on labeling of all products used in mixtures. WHEN PREPARING COMBINATION SPRAYS, FIRST ADD THIS PRODUCT TO ½ THE DESIRED AMOUNT OF WATER, MIX THOROUGHLY, AND THEN ADD COMBINATION PRODUCTS TO THE MIXTURE. DO NOT APPLY TANK MIX COMBINATIONS UNLESS YOUR PREVIOUS EXPERIENCE INDICATES THE MIXTURE IS EFFECTIVE AND WILL NOT RESULT IN APPLICATION PROBLEMS, EXCESSIVE RESIDUES OR PLANT INJURY.

Unstable under highly alkaline conditions. Not effective if used with alkaline materials such as Bordeaux, time-sulfur and casein-time spreaders. Do not use with summer oils on deciduous fruits.

# **APPLICATION**

On all crops use sufficient gallonage to obtain thorough and uniform coverage. Calibrate spray equipment to deliver the required volume. Use 50 mesh slotted strainers in spray system and 25 mesh slotted strainers behind nozzles. Avoid applications just before rainfall as poor insect control may result. To clean spray system after use, drain and flush with water. Refer to the Storage and Disposal directions for proper disposal of rinse water.

NOTE: Staining may occur on certain surfaces such as stucco, brick, cinder block, and wood. Spray deposits on painted or stained surfaces or finishes (i.e., cars, houses, trailers, boats, etc.) should be immediately removed by washing to prevent discoloration. Avoid applications to surfaces where visible spray residues are objectionable.

#### CHEMIGATION:

Refer to supplemental labeling entitled "APPLICATION THROUGH IRRIGATION SYSTEMS—CHEMIGATION" for use directions for chemigation. Do not apply this product through any irrigation systems unless the supplemental labeling on chemigation is followed.

# **INSECT CONTROL**

Apply when insects or their damage appear. To maintain control repeat at 7 to 14 day intervals or as necessary unless a shorter interval is specified below. Where a dosage range is indicated, use lower rate on young plants and early instars and higher rate on mature plants, advanced instars and adults. Thorough and uniform spray coverage is essential for effective control.

This product does not control spider mites. If spider mites are a problem, use a registered miticide.

Regional differences have been noted in the susceptibility of certain strains of fall armyworm to this product. If local experience indicates inadequate control, use an alternative pesticide.

# FORAGE, FIELD AND VEGETABLE CROP INSECT CONTROL

Recommended dosages refer to pounds of this product per acre. Where a dosage range is indicated, use lower rate on young plants, higher rate on mature plants. Use sufficient spray gallonage to obtain full coverage. This will usually vary from 3 to 40 gallons per acre depending on equipment, degree of insect infestation, and stage of crop growth. Keep spray mixture well agitated. Apply when insects or their damage appear and repeat at 7 to 10 day intervals or as necessary unless shorter interval is specified below. See specific directions below for grasshopper control.

# ALFALFA AND CLOVERS

Use 1 to 2 pounds for blister beetles and Mexican bean beetle.

Use 2 pounds for alfalfa caterpillar, bean leaf beetle, cucumber beetles, green cloverworm, Japanese beetle, leafhoppers, three-cornered alfalfa hopper, thrips and velvetbean caterpillar.

Use 2 to 3 pounds for alfalfa weevil larvae, armyworm, cloverhead weevil, corn earworm, cutvorms, Egyptian alfalfa weevil larvae, essex skipper, European alfalfa beetle, fall armyworm, lygus bugs, stink bugs, webworms, and yellowstriped armyworm. Use higher rate in areas east of Rocky Mountains. On dense growth, use 25 to 40 gallons per acre with ground equipment to ensure adequate coverage. For alfalfa weevil larvae, if pretreatment damage is extensive, cut alfalfa and treat the stubble. To avoid possible injury on tender foliage, do not apply when foliage is wet or when rain or excessive humidity is expected during the next 2 days.

Do not use on affalfa within 3 days of harvest.

## **ASPARAGUS**

Use 2 to 4 pounds for asparagus beetle on seedlings or spears. Use 4 to 8 pounds for asparagus beetle and Apache cicada on ferns or brush growth in the post-harvest period.

Do not apply more often than once every 3 days.

Do not apply within 1 day of harvest.

BEANS (including blackeyed peas, cowpeas, crowder or southern peas, dry beans, green beans, lima beans, navy beans and snap beans)

Use 1 to 2 pounds for blister beetles and Mexican bean beetle

Use 2 pounds for alfalfa caterpillar, bean leaf beetle, cucumber beetles, flea beetles, green cloverworm, Japanese beetle, leafhoppers, three-cornered affalfa hopper, thrips, velvetbean caterpillar, and western bean cutworm.

Use 2 to 3 pounds for armyworm, corn earworm, cutworms, European corn borer, fall armyworm, stink bugs, tarnished plant bug, and webworms.

Use 4 pounds for cowpea curculio. In California, use 4 pounds for corn earworm, lima bean pod borer, lygus bugs, and stink bugs.

Do not apply within 3 days of harvest for succulent beans, 14 days for forage, 21 days for dried and hay.

# CABBAGE, BROCCOLI, BRUSSELS SPROUTS, CAULIFLOWER AND KOHLRABI

Use 1 to 2 pounds for flea beetles and harlequin bug

Use 2 to 4 pounds for armyworm, fall armyworm, imported cabbageworm and corn earworm.

Do not apply within 3 days of harvest.

# CHINESE CABBAGE, COLLARDS, HANOVER SALAD, HORSERADISH, KALE, MUSTARD GREENS, RADISHES, RUTABAGAS AND TURNIPS.

Use 1 to 2 pounds for flea beetles, harlequin bug and leafhoppers.

Use 2 to 3 pounds in a 5 to 7 day schedule for aster leafhopper.

Use 2 to 4 pounds for armyworm, fall armyworm, imported cabbageworm, corn earworm, tarnished plant bug and stink bugs.

Do not apply within 7 days of harvest of horseradish, radishes, rutabagas and turnips (roots).

Do not apply within 14 days of harvest of Chinese cabbage, collards, hanover salad, kale, mustard greens and turnips (tops).

# CARROTS, CELERY, PARSNIPS AND PARSLEY (DO NOT USE ON CELERY IN CALIFORNIA)

Use 1 to 2 pounds for flea beetles and leafhoppers.

Use 2 to 3 pounds in a 5 to 7 day schedule for aster leafhopper, lygus bugs, and spittlebugs.

Use 2 to 4 pounds for armyworm, fall armyworm, corn earworm, tarnished plant bug and stink bugs.

Do not apply within 3 days of harvest of carrots and parsnips.

Do not apply within 14 days of harvest of parsley and celery.

## CORN (FIELD, SWEET AND POP)

Use 2 to 4 pounds for armyworm, chinch bugs, corn earworm, corn rootworm adults. European corn borer, fall armyworm, flea beetles, Japanese beetle, sap beetles, Southwestern corn borer, and leafhoppers. For larvae in whorl and lobiage feeders, apply to entire plant. Repeat as necessary. For insects attacking silks and ears, apply at 1 to 6 day intervals starting when first silks appear and continuing until silks begin to dry. For chinch bugs use high gallonage ground application directed at the base of plants. Three or more applications may be required depending on severity of infestation. Timing and good coverage are absolutely essential for effective control. OBSERVE BEE CAUTION.

Use 4 pounds for Western bean cutworm. Treat when infestation averages 15% and at 90% to 100% tassel emergence. Treatment after 100 silk emergence will reduce effectiveness.

Use 4 to 13 pounds in at least 15 gallons of water per acre for cutworm control. Spray in 12-inch band using 3/8 pound (6 ounces) per 1000 linear feet of row. For broadcast ground application, use up to 13 pounds in at least 20 gallons of water near acre.

For field and pop corn, do not apply within 14 days of harvest for forage and silage; do not apply within 48 days of harvest for grain and fodder. For sweet corn, do not apply within 2 days of harvest for ears, 14 days of harvest for forage, 48 days of harvest for fooder.

# CUCUMBER, MELONS, PUMPKIN AND SQUASH

Use 1 to 2 pounds for pickleworm and melonworm; 2 pounds for cucumber beetles, flea beetles, leafhoppers and squash bug. Avoid excess applications.

To avoid possible injury on tender toliage, do not apply when foliage is wet or when rain or excessive humidity is expected during the next 2 days.

Do not apply within 3 days of harvest.

# DANDELION, ENDIVE (ESCAROLE), LETTUCE AND SALSIFY

Use 1 to 2 pounds for flea beetles, harlequin bug and leafhoppers.

Use 2 to 3 pounds in a 5 to 7 days schedule for aster leafhopper, lygus bugs, and spittlebugs.

Use 2 to 4 pounds for armyworm, fall armyworm, imported cabbageworm, corn earworm, tarnished plant bug and stink bugs. For optimum control of corn earworm after lettuce heads begin to form, use 4 pounds in a 5 to 7 day schedule.

To avoid possible injury on lettuce, do not apply when foliage is wet or when rain or excessive humidity is expected during the next 2 days.

Do not apply within 7 days of harvest of salsify (roots).

Do not apply within 14 days of harvest of dandelion, endive (escarole), head lettuce, leaf lettuce and salsify (tops).

# FORAGE GRASSES AND PASTURE

Use 2 to 3 pounds for armyworm, blackgrass bugs, chinch bugs, essex skipper, fall

armyworm, range caterpillar, range cranefly, striped grass looper, and thrips. For thrips control in grasses grown for seed, use high spray pressure to improve penetration into boot.

Use 3 to 4 pounds for white grubs (green June beetle.)

Do not apply within 14 days of harvest.

#### **GARDEN BEET, SPINACH AND SWISS CHARD**

Use 1 to 2 pounds for the flea beetles, harlequin bug and leafhoppers.

Use 2 to 3 pounds in a 5 to 7 day schedule for aster leafhopper.

Use 2 to 4 pounds for armyworm, corn earworm, fall armyworm, tarnished plant bug and stink bugs.

Do not apply within 3 days of harvest of garden beets (roots).

Do not apply within 14 days of harvest of garden beets (tops), spinach and Swiss chard.

#### OKRA

Use 2 to 4 pounds for corn earworm and stink bugs. Repeat at 5 to 7 day intervals or as necessary.

Do not apply within 3 days of harvest.

#### **PEANUTS**

Use 1 to 2 pounds for blister beetles and Mexican bean beetle.

Use 2 pounds for alfalfa caterpillar, bean leaf beetle, cucumber beetles, green cloverworm, Japanese beetle, leafhoppers, red-necked peanutworm, three-cornered alfalfa hopper, thrips and velvetbean caterpillar.

Use 2 to 3 pounds for armyworm, fall armyworm, corn earworm, stink bugs and webworms.

Use 4 pounds for white fringed beetle adults and cutworms.

To avoid possible injury on tender foliage, do not apply when foliage is wet or when rain or excessive humidity is expected during the next 2 days.

Do not apply within 14 days of harvest.

#### PEAS

Use 2 pounds for leafhoppers and Colorado potato beetle.

Use 2 to 3 pounds for armyworm.

Use 3 pounds for alfalfa caterpillar, cutworms, pea leaf weevil, pea weevil, and yellow-striped armyworm.

Use 5 pounds for alfalfa looper in Washington State only. Repeat as necessary. Do not apply within 3 days of harvest.

Do not apply within 3 days of harvest for succulent beans, 14 days for forage, 21 days for dried and hay.

#### POTATO, TOMATO, EGGPLANT AND PEPPER

Use 1 to 2 pounds for Colorado potato beetle, flea beetles and leafhoppers.
Use 2 to 4 pounds for European corn borer, fall armyworm, lace bugs, tornato fruitworm, tomato hornworm, tomato pinworm, tarnished plant bug and stink bugs.
Use 4 pounds for cutworm control.

Do not apply within 7 days of harvest of potato, 3 days of harvest of tomato, eggplant, pepper.

## RICE

CAUTION: May kill shrimp and crabs. Do not use in areas where these are important resources. Do not use on rice fields in which crayfish and/or catfish farming are included in the cultural practice.

In the Mississippi Delta and Texas use 2 to 3 pounds for armyworm, fall armyworm, chinch bugs, and stink bugs.

DO NOT APPLY PROPANIL HERBICIDES WITHIN 15 DAYS BEFORE OR AFTER APPLICATION OF THIS PRODUCT OR PLANT INJURY WILL RESULT.

In California use 4 pounds for armyworm, leafhoppers and tadpole shrimp. For optimum tadpole shrimp control apply to the water when the pest first appears. Do not apply within 14 days of harvest of grain or straw.

# SORGHUMS (mile, grain sorghum, and hybrids)

Use 2 to 4 pounds for armyworm, chinch bugs, corn earworm, fall armyworm, stink bugs, and webworms. For chinch bugs use high gallonage ground application directed to base of plants.

Use 3 pounds for sorghum midge and Southwestern corn borer. Treat for sorghum midge when 25 to 30 percent of heads have emerged from boot and are in bloom. Repeat 3 to 5 days later if adults are still active. A third application may be necessary. For optimum insect control, direct spray into forming heads.

Do not apply within 21 days of harvest for grain, fodder; 14 days for grazing, forage.

Use 4 pounds for cutworm control.

# SOYBEANS

DO NOT APPLY A COMBINATION OF THIS PRODUCT AND 2,4-DB HERBI-CIDES TO SOYBEANS AS CROP INJURY MAY RESULT.

Use 1 pound for light to moderate populations or 2 pounds for heavy infestations of bean leaf beetle, cucumber beetle, green cloverworm, and velvetbean caterpillar.

Use 1 to 1½ pounds for light to moderate populations or 2 to 3 pounds for heavy intestations of corn earworm.

Use 1 to 2 pounds for blister beetles, grape colaspis, Mexican bean beetle.

Use 2 pounds for alfalfa caterpillar, Japanese beetle, leafhoppers, three-cornered alfalfa hopper, and thrips.

Use 2 to 3 pounds for armyworm, cutworm, tall armyworms, stink bugs, and webworms.

Use 4 to 5 pounds for painted lady (thistle caterpillar), saltmarsh caterpillar, and yellow striped armyworm.

Use higher rates for heavy infestations.

Do not apply within 3 days of harvest for succulent beans, 14 days for forage, 21 days for dried and hay.

#### SUGAR BEETS

Use 2 to 3 pounds for armyworms, beet leaf beetle, fall armyworm, flea beetles, leafhoppers and webworms.

Use 3 pounds for cutworms.

Do not apply within 14 days of harvest.

#### SWEET POTATOES-(DO NOT USE IN CALIFORNIA.)

Use 13 Tosps, per gallon of water as a preplant dip for sweet potato weevil. Just prior to planting, dip sweet potato cuttings in a suspension of this product. Use 2 to 4 pounds for corn earworm, cucumber beetles, flea beetles, sweet potato hornworm, sweet potato weevil, and tortoise beetles.

Do not apply within 7 days of harvest.

#### TOBACCO

#### IN PLANT BEDS:

For tobacco flea beetle, use 4 level tablespoonfuls per gallon or 2 pounds per 50 gallons, and apply 6 gallons per 100 square yards.

For green June beetle grubs, use 1 pound per 100 gallons of water when insects or their damage appear. Apply only to areas that larvae have uprooted by sprinkling as a drench with 50 to 100 gallons per 100 square yards. May be applied before or after seeding. Avoid excessive application as plant injury may result.

#### IN FIELDS:

For budworms, fall armyworm, flea beetles, Japanese beetle, June beetles, hornworms and suckfly, use 2 to 4 pounds in 50 to 100 gallons of water per acre. Full coverage of plants is essential. Use lower rate on young plants up to knee height, higher rate on mature plants. Begin treatments when worms are small. Avoid excessive application in bud of plant as injury may result.

Treated fields may be entered immediately after foliage has dried. If late applications are necessary, allow 3 days before priming or cutting.

#### **GRASSHOPPERS**

Apply 1 to 3 pounds as often as necessary. TO CONTROL GRASSHOPPERS ON THE ABOVE FORAGE FIELD AND VEGETABLE CROPS, FOLLOW PREHARVEST LIMITATIONS GIVEN AFTER EACH CROP, A 1 to 2 pounds rate is suggested for nymphs on small plants or sparse vegetation in wasteland, rangeland, ditchbanks and borders. A 2 to 3 pounds dosage should be used when grasshoppers are mature or material is applied to crops requiring greater coverage.

#### TREE FRUIT AND NUT INSECT CONTROL

Recommended dosages refer to pounds of this product per 100 gallons of dilute spray in conventional hydraulic-type sprayers. Apply dilute sprays for full coverage. Spray gallonage will vary according to tree size, density, planting distance and stage of growth. With concentrate spray, where lower volumes of spray are applied per acre, the concentration of this product should be increased in the spray mixture so that the amount of this product applied per acre is equivalent to a full-coverage dilute spray. Keep spray mixtures well agitated. Additional instructions appear with the crop categories below.

## ALMOND

Use 2 pounds for peach twig borer, San Jose scale and fruittree leafrotter. Apply in "popcorn" or petal fall stages and again when the May brood of the peach twig borer begins to hatch or thereafter as needed.

Use 2 pounds for navet orangeworm. Time early and mid season applications to correspond to moth flight peaks. Make late season application at initiation of or up to 10% hull split.

Do not apply more than 10 pounds per acre.

Do not apply within 28 days of harvest.

# APPLES AND PEARS

Application of this product within 30 days after full bloom may also provide apple thinning; to avoid this, delay use until at least 30 days after bloom. Foliar injury may result from combination with summer oils west of the Rocky Mountains, or when used before second cover on York and McIntosh apples east of the Rocky Mountains.

West of the Rocky Mountains: Use 1½ to 2 pounds for apple sucker, apple aphid, woolly apple aphid, bagworms, California pearstug (pear sawfly), codling moth, apple rust mite, pearleaf blister mite, pear rust mite, eyespotted bud moth, green fruitworm, lesser appleworm, lygus bugs, orange tortrix, pear psylla, tentiform leafminers, lecanium scales, oystershell scale, and San Jose scale. For optimum scale control apply when crawlers are present. For psylla control apply when eggs hatch or when young nymphs are present. When heavy aphid infestations are present, repeated applications may be necessary for optimum control. East of the Rocky Mountains: Use 1 pound for apple mealybug, apple aphid, codling moth and white apple leafhopper. When heavy aphid infestations are present, repeated applications may be necessary for optimum control.

Use 2 pounds for apple maggot, bagworms, eastern tent caterpillar, European apple sawfly, eyespotted bud moth, fruittree leafroller, green fruitworm, Japanese beetle, lesser appleworm, pear psylia, periodical cicada, plum curculio, redbanded leafroller, rosy apple aphid, woolly apple aphid, apple rust mite, pearleaf blister mite, pear rust mite, tarnished plant bug, tentiform leafminers, yellow headed fireworm, forbes scale, lecanium scales, cystershell scale, and San Jose scale. For optimum scale control, apply when crawlers are present. To control rosy apple aphid, apply before leaves are curled.

Do not apply within 3 days of harvest of apples and pears.

#### APPLE THINNING

Many factors influence the degree of apple thinning obtained with this product. These include tree age, variety, nutrition, previous crop, pruning, degree of set, bloom, weather and use of other chemical thinners. When any of these favor reduced fruit set, caution should be observed in applying this product so that excessive thinning and possible yield reduction will not occur. Recommended dosages refer to pounds of this product per 100 gallons dilute spray.

Consult with your County Extension Service or other experts for advice on the proper use of this product.

Concentration: Use ½ to 1 pound on easily thinned varieties. Apply for full coverage. On hard-to-thin varieties, use 1 to 2 pounds.

Timing: Apply in one spray timed between 10 and 25 days after full bloom.

Varietal Response: Easily-thinned varieties include Cortland, Grimes, Jonathan, McIntosh, Orleans, Rome Beauty, Puritan, Red Delicious, Winesap, and Yellow Newton. Difficult-to-thin varieties include Baldwin, Ben Davis, Dutchess, Early McIntosh, Golden Delicious, Lady Apple, Northern Spy, Rhode Island Greening, Steele Red, Turley, Wealthy, Yellow Transparent, and York Imperial.

CITRUS FRUITS (such as grapetruit, lemons, limes, oranges, tangelos, tangerines, citrus citron, kumquats and hybrids).

Use 2 pounds for avocado leafroller, California orangedog, citrus cutworm, citrus root weevil, fruittree leafroller, orange tortrix, Western tussock moth and West Indian sugarcane borer (adults).

Use 11/2 to 2 pounds for black scale, brown soft scale, California red scale, citricola scale, citrus scale, and yellow scale.

Apply lower dosage early in the season or against light infestation and the higher dosage late in the season or against heavy infestation and situations involving infested fruit. May be used with petroleum oil as used in common practice on citrus. Do not apply more than 40 pounds of this product per acre per application. Do not apply less than 10 gallons of dilute spray mixture per mature tree.

Do not apply within 5 days of harvest of these crops.

#### CHESTNUTS-DO NOT USE IN CALIFORNIA

Use 6 pounds for chestnut weevil.

Make 4 applications at weekly intervals beginning in late July for adult chestnut weevil control. Last application should be made prior to shuck split. Do not apply within 14 days of harvest.

#### FILBERT

Use 2 pounds for filbert aphid, filbert leafroller and filbertworm. Apply when leafroller eggs are hatching. Repeat on first appearance of adult filbert moths and again 3 to 4 weeks later. With dilute sprays, 400 gallons per acre is suggested. Do not apply within 14 days of harvest.

#### OLIVES

Use 1½ to 2 pounds in sprays for olive scale control. For optimum scale control, apply when crawlers are present. A maximum of 2 applications is permitted. Do not apply more than 30 pounds of this product per acre per application. Do not apply within 14 days of harvest.

# PEACHES, APRICOTS AND NECTARINES

Use 2 pounds for codling moth, cucumber beetles, European earwig, Japanese beetle, apple pandemis, June beetles, lesser peachtree borer, orange tortrix, oriental truit moth, peach twig borer, periodical cicada, plum curculio, fruittree leafroller, redbanded leafroller, variegated leafroller, tamished plant bug, tussock moths, lecanium scale, San Jose scale and olive scale. For optimum scale control, apply when crawlers are present. For lesser peachtree borer control, spray limbs and trunk thoroughly, weekly during moth flight. Do not apply more than 12 pounds of this product per acre per application on apricots.

Do not apply within 3 days of harvest of peaches.

Do not apply within 3 days of harvest of apricots and nectarines.

## PECANS

Use 2 to 5 pounds for black margined aphid, fall webworm, hickory shuckworm, lesser webworm, pecan leaf phylloxera, pecan nut casebearer, pecan spittlebug, pecan weevil, twig girdler, walnut caterpillar.

Do not apply more than 14 2/5 pounds of this product per acre per application. Do not apply within 14 days of harvest.

# PLUMS, PRUNES, AND CHERRIES

Use 2 pounds for black cherry aphid, mealy plum aphid, cherry maggots, cherry fruitworm, eyespotted bud moth, fruittree leafroller, redbanded leafroller, Japanese beetle, lesser peachtree borer, peach twig borer, plum curculio, prune leafhopper, European earwig, green fruitworm, rose chafer, variegated leafroller, brown soft scale, Forbes scale, lecanium scales, oystershell scale, and San Jose scale. For optimum scale control, apply when crawlers are present. For lesser peachtree borer control spray limbs and trunk thoroughly, weekly during moth flight. Use 1½ pounds for eastern tent caterpillar, codling moth, orange tortrix, and tus-

Use 11/2 pounds for eastern tent caterpillar, codling moth, orange tortrix, and to sock moth.

Do not apply more than 12 pounds of this product per acre per application. Do not apply within 3 days of harvest of these crops.

## **PISTACHIOS**

Use 1 to 4 pounds per 100 gallons of water for navel orangeworm control, Apply 150 to 300 gallons of mixed spray per acre for full coverage at onset of hull split. Do not use within 14 days of harvest.

## WALNU

Use 1 pound for calico scale, codling moth, European fruit lecanium, filbertworm, fruittree leafroller, and frosted scale. Apply 1000 gallons of diluted spray per acre for mature trees. For codling moth, apply first spray when average cross-sectional

diameters of developing nuts are ½ to ¾ inch. Repeat during middle or late June as needed.

Use 4 pounds for European earwig. Spray tree trunks to point of run-off. Do not apply within 14 days of harvest.

## SMALL FRUIT INSECT CONTROL

Recommended dosage refers to pounds of this product per acre. Keep spray mixtures well agitated. Apply when insects or their damage appear. Repeat at 7 to 10 day intervals or as necessary.

Typical spray gallonage per acre ranges from 100-300 gallons for dilute sprays, and 30-100 gallons for concentrate sprays. Do not exceed maximum label rate per acre per application.

# **BLACKBERRIES, RASPBERRIES AND DEWBERRIES** (including Boysenberries and Loganberries)

Use 2 to 4 pounds for Japanese beetle, leafrollers, leafhoppers, European raspberry aphid, rose chafer, snowy tree cricket.

In California, use 4 pounds for omnivorous leafroller and raspberry sawfly.

Do not apply within 7 days of harvest of these crops.

# BLUEBERRIES

Use 3 pounds for blueberry maggot, cherry and cranberry fruitworms, European fruit lecanium and Japanese beetle. Apply 3 weeks before harvest and repeat as necessary.

Do not apply within 7 days of harvest.

#### **CRANBERRIES**

Use 3 to 6 pounds for cutworms, cranberry fireworms, cranberry fruitworm, Japanese beetle, leafhoppers, and rose chafer. Apply in late bloom and as needed at 7 to 10 day intervals.

Do not apply within 7 days of harvest.

CAUTION: May kill shrimp and crabs. Do not use in areas where these are important resources.

#### GRAPES

Use 2 to 4 pounds for European fruit lecanium, grape leaffolder, grape leafhopper, western leaf skeletonizer, and Western yellowstriped armyworm.

Apply just before first brood leaffolder larvae emerge from rolls and as needed for leaffoopers.

Use 4 pounds for grape berry moth, Japanese beetle, June beetles, orange tortrix, ornnivorous leafroller, rebanded leafroller, cutworms, eight spotted forester, and sattmarsh cateroillar.

saltmarsh caterpillar. Do not apply within 7 days of harvest.

## **STRAWBERRIES**

Use 2 to 4 pounds for flea beetles, meadow spittlebug, omnivorous leaftier (strawberry truitworm), strawberry leafroller and strawberry weevil. Carbaryl may injure Early Dawn and Sunrise varieties on Delmarva Peninsula. Do not apply within 7 days of harvest.

# TREES AND ORNAMENTALS INSECT CONTROL

For dilute spray ground applications to trees (including shade trees, sugar maple, shelter belts, forests, plantations, parks, and recreational areas), ornamentals (including roses, flowers and other herbaceous plants), woody plants and shrubs, apply the specified dosage per 100 gallons of water. For concentrate-spray ground applications, apply the specified dosage per acre in sufficient spray volume to provide thorough coverage.

Use 2 pounds for control of:

Flea beetles

Green striped mapleworm Pitch pine tip moth Ants Apple aphid Grasshoppers Plant bugs Armyworm Gypsy moth Poinsettia hornworm Azalea leatminer Hackberry nipple-gall maker **Psyllids** Bagworms Holly bud moth Pusa caterpillar Birch leafminer Holly leafminer Redhumped oakworm Blister beetle Jackpine budworm Rose aphid Boxelder bug Japanese beetle Rose chater Boxwood leafminer Jeffrey pine needleminer Roseslug Brown tail moth June beetles Saddled prominent Cankerworms Lace bugs Sawfiles (exposed) Catalpa sphinx Leafhoppers Scale insects Chiggers Leafroilers Sowbugs Cooley spruce gall aphid Locust borer Spiny elm caterpillar Maple leafcutter Springtaile Cutworma Spruce budworm Cypress tip moth Mealybuga Douglas-fir tussock moth Spruce needleminer Mimosa webworm Eastern spruce gall aphid Nantucket pine tip moth Subtropical pine tip moth Elm leaf aphid Oak leafminers Tent caterpillars Elm leaf beetle Oak leaf skeletonizer Thorn bug Elm spanworm Oakworm complex Thrips (exposed) Eriophyld mites Oleander caterpillar Ticks Olive ash borer Walnut çaterpillar European pine shoot moth Fall armyworm Orange-striped oakworm Webworms

Orange tortrix

Fuller rose beetle Gall midges Gall wasps Periodical cicada Pine sawlly Pine spittlebug Western spruce buworm Willow leaf beetles Yellow popular weevil

Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.

Applications for control of Maple leafcutter on sugar maple should be made when larvae are in 2nd instar, after mining, and as cases are being formed.

Use 40 pounds for control of ips engraver beetles, mountain pine beetle, roundheaded pine beetle, and western pine beetle. Effective as a preventive treatment only. Repeat annually as required to prevent beetle attacks. Apply 1 gallon of spray per 50 square feet of bark in late May to early July, or prior to beetle attack. Treat tree trunks from ground level up, until trunk diameter is less than 5 inches.

# LAWN AND RECREATIONAL AREA INSECT CONTROL

Use 2 pounds of this product in 150 to 200 gallons of water for each 5000 square teet of established lawn area for the control of:

teet of establishe armyworm ants bluegrass billbug centipedes chiggers chinch bugs cutworms earwigs

European chafer fall armyworm fiery skipper fleas grasshoppers green June beette

leathoppers

lucerne moth

millipedes
mosquitos
sod webworms
(lawn moths)
sowbugs
springtails
ticks
yellow-striped armyworm

essex skipper

Use garden hose sprayers or pressure type equipment. Insure good penetration of turf. For best results, mow lawn and apply immediately after rain or watering. Repeat 2 to 3 weeks later if necessary. Use 3 pounds of this product in 150 to 200 gallons of water per 5000 square feet for control of chinch bugs and white grubs.

# NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep children and pets out of the treated area until sprays have dried.

IMPORTED FIRE ANT CONTROL

Pounds of this product Specific Instructions Lawns, cemeteries Apply a total of 2 gallons of the diluted and Recreational solution over the surface of each mound Areas (including or at least 1 quart per 6 inches of turf, golf courses mound diameter using a bucket, can or and parks) other appropriate equipment, Thoroughly Pastures, Rangeland wet mound and surrounding area to a 4 Forested Lands and ft. diameter (12 sq. ft.). Do not disturb mounds prior to treatment. Pour solution Wastelands from a height of about 3 ft. to give sufficient force to break mound apex and flow into ant tunnels. For best results apply in cool weather, 65-80°F, or in early morning or late evening hours. Repeat application if mound activity resumes after 10 days. Treat new mounds as they appear. Pressurized spray may disturb the ants and cause migration, reducing product

# **ADULT MOSQUITOES**

On pasture, rangelands and non-agricultural lands such as yards, parks, recreation areas, logging camps, military posts and adjacent forested lands or wastelands, use ½ to 1 pounds per acre in mist blowers, 2 pounds per acre in suitable low pressure ground equipment. Apply in sufficient spray gallonage to effectively cover areas to be treated. For optimum control, apply in early morning or evening when air is calm and adult mosquitoes are active.

effectiveness.

Use 2 pounds per 100 gallons in hydraulic sprayers or 2 tablespoonfuls per gallon in hand sprayers for treating backyards or other limited areas. Thoroughly cover lower shade tree foliage, shrubbery, flower beds, grass and shaded areas around buildings where adult mosquitoes congregate. Repeat at 7 to 10 day intervals or as necessary. Do not use on Boston ivy, Virginia creeper and maidenhair tern as injury will result.

## OBSERVE BEE CAUTION.

CAUTION: May kill shrimp and crabs. Do not use in areas where these are important resources.

Use 50 pounds of this product in 100 gallons of water for residual control in subtropical regions. Apply 4 gallons of prepared spray per 2000 square feet of surface area. Repeat in 3 to 6 months or when necessary.

Western hemlock looper

# PEST CONTROL IN AND AROUND BUILDINGS

LIMITED TO PEST CONTROL OPERATORS ONLY.

For use in and around buildings such as homes, apartments, warehouses, barns, and municipal and recreation areas.

Use 40 pounds per 100 gallons of water (40 tablespoons per gallon of water) for ants and cockroaches.

Use 20 pounds per 100 gallons of water (20 tablespoons per gallon of water) for brown dog tick, earwigs, fleas, millipedes, and silverfish.

Apply as a coarse wet spray or with a paint brush, and thoroughly treat cracks and crevices, base boards, corners, walls, door sills and window frames, quarters of household pets, ant trails, outside perimeter of dwellings and other areas where insects tend to congregate.

Do not use as a space spray. Repeat when necessary, but not more than twice per week

Do not use this product in commercial food areas of food handling establishments, restaurants, or other places where food is prepared or processed. Do not use in serving areas while food is exposed.

Avoid application to surfaces where visible spray residues are objectionable.

#### **POULTRY INSECT CONTROL**

CHICKENS, DUCKS, GAME BIRDS, GEESE, PIGEONS AND TURKEYS Direct Mist Spray on Birds: Control northern fowl mite, chicken mite, lice and fleas

- 1. Misting with Electric Fog Machine: Mix 5/8 pound (10 ounces) of this product in 1 gallon of spray. Use 11/2 gallons per 1000 hens in cages, on litter or slatted floor. Repeat in 4 weeks if necessary. OR
- 2. Spraying with knapsack or cylinder type compressed air sprayers. Mix 3/8 pound (6 ounces) of this product in 5 gallons of spray. Use 1 gallon per 100 hens in cages on litter or on slatted floor. Repeat in 4 weeks if necessary. Direct mist spraying for chicken mite and fleas, as a supplement to spraying roosts

and buildings for control of these pests. For bedbugs, chicken mite, fleas, fowl tick, lesser mealworms, lice and northern fowl mite; spray roosts and buildings with conventional power spray or knapsack equipment. For chicken mite, fleas and bedbugs, use 2 pounds per 25 gallons of water. For lowl ticks, use 8 pounds per 25 gallions of water. Spray 1 to 2 gallions per 1000 square feet of wall, bedding, litter or roost surfaces. Force spray into cracks and crevices. Repeat as needed. Ventilate while spraying. Avoid spraying of nests, eggs and feeding and watering troughs.

Do not apply to poultry and game birds or to their premises within 7 days of slaugh-

NOTICE
IT IS IMPOSSIBLE TO ELIMINATE ALL RISKS INHERENTLY ASSOCIATED WITH THE USE OF THIS PRODUCT. CROP INJURY, INEFFECTIVENESS, OR OTHER UNINTENDED CONSEQUENCES MAY RESULT BECAUSE OF SUCH FACTORS AS WEATHER CONDITIONS, PRESENCE OF OTHER MATERIALS. OR THE MANNER OF USE OR APPLICATION, ALL OF WHICH ARE BEYOND THE CONTROL OF PLATTE, THE MANUFACTURER OR SELLER. IN NO CASE SHALL PLATTE, THE MANUFACTURER OR SELLER BE LIABLE FOR CONSE-QUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER.

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