

1381-187

6/19/2012

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D C 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

Mr Alice Walker, Ph D  
Winfield Solutions, LLC  
P O Box 64589  
St Paul, MN 55164-0589

JUN 19 2012

**Subject Amended Reregistration Label Arctic <sup>®</sup>3 2 EC Insecticide  
D413767  
EPA Registration No 1381-187**

Dear Dr Walker

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all of the information submitted with your application to support the reregistration of the referenced product in connection with the Permethrin **RED**, and has concluded that your submission is acceptable

**PLEASE NOTE** This product is not being reregistered under sections 3(c)5 and 4(g) of FIFRA at this time

**PLEASE NOTE** That the record for this product currently contains the Confidential Statements of Formulation (CSFs) listed below Any previously dated CSF's are superseded

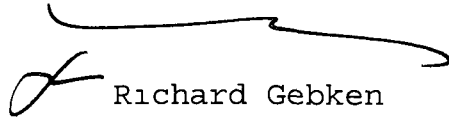
- Basic CSF, dated February 8, 2010
- Alternate A dated February 8, 2010
- Alternate B dated February 8, 2010

A copy of your label stamped Acceptable is enclosed along with copies of the acute toxicity and product chemistry reviews completed for the subject product Products shipped after 12 months from the date of this amendment or the next printing of the label whichever occurs first, must bear the new revised label Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec 6(e)

20128

If you have any questions about this letter, please contact Linda A DeLuise at (703) 305-5428 or via e-mail at deluise linda@epa gov or Mr Richard J Gebken at (703) 305-6701 or via e-mail at Gebken Richard@epa gov

Sincerely yours,



Richard Gebken  
Product Manager 10  
Insecticide Branch  
Registration Division (7505P)

Enclosure

Label stamped Accepted dated June 19, 2012

## RESTRICTED USE PESTICIDE

### Due to Toxicity to Fish and Aquatic Organisms

For retail sale to and use only by Certified Applicators, or persons under their direct supervision,  
and only for those uses covered by the Certified Applicator's certification

# ARCTIC<sup>®</sup> 3.2 EC Insecticide

Active Ingredient	
Permethrin*	36.8%
Other Ingredients **	<u>63.2%</u>
<b>TOTAL</b>	<b>100.0%</b>

\*cis/trans ratio Max 58% (±) cis and min 42% (±) trans

\*\* Contains petroleum distillates

Contains 3.2 pounds permethrin per gallon as an emulsifiable concentrate

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

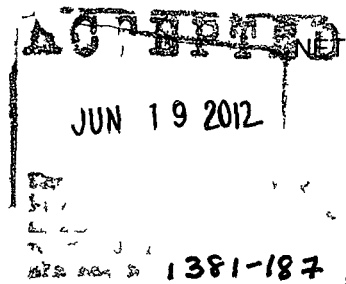
FIRST AID	
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor</li> <li>• Do not give any liquid to the person</li> <li>• Do not give anything by mouth to an unconscious person</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 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 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>
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. <b>NOTE TO PHYSICIAN</b> Contains petroleum distillate – vomiting may cause aspiration pneumonia. For additional information in case of emergency call toll free 1-877-424-7452</p>	

EPA Reg No 1381-187

EPA Est No 53883-TX-2 70989 MO 1

Distributed By

Winfield Solutions LLC  
P O Box 64589  
St Paul MN 55164 0589



NET CONTENTS 1 Gal (3.785 Liters)

0/0613/2

# WINFIELD

# AgriSOLUTIONS

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans & Domestic Animals

**CAUTION** Harmful if swallowed inhaled or absorbed through the skin Avoid contact with skin eyes or clothing Wash thoroughly with soap and water after handling and before eating drinking chewing gum or using tobacco Remove and wash contaminated clothing before reuse

#### Personal Protection Equipment (PPE)

Some materials that are chemical resistant to this product are made of barrier laminate nitrile rubber neoprene rubber or viton If you want more options follow the instructions for category E on an EPA chemical resistance category selection chart

Applicators using ULV cold foggers or fog/mist generators in indoor spaces must wear  
Coveralls over long sleeved shirt and long pants  
Chemical resistant gloves  
Chemical resistant footwear plus socks and  
Chemical resistant headgear if overhead exposure

Applicators using ULV cold foggers or fog/mist generators in outdoor spaces must wear  
Long sleeved shirt and long pants  
Shoes plus socks and  
Chemical resistant gloves

All other mixers loaders applicators and other handlers must wear  
Long sleeve shirt and long pants  
Shoes plus socks  
Chemical resistant gloves and  
Chemical resistant apron for mixers/loaders persons cleaning equipment and persons exposed to the concentrate

See engineering controls for additional requirements

Engineering Controls  
Pilots must use an enclosed cockpit that meet the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [(40 CFR 170 240 (d)(6)]

Follow manufacturer s instructions for cleaning/maintaining PPE If no such instructions for washables exists use detergent and hot water Keep and wash PPE separately from other laundry

Discard clothing and other absorbent materials that have been drenched (except as required by directions for use) or heavily contaminated with this product s concentrate Do not reuse them

#### User Safety Recommendations

- Users should
- Wash hands before eating drinking chewing gum using tobacco or using the toilet
  - Remove clothing/PPE 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 pesticide is extremely toxic to aquatic organisms including fish and invertebrates Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean water mark Do not apply when weather conditions favor drift from treated areas Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas Do not contaminate water when disposing of equipment wash waters

Under some conditions it may also have a potential for transport into surface water in runoff (primarily absorbed to suspended soil particles) for several months or more after applications These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters frequently flooded areas and areas overlying extremely shallow groundwater areas with in field canals or ditches that drain to surface water areas not separated from adjacent surface waters and vegetated filter strips and areas over lying tile drainage systems that drain to surface waters

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

#### Physical/Chemical Hazards

Combustible Do not use or store near heat or open flame

### DIRECTIONS FOR USE RESTRICTED FOR USE PESTICIDE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling

- Not for use in outdoor residential misting systems  
Use in a handheld cold or thermal fogger is prohibited
- For 4 hours following applications do not allow any person to reenter treated areas

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

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

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 on this product that are covered by Worker Protection Standard.

Do not enter or allow worker entry to 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
- Shoes plus socks
- Chemical resistant gloves made of any waterproof material

### Chemigation

Apply this product only through the following types of sprinkler irrigation: 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. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. For questions concerning calibration, consult the equipment manufacturer or your local State Extension Service representative. A person knowledgeable of the chemigation system and responsible for its operation, or person under the supervision of the person responsible, shall shut the system down and make necessary adjustments should the need arise.

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

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

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

ARCTIC 3.2 EC should be applied continuously for the duration of the water application. ARCTIC 3.2 EC should be diluted in sufficient volume to ensure accurate application of the area to be treated. When using chemigation, a minimum of 0.1 inch per acre of irrigation water is recommended. Agitation generally is not required when a suitable diluent is used. A diluent test should be conducted to ensure that phase separation will not occur during dilution and application. Failure to achieve a uniform dilution throughout the time of application may result in undesirable residues or less than desirable control.

### Commercial Impregnation and Application on Dry Bulk Fertilizers

ARCTIC 3.2 EC may be impregnated on dry bulk fertilizers. When applied as directed, ARCTIC 3.2 EC/dry bulk fertilizer mixtures provide insect control equal to that provided by the same rates of ARCTIC 3.2 EC applied in water.

The ARCTIC 3.2 EC/fertilizer mixtures may be surface applied or shallow incorporated. The higher rate should be used if incorporation is used.

**Impregnation** Apply using a minimum of 200 pounds of dry bulk fertilizer per acre and up to a maximum of 450 pounds per acre with the recommended amount of ARCTIC 3.2 EC per acre. Use a closed rotary drum mixer or a similar type of closed blender equipped with suitable spray equipment. The spray nozzle(s) should be positioned to provide a uniform, fine spray pattern over the tumbling fertilizer for thorough coverage. The physical properties of fertilizers vary particularly in liquid absorption capacity. When absorptivity is sufficient, simply spray impregnation of the fertilizer with ARCTIC 3.2 EC provides a satisfactory, dry mixture. If the absorptive capacity is inadequate, the use of a highly absorptive powder is required to provide a dry, flowable mixture. Microcel E

(Johnson Manville Product Corporation) is a recommended absorbent powder. Generally less than 2% by weight of Microcel E is required. DO NOT impregnate ARCTIC 3 2 EC onto straight coated ammonium nitrate or straight limestone because these materials will not absorb the insecticide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with ARCTIC 3 2 EC.

The amount of ARCTIC 3 2 EC actually required in the preparation of individual fertilizer mixtures should be determined carefully for each production operation. This is necessary to ensure that the amount of pesticide actually contained in the mixture applied to the soil represents the correct rate of use. Bulk fertilizer impregnated with ARCTIC 3 2 EC should be applied immediately, not stored.

All individual state regulations relating to bulk dry fertilizer blending, registration, labeling, and application of the mixtures are the responsibility of the individual and/or company selling the fertilizer and ARCTIC 3 2 EC mixture.

## SPRAY DRIFT REQUIREMENTS

### Wind Direction and Speed

Only apply this product if the wind direction favors on target deposition. Do not apply when the wind velocity exceeds 15 mph.

### Temperature Inversion

Do not make aerial or ground applications into temperature inversions.

Inversions are characterized by stable air and increasing temperature with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

### Droplet Size

Use only medium or coarser spray nozzles (for ground and non ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

### Additional Requirements for Ground Applications

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.

For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

### Additional Requirements for Aerial Applications

The spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must not exceed 75% of the wing span or 80% rotor diameter.

Flight speed and nozzle orientation must be considered in determining droplet size.

Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.

When applications are made with a cross wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

## BUFFER ZONES

### Vegetative Buffer Strip

Construct and maintain a minimum 10 foot wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes or natural ponds, estuaries, and commercial fish farm ponds).

Only apply products containing permethrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers:

*Conservation Buffers to Reduce Pesticide Losses*, Natural Resources Conservation Service, USDA NRCS, 2000, Fort Worth, Texas, 21pp.

<http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf>

### Buffer Zone for Ground Application (groundboom, overhead chemigation, or airblast)

Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

### Buffer Zone for ULV Aerial Application

Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

### Buffer Zone for Non ULV Aerial Application

Do not apply within 150 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

### GENERAL USE INFORMATION

#### Important

ARCTIC 3 2 EC is toxic to fish Exercise care when making applications near ponds lakes streams reservoirs and other aquatic environments where fish are present

For advice concerning current control practices with relation to specific local conditions consult your local State Cooperative Extension or regulatory agencies

ARCTIC 3 2 EC is formulated as an emulsifiable concentrate (EC) formulation and is to be diluted with water and applied as an emulsion When tank mixing as an emulsion with other products observe all precautions and limitations on the labels of each product in the mixture

ARCTIC 3 2 EC can be tank mixed with natural pyrethrin containing products or Insect Growth Regulators (IGRs) Do not tank mix with dichlorvos (DDVP) or other fumigant products

### DIRECTIONS FOR APPLICATION

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

ARCTIC 3 2 EC is a 3 2 pounds per gallon formulation of the insecticide permethrin Apply ARCTIC 3 2 EC when insects appear or feeding is noticed The higher rate should be used as pest populations increase Repeat the application as necessary to maintain control Use sufficient water to obtain full coverage With the exception of crops listed below rotational crops should not be planted within 60 days of last application

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

#### RATE CONVERSION CHART

POUNDS ACTIVE PER ACRE	FORMULATION OUNCES PER ACRE
0 05	2 0
0 10	4 0
0 15	6 0
0 20	8 0
0 25	10 0
0 30	12 0

#### Index to Crops Listed on this Label

##### Vegetable Crops

- Artichoke
- Asparagus
- Avocado
- Cole Crops (Brassica Leafy Vegetables)
- Collards and Turnips
- Corn Sweet
- Corn Sweet (Florida only)
- Cucurbit Vegetables
- Eggplant
- Horseradish
- Leafy Vegetables (except Brassica)
- Onions Bulb and Garlic
- Peppers Bell
- Potatoes
- Tomatoes Tomatillos

##### Tree Fruit and Nuts

- Almonds
- Apples
- Cherries
- Filberts
- Papaya (Florida Only)
- Peaches and Nectarines
- Pistachios
- Pears
- Walnuts

##### Other Crops

- Alfalfa
- Corn (Field) Field Corn Grown for Seed Popcorn
  - Pre emergent Use
  - Foliar Use
- Corn (Field) Field Corn Grown for Seed Popcorn
  - At Plant Use
- Mushrooms

- Range Grass (New Mexico Only)
- Soybeans
- Ornamentals
  - Chrysanthemum
  - Conifers (Container and Field Grown)
  - Ornamental Nursey Stock (Field Grown)
  - Pine Seed Orchards
  - Roses (Field Grown)
  - Roses (Greenhouse)
- Other Uses
  - Premises Spray
  - Treatment of Preconstruction Lumber and Logs



### VEGETABLE CROPS

ARTICHOKE			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Artichoke	Artichoke plume moth Leafminers	4 – 12 (0.1 – 0.3)	Maximum single application rate is 0.3 lb ai/A (12 fl oz /A) Do not apply more than 0.9 lb ai/A (36 fl oz/A) per season Retreatment interval is 10 days
<ul style="list-style-type: none"> <li>Apply by air or ground equipment. By air, apply in a minimum of 2 gallons of water per acre. By ground, apply in a minimum of 10 gallons of water per acre. Use sufficient water to obtain full coverage of foliage.</li> <li>Applications may be made up to harvest.</li> </ul>			

ASPARAGUS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Asparagus	Asparagus beetle Cutworms	2 – 4 (0.05 – 0.1)	Maximum single application rate is 0.1 lb ai/A (4 fl oz/A) Do not apply more than 0.4 lb ai/A (16 fl oz/A) per season Retreatment interval is 7 days Post harvest application only. Apply to the fern stage of the asparagus plant after spear harvest when larval and adult stages are present. Not for control of this insect in California.
	Asparagus beetle Japanese beetle (Adult stage) Lygus bugs Tarnished plant bug	4 (0.1)	
<ul style="list-style-type: none"> <li>Apply by ground in a minimum of 10 gallons of water per acre. Use sufficient water to obtain full coverage of foliage.</li> <li>Do not apply within 1 day of harvest.</li> </ul>			

AVOCADO			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Avocado	Avocado caterpillar Avocado lace bug Avocado leafhopper Avocado leafroller Avocado looper Avocado tree girdler Avocado whitefly Brown soft scale Mirids Omnivorous looper Orange tortrix Scale crawlers Spanworm Thrips Twig borers	8 (0.2)	Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.8 lb ai/A (32 fl oz/A) per season Retreatment interval is 7 days Apply when insects first appear and repeat at 7 to 10 day intervals as needed to provide control.
<p>Apply by ground equipment in 25-400 gallons of finished spray per acre. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. Do not apply within 7 days of harvest.</p>			

COLE CROPS – Brassica Leafy Vegetables			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Broccoli Chinese Broccoli (gai lon white flowering broccoli) Cavalo broccolo Cabbage Chinese Cabbage (napa tight headed varieties only) Kohlrabi	Cabbage looper Armyworm spp Imported cabbageworm Diamondback moth Plant bugs Thrips Cabbage aphid	2 – 8 (0.05 – 0.2)	Apply when insects first appear and repeat at 5 day intervals as needed to provide control Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.4 lb ai/A (16 fl oz/A) per season (except Hawaii) for cabbage In Hawaii do not apply more than 0.8 lb ai/A (32 fl oz/A) per season for cabbage Do not apply more than 0.8 lb ai/A (32 fl oz/A) per season for broccoli Retreatment interval is 5 days
Brussels Sprouts Cauliflower	Diamondback moth Southern white butterfly	2 – 4 (0.05 – 0.1)	Apply when insects first appear and repeat at 5 to 10 day intervals as needed to provide control Maximum single application rate is 0.1 lb ai/A (4 fl oz/A) For Brussels Sprouts do not apply more than 0.4 lb ai/A (16 fl oz/A) per season For Cauliflower do not apply more than 0.4 lb ai/A (16 fl oz/A) per season everywhere except Hawaii In Hawaii do not apply more than 0.6 lb ai/A (24 fl oz/A) per season for Cauliflower Retreatment interval is 5 days
	Armyworm spp Cutworms Flea beetles	2 – 4 (0.05 – 0.1)	
Apply by air or ground equipment except for collards (ground application only) By air apply in a minimum of 2 gallons of water per acre By ground apply in a minimum of 10 gallons of water per acre Use sufficient water to obtain full coverage of foliage Do not apply within 1 day of harvest Aids in the suppression only			

COLLARDS and TURNIPS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Collards (AR AZ GA IL NC OK SC and TX only)	Beet armyworm Cabbage looper Corn earworm Cutworms Diamond back moth European corn borer Fall armyworm Green cloverworm Imported cabbageworm Leafhoppers Leafminer Southern armyworm Southern white butterfly Tobacco budworm Vegetable leafminer Aphids	2 - 4 (0.05 - 0.15)	Apply with ground equipment only. Apply when insects first appear and repeat at 3 day intervals as needed to provide control. Apply when insects first appear and repeat at 5 day intervals as needed to provide control. Do not exceed 8 applications. Maximum single application rate is 0.15 lb ai/A (6 fl oz/A). Do not apply more than 0.45 lb ai/A (18 fl oz/A) per season. Retreatment interval is 3 days.
Turnips (FL GA IL IN OK SC TX and WA only)	Beet armyworm Cabbage looper Corn earworm Cutworms Diamond back moth European corn borer Fall armyworm Green cloverworm Imported cabbageworm Leafhoppers Leafminer Southern armyworm Southern white butterfly Tobacco budworm Vegetable leafminer Aphids	2 - 4 (0.05 - 0.1)	Apply with ground equipment only. Apply when insects first appear and repeat at 3 day intervals as needed to provide control. Do not exceed 8 applications. Do not graze treated areas or feed crop refuse to livestock. Maximum single application rate is 0.15 lb ai/A (6 fl oz/A). Do not apply more than 0.45 lb ai/A (18 fl oz/A) per season. Retreatment interval is 3 days.
<ul style="list-style-type: none"> <li>Apply in a minimum of 10 gallons of water per acre. Use sufficient water to obtain full coverage of foliage.</li> <li>Do not apply within 1 day of harvest.</li> </ul> <p>Aids in the suppression only.</p>			

CORN SWEET			
CROP	TARGET PESTS	RATE FL OZ/A (LBS A/A)	REMARKS
Corn Sweet	Corn earworm Corn rootworm beetles Cutworms European corn borer Fall armyworm Flea beetle Hop vine borer Leafhoppers Southern armyworm Stalk borers	4 – 8 (0.1 – 0.2)	Apply when insects first appear and repeat at 3 to 5 day intervals as needed to provide control Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.8 lb ai/A (32 fl oz/A) per season Retreatment interval is 3 days Pest does not occur on this crop in California
<ul style="list-style-type: none"> <li>Apply by air or ground equipment By air apply in a minimum of 2 gallons of water per acre By ground apply in a minimum of 10 gallons of water per acre Use sufficient water to obtain full coverage of foliage Do not apply within 1 day of harvest</li> </ul>			

CORN SWEET (FLORIDA ONLY)			
CROP	TARGET PESTS	RATE FL OZ/A (LBS A/A)	REMARKS
Corn Sweet	Aster leafhopper Corn earworm Cutworm European corn borer Fall armyworm Southern armyworm	4 – 8 (0.1 – 0.2)	Apply when insects first appear and repeat at 3 to 5 day intervals as needed to provide control Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.8 lb ai/A (32 fl oz/A) per season Retreatment interval is 3 days
<ul style="list-style-type: none"> <li>Apply by air or ground equipment By air apply in a minimum of 2 gallons of water per acre By ground apply in a minimum of 10 gallons of water per acre Use sufficient water to obtain full coverage of foliage</li> <li>Do not apply within 1 day of harvest</li> </ul>			

CUCURBIT VEGETABLES			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Cucurbit vegetables	Aphids Leafminers Squash bugs	8 (0.2)	Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 1.2 lb ai/A (48 fl oz/A) per season on everything except cantaloupe
	Cabbage looper Cucumber beetle (adult) Cutworms Leafhoppers Melonworm Pickleworm Plant bugs (including Lygus and Stink bugs) Rindworms Squash vine borer	4 – 8 (0.1 – 0.2)	On Cantaloupes do not apply more than 0.8 lb ai/A (32 fl oz/A) per season. On Cantaloupes in Hawaii do not apply more than 1.2 lb ai/A (48 fl oz/A) per season. Retreatment interval is 7 days
<ul style="list-style-type: none"> <li>Apply by air or ground equipment. By air, apply in a minimum of 4 gallons of water per acre. By ground, apply in a minimum of 20 gallons of water per acre. Use sufficient water to obtain full coverage of foliage.</li> <li>Applications may be made up to harvest.</li> </ul>			
<p>Cucurbit vegetables include: Chayote (fruit), Chinese waxgourd (Chinese preserving melon), Citron melon, Cucumber, Gherkin, Gourd (edible) (includes hyotan, cucuzza), Luffa spp (includes hechima, Chinese okra), Momordica spp (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), Muskmelon (hybrids and/or cultivars of Cucurbita melo, including true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon), Pumpkin, Summer Squash (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini), Winter Squash (includes butternut squash, calabaza, hubbard squash, C mixta, C pepo, acorn squash, spaghetti squash), Watermelon (includes hybrids and/or varieties of Citrullus spp).</p>			

EGGPLANT			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Eggplant	Colorado potato beetle	6 (0.15)	Maximum single application rate is 0.15 lb ai/A (6 fl oz/A) Do not apply more than 0.6 lb ai/A (24 fl oz/A) per season except in Hawaii. In Hawaii, do not apply more than 1.0 lb ai/A (40 fl oz/A) Retreatment interval is 7 days
	Cabbage looper Flea beetles Vegetable leafminer	6 (0.15)	Apply when insects first appear and repeat at 7 day intervals as needed to provide control. Use sufficient water to obtain uniform coverage.
<ul style="list-style-type: none"> <li>Apply by air or ground equipment. By air, apply in a minimum of 2 gallons of water per acre. By ground, apply in a minimum of 10 gallons of water per acre. Use sufficient water to obtain full coverage of foliage.</li> <li>Do not apply within 3 days of harvest.</li> </ul>			

HORSERADISH			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Horseradish	Imported crucifer weevil (Burs leptodii)	0.1% active solution (2 pt 1 oz per 100 gallons)	As a spring preplant dip soak sets for 30 minutes and air dry before planting
		6 (0.15)	For foliar application apply with ground equipment in a minimum spray volume of 20 gallons finished spray per acre. Make up to 3 foliar applications as needed to control weevil adults during oviposition.
Maximum single application rate is 0.15 lb ai/A (6 fl oz/A) Do not apply more than 0.45 lb ai/A (18 fl oz/A) per season Retreatment interval is 10 days Do not apply within 30 days of harvest			

LEAFY VEGETABLES (except Brassica)			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Leafy vegetables	Aphids Beet armyworm Corn earworm Cutworms European corn borer Fall armyworm Green cloverworm Leafminers Southern armyworm Tobacco budworm	4 – 8 (0.1 – 0.2)	Apply when insects first appear and repeat at 7 day intervals (3 day interval for spinach) as needed to provide control. Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.8 lb ai/A (32 fl oz/A) per season except for spinach. For spinach do not apply more than 0.6 lb ai/A (24 fl oz/A) per season. For celery do not apply more than 1.0 lb ai/A (40 fl oz/A) per season except in Hawaii. In Hawaii do not apply more than 1.2 lb ai/A (48 fl oz/A). For spinach do not apply more than 0.6 lb ai/A (24 fl oz/A) per season. For lettuce do not apply more than 0.8 lb ai/A (32 fl oz/A) per season except in Hawaii. In Hawaii do not apply more than 1.2 lb ai/A (48 fl oz/A). Retreatment interval is 7 days except for spinach which is 3 days. For all leafy vegetable crops (except brassica, celery, lettuce and spinach) <ul style="list-style-type: none"> <li>The maximum individual application rate is 0.2 lbs ai per acre</li> <li>The minimum retreatment interval is 3 days</li> <li>The maximum number of applications is 10</li> </ul>
	Alfalfa looper Cabbage looper Leafhoppers	2 – 8 (0.05 – 0.2)	
Apply by air or ground equipment. By air apply in a minimum of 2 gallons of water per acre. By ground apply in a minimum of 10 gallons of water per acre. Use sufficient water to obtain full coverage of foliage. <ul style="list-style-type: none"> <li>Do not apply within 1 day of harvest</li> </ul>			
Leafy vegetables: Amaranth (leafy amaranth, Chinese spinach, tampala), Arugula (Roquette), Cardoon, Celery, Chinese celery, Celtuce, Chervil, Chrysanthemum (edible leaved and garland), Corn salad, Garden Cress, Upland Cress (yellow rocket, winter cress), Dandelion, Dock (sorrel), Endive (escarole), Florence fennel (finocchio), Head and Leaf Lettuce, Orach, Parsley, Garden Purslane, Winter Purslane, Radicchio (red chicory), Rhubarb, Swiss chard, Spinach (including New Zealand and vine Malabar spinach, Indian spinach)			

ONIONS BULB and GARLIC			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Onion bulb Garlic	Armyworms Onion thrips	Onion 6 – 12 (0 15 – 0 3)	Begin applications when pest appear and repeat as necessary to maintain control Use the higher label rates as onion thrips population increases and avoid rescue situations  Onion Maximum single application rate is 0 3 lb ai/A (12 fl oz/A) Do not apply more than 1 0 lb ai/A (40 fl oz/A) per season Retreatment interval is 7 days  Garlic Maximum single application rate is 0 2 lb ai/A (8 fl oz/A) Do not apply more than 0 8 lb ai/A (32 fl oz/A) per season Retreatment interval is 10 days
	Cutworms Leafminers Onion maggots (adults) Stink bugs	Garlic 6 8 (0 15 – 0 2)	
Apply by air or ground equipment By air apply in a minimum of 5 gallons of water per acre By ground apply in a minimum of 20 gallons of water per acre Use sufficient water to obtain full coverage of foliage  Do not apply within 1 day of harvest			

PEPPERS BELL			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Peppers bell	Cabbage looper Corn earworm Cutworms Flea beetle Pepper weevil Vegetable leafminer	4 – 8 (0 1 – 0 2)	Maximum single application rate is 0 2 lb ai/A (8 fl oz/A) Do not apply more than 0 8 lb ai/A (32 fl oz/A) per season Retreatment interval is 5 days
	European corn borer	8 (0 2)	
Apply by air or ground equipment By air apply in a minimum of 2 gallons of water per acre By ground apply in a minimum of 10 gallons of water per acre Use sufficient water to obtain full coverage of foliage  Do not apply within 3 days of harvest			

POTATOES			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Potatoes	Aster leafhopper Beet armyworm Cabbage looper Colorado potato beetle Cutworms European corn borer Potato aphid Potato flea beetle Potato leafhopper Potato psyllid Potato tuberworm Tarnished plant bug	4 – 8 (0.1 – 0.2)	Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.8 lb ai/A (32 fl oz/A) per season Retreatment interval is 10 days
<p>Apply by air or ground equipment. By air apply in a minimum of 2 gallons of water per acre. By ground apply in a minimum of 10 gallons of water per acre. Use sufficient water to obtain full coverage of foliage.</p> <p>ARCTIC 3.2 EC also may be applied using refined non volatile vegetable oil for control of listed pests. ARCTIC 3.2 EC should be diluted with oil and applied in a minimum of one quart total volume per acre using equipment calibrated to give adequate coverage. Use sufficient spray volume to obtain full coverage.</p> <p>Do not apply within 14 days of harvest.</p>			

TOMATOES TOMATILLOS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Tomatoes Tomatillos	Beet armyworm Cabbage looper Colorado potato beetle Granulate cutworm Hornworms Southern armyworm Tomato fruitworm Tomato pinworm Vegetable leafminers	2 – 8 (0.05 – 0.2)	Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.6 (24 fl oz/A) per season except in Hawaii. In Hawaii do not apply more than 0.8 lb ai/A (32 fl oz/A) per season Retreatment interval is 7 days Do not apply to cherry tomatoes or other varieties which produce fruit less than one inch in diameter
<p>Apply by air or ground equipment. By air apply in a minimum of 2 gallons of water per acre. By ground apply in a minimum of 10 gallons of water per acre. Use sufficient water to obtain full coverage of foliage.</p> <p>May be applied up until harvest.</p>			



### TREE FRUIT AND NUTS

ALMONDS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Almonds	Navel orangeworm Peach twig borer	8 10 (0.2 - 0.25)	Apply when insects appear and repeat at 10 day intervals to maintain control Apply by air or ground equipment By air apply in a minimum of 15 gallons of water per acre By ground apply in 25 400 gallons of finished spray per acre
	Ants	8 10 (0.2 - 0.25)	Apply by ground equipment only in a minimum of 15 gallons of water per acre Application should follow mowing of weed growth to ensure maximum coverage of the soil surface Overhead moisture following application will enhance activity
Maximum single application rate is 0.25 lb ai/A (10 fl oz/A) Do not apply more than 0.75 lb ai/A (30 fl oz/A) per season Retreatment interval is 10 days Do not graze livestock in treated areas Do not feed cover crops from treated areas to livestock Do not apply within 7 days of harvest			

APPLES			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Apples	Green fruitworm Oblique banded leafroller Plum curculio Redbanded leafroller Rosy apple aphid Spotted tentiform leafminer Tarnished plant bug White apple leafhopper	4 10 (0.1 - 0.25)	Maximum single application rate is 0.25 lb ai/A (10 fl oz/A) Do not apply more than 0.5 lb ai/A (20 fl oz/A) per season Retreatment interval is 10 days Apply when insects appear and repeat at 10 day intervals to maintain control Do not graze livestock in treated areas Do not feed cover crops from treated areas to livestock
Apply by ground equipment only Apply in 25 400 gallons of finished spray per acre Do not apply after petal fall			

CHERRIES			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Cherries (includes Sweet Cherries and Tart Cherries)	Green fruitworm Lesser peach tree borer Plum curculio Redbanded leafroller Rose chafer Tarnished plant bug	4 – 8 (0.1 – 0.2)	Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.6 lb ai/A (24 fl oz/A) per season Retreatment interval is 10 days Apply when insects first appear East of the Rockies Do not exceed 6 applications per season with no more than 4 applications after petal fall West of the Rockies Do not apply more than 4 applications per season with no more than 3 applications after petal fall
<p>Apply by ground equipment only Apply in 25 400 gallons of finished spray per acre Do not graze livestock in treated areas Do not feed cover crops from treated areas to livestock Do not apply within 3 days of harvest</p>			

FILBERTS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Filberts	Filbertworm Oblique banded leafroller	8 – 10 (0.2 – 0.25)	Do not apply more than 0.75 pounds of active ingredient per acre per season Apply when insects appear Do not make applications less than 10 days apart Do not graze livestock in treated areas Do not feed cover crops from treated areas to livestock
<p>Apply by air or ground equipment By air apply in a minimum of 10 gallons of water per acre By ground apply in 25 400 gallons of finished spray per acre Do not apply within 14 days of harvest</p>			

PAPAYA (Florida Only)			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Papaya	Aphids Brown soft scale Mealybug Papaya fruit fly Papaya webworm Papaya whitefly Scale crawlers	6 (0.15)	Maximum single application rate is 0.15 lb ai/A (6 fl oz/A) Do not apply more than 0.75 lb ai/A (30 fl oz/A) per season Retreatment interval is 10 days Spray to wet all foliage Apply when insects first appear and repeat at 7 10 day intervals as needed to provide control Do not graze livestock in treated areas Do not feed cover crops from treated areas to livestock
<p>Apply by ground equipment only Apply in 25 400 gallons of finished spray per acre Do not apply within 7 days of harvest</p>			

PEACHES and NECTARINES			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Peaches Nectarines	Green fruitworm Lesser peach tree borer Oriental fruit moth Peach twig borer Plum curculio Rose chafer Tarnished plant bug	4 10 (0 1 0 25)	Maximum single application rate is 0 25 lb ai/A (10 fl oz/A) Do not apply more than 0 75 lb ai/A (30 fl oz/A) per season Retreatment interval is 10 days Spray to wet all foliage Do not graze livestock in treated areas Do not feed cover crops from treated areas to livestock
<p>Apply by air or ground equipment By air apply in a minimum of 10 gallons of water per acre By ground apply in 25 400 gallons of finished spray per acre</p> <p>Do not apply within 14 days of harvest</p>			

PISTACHIOS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Pistachios	Leaffooted bugs Naval orangeworm Peach twig borer Plant bugs Stink bugs	8 12 (0 2 0 3)	Use sufficient water to obtain full coverage of foliage
	Ants	12 (0 3)	Application should follow mowing of weed growth to ensure maximum coverage of the soil surface Overhead moisture following application will enhance activity
<p>Maximum single application rate is 0 3 lb ai/A (12 fl oz/A) Do not apply more than 0 9 lb ai/A (36 fl oz/A) per season Retreatment interval is 10 days</p> <p>Apply by air or ground equipment By air apply in a minimum of 10 gallons of water per acre By ground apply in 25 400 gallons of finished spray per acre</p> <p>Do not apply after 10 percent hull split</p> <p>Do not graze livestock in treated areas</p> <p>Do not feed cover crops from treated areas to livestock</p> <p>May be applied up until harvest</p>			

PEARS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Pears (Dormant through Delayed Dormant)	Pear psylla	8 16 (0.2 – 0.4)	May be combined with 2 to 8 gallons of spray oil per acre. Apply during the dormant through delayed dormant growth periods only.
Pears (Pre Bloom)	Codling moth Green fruitworm Pear psylla	10 (0.25)	Pre bloom sprays can be applied from dormant through bud burst stages.
<p>Dormant Maximum single application rate is 0.4 lb ai/A (16 fl oz/A)</p> <p>Pre bloom Maximum single application rate is 0.25 lb ai/A (10 fl oz/A)</p> <p>Do not apply more than 0.65 lb ai/A (26 fl oz/A) per season</p> <p>Retreatment interval is 10 days</p> <p>Apply by air or ground equipment. By air, apply in a minimum of 10 gallons of water per acre. By ground, apply in 25-400 gallons of finished spray per acre. Use sufficient water to obtain uniform coverage.</p> <p>Do not graze livestock in treated areas.</p> <p>Do not feed cover crops from treated areas to livestock.</p>			

WALNUTS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Walnuts	Codling moth Navel orangeworm Walnut husk fly	10 (0.25)	Apply when insects appear. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. Maximum single application rate is 0.25 lb ai/A (10 fl oz/A). Do not apply more than 0.75 lb ai/A (30 fl oz/A) per season. Retreatment interval is 10 days.
<p>Apply by air or ground equipment. By air, apply in a minimum of 10 gallons of water per acre. By ground, apply in 25-400 gallons of finished spray per acre. Use sufficient water to obtain uniform coverage.</p> <p>Do not apply within 1 day of harvest.</p>			

**OTHER CROPS**

ALFALFA			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Alfalfa lucerne sainfoin holy clover esparcet birdsfoot trefoil and varieties and/or hybrids of these Alfalfa grown for seed	Alfalfa caterpillar Armyworms Blue alfalfa aphid Cutworms Green cloverworm Green peach aphid Loopers Pea aphid Spotted alfalfa aphid Velvetbean caterpillar Webworms	2 - 8 (0.05 - 0.2)	Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.2 lb ai/A (8 fl oz/A) per cutting Retreatment interval is 30 days Use higher recommended dosage for increased pest pressure or for increased residual pest control. Avoid application when bees are actively foraging by applying during the early morning or during the evening hours
	Alfalfa weevil Cucumber beetle Egyptian alfalfa weevil Meadow spittlebug Plant bugs (including <i>Lygus</i> spp.) Potato leafhopper Stink bugs	4 - 8 (0.1 - 0.2)	
<p>Apply only to fields planted to pure stands of alfalfa</p> <p>Apply by air or ground equipment. By air, apply in a minimum of 2 gallons of water per acre. By ground, apply in a minimum of 10 gallons of water per acre. Use higher gallonage: 5-10 gallons by air or 20 by ground of finished spray per acre when foliage is dense and/or when pest populations are high.</p> <p>May be applied up until harvest when rates of 0.1 pound per active per acre or less are used. When rates greater than 0.1 pound active per acre are used, do not apply within 14 days of harvest.</p>			

CORN (FIELD) FIELD CORN GROWN FOR SEED POPCORN			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Field Corn Field corn grown for seed Popcorn (Pre emergent Use)	Armyworm Cutworm Stalk borers	4 – 6 (0.1 – 0.15) as a broadcast spray  OR  0.3 – 0.6 oz per 1000 linear feet row (based on a 4 band and 40 row spacing)	May be applied as a preplant incorporated pre emergence or at planting time application Apply in the time period from 5 days prior to planting up to emergence of the crop Apply as a broadcast spray by ground or air or 4.15 inch band using sufficient spray volume to achieve adequate coverage  Linear row calculations should be used proportional to the standard Band Width/Row Width formula to adjust rates for different band widths or row spacings Use higher rates of ARCTIC 3.2 EC when incorporating into the soil without exceeding the recommended dosage  When using tank mixes observe all restrictions and precautions which appear on the labels of these products Provide constant agitation during mixing and application to keep the mixture in solution
Field Corn Field Corn Grown for Seed Popcorn (Foliar Use)	Armyworm (including Fall Armyworm) Corn borer European Southwestern Corn earworm Corn rootworm beetles Cutworm Flea beetle Hop vine borer Stalk borers Webworms	4 – 6 (0.1 – 0.15)	Do not apply more than 0.6 pound of active ingredient per acre per season Do not make treatments less than 6 days apart When treating for stalk borers ARCTIC 3.2 EC must be applied when or shortly before the stalk borer larvae are moving into the corn from surrounding weeds and grasses Mowing or burndown herbicide is suggested to initiate movement For control of corn earworm apply just before silking and continue as necessary to maintain control
	Western bean cutworm	2 – 4 (0.05 – 0.1)	
<p>Apply by air or ground equipment By air apply in a minimum of 2 gallons of water per acre By ground apply in a minimum of 10 gallons of water per acre Use sufficient water to obtain full coverage of foliage</p> <p>Do not apply within 30 days of harvest of grain or fodder (stover)</p> <p>Forage may be harvested on the day of application</p> <p>Maximum single application rate is 0.15 lb ai/A (6 fl oz/A)</p> <p>Do not apply more than 0.45 lb ai/A (18 fl oz/A) per cutting</p> <p>Retreatment interval is 7 days</p>			

CORN (FIELD) FIELD CORN GROWN FOR SEED POPCORN			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Field Corn Field corn grown for seed Popcorn (At Plant Use)	Armyworm Cutworm Seed corn maggot Wireworm	0.3 oz per 1000 linear feet of row	Apply as an in furrow band or T band treatment using a minimum 4 band  Use table below to determine the ARCTIC 3.2 EC needs for each acre  Not for use in California
Row Spacings (inches)		40      30      20	
ARCTIC 3.2 EC (ounces per acre)		4.0      6.0      8.0	
ARCTIC 3.2 EC (pounds ai per acre)		0.10      0.15      0.20	

MUSHROOMS (Mushroom Houses and Adjacent Premise Areas)			
CROP	TARGET PESTS	RATE OZ (LBS AI)	REMARKS
Mushrooms (Mushroom houses and adjacent premise areas)	Mushroom flies (Sciard and Phorid adults)	2 – 2.5 (0.05 – 0.0625)	Preparation of the building prior to fogging (1) Close all doors windows and ventilators (2) Lock or barricade all entrances turn off pilot lights post warning signs and take precautions to prevent persons and animals from entering the area Use prior to filling the house during cool down during spawning up to pinning and between breaks Do not use when mushrooms are present Treat once daily as needed when flies appear Do not make more than 20 applications prior to pinning of first break apply no more than two applications between each break Do not apply more than 30 applications total per crop of 5 breaks Length of exposure time should be limited to 1 hour then ventilate the house Use fans to ventilate in houses that do not have forced air circulation Wear a respirator with either an organic vapor removing cartridge with a pre filter approved for pesticides (MSHA/NIOSH approval number prefix TC 23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC 14G)
<p>Apply in 30 ounces of water or suitable diluent Use 1 quart of solution per standard double house (35 000 cu ft 8000 sq ft )</p> <p>Apply as a fogging or aerosol treatment Use of high pressure hand wand is prohibited in mushroom houses</p> <p>Do not apply within 3 days of harvest</p>			

RANGE GRASS (New Mexico Only)			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Range Grass (New Mexico only)	Range caterpillar	0.4 (0.01)	Apply when insects first appear Do not apply more than once per year Cattle may be present during application
<p>Apply by air or ground equipment By air apply in a minimum of 2 gallons of water per acre By ground apply in a minimum of 10 gallons of finished spray per acre Use sufficient volume to obtain uniform coverage</p> <p>Do not harvest or feed hay to livestock</p>			

SOYBEANS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Soybeans	Bean leaf beetle Cabbage looper Corn rootworm beetle Cutworms Flea beetle Green cloverworm Japanese beetle Mexican bean beetle Potato leafhopper Saltmarsh caterpillar (Woollybear caterpillar) Thistle caterpillar Velvetbean caterpillar	2 – 4 (0.05 – 0.1)	Maximum single application rate is 0.2 lb ai/A (8 fl oz/A) Do not apply more than 0.4 lb ai/A (16 fl oz/A) per cutting Retreatment interval is 10 days Do not graze treated areas or feed soybean forage or hay
	Beet armyworm Corn earworm Soybean looper Webworms	4 – 8 (0.1 – 0.2)	
<p>Apply by air or ground equipment. By air, apply in a minimum of 2 gallons of water per acre. By ground, apply in a minimum of 10 gallons of water per acre.</p> <p>ARCTIC 3.2 EC may also be applied using refined non volatile vegetable oil for control of listed pests. ARCTIC 3.2 EC should be diluted with oil and applied in a minimum of 1 quart total volume per acre using equipment calibrated to give adequate coverage. When applying in water by aircraft, 1 quart of oil may be substituted for 1 quart of water per gallon of finished spray.</p> <p>Do not apply within 60 days of harvest.</p>			

### ORNAMENTALS

CHRYSANTHEMUMS			
CROP	TARGET PESTS	RATE OZ (LBS AI)	REMARKS
Chrysanthemums	Limomyza leafminer flies	20 (0.5) per 100 gallons of water (1 teaspoon per gallon)	Avoid spraying the blooms. May be applied on a weekly schedule.
<p>Caution: ARCTIC 3.2 EC has demonstrated excellent plant safety; however, not all cultivars have been tested. Before treating large numbers of plants of a particular cultivar, treat a few plants and observe prior to full scale application.</p>			

CONIFERS (Container and Field Grown)			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI/A)	REMARKS
Conifers (container and field grown)	Nantucket pine tip moth	4 – 8 (0.1 – 0.2)	Begin application when the adults appear and repeat at 5 to 7 day intervals or as needed throughout the season.
<p>ARCTIC 3.2 EC may be diluted in a non volatile vegetable oil or water in a minimum of 1 gallon of finished spray per acre using equipment calibrated to give adequate coverage.</p>			



Conifers Nursery (Alabama Arkansas Florida Georgia Mississippi South Carolina Tennessee Texas Virginia)	Regeneration weevil	64 fl oz / 1 1/4 acres (16 lbs a/1 1/4 acres)	Apply to 100 000 trees (approximately 1 1/4 acres) in enough water to achieve thorough coverage
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ORNAMENTAL NURSERY STOCK (Field Grown)			
CROP	TARGET PESTS	RATE FL OZ (LBS AI)	REMARKS
Ornamental nursery stock (field grown)	Bagworm Beet armyworm Cabbage looper Citrus thrips Lace bug Leafhoppers Leafminers Whiteflies	4 - 8 (0.1 - 0.2) per 100 gallons of water	ARCTIC 3.2 EC may be used to control specified pests on non edible ornamentals and non bearing plants of fruiting species
<p>Caution Marginal leaf burn may occur on Salvia Dieffenbachia and Pteris Fern Application to blooming plants may cause browning of petals ARCTIC 3.2 EC has demonstrated excellent plant safety however not all species and cultivars have been tested Before treating large numbers of plants of a particular variety treat a few plants and observe prior to full scale application</p>			

PINE SEED ORCHARDS			
CROP	TARGET PESTS	RATE FL OZ/A (LBS AI)	REMARKS
Pine seed orchards	Coneworms Seed bugs	Ground 8 - 16 (0.2 - 0.4)	For low and high volume applications use a final carrier solution of 25 400 gals depending on the type of sprayer system being used Make up to 3 applications per season
		Air 24 (0.6)	Apply in a minimum of 5 gals of finished spray per acre Apply once per season
<p>To control webbing coneworm - make first application within 1 week of female flower closure or peak pollen flight To control other coneworms and seed bugs - make first application within 30 days following female flower closure Repeat applications at 4 week intervals</p>			
<p>Harvesting of conifer seed is prohibited within 30 days of application Do not graze livestock in treated areas Do not feed cover crops from treated areas to livestock</p>			

ROSES (Field Grown)			
CROP	TARGET PESTS	RATE FL OZ/A (LBS A/A)	REMARKS
Roses (field grown)	Heliothis spp	4 - 8 (0.1 - 0.2)	
<p>Apply by air or ground equipment By air apply in a minimum of 2 gallons of water per acre By ground apply in a minimum of 10 gallons of finished spray per acre</p>			

ROSES (Greenhouse)			
CROP	TARGET PESTS	RATE OZ (LBS AI)	REMARKS
Roses (greenhouse)	Beet armyworm Cabbage looper Omnivorous leafroller	8 (0.2) per 100 gallons of water	Use a pump spray or power spray ULV and/or mist or fogging equipment is permitted
ARCTIC 3 2 EC is not phytotoxic to the following varieties of greenhouse roses Ballena Bettina Cara Mia Coquette Excitement Forever Yours G Wave Jack Frost Jr Bridesmaid Matador Paul s Pink Samantha Seventeen Sonia Town Crier Tropicana and Visa Other varieties may vary in their sensitivity to ARCTIC 3 2 EC and a small number of plants should be treated under local conditions to determine plant safety prior to commercial use			

**OTHER USES**

PREMISES SPRAY (For Agricultural Use Only)			
SITE	TARGET PESTS	RATE OZ	REMARKS
For Application in Dairies Barns Feedlots Stables Poultry houses Swine and Livestock houses	House flies Stable flies and other manure breeding flies Also aids in the reduction of Cockroaches Mosquitoes and Spiders	4 to 12.5 gallons of water Sprayer apply 1 gallon per 750 sq ft of space	Spray directly to walls and ceiling as residual surface treatment only Re treat as necessary but not more often than once every 2 weeks Do not treat manure or litter
<p>The use of any residual fly spray should be supplemental with proper manure management and general sanitation to reduce or eliminate fly breeding sites</p> <p>Do not apply directly to livestock or poultry</p> <p>Avoid contamination of feed and water</p> <p>When applied in dairy barns or facilities close milk bulk tank lids to prevent contamination</p>			

**TREATMENT OF PRECONSTRUCTION LUMBER AND LOGS**

**General Information**

ARCTIC 3 2 EC should be diluted with water To prepare the spray dilute ARCTIC 3 2 EC as shown in the following spray dilution chart

GALLONS OF SPRAY MIXTURE DESIRED	GALLONS OF ARCTIC 3 2 EC FOR 0.5 / SOLUTION	GALLONS OF ARCTIC 3 2 EC FOR 0.75 / SOLUTION	GALLONS OF ARCTIC 3 2 EC FOR 1.0 / SOLUTION
40	/	/	1
80	1	1 /	2
200	2 /	3 /	5
400	5	7 /	10
800	10	15	20

**Directions for Application**

To protect unseasoned lumber and logs from wood destroying insects such as Termites Carpenter Ants and Beetles (Ambrosia Powder post Old house borers and others) totally treat wood with a 0.5 / to 1.0 / solution of ARCTIC 3 2 EC This solution can be applied by various methods including spraying brushing dipping and pressure treatment Frequent monitoring of dip and pressure systems are necessary to insure that the desired level of ARCTIC 3 2 EC is maintained Wood can be handled after treatment when dry

- 1 For dip treatments the wood should be totally submersed in the solution until thoroughly wet and then allowed to dry in a suitable location Dipping solutions to which ARCTIC 3 2 EC has been added should be agitated before use if left unused for long periods of time Sediment debris and other deposits should be periodically cleaned from the tank
- 2 For pressure treatments the wood should be placed in the treatment chamber the ARCTIC 3 2 EC solution added and the system pressurized up to 250 psi for up to one hour depending on the density and type of wood treated After the pressure is released and the system drained the wood should be placed in a suitable location for drying

- 3 For spray treatments the wood should be sprayed thoroughly including back and ends
- 4 For brush treatments all parts of wood surfaces should be thoroughly treated

**STORAGE AND DISPOSAL**

Do not contaminate other water food or feed by storage or disposal

**PESTICIDE STORAGE**

Store at temperatures above 40 F (5 C)

If feasible shake container well before using If crystals form warm to room temperature by placing container in a room at ambient temperature 70 F (21 C) until crystals dissolve

Do not use or store near heat open flame or hot surfaces

Keep out of reach of children and animals

Store in a dry place and avoid excess heat in storage Store in original containers only

Carefully open containers After partial use replace lids and close tightly Do not put concentrate or dilute material into food or drink containers

In case of spill avoid contact isolate area and keep out animals and unprotected persons To confine spill dike surrounding area or absorb with sand cat litter commercial clay or gel absorbents If dry material cover to prevent dispersal Place damaged package in a holding container Identify contents

**PESTICIDE DISPOSAL**

Pesticide wastes are toxic Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal Law If these wastes cannot be disposed of by use according to label instructions contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance

**CONTAINER DISPOSAL** Use label language appropriate for container size and type

**Nonrefillable containers** Do not reuse or refill this container Offer for recycling if available Clean container promptly after emptying

**Nonrefillable container equal to or less than 5 gallons** Triple rinse as follows Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip Fill the container / full with water and recap Shake for 10 seconds Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal Drain for 10 seconds after the flow begins to drip Repeat this procedure two more times

**Nonrefillable container greater than 5 gallons** Triple rinse as follows Empty the remaining contents into application equipment or a mix tank Fill the container / full with water Replace and tighten closures Tip container on its side and roll it back and forth ensuring at least one complete revolution for 30 seconds Stand the container on its end and tip it back and forth several times Turn the container over onto its other end and tip it back and forth several times Empty the rinsate into application equipment or a mix tank or store rinsate for later use of disposal Repeat this procedure two more times

**Refillable container** Refill this container with pesticide only Do not reuse this container for any other purpose Cleaning the container before final disposal is the responsibility of the person disposing of the container Cleaning before refilling is the responsibility of the refiller To clean the container before final disposal empty the remaining contents from this container into application equipment or mix tank Fill the container about 10 percent full with water Agitate vigorously or recirculate water with the pump for 2 minutes Pour or pump rinsate into application equipment or rinsate collection system Repeat this rinsing procedure two more times

**FOR CHEMICAL EMERGENCY** Spill leak fire exposure or accident call CHEMTREC 1 800 424 9300

**ATTENTION**

**Dealers Must Sell in Original Packages Only**

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