34704-873 2120/2007

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FEB 2 0 2007

Mr. John T. Tice Loveland Products, Inc. P.O. Box 1286 Greeley, Colorado 80632-1286

Dear Mr. Tice:

Subject: Label Amendment- expands ornamental nursery stock Permethrin EPA Registration Number 34704-873 Your submissions dated August 17 and September 29, 2006

The application referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable with the following comments:

1. On page 5 under Ornamental Nursery Stock after pine moths add a space and start another heading that reads "Ornamental Trees".

2. On page 5 delete "adult black vine weevil". The cited product does not have this pest on its label.

3. On Page 5 after "...environmental conditions and geographic location." add "Thorough coverage of bark is required for control.". Also delete all the lines in this column after "Thorough overage of bark is required for control.".

A copy of a stamped label is enclosed for your records.

Sincerely yours,

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

Enclosure

8 8

RESTRICTED USE PESTICIDE

Toxic to fish and aquatic organisms

For retail sale to and use only by certified applicators, or persons under their direct supervision and only for those use of the certified applicators of persons under their direct supervision and only for those use of the certified applicators of applicator's certification. in EPA Letter Dated





ACTIVE INGREDIENT: 'Permethrin'

INERT INGREDIENTS:*** . 61.6% 100.0%

*(3-Phenoxyphenyl)methyl (±) cis-trans 3-(2,2-dichloroethenyl)-2,2dimethylcyclopropanecarboxylate

*cis/trans ratio: Max. 55% (±) cis and min. 45% (±) trans

***Contains xylene range aromatic solvents.

Contains 3.2 pounds permethrin per gallon.

U.S. Patent No. 4.024, 163

KEEP OUT OF REACH OF CHILDREN CAUTION—AVISO

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 Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-tomouth, if possible. Call a poison control center or doctor for further treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Binse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If in Eyes: 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.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-800-301-7976.

Note to Physician: Vomiting should be supervised by a physician or the professional staff because of the possible pulmonary damages by aspiration of the solvent.

See other panels for additional precautionary information.

EPA REG. NO. 34704-873

EPA EST. NO. 279-FL-1

NET CONTENTS 1 GAL. (3.78 KG.) IHT

EXP 08Y06

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS (AND DOMESTIC ANIMALS) CAUTION

Harmful if swallowed, inhated, or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling

Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear: Long-sleeved shirt and long pants, chemical-resistant gloves, such as Barrier Laminate or Viton, and shoes plus socks

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.

USER SAFETY RECOMMENDATIONS

Users should Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

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

PHYSICAL/CHEMICAL HAZARDS Do not use or store near heat or open flame.

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.

Resistance. Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state agricultural authorities for details.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternative method of control for your area.

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 12 hours.

PPE required for early entry to treaterl areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such ar plants soil, or water, is: Coveralls, Chemicalresistant gloves, such as Earriur Luminate or Viton, and Shoes plus socks.

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STORAGE AND DISPOSAL

PESTICIDE STORAGE: Do not store below 10° F, (- 12° C). Do not use or store near heat, open flame or hot surfaces.

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 replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fer-

tilizers, water, food, or feed by storage or disposal. In case of spill, evoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call Chem Trec 1-800-424-9300.

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 toxic. 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 of the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Metal Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landlill or by other approved State and Local procedures. Do not cut or weld metal containers. Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning or dispose of in a sanitary landfill, or incineration, or, if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

Returnable/Refillable Sealed Container: Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.

CHEMIGATION USE DIRECTIONS

Apply this product only through sprinkler including center pivot, lateral move end tow, side (wheel) roli, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

Permethrin insecticide should be applied continuously for the duration of the water application. Permethrin should be diluted in sufficient volume to ensure accurate application over the area to be treated. When using chemigation, a minimum of 0.1 inch per acre of irrigation water is recommended. Agitation generally is not required when a suitable diluent is used. A diluent test should be conducted to ensure that phase separation will not occur during dilution and application. Failure to achieve a uniform dilution throughout the time of application may result in undesirable residues or less than desirable control.

COMMERCIAL IMPREGNATION AND APPLICATION OF PERMETHRIN ON DRY BULK FERTILIZERS

Permethrin insecticide may be impregnated on dry bulk fertilizers. When applied as directed, Permethrin/dry bulk fertilizer mixtures provide insect control equal to that provided by the same rates of Permethrin applied in water.

The Permethrin/fertilizer mixtures may be surface applied or shallow incorporated. The higher rate should be used if incorporation is used.

Impregnation: Apply using a minimum of 200 pounds of dry bulk fertilizer per acre and up to a maximum of 450 pounds per acre with the recommended amount of Permethrin insecticide per acre. Use a closed rotary-drum mixer or a similar type of closed blender equipped with suitable spray equipment. The spray nozzle(s) should be positioned to provide a uniform, fine spray pattern over the tumbling fertilizer for thorough coverage. The physical properties of fertilizers vary, particularly in liquid absorptive capacity. When absorptivity is sufficient, simple spray impregnation of the fertilizer with Permethrin provides a satisfactory, dry mixture. If the absorptive capacity is inadequate, the use of a highly absorptive powder is required to provide a dry, flowable mixture. Microcel E (Johns-Manville Products Corporation) is a recommended absorbent powder. Generally less than 2% by weight of Microcel E is required. **DO NOT** impregnate Permethrin onto straight coated ammonium nitrate or straight limestone because these materials will not absorptive insecticide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with Permethrin.

The amount of Permethrin actually required in the preparation of individual fertilizer mixtures should be determined carefully for each production operation. This is necessary to ensure that the amount of pesticide actually contained in the mixture applied to the soil represents the correct rate of use. Bulk fertilizer impregnated with Permethrin insecticide should be applied immediately, not stored.

All individual state regulations relating to bulk dry fertilizer blending, registration, labeling, and application of the mixtures are the responsibility of the individual and/or company selling the fertilizer and Permethrin mixture.

GENERAL INSTRUCTIONS

Unless otherwise directed by registered supplemental labeling, follow the Directions for Use in each crop group section.

Permethrin is a 3.2 pounds per gallon formulation of the insecticide permethrin. Apply Permethrin when insects appear or feeding is noticed. The higher rate should be used as pest populations increase. Repeat the application as necessary to maintain control. Permethrin may be applied by both ground and aerial equipment. Use sufficient water to obtain full coverage. With the exception of crops listed below, rotational crops should not be planted within 60 days of last application.

This label must be in the possession of the user at the time of application.

Alfalfa; Alfalfa grown for seed (0 day phi)* (Includes lucerne, sainfoin, holy clover, esparcet, birdsfoot trefoil and varieties and/or hybrids of these)

insects Controlled	Rate of Application	Method of Application
Alfalfa Caterpillar Armyworms, Blue Alfalfa Aphid, Cutworms, Green Cloverworm, Green Peach Aphid Loopers, Pea Aphid, Spotted Alfalfa Aphid, Vetvet bean Caterpillar,	2 to 8 ounces (0.05 to 0.2 pound active) per acre	Use higher recommended dosage for increased pest pressure or for increased residual pest control. Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or 2 gallons of finished spray pe acre by aircraft.
Webworms Altala Weevil, Cucumber Beetle, Egyptian Altalfa Weevil, Meadow Spittlebug, Plant Bugs (including Lygus spp.), Potato Leathopper, Stink Bugs	4 to 8 ounces (0.1 to 0.2 pound active) per acre	

Do not apply more than 0.2 pound active ingredient per cutting. *When rates greater than 0.1 pound active per acre are used, do not apply within 14 days of harvest. Do not apply to mixed stands with intentionally-grown torage grasses and/or legumes.

Almonds (7 day phi)

Insects Controlled	Rate of Application	Method of Application
Navel Orangeworm Peach Twig Borer	8 to 16 ounces (0.2 to 0.4 pound active) per acre	Apply when insects appear. Apply in a minimum of 15 gallons of finished spray per acre by aircraft or 25-400 gallons of linished spray per acre with ground equipment.
Ants	16 ounces (0.4 pound active) per acre	Apply by ground equipment in a minimum of 15 gallons of finished spray per acre.Application should follow mowing of weed growth to insure maximum coverage of the soil surface. Overhead moisture following application will enhance activity

Do not apply more than 0.8 pound active per acre during hull split Do not apply more than 2.0 pounds active per acre per season. Do not graze livestock in treated areas.

Do not feed cover crops from treated areas to livestock.

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Apples

Insects Controlled	Rate of Application	Method of Application
Green Fruitworm, Oblique Banded Leafroller, Pium Curculio, Redbanded Leafroller, Rosy Apple Aphid, Spotted Tentiform, Leafminer, Tarnished Plant Bug, White Apple Leafhopper	4 to 16 ounces (0.1 to 0.4 pound active) per acre	Use with ground equipment only. Apply in 25-400 gallons of finished spray per acre when insects appear and repeat as required to maintain control.
Do not apply more than	0.6 pound active	per acre per season.
Do not apply after petal	fail.	
Do not graze livestock i	n treated areas.	

Do not feed cover crops from treated areas to livestock.

Artichoke (0 day phi)

Insects Controlled	Rate of Application	Method of Application
Artichoke Plume Moth, Leafminers	4 to 12 ounces (0.1 to 0.3 pound active) per acre.	Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Apply as needed. Buds may be harvested on the day of application.
Do not apply more than acre per season	5 applications (1	5 pounds active ingredient) per

Asparagus (1 day phi)

Insects Controlled	Rate of Application	Method of Application
Asparagus Beetle, Cutworms	2 to 4 ounces (0.05 to 0.1 pound active) per acre	Apply with ground equipment in a minimum of 10 gallons of finished spray per acre. Apply as needed.
Asparagus Beetle, Japanese Beetle (Adult stage)*, Lygus Bugs, Tarnished Plant Bug	4 ounces (0.1 pound active) per acre	For post harvest application, apply to the fern stage of the asparagus plant after spear harvest when larval and adult stage are present. Not for control of this insect in California.

Do not apply more than 0.4 pound active ingredient per acre per season.

Avocado (7 day phi)

	Rate of		
Insects Controlled	Application	Method of Application	
Avocado Caterpillar	8 ounces	Apply with ground equipment in 25-	
Avocado Lace Bug,	(0.2 pound	400 gallons of finished spray per acre.	
Avocado Leathopper,	active) per acre	Apply when insects first appear and	
Avocado Leafroller,		repeat at 7 to 10 day intervals as	
Avocado Looper,		needed to provide control.	
Avocado Tree Girdier,			
Avocado Whitefly,			
Brown Soft Scale,			
Mirids, Omnivorous			
Looper, Orange Tortrix,			
Scale Crawlers,			
Spanworm, Thrips,			
Twig Borers			
Do not apply more than	1.2 pounds active	e ingredient per acre per season.	
Do not graze livestock i	n treated areas.		

Do not feed cover crops from treated areas to livestock

Broccoli; Chinese Broccoli (gai lon. white flowering broccoli); Brussels Sprouts; Cauliflower; Cavalo broccolo; Kohlrabi (1 day phi)

Insects Controlled	Rate of Application	Method of Application
Armyworm spp., Cabbage Looper, Diamondback Moth, Imported Cabbage- worm, Plant Bugs, Thrips	2 to 4 ounces (0.05 to 0.1 pound active) per acre	Apply with ground equipment in a minimum of 10 gellons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Apply as needed.

Do not apply more than 0.8 pound active ingredient per acre per season.

Cabbage; Cabbagi

gi nese (napa) (tight-heading varieties only) (1 day

Insects Controlled	Rate of Application	Method of Application
Cabbage Looper, Diamondback Moth, Imported Cabbage- worm, Southern White, Butterfly	2 to 8 ounces (0.05 to 0.2 pound active) per acre	Apply with ground equipment in a minimum of 10 gallons per acre or in a minimum of 2 gallons per acre by aircraft. Apply as needed.
Armyworm spp., Cutworms, Flea Beetles	4 to 8 ounces (0.1 to 0.2 pound active) per acre	

Do not apply more than 1.0 pound active ingredient per acre per season.

Cantaloupes: For general use directions refer to the Cucurbit Vegetables crop grouping.

Celery, Florence fennel (sweet anise, sweet fennel, finochio) (fresh leaves and leaf petioles only): For general use directions refer to the Leafy Vegetable crop grouping.

Cherries (Includes Sweet Cherries and Tart Cherries) (3 day phi)

Insects Controlled	Rate of Application	Method of Application
Green Fruitworm, Lesser Peach Tree Borer, Plum Curculio, Redbanded Leafrotler, Rose Chafer, Tarnished Plant Bug	4 to 8 ounces {0.1to 0.2 pound active) per acre	Use Permethrin insecticide as a dilute spray. Apply when insects appear. Apply with ground equipmen in 25-400 gallons of finished spray per acre.

Do not graze livestock in treated areas.

Do not feed cover crops from treated areas to livestock.

East of the Rockies, do not exceed 6 applications per season, with no more than 4 applications after petal fall.

West of the Rockies, do not apply more than 4 applications per season, with no more than 3 applications after petal fall.

Chrysanthemums

Insects Controlled	Rate of Application	Method of Application
Liriomyza Leafminer Flies	20 fluid ounces (0.5 pound active) per 100 gallons (1 teaspoon per gallon)	Avoid spraying the blooms. Permethrin may be applied on a weekly schedule. Caution: Permethrin has demonstrated excellent plant safety, however, not all cultivars have been tested. Before treating large numbers of plants of a particular cultivar, treat a few plants and observe prior to full scale applications.

Collards and Turnips (1 day phi)

Insects Controlled	Rate of Application	Method of Application
Beet Armyworm,	2 to 4 ounces	Apply with ground equipment only.
Cabbage Looper,	(0.05 to 0.1	Apply with ground equipment in a
Corn Earworm,	pound active)	minimum spray volume of 10 gallons of
Cutworms,	per acre	finished spray per acre. Apply as
Diamondback Moth,		needed.
European Corn Borer,		
Fall Armyworm,		
Green Cloverworm,	Ì	
Imported Cabbage-		
worm, Leafhoppers		
Leafminer, Southern		
Armyworm, Southern	ĺ	
White Butterfly		
Tobacco Budworm,	ſ	(
Vegetable Leafminer,		1
Aphids*		1

For use on Collards in AR, AZ, GA, IL, NC, OK, SC, and TX and on Turnips in FL, GA, IL, IN, OK, SC, TX, and WA. Do not apply more than 0.8 pound active ingredient per acre per season on Collards and Turnips (AR, TX & IN). Do not apply more than 0.4 pound active ingredient per acre per season on Turnips (SC, GA, FL & WA). GA, FL & WA).

Conifers (Container and Field Grown)

Insects Controlled	Rate of Application	Method of Application
Nantucket Pine Tip Moth	4 to 8 fluid ounces (0.1 to 0.2 pound active) per acre	Permethrin may be diluted in a non-volatile vegetable oil or water in a minimum of 1 gallon of finished spray per acre using equipment calibrated to give adequate coverage Begin application when the adults appear and repeat at 5 to 7 day intervals or as needed throughout the season.

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Corn (Field), Field Corn Grown for Seed, Popcorn

	Rate of	
Insects Controlled	Application	Method of Application
Preemargent Use:	4 to 8 ounces	Permethrin may be applied as a
Armyworms	(0.1 to 0.2	preplant incorporated, pre-emergence,
Cutworms	pound active)	or at planting time application. Apply
Stalk Borers	per acre as a	as a broadcast spray by ground or air
	broadcast spray	(minimum of 2 gallons finished spray
		per acre by air) or 4-15 inch band
	OR	using sufficient spray volume to
		achieve adequate coverage.
	0.3 to 0.6	
	ounces per	Linear row calculations should be used
	1000 linear leet	proportional to the standard Band
	row (based on a	Width/Row Width formula to adjust
	4" band and 40"	rates for different band widths or row
	row spacing.)	spacings. Use higher rates of
	ion opaologij	Permethrin when incorpo-
	1	rating into the soil without exceeding
		the recommended dosage.
		nie rotorinionalia obelge.
	l	When using tank mixes, observe all
		restrictions and precautions which
	ļ	appear on the labels of these products.
		Provide constant agitation during
		mixing and application to keep the
		mixture in solution.
Foliar Use:	4 to 8 ounces	When treating for stalk borers.
Armyworm (including	(0.1 to 0.2	Permethrin must be applied when
Fall Armyworm).	pound active	or shortly before the stalk borer
Corn Borer	per acre	larvae are moving into the corn from
European	peracte	surrounding weeds and grasses.
Southwestern	1	Mowing of burndown herbicide are
Corn Earworm, Corn		suggested to initiate movement. For
	}	control of Corn Earworm apply just
Rootworm Beetles, Cutworms, Flea		before silking and continue as neces-
	1	
Beetle, Hop Vine		sary to maintain control. Apply a
Borer, Stalk Borers	l	minimum of 2 gallons of finished
Webworms	1	spray per acre by air or 10 gallons per
Calles Line:		acre with ground equipment.
Foliar Use:	2 to 4 ounces	
Western Bean	(0.05 to 0.1	
Cutworm	pound active)	
	per acre	

Up to 0.6 pound active ingredient may be used per season. Do not make treatments less than 6 days apart or apply less than 30 days prior to harvest of grain or fodder (stover).

Forage may be harvested on the day of application.

Corn (Field), Field Corn Grown for Seed, Popcorn (At Plant Use)

Insects Controlled	Rate of Application	Method	of Applicat	tion	
Armyworms, Cutworms, Seed Corn Maggot*, Wireworm* *Not for use in Catitornia.	0.3 ounces per 1,000 linear feet of row	Apply as an in-furrow, band or T-ba treatment using a minimum 4" band Use table below to determine the Permethrin needs for each acre.		' band. the	
Row Spacings (inches)		40	30	20	
Permethrin (pounds ai per acre)		0.10	0.15	0.20	
Permethrin (formulated ounces per acre)		4.0	6.0	8.0	

Corn, Sweet (1 day phi)

insects Controlled	Rate of Application	Method of Application
Corn Earworm, Corn Rootworm Beetles*, Cutworms, European Corn Borer, Fall Armyworm, Flea Beetle, Hop Vine Borer, Leafhoppers, Southern Armyworm, Stalk Borers	4 to 8 ounces (0.1 to 0.2 pound active) per acre	Apply every 3 to 5 days or as needed Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. 'Pest does not occur on this crop in California.

Do not apply more than 1.2 pounds active ingredient per acre per season.

Corn, Sweet (Flori dy)

Insects Controlled	Rate of Application	Method of Application
Aster Leafhopper, Corn Earworm, Cutworm, European Corn Borer, Fall Armyworm, Southern Armyworm	4 to 10 ounces (0 1 to 0.25 pound active) per acre	Apply every 3 to 5 days or as needed Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft.

Do not apply more than 2.0 pounds active ingredient per acre per season.

Cucurbit Vegetables (0 day phi): Chayote (fruit) (Sechium edule); Chinese waxgourd (Chinese preserving melon) (Bernincasa hispida); Citron melon (Citrullus lanatus var. citroides); Cucumber (Cucurnis sativus); Gherkin (Cucurnis anguria); Gourd, edible (Lagenaria spp.) (includes hyotan, cucuza); (Luffa spp.) (includes hechima, Chinese okra); (Momordica spp.) (includes balsam apple, balsam pear, bitter melon, Chinese cucumber); Muskmelon (hybrids and/or cuttivars of Cucurnis melo) (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon); Pumpkin (Cucurbita spp.); Squash, summer (Cucurbita pepo var. melopepo) (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); Squash, winter (Cucurbita maxima; C. moshata) (includes butternut squash, catabaza, hubbard squash); (C. mixta; C. pepo) includes acorn squash, spaghetti squash); Watermelon (includes hybrids and/or varieties of Citrultus spp.).

Insects Controlled	Rate of Application	Method of Application
Aphids, Leafminers,	8 ounces	Apply with ground equipment in a
Squash Bug	10.2 pound	minimum spray volume of 20 gallons of
, 0	active) per acre	finished spray per acre or in a
Cabbage Looper,	4 to 8 ounces	minimum of 4 gallons per acre by
Cucumber Beetle	(0.1 to 0.2	aircraft.
(adults), Cutworms,	pound active)	
Leafhoppers, Melon-	per acre	
worm, Pickleworm,	, i	
Plant Bugs (including		
Lygus and Stink Bugs),		
Rindworms,		
Squash Vine Borer		
Do not apply more than	1.6 pounds active	e ingredient per acre per season.
Applications may be ma	de up to harvest.	

Eggplants (3 day phi)

Insects Controlled	Rate of Application	Method of Application
Colorado Potato Beetle	8 ounces (0.2 pound active) per acre	Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or a minimum of 2
Cabbage Looper, Flea Beetles, Vegetable Leafminer	4 to 8 ounces (0.1 to 0.2 pound active) per acre	gallons by aircraft. Apply using sufficient water to obtain uniform coverage. Apply as needed

Filberts (14 day phi)

insects Controlled	Rate of Application	Method of Application
Filbertworm, Oblique Banded Leafroller	8 to 16 ounces (0.2 to 0.4 pound active) per acre	For full coverage application apply 0.0: to 0.1 pound active per 100 gallons (based on 400 gallons finished spray per acre) and spray to run-off, OR for low volume concentrate application apply 0.2 to 0.4 pound active per acre (50 to 200 gallons finished spray per acre). For aerial application apply 0.2 to 0.4 pound active in a minimum of 10 gallons of finished spray per acre. Apply when insects appear,

Do not apply more than 1.6 pounds active per acre per season. Do not graze livestock in treated areas.

Do not feed cover crops from treated areas to livestock

Horseradish (30 day phi)

Insects Controlled	Rate of Application	Method of Application
imported Crucifer Weevil (Baris lepidii)	0.1% active solution (2 pints, 1 ounce of Permethrin per	As a spring preplant dip, soak sets for 30 minutes and air-dry before planting.
	100 gallons) 8 ounces (0.2 pound active) per acte	For Ioliar application, apply with ground equipment in a minimum spray volume of 20 gallons finished spray per acre. Make up to 3 foliar applications as needed to control weevil adults during oviposition,

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Leafy Vegetables (except Brassica) (1 day phi): Amaranth (leafy amaranth, Chinese spinach, tampala): Arugula (Roquette); Cardoon; Celery; Celery, Chinese; Celtuce; Chervil; Chrysanthemum, adible-leaved and garland; Corn salad; Cress, garden; Cress, upland (yellow rocket, winter cress): Dandelion; Dock (sorrel); Endive (escarole): Fennel, Florence (finochio); Lettuce, head and leaf; Orach; Parsley; Purslane, garden; Purslane, winter; Radicchio (red chicory): Rhubarb; Swiss chard.

Spinach (including New Zealand and vine, Malabar spinach, Indian spinach).*

Insects Controlled	Rate of Application	Method of Application
Aphids, Beet Army- worm, Corn Earworm, Cutworms, European Corn Borer, Fall Army- worm, Green Clover- worm, Leafminers, Southern Armyworm, Tobacco Budworm	4 to 8 ounces (0.1 to 0.2 pound active) per acre	Apply every 3 to 5 days or as needed by air or ground. Use sufficient water to obtain full coverage of foliage. Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft.
Alfalfa Looper, Cabbage Looper, Leafhoppers	2 to 8 ounces (0.05 to 0.2 pound active) per acre	

Do not apply more than 2.0 pounds active ingredient per acre per season. *For Spinach, do not apply more than 1.0 pound active ingredient per acre per season.

Lettuce, Head: For general use directions refer to the Leafy Vegetable crop grouping.

Mushrooms (Mushroom houses and adjacent premise areas) (3 day phi)

investe Controlled	Rate of	Nothod of Application
Insects Controlled Mushroom Files (Sciarid and Phorid adults)	Application Apply as a fogging or aerosol treatment at the rate of 2.0 to 2.5 ounces (0.05-0.0625 Ib.ai) per 30 ounces of water or suitable dikuent. Use 1 quart of solution per standard double house (35,000 cu. ft.: 8000 sq. ft.)	Method of Application Preparation of the building prior to fogging: (1) Close all doors, windows, and ventilators, (2) Lock or barricade all entrances, turn off pilot lights, post warning signs, and take precautions to prevent persons and animals from entering the area. Use prior to filling the house, during cool-down, during spawning, up to pinning, and between breaks. Do not use when mushrooms are present, Treat once daily as needed when files appear. Do not make more than 20 applications prior to pinning of first break; apply no more than two applications between each break. Do not apply more than 30 applications total per crop of 5 breaks. Length of exposure time should be limited to 1 hour; then ventilate the house. Use fans to ventilate in houses that do not have forced air circulation. Wear a respirator with either an organic vapor-removing cartridge with a pre-filter approved for pasticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval

Onions, Bulb and Garlic (1 day phi)

Insects Controlled	Rate of Application	Method of Application
Armyworms, Onion Thrips	6 to 12 ounces (0.15 to 0.3 pound active) per acre	Apply with ground equipment in a minimum of 20 gallons of finished spray per acre or in a minimum of 5 gallons per acre by aircraft. Begin
Cutworms, Leafminers, Onion Maggots (Adults), Stink Bugs	4 to 12 ounces (0.1 to 0.3 pound active) per acre	applications when pests appear and repeat as necessary to maintain control. Use the higher label rates as Onion Thrips population increases and avoid rescue situations. e ingredient per acre per season.

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	Rate of	Allothed of Acadian
Insects Controlled	Application 4 to 8 ounces	Method of Application
Ants, Aphids,		Permethrin may be used to control
Bagworm, Beet	(0.1 to 0.2	specified pests on non-edible
Armyworm, Birch	pounds active)	ornamental and non-bearing plants
leatminer. Cabbage	per 100 gallons	of fruiting species.
Looper, Citrus Thrips,	of water	Caution: Marginal leaf burn may occur
Fungus gnats,		on Salvia, Dieffenbachia and Pteris
Japanese Beetles,		Fern. Application to blooming plants
Heliothis spp., Lace		may cause browning of petals.
Bug, Leafhoppers,	1	Permethrin has demonstrated
Leafminers,	1	excellent plant safety; however, not all
Leafrollers, Lygus Bugs,		species and varieties have been
Pine sawflies, Plant	ļ	tested. Before treating large numbers
Bugs, Root Weevils	[of plants of a particular variety, treat a
(adults), Webworms,	Í	few plants and observe prior to full
Whiteflies.)	scale application
Zimmerman Pine Moths	L	
Clearwing Moth borer,	1 to 2 qts. per	Apply to the lower branches and trunks
Ash borer, Banded	100 gallons	prior to adult emergence. Adult
Ash Clearwing,		emergence varies according to pest
Dogwood borer,		species, host tree, environmental
Lesser Peachtree		conditions and geographic location.
borer, Lilac borer, Oak		l,
borer, Rhododendron		
borer	L	
Bark Beetles:	2 to 5 qts. per	
Dendroctorius spp.,	100 gallons	
Elm bark bøetles,		
Mountain pine beetles,		
Pine engravers,	Į	
Turpentine beetles,		
Western pine beetles		
Coleopteran borers:	2 to 5 qts. per)
Bronze birch borer.	100 gallons	}
Flatheaded porers		
Adult black vine weevil	2 to 5 gts. per	Apply to the lower branches, trunks
	100 gailons	and soil. Adults hide in the soil during
	1	the day and feed at night by climbing
		up the stems and eating notches or
		holes in the margins of the leaves.
For the maximum	5.35 qts. per	
residual control of the	100 gallons	
above listed pests	i	<u> </u>

ck (Field and Container Grown)

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Papaya (Florida Only) (7 day phi)

Ornamental Nurse

Insects Controlled	Bate of Application	Method of Application
Aphids, Brown Soft	8 ounces	Apply with ground equipment in 25-
Scale, Mealybug,	(0.2 pound	400 gallons of finished spray per acre.
Papaya Fruit Fly,	active) per acre	Apply when insects first appear and
Papaya Webworm,		repeat at 7 to 10 day intervals as
Papaya Whitefly,		needed to provide control.
Scale Crawlers,		
Do not apply more that	n 1.2 pounds activ	e per acre per season.
Do not graze livestock	in treated areas.	

Do not feed cover crops from treated areas to livestock

Peaches, Nectarines (14 day phi)

Insects Controlled	Rate of Application	Method of Application
Green Fruitworm, Lesser Peach Tree, Borer, Oriental Fruit Moth, Peach Twig Borer, Plum Curculio, Rose Chafer, Tarnished Plant Bug	4 to 12 ounces (0.1 to 0.3 pound active) per acre	Apply with ground equipment using 25- 400 gallons of spray per acre or a minimum of 10 gallons per acre by aircraft. Spray to wet all foliage.
	1.5 pounds activ	e ingredient per acre per season.

Do not graze livestock in treated areas to livestock.

Pears (Dormant through Delayed Dormant)

insects Controlled	Rate of Application	Method of Application
Pear Psylla	8 to 16 ounces	Permethrin may be combined with
	(0.2 to 0.4	2 to 8 galions of spray oil per acre.
	pound active)	Apply during the dormant through
	per acre	delayed dormant growth periods only.
	ſ	Apply in a minimum of 10 gallons of
		finished spray per acre by aircraft and
	[25-400 gallons per acre by
		ground equipment.

Do not apply more than 0.8 pound active per acre per season. Do not graze livestock in treated areas.

Do not feed cover crops from treated areas to livestock.

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Pears (Pre-Bloom)

Rate of Application	Method of Application
B to 16 punces (0.2 to 0.4 pound active) per acre	Apply with ground equipment using 25 400 gallons of finished spray per acre or a minimum of 10 gallons per acre by aircraft. Pre-bloom sprays can be applied from dormant through bud burst stages.
	Application to 16 ounces (0.2 to 0.4 pound active)

Do not feed cover crops from treated areas to livestock

Peppers, Bell (3 day phi)

Insects Controlled	Rate of Application	Method of Application
Cabbage Looper, Corn Earworm, Cutworms, Flea Beetle, Pepper Weevil, Vegetable Leafminer	4 to 8 ounces (0.1 to 0.2 pound active) per acre	Apply using sufficient water to obtain uniform coverage. Apply as needed. Apply with ground equipment using a minimum of 10 gallons of finished spray per acre or a minimum of 2
European Corn Borer	8 ounces (0.2 pound active) per acre	gallons per acre by aircraft.

Pine Seed Orchards

Insects Controlled	Rate of Application	Method of Application
Coneworms, Seed Bugs	8 ounces in 100 gallons of water (0.025% dilution by weight)	For high volume sprayers, apply 5 to 10 gallons of finished spray per tree.
	42 ounces in 100 gallons of water (0.125% dilution by weight)	For low volume sprayers, apply 100 gallons per acre.
	30 ounces per acre	For aerial application, use in not less than 10 gallons of water.

To control Webbing Coneworm—make first application within 1 week of female flower closure or peak pollen flight. To control other coneworms and seed bugs—make first application within 30

days following female flower closure.

Repeat applications at 4 week intervals, but do not apply more than 6 applications.

Do not graze livestock in treated areas.

Do not feed cover crops from treated areas to livestock.

Avoid contact with open water.

Pistachios (0 day phi)

Insects Controlled	Flate of Application	Method of Application
Leaffooted Bugs, Navel Orangeworm, Peach Twig Borer, Plant Bugs, Stink Bugs	8 to 16 ounces (0.2 to 0.4 pound active) per acre	Use sufficient water to obtain full coverage of foliage. Apply Permethrin in a minimum of 10 gallons of finished spray per acre by aircraft or by ground equipment in 25-400 gallons of finished spray per acre.
Ants	16 ounces (0.4 pound active) per acre	Application should follow mowing of weed growth to insure maximum coverage of the soil surface. Overhead moisture following application will enhance activity.

not apply more than 1.6 pound active per acre per crop se ion. Do not apply after 10% hull split.

Do not graze livestock in treated areas.

Do not feed cover crops from treated areas to livestock

Potatoes (14 day p



insects Controlled	Rate of Application	Method of Application
Aster Leafhopper.	4 to 8 ounces	Apply with ground equipment in a
Beet Armyworm,	(0.1 to 0.2	minimum of 10 gallons of finished
Cabbage Looper.	pound active)	spray per acre or in a minimum of 2
Colorado Polato	per acre	gallons per acre by aircraft.
Beetle, Cutworms,	ļ.	Permethrin may also be applied using
European Corn Borer,		refined non-volatile vegetable oil for
Potato Aphid.		control of listed pests.
Potato Flea Beetle,]	Permethrin should be diluted with
Potato Leathopper.		oil and applied in a minimum of one
Potato Psyllid,	ţ	quart total volume per acre using
Potato Tuberworm,		equipment calibrated to give
Tarnished Plant Bug		adequate coverage. Use sufficient
]	spray volume to obtain full coverage.

Do not apply more than 1.6 pounds active ingredient per acre per season. Pumpkins: For general use directions refer to the Cucurbit Vegetables crop grouping.

Range Grass (New Mexico Only)

insects Controlled	Rate of Application	Method of Application
Range Caterpillar	0.4 ounces (0.01pound active) per acre	Apply using sufficient spray volume to obtain uniform coverage. Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft.

Do not apply more than once per year. Cattle may be present during application. Do not harvest or feed hay to livestock.

Roses (Field Grown)

Insects Controlled	Rate of Application	Method of Application
Heliothis spp.	4 to 8 fluid ounces (0.1 to 0.2 pound active) per acre	Permethrin may be applied with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons of finished spray per acre by aircraft.

Roses (Greenhouse)

Insects Controlled	Rate of Application	Method of Application
Beet Armyworm, Cabbage Looper, Omnivorous Leafroller	8 fluid ounces (0.2 pound active) per 100 gallons of water	Caution: Permethrin is not phyto- toxic to the following varieties of greenhouse roses: Ballena, Bettina, Cara Mia, Coquette, Excitement, Forever Yours, G. Wave, Jack Frost, Ji Bridesmaid, Matador, Paul's Pink, Samantha, Seventeen, Sonia, Town Crier, Tropicana and Visa. Other varieties may vary in their sensitivity is Permethrin, and a small number of plants should be treated under local conditions to determine plant safety prior to commercial use.

Soybeans (60 day phi)

Insects Controlled	Rate of Application	Method of Application
Bean Leaf Beetle,	2 to 4 ounces	Apply with ground equipment in a
Cabbage Looper,	(0.05 to 0.1	minimum of 10 gallons of finished
Corn Rootworm	pound active)	spray per acre or in a minimum of 2
Beetles, Cutworms,	per acre	gallons per acre by aircraft.
Flea Beetle,		Permethrin may also be applied using
Green Cloverworm,		refined non-volatile vegetable oil for
Japanese Beetle,		control of listed pests.
Mexican Bean Beetle,		Permethrin should be diluted with
Potato Leathopper,		oil and applied in a minimum of 1
Saltmarsh Caterpillar		quart total volume per acre using
(Woollybear Caterpillar),		equipment calibrated to give adequate
Thistle Caterpillar,		coverage. When applying in water by
Velvetbean Caterpillar		aircraft, 1 quart of oil may be
Beet Armyworm,	4 to 8 ounces	substituted for 1 quart of water per
Corn Earworm	(0.1 to 0.2	gallon of finished spray.
Soybean Looper,	pound active)	[
Webworms	per acre]

Do not apply more than 0.4 pound active ingredient per acre per season. Do not graze or leed soybean forage or hay.

Spinach: Refer to Leafy Vegetable crop grouping for general use directions. Do not apply more than 1.0 pound active ingredient per acre per season.

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Tomatoes, Tomatillos (0 day phi)

Insects Controlled	Rate of Application	Method of Application
Beel Armyworm, Cabbage Looper, Colorado Potato Beetle, Granulate Cutworm, Hornworms, Southern Armyworm, Tomato Fruitworm, Tomato Pinworm, Veoetable Lealminers	2 to 8 ounces (0.05 to 0.2 pound active) per acre	Apply with ground equipment in a minimum of 10 gallons finished spray per acre or in a minimum of 2 gallons per acre by aircraft.

Do not apply more than 1.2 pounds active ingredient per acre per season. Do not apply to cherry tomatoes or other varieties which produce fruit less than one inch in diameter

Walnuts (1 day phi)

Insects Controlled	Rate of Application	Method of Application
Codling Moth, Navel Orangeworm, Walnut Husk Fly	8 to 16 ounces (0.2 to 0.4 pound active) per acre	For full coverage application apply 0.05 to 0.1 pound active per 100 gallons (based on 400 gallons finished spray per acre), spray to run-off; OR, for low volume application apply 0.2 to 0.4 pound active per acre (25-200 gallons finished spray per acre). For aerial application apply 0.2 to 0.4 pound active in a minimum of 10 gallons of finished spray per acre. Apply when insects appear.

Do not apply more than 1.6 pounds active ingredient per acre per season. Do not graze livestock in treated areas.

Do not feed cover crops from treated areas to livestock.

Premises Spray

For agricultural use only.

Spray directly to walls and ceiling as residual surface treatment only. Do not treat manure or litter. Avoid contamination of feed and water. Do not apply directly to livestock or poultry.

For	Target	Method of	Dilute	Application
Application In	Insects	Application		Rate
Dairies, Barns, Feedlots, Stables, Poultry Houses, Swine and Livestock Houses	and other Manure	Sprayer	4 ounces to 12.5 gallons water	1 gallon per 750 square feet of surface

Re-treat as necessary, but not more often than once every 2 weeks. The use of any residual fly spray should be supplemental with proper manure management and general sanitation to reduce or eliminate fly breeding site.

	Rate	Conversion	Chart
			- 1.1

Pounds Active per Acre	Formulation Ounces per Acre			
0.05	2.0			
0.10	4.0			
0.15	6.0			
0.20	8.0			
0.25	10.0			
0.30	12.0			
D.4D	16.0			

Dealers Should Sell in Original Packages Only.

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