



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:
45639-
197

Date of Issuance:
JUN 16 1995

Term of Issuance: Conditional

NOTICE OF PESTICIDE:
 Registration
 Reregistration

(under FIFRA, as amended)

Name of Pesticide Product:
Phaser 3EC - For Use
In California

Name and Address of Registrant (include ZIP Code):

Agrevo USA Company
Little Falls Centre-One
2711 Centerville Road
Wilmington, DE 19707

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. Make the labeling changes listed below before you release the product for shipment:
 - a. Add the phrase "EPA Registration No. 45639-197".
 - b. Relocate "For Use In California" to appear directly below "Phaser 3EC" since it is part of the product name. Be sure the correct full product name appears on the finished label.

Signature of Approving Official:

Date:
JUN 16 1995

- c. Under the heading **Personal Protective Equipment**, revise "category F or G" to "category G", since there is more than 40% solvent (see PR Notice 93-7).
- d. As discussed, the first entry for the **Personal Protective Equipment** should be that as shown on your draft labeling, i.e., "Coveralls over long-sleeved shirt and long pants."
- e. As indicated in the Agency's March 6, 1995 letter, the last item of the **Personal Protective Equipment** entry should read "Add a chemical-resistant apron when cleaning equipment, mixing or loading." This emphasizes that the apron is to be worn in addition to the other specified protective equipment, and is the wording stipulated in 40 CFR sect. 156.212(i)(3).
- f. Since the California Supplemental label is now incorporated into the text of this label, revise the referral to that text from "See California Supplemental label for required procedures for reducing risk of contamination of aquatic ecosystems." to "Be sure to read and follow the required procedures for reducing risk of contamination of aquatic ecosystems in California"
- g. For the crop entry **Barley, Oats, Rye, Wheat**, delete the line in the **Method of Application** column between the two entries and move "Make applications when insects appear or feeding is noticed" to the top line so that is similar to the **Beans** entry.
- h. For the crop entry **Citrus (Non-Bearing and Nursery Stock)**, revise the **Rate of Application** to read as follows:

2/3 pint per 100 gallons or a maximum of 3 1/3 quarts per acre
- i. For the crop entry **Eggplant**, revise the **Rate of Application** to 2/3 to 1 1/3 pints per acre for Blister Beetle, etc. and to 1 1/3 pints per acre for Whitefly. Also, revise the second Note to read: "Do not exceed a maximum of 0.5 lb. active ingredient (i.e., 1 1/3 pints) per acre per year."
- j. Revise the directions for control of Peachtree Borer and Lesser Peachtree Borer on **Plums and Prunes** to read as follows (a single entry may appear in the **Method of Application** column, i.e, delete the horizontal line in that column between the two pests with the same directions):

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.

Please note, however, that FMC has indicated to the Agency that the time specificity in the directions for control of Peachtree Borer and Lesser Peachtree Borer as they appear for these crops may potentially cause difficulties due to the variations encountered in the time of harvest for these crops in different geographical areas. Therefore, you may elect to delete "during the first week of September" from these directions. Conversely, if your agricultural field experts believe that stipulating a more exact time would be beneficial to product efficacy then you may retain "during the first week of September" as shown above.

- k. For the crop entry **Douglas Fir**, revise the first Note to indicate "such as teaspoons" rather than "such as tablespoons", since the alternate rate is given in teaspoons per gallon.
- l. For the crop entry **Shade Trees**, revise the first Note to indicate "such as teaspoons" rather than "such as tablespoons", since the alternate rate is given in teaspoons per gallon.
- 3. Submit three (3) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

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

Regarding the California supplemental labeling for required procedures for reducing risk to aquatic ecosystems, it should be understood that permitting this supplemental labeling for use only in California to appear on a Federally registered label in order to address CAL-EPA's criteria for issuing permits by a County Agricultural Commissioner for the subject product does not constitute the Agency's determination in regard to the reregistration of endosulfan, nor does it represent the Agency's conclusions based upon review of any data, nor should it be construed in any way as signifying the Agency's agreement or determination that the instructions and restrictions appearing on the supplemental labeling for use in California only adequately address the issues of mitigating offtarget movement and aquatic exposure. The Agency reserves these decisions until all data submitted in support of reregistration for endosulfan have been reviewed and evaluated.

Enclosures



Specimen Label - California

A company of Hoechst and NOR-AM

FOR AGRICULTURAL OR COMMERCIAL USE ONLY

Phaser® 3EC

INSECTICIDE

EPA Registration Number 45639-ROT
For Use In California

ACCEPTED
with COMMENTS
in EPA Letter Dated

JUN 16 1995

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
45639-197



5 of 20

For Agricultural or Commercial Use Only

Phaser 3EC

INSECTICIDE

ACTIVE INGREDIENT:

Endosulfan (Hexachlorohexahydromethano-2,4,3-benzodioxathiepin-3-oxide)* 33.70%

INERT INGREDIENTS:** 66.30%

TOTAL: 100.00%

*Equivalent to 3.0 pounds of active ingredient per gallon

**Contains xylene range aromatic solvent

EPA Reg. No. 45639-

KEEP OUT OF REACH OF CHILDREN



DANGER — PELIGRO POISON



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.)

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a physician or Poison Control Center immediately. Vomiting should be induced *only* under the direct supervision of a physician. If person is unconscious or convulsing, do not give anything by mouth and do not induce vomiting.

IF INHALED: Remove victim to fresh air. Apply artificial respiration if indicated. Get medical attention.

IF ON SKIN: Remove contaminated clothing and wash skin with soap and water. Get medical attention.

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. 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.

This formulation contains petroleum hydrocarbons. Vomiting should be induced *only* under the direct supervision of a physician. Care should be taken to prevent aspiration because of the possibility of chemical pneumonia or pulmonary edema due to the organic solvent in the formulation.

IN CASE OF MEDICAL EMERGENCIES OR HEALTH AND SAFETY INQUIRIES, OR IN CASE OF FIRE, LEAKING, OR DAMAGED CONTAINERS, INFORMATION MAY BE OBTAINED BY CALLING 800-228-5635, EXT. 202.

PRECAUTIONARY STATEMENTS

DANGER

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Fatal if swallowed. Corrosive. Causes irreversible eye damage. Do not get in eyes, on skin, or on clothing. May be fatal if inhaled or absorbed through skin. Do not breathe vapor or spray mist. Do not contaminate food or feed. Keep out of reach of domestic animals. Food utensils such as teaspoons or measuring cups must not be used for food purposes after use in measuring pesticides.

PERSONAL PROTECTIVE EQUIPMENT

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

Applicators and other handlers must wear:

- ◆ Coveralls over short-sleeved shirt and short pants
- ◆ Chemical-resistant gloves, such as barrier laminate, or viton ≥14 mils
- ◆ Chemical-resistant footwear plus socks
- ◆ Protective eyewear
- ◆ Chemical-resistant headgear for overhead exposure
- ◆ A respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G)
- ◆ A chemical-resistant apron when cleaning equipment, mixing or loading

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

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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 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 by ground or air 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.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill 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.

Do not apply this product through any type of irrigation system.

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 intervals. 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 over long-sleeved shirt and long pants; chemical-resistant gloves, such as barrier laminate or viton ≥ 14 mils; chemical-resistant footwear plus socks; protective eyewear; chemical-resistant headgear for overhead exposure.

See California Supplemental Label for required procedures for reducing risk of contamination of aquatic ecosystems.

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 diluted material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

In case of spill: Avoid contact, isolate area, and keep out animals and unprotected persons. Confine spills.

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

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticides, 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: 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.

DO NOT REUSE EMPTY CONTAINER

(this statement is deleted when returnable packaging is used)

(or when packed in returnable containers)

This returnable container must not be opened or discarded.

Returnable Container Return Procedure

Return the container clean (**outside only**) to the place of business from which the PHASER 3EC was purchased.

This product is intended for use in California.

GENERAL INSTRUCTIONS

Not for use or storage in or around the home.

Do not use in undiluted form.

Apply the listed amount per acre when insects first appear and repeat as required 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 1 gallon 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. Where more than 2 quarts of this material are recom-

finished spray equal to twice the amount of PHASER 3EC Insecticide used.

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.

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 1.5 lbs a.i./acre/application or more than 3.0 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 percent of wing span or rotor diameter.

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 whirl-plate may be used.
11. For ground applications, equipment other than hand-guns 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.

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 CHanneled 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.

ALFALFA (Grown for Forage) (21)

Insects Controlled	Rate of Application	Method of Application
Meadow Spittlebug	2/3 pint per acre	Apply 1 week after eggs begin to hatch or when first small masses of froth are produced in the crowns of the plant, which is usually when the alfalfa is about 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.

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 (i.e., 1 quart) per acre per year.

APPLES (30)

Insects Controlled	Rate of Application	Method of Application
Aphids (including Apple Aphid, Rosy Apple Aphid, Woolly Apple Aphid) Apple Rust Mite White Apple Leafhopper (first generation)	2/3 quart per 100 gallons or a maximum of 3 1/2 quarts 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 1 quart per 100 gallons to control Apple Aphid and Rosy Apple Aphid.

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 per year.
 Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 4 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) Peach Silver Mite Peach Twig Borer	2/3 quart per 100 gallons or a maximum of 3 1/2 quarts per acre <i>West Coast:</i> Do not use more than 4 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 (i.e., 4 quarts) per acre per year.

ARTICHOKES (7)

Insects Controlled	Rate of Application	Method of Application
Aphids (including Artichoke Aphid, Green Peach Aphid)	1 to 1 1/2 quarts	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	1 to 1 1/2 quarts per acre	

Do not make more than 2 applications per year.
 Do not exceed a maximum of 2.0 lbs. active ingredient (i.e., 2 2/3 quarts) per acre per year.

BARLEY, OATS, RYE, WHEAT

Insects Controlled	Rate of Application	Method of Application
Army Cutworm	2/3 quart per acre	
Aphids (including Russian Wheat Aphid)	2/3 to 1 quart 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 (i.e., 1 1/3 quarts) per acre per year.		

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 Cucumber Beetle Flea Beetle Green Stink Bug Leafhopper Mexican Bean Beetle	2/3 to 1 1/3 quarts per acre	Make applications when insects appear or feeding is noticed.
Aphids Western Bean Cutworm Whitefly	1 1/3 quarts per acre	
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 (i.e., 4 quarts) per acre per year.		

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 Moth (larvae) Flea Beetle Harlequin Bug Imported Cabbageworm Stink Bug	1 to 1 1/3 quarts per acre	Make applications when insects appear or feeding is noticed.
Armyworm Cutworm Whitefly	1 1/3 quarts per acre	
Do not make more than 2 applications per year. Do not exceed a maximum of 2.0 lbs. active ingredient (i.e., 2 2/3 quarts) per acre per year.		

CARROTS (7)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid	$\frac{2}{3}$ to $1\frac{1}{3}$ quarts per acre	Make application when insects appear or feeding is noticed.
Flea Beetle Whitefly	$1\frac{1}{3}$ quarts per acre	
Do not use tops for food or feed. Do not make more than 1 application per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., $1\frac{1}{3}$ quarts) per acre per year.		

CELERY (4)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Cabbage Looper	$\frac{2}{3}$ to $1\frac{1}{3}$ quarts per acre	Make application when insects appear or feeding is noticed.
Flea Beetle Whitefly	$1\frac{1}{3}$ quarts per acre	
Do not make more than 1 application per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., $1\frac{1}{3}$ quarts) per acre per year.		

CELERY (7)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid	$\frac{2}{3}$ 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 (i.e., $1\frac{1}{3}$ quarts) per acre per year.		

CHERRIES (21)

Insects Controlled	Rate of Application	Method of Application
Black Cherry Aphid Plum Rust (Nursery) Mite	$\frac{2}{3}$ quart per 100 gallons or $2\frac{2}{3}$ to $3\frac{1}{3}$ quarts per acre	Make applications when insects appear or feeding is noticed.
<i>Pacific Northwest only:</i> Eyespotted Bud Moth Fruittree Leafroller	$\frac{2}{3}$ quart per 100 gallons or $2\frac{2}{3}$ to $3\frac{1}{3}$ quarts per acre	For Bud Moth control, apply at "popcorn" stage. For Leafroller control, apply during pre-pink stage of growth.
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 (i.e., 4 quarts) per acre per year.		

CHERRY, PEACH, PLUM NURSERY STOCK DIP

Insects Controlled	Rate of Application	Method of Application
Peachtree Borer	$2\frac{2}{3}$ quarts per 40 gallons	Mix thoroughly. Immerse trees so that the roots and crowns are covered well above the grafting bud scar.
Plant immediately or dry before returning stock to storage.		

CITRUS (Non-Bearing Trees and Nursery Stock)

Insects Controlled	Rate of Application	Method of Application
Citrus Aphid	$\frac{2}{3}$ quart per 100 gallons or a maximum of $3\frac{1}{3}$ 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 12 months. Do not make more than 2 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 4 quarts) per acre per year.</p>		

COLLARDS (21)

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

COTTON

Insects Controlled	Rate of Application	Method of Application
Aphids	$\frac{1}{2}$ to 1 quart per acre	Make applications when insects appear or feeding is noticed. For control of Aphids, thorough coverage is important.
Boll Weevil	$\frac{2}{3}$ to 2 quarts per acre	
Bollworm Cabbage Looper Cotton Leaf-perforator Fleahopper Lygus Bug Stink Bug	$1\frac{1}{3}$ to 2 quarts per acre	
Whitefly	$1\frac{1}{3}$ quarts per acre	
Thrips	2 quarts per acre	
<p>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 (i.e., 4 quarts) per acre per year.</p>		

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

Insects Controlled	Rate of Application	Method of Application
Aphids Cucumber Beetle Melonworm Pickleworm Rindworm (on watermelons) Squash Beetle Squash Bug Squash Vine Borer Striped Flea Beetle	$\frac{2}{3}$ to $1\frac{1}{2}$ 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	$1\frac{1}{2}$ quarts per acre	
Do not make more than 3 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 4 quarts) per acre per year.		

EGGPLANT (1)

Insects Controlled	Rate of Application	Method of Application
Blister Beetle Colorado Potato Beetle Flea Beetle Green Peach Aphid Green Stink Bug	$\frac{2}{3}$ to $1\frac{1}{2}$ quarts per acre	Make applications when insects appear or feeding is noticed.
Whitefly	$1\frac{1}{2}$ quarts per acre	
Do not make more than 2 applications per year. Do not exceed a maximum of 1.0 lb. active ingredient (i.e., $1\frac{1}{2}$ quarts) per acre per year.		

GRAPES (7)

Insects Controlled	Rate of Application	Method of Application
Grape Leafhopper Grape Phylloxera (leaf form) Rose Chafer	$\frac{2}{3}$ quart per 100 gallons or $1\frac{1}{2}$ to 2 quarts per acre	Make applications when insects appear or feeding is noticed.
Do not apply to Concord variety 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 (i.e., 4 quarts) per acre per year.		

KALE (21)

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

LETTUCE (14)

Insects Controlled	Rate of Application	Method of Application
Cabbage Looper Diamondback Moth (larvae) Green Peach Aphid Imported Cabbageworm	1 to 1½ quarts per acre	Make applications when insects appear or feeding is noticed.
Whitefly	1½ 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 (i.e., 4 quarts) per acre per year.

MUSTARD GREENS (21)

Insects Controlled	Rate of Application	Method of Application
Aphids Cabbage Looper Diamondback Moth (larvae) Flea Beetle Harlequin Bug Imported Cabbageworm Whitefly	1 quart per acre	Make application when insects appear or feeding is noticed.

Do not make more than 1 application per year.
 Do not exceed a maximum of 0.75 lb. active ingredient (i.e., 1 quart) per acre per year.

PEARS (7)

Insects Controlled	Rate of Application	Method of Application
Pear Psylla	3½ quarts per acre	Apply in a minimum of 10 gallons of water for aerial application or in 300 gallons of water for dilute application. Apply when adults are first observed or nymphs are small and repeat to maintain control.
Pear Rust Mite Conspere Stink Bug (foliar treatment)	¾ quart per 100 gallons or 2½ to 3½ 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)	¾ quart per 100 gallons; 200 to 400 gallons per acre	Apply to orchard floor and around trees prior to bloom.
Pear Leaf Blister Mite	½ to ¾ quart per 100 gallons	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 (i.e., 4 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.

PEAS (Seed Crop Only) (1)

Insects Controlled	Rate of Application	Method of Application
Pea Aphid Pea Weevil	$\frac{2}{3}$ to 1 quart 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 (i.e., 2 quarts) per acre per year.

PECANS

Insects Controlled	Rate of Application	Method of Application
Black Pecan Aphid Pecan Nut Casebearer Spittlebug	1 quart per 100 gallons	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.

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 (i.e., 4 quarts) per acre per year.

PEPPERS (1)

Insects Controlled	Application	Method of Application
Flea Beetle Green Peach Aphid Hornworm Pepper Maggot	$\frac{2}{3}$ 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 (i.e., $1\frac{1}{3}$ quarts) per acre per year.

PEPPERS (4)

Insects Controlled	Rate of Application	Method of Application
Flea Beetle Green Peach Aphid Hornworm Pepper Maggot	$\frac{2}{3}$ to $1\frac{1}{2}$ quarts per acre	Make applications when insects appear or feeding is noticed.
Whitefly	$1\frac{1}{2}$ quarts per acre	

Do not make more than 2 applications per year.
 Do not exceed a maximum of 2.0 lbs. active ingredient (i.e., $2\frac{2}{3}$ quarts) per acre per year.

PINEAPPLE (For Fresh Market Only) (7)

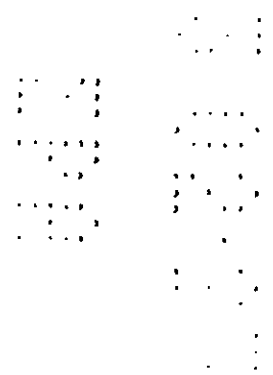
Insects Controlled	Rate of Application	Method of Application
Pineapple Fruit Mite	2 to 2½ quarts per acre	Make applications when insects appear or feeding is noticed. Apply at intervals of 7 to 10 days, if necessary, particularly during the 40-day blooming period.

Do not feed 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 (i.e., 4 quarts) per acre per year.

PLUMS (7), PRUNES (7)

Insects Controlled	Rate of Application	Method of Application
Fruittree Leafroller (Pacific Northwest Only)	¾ quart per 100 gallons or 2½ to 3½ quarts per acre	Apply during pre-pink stage of growth when insects appear or feeding is noticed.
Aphids (including Hop Aphid, Leafcurl Aphid, Thistle Aphid) Plum Rust (Nursery) Mite	¾ quart per 100 gallons or 2½ to 3½ quarts 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	¾ quart per 100 gallons or 2½ to 3½ quarts per acre	Make applications when insects appear or feeding is noticed.
Lesser Peachtree Borer	1 quart per 100 gallons or 2½ to 3½ quarts per acre	Apply spray to thoroughly wet the trunk and main branches.
Peachtree Borer	1 quart per 100 gallons or 2½ to 3½ quarts per acre West Coast: ¾ to 1 quart per 100 gallons or 2½ to 3½ quarts per acre	Spray thoroughly to cover all bark area 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 (i.e., 4 quarts) per acre per year.



POTATOES (1)

Insects Controlled	Rate of Application	Method of Application
Aphids Armyworm Colorado Potato Beetle Green Stink Bug Leafhopper Plant Bug Potato Flea Beetle Potato Leafhopper Potato Tuberworm Threelined Potato Beetle	2/3 to 1 1/2 quarts per acre	Make applications when insects appear or feeding is noticed.
European Corn Borer Potato Psyllid	1 to 1 1/2 quarts per acre	
False Chinch Bug Whitefly	1 to 1 1/2 quarts per acre	
Do not make more than 6 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 4 quarts) per acre per year.		

SAFFLOWER

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Whitefly	1 1/2 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 (i.e., 2 2/3 quarts) per acre per year.		

SPINACH (21)

Insects Controlled	Rate of Application	Method of Application
Crown Mite Flea Beetle Green Peach Aphid Whitefly	1 quart per acre	Make application when insects appear or feeding is noticed.
Do not make more than 1 application per year. Do not exceed a maximum of 0.75 lb. active ingredient (i.e., 1 quart) per acre per year.		

STRAWBERRIES (4)

Insects Controlled	Rate of Application	Method of Application
Meadow Spittlebug Strawberry Aphid Tarnished Plant Bug Whitefly	1 1/2 quarts per acre	Make applications when insects appear or feeding is noticed. Do not reapply within 15 days or more (11d) twice during a 35-day period when fruit is present.
Cyclamen Mite	2 2/3 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 (i.e., 4 quarts) per acre per year.		

STRAWBERRIES - Northwest Use Only

Insects Controlled	Rate of Application	Method of Application
Garden Symphylan (aids in reducing damage)	1 1/2 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 the entire plant.
Drain and allow plants to dry before setting them out in the field.		

SUGAR BEETS (30)

Insects Controlled	Rate of Application	Method of Application
Green Peach Aphid Meadow Spittlebug	2/3 to 1 1/2 quarts per acre	Make applications when insects appear or feeding is noticed. Make one or two applications per year as needed for control.
Sugar Beet Webworm	1 to 1 1/2 quarts per acre	
Whitefly	1 1/2 quarts per acre	
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 (i.e., 2 2/3 quarts) per acre per year.		

SUNFLOWERS (1)

Insects Controlled	Rate of Application	Method of Application
Sunflower Moth	1 1/2 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.
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 (i.e., 4 quarts) per acre per year.		

SWEET CORN (Fresh Vegetable Use Only) (1)

Insects Controlled	Rate of Application	Method of Application
Corn Leaf Aphid Whitefly	1 1/2 quarts per acre	Make applications when insects appear or feeding is noticed.
Corn Earworm	2 quarts per acre	Apply when silks first appear and continue until they begin to dry. Allow 5 days between applications.
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 (i.e., 4 quarts) per acre per year.		

SWEET POTATOES (1)

Insects Controlled	Rate of Application	Method of Application
Sweet Potato Flea Beetle Sweet Potato Weevil	2/3 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.
<p>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 1.5 lbs. active ingredient (i.e., 2 quarts) per acre per year.</p>		

TOMATOES (Field and Greenhouse) (2)

Insects Controlled	Rate of Application	Method of Application
Aphids Blister Beetle Colorado Potato Beetle Flea Beetle Tomato Hornworm Webworm (California only)	2/3 to 1 1/2 quarts per acre	Make applications when insects appear or feeding is noticed.
Cabbage Looper Stink Bug	1 to 1 1/2 quarts per acre	
Tomato Fruitworm Tomato Russet Mite Whitefly Yellowstriped Armyworm	1 1/2 quarts per acre	
Whitefly	2/3 quart per 100 to 200 gallons of water	
<p>Do not make more than 6 applications per year. Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 4 quarts) per acre per year.</p>		

COMMERCIALLY GROWN ORNAMENTALS

ORNAMENTAL PLANTS

ORNAMENTALS (Greenhouse and Out-of-Doors)

Insects Controlled	Rate of Application	Method of Application
Aphids Cyclamen Mite Rose Chafer Whitefly	$\frac{2}{3}$ quart per 100 gallons ($1\frac{1}{2}$ teaspoons per gallon)	Make applications when insects appear or feeding is noticed.

Food utensils such as teaspoons must not be used for food purposes after use in measuring pesticides.
 On chrysanthemums, best results will be obtained if applied before plants flower.
 Do not apply to "Bonnafon Deluxe", "Fred Shoemith", and "White Knight" chrysanthemums as injury may result.
 Do not use on Birch trees.
 Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 4 quarts) per acre per year.

ORNAMENTAL TREES AND SHRUBS

DOUGLAS FIR (Grown for Ornamentals, Nursery Stock or Christmas Trees) *Pacific Northwest Only*

Insects Controlled	Rate of Application	Method of Application
Aphids Cooley Spruce Gall Adelgid Douglas Fir Needle Midge	$\frac{2}{3}$ quart per 100 gallons ($1\frac{1}{2}$ teaspoon 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.

Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides.
 Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 4 quarts) per acre per year.

SHADE TREES (except Birch), SHRUBS

Insects Controlled	Rate of Application	Method of Application
Aphids	$\frac{2}{3}$ quart per 100 gallons ($1\frac{1}{2}$ teaspoon per gallon)	Make applications when insects appear or feeding is noticed.

Food utensils such as tablespoons must not be used for food purposes after use in measuring pesticides.
 Do not exceed a maximum of 3.0 lbs. active ingredient (i.e., 4 quarts) per acre per year.

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