

10163-110

12/31/2002

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Ms. Terre Allen  
Gowan Company  
P.O. Box 5569  
Yuma, AZ 85366-5569

DEC 31 2002

Dear Ms. Allen:

Subject: Amendment- Update to match use patterns and limitations  
appearing on source material label; and  
Revise First Aid Per PR Notice 2001-1  
Gowan Endosulfan 3EC  
EPA Registration Number 10163-110  
Your submission dated December 19, 2002

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

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

- a. On the front panel, under "For Agricultural or Commercial Use Only", add "Not for use or storage in around residential sites - see DIRECTIONS FOR USE /GENERAL INSTRUCTIONS for prohibited areas".
- b. In the First Aid section, relocate the If Swallowed advice to be the first route of exposure listed. In this entry, add "or convulsing" after "unconscious" in the fourth bullet item.
- c. The submitted NOTE TO PHYSICIAN is for an organophosphate insecticide. Endosulfan is not an organophosphate. Replace that section with the following:

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 formula contains petroleum hydrocarbons (xylene range aromatic solvent). 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.

- c. Please refer to PR Notice 98-9 for updated pesticide respirator recommendation text to appear in the PPE listing for applicators and other handlers.
- d. Under the heading GENERAL INSTRUCTIONS, replace "Not for use or storage in or around the home." with "Not for use or storage in or around residential sites, including homes, non-agricultural outbuildings, non-commercial greenhouses, recreational vehicles, preschools, day care centers, and applications to humans and pets.".
- e. Under the heading ORNAMENTAL TREES AND SHRUBS (Commercially grown outdoors only), delete the entries for LEATHERLEAF FERN and for "ORNAMENTALS" (which pertains to succulent ornamentals). As we discussed by telephone, all of the other listed use patterns may remain under this heading.

Please submit 5 copies of labeling bearing the above revisions as soon as it becomes available. Thank you for your prompt cooperation in this regard.

Sincerely,

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

3/15

# GOWAN ENDOSULFAN 3EC

## INSECTICIDE

For Agricultural or Commercial Use Only

<b>ACTIVE INGREDIENT:</b>	<b>% BY WEIGHT</b>
Endosulfan (Hexachlorohexahydromethano-2,4,3-benzodioxathiepin-3-oxide) .....	34.0%
<b>OTHER INGREDIENTS*</b> .....	<b>66.0%</b>
	<b>TOTAL 100.0%</b>

\*Contains Xylene Range Aromatic Solvent.  
Contains 3 pounds of endosulfan per gallon.

### KEEP OUT OF REACH OF CHILDREN

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	
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-888-478-0798 for emergency medical treatment information.	
NOTE TO PHYSICIAN	
This product is an organophosphate insecticide. If symptoms of cholinesterase inhibition are present, atropine sulfate by injection is antidotal. 2-PAM is also antidotal and may be administered, but only in conjunction with atropine.	

**FOR EMERGENCY RESPONSE AND HAZARD COMMUNICATIONS ONLY, CALL 1-888-478-0798**

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS DANGER

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 (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:**

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves, such as Barrier Laminate or Viton  $\geq$  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)
- Add 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.

**NET CONTENTS \_\_\_\_\_ GALS.**

ACCEPTED  
with COMMENTS  
In EPA Letter Dated:

DEC 31 2002



Under the Fungicide, and insecticide use is recorded, for the pesticide registered under EPA Reg. No. 10163-110

Gowan Company  
P.O. Box 5569  
Yuma, Arizona 85366

EPA Reg. No. 10163-110  
EPA Est. No. 67545-AZ-1

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

**USER SAFETY RECOMMENDATIONS**

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**ENVIRONMENTAL HAZARDS**

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

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

**PHYSICAL AND 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.

**AGRICULTURAL USE REQUIREMENTS**

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

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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  $\geq$  14 mils
- Protective eyewear
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear for overhead exposure

See California Supplemental Label (at the end of this label) for required procedures for reducing risk of contamination of aquatic ecosystems.

**PHYTOTOXICITY STATEMENT**

As is common with most emulsifiable concentrate formulations, adverse effects such as spotting or discoloration of the fruit or foliage can occur. Some conditions known to contribute to phytotoxicity include, but are not limited to: high temperatures, poor spray drying conditions excessive spray deposit or runoff, certain spray mixtures, stage of crop development or tank mixes with other pesticides.

**RESISTANCE MANAGEMENT**

Based on historical use patterns in some areas, certain pest species listed on this label may have developed resistance to ENDOSULFAN 3EC. Consult your local agricultural advisor, State Cooperative Extension Service or regional Gowan Company representative for recommendations.

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

When applying this material by aircraft, mix the recommended amount with sufficient water to provide a minimum of 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 recommended, mix with sufficient water to provide a minimum of finished spray equal to twice the amount of Gowan Endosulfan 3EC insecticide used.

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

OBSERVE STATE AND REGIONAL RESTRICTIONS AND LIMITATIONS if indicated in the crop headings. (California only) indicates instructions specific to California. (Except California) indicates uses for all states excluding California. No state restrictions indicates that the use is valid in California and all other states.

**PREHARVEST INTERVAL**

The required days between the last application and harvest are given in ( ) after each crop name.

CROP	PEST	QTS./100 GALS. WATER	COMMENTS
APPLES (30) (California only)	Aphids (including Apple Aphid, Rosy Apple Aphid, Woolly Apple Aphid), Apple Rust Mite, White Apple Leafhopper (first generation)	25	Or a maximum of 3 1/2 qts. 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 qt. per 100 gals. to control Apple Aphids and Rosy Apple Aphids.
	<ul style="list-style-type: none"> <li>Do not feed pomace from treated apples to livestock.</li> <li>Do not feed cull fruits to animals or allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications during the fruiting period.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
APPLES (21) (Except California)	Aphids (including Apple Aphid, Rosy Apple Aphid, Woolly Apple Aphid), Apple Rust Mite, Green Fruitworm, Tarnished Plant Bug, Tentiform Leafminer, White Apple Leafhopper (first generation)	2/3	Or a maximum of 3 1/2 qts. per acre. Applications made at pink and/or petal fall provide best control of Tarnished Plant Bug and Green Fruitworm. For best control of first generation White Apple Leafhopper, apply when nymphs first appear on leaves. If necessary, prior to petal fall, use 1 qt. per 100 gals. to control Apple Aphids and Rosy Apple Aphids. For control of Tentiform Leafminer make first application as soon as moth flights begin. A second application should be made 10 days later.
	<ul style="list-style-type: none"> <li>Do not feed pomace from treated apples to livestock.</li> <li>Do not feed cull fruits to animals or allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications during the fruiting period.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
APRICOTS, NECTARINES, PEACHES (21) (Except California)	Peachtree Borer, Lesser Peachtree Borer	1	Or 2 2/3 to 3 1/3 qts. per acre. Pacific Northwest: Use 2/3-1 qt. Per 100 gals.; Southeastern States: Use 2 to 3 1/2 qts. Per 100 gals. 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.
	<ul style="list-style-type: none"> <li>Do not feed cull fruits to animals or allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
APRICOTS, NECTARINES, PEACHES (30) (Except California)	Aphids (including Black Cherry Aphid, Black Peach Aphid, Green Peach Aphid, Rusty Plum Aphid), Catfacing Insects (Stink Bug type), Green Fruitworm, Peach Silver Mite, Peach Twig Borer	2/3	Or a maximum of 3 1/2 qts. Per acre. Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> <li>Do not feed cull fruits to animals nor allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
APRICOTS, NECTARINES, PEACHES (30) (California only)	Aphids (including Black Cherry Aphid, Black Peach Aphid, Green Peach Aphid, Rusty Plum Aphid), Catfacing Insects (Stink Bug type), Peach Silver Mite, Peach Twig Borer	2/3	Or a maximum of 3 1/2 qts. Per acre. Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> <li>Do not feed cull fruits to animals nor allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		

CROP	PEST	QTS./ACRE	COMMENTS
BARLEY, OATS, RYE, WHEAT (Except California)	Army Cutworm	2/3	For aerial application apply in 2 gals. of crop oil per acre. Apply when small larvae are readily found in the field.
	Cereal Leaf Beetle (Illinois, Indiana, Michigan, and Ohio only)	1/3 - 2/3	Apply when small larvae are readily found in the field. For aerial application, use a minimum of 1 to 2 gals. of water per acre.
	Aphid	2/3 - 1	Make application when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not apply after heads begin to form.</li> <li>Do not feed treated forage to livestock.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., 1 1/2 qts.) per acre per year.</li> </ul>			
BARLEY, OATS, RYE, WHEAT (California only)	Army Cutworm	2/3	Make application when insects appear or feeding is noticed.
	Aphid	2/3 - 1	
	<ul style="list-style-type: none"> <li>Do not apply after heads begin to form.</li> <li>Do not feed treated forage to livestock.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., 1 1/2 qts.) per acre per year.</li> </ul>		

CROP	PEST	QTS./ACRE	COMMENTS
<b>BEANS, SUCCULENT and DRY</b> (Except Lima Beans) (3) <b>SOUTHERN FIELD PEAS</b> (Succulent type, including Black-Eyed Peas, Crowder Peas and Southern Peas (3) (Except California)	Black Bean Aphid, Bean Leaf Skeletonizer, Cowpea Curculio, Cucumber Beetle, Flea Beetle, Green Stink Bug, Leafhopper, Mexican Bean Beetle	$\frac{2}{3}$ - 1 $\frac{1}{3}$	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 $\frac{1}{2}$ inch long.
	Aphid, Armyworm, Western Bean Cutworm, Whitefly	1 $\frac{1}{3}$	
	<ul style="list-style-type: none"> <li>Do not feed treated threshings or allow livestock to graze in treated fields.</li> <li>Do not use on Lima Beans that are to be removed from the field for processing.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
<b>BEANS, SUCCULENT and DRY</b> (Except Lima Beans) (3) <b>SOUTHERN FIELD PEAS</b> (Succulent type, including Black-Eyed Peas, Crowder Peas and Southern Peas) (3) (California only)	Black Bean Aphid, Bean Leaf Skeletonizer, Cucumber Beetle, Flea Beetle, Green Stink Bug, Leafhopper, Mexican Bean Beetle	$\frac{2}{3}$ - 1 $\frac{1}{3}$	Make applications when insects appear or feeding is noticed.
	Aphid, Western Bean Cutworm, Whitefly	1 $\frac{1}{3}$	
	<ul style="list-style-type: none"> <li>Do not feed treated threshings or allow livestock to graze in treated fields.</li> <li>Do not use on Lima Beans that are to be removed from the field for processing.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
<b>BLUEBERRIES</b> (Except California)	Blueberry Bud Mite	2 per 300 gals.	Apply immediately after harvest and repeat 6 to 8 weeks later.
	<ul style="list-style-type: none"> <li>Do not apply after buds are well formed.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
<b>BROCCOLI</b> (7), <b>BRUSSELS SPROUTS</b> (14), <b>CABBAGE</b> (7), <b>CAULIFLOWER</b> (14) (Except California)	Cabbage Aphid, Cabbage Looper, Cross-striped Cabbageworm, Diamondback Moth Larvae, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Leafhopper, Stink Bug	1 - 1 $\frac{1}{3}$	Make applications when insects appear or feeding is noticed.
	Armyworm, Cutworm, Whitefly	1 $\frac{1}{3}$	
	<ul style="list-style-type: none"> <li>Do not make more than 4 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
<b>BROCCOLI</b> (7), <b>BRUSSELS SPROUTS</b> (14), <b>CABBAGE</b> (7), <b>CAULIFLOWER</b> (14) (California only)	Cabbage Aphid, Cabbage Looper, Cross-striped Cabbageworm, Diamondback Moth Larvae, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Stink Bug	1 - 1 $\frac{1}{3}$	Make applications when insects appear or feeding is noticed.
	Armyworm, Cutworm, Whitefly	1 $\frac{1}{3}$	
	<ul style="list-style-type: none"> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 2 lbs. active ingredient (i.e., 2 <math>\frac{2}{3}</math> qts.) per acre per year.</li> </ul>		
<b>CARROTS</b> (7) (Except California)	Green Peach Aphid, Leafhopper	$\frac{2}{3}$ - 1 $\frac{1}{3}$	Make application when insects appear or feeding is noticed.
	Armyworm, Flea Beetle, Whitefly	1 $\frac{1}{3}$	
	<ul style="list-style-type: none"> <li>Do not use tops for food or feed.</li> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., 1 <math>\frac{1}{3}</math> qts) per acre per year.</li> </ul>		
<b>CARROTS</b> (7) (California only)	Green Peach Aphid	$\frac{2}{3}$ - 1 $\frac{1}{3}$	Make application when insects appear or feeding is noticed.
	Flea Beetle, Whitefly	1 $\frac{1}{3}$	
	<ul style="list-style-type: none"> <li>Do not use tops for food or feed.</li> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., 1 <math>\frac{1}{3}</math> qts) per acre per year.</li> </ul>		

CROP	PEST	QTS./ACRE	COMMENTS
CELERY (4) (Except California)	Green Peach Aphid, Cabbage Looper, Leafhopper	$\frac{2}{3}$ - $1\frac{1}{3}$	Make application when insects appear or feeding is noticed.
	Amyworm, Flea Beetle, Whitefly	$1\frac{1}{3}$	
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., <math>1\frac{1}{3}</math> qts.) per acre per year.</li> </ul>			
CELERY (4) (California only)	Green Peach Aphid, Cabbage Looper	$\frac{2}{3}$ - $1\frac{1}{3}$	Make application when insects appear or feeding is noticed.
	Flea Beetle, Whitefly	$1\frac{1}{3}$	
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., <math>1\frac{1}{3}</math> qts.) per acre per year.</li> </ul>			
CELERY (7)	Green Peach Aphid	$\frac{2}{3}$	Make applications when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., <math>1\frac{1}{3}</math> qts.) per acre per year.</li> </ul>			
CHERRIES (21) (Except California)	Peachtree Borer, Lesser Peachtree Borer	$2\frac{2}{3}$ - $3\frac{1}{3}$ or 1 qt. per 100 gals.	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.
	Black Cherry Aphid, Green Fruitworm, Plum Rust (Nursery) Mite	$2\frac{2}{3}$ - $3\frac{1}{3}$ or $\frac{2}{3}$ qt. per 100 gals.	Make applications when insects appear or feeding is noticed. Pacific Northwest Only: Eyespotted Bud Moth, Fruitree Leafroller: Use $\frac{2}{3}$ qt. per 100 gals or $2\frac{2}{3}$ - $3\frac{1}{3}$ qts. per acre. For bud moth control apply at "popcorn" stage. For leafroller control, apply during pre-pink stage of growth. Michigan Only: Mineola Moth: Use $1\frac{1}{3}$ qts. per 100 gals. Apply in the delayed dormant period.
<ul style="list-style-type: none"> <li>Do not feed cull fruits to animals or allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
CHERRIES (21) (California only)	Black Cherry Aphid, Plum Rust (Nursery) Mite	$2\frac{2}{3}$ - $3\frac{1}{3}$ or $\frac{2}{3}$ qt. per 100 gals.	Make applications when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not feed cull fruits to animals or allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
CHERRY, PEACH, PLUM (Nursery Stock Dip)	Peachtree Borer	$2\frac{2}{3}$ per 40 gals.	Mix thoroughly. Immerse trees so that the roots and crowns are covered well above the grafting bud scar. <b>NOTE:</b> Plant immediately or dry before returning stock to storage. Full personal protective equipment (PPE) requirements for applicators also apply to this dipping operation.
CITRUS (Non-bearing Trees and Nursery Stock)	Citrus Aphid	$3\frac{1}{3}$ or $\frac{2}{3}$ per 100 gals.	Make applications when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not apply to bearing trees or trees that will bear fruit within twelve months.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
COLLARDS (21) (Except California)	Aphid, Cabbage Looper, Diamondback Moth Larvae, Fall Armyworm, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Leafhopper	1 - $1\frac{1}{3}$	Make application when insects appear or feeding is noticed.
	Whitefly	$1\frac{1}{3}$	
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., <math>1\frac{1}{3}</math> qts.) per acre per year.</li> </ul>			
COLLARDS (21) (California only)	Aphid, Cabbage Looper, Diamondback Moth Larvae, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Whitefly	1	Make application when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of <math>\frac{3}{4}</math> lb. active ingredient (i.e., 1 qt.) per acre per year.</li> </ul>			
COTTON (Except California)	Aphid	$\frac{1}{2}$ - 1	Make applications when insects appear or feeding is noticed. For control of aphids, thorough coverage is important. <b>NOTE:</b> Applications may be made using ground or aerial application equipment. The higher rate should be used under heavy pest pressure.
	Boll Weevil	$\frac{2}{3}$ - 2	
	Bollworm, Cabbage Looper, Cotton Leafperforator, Cotton Leafworm, Fleahopper, Lygus Bug, Stink Bug, Tobacco Budworm	$1\frac{1}{3}$ - 2	
	Thrips	2	
<ul style="list-style-type: none"> <li>Do not apply after bolls open.</li> <li>Do not graze meat or dairy animals in treated fields.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			

CROP	PEST	QTS./ACRE	COMMENTS
COTTON (California only)	Aphid	1/2 - 1	Make applications when insects appear or feeding is noticed. For control of aphids, thorough coverage is important. <b>NOTE:</b> Applications may be made using ground or aerial application equipment. The higher rate should be used under heavy pest pressure.
	Bolt Weevil	2/3 - 2	
	Bollworm, Cabbage Looper, Cotton Leafperforator, Fleahopper, Lygus Bug, Stink Bug	1 1/3 - 2	
	Thrips	2	
	Whitefly	1 1/3	
<ul style="list-style-type: none"> <li>Do not apply after bolls open.</li> <li>Do not graze meat or dairy animals in treated fields.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
CUCUMBERS, MELONS, PUMPKINS, SUMMER and WINTER SQUASH, (2) (Except California)	Aphid, Cucumber Beetle, Melonworm, Pickleworm, Rindworm (on watermelons), Squash Beetle, Squash Bug, Squash Vine Borer, Striped Flea Beetle	2/3 - 1 1/3	Make applications when insects appear or feeding is noticed. For squash vine borer control, apply weekly to flower buds, stems and vines beginning when moths first appear.
	Cabbage Looper, Omnivorous Leafroller, Whitefly	1 1/3	
	<ul style="list-style-type: none"> <li>Do not make more than 6 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
CUCUMBERS, MELONS, PUMPKINS, SUMMER and WINTER SQUASH (2) (California only)	Aphid, Cucumber Beetle, Melonworm, Pickleworm, Rindworm (on watermelons), Squash Beetle, Squash Bug, Squash Vine Borer, Striped Flea Beetle	2/3 - 1 1/3	Make applications when insects appear or feeding is noticed. For squash vine borer control, apply weekly to flower buds, stems and vines beginning when moths first appear.
	Cabbage Looper, Omnivorous Leafroller, Whitefly	1 1/3	
	<ul style="list-style-type: none"> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
EGGPLANT (1) (Except California)	Blister Beetle, Colorado Potato Beetle, Flea Beetle, Green Peach Aphid, Green Stink Bug	2/3 - 1 1/3	Make applications when insects appear or feeding is noticed.
	Whitefly	1 1/3	
	<ul style="list-style-type: none"> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., 1 1/2 qts.) per acre per year.</li> </ul>		
EGGPLANT (1) (California only)	Blister Beetle, Colorado Potato Beetle, Flea Beetle, Green Peach Aphid, Green Stink Bug, Whitefly	1 1/3 pts.	Make application when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1/2 lb. active ingredient (i.e., 1 1/3 pts.) per acre per year.</li> </ul>			
GRAPES (7)	Grape Leafhopper, Grape Phylloxera (leaf form), Rose Chafer	1 1/3 - 2 or 2/3 qt. per 100 gals.	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> <li>Do not use on Concord varieties as severe plant injury is likely to occur.</li> <li>Ground application is preferred.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
KALE (21)	Cabbage Flea Beetle, Harlequin Bug, Imported Cabbageworm	1	Make application when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 3/4 lb. active ingredient (i.e., 1 qt.) per acre per year.</li> </ul>		
LETTUCE (14) (Except California)	Cabbage Looper, Diamondback Moth Larvae, Green Peach Aphid, Imported Cabbageworm, Leafhopper	1 - 1 1/3	Make applications when insects appear or feeding is noticed.
	Amyworm, Whitefly	1 1/3	
	<ul style="list-style-type: none"> <li><b>NOTE:</b> On Head Lettuce: For all uses, do not exceed 3 applications after thinning. Remove wrapper leaves at harvest. On Leaf Lettuce: For all uses, do not make more than 2 applications per year.</li> <li>Do not feed crop refuse to livestock.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		



CROP	PEST	QTS./ACRE	COMMENTS
LETTUCE (14) (California only)	Cabbage Looper, Diamondback Moth Larvae, Green Peach Aphid, Imported Cabbageworm	1 - 1 1/2	Make applications when insects appear or feeding is noticed.
	Whitefly	1 1/2	
<ul style="list-style-type: none"> <li>NOTE: On Head Lettuce: For all uses, do not exceed 3 applications after thinning. Remove wrapper leaves at harvest. On Leaf Lettuce: For all uses, do not make more than 2 applications per year.</li> <li>Do not feed crop refuse to livestock.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
MUSTARD GREENS (21) (Except California)	Aphid, Cabbage Looper, Diamondback Moth Larvae, Fall Armyworm, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Leafhopper	1 - 1 1/2	Make application when insects appear or feeding is noticed.
	Whitefly	1 1/2	
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., 1 1/2 qts.) per acre per year.</li> </ul>			
MUSTARD GREENS (21) (California only)	Aphid, Cabbage Looper, Diamondback Moth Larvae, Flea Beetle, Harlequin Bug, Imported Cabbageworm, Whitefly	1	Make application when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1/2 lb. active ingredient (i.e., 1 qt.) per acre per year.</li> </ul>			
PEARS (7) (Except California)	Green Fruitworm, Tarnished Plantbug	2 2/3 - 3 1/2 or 2/3 qt. per 100 gals.	Make applications at white bud or petal fall when insects appear or feeding is noticed.
	Pear Psylla	3 1/2	Apply in a minimum of 10 gals. of water for aerial application or in 300 gals. of water for dilute application. Apply when adults are first observed or nymphs are small and repeat to maintain control.
	Pear Rust Mite, Consperse Stink Bug (foliar treatment)	2 2/3 - 3 1/2 or 2/3 qt. per 100 gals.	Make applications when insects appear or feeding is noticed. Stink bugs must be wet by spray to obtain control.
	Consperse Stink Bug (soil treatment)	2/3 qt. per 100 gals.	Use 200 to 400 gals. per acre. Apply to orchard floor and around trees prior to bloom.
	Pear Leaf Blister Mite	1/3 - 2/3 qt. per 100 gals.	Apply to trees as a post-harvest or dormant treatment.
<ul style="list-style-type: none"> <li>Do not feed cull fruits to animals or allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> <li>Aerial application may not result in satisfactory control and should only be employed if impossible to apply by ground.</li> </ul>			
PEARS (7) (California only)	Pear Psylla	3 1/2	Apply in a minimum of 10 gals. of water for aerial application or in 300 gals. of water for dilute application. Apply when adults are first observed or nymphs are small and repeat to maintain control.
	Pear Rust Mite, Consperse Stink Bug (foliar treatment)	2 2/3 - 3 1/2 or 2/3 qt. per 100 gals.	Make applications when insects appear or feeding is noticed. Stink bugs must be wet by spray to obtain control.
	Consperse Stink Bug (soil treatment)	2/3 qt. per 100 gals.	Use 200 to 400 gals. per acre. Apply to orchard floor and around trees prior to bloom.
	Pear Leaf Blister Mite	1/3 - 2/3 qt. per 100 gals.	Apply to trees as a post-harvest or dormant treatment.
<ul style="list-style-type: none"> <li>Do not feed cull fruits to animals or allow livestock to graze in treated orchards.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> <li>Aerial application may not result in satisfactory control and should only be employed if impossible to apply by ground.</li> </ul>			
PECANS (Except California)	Black Pecan Aphid, Pecan Nut Casebearer, Spittlebug	1 qt. 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 are deposited. For spittlebug, apply when first leaves are half grown and repeat as required.
	Pecan Leaf Phylloxera	2/3 - 1 qt. per 100 gals.	Apply when nymphs appear and before they are enclosed in plant tissue. For high populations, use the higher rate.
<ul style="list-style-type: none"> <li>Do not apply after shuck split.</li> <li>Do not graze livestock on orchard crops or grasses in treated areas.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
PEPPERS (1)	Flea Beetle, Green Peach Aphid, Hornworm, Pepper Maggot	2/3	Make applications when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., 1 1/2 qts.) per acre per year.</li> </ul>			

CROP	PEST	QTS./ACRE	COMMENTS
PEPPERS (4) (Except California)	Amyworm, Flea Beetle, Green Peach Aphid, Hornworm, Leafhopper, Pepper Maggot	$\frac{2}{3}$ - $1\frac{1}{3}$	Make applications when insects appear or feeding is noticed.
	Whitefly	$1\frac{1}{3}$	
<ul style="list-style-type: none"> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 2 lbs. active ingredient (i.e., <math>2\frac{2}{3}</math> qts.) per acre per year.</li> </ul>			
PEPPERS (4) (California only)	Flea Beetle, Green Peach Aphid, Hornworm, Pepper Maggot	$\frac{2}{3}$ - $1\frac{1}{3}$	Make applications when insects appear or feeding is noticed.
	Whitefly	$1\frac{1}{3}$	
<ul style="list-style-type: none"> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 2 lbs. active ingredient (i.e., <math>2\frac{2}{3}</math> qts.) per acre per year.</li> </ul>			
PINEAPPLE (For Fresh Market Only) (7)	Pineapple Fruit Mite	2 - $2\frac{2}{3}$	Make applications when insects appear or feeding is noticed. Apply at intervals of 7 to 10 days if necessary, particularly during the 40 day period of blooming.
<ul style="list-style-type: none"> <li>Do not feed treated forage or pineapple by-products to livestock.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
PLUMS (7), PRUNES (7)	Fruitree Leafroller (Pacific Northwest Only)	$2\frac{2}{3}$ - $3\frac{1}{3}$ or $\frac{2}{3}$ qt. per 100 gals.	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	$2\frac{2}{3}$ - $3\frac{1}{3}$ or $\frac{2}{3}$ qt. per 100 gals.	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	$2\frac{2}{3}$ - $3\frac{1}{3}$ or $\frac{2}{3}$ qt. per 100 gals.	Make applications when insects appear or feeding is noticed.
	Lesser Peachtree Borer, Peachtree Borer	$2\frac{2}{3}$ - $3\frac{1}{3}$ or $\frac{2}{3}$ qt. per 100 gals.	West Coast: Use $\frac{2}{3}$ - 1 qt. per 100 gals. or $2\frac{2}{3}$ - $3\frac{1}{3}$ qts. per acre. 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.
<ul style="list-style-type: none"> <li>Do not allow livestock to graze on orchard crops or grasses in treated areas.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
POTATOES (1)	Aphid, Armyworm, Cabbage Looper, Colorado Potato Beetle, Green Stink Bug, Leafhopper, Plant Bug, Potato Flea Beetle, Potato Leafhopper, Potato Tuberworm, Threelined Potato Beetle	$\frac{2}{3}$ - $1\frac{1}{3}$	Make applications when insects appear or feeding is noticed. <b>POTATOES—CHEMIGATION:</b> For application by irrigation system, apply specified dosage of Gowan Endosulfan 3EC per acre. Follow all directions given under CHEMIGATION USE INSTRUCTIONS section of this label.
	European Corn Borer, Potato Psyllid	1 - $1\frac{1}{3}$	
	False Chinch Bug, Whitefly	$1\frac{1}{3}$	
	<ul style="list-style-type: none"> <li>Do not make more than 6 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
SPINACH (21) (Except California)	Amyworm, Crown Mite, Flea Beetle, Green Peach Aphid, Leafhopper	1 - $1\frac{1}{3}$	Make application when insects appear or feeding is noticed.
	Whitefly	$1\frac{1}{3}$	
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of 1 lb. active ingredient (i.e., <math>1\frac{1}{3}</math> qts.) per acre per year.</li> </ul>			
SPINACH (21) (California only)	Crown Mite, Flea Beetle, Green Peach Aphid, Whitefly	1	Make application when insects appear or feeding is noticed.
<ul style="list-style-type: none"> <li>Do not make more than one application per year.</li> <li>Do not exceed a maximum of <math>\frac{3}{4}</math> lb. active ingredient (i.e., 1 qt.) per acre per year.</li> </ul>			
STRAW-BERRIES (4)	Meadow Spittlebug, Strawberry Aphid, Tarnished Plant Bug, Whitefly	$1\frac{1}{3}$	Make applications when insects appear or feeding is noticed.
	<ul style="list-style-type: none"> <li>Do not reapply within 15 days or more than twice during a 35 day period when fruit is present.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>		
	Cyclamen Mite	$2\frac{2}{3}$ in 400 gals.	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.
<ul style="list-style-type: none"> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
STRAW-BERRIES (Northwest Use Only)	Garden Symphylan (aids in reducing damage)	$1\frac{1}{3}$ per 100 gals.	Mix thoroughly. Dip entire plant. When immersing bundles of plants, make certain any trapped air is forced out to assure thorough wetting of entire plant. <b>NOTE:</b> Drain and allow plants to dry before setting them out in the field. Full personal protective equipment (PPE) requirements for applicators also apply to this dipping operation.

CROP	PEST	QTS./ACRE	COMMENTS	
SWEET CORN (Fresh Vegetable Use Only) (1)	Corn Leaf Aphid, Whitefly	1 1/3	Make applications when insects appear or feeding is noticed.	
	Corn Earworm	2	Apply when silks first appear and continue until they begin to dry. Allow 5 days between applications.	
<ul style="list-style-type: none"> <li>Do not apply to sweet corn to be processed.</li> <li>Do not feed treated forage or ensilage to livestock or allow livestock to graze in treated fields.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>				
SWEET POTATOES (1) (Except California)	Sweet Potato Flea Beetle, Sweet Potato Weevil	2/3	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 up to 3 per year. For sweet potato weevil control in a clean up program, apply at a rate of 2 2/3 qts. per acre to the soil under the sweet potato nursery beds and to the area immediately surrounding the nursery beds.	
	<ul style="list-style-type: none"> <li>Do not place the seed tubers directly on the ground treated with endosulfan.</li> <li>Do not feed cull potatoes to livestock or allow livestock to graze in treated fields.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
	Whitefly	1 1/3	Make applications when insects appear or feeding is noticed.	
	Banded Cucumber Beetle Larvae (aids in control) (South Central States and Puerto Rico Only)	1 1/3 - 2 2/3	Broadcast 1/2 to 1 qt. per acre on a 16 inch band over the row (48 inch row spacing). Work into the soil to a depth of approximately 3 inches. Treatment should be made just prior to plant set.	
<ul style="list-style-type: none"> <li>Do not feed cull potatoes to livestock or allow livestock to graze in treated fields.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>				
SWEET POTATOES (1) (California only)	Sweet Potato Flea Beetle, Sweet Potato Weevil	2/3	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 up to 3 per year.	
	<ul style="list-style-type: none"> <li>Do not feed cull potatoes to livestock or allow livestock to graze in treated fields.</li> <li>Do not make more than 3 applications per year.</li> <li>Do not exceed a maximum of 1 1/2 lbs. active ingredient (i.e., 2 qts.) per acre per year.</li> </ul>			
TOBACCO (5) (Except California)	Aphids (including Green Peach Aphid, Tobacco Aphid), Budworm, Cabbage Looper, Flea Beetle, Hornworm	2/3 qt. per 100 gals.	<b>Seed Bed:</b> Make applications when insects appear or feeding is noticed. Apply about 6 gals. of finished spray per 100 square yards.	
	Green June Bug Larvae	2/3 pt. per 100 gals.	<b>Plant Bed:</b> Make applications when insects appear or feeding is noticed. Drench at a rate of 1 gal. per square yard.	
	Aphids (including Green Peach Aphid, Tobacco Aphid), Budworm, Cabbage Looper, Flea Beetle, Green June Bug Larvae, Hornworm	2/3 - 1 1/3	<b>Field:</b> Make applications when insects appear or feeding is noticed.	
	Stink Bug	2/3 qt. per 100 gals.	<b>Field:</b> Make applications when insect activity or feeding is noticed.	
	<ul style="list-style-type: none"> <li>Do not make more than 6 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>			
TOMATOES (Field and Greenhouse) (2) (Except California)	Aphid, Blister Beetle, Colorado Potato Beetle, Flea Beetle, Tomato Hornworm	2/3 - 1 1/3	Make applications when insects appear or feeding is noticed.	
	Cabbage Looper, Stink Bug	1 to 1 1/3		
	Tomato Fruitworm, Tomato Russet Mite, Whitefly, Yellowstriped Armyworm	1 1/3		
	Whitefly	2/3 qt. per 100 gals.	Use 100-200 gals. of spray per acre. Make applications when insects appear or feeding is noticed. Higher spray volumes may be necessary for thorough coverage when high whitefly populations exist.	
<ul style="list-style-type: none"> <li>Do not make more than 6 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>				

CROP	PEST	QTS./ACRE	COMMENTS
TOMATOES (Field and Greenhouse) (2) (California only)	Aphid, Blister Beetle, Colorado Potato Beetle, Flea Beetle, Tomato Hornworm, Webworm	2/3 - 1 1/3	Make applications when insects appear or feeding is noticed.
	Cabbage Looper, Stink Bug	1 - 1 1/3	
	Tomato Fruitworm, Tomato Russet Mite, Whitefly, Yellowstriped Armyworm	1 1/3	
	Whitefly	2/3 qt. per 100 gals.	Use 100-200 gals. of spray per acre. Make applications when insects appear or feeding is noticed. Higher spray volumes may be necessary for thorough coverage when high whitefly populations exist.
			<ul style="list-style-type: none"> <li>Do not make more than 6 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>
WALNUTS (Except California)	Walnut Aphid	2 - 2 2/3	Apply in a minimum of 100 gals. of water per acre. Make applications when insects appear or feeding is noticed.
			<ul style="list-style-type: none"> <li>Do not apply after husk split.</li> <li>Do not graze livestock on orchard crops or grasses in treated areas.</li> <li>Do not make more than 2 applications per year.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>

**ORNAMENTAL STATEMENT**

Before treating a large number of ornamental plants with Gowan Endosulfan 3EC alone or as a tank mixture with any other material, make a test application on a few plants and observe for 7 - 10 days prior to treating large areas to reduce the possibility of plant injury.  
**NOTE:** Food utensils such as teaspoons must not be used for food purposes after use in measuring pesticides.

**ORNAMENTAL TREES AND SHRUBS  
(Commercially grown outdoors only)**

CROP	PEST	QTS./100 GALS.	COMMENTS
LEATHERLEAF FERN (LEATHER HOLLY FERN) (Except California)	Leatherleaf Fern Borer	2/3	(1 1/3 teaspoons per gallon). 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.
			<ul style="list-style-type: none"> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>
ORNAMENTALS	Aphid, Cyclamen Mite, Rose Chafer, Whitefly	2/3	(1 1/3 teaspoons per gallon). Make applications when insects appear or feeding is noticed. On chrysanthemums, best results will be obtained if applied before plants flower.
			<ul style="list-style-type: none"> <li>Do not apply to "Bonnafon Deluxe", "Fred Shoemith", and "White Knight" chrysanthemums as injury may result.</li> <li>Do not use on Birch trees.</li> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>
DOGWOOD, LILAC (Except California)	Dogwood Borer, Lilac Borer	2/3 - 1 1/3	(1 1/3 - 2 2/3 teaspoons per gallon). Apply in early June and repeat in 10 to 14 days. Drench all bark areas down to the ground level.
			<ul style="list-style-type: none"> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>
DOUGLAS FIR (Grown for Ornamentals, Nursery Stock or Christmas Trees) (Pacific Northwest Only)	Aphid, Cooley Spruce Gall, Adelgid, Douglas Fir Needle Midge	2/3	(1 1/3 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.
			<ul style="list-style-type: none"> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>
PINES (Austrian, Jack, Red, Scotch, White) (Except California)	Zimmerman Pine Moth	1	(2 teaspoons per gallon). Apply in mid-April and again, if necessary, in late fall. Thoroughly wet bark and main stem, especially where branches join main stem.
			<ul style="list-style-type: none"> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>
SHADE TREES (Except Birch), SHRUBS	Aphid	2/3	(1 1/3 teaspoons per gallon). Make applications when insects appear or feeding is noticed.
			<ul style="list-style-type: none"> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>
SPRUCE (New England Area Only)	Spruce Gall Aphid	2/3	(1 1/3 teaspoons per gallon). Apply in late April or early May when aphids are present but before galls are formed.
			<ul style="list-style-type: none"> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>
TAXUS	Taxus Bud Mite	2/3	(1 1/3 teaspoons per gallon). Make 3 to 5 applications beginning in mid-May. Thoroughly spray foliage, twigs, and bark.
	Black Vine Weevil	1 1/3	(2 2/3 teaspoons per gallon). Spray thoroughly and drench soil under the plants. Apply when the weevils first appear and repeat in 14 days.
			<ul style="list-style-type: none"> <li>Do not exceed a maximum of 3 lbs. active ingredient (i.e., 4 qts.) per acre per year.</li> </ul>

**CHEMIGATION STATEMENT  
CHEMIGATION USE INSTRUCTIONS – POTATOES ONLY**

Do not apply this product through any type of irrigation system to other crops. Do not apply this product to potatoes through any type of irrigation system unless the Chemigation Application Instructions are followed.

**APPLICATION THROUGH IRRIGATION SYSTEMS - CHEMIGATION**

Apply this product only through sprinkler, including center pivot, lateral move, end tow side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide 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.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

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.

Mix in clean supply tank the recommended amount of this product for acreage to be covered, and needed quantity of water.

This product should not be tank-mixed with other pesticides, surfactants or fertilizers unless prior use has shown the combination noninjurious under your conditions of use. Follow precautionary statements and directions for all tank-mix products.

On all crops, use sufficient gallonage of water to obtain thorough and uniform coverage, but not cause runoff or excessive leaching. This will vary depending on equipment, pest problem and stage of crop growth. Application of more or less than optimal quantity of water may result in decreased chemical performance, crop injury or illegal pesticide residues.

Meter this product into the irrigation water uniformly during the period of operation. Do not overlap application. Follow recommended label rates, application timing, and other directions and precautions for crop being treated. Continuous mild agitation of pesticide mixture may be needed to assure a uniform application, particularly if the supply tank requires a number of hours to empty.

Do not apply when wind speed favors drift beyond the area intended for treatment.

**CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS**

*Note: Gowan Company does not encourage connecting chemigation systems to public water supplies. The following information is provided for users who have diligently considered all other application and water supply options before electing to make such a connection.*

Public water systems means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Chemigation systems connected to public water systems must contain a functional reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from a point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of a least twice the inside diameter of the fill pipe.

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 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 shutdown.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, 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 material that are compatible with pesticides and capable of being fitted with a system interlock.

**SPRINKLER CHEMIGATION (FOLIAR SPRAY USES)**

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 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 system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

**CALIFORNIA SUPPLEMENTAL LABEL  
Procedures for reducing risk of contamination of  
Aquatic ecosystems**

**FOR CROP USES LISTED ON THE PRODUCT LABEL**

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

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

**DIRECTIONS FOR USE IN CALIFORNIA  
(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 ½ lbs. a.i. per acre per application or more than 3 lbs. a.i. per acre per season. (Orchard crops and strawberries exempted on rate per acre per 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 application a positive shutoff system shall be in place to control flow of liquid to spray nozzles as follows: Each individual nozzle shall be equipped with a check valve and the flow controlled by a suckback device or a boom pressure release device; or each nozzle shall be equipped with a positive action valve.
5. For aerial applications, the spray boom must be mounted on the aircraft so as to minimize drift caused by wing tip or rotor vortices. The working boom length must not exceed 75% of wing span or rotor diameter.
6. Aircraft boom pressure shall not exceed 40 pounds per square inch.
7. Aircraft nozzles shall be equipped with orifices directed backward parallel to the horizontal axis of the aircraft in flight.
8. Aircraft nozzles shall not be equipped with any device or mechanism which would cause a sheet, cone, fan, or similar type dispersion of the discharged material except as otherwise provided.
9. Fixed wing aircraft and helicopters operating in excess of 60 mph shall be equipped with jet nozzles having an orifice not less than 1/16 inch in diameter (D-4 or larger).
10. Helicopters operating at 60 mph or less shall be equipped with nozzles having an orifice not less than 1/16 inch in diameter. A number 46 or equivalent whirlplate may be used.
11. For ground applications, equipment other than handguns shall be equipped with nozzles having an orifice not less than 1/16 inch in diameter or larger. Boom nozzles shall be operated at a boom pressure not to exceed 30 pounds per square inch.

**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.

All applicable directions, restrictions and precautions on the EPA registered label are to be followed.

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

**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 lid and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

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

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

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

**CONTAINER DISPOSAL:** 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.

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

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**FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK, OR FIRE), CALL CHEMTREC® (800) 424-9300.**  
**For other product information, contact Gowan Company or see Material Safety Data Sheet.**

**NOTICE ON CONDITIONS OF SALE**

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility including injury or damage, resulting from its misuse as such, or in combination with other materials.

EPA Text: Endosulfan 3EC (12-6-99)