

66222-61

11/14/2002

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

NOV 14 2002

Ms. Anne Stout
Makhteshim-Agan of North America, Inc.
551 Fifth Avenue, Suite 1100
New York, NY 10176

Dear Ms. Stout:

Subject: Amendment- Update to match use patterns and limitations appearing on source material label;
Revise Per PR Notices 94-8, 98-8, and 2001-1;
Add water soluble bag labeling; and
Revise Basic Statement of Formula

Thionex 50WSB
EPA Registration Number 66222-61
Your submissions dated October 21 and 24, 2002

The amendment referred to above, submitted in connection with registration under FIFRA section 3(c)(7)(a), is acceptable and a stamped copy of the label is enclosed for your records.

When preparing the finished label, please incorporate the following revisions:

- a. Do not delete the front panel limitation "For Agricultural or Commercial Use Only". This should appear above the new limitation "Not for use ...".
- b. Revise the fourth item of the If Swallowed advice in the First Aid section to read as follows; "Do not give anything by mouth to an unconscious or convulsing person."
- c. Under the heading GENERAL INSTRUCTIONS, revise the site listing of the new limitation to include homes, i.e. to read "including homes, non-agricultural outbuildings,...".
- d. For the crop Peas, based on the latest MUP labeling this crop should appear as "PEAS (Succulent, except seed crop)".
- e. Under the heading Ornamental Trees and Shrubs, delete the proposed addition of Junipers and Maples from the list of plants attacked by Dogwood Borer and Lilac Borer. The Agency does not have knowledge of these insects being pest problems for Junipers or Maples.

- f. Under the heading Mixing Instructions, delete the sentence "When packaged in a water soluble bag, follow these instructions:" since this WSB product will always be packaged in a water soluble bag.

The revised Basic Confidential Statement of Formula (CSF) dated October 24, 2002 is acceptable and has been added to this product's registration file as the new Basic CSF.

Sincerely,

George T. LaRocca
Product Manager 13
Insecticide Branch
Registration Division (7505C)

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Thionex 50WSB
Contains 50% Endosulfan



KEEP OUT OF REACH
OF CHILDREN
DANGER-POISON
See label on outer package for
first aid and other precautions
DO NOT OPEN THIS BAG

ACCEPTED
with COMMENTS
In EPA Letter Dated:
NOV 14 2002
Under the
Fungicide, Insecticide, and
Plant Growth Regulator Act,
Registration No. 66222-01

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ACCEPTED
with COMMENTS
In EPA Comment Period

NOV 14 2002

Under the
Registration, Use, and Distribution
of Pesticides Act, 7 U.S.C. 136-137
Under FIFRA Section 4(d)
66222-61

THIONEX[®] 50WSB

INSECTICIDE

Not for use or storage in or around residential sites-See DIRECTIONS FOR USE/GENERAL INSTRUCTIONS for prohibited areas (Wettable Powder in Water Soluble Bags)

ACTIVE INGREDIENT	% BY WT.
Endosulfan: (Hexachlorohexahydromethano-2,4,3-benzodioxathiepin-3-oxide).....	50.0
INERT INGREDIENTS:.....	50.0
	TOTAL 100.0

KEEP OUT OF REACH OF CHILDREN

 **DANGER-POISON** 
PELIGRO

SEE OTHER PANELS FOR ADDITIONAL PRECAUTIONARY INFORMATION.

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

FIRST AID

- IF SWALLOWED:**
 - Call a poison control center or doctor immediately for treatment advice.
 - Have person sip a glass of water if able to swallow.
 - Do not induce vomiting unless told to do so by the poison control center or doctor.
- IF INHALED:**
 - Do not give anything by mouth to an unconscious person.
 - Move person to fresh air.
 - If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- IF ON SKIN OR CLOTHING:**
 - Call a poison control center or doctor for further treatment advice.
 - Take off contaminated clothing.
 - Rinse skin immediately with plenty of water for 15-20 minutes.
- IF IN EYES:**
 - Call a poison control center or doctor for treatment advice.
 - Hold eye open and rinse slowly and gently with water for 15-20 minutes.
 - Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
 - Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact PROSAR at 1-877-250-9291 for emergency medical treatment information.

NOTE TO PHYSICIAN: Endosulfan is a central nervous system stimulant absorbable by mouth, inhalation, or through contact with skin. It may cause convulsions. There is no specific antidote. Diazepam I.V. is the drug of choice. Barbituric acid derivatives such as Phenobarbital may be used additionally. A neuromuscular blocking agent may be used if convulsions persist. This type of drug may be used *only* if complete control of respiration can be maintained. Epinephrine derivatives are absolutely contraindicated.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS DANGER

Fatal if swallowed or inhaled. Harmful if absorbed through skin. Causes moderate eye irritation. Do not breathe dust or spray mist. Avoid contact with skin, eyes, or clothing. Do not contaminate food or feed. Keep out of reach of domestic animals. Food utensils such as spoons or measuring cups must not be used for food purposes after use in measuring pesticides.

NET CONTENTS: 5 POUNDS

EPA Reg. No. 66222-61
EPA Est. No. 11678-ISR-002

Makhteshim-Agar of North America, Inc.
551 Fifth Avenue, Suite 1100
New York, NY 10176

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PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers (other than mixers and loaders) must wear:

- Coveralls over short-sleeved shirt and short pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- A NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N. R. P. or HE prefilter

Mixers and loaders must wear:

- Coveralls over short-sleeved shirt and short pants
 - Waterproof gloves
 - Shoes plus socks
 - Protective eyewear
 - Chemical-resistant headgear
 - A chemical resistant apron when cleaning equipment, mixing, or loading
 - A NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N. R. P. or HE prefilter
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROL STATEMENT: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the 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 outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is toxic to fish, birds, and other wildlife. Birds feeding on treated areas may be killed. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Due to the risk of runoff and drift, do not apply within a distance of 300 feet of lakes, ponds, streams, and estuaries. Shrimp and crab may be killed at application rates recommended on this label. Do not apply where fish, shrimp, crab and other aquatic life are important resources. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters. This product must not be used in areas where impact on threatened endangered species is likely. Contact your State Fish and Game Agency before applying this product. Apply this product only as specified on this label.

This pesticide is toxic to bees exposed to direct application. Applications should be timed to coincide with periods of minimum bee activity, usually between late evening and early morning.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. 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. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

CHEMIGATION STATEMENT: Do not apply this product through any type of irrigation equipment.

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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 enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 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
- Waterproof gloves
- Shoes plus socks
- Chemical-resistant headgear for overhead exposure

This product may be used in California by following the specific crop directions and the SUPPLEMENTAL LABEL found at the end of this label.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Do not store in or around the home.

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. Contact INFOTRAC: (800) 535-5053.

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: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA regional office for guidance.

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.

GENERAL INSTRUCTIONS

Not for use or storage in or around residential sites, including non-agricultural outbuildings, non-commercial greenhouses, pleasure boats, recreational vehicles, preschools, day care centers, and applications to humans and pets.

Apply the listed amount per acre when insects first appear and repeat as required, unless otherwise noted, to maintain effective control. Use in sufficient water for thorough coverage of listed crops, unless otherwise noted. Coverage of upper and lower leaf surfaces is essential for good control. For ground application, apply recommended amount of pesticide in a minimum of 10 gallons of water per acre on vegetable or row crops, unless otherwise noted. Observe use limitations. If insect control is required beyond the following use patterns, supplement the control program with other suitable pesticides.

When applying this material by aircraft, mix the recommended amount with sufficient water to provide a minimum of 5 gallons of finished spray per acre on vegetable and field crops unless otherwise noted, and a minimum of 20 gallons of finished spray per acre on fruit and nut trees and on vines. When applying 4 pounds or more of Trionex 50WSB, mix in a minimum of 10 gallons of water.

Mixing Instructions

When packaged in a water soluble bag, follow these instructions: The product, a wettable powder formulation of the insecticide endosulfan, is individually packaged in one-pound units in a translucent water soluble bag contained within an outer package. Do not open the water soluble bags. Do not allow the inner bag to become wet before adding to spray or nurse tank. Do not handle the inner bag with wet hands or wet gloves. Rough handling may cause breakage. Do not store at temperatures below 32°F (0°C). Allow to warm above 50°F (10°C) before normal use. Cooler water temperatures increase the time needed for the inner bag to dissolve completely.

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This product is intended for dilution with water for spray application. Do not use strainers finer than 50-mesh size. Determine the number of water soluble bag(s) to make up necessary spray suspension. Where dosages are expressed as fractions of pounds, prepare the tank mix to the lower of the nearest whole package. Use a minimum spray volume of 5 gallons of water per acre. Fill the spray or nurse tank $\frac{1}{2}$ full with water. Open the outer wrapper of this product and immediately dump required contents into spray tank. If possible, direct the fill water over the top of the packets. Allow the water soluble bag(s) to dissolve completely. Depending on the water temperature and agitation, the packets should be completely dissolved within approximately 3 to 5 minutes from the time they were added to the spray tank. Start hydraulic or mechanical agitation. Air agitation is not recommended. Mix thoroughly to fully disperse and suspend the wettable powder. Fill the spray tank with the required amount of water. Once the water soluble packets have dissolved, add other products following conventional mixing order practices. Maintain agitation during storage in nurse or supply tank or application.

Note: Each bag contains 1.0 pound of formulated product, which is equivalent to 0.5 pound active ingredient.

Do not plant root crops other than carrots, potatoes, sweet potatoes, and sugar beets as follow-up crops.

PREHARVEST INTERVAL

Observe days interval between last application and harvest indicated by number in () following the crop name.

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
APPLES (21) (Except California)	Aphids (including Apple Aphid, Rosy Apple Aphid, Woolly Apple Aphid), Apple Rust Mite, Green Fruitworm, Tarnished Plant Bug, Tentiform Leafminer, White Apple Leafhopper (first generation)	1 lb./100 gals. or a maximum of 5 lbs. per acre	Applications made at pink and/or petal fall provide best control of Tarnished Plant Bug and Green Fruitworm. For best control of first generation White Apple Leafhopper apply when nymphs first appear on leaves. If necessary, prior to petal fall, use 1½ lbs. per 100 gals. to control Apple Aphid and Rosy Apple Aphid. For control of Tentiform Leafminer make first application as soon as moth flight begins. A second application should be made 10 days later.
<ul style="list-style-type: none"> • Do not feed pomace from treated apples to livestock. • Do not feed cull fruits to animals or allow livestock to graze in treated orchards. • Do not make more than 2 applications during the fruiting period. • Do not make more than 3 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
APPLES (30) (California only)	Aphids (including Apple Aphid, Rosy Apple Aphid, Woolly Apple Aphid), Apple Rust Mite, White Apple Leafhopper (first generation)	1 lb./100 gals. or a maximum of 5 lbs. per acre	For best control of first generation White Apple Leafhopper, apply when nymphs first appear on leaves. If necessary, prior to petal fall, use 1½ lbs. per 100 gals. to control Apple Aphid and Rosy Apple Aphid.
<ul style="list-style-type: none"> • Do not feed pomace from treated apples to livestock. • Do not feed cull fruits to animals or allow livestock to graze in treated orchards. • Do not make more than 2 applications during the fruiting period. • Do not make more than 3 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
APRICOTS (21), NECTARINES (21), PEACHES (21) (Except California)	Peachtree Borer, Lesser Peachtree Borer	1½ lbs./100 gals. or 4-5 lbs. per acre; Pacific Northwest: 1-1½ lbs./100 gals.; Southeastern: 3-5 lbs./100 gals.	Best control is obtained with a single application post-harvest after the leaves have dropped. Spray all bark areas from ground level to lower scaffold limbs.
<ul style="list-style-type: none"> • Do not feed cull fruits to animals or allow livestock to graze in treated orchards. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
APRICOTS (30), NECTARINES (30), PEACHES (30) (Except California)	Aphids (including Black Cherry Aphid, Black Peach Aphid, Green Peach Aphid, Rusty Plum Aphid), Catfacing Insects (Stink Bug type), Green Fruitworm, Peach Silver Mite, Peach Twig Borer	1 lb./100 gals. or a maximum of 4-5 lbs. per acre	Make applications when insects appear or feeding is noticed.
<ul style="list-style-type: none"> • Do not feed cull fruits to animals nor allow livestock to graze in treated orchards. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			

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CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
APRICOTS (30), NECTARINES (30), PEACHES (30) (California only)	Aphids (including Black Cherry Aphid, Black Peach Aphid, Green Peach Aphid, Rusty Plum Aphid), Catfacing Insects (Stink Bug type), Peach Silver Mite, Peach Twig Borer	1 lb./100 gals. or a maximum of 4-5 lbs. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not feed cull fruits to animals nor allow livestock to graze in treated orchards Do not make more than 2 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
BARLEY, OATS, RYE, WHEAT (Except California)	Army Cutworm	1 lb. per acre	Apply when small larvae are readily found in the field. For aerial application, use a minimum 2 gals. of water per acre.
	Cereal Leaf Beetle (Illinois, Indiana, Michigan, and Ohio only)	$\frac{1}{2}$ -1 lb. per acre	Apply when small larvae are readily found in the field. For aerial application, use a minimum of 1 to 2 gals. of water per acre.
	Aphids (including Russian Wheat Aphid)	1-1½ lbs. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not apply after heads begin to form. Do not feed treated forage to livestock. Do not make more than 2 applications per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 		
BARLEY, OATS, RYE, WHEAT (California Only)	Army Cutworm	1 lb. per acre	Apply when small larvae are readily found in the field. For aerial application, use a minimum 2 gals. of water per acre.
	Aphids (including Russian Wheat Aphid)	1-1½ lbs. per acre	Make applications when insects appear or feeding is noticed.
<ul style="list-style-type: none"> Do not apply after head begin to form Do not feed treated forage to livestock. Do not make more than 2 applications per year. Do not exceed a maximum of 1.0 lb active ingredient (i.e., 2 pounds) per acre per year) 			

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CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
BEANS, SUC-CULENT and DRY (Except Lima Beans) (3) SOUTHERN FIELD PEAS (Succulent type, Including Black-Eyed Peas, Crowder Peas and Southern Peas) (3) (Except California)	Black Bean Aphid, Bean Leaf Skeletonizer, Cowpea Curculio, Cucumber Beetle, Flea Beetle, Green Stink Bug, Leafhopper, Mexican Bean Beetle	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed. For control of Cowpea Curculio, make 3 applications at 5-day intervals starting when the pods are ½ inch long.
	Aphid, Armyworm, Western Bean Cutworm, Whitefly	2 lbs. per acre	
BEANS, SUC-CULENT and DRY (Except Lima Beans) (3) SOUTHERN FIELD PEAS (Succulent type, Including Black-Eyed Peas, Crowder Peas and Southern Peas) (3) (California only)	Black Bean Aphid, Bean Leaf Skeletonizer, Cucumber Beetle, Flea Beetle, Green Stink Bug, Leafhopper, Mexican Bean Beetle	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Aphid, Western Bean Cutworm, Whitefly	2 lbs. per acre	
BLUE-BERRIES (Except California)	Blueberry Bud Mite	3 lbs. per acre in 300 gals.	Apply immediately after harvest and repeat 6 to 8 weeks later. <ul style="list-style-type: none"> • Do not apply after buds are well formed. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year.

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CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
BROCCOLI (7), BRUSSELS SPROUTS (14), CABBAGE (7), CAULI-FLOWER (14) (Except California)	Cabbage Aphid, Cabbage Looper, Cross-striped Cabbageworm, Diamondback Moth Larvae, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Leafhopper, Stink Bug	1½ -2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Armyworm, Cutworm, Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> Do not make more than 4 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
BROCCOLI (7), BRUSSELS SPROUTS (14), CABBAGE (7), CAULI-FLOWER (14) (California only)	Cabbage Aphid, Cabbage Looper, Cross-striped Cabbageworm, Diamondback Moth Larvae, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Stink Bug	1½ -2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Armyworm, Cutworm, Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not exceed a maximum of 2 lbs. active ingredient (i.e., 4 lbs.) per acre per year. 			
CARROTS (7) (Except California)	Green Peach Aphid, Leafhopper	1-2 lbs. per acre	Make application when insects appear or feeding is noticed.
	Armyworm, Flea Beetle, Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> Do not use tops for food or feed. Do not make more than one application per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 			
CARROTS (7) (California only)	Green Peach Aphid	1-2 lbs. per acre	Make application when insects appear or feeding is noticed.
	Flea Beetle, Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> Do not use tops for food or feed. Do not make more than one application per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 			
CELERY (4) (Except California)	Green Peach Aphid, Cabbage Looper, Leafhopper	1-2 lbs. per acre	Make application when insects appear or feeding is noticed.
	Armyworm, Flea Beetle, Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 			
CELERY (4) (California only)	Green Peach Aphid, Cabbage Looper	1-2 lbs. per acre	Make application when insects appear or feeding is noticed.
	Flea Beetle, Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 			
CELERY (7) (Except California)	Green Peach Aphid	1lb. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 		

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
CELERY (7) (California only)	Green Peach Aphid	1lb. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not make more than 2 applications per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 		
CHERRIES (21) (Except California)	Peachtree Borer, Lesser Peachtree Borer	1½ lbs./100 gals. or 4-5 lbs. per acre; Pacific North-west: 1-1½ lbs./100 gals.	Best control is obtained with a single application post-harvest after the leaves have dropped. Spray all bark areas from ground to lower scaffold limbs.
	Black Cherry Aphid, Green Fruitworm, Plum Rust (Nursery) Mite	1 lb./ 100 gals. or 4- 5 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Pacific Northwest only: Eye-spotted Bud Moth Fruit Tree Leafroller		For bud moth control apply at "popcorn" stage. For leafroller control, apply during pre-pink stage of growth.
	Michigan Only: Mineola Moth	2 lbs./ 100 gals.	Apply in the delayed dormant period.
<ul style="list-style-type: none"> Do not feed cull fruits to animals or allow livestock to graze in treated orchards. Do not make more than 2 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
CHERRIES (21) (California only)	Black Cherry Aphid, Plum Rust (Nursery) Mite	1 lb./ 100 gals. or 4- 5 lbs. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not feed cull fruits to animals or allow livestock to graze in treated orchards. Do not make more than 2 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
CHERRY, PEACH, PLUM (Nursery Stock Dip) (Except California)	Peachtree Borer	4 lbs. per 40 gals.	Mix thoroughly. Immerse trees so that the roots and crowns are covered well above the grafting bud scar.
	<ul style="list-style-type: none"> Full personal protective equipment (PPE) requirements for applicators also apply to this dipping operation. Plant immediately or dry before returning stock to storage. 		
CHERRY, PEACH, PLUM (Nursery Stock Dip) (California only)	Peachtree Borer	4 lbs. per 40 gals.	Mix thoroughly. Immerse trees so that the roots and crowns are covered well above the grafting bud scar.
	<ul style="list-style-type: none"> Full personal protective equipment (PPE) requirements for applicators also apply to this dipping operation. Plant immediately or dry before returning stock to storage. 		
CITRUS (Non-bearing Trees and Nursery Stock) (Except California)	Citrus Aphid	1 lb./100 gals. or a maximum of 5 lbs. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not apply to bearing trees or trees that will bear fruit within twelve months. Do not make more than 2 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
CITRUS (Non-bearing Trees and Nursery Stock) (California only)	Citrus Aphid	1 lb./100 gals. or a maximum of 5 lbs. per acre	Make applications when insects appear or feeding is noticed. <ul style="list-style-type: none"> Do not apply to bearing trees or trees that will bear fruit within twelve months. Do not make more than 2 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year.
COLLARDS (21) (Except California)	Aphid, Cabbage Looper, Diamondback Moth Larvae, Fall Armyworm, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Leafhopper	1½ -2 lbs. per acre	Make application when insects appear or feeding is noticed. <ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year.
	Whitefly	2 lbs. per acre	
COLLARDS (21) (California only)	Aphid, Cabbage Looper, Diamondback Moth Larvae, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Whitefly	1½ lbs. per acre	Make application when insects appear or feeding is noticed. <ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 0.75 lb. active ingredient (i.e., 1½ lbs.) per acre per year.
COTTON (Except California)	Aphid	¾ -1½ lbs. per acre	Make applications when insects appear or feeding is noticed. For control of aphids, thorough coverage is important. <ul style="list-style-type: none"> Applications may be made using ground or aerial application equipment. The higher rate should be used under heavy pest pressure. Do not apply after bolls open. Do not graze meat or dairy animals in treated fields. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year.
	Boll Weevil	1-3 lbs. per acre	
	Bollworm, Cabbage Looper, Cotton Leafperforator, Cotton Leafworm, Fleahopper, Lygus Bug, Stink Bug, Tobacco Budworm	2-3 lbs. per acre	
	Thrips	3 lbs. per acre	
	Whitefly	2 lbs. per acre	
CUCUM- BERS (2), MELONS (2), PUMPKINS (2), SUMMER and WINTER SQUASH, (2) (Except California)	Aphid, Cucumber Beetle, Melonworm, Pickleworm, Rindworm (on watermelons), Squash Beetle, Squash Bug, Squash Vine Borer, Striped Flea Beetle	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed. For squash vine borer control, apply weekly to flower buds, stems, and vines beginning when moths first appear. <ul style="list-style-type: none"> Do not make more than 6 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year.
	Cabbage Looper, Omnivorous Leafroller, Whitefly	2 lbs. per acre	

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
CUCUMBERS (2), MELONS (2), PUMPKINS (2), SUMMER and WINTER SQUASH (2) (California only)	Aphid, Cucumber Beetle, Melonworm, Pickleworm, Rindworm (on watermelons), Squash Beetle, Squash Bug, Squash Vine Borer, Striped Flea Beetle	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed. For squash vine borer control, apply weekly to flower buds, stems, and vines beginning when moths first appear.
	Cabbage Looper, Omnivorous Leafroller, Whitefly	2 lbs. per acre	
EGGPLANT (1) (Except California)	Blister Beetle, Colorado Potato Beetle, Flea Beetle, Green Peach Aphid, Green Stink Bug	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Whitefly	2 lbs. per acre	
EGGPLANT (1) (California only)	Blister Beetle, Colorado Potato Beetle, Flea Beetle, Green Peach Aphid, Green Stink Bug, Whitefly	1 lb. per acre	Make application when insects appear or feeding is noticed.
FILBERTS (1) (Except California)	Filbert Aphid, Filbert Bud Mite, Filbert Leafroller	1 lb./100 gals. or 3-4 lbs. per acre	Make applications when insects appear or feeding is noticed.
FILBERTS (1) (California only)	Filbert Aphid, Filbert Leafroller	1 lb./100 gals. or 3-4 lbs. per acre	Make application when insects appear or feeding is noticed.
GRAPES (7) (Except California)	Grape Leafhopper, Grape Phylloxera (leaf form), Rose Chafer	1 lb./100 gals. or 2-3 lbs. per acre	Make applications when insects appear or feeding is noticed.
GRAPES (7) (California only)	Grape Leafhopper, Grape Phylloxera (leaf form), Rose Chafer	1 lb./100 gals. or 2-3 lbs. per acre	Make applications when insects appear or feeding is noticed.
KALE (21) (Except California)	Cabbage Flea Beetle, Harlequin Bug, Imported Cabbageworm	1½ lbs. per acre	Make application when insects appear or feeding is noticed.

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
KALE (21) (California only)	Cabbage Flea Beetle, Harlequin Bug, Imported Cabbageworm	1½ lbs. per acre	Make application when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 0.75 lb. active ingredient (i.e., 1½ lbs.) per acre per year. 		
LETTUCE (14) (Except California)	Cabbage Looper, Diamondback Moth Larvae, Green Peach Aphid, Imported Cabbageworm, Leafhopper	1½-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Armyworm, Whitefly	2 lbs. per acre	<ul style="list-style-type: none"> On Head Lettuce: Do not exceed 3 applications after thinning. Remove wrapper leaves at harvest. On Leaf Lettuce: Do not make more than 2 applications per year. Do not feed crop refuse to livestock. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year.
LETTUCE (14) (California only)	Cabbage Looper, Diamondback Moth Larvae, Green Peach Aphid, Imported Cabbageworm	1½-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Whitefly	2 lbs. per acre	<ul style="list-style-type: none"> On Head Lettuce: Do not exceed 3 applications after thinning. Remove wrapper leaves at harvest. On Leaf Lettuce: Do not make more than 2 applications per year. Do not feed crop refuse to livestock. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year.
MUSTARD GREENS (21) (Except California)	Aphid, Cabbage Looper, Diamondback Moth Larvae, Fall Armyworm, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Leafhopper	1½-2 lbs. per acre	Make application when insects appear or feeding is noticed.
	Whitefly	2 lbs. per acre	<ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year.
MUSTARD GREENS (21) (California only)	Aphid, Cabbage Looper, Diamondback Moth Larvae, Fall Armyworm, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Whitefly	1½ lbs. per acre	Make application when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 0.75 lb. active ingredient (i.e., 1½ lbs.) per acre per year. 		
PEARS (7) (Except California)	Green Fruitworm, Tarnished Plantbug	1 lb./100 gals. or 4-5 lbs. per acre	Make applications at white bud or petal fall when insects appear or feeding is noticed.
	Pear Psylla	5 lbs. per acre	Apply in a minimum of 10 gals. of water for aerial application or in 300 gals. of water for dilute application. Apply when adults are first observed or nymphs are small and repeat to maintain control.

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CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
PEARS (7) (Except California) (continued)	Pear Rust Mite, Consperse Stink Bug (foliar treatment)	1 lb./100 gals. or 4-5 lbs. per acre	Make applications when insects appear or feeding is noticed. Stink bugs must be wet by spray to obtain control.
	Consperse Stink Bug (soil treatment)	1 lb./100 gals; 200-400 gals. per acre	Apply to orchard floor and around trees prior to bloom.
	Pear Leaf Blister Mite	½ - 1 lb. per 100 gals.	Apply to trees as a post-harvest or dormant treatment.
	<ul style="list-style-type: none"> • Do not feed cull fruits to animals or allow livestock to graze in treated orchards. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. • Note: Aerial application may not result in satisfactory control and should only be employed if impossible to apply by ground. 		
PEARS (7) (California only)	Pear Psylla	5 lbs. per acre	Apply in a minimum of 10 gals. of water for aerial application or in 300 gals. of water for dilute application. Apply when adults are first observed or nymphs are small and repeat to maintain control.
	Pear Rust Mite, Consperse Stink Bug (foliar treatment)	1 lb./100 gals. or 4-5 lbs. per acre	Make applications when insects appear or feeding is noticed. Stink bugs must be wet by spray to obtain control.
	Consperse Stink Bug (soil treatment)	1 lb./100 gals. ; 200-400 gals. per acre	Apply to orchard floor and around trees prior to bloom.
	Pear Leaf Blister Mite	½ - 1 lb. per 100 gals.	Apply to trees as a post-harvest or dormant treatment.
<ul style="list-style-type: none"> • Do not feed cull fruits to animals or allow livestock to graze in treated orchards. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. • Note: Aerial application may not result in satisfactory control and should only be employed if impossible to apply by ground. 			
PEAS (Succulent) (5) (Except California)	Pea Aphid, Pea Weevil, Loopers, Stink Bug, Colorado Potato Beetle	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
<ul style="list-style-type: none"> • Use only on peas to be harvested by combine. • Do not feed treated vines to livestock or allow livestock to graze in treated fields. • Do not make more than 2 applications per year. • Do not exceed a maximum of 2 lbs. active ingredient (i.e., 4 lbs.) per acre per year. 			
PECANS (Except California)	Black Pecan Aphid, Pecan Nut Casebearer, Spittlebug	1½ lbs. per 100 gals.	Make applications when insects appear or feeding is noticed. For casebearer, apply when eggs of first generation appear on the tips of the young nuts. Another application may be required after the second generation of eggs is deposited. For spittlebug, apply when first leaves are half grown and repeat as required.
	Pecan Leaf Phylloxera	1-1½ lbs. per 100 gals.	Apply when nymphs appear and before they are enclosed in plant tissue. For high populations, use the higher rate.
<ul style="list-style-type: none"> • Do not apply after shuck split. • Do not graze livestock on orchard crops or grasses in treated areas. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			

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CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
PECANS (California only)	Black Pecan Aphid, Pecan Nut Casebearer, Spittlebug	1½ lbs. per 100 gals.	Make applications when insects appear or feeding is noticed. For casebearer, apply when eggs of first generation appear on the tips of the young nuts. Another application may be required after the second generation of eggs is deposited. For spittlebug, apply when first leaves are half grown and repeat as required.
	<ul style="list-style-type: none"> • Do not apply after shuck split. • Do not graze livestock on orchard crops or grasses in treated areas. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
PEPPERS (1) (Except California)	Flea Beetle, Green Peach Aphid, Hornworm, Pepper Maggot	1 lb. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> • Do not make more than 2 applications per year. • Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 		
PEPPERS (1) (California only)	Flea Beetle, Green Peach Aphid, Hornworm, Pepper Maggot	1 lb. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> • Do not make more than 2 applications per year. • Do not exceed a maximum of 1 lb. active ingredient (i.e., 2 lbs.) per acre per year. 		
PEPPERS (4) (Except California)	Armyworm, Flea Beetle, Green Peach Aphid, Hornworm, Leafhopper, Pepper Maggot	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Whitefly	2 lbs. per acre	
PEPPERS (4) (California only)	Flea Beetle, Green Peach Aphid, Hornworm, Pepper Maggot	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Whitefly	2 lbs. per acre	
PINE-APPLE (For Fresh Market Only) (7) (Except California)	Pineapple Fruit Mite	3-4 lbs. per acre	Make applications when insects appear or feeding is noticed. Apply at intervals of 7 to 10 days if necessary, particularly during the 40-day period of blooming.
	<ul style="list-style-type: none"> • Do not feed treated forage or pineapple by-products to livestock. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
PLUMS (7), PRUNES (7) (Except California)	Fruitree Leafroller (Pacific Northwest Only)	1 lb./100 gals. or 4-5 lbs. per acre	Apply during pre-pink stage of growth when insects appear or feeding is noticed.
	Aphids (including Hop Aphid, Leafcurl Plum Aphid, Thistle Aphid), Plum Rust (Nursery) Mite		For control of aphids, apply when eggs hatch during pre-bloom or petal fall. Summer applications should be made before leaves curl.
	Peach Twig Borer		Make applications when insects appear or feeding is noticed.
	Lesser Peachtree Borer, Peachtree Borer	1½ lbs./100 gals. or 4-5 lbs. per acre; Pacific Northwest: 1-1½ lbs./100 gals. or 4-5 lbs. per acre	Best control is obtained with a single application post-harvest after the leaves have dropped. Spray all bark areas from ground level to lower scaffold limbs.
<ul style="list-style-type: none"> • Do not allow livestock to graze on orchard crops or grasses in treated areas. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
PLUMS (7), PRUNES (7) (California only)	Aphids (including Hop Aphid, Leafcurl Plum Aphid, Thistle Aphid), Plum Rust (Nursery) Mite	1 lb./100 gals. or 4-5 lbs. per acre	For control of aphids, apply when eggs hatch during pre-bloom or petal fall. Summer applications should be made before leaves curl.
	Peach Twig Borer		Make applications when insects appear or feeding is noticed.
	Lesser Peachtree Borer, Peachtree Borer	1-1½ lbs./100 gals. or 4-5 lbs. per acre	Best control is obtained with a single application post-harvest after the leaves have dropped. Spray all bark areas from ground level to lower scaffold limbs.
<ul style="list-style-type: none"> • Do not allow livestock to graze on orchard crops or grasses in treated areas. • Do not make more than 2 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
POTATOES (1) (Except California)	Aphid, Armyworm, Colorado Potato Beetle, Green Stink Bug, Leafhopper, Plant Bug, Potato Flea Beetle, Potato Leafhopper, Potato Tuberworm, Threelined Potato Beetle	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	European Corn Borer, Potato Psyllid	1½-2 lbs. per acre	
	False Chinch Bug, Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> • Do not make more than 6 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			

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CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
POTATOES (1) (California only)	Aphid, Armyworm, Colorado Potato Beetle, Green Stink Bug, Leaffooted Bug, Plant Bug, Potato Flea Beetle, Potato Leafhopper, Potato Tuberworm, Threelined Potato Beetle	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	European Corn Borer, Potato Psyllid	1½-2 lbs. per acre	
	False Chinch Bug, Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> Do not make more than 6 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
SPINACH (21) (Except California)	Armyworms, Crown Mite, Flea Beetles, Green Peach Aphid, Leafhopper	1½ -2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Whitefly	2 lbs. per acre	
<ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 1 lb. active ingredient (i.e. 2 lbs.) per acre per year. 			
SPINACH (21) (California only)	Crown Mite, Flea Beetles, Green Peach Aphid, Whitefly	1½ lbs. per acre	Make application when insects appear or feeding is noticed.
<ul style="list-style-type: none"> Do not make more than one application per year. Do not exceed a maximum of 0.75 lb. active ingredient (i.e. 1½ lbs.) per acre per year. 			
STRAW-BERRIES (4) (Except California)	Meadow Spittlebug, Strawberry Aphid, Tarnished Plant Bug, Whitefly	2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not reapply within 15 days or more than twice during a 35-day period when fruit is present. Do not make more than 3 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
	Cyclamen Mite	4 lbs. per acre in 400 gals. of water	
<ul style="list-style-type: none"> For multiple applications, do not apply at intervals less than 35-days when fruit is present. Do not make more than 3 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
STRAW-BERRIES (4) (California only)	Meadow Spittlebug, Strawberry Aphid, Tarnished Plant Bug, Whitefly	2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not reapply within 15 days or more than twice during a 35-day period when fruit is present. Do not make more than 3 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
	Cyclamen Mite	4 lbs. per acre in 400 gals. of water	
<ul style="list-style-type: none"> For multiple applications, do not apply at intervals less than 35-days when fruit is present. Do not make more than 3 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
STRAW-BERRIES (Northwest Use Only)	Garden Symphylan (aids in reducing damage)	2 lbs. per 100 gals.	Mix thoroughly. Dip entire plant. When immersing bundles of plants, make certain any trapped air is forced out to assure thorough wetting of entire plant.
	<ul style="list-style-type: none"> • Full personal protective equipment (PPE) requirements for applicators also apply to this dipping operation. • Drain and allow plants to dry before setting them out in the field. 		
SWEET CORN (Fresh Vegetable Use Only) (1) (Except California)	Corn Leaf Aphid, Whitefly	2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Corn Earworm	3 lbs. per acre	Apply when silks first appear and continue until they begin to dry. Allow 5 days between applications.
<ul style="list-style-type: none"> • Do not apply to sweet corn to be processed. • Do not feed treated forage or ensilage to livestock or allow livestock to graze in treated fields. • Do not make more than 3 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
SWEET POTATOES (1) (Except California)	Sweet Potato Flea Beetle, Sweet Potato Weevil	1 lb. per acre	Make applications when insects appear or feeding is noticed. For flea beetle control, begin applications shortly after transplanting or as soon as flea beetles appear. For sweet potato weevil control, apply in sufficient water for complete coverage. Applications may be made to transplants in the nursery and/or in the field. Repeat applications may be made as necessary. For sweet potato weevil control in a clean up program, apply at a rate of 4 lbs. per acre to the soil under the sweet potato nursery beds and to the area immediately surrounding the nursery beds. Do not place the seed tubers directly on the ground treated with endosulfan.
	Whitefly	2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Banded Cucumber Beetle Larvae (aids in control) (South Central States and Puerto Rico Only)	2-4 lbs. per acre broadcast or $\frac{3}{4}$ - 1½ lbs. per acre on a 16 inch band over the row (48 inch row spacing).	Work into the soil to a depth of approximately 3 inches. Treatment should be made just prior to plant set.
	<ul style="list-style-type: none"> • Do not feed cull potatoes to livestock or allow livestock to graze in treated fields. • Do not make more than 3 applications per year. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
SWEET POTATOES (1) (California only)	Sweet Potato Flea Beetle, Sweet Potato Weevil	1 lb. per acre	Make applications when insects appear or feeding is noticed. For flea beetle control, begin applications shortly after transplanting or as soon as flea beetles appear. For sweet potato weevil control, apply in sufficient water for complete coverage. Applications may be made to transplants in the nursery and/or in the field. Repeat applications may be made as necessary.
	<ul style="list-style-type: none"> Do not feed cull potatoes to livestock or allow livestock to graze in treated fields. Do not make more than 3 applications per year. Do not exceed a maximum of 1½ lbs. active ingredient (i.e., 3 lbs.) per acre per year. 		
TOBACCO (5) (Except California)	Aphids (including Green Peach Aphid, Tobacco Aphid), Budworm, Cabbage Looper, Flea Beetle, Hornworm	1 lb. per 100 gals.	Seed Bed: Make applications when insects appear or feeding is noticed. Apply about 6 gals. of finished spray per 100 square yards.
	Green June Bug Larvae	½ lb. per 100 gals.	Plant Bed: Make applications when insects appear or feeding is noticed. Drench at a rate of 1 gal. per square yard.
	Aphids (including Green Peach Aphid, Tobacco Aphid), Budworm, Cabbage Looper, Flea Beetle, Green June Bug Larvae, Hornworm	1-2 lbs. per acre	Field: Make applications when insect activity or feeding is noticed.
	Stink Bug	2-3 lbs. per 100 gals.	Field: Make applications when insect activity or feeding is noticed.
	<ul style="list-style-type: none"> Do not make more than 6 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
TOMATOES (Field and Greenhouse) (2) (Except California)	Aphid, Blister Beetle, Colorado Potato Beetle, Flea Beetle, Tomato Hornworm	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Cabbage Looper, Stink Bug	1½ -2 lbs. per acre	
	Tomato Fruitworm, Tomato Russet Mite, Whitefly, Yellowstriped Armyworm	2 lbs. per acre	
	Whitefly	1 lb. per 100 gals. of water. Use 100-200 gals. of spray per acre	Make applications when insects appear or feeding is noticed. Higher spray volumes may be necessary for thorough coverage when high whitefly populations exist.
<ul style="list-style-type: none"> Do not make more than 6 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
TOMATOES (Field and Greenhouse) (2) (California only)	Aphid, Blister Beetle, Colorado Potato Beetle, Flea Beetle, Tomato Hornworm, Webworm	1-2 lbs. per acre	Make applications when insects appear or feeding is noticed.

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
TOMA-TOES (Field and Greenhouse) (2) (California only) (continued)	Cabbage Looper, Stink Bug	1½ -2 lbs. per acre	Make applications when insects appear or feeding is noticed.
	Tomato Fruitworm, Tomato Russet Mite, Whitefly, Yellowstriped Armyworm	2 lbs. per acre	
	Whitefly	1 lb. per 100 gals. Use 100-200 gals. of spray per acre	Make applications when insects appear or feeding is noticed. Higher spray volumes may be necessary for thorough coverage when high whitefly populations exist.
<ul style="list-style-type: none"> Do not make more than 6 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 			
WALNUTS (Except California)	Walnut Aphid	3-4 lbs. per acre.	Apply in a minimum of 100 gals. of water per acre. Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not apply after husk split. Do not graze livestock on orchard crops or grasses in treated areas. Do not make more than 2 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
WALNUTS (California only)	Walnut Aphid	3-4 lbs. per acre.	Apply in a minimum of 100 gals. of water per acre. Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> Do not apply after husk split. Do not graze livestock on orchard crops or grasses in treated areas. Do not make more than 2 applications per year. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		

**COMMERCIALLY GROWN ORNAMENTALS
GROWN OUTDOORS IN NURSERIES ONLY
Ornamental Trees And Shrubs**

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
DOG-WOOD, LILAC, JUNIPERS, MAPLES (Except California)	Dogwood Borer, Lilac Borer	1-2 lbs. per 100 gals. (1-2 tablespoons per gal.)	Apply in early June and repeat in 10 to 14 days. Drench all bark areas down to the ground level.
	<ul style="list-style-type: none"> Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
DOUGLAS FIR (Grown for Ornamentals, Nursery Stock, or Christmas Trees) (Pacific Northwest Only)	Aphid, Cooley Spruce Gall, Adelgid, Douglas Fir Needle Midge	1 lb. per 100 gals. (1 tablespoon per gal.)	Make applications when insects appear or feeding is noticed. For control of gall adelgid, apply when white cottony tufts appear. For control of needle midge, apply in late April or early May just before buds open.
	<ul style="list-style-type: none"> Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		

CROP	INSECTS CONTROLLED	RATE OF APPLICATION	METHOD OF APPLICATION
PINES (Austrian, Jack, Red, Scotch, White) (Except California)	Zimmerman Pine Moth	1½ lbs. per 100 gals. (1½ table- spoons per gal.)	Apply in mid-April and again, if necessary, in late fall. Thoroughly wet bark and main stem, especially where branches join main stem.
	<ul style="list-style-type: none"> • Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
SHADE TREES (Except Birch), SHRUBS (Except California)	Aphid	1 lb. per 100 gals. (1 tablespoon per gal.)	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> • Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
SPRUCE (New England Area Only)	Spruce Gall Aphid	1 lb. per 100 gals. (1 tablespoon per gal.)	Apply in late April or early May when aphids are present but before galls are formed.
	<ul style="list-style-type: none"> • Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		
TAXUS	Taxus Bud Mite	1 lb. per 100 gals. (1 tablespoon per gal.)	Make 3 to 5 applications beginning in mid-May. Thoroughly spray foliage, twigs, and bark.
	Black Vine Weevil	2 lbs. per 100 gals. (2 tablespoons per gal.)	Spray thoroughly and drench soil under the plants. Apply when the weevils first appear and repeat in 14 days.
	<ul style="list-style-type: none"> • Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides. • Do not exceed a maximum of 3 lbs. active ingredient (i.e., 6 lbs.) per acre per year. 		

WARRANTY STATEMENT

MAKHTESHIM-AGAN OF NORTH AMERICA warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with 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 MAKHTESHIM-AGAN OF NORTH AMERICA. In no case shall MAKHTESHIM-AGAN OF NORTH AMERICA be liable for consequential, special or indirect damages resulting from the use, or handling of this product. All such risks shall be assumed by the Buyer. In addition to the foregoing, no purchaser of this product (other than an end user) shall be entitled to any reimbursement for any loss suffered as a result of any suspension or cancellation of the registration for this product by the U.S. Environmental Protection Agency. Except as expressly provided herein, MAKHTESHIM-AGAN OF NORTH AMERICA makes no warranties, guarantees, or representations of any kind, either expressed or implied, or by usage of trade, statutory or otherwise, with regard to the product sold, including, but not limited to merchantability, fitness for a particular purpose, use or eligibility of the product for any particular trade usage. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall be damages not exceeding the purchase price paid for this product or, at MAKHTESHIM-AGAN OF NORTH AMERICA's election, the replacement of this product.

CALIFORNIA SUPPLEMENTAL LABEL**PROCEDURES FOR REDUCING RISK OF CONTAMINATION OF AQUATIC ECOSYSTEMS****FOR CROP USES LISTED ON THE PRODUCT LABEL**

Endosulfan may be a source of contamination in aquatic ecosystems as a result of run-off from agricultural land due to discharge of irrigation water or during periods of heavy rainfall.

To minimize the chance of aquatic impact, the following conditions must be met to allow endosulfan applications:

DIRECTIONS FOR USE (General)

IN ADDITION TO SPECIFIC INSTRUCTIONS UNDER DIRECTIONS FOR USE ON THE PRINCIPAL LABELS, THE FOLLOWING CONDITIONS MUST ALSO BE FOLLOWED FOR USE IN CALIFORNIA:

1. Do not apply this product to fields during irrigation or irrigate for 72 hours following an application.
2. Do not apply this product through any type of irrigation system.
3. Do not apply more than 1½ lbs. a.i./acre/application or more than 3 lbs. a.i./acre/season. (Orchard crops and strawberries exempted on rate/acre/application restriction.)
4. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark.
5. Do not apply by ground or air within a distance of 300 feet to natural bodies of water including lakes, ponds, streams, and estuaries.

FOR DRIFT CONTROL

1. All application equipment should be properly maintained and calibrated using appropriate carriers.
2. Do not make aerial or ground applications during temperature inversions.
3. Make aerial or ground applications when the wind velocity favors on-target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 10 mph. Do not discharge at a height of more than 10 feet above the crop or target.
4. For aerial applications, a positive shutoff system shall be in place to control flow of liquid to spray nozzles as follows: Each individual nozzle shall be equipped with a check valve and the flow controlled by a suckback device or a boom pressure release device or each nozzle shall be equipped with a positive action valve.
5. For aerial applications, the spray boom must be mounted on the aircraft so as to minimize drift caused by wing tip or rotor vortices. The working boom length must not exceed 75% of wing span or rotor diameter.
6. Aircraft boom pressure shall not exceed 40 pounds per square inch.
7. Aircraft nozzles shall be equipped with orifices directed backward parallel to the horizontal axis of the aircraft in flight.
8. Aircraft nozzles shall not be equipped with any device or mechanism which would cause a sheet, cone, fan, or similar type dispersion of the discharged material except as otherwise provided.
9. Fixed wing aircraft and helicopters operating in excess of 60 mph shall be equipped with jet nozzles having an orifice not less than 1/16 inch in diameter (D-4 or larger).
10. Helicopters operating at 60 mph or less shall be equipped with nozzles having an orifice not less than 1/16 inch in diameter. A number 46 or equivalent whirlplate may be used.
11. For ground applications, equipment other than handguns shall be equipped with nozzles having an orifice not less than 1/16 inch in diameter or larger. Boom nozzles shall be operated at a boom pressure not to exceed 30 pounds per square inch.

READ CONTAINER LABEL FOR COMPLETE USE INSTRUCTIONS**ACCEPTABLE SITES FOR ENDOSULFAN APPLICATION**

1. FIELDS, WITH NO DRAINS, HAVING CONTAINMENT THROUGH BERMS (able to hold irrigation water and normal rainwater), LEVEES AND NON-DRAINING CIRCULATION SYSTEMS.
2. FIELDS WITH DRAINS, BUT DRAINAGE FLOWS TO SUMP, FARM POND, EVAPORATION POND, OR RECIRCULATION SYSTEM WITHOUT DRAINAGE (uncontrollable overflow acceptable, e.g., 10 or 100 year flood). Only grower maintained recirculation systems without drainage are acceptable.
3. FIELDS WITH SURFACE DRAINS THAT NATURALLY FLOW ONTO PASTURELAND OR FALLOW FIELDS THAT HAVE NO CHANNLED DRAINAGE AND ARE AT LEAST 300 FEET LONG.

UNACCEPTABLE SITES FOR ENDOSULFAN APPLICATION

1. FIELDS DRAINING DIRECTLY INTO SURFACE WATERS SUCH AS STREAMS, RIVERS, LAKES, PONDS, MARSHES, BAYS, ESTUARIES, OR THE OCEAN.
2. FIELDS DRAINING INTO SURFACE DRAINAGE DITCHES OR CANALS THAT FLOW DIRECTLY INTO SURFACE WATERS SUCH AS STREAMS, RIVERS, LAKES, PONDS, MARSHES, BAYS, ESTUARIES, OR THE OCEAN.

- 3. ANY AND ALL FIELDS WITH SURFACE DRAINAGE PATTERNS IN THE MOSS LANDING DRAINAGE SYSTEM HAVING MAIN ARTERIES THAT DRAIN INTO THE ELKHORN SLOUGH (northern portion of Monterey County).
- 4. ANY AND ALL FIELDS WITH DRAINAGE PATTERNS IN THE SAN DIEGO CREEK DRAINAGE SYSTEM HAVING MAIN ARTERIES THAT DRAIN INTO NEWPORT BAY.

ALL APPLICABLE DIRECTIONS, RESTRICTIONS, AND PRECAUTIONS ON THE EPA REGISTERED LABEL ARE TO BE FOLLOWED.

THIS LABELING MUST BE IN THE POSSESSION OF THE USER AT THE TIME OF PESTICIDE APPLICATION.

File name: Thionex 50WSB (66222-62)(to EPA 10-21-02)