



60063-4

10/30/2007

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# SIPCAM AGRO USA, INC.

## ECHO<sup>®</sup> Zn

<b>Active Ingredient:</b> Chlorothalonil (tetrachloroisophthalonitrile) .....	38.5%
<b>Other Ingredients:</b> .....	61.5%
<b>Total:</b> .....	100.0%

Contains 4.17 Pounds Chlorothalonil Per Gallon (500 grams per liter)

### Keep Out of Reach of Children

### WARNING – AVISO

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

<b>FIRST AID</b>	
<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 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 affected person sip a glass of water if able to swallow.</li> <li>➤ Do not induce vomiting unless told by a poison control center or doctor.</li> <li>➤ Do not give anything by mouth to an unconscious person.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
Emergency phone numbers	(800) 858-7378 NPIC (human and animal health) (800) 424-9300 CHEMTREC (transportation and spills)
<b>NOTES TO PHYSICIAN:</b> Probable mucosal damage may contraindicate the use of gastric lavage. Persons having a temporary allergic reaction respond to treatment with antihistamines or steroid creams and/or systemic steroids.	

EPA Reg. No. 60063-4

EPA Est. No. \_\_\_\_\_

Net Contents: \_\_\_\_\_ gallons

Manufactured for  
 Sipcam Agro USA, Inc.  
 300 Colonial Center Parkway, Suite 230  
 Roswell, Georgia 30076

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[label date code]

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

### WARNING - AVISO

May be fatal if inhaled. Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Do not breathe spray mist. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

#### Personal Protective Equipment (PPE):

Mixers, loaders, applicators and all other handlers must wear:

- Long-sleeved shirt and long pants;
- Shoes plus socks;
- Protective eye wear;
- Chemical resistant gloves made of waterproof material (some of the materials that are chemical-resistant to this product are barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyethylene, polyvinyl chloride, or viton; If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart);
- A NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N, R, P, or HE prefilter.

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

#### Engineering Controls:

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 contaminated clothing and wash clothing before reuse.

#### ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates and wildlife. DO NOT apply directly to water or to areas where surface water is present or to intertidal areas below the mean high-water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. DO NOT contaminate water when disposing of equipment washwater or rinsate.

Chlorothalonil can contaminate surface water through spray drift. DO NOT apply when weather conditions favor drift from treated areas. Under some conditions, it may also have a high potential for runoff into surface water for several days to weeks after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlying extremely shallow ground water, areas with in-field canals or ditches that drain to surface

water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlying tile drainage systems that drain to surface water.

Chlorothalonil degradates are known to leach through soil into ground water under certain conditions as a result of label use. Use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

## DIRECTIONS FOR USE

### General Precautions and Restrictions

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, or pets, either directly or through drift. Only protected handlers may be in the area during applications. 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 12 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, chemical resistant gloves made of waterproof material, shoes plus socks, and protective eyewear.

**Special Eye Irritation Provisions:** This product is a severe eye irritant. Although the restricted-entry interval expires after 12 hours, for the next 6½ days entry is permitted only when the following safety measures are provided:

At least one container designed specifically for flushing eyes must be available in operating condition at the WPS-required decontamination site intended for workers entering the treated area.

Workers must be informed, in a manner they can understand:

- that residues in the treated area may be highly irritating to their eyes;
- that they should take precautions, such as refraining from rubbing their eyes, to keep the residues out of their eyes;
- that if they do get residues in their eyes, they should immediately flush their eyes using the eyeflush container that is located at the decontamination site or using other readily available clean water; and
- how to operate the eyeflush container.

This product must not be applied within 150 feet (for aerial and air-blast applications), or 25 feet (for ground applications) from marine/estuarine water bodies unless there is an untreated buffer area of that width between the area to be treated and the water body.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift

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management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

### **Aerial Drift Advisory Information**

#### **INFORMATION ON DROPLET SIZE**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly, or under unfavorable conditions (see Wind, Temperature).

#### **CONTROLLING DROPLET SIZE**

- Volume- Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure- Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles- Use the minimum number of nozzles that provide uniform coverage.
- Nozzle orientation- Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle type- Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift potential.

#### **BOOM LENGTH**

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

#### **APPLICATION HEIGHT**

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### **SWATH ADJUSTMENT**

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, small drops, etc.).

#### **WIND**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

#### **TEMPERATURE AND HUMIDITY**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

#### **TEMPERATURE INVERSIONS**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### **Integrated Pest Management**

ECHO is an excellent disease control agent when used according to label directions for control of a broad spectrum of plant diseases. ECHO is recommended for use in programs that are compatible with the principles of Integrated Pest Management (IPM), including the use of disease resistant crop varieties, cultural practices, pest scouting and disease forecasting systems which reduce unnecessary applications of pesticides.

### **Fungicide Resistance Management**

ECHO is effective for strategic use in programs that attempt to minimize disease resistance to fungicides. Some other fungicides which are at risk from disease resistance exhibit a single-site mode of fungicidal action. ECHO, with a multi-site mode of action, may be used to delay or prevent the development of resistance to single-site fungicides. Consult with your federal or state Cooperative Extension Service representatives for guidance on the proper use of ECHO in programs which seek to minimize the occurrence of disease resistance to other fungicides.

### **Mixing, Loading and Applying**

ECHO is intended to be diluted into water, then applied to crops by typical agricultural spraying techniques. **Always apply ECHO in sufficient water to obtain thorough, uniform coverage of foliage and crop surfaces intended to be protected from disease.** Spray volume to be used will vary with crop and amount of plant growth. Spray volume should normally range from 20 to 150 gallons per acre (200 to 1400 liters per hectare) for dilute sprays and 5 to 10 gallons per acre (50 to 100 liters per hectare) for concentrate ground sprays and aircraft applications. Both ground and aircraft methods of application are recommended unless specific directions are given for a crop.

Slowly invert container several times to assure uniform mixture. Measure the required amount of ECHO and pour into the spray tank during filling. Keep agitator running when filling spray tank and during spray operations.

Do not use on greenhouse-grown crops except as directed in the Ornamental Plants section of this label.

### **Tank Mixing**

When tank mixing this product with other pesticides observe the more restrictive label limitations and precautions. No label dosage rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing.

Do not combine ECHO in sprayer tank with pesticides, surfactants or fertilizers, unless your prior use has shown the combination physically compatible, effective and noninjurious under your conditions of use.

Do not combine ECHO with Dipel 4L, Foil, Triton AG-98, Triton B-1956 or Latron B-1956, as phytotoxicity may result from the combination when applied to the crops on this label. DO NOT tank mix Echo with oil, or with any adjuvants which contain oil as their principal ingredient. Do not use with Copper-Count N in concentrated spray suspensions.

Dipel is a registered trademark of Abbott Laboratories;  
Foil is a registered trademark of Ecogen, Inc.;  
Latron and B-1956 are trademarks of Rohm and Haas Company;  
Copper-Count is a registered trademark of Mineral Research and Development Corporation.

### **Applications Through Sprinkler Irrigation Systems (Chemigation)**

Application through sprinkler irrigation systems is recommended only for those specific crops for which the notation "chemigation OK" is listed on this label.

Apply this product only through center pivot, motorized lateral move, traveling gun, solid set and portable (wheel move, side roll, end tow, or hand move) irrigation system(s). 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 non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

DO NOT apply this product through irrigation systems connected to a public water system. 'Public water system' 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 per year.

Controls for both irrigation water and pesticide injection systems must be functionally interlocked, so as to automatically terminate pesticide injection when the irrigation water pump motor stops. A person knowledgeable of the irrigation system and responsible for its operation shall be present so as to discontinue pesticide injection and make necessary adjustments, should the need arise.

The irrigation water pipeline must be fitted with a functional, automatic, quick-closing check valve to prevent the flow of treated irrigation water back toward the water source. The pipeline must also be fitted with a vacuum relief valve and low pressure drain, located between the irrigation water pump and the check valve, to prevent back-siphoning of treated irrigation water into the water source.

Always inject ECHO into irrigation water after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides into the intake line on the suction side of the pump.

Pesticide injection equipment must be fitted with a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump. Interlock this valve to the power system, so as to prevent fluid from being withdrawn from the chemical supply tank when the irrigation system is either automatically or manually turned off.

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 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.

Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur. DO NOT apply when wind speed favors drift beyond the area intended for treatment.

ECHO may be used through two basic types of sprinkler irrigation systems as outlined in Sections A and B below. Determine which type of system is in place, then refer to the appropriate directions provided for each type.

#### **A. Center Pivot, Motorized Lateral Move and Traveling Gun Irrigation Equipment**

For injection of pesticides, these continuously moving systems must use a metering pump, such as a positive displacement injection pump of either diaphragm or piston type, constructed of materials that are compatible with pesticides, fitted with a system interlock, and capable of injection at pressures approximately 2 to 3 times those encountered within the irrigation water line. Venturi applicator units cannot be used on these systems.

Fill chemical supply tank of injection equipment with water. Operate system for one complete revolution or run across the field, measuring time required, amount of water injected, and acreage covered. Thoroughly mix recommended amount of ECHO for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run. Mixture in the chemical supply tank must be continuously agitated during the injection run. Shut off injection equipment after one revolution or run, but continue to operate irrigation system until ECHO has been cleared from last sprinkler head.

#### **B. Solid Set and Portable (Wheel Move, Side Roll, End Tow, or Hand Move) Irrigation Equipment**

With stationary systems, an effectively designed in-line venturi applicator unit is preferred which is constructed of materials that are compatible with pesticides; however, a positive-displacement pump can also be used.

Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of ECHO for acreage to be covered with water so that the total mixture of ECHO plus water in the injection tank is equal to the quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. No agitation should be required. ECHO can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until ECHO has been cleared from last sprinkler head.

#### **Application Rates**

Dosage rates on this label indicate pints of ECHO Zn per acre, unless otherwise stated. Under conditions favoring disease development, the high rate specified and shortest application interval should be used.

For each listed crop, the maximum total amount of chlorothalonil active ingredient (lbs a.i./A) which may be applied per acre of that crop (or crop group) during each growing season is given in bold print within a box beneath the crop name. For each crop use situation listed below, the listed maximum individual and seasonal application rates must not be exceeded and the listed minimum retreatment intervals must not be decreased.

## FIELD AND ROW CROPS

CROP	PHI (DAYS)	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Asparagus <b>9.0 lbs a.i./A</b>	190 (120 in California)	Rust, Purple spot, Cercospora leaf blight	3 to 5 ¾ pints	Begin applications after harvest of spears, when conditions favor disease development on ferns, generally when leaf wetness occurs. Repeat applications at 2 to 4 week intervals until ferns are no longer productive. Use the high rate and shortest interval when conditions favor disease.
Bean (Snap) <b>9.0 lbs a.i./A</b>	7	Rust	2 to 4 ¼ pints	Begin applications during early bloom stage or when disease first threatens and repeat at 7 day intervals or as necessary to maintain control.
		Botrytis blight (gray mold)	4 ¼ pints	
Beans (Dry) <b>6.0 lbs a.i./A</b> <b>Chemigation OK</b>	14	Rust, Anthracnose, Downy mildew, Cercospora leaf spot (blackeye only), Ascochyta blight	2 to 3 pints	Begin applications during early bloom stage and repeat at 7 to 10 day intervals. For use only on beans to be harvested dry with pods removed.
Cabbage, Chinese Cabbage (tight-headed varieties only), Cauliflower, Broccoli, Chinese Broccoli, Brussels Sprouts <b>12.0 lbs a.i./A</b>	7	Alternaria leaf spot, Downy mildew	2 ¼ pints	Begin applications after transplants are set in field, or shortly after emergence of field-seeded crop, or when conditions favor disease development. Repeat at 7 to 10 day intervals or as necessary to maintain control.
		Ring spot	2 ¾ pints	
Carrot <b>15.0 lbs a.i./A</b> <b>Chemigation OK</b>	0	Cercospora (Early) blight, Alternaria (Late) blight	2 ¼ to 2 ¾ pints	Start applications when disease threatens and repeat at 7 to 10 day intervals or as necessary to maintain control.



Celery <b>18.0 lbs a.i./A</b> Chemigation OK	7	Cercospora (Early) blight, Septoria (Late) blight, Basal stalk rot <i>(Rhizoctonia solani)</i>	Start applications shortly after crop emergence or when transplants are set in the field. For the indicated rates, re-apply at:	
			1½ to 2-1/8 pints	3 to 5 day intervals
			3 to 4¼ pints	7 day intervals
Corn (sweet), Corn grown for seed <b>9.0 lbs a.i./A</b>	14	Helminthosporium leaf blights, Rust	1-1/8 to 2¾ pints	Begin applications when conditions favor disease development and repeat at 7 day intervals. Do not allow livestock to graze in treated fields. Do not ensile treated corn or use as livestock forage. Do not apply to sweet corn to be processed.
Cranberry <b>15.0 lbs a.i./A</b> Chemigation OK; solid set systems only	50	Upright dieback, Fruit rots, Lophodermium leaf & twig blight	6 to 10 pints	Apply at shoot emergence to early bloom and repeat at 10 to 14 day intervals. Under severe disease conditions use the high rate on a 10 day schedule. DO NOT apply to bogs when flooded or allow release of irrigation water from bogs for at least 3 days following application.
Cucurbits: Cucumber, Cantaloupe, Muskmelon, Honeydew melon, Watermelon, Squash, Pumpkin <b>15.75 lbs a.i./A</b> Chemigation OK	0	Anthracnose, Downy mildew, Target spot	2¼ to 2¾ pints	Begin applications when plants are in first true leaf stage or when conditions are favorable for disease development. Repeat applications at 7 day intervals. Under severe disease conditions, shorten spray interval. <b>Note:</b> Spraying mature watermelons may result in sunburn of the upper surface of the fruit. DO NOT apply ECHO to watermelons when any of the following conditions are present: 1. Intense heat and sunlight; 2. Drought conditions; 3. Poor vine canopy; 4. Other crop and environmental conditions which may be conducive to increased natural sunburn. DO NOT combine ECHO with anything except water for application to watermelons unless your prior use has shown the combination to be non-injurious to watermelons under your conditions of use.
		Cercospora leaf spot, Gummy stem blight (black rot), Alternaria leaf blight, Scab, Powdery mildew (Sphaerotheca only)	2¾ to 4¼ pints	

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Grasses Grown for Seed <b>4.5 lbs a.i./A</b>	14	Stem rust, Leaf rust, Stripe rust, Septoria leaf spot, Glume blotch, Bipolaris and Drechslera leaf spots	1½ to 2 pints	Begin applications during stem elongation when conditions favor disease development. Re-apply at flag (top) leaf emergence and repeat applications at 14 day intervals. DO NOT allow livestock to graze in treated areas. Do not feed straw, seed or seed screenings to livestock.			
		Selenophoma eyespot	1½ to 3 pints				
Mint <b>3.0 lbs a.i./A</b>	80	Rust, Septoria leaf spot	2 pints	Begin applications when emerging plants are 4 to 8 inches high. Repeat applications at 7 to 10 day intervals or as necessary to maintain control. Based on available residue data, use of this product on mint is restricted to Indiana, Michigan and Wisconsin.			
Mushroom beds	5  Do not apply after first break (harvest)	Verticillium brown spot and dry bubble	Rate per 1,000 sq. ft. of bed surface  4 to 8 fl. oz.	Apply as a drench to the mushroom bed surface in at least 12.5 gallons of water per 1,000 sq. ft. of bed surface. Make two applications. Apply the high rate in the first application and the low rate in the second application. The first application should be made within two days after top-dressing the spawn-colonized mushroom compost with a casing layer. The second application should be made at pinning. Make no more than two applications per cropping cycle. Do not apply more than 0.4 lbs active ingredient chlorothalonil per 1,000 sq. ft. per cropping cycle.			
Onion (dry bulb), Garlic <b>15.0 lbs a.i./A</b>	7	Botrytis leaf blight or blast, Purple blotch	1½ to 3 pints	ECHO is recommended for use with disease monitoring systems which adjust fungicide rates and frequency of application according to disease hazard. Apply as follows:			
					Low Disease Hazard & Prior to Infection	Low Disease Hazard & Some Disease Present	High Disease Hazard
				Rate per Acre:	1 ½ pints	2 pints	3 pints
	Frequency:	10 days	7 to 10 days	7 days			
		Neck rot	2 to 3 pints	For suppression of neck rot (Botrytis spp.) during storage, make a minimum of three weekly applications prior to lifting.			

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Onion (green bunching), Leek, Shallot, Onion grown for seed <b>6.7 lbs a.i./A</b>	14 (green onion, leek, shallot)	Botrytis leaf blight or blast, Purple blotch, Downy mildew (suppression)	2 to 4¼ pints	Begin applications prior to favorable infection periods, and repeat at 7 to 10 day intervals for as long as conditions favor disease. Use the high rate and a 7 day schedule of applications when heavy dew or rain persist. If additional disease control is needed before harvest, use another registered fungicide.
Parsnip <b>6.0 lbs a.i./A</b>	10	Alternaria leaf spot, Downy mildew, Anthracnose, Botrytis blight (gray mold), Bottom rot (Rhizoctonia)	2 to 3 pints	Make the first application at the first sign of disease or when conditions are favorable for infection. Continue applications on a 7 to 10 day schedule.
Peanut <b>9.0 lbs a.i./A</b> <b>Chemigation OK</b>	14	Early leafspot (Cercospora) Late leafspot (Cercosporidium), Rust, Web blotch	1½ to 2-1/8 pints 2-1/8 pints	Apply in sufficient water for coverage when leaf wetness first occurs or 30 to 40 days after planting; repeat at 14 day intervals. Do not allow livestock to graze in treated areas. Do not feed hay or threshings from treated fields to livestock.
Potato <b>11.25 lbs a.i./A</b> <b>Chemigation OK</b>	7	Late blight, Early blight, Botrytis vine rot, Black dot	1 pint -- Then -- 1½ to 2-1/8 pints	Begin applications at the low rate when vines are first exposed and leaf wetness occurs. Repeat applications at 7 to 10 day intervals. Begin applying the higher label rates at 5 to 10 day intervals when any one of the following events occur: <ul style="list-style-type: none"> <li>▪ Vines close within the rows;</li> <li>▪ Late blight forecasting measures 18 disease severity values (DSV);</li> <li>▪ The crop reaches 300 P-days</li> </ul> <p>Increase water spray volume as canopy density increases. Use the highest rate and shortest interval when plants are rapidly growing and disease conditions are severe.</p>

<p>Soybean</p> <p><b>4.5 lbs a.i./A</b></p> <p>Chemigation OK</p>	<p>42</p>	<p>Anthracnose, Diaporthe pod &amp; stem blight, Frogeye leaf spot (<i>Cercospora sojina</i>), Purple seed stain, Cercospora leaf blight (<i>Cercospora kikuchii</i>), Septoria brown spot, Rust (<i>Phakopsora pachyrhizi</i>)</p>	<p>See tables below for rates and timing of applications. Use the three application program in areas having a history of moderate to severe disease intensity. Do not feed soybean hay or threshings from treated fields to livestock.</p>			
				<p>Determinate southern varieties</p>	<p>Indeterminate northern varieties</p>	
		<p>2 to 3½ pints</p>	<p>2-Application Program</p>	<p>Early pod set (R3) Seed formation (R5)</p>	<p>Pods 1 – 1½ inches Then 14 days later</p>	
		<p>1½ to 2¾ pints</p>	<p>3-Application Program</p>	<p>Early flowering (R1) Early pod set (R3) Seed formation (R5)</p>	<p>One week after first flowering, then at 14 day intervals</p>	
		<p>Stem canker (<i>Diaporthe phaseolorum</i> var. <i>caulivora</i>)</p>	<p>1½ pints</p>	<p>Apply in 10 to 20 gallons of water per acre, as a band treatment directing spray to provide coverage of entire plant. Make the application at time of emergence of the second trifoliolate leaves (V2). If conditions favor stem canker disease make a second and third application at 14 day intervals.</p>		
<p>Tomato</p> <p><b>15.1 lbs a.i./A</b></p> <p>Chemigation OK; solid set or portable wheel move systems only</p>	<p>0</p>	<p>FOLIAGE (apply every 7-10 days): Early blight, Late blight, Gray leaf spot, Gray leaf mold, Septoria leaf spot, Target spot</p>	<p>2 to 3 pints</p>	<p>Begin applications when dew or rain occur and disease threatens. Use the highest rate and shortest interval specified when disease conditions are severe.</p>		
		<p>FRUIT (apply every 7-14 days beginning at fruit set): Anthracnose, Alternaria fruit rot (black mold), Botrytis gray mold, Late blight fruit rot, Rhizoctonia fruit rot</p>	<p>3 to 4 pints</p>	<p>ECHO may be combined in the spray tank with EPA-registered pesticide products that claim copper as the active ingredient and are labeled for control of bacterial diseases of tomatoes. Check the copper manufacturer's label for specific instructions, precautions and limitations prior to mixing with ECHO.</p>		

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## TREE AND ORCHARD CROPS

Apply this product in sufficient water and with proper calibration to obtain uniform coverage of tree canopy. Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy. If application with ground equipment is not feasible, this product may be applied with aircraft using at least 20 gallons of spray per acre. When concentrate sprays are used or when treating non-bearing or immature trees, use the lower rate of this product listed for the crop being treated.

DO NOT allow livestock to graze in treated areas.

DO NOT apply Echo within one week before or after application of oil or an oil-based pesticide.

Crop	PHI (days)	Diseases	RATE PER Acre	Spray Volume (gallons/acre)	Application Directions
Blueberry <b>9.0 lbs a.i./A</b>	42	Mummy Berry, Anthracnose	4¼ to 5¾ pints	20 (concentrate) to 100 (full dilute)	Begin applications at budbreak (green tip). Repeat applications until early bloom at 10 day intervals. DO NOT apply after early bloom, otherwise phytotoxicity may occur to the developing fruit.
Filberts (Hazlenuts) <b>9.0 lbs a.i./A</b>	120	Eastern filbert blight	5¾ pints	20 (concentrate) to 400 (full dilute)	Begin applications at leaf bud break and repeat at 2 to 4 week intervals. Based on available residue data, use of this product on filberts is restricted to Oregon.
Mango <b>24.0 lbs a.i./A</b>	21	Anthracnose	3 to 5 pints	100 (full dilute)	Begin applications at early bloom and repeat at 7 to 14 day intervals until early fruit development. Use the high rate and apply weekly when conditions favor disease.
Papaya <b>6.75 lbs a.i./A</b>	14	Alternaria fruit spot, Anthracnose, Stem end rot	3 to 4 pints	20 (concentrate) to 150 (full dilute)	Apply with ground equipment only. Begin treatment when conditions favor development of disease and continue treatments at 14 day intervals until weather conditions no longer favor disease development.
Passion Fruit (Hawaii only) <b>7.5 lbs a.i./A</b>	7	Alternaria fruit and leaf spot (brown spot)	3 pints	20 (concentrate) to 100 (full dilute)	Apply with ground equipment in sufficient water to obtain adequate coverage of fruit and leaves. Begin applications before fruit spots appear (April to July) and re-apply at 14 day intervals until weather conditions no longer favor disease development.

<p>Pistachio</p> <p><b>22.5 lbs a.i./A</b></p>	<p>14</p>	<p>Shoot &amp; panicle blight, Blossom &amp; shoot blight, Late blight, Leaf blight</p>	<p>8 ½ pints</p>	<p>50 (concentrate) to 200 (full dilute)</p>	<p>Apply when trees begin to blossom, then re-apply at full bloom for optimal protection against shoot and panicle blights. If conditions are favorable for late blight or leaf spot infections, repeat applications at 4 week intervals. Use the high rate when abnormally wet or cloudy weather conditions prevail. NOTE: Use of this product in the manner described may result in specking or reddening of the fruit hull (epicarp). This effect appears to be superficial, and has not resulted in any change in nut quality.</p>
<p>Stone Fruits: Peach, Nectarine, Apricot, Cherry, Plum, Prune</p> <p><b>15.5 lbs a.i./A</b></p>	<p>Do not apply after shuck split</p>	<p>Leaf curl</p>	<p>4½ to 6 pints</p>	<p>20 (concentrate) to 300 (full dilute)</p>	<p>For best control apply at leaf fall in late autumn, using sufficient water and proper sprayer calibration to obtain uniform coverage. When conditions favor high disease levels use the high rate and apply once or twice more in mid to late winter before budswell. If the leaf fall application is not practical, application of ECHO for control of leaf curl may be made at any time prior to budswell the following spring.</p> <p>Make one application at budbreak or popcorn (pink, red or early white bud). If weather conditions favor disease, make a second application 10 days later (full bloom to petal fall). Apply at shuck split to prevent infections on young fruit. If additional disease control is needed after shuck split and before harvest, use another registered fungicide.</p> <p>For control of cherry leaf spot after harvest, make one application to foliage within 7 days after fruit is removed. In orchards with a history of high leaf spot incidence, make a second application 10-14 days later.</p>

14 8 20

<p>Conifers</p> <p><b>16.5 lbs a.i./A</b></p>	<p>N/A</p>	<p>Swiss needlecast</p>	<p>4 to 8 pints</p>	<p>5 to 10 (concentrate ground or aircraft) to 100 (dilute)</p>	<p>Single application technique: In Christmas tree plantations or forest stands make one application in the spring when new shoot growth is 1/2 to 2 inches in length.</p>	
		<p>Scleroderris canker (pines), Swiss needlecast</p>	<p>2 to 4 pints</p>		<p>Make the first application in spring when new shoot growth is 1/2 to 2 inches in length. Make additional applications at 3 to 4 week intervals until conditions no longer favor disease development. For use in nursery beds, apply the highest rate specified on a 3 week schedule.</p>	
		<p>Sirococcus tip blight</p>	<p>3 to 5 pints</p>			
		<p>Rhizosphaera needlecast (spruces), Scirrhia brown spot (pines)</p>	<p>8 pints</p>			
		<p>Cyclaneusma and Lophodermium needlecasts (pines)</p>	<p>4 to 8 pints</p>			<p>Apply in early spring prior to budbreak. Repeat applications at approximately 6 to 8 week intervals, until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended, then resumed upon next occurrence of needle wetness.</p>
		<p>Rhabdocline needlecast (Douglas-fir)</p>	<p>2 to 4 pints</p>			<p>Apply at budbreak and repeat at 3 to 4 week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular budbreak occurs, apply weekly until all trees have broken bud, then every 3 to 4 weeks as specified above. In nursery beds, use the high rate on a 3 week schedule.</p>
		<p>Botrytis seedling blight, Phoma twig blight</p>	<p>4 pints</p>			<p>Begin applications in nursery beds when seedlings are 4 inches tall and when cool, moist conditions favor disease development. Make additional applications at 7 to 14 day intervals as long as disease favorable conditions persist.</p>
		<p>Autoecious needle rust (Weir's cushion rust) (spruces)</p>	<p>8 pints</p>			<p>Begin applications when 10% of buds have broken and repeat twice thereafter at 7-10 day intervals.</p>

15 8 20

## TURFGRASSES

Do not use on home lawns and turf sites associated with apartment buildings, daycare centers, playgrounds, recreational park athletic fields, athletic fields located on or next to schools (ie., elementary, middle and high schools), campgrounds, churches, and theme parks. Sodfarm turf treated with chlorothalonil prior to harvest must be mechanically cut, rolled and harvested. Do not use for sodfarms at application rates greater than 13 pounds of active ingredient, per acre, per year. Do not apply more than the following totals of chlorothalonil active ingredient from all registered product sources to the indicated types of turfgrass:

TYPE OF TURFGRASS	TOTAL CHLOROTHALONIL ACTIVE INGREDIENT PER ACRE PER YEAR
Golf Course Greens	<b>73 lbs</b>
Golf Course Tees	<b>52 lbs</b>
Golf Course Fairways	<b>26 lbs</b>
Sod Farms	<b>13 lbs</b>
Other Turf	<b>26 lbs</b>

Apply ECHO in 90 to 450 gallons of water per acre on golf course greens and tees, and 30 to 100 gallons of water per acre on fairways, lawns and other turfgrass. Apply with ground equipment only.

Begin applications when conditions favor disease development and repeat applications as long as these conditions persist. Under severe disease conditions use the highest rate and shortest interval corresponding with the application schedule selected from the table below. DO NOT mow or irrigate after treatment until spray deposit on turfgrass is thoroughly dry. ECHO should always be used in conjunction with good turf management practices.

DISEASES* CONTROLLED	INTERVAL OF APPLICATION	GOLF COURSE GREENS & TEES RATE PER 1,000 SQ.FT.	GOLF COURSE FAIRWAYS, LAWNS & OTHER TURFGRASS RATE PER ACRE
1. Dollar spot 2. Brown patch 3. Leaf spot, Melting-out, Brown blight 4. Gray leaf spot	7-14 days	3 to 5 fluid ounces (4.1 to 7.3 lbs a.i./acre)	8 to 14 pints (4.1 to 7.3 lbs a.i./acre)
5. Red thread 6. Anthracnose 7. Copper spot	7 days or	5 fluid ounces (7.3 lbs a.i./acre) or	14 pints (7.3 lbs a.i./acre) or
8. Stem rust (bluegrass) 9. Dichondra leaf spot	14 days	8 fluid ounces (11.3 lbs a.i./acre)	22 pints (11.3 lbs a.i./acre)

\*Diseases listed are caused by fungi, some of which are named as follows:

1. Dollar spot: *Sclerotinia homeocarpa*; *Lanzia* or *Moellerodiscus* spp.
2. Brown patch: *Rhizoctonia solani*, *R. zeae*, *R. cerealis*
3. Leaf spots, Melting-out, Brown blight: *Drechslera* spp. (including *D. poae*, *D. siccans*), *Bipolaris sorokiniana*, *Curvularia* spp.
4. Gray leaf spot: *Pyricularia grisea*, *P. oryzae*
5. Red thread: *Laetisaria fuciformis*
6. Anthracnose: *Colletotrichum graminicola*



7. Copper spot: *Gloeocercospora sorghi*
8. Stem rust: *Puccinia graminis*
9. Dichondra leaf spot: *Alternaria spp.*

**Gray Snow Mold** caused by *Typhula spp.*: Apply in sufficient water to obtain adequate coverage (2 to 10 gallons per 1,000 square feet). Apply 8 fluid ounces of ECHO Zn per 1,000 square feet of turf area (22 pints per acre). Application must be made before snow cover in autumn. If snow cover is intermittent or lacking during the winter, re-apply ECHO at monthly intervals until Gray Snow Mold conditions no longer prevail. In areas where Pink Snow Mold (*Microdochium* or *Fusarium* patch) is likely to occur, apply ECHO Zn at 8 fluid ounces in combination with products containing iprodione at 2 ounces active ingredient, per 1,000 square feet of turf area. Read and observe all label directions for products containing these active ingredients.

**Fusarium (Microdochium) Patch**: ECHO is effective against *Fusarium* patch only in areas where snow cover is intermittent or lacking during the winter. Apply 8 fluid ounces of ECHO Zn per 1,000 square feet of turf area. Begin applications in late autumn and re-apply at 21 to 28 day intervals until conditions favorable for *Fusarium* patch no longer prevail.

**Algal scum**: Apply ECHO Zn at 3 to 5 fluid ounces per 1,000 square feet on a 7 to 14 day schedule. When colonies of algae are well established, every attempt should be made to dry out the afflicted area. Once dry, spiking or verticutting should be done to enhance turfgrass recovery in conjunction with the use of ECHO. Several applications of ECHO at the high rate may be necessary for turfgrass recovery. When environmental conditions are favorable for algae growth, a preventive program with ECHO will suppress re-colonization of the turf.

## ORNAMENTAL PLANTS

Apply ECHO Zn at a rate of 2 pints per 100 gallons of water unless other directions are given in the tables below. Apply enough diluted spray per acre to provide thorough coverage of all plant parts that are intended to be protected from disease, generally ranging from 20 to 150 gallons per acre. Repeat applications at 7 to 14 day intervals until conditions are no longer favorable for disease. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, apply ECHO at 7 day intervals. **DO NOT apply more than a total of 36.4 lbs chlorothalonil active ingredient per acre per growing season on field-grown ornamentals.**

Fruits and other structures which may be borne on treated plants **MUST NOT BE EATEN.**

This product may be used in greenhouses. DO NOT use mistblowers or high pressure spray equipment when making applications of this product in greenhouses.

ECHO is recommended for control of fungal diseases referred to by numbers in parentheses following each type of ornamental plant. The user should test for possible phytotoxic responses, using recommended rates on each type of ornamental plant on a small area prior to widespread use. Applications made during bloom may damage flowers and/or fruits.

## ORNAMENTALS RECOMMENDED FOR TREATMENT WITH ECHO

Broadleaf Shrubs and Trees	
Andromeda ( <i>Pieris</i> ) (4)	Holly (1)
Ash ( <i>Fraxinus</i> ) (1)	Lilac (5)
Aspen (1)	Magnolia (1)
Azalea (1,2,4)	Maple (1)
Buckeye, Horsechestnut (1)	Mountain laurel (1)
Camellia (2)	Oak (red group only) (1,7)
Cherry-laurel (1)	Oregon-grape ( <i>Mahonia</i> ) (6)
Crabapple (1,6)	Red-tip ( <i>Photinia</i> ) (1)
Dogwood (1)	Poplar (1)
Eucalyptus (3)	Privet ( <i>Ligustrum</i> ) (1)
Euonymus (1)	Rhododendron (1,2,4)
Firethorn ( <i>Pyracantha</i> ) (1)	Sand cherry (1,2)
Flowering almond (1,2)	Sequoia (1)
Flowering cherry (1,2)	Spirea (1)
Flowering peach (1,2)	Sycamore, Planetree (1)
Flowering plum (1,2)	Viburnum (5)
Flowering quince (1,2)	Walnut ( <i>Juglans</i> ) (1)
Hawthorn (1,6)	

Flowering <sup>a</sup> Plants and Bulbs	
Arabian violet (2)	Lily (1)
Begonia (1)	Marigold (1)
Carnation (1,2)	Narcissus (1)
Chrysanthemum (1,2)	Pansy (1)
Crocus (1)	Petunia (1,4)
Daffodil (1)	Phlox (1)
Daisy (1)	Poinsettia <sup>b</sup> (1)
Geranium (1,6)	Rose <sup>c</sup> (1)
Gladiolus (1,2)	Statice (1)
Hollyhock (6)	Tulip (1)
Hydrangea (foliage only) (1,6)	Zinnia (1,5)
Iris (1,2)	

a/ Avoid applications during bloom period on plants where flower injury is unacceptable.

b/ Discontinue applications prior to bract formation; phytotoxicity is possible on the bracts.

c/ Use 1½ pints of ECHO Zn per 100 gallons of water.

Foliage Plants	
Aglaonema (1)	Lipstick plant (1)
Areca palm (1)	Ming aralia (1)
Artemesia (1)	Oyster plant ( <i>Rhoeo</i> ) (1)
Boston fern ( <i>Nephrolepis</i> ) (1)	Pachysandra <sup>d</sup> (1)
Dracaena (1)	Parlor palm ( <i>Chamaedorea</i> ) (1)
Dumbcane ( <i>Dieffenbachia</i> ) (1)	Peperomia (1)
Fatsia ( <i>Aralia</i> ) (1)	Philodendron (1,4)
Ficus (1)	Prayer plant ( <i>Maranta</i> ) (1)
Florida ruffle fern (1)	Syngonium (1)
Leatherleaf fern (1)	Zebra plant ( <i>Aphelandra</i> ) (1)

d/ Use 4 pints of ECHO Zn per 100 gallons of water.

**Diseases controlled with ECHO:**

<b>1. Leafspots &amp; Foliar Blights:</b>	
Actinopelte leafspot Alternaria leafspot or leaf blight Anthracnose ( <i>Gnomonia</i> , <i>Glomerella</i> , <i>Colletotrichum</i> , <i>Discula</i> ) blights Black spot ( <i>Diplocarpon</i> ) Botrytis blights Cephalosporium leafspot Cercospora leafspot Cercosporidium leafspot Shothole ( <i>Stigmina</i> ) Corynespora stem & leafspots Curvularia leafspot Dactylaria leafspot Didymellina leafspot Drechslera ( <i>Bipolaris</i> ) leafspots, inkspot	Fabraea (Entomosporium) leafspot Fusarium ( <i>Gibberella</i> ) leafspot Gloeosporium black leafspot Marssonina leafspot Monilinia blossom blight, twig blight Mycosphaerella ray blight Myrothecium leafspot, brown rot Phyllosticta leafspot Ramularia leafspot Rhizoctonia web blight Scab ( <i>Venturia</i> ) Septoria leafspot Sphaeropsis leafspot Stagonospora leaf scorch Tan leafspot ( <i>Curvularia</i> ) Volutella leaf blight
<b>2. Flower Spots &amp; Blights:</b>	
Botrytis flower spot, flower blight Curvularia flower spot Monilinia blossom blight	Ovulinia flower blight Rhizopus blossom blight Sclerotinia flower blight
<b>3. Cylindrocladium stem canker</b>	
<b>4. Phytophthora leaf blight, dieback</b>	
<b>5. Powdery mildews:</b>	
<i>Erysiphe cichoracearum</i> <i>Sphaerotheca fuliginea</i>	<i>Microsphaera</i> spp.
<b>6. Rusts:</b>	
<i>Gymnosporangium</i> spp. <i>Pucciniastrum hydrangeae</i>	<i>Puccinia</i> spp.
<b>7. Taphrina blister</b>	

## STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

**Pesticide Storage:** Store in a cool place. Protect from excessive heat.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, pesticide spray 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:** DO NOT reuse empty container. Triple rinse (or equivalent) and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Returnable Refillable Container:** If ECHO Zn is packaged in a returnable refillable container, then, after use, do not rinse container. Return container intact to point of purchase. This container must only be refilled with ECHO Zn. DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Before refilling, inspect thoroughly for damage such as cracks, punctures, abrasions, and damaged or worn threads on closure devices. Check for leaks after refilling and before transport.

## WARRANTY AND LIMITATION OF DAMAGES

**CONDITIONS OF SALE:** To the extent consistent with applicable law, Sipcam Agro USA, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in accordance with the directions under normal conditions of use. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Sipcam Agro USA, Inc.. **SIPCAM AGRO USA, INC. DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.** To the extent consistent with applicable law, **SIPCAM AGRO USA, INC. SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, AND SIPCAM AGRO USA, INC.'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE. BUYER AND USER ACKNOWLEDGE AND ASSUME ALL RISKS AND LIABILITY RESULTING FROM HANDLING, STORAGE AND USE OF THIS PRODUCT. SIPCAM AGRO USA, INC. DOES NOT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTY, GUARANTEE OR REPRESENTATION CONCERNING THIS PRODUCT.**

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5/30/03 added soybean rust (notification); 5/24/05 added cranberry upright dieback (notification);

8/15/07 Amendment to clarify residential turf/sod farm uses

