

452211

OCT 29 1993

Ms. Nancy Hilton
 FMC Corporation
 1735 Market Street
 Philadelphia, PA 19103

Dear Ms. Hilton:

Subject: Amendments - Clarify directions for use; and
 Extend PHIs/Cucumbers, Melons, Pumpkins,
 Summer Squash, Winter Squash, Macadamia Nuts,
 Potatoes, Sugar Beets, Sunflowers, Sweet Corn,
 and Tomatoes
 Thiodan 2 Pyrenone 0.3-0.03 EC
 EPA Reg. No. 279-2822
 Your label submission dated November 19, 1990

The amendments referred to above, submitted in connection with the above registrations under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, are acceptable provided the following revisions are made prior to release for shipment under the amended labeling:

- 1) Based on FMC's data for your "Thiodan 2 C.O. EC", EPA Reg. No. 279-2659, (MRID 41400501 through 41400506), which was developed in response to the Endosulfan Registration Standard with the intent to cover all of your endosulfan emulsifiable concentrate products containing 2 lbs. per gallon of this active ingredient (including those in combination with Pyrenone), the correct signal word for this product is DANGER POISON, with the skull and crossbones symbol in red.
- 2) Replace the current Hazards to Humans (& Domestic Animals) text with text identical to that found on the current label for "Thiodan 2 C.O. EC", EPA Reg. No. 279-2659 (a copy of the first page of that product is enclosed for reference).
- 3) Replace the current Environmental Hazards text with text identical to that found on the current label for "Thiodan 2 C.O. EC", EPA Reg. No. 279-2659 (a copy of the first page of

that product is enclosed for reference), with the exception that "Do not apply directly to water or wetlands." should be replaced by "Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark.". All other sentence in this section as it appears on the "Thiodan 2 C.O. EC" label should be retained as is.

- 4) Be sure to revise the written warnings text for Re-entry to carry the correct signal word, DANGER. Of course, this whole section of the label (and potentially some of the Precautionary Statements, as well) will have to be revised for compliance with the Worker Protection Standard (see below), and must reflect the Toxicity Category I nature of this product.
- 5) In the notes under the crops Tomatoes (Field & Greenhouse) and Ornamentals (Greenhouse and Out-of-Doors) delete "In greenhouse applications, wear a mask or respirator approved by MSA and OSHA for protection against endosulfan.". As indicated in the Hazards to Humans (& Domestic Animals) as revised - see item 2 above, a pesticide mask or respirator is required for all applications of this endosulfan product, whether outdoors or in greenhouses.
- 6) Be sure that the solvent, Xylene Range Aromatic Solvent, appears as a footnote under the ingredients statement and that its percentage is added to the Inert Ingredients percentage. FMC has already submitted a Notification to this effect on December 4, 1990, i.e., shortly after submission of the labeling being reviewed at this time.

A stamped copy of the label is enclosed for your records. Please submit five copies of the revised amended finished label prior to release for shipment under the amended labeling.

NOTE: This acceptance of your label does not relieve you of your obligation to comply with the Worker Protection Standard. If any of your products are covered by this Standard, you are required to submit, and receive the Agency's approval by April 21, 1994, a revised label reflecting the required label statements of 40 CFR 156, published in the FEDERAL REGISTER on August 21, 1992 (57 FR 38102). Please refer to PR Notice 93-7 for further guidance. According to 40 CFR 156, subpart K, "No product to which this

subpart applies shall be distributed or sold without amended labeling by any registrant after April 21, 1994. Please call 1-800-777-2185 if you have any labeling questions regarding the Worker Protection Standard.

Sincerely,

George T. LaRocca
Product Manager (13)
Insecticide Rodenticide Branch
Registration Division (H7505C)

Code 3042

Net Contents

Thiodan® 2 Pyrenone®

0.3-0.03 EC

Insecticide

For Agricultural or Commercial Use Only

EPA Reg. No. 279-2822 EPA Est., 279-

Active Ingredients:

*Endosulfan (Hexachlorohexahydromethano-2,4,3-benzodioxathiepin oxide)	23.86%
**Technical Piperonyl Butoxide	3.57%
Pyrethrins	0.36%
Xylene Range Aromatic Solvent	65.80%
Inert Ingredients:	6.41%
	100.00%

*Thiodan
**Consists of 3.14% (butylcarbityl) (6-propylpiperonyl) ether and 0.43% of related compounds.

Contains 2 pounds Endosulfan, 0.03 pound Pyrethrins, and 0.3 pound piperonyl butoxide (Butacide*) per gallon.

KEEP OUT OF REACH OF CHILDREN WARNING

AVISO

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

For Emergency Assistance Call 716-735-3765.
See Other Panels for Additional Precautionary Information.

STATEMENT OF PRACTICAL TREATMENT

If swallowed: Call a physician or Poison Control Center immediately. If possible, vomiting should be induced under medical supervision. Drink one or two glasses of water and one (1) ounce of syrup of ipecac. If syrup of ipecac is not available, drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with finger. Do not induce vomiting or give anything by mouth to a person who is unconscious or convulsing.

If inhaled: Remove victim to fresh air. Apply respiration if indicated. If on skin: Remove contaminated clothing and wash contaminated skin with soap and water.

If in eyes: Flush eyes with plenty of water. Call a physician immediately.

Note to Physician: Endosulfan is a central nervous system stimulant absorbable by mouth, inhalation or through contact with skin. There is no antidote, but excitant effects can usually be controlled by barbiturates.

ACCEPTED
with COMMENTS
in EPA Letter Dated

OCT 29 1993

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.

279-2822



FMC Corporation
Agricultural Chemical Group
Philadelphia PA 19103

PRECAUTIONARY STATEMENTS Hazards to Humans (& Domestic Animals)

Warning

May be fatal if swallowed, inhaled or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Do not breathe vapor. Wear waterproof rubber gloves and a pesticide mask or respirator jointly approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for pesticide application under the provision of 30 CFR Part 11 for protection against endosulfan. Do not apply or allow to drift to areas occupied by unprotected humans or beneficial animals. Wash thoroughly with soap and water after handling and before smoking or eating. Remove contaminated clothing and wash before reuse.

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 or wetlands. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on this label.

This product is toxic to bees and should not be applied when bees are actively visiting the area.

PHYSICAL OR 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 through any type of irrigation system.

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

Do not enter treated areas for 24 hours unless appropriate protective clothing is worn.

Protective clothing means, at least, a hat or other suitable head covering, a long sleeved shirt and long legged trousers or a coverall type garment (all of closely woven fabric covering the body, including the arms and legs), shoes and socks.

Because certain states may require more restrictive re-entry intervals for various crops treated with this product, such as the 48 hour re-entry interval established by California, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Inform workers of areas or fields that may not be entered without specific protective clothing, period of time field must be vacated and appropriate actions to take in case of accidental exposure. An example of such information is given under written warnings. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information:

WARNING

Area treated with endosulfan on (insert date). Do not enter without appropriate protective clothing for 24 hours (insert State Department of Agriculture's re-entry interval, if more restrictive).

In case of accidental exposure to pesticide spray, wash the skin thoroughly with soap and water. Remove contaminated clothing and wash before reuse. If in eyes, flush with plenty of water. If inhaled, go to an area where the pesticide has not been applied. Get medical attention if needed.

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STORAGE AND DISPOSAL

Pesticide Storage

Do not store in or around the home.

Do not store below 20°F, (-7°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, 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. Call FMC collect: (716) 735-3765.

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.

Container Disposal

Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. Do not cut or weld metal containers.

Not For Use Or Storage In Or Around The Home.

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, unless otherwise noted, of listed crops. 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. Observe use limitations. If insect control is required beyond the following use patterns, supplement the control program with other suitable pesticides.

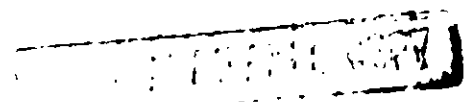
When applying this material by aircraft, mix the recommended amount with sufficient water to provide a minimum of 1 gallon finished spray per acre on vegetable and field crops, unless otherwise noted, and a minimum of 20 gallons of finished spray per acre on fruit and nut trees and on vines. Where more than 2 quarts of this material are recommended, mix with sufficient water to provide a minimum of finished spray equal to twice the amount of Thiodan* 2 Pyrenone* 0.3-0.03 EC insecticide used. Apply with continuous agitation.

Do not plant root crops other than carrots, potatoes, sweet potatoes, and sugar beets as follow-up crops. Observe days interval between last application and harvest indicated by number in () following the crop name.

THIODAN 2 PYRENONE 0.3-0.03 EC - CODE 3042

ALFALFA (Grown for Forage) (21)

Insects Controlled	Rate of Application	Method of Application
Meadow Spittlebug	1 pint per acre	Apply one week after eggs begin to hatch or when first small masses of froth are produced in the crowns of the plant which is usually about the time the alfalfa is 4 to 6 inches tall. Apply in a minimum of 10 gallons of water per acre by ground or 2 gallons of water per acre by air.
<p>Do not graze or cut forage within 21 days of treatment. Do not apply more than once per cutting. Do not make more than 3 applications per year. Do not exceed a maximum of 0.75 lb. active ingredient endosulfan (i.e., 3 pints) per acre per year.</p>		



APPLES (21)

Insects Controlled	Rate of Application	Method of Application
<p>Aphids (including Apple Aphid, Rosy Apple Aphid, Woolly Apple Aphid) Apple Rust Mite Green Fruitworm Tarnished Plant Bug Tentiform Leafminers White Apple Leafhopper (first generation)</p>	<p>1 quart per 100 gallons or a maximum of 5 quarts per acre</p>	<p>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 1 1/2 quarts per 100 gallons to control Apple Aphids and Rosy Apple Aphids. For control of Tentiform Leafminers, make first application as soon as moth flight begins. A second application should be made 10 days later.</p>

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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

APRICOTS (21), NECTARINES (21), PEACHES (21)

Insects Controlled	Rate of Application	Method of Application
Peachtree Borer Lesser Peachtree Borer	1 1/2 quarts per 100 gals.; <u>West Coast</u> - 1 to 1 1/2 quarts per 100 gallons; <u>Southeastern States</u> - 3 to 5 qts. per 100 gallons	Best control is obtained with a single application post-harvest during the first week of September. Spray all bark areas from ground level to lower scaffold limbs.

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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

APRICOTS (30), NECTARINES (30), PEACHES (30)

Insects Controlled	Rate of Application	Method of Application
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 quart per 100 gallons or a maximum of 4 to 5 quarts per acre; <u>West Coast</u> - do not use more than 6 quarts per acre	Make applications when insects appear or feeding is noticed.

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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

ARTICHOKES (7)

Insects Controlled	Rate of Application	Method of Application
Aphids (including Artichoke Aphid, Green Peach Aphid)	1 1/2 to 2 quarts per acre	Make applications when insects appear or feeding is noticed. Apply in a minimum of 20 gallons of water per acre by ground and in a minimum of 10 gallons of water per acre by air.
Artichoke Plume Moth Whitefly	2 quarts per acre	

Do not make more than 2 applications per year.
Do not exceed a maximum of 2.0 lbs. active ingredient endosulfan (i.e., 4 quarts) per acre per year.

BARLEY, OATS, RYE, WHEAT

Insects Controlled	Rate of Application	Method of Application
Army Cutworm	1 quart per acre	For aerial application, apply in 2 gallons of diesel fuel oil per acre.
Aphids	1 to 1 1/2 quarts per acre	Make applications when insects appear or feeding is noticed.

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 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.

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BEANS, Succulent and Dry (except Lima Beans) (3) and SOUTHERN FIELD PEAS (Succulent type, including Black-Eyed Peas, Crowder Peas, and Southern Peas) (3)

Insects Controlled	Rate of Application	Method of Application
Black Bean Aphid Bean Leaf Skeletonizer Cowpea Curculio Cucumber Beetles Flea Beetles Green Stink Bug Leafhoppers Mexican Bean Beetle	1 to 2 quarts 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 1/2 inch long.
Aphids Armyworms Western Bean Cutworm Whitefly	2 quarts per acre	
<p>Do not feed treated threshings or allow livestock to graze in treated fields. Do not use on Lima Beans that are to be removed from the field for processing. Do not make more than 3 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.</p>		

BLUEBERRIES

Insects Controlled	Rate of Application	Method of Application
Blueberry Bud Mite	3 quarts per 300 gallons	Apply immediately after harvest and repeat 6 to 8 weeks later.
<p>Do not apply after buds are well formed. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.</p>		

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BROCCOLI (7), BRUSSEL SPROUTS (14), CABBAGE (7), CAULIFLOWER (14)

Insects Controlled	Rate of Application	Method of Application
Cabbage Aphid Cabbage Looper Cross-striped Cabbageworm Diamondback Motl larvae Flea Beetles Harlequin Bug Imported Cabbageworm Leafhoppers Stink Bugs	1 1/2 to 2 quarts per acre	Make applications when insects appear or feeding is noticed.
Armyworms Cutworms Whitefly	2 quarts per acre	
Do not make more than 4 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

CARROTS (7)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Leafhoppers	1 to 2 quarts per acre	Make application when insects appear or feeding is noticed.
Armyworms Flea Beetles Whitefly	2 quarts per acre	
Do not use tops for food or feed. Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.		

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CELERY (4)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Cabbage Looper Leafhoppers	1 to 2 quarts per acre	Make application when insects appear or feeding is noticed.
Armyworms Flea Beetles Whitefly	2 quarts per acre	
<p>Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.</p>		

CELERY (7)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid	1 quart per acre	Make applications when insects appear or feeding is noticed.
<p>Do not make more than 2 applications per year. Do not exceed a maximum of 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.</p>		

CHERRIES (21)

Insects Controlled	Rate of Application	Method of Application
Peachtree Borer Lesser Peachtree Borer	1 1/2 quarts per 100 gals.; <u>West Coast:</u> 1 to 1 1/2 qts. per 100 gallons	Thoroughly wet all bark from ground to scaffold limbs.
Black Cherry Aphid Green Fruitworm Plum Rust (Nursery) Mite	1 quart per 100 gallons or 4 to 5 quarts per acre	Make applications when insects appear or feeding is noticed.
<u>Pacific Northwest only:</u> Eyespotted Bud Moth Fruittree Leafroller		For Bud Moth control, apply at "popcorn" stage. For Leafroller control, apply during pre-pink stage of growth.
<u>Michigan only:</u> Mineola Moth	2 quarts per 100 gallons	Apply in the delayed dormant period.
<p>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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.</p>		

CHERRY, PEACH, PLUM NURSERY STOCK DIP

Insects Controlled	Rate of Application	Method of Application
Peachtree Borer	4 quarts per 40 gallons	Mix Thoroughly. Immerse trees so that the roots and crowns are covered well above the grafting bud scar.
<p>Wear rubber gloves during the dipping operation. Plant immediately or dry before returning stock to storage.</p>		

CITRUS (Non-Bearing Trees and Nursery Stock)

Insects Controlled	Rate of Application	Method of Application
Citrus Aphid	1/2 quart per 100 gallons or a maximum of 5 quarts per acre	Make applications when insects appear or feeding is noticed.
<p>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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.</p>		

COLLARDS (21)

Insects Controlled	Rate of Application	Method of Application
Aphids Cabbage Looper Diamondback Moth larvae Fall Armyworm Flea Beetles Harlequin Bug Imported Cabbageworm Leafhoppers	1 1/2 to 2 quarts per acre	Make application when insects appear or feeding is noticed.
Whitefly	2 quarts per acre	

Do not make more than one application per year.
Do not exceed a maximum of 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.

CORN (Seed Crop Only)

Insects Controlled	Rate of Application	Method of Application
Corn Leaf Aphid	2 quarts per	Make applications when insects appear or feeding is noticed.
Corn Earworm	2 to 3 qts.	Direct spray to the area of the cornsilks.

Do not use seed for food, feed or oil purposes.
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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

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COTTON

Insects Controlled	Rate of Application	Method of Application
Aphids	3/4 to 1 1/2 quarts per acre	Make applications when insects appear or feeding is noticed. For control of aphids, thorough coverage is important.
Boll Weevil	1 to 3 quarts per acre	
Bollworm Cabbage Looper Cotton Leafperforator Cotton Leafworm Fleahoppers Lygus Bugs Stink Bugs Tobacco Budworm	2 to 3 quarts per acre	
Thrips	3 quarts per acre	

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 dairy or meat animals in treated fields.
 Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

CUCUMBERS (2), MELONS (2), PUMPKINS (2), SUMMER & WINTER SQUASH (2)

Insects Controlled	Rate of Application	Method of Application
Aphids Cucumber Beetles Melonworm Pickleworm Rindworm (on watermelons) Squash Beetle Squash Bug Squash Vine Borer Striped Flea Beetle	1 to 2 quarts 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 Omniverous Leafroller Whitefly	2 quarts per acre	
Do not make more than 6 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

EGGPLANT (1)

Insects Controlled	Rate of Application	Method of Application
Blister Beetle Colorado Potato Beetle Flea Beetles Green Peach Aphid Green Stink Bug	1 to 2 quarts per acre	Make applications when insects appear or feeding is noticed.
Whitefly	2 quarts per acre	
Do not make more than 2 applications per year. Do not exceed a maximum of 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.		

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GRAPES (7)

Insects Controlled	Rate of Application	Method of Application
Grape Leafhopper Grape Phylloxera (leaf form) Rose Chafer	1 quart per 100 gallons or 2 to 3 quarts per acre	Make applications when insects appear or feeding is noticed.
<p>Do not use on Concord varieties as severe injury is likely to occur. Ground application is preferred. Do not make more than 3 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.</p>		

KALE (21)

Insects Controlled	Rate of Application	Method of Application
Cabbage Flea Beetle Harlequin Bug Imported Cabbageworm	1 1/2 quarts per acre	Make application when insects appear or feeding is noticed
<p>Do not make more than one application per year. Do not exceed a maximum of 0.75 lb. active ingredient endosulfan (i.e., 1 1/2 quarts) per acre per year.</p>		

LETTUCE (14)

Insects Controlled	Rate of Application	Method of Application
Cabbage Looper Diamondback Moth larvae Green Peach Aphid Imported Cabbageworm Leafhoppers	1 1/2 to 2 quarts per acre	Make applications when insects appear or feeding is noticed.
Armyworms Whitefly	2 quarts per acre	

On Head Lettuce: Do not make more than 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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

MACADAMIA NUTS (1)

Insects Controlled	Rate of Application	Method of Application
Southern Green Stink Bug	2 quarts per 100 gallons	Make applications when insects appear or feeding is noticed.

Do not graze livestock on orchard crops or grasses in treated areas.
 Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

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MUSTARD GREENS (21)

Insects Controlled	Rate of Application	Method of Application
Aphids Cabbage Looper Diamondback Moth larvae Fall Armyworm Flea Beetles Harlequin Bug Imported Cabbageworm Leafhoppers	1 1/2 to 2 quarts per acre	Make application when insects appear or feeding is noticed.
Whitefly	2 quarts per acre	
Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.		

PEARS (7)

Insects Controlled	Rate of Application	Method of Application
Green Fruitworm Tarnished Plant Bug	1 quart per 100 gallons or 4 to 5 quarts per acre	Make applications at white bud or petal fall when insects appear or feeding is noticed.
Pear Psylla (second generation)	1 1/2 quarts per 100 gals.; maximum of 300 gals. per acre	Apply when nymphs are still small and repeat, if necessary, in 7 to 10 days.
Pear Rust Mite Conspere Stink Bug (foliar treatment)	1 quart per 100 gallons or 4 to 5 quarts per acre	Make applications when insects appear or feeding is noticed. Stink Bugs must be wet by spray to obtain control.
Conspere Stink Bug (Soil treatment)	1 quart per 100 gallons; 200 to 400 gals. per acre	Apply to orchard floor and around trees prior to bloom.
Pear Leaf Blister Mite	1/2 to 1 quart per 100 gals.	Apply as a post harvest or dormant treatment.

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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

NOTE: Aerial application may not result in satisfactory control and should only be employed if impossible to apply by ground.

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PEAS (Seed Crop Only) (1)

Insects Controlled	Rate of Application	Method of Application
Pea Aphid Pea Weevil	1 to 2 quarts per acre	Make applications when insects appear or feeding is noticed.

Use only on peas to be harvested by combine.
 Do not feed treated vines or threshings 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 1.5 lbs. active ingredient endosulfan (i.e., 3 quarts) per acre per year.

PEAS, SUCCULENT (5)

Insects Controlled	Rate of Application	Method of Application
Pea Aphid Pea Weevil	1 to 2 quarts per acre	Make applications when insects appear or feeding is noticed.

Use only on peas to be harvested by combine.
 Do not feed treated vines or threshings 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 2.0 lbs. active ingredient endosulfan (i.e., 4 quarts) per acre per year.

PECANS

Insects Controlled	Rate of Application	Method of Application
Black Pecan Aphid Pecan Nut Casebearer Spittlebug	1 1/2 quarts 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 to 1 1/2 quarts per 100 gallons	Apply when nymphs appear and before they are enclosed in plant tissue. For high populations, use the higher rate.

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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

PEPPERS (1)

Insects Controlled	Rate of Application	Method of Application
Flea Beetles Green Peach Aphid Hornworms Pepper Maggot	1 quart per acre	Make applications when insects appear or feeding is noticed.

Do not make more than 2 applications per year.
Do not exceed a maximum of 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.

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PEPPERS (4)

Insects Controlled	Rate of Application	Method of Application
Armyworms Flea Beetles Green Peach Aphid Hornworms Leafhoppers Pepper Maggot	1 to 2 quarts per acre	Make applications when insects appear or feeding is noticed.
Whitefly	2 quarts per acre	
Do not make more than 2 applications per year. Do not exceed a maximum of 2.0 lbs. active ingredient endosulfan (i.e., 4 quarts) per acre per year.		

PINEAPPLE (For Fresh Market Only) (7)

Insects Controlled	Rate of Application	Method of Application
Pineapple Fruit Mite	3 to 4 quarts 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.
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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

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PLUMS (7), PRUNES (7)

Insects Controlled	Rate of Application	Method of Application
Fruittree Leafroller (<u>Pacific Northwest Only</u>)	1 quart per 100 gallons or 4 to 5 quarts 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	1 quart per 100 gallons or 4 to 5 quarts per acre	Make applications when insects appear or feeding is noticed.
Lesser Peachtree Borer	1 1/2 quarts per 100 gals. or 4 to 5 qts. per acre	Apply spray to thoroughly wet the trunk and main branches.
Peachtree Borer	1 1/2 quarts per 100 gals. or 4 to 5 qts. per acre West Coast - 1 to 1 1/2 quarts per 100 gallons or 4 to 5 qts. per acre	Spray thoroughly to cover all bark areas from ground to scaffold limbs.

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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

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POTATOES (1)

Insects Controlled	Rate of Application	Method of Application
Aphids Armyworms Colorado Potato Beetle Green Stink Bug Leaffooted Bug Plant Bugs Potato Flea Beetles Potato Leafhopper Potato Tubeworm Threelined Potato Beetle	1 to 2 quarts per acre	Make applications when insects appear or feeding is noticed.
European Corn Borer Potato Psyllid	1 1/2 to 2 qts. per acre	
False Chinch Bug Whitefly	2 quarts per acre	
Do not make more than 6 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

SAPFLOWER

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Whitefly	2 quarts per acre	Make applications when insects appear or feeding is noticed.
Do not apply after flower heads open. Do not make more than 2 applications per year. Do not exceed a maximum of 2.0 lbs. active ingredient endosulfan (i.e., 4 quarts) per acre per year.		

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SPINACH (21)

Insects Controlled	Rate of Application	Method of Application
Armyworms Crown Mite Flea Beetles Green Peach Aphid Leafhoppers	1 1/2 to 2 quarts per acre	Make application when insects appear or feeding is noticed.
Whitefly	2 quarts per acre	
Do not make more than one application per year. Do not exceed a maximum of 1.0 lb. active ingredient endosulfan (i.e., 2 quarts) per acre per year.		

STRAWBERRIES (4)

Insects Controlled	Rate of Application	Method of Application
Meadow Spittlebug Strawberry Aphid Tarnished Plant Bug Whitefly	2 quarts per acre	Make applications when insects appear or feeding is noticed. Do not reapply within 15 days or more than twice during a 35 day period when fruit is present.
Cyclamen Mite	4 quarts per acre in 400 gallons	Make applications when insects appear or feeding is noticed. Thoroughly wet the foliage, stem and crown of the plant. 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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

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STRAWBERRIES - Northwest Use Only

Insects Controlled	Rate of Application	Method of Application
Garden Symphylan (aids in reducing damage)	2 quarts per 100 gallons	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.
<p>Wear rubber gloves during the dipping operation. Drain and allow plants to dry before setting them out in the field.</p>		

SUGAR BEETS (30)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Meadow Spittlebug	1 to 2 quarts per acre	Make application(s) when insects appear or feeding is noticed. Make one or two applications per year as needed for control.
Sugar Beet Webworm	1 1/2 to 2 qts. per acre	
Whitefly	2 quarts per acre	
<p>Do not feed treated tops to livestock. Do not make more than 2 applications per year. Do not exceed a maximum of 2.0 lbs. active ingredient endosulfan (i.e., 4 quarts) per acre per year.</p>		

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SUNFLOWERS (1)

Insects Controlled	Rate of Application	Method of Application
Sunflower Moth	2 quarts per acre	Make applications when insects appear or feeding is noticed. Make the first application at the onset of bloom. Allow 7 days between repeat applications.
<p>Do not feed treated forage to livestock. Do not make more than 3 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.</p>		

SWEET CORN (Fresh Vegetable Use Only) (1)

Insects Controlled	Rate of Application	Method of Application
Corn Leaf Aphid Whitefly	2 quarts per acre	Make applications when insects appear or feeding is noticed.
Corn Earworm	3 quarts per acre	Apply when silks first appear continue until they begin to dry. Allow 5 days between applications.
<p>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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.</p>		

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SWEET POTATOES (1)

Insects Controlled	Rate of Application	Method of Application
Sweet Potato Flea Beetle Sweet Potato Weevil	1 quart 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 quarts 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 Thiodan ^R .
Whitefly	2 quarts per acre	Make applications when insect activity or feeding is noticed.
Banded Cucumber Beetle (aids in control) (South Central States and Puerto Rico Only)	2 to 4 quarts per acre broadcast or 2/3 to 1 1/3 qts. 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.

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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

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TOBACCO (5)

Insects Controlled	Rate of Application	Method of Application
Aphids (including Green Peach Aphid, Tobacco Aphid) Budworm Cabbage Looper Flea Beetles Hornworms	<u>Seed Bed:</u> 1 quart per 100 gallons	Make applications when insects appear or feeding is noticed. Apply about 6 gallons of finished spray per 100 square yards.
Green June Bug larvae	<u>Plant Bed:</u> 1/2 quart per 100 gallons	Make application when insects appear or feeding is noticed. Drench at a rate of 1 gallon per square yard.
Aphids (including Green Peach Aphid, Tobacco Aphid) Budworm Cabbage Looper Flea Beetles Green June Bug larvae Hornworms	<u>Field:</u> 1 to 2 quarts per acre	Make applications when insect activity or feeding is noticed.
Stink Bugs	<u>Field:</u> 2 to 3 quarts per 100 gallons	

Do not make more than 6 applications per year.
 Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

NOTE: When using a knapsack sprayer, apply the recommended amount of this insecticide in 20 to 30 gallons of water per acre using a maximum pressure of 20 psi and holding the spray nozzle 12 to 18 inches above the plants. Some phyto toxicity may occur under conditions of high humidity with temperatures above 85° F.

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TOMATOES (Field & Greenhouse) (2)

Insects Controlled	Rate of Application	Method of Application
Aphids Blister Beetles Colorado Potato Beetle Flea Beetles Tomato Hornworm	1 to 2 quarts per acre	Make applications when insects appear or feeding is noticed.
Cabbage Looper Stink Bugs	1 1/2 to 2 qts. per acre	
Tomato Fruitworm Tomato Russet Mite Whitefly Yellowstriped Armyworm	2 quarts per acre	
Whitefly	1 quart per 100 to 200 gals. of water	

In greenhouse applications, wear a mask or respirator approved by MSA and OSHA for protection against endosulfan.
 Do not make more than 6 applications per year.
 Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.

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TURNIP GREENS (21)

Insects Controlled	Rate of Application	Method of Application
Aphids Cabbage Looper Diamondback Moth larvae Fall Armyworm Flea Beetles Harlequin Bug Imported Cabbageworm Leafhoppers	1 1/2 quarts per acre	Make application when insects appear or feeding is noticed.
Do not apply to turnips grown for roots. Do not make more than one application per year. Do not exceed a maximum of 0.75 lb. active ingredient endosulfan (i.e., 1 1/2 quarts) per acre per year.		

WALNUTS

Insects Controlled	Rate of Application	Method of Application
Walnut Aphid	3 to 4 quarts per acre	Make applications when insects appear or feeding is noticed.
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 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

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**COMMERCIALLY GROWN ORNAMENTALS
ORNAMENTAL PLANTS**

LEATHERLEAF FERN (Leather Holly Fern)

Insects Controlled	Rate of Application	Method of Application
Leatherleaf Fern Borer	1 quart per 100 gallons	Begin treatment when first larval feeding is observed in the mid-vein area at the base of the leaflets. Repeat at intervals of 2 to 3 weeks as necessary.
Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

ORNAMENTALS (Greenhouse and Out-of-Doors)

Insects Controlled	Rate of Application	Method of Application
Aphids Cyclamen Mite Rose Chafer Whitefly	1 quart per 100 gallons	Make applications when insects appear or feeding is noticed.
<p>On chrysanthemums, best results will be obtained if applied before plants flower.</p> <p>Do not apply to "Bonnafon Deluxe", "Fred Shoemith", and "White Knight" chrysanthemums as injury may result.</p> <p>Do not use on Birch trees.</p> <p>In greenhouse applications, wear a mask or respirator approved by MSA and OSHA for protection against endosulfan.</p> <p>Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.</p>		

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ORNAMENTAL TREES AND SHRUBS

DOGWOOD, LILAC

Insects Controlled	Rate of Application	Method of Application
Dogwood Borer Lilac Borer	1 to 2 quarts per 100 gals.	Apply in early June and repeat in 10 to 14 days. Drench all bark areas down to the ground level.
Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

DOUGLAS FIR (Grown for Ornamentals) - Pacific Northwest Only

Insects Controlled	Rate of Application	Method of Application
Aphids Cooley Spruce Gall Adelgid Douglas Fir Needle Midge	1 quart per 100 gallons (2 teaspoons per gallon)	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.
Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

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SHADE TREES (except Birch), SHRUBS

Insects Controlled	Rate of Application	Method of Application
Aphids	1 quart per 100 gallons	Make applications when insects appear or feeding is noticed.
Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

TAXUS

Insects Controlled	Rate of Application	Method of Application
Taxus Bud Mite	1 quart per 100 gallons	Make 3 to 5 applications beginning in mid-May. Thoroughly spray foliage, twigs and bark.
Black Vine Weevil	2 quarts per 100 gallons	Spray thoroughly and drench the soil under the plants. Apply when the weevils first appear and repeat in 14 days.
Do not exceed a maximum of 3.0 lbs. active ingredient endosulfan (i.e., 6 quarts) per acre per year.		

Dealers Should Sell in Original Packages Only.

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