

34704-858

2/18/2011

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

February 18, 2011

Premjit Halarnkar, Ph.D.  
Loveland Products, Inc  
P.O. Box 1286  
Greeley, Colorado 80632-1286

Subject: Amendment – Per Agency’s January 24, 2011 meeting  
Sniper Insecticide/Miticide  
EPA Reg. No. 34704-858  
Your submission dated January 26, 2011

Dear Dr. Halarnkar:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable subject to the comments listed below. Two (2) copies of the finished labeling must be submitted prior to releasing the product for shipment. A stamped copy of the label is enclosed for your records.

1. Replace “Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco” with “Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet” in the *Precautionary Statements* section.
2. On page 4 replace, “ponds” with “natural ponds” in *Buffer Zones* section.
3. On page 12 and 14 replace, “For control of other insect pests” with “For control of listed insect pests” in the *Corn Remarks* and *Sweet Corn Remarks* sections.
4. On page 20 delete, “such as” from the title “Leafy Brassicas such as”.
5. On page 30 replace “eliminate existing colonies” with “control existing colonies” in the *Imported Fire Ants* section.

If you have any questions regarding this action, please contact BeWanda Alexander at [Alexander.bewanda@epa.gov](mailto:Alexander.bewanda@epa.gov) or (703) 305-7460.

Sincerely,

A handwritten signature in black ink that reads "BeWanda Alexander for". The signature is written in a cursive, flowing style.

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

Enclosure

**RESTRICTED USE PESTICIDE**  
Toxic to fish and aquatic organisms.  
For retail sale to and use only by certified applicators, or persons under their direct supervision and only for the uses covered by the certified applicator's certification.



**Insecticide/Miticide**

**ACTIVE INGREDIENT:**

**BY WT.**

Bifenthrin: (2 methyl[1,1'-biphenyl]-3-yl) methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethyl-cyclopropanecarboxylate*	25.0%
<b>OTHER INGREDIENTS**:</b>	75.0%
<b>TOTAL</b>	<b>100.0%</b>

\*Cis isomers 97% minimum, trans isomers 3% maximum.

\*\*Contains petroleum distillates.

This product contains 2 pounds active ingredient per gallon.

Bifenthrin U.S. Patent No. 4,238,505

**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 this label, find someone to explain it to you in detail.)

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 the poison control center or doctor.</li> <li>•Do not give any liquids to the person.</li> <li>•Do not give anything by mouth to an unconscious person.</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 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>

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565.**

**NOTE TO PHYSICIAN:** This product is a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. Contains petroleum distillate - vomiting may cause aspiration pneumonia.

**ACCEPTED**  
with **COMMENTS**  
In EPA Letter Dated  
**FEB 18 2011**

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

34704-858

**EPA REG. NO. 34704-858**

**EPA EST. NO. 5905-IA-001**

**NET CONTENTS 1 GAL. (3.78 L)**

**EXP 08/10 CROPS**

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**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS & DOMESTIC ANIMALS**  
**WARNING**

May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Harmful if inhaled or absorbed through skin. Avoid breathing vapor or spray mist. 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 Protective Equipment (PPE):**

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

**Handlers who may be exposed to the dilute through application or other tasks must wear:**

- Long-sleeved shirt and long pants,
- Chemical-resistant gloves, such as barrier laminate or nitrile rubber or neoprene rubber or viton, and
- Shoes plus socks.

**Handlers who may be exposed to the concentrate through mixing, loading, application or other tasks must wear:**

- Long-sleeved shirt and long pants,
- Chemical-resistant gloves, such as barrier laminate or nitrile rubber or neoprene rubber or viton,
- Shoes plus socks, and
- Protective eyewear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**ENVIRONMENTAL HAZARDS**

This pesticide is extremely toxic to fish and aquatic invertebrates. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not make applications 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 washwaters.

This product is highly toxic to bees exposed to direct treatment or residues 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.

The use of bifenthrin is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county, contact the local extension service for procedures and precautions to use to protect endangered species.

**PHYSICAL / CHEMICAL HAZARDS**

Combustible. Do not use or store near open flame.

**DIRECTIONS FOR USE**

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**RESISTANCE MANAGEMENT**

Sniper contains a Group 3 Insecticide. With repeated use of Group 3 insecticides as the primary method of control in the same field for successive years, insect/mite populations can develop resistant biotypes. If this occurs, insect/mite biotypes with acquired resistance to Group 3 insecticides may eventually dominate the insect/mite population. This may result in partial or total loss of control of those species by Sniper or other Group 3 insecticides.

To delay development of insecticide resistance, the following practices are recommended:

- Base insecticide applications on comprehensive IPM programs. This program should include an insect management program that includes cultural and biological control where possible.

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- Use good resistance management strategies established for the use area. This may include the use of insecticide rotations or tank mixes with other groups of insecticide and miticides in an IPM program.
- Always apply Sniper at the recommended rates and according to label directions. Do not use less than recommended label rates alone or in tank mixtures unless directed otherwise in supplemental labeling supplied by Loveland Products, Inc.
- Monitor treated populations in the field for loss of control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. Immediately consult your local Loveland Products, Inc. representative or agricultural advisor for the best alternative method of control in your area.
- Do not treat seedling plants grown for transplant in greenhouses, shade houses, or field plots.
- Consult your local extension specialist, certified crop advisor, and/or manufacturer for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.

**Application Instructions**

Rate of application is variable according to pest pressure, timing of sprays, and field scouting. Use lower rates under light to moderate infestations; higher rates under heavy insect pressure and for mite control. Arid climates generally require higher rates. Cultivation within 10 feet of water body is prohibited to allow for the growth of a vegetated filter strip.

In New York State this product may not be applied within 100 feet (using ground equipment) to 300 feet (using aerial equipment) of coastal marshes or streams that drain into coastal marshes.

**California Special Equipment and Restrictions:** The use of Sniper® on corn is prohibited in all coastal counties. Sniper must be used in closed systems that meet the criteria for closed systems as established by the California Department of Food and Agriculture. The criteria and a list of the closed systems meeting the criteria are available through the California Department of Food and Agriculture.

**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, such as barrier laminate or nitrile rubber or neoprene rubber or viton, and
- Shoes plus socks.

**CHEMIGATION USE DIRECTIONS**

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand-move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Results from utilizing chemigation have been variable and depend upon the set up and calibration of equipment.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. Contact your State Agricultural Extension Service specialist, equipment manufacturers or other experts for consultation on the suitability of the equipment set up to obtain effective control of the target insect pests.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Failure to cease application during a mechanical stoppage may result in undesirable residues to adjacent areas.

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

The pesticide injection pipeline must contain a functional automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain 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.

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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.

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

For sprinkler irrigation, meter Sniper at a continuous uniform rate during the entire irrigation period. To ensure accurate application over the treated area, apply in sufficient volume of water or other diluents. If non emulsified oil is used as the diluent, use 1 to 2 pints per acre. Continuous agitation of the pesticide supply tank for the duration of the application period is recommended. When chemigation systems are used, 0.5 inch per acre of irrigation water is suggested except that for Low Energy Precision Application (LEPA) irrigation, a minimum of 0.75 inch of water per acre is suggested.

**ROTATIONAL CROPS**

Crops for which bifenthrin tolerances exist may be rotated at any time. All other crops may be rotated 30 days following the final application of Sniper.

**MIXING INSTRUCTIONS**

The spray tank must be clean, thoroughly rinsed, and decontaminated before adding either Sniper alone or with tank mix combinations (see Sniper in **Tank Mixtures** section below). If water is used as the carrier, use clean water.

For aerial applications made on brassicas (see **CROPS** section of the label below for full list of approved brassicas), canola, crambe, rapeseed, foliar applications on corn, cucurbits (see **CROPS** section of the label below for full list of approved cucurbits), eggplant, grapes, head lettuce, and succulent peas and beans (see **CROPS** section of the label below for full list of approved succulent peas and beans), 1 to 2 quarts of emulsified oil may be substituted for 1 to 2 quarts of water in the finished spray. For aerial applications made on cotton, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray. Thorough coverage is essential to achieve control.

**Sniper Used Alone:** When Sniper is used alone, add the recommended amount to the spray tank when the tank is half filled with water or other carrier; then add the rest of the water or other carrier (as permitted on this label). Provide sufficient agitation during mixing and application to maintain a uniform emulsion.

**Sniper with Fertilizer:** Fill the spray tank approximately one-half full with water and/or liquid fertilizer, add the proper amount of Sniper, and then add the rest of the water and/or fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform spray mixture.

A jar compatibility test should be performed with the appropriate ratio of Sniper and fertilizer to ensure the mixture will stay in solution. Maintain constant agitation during mixing and application.

**Sniper in Tank Mixtures:** If a tank mixture is used, it is recommended that a compatibility test be done before actual tank mixing. A jar test for physical compatibility is recommended for untried mixtures using proper ratios and mixing sequences of all ingredients to be included in the mixture. Once compatibility is confirmed for the tank mix, fill the tank half full with water or other carrier. Start and continue agitation throughout mixing following conventional mixing order practices. Sniper may be applied in tank mixtures with other products approved for use on registered crops. Observe all restrictions and precautions which appear on the labels of these products.

**California Closed System: Special Equipment:** The registration of Sniper in California requires that the product be used in a closed system that meets the criteria for closed systems as established by the California Department of Pesticide Regulation (CDPR). The criteria and list of suppliers meeting the criteria are available from CDPR.

**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; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing bifenthrin 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 Services. USDA, NRCS. 2000. Fort Worth, Texas. 21 pp. <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, streams, marshes, 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, streams, marshes, ponds, estuaries, and commercial fish ponds).

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**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, streams, marshes, ponds, estuaries, and commercial fish ponds).

**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 temperatures 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 crosswind, 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.

**ARTICHOKE**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Artichoke plume moth	0.10	6.4	Apply when pest population reaches damaging threshold. <b>Application by ground:</b> Apply a full cover spray in a minimum of 75 gals of finished spray/A. <b>Application by air:</b> Apply specified dosage in a minimum of 10 gals/A.
Cribrate weevil			

- Repeat as necessary to maintain control, but not more often than 15-day intervals.
- Do not exceed 0.5 lb ai (32 oz formulated)/A/season.
- A 5-day pre-harvest interval must be observed.

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**BRASSICAS**

CROP	PEST	DOSAGE		REMARKS
		LB AI/A	FL OZ/A	
Head and Stem	Aphids	0.033-0.10	2.1-6.4	Apply in a minimum of 2 gals of finished spray/A by air or in a minimum of 10 gals/A with ground equipment. When applying by air, 1-2 qts of emulsified oil may be substituted for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.
Brassica Vegetables including:	Armyworms spp.			
Broccoli	Corn earworm			
Chinese Broccoli (gai lon, white flowering broccoli)	Crickets			
Brussels sprouts	Cucumber beetles			
Cauliflower	Cutworms			
Cavalo broccolo	Diamondback moth			
Kohlrabi	Flea beetles			
Cabbage	Ground beetles			
Chinese cabbage (napa)	Imported cabbageworm			
Chinese mustard	Leafhoppers			
Cabbage (gai choy)	Loopers			
	Saltmarsh caterpillar			
	Stink bugs			
	Tobacco budworm			
	Thrips			
	Whitefly			
	Wireworm (adults)			
	Banks grass mite	0.08-0.10	5.12-6.4	
	Carmine mite			
	Lygus spp.			
	Pacific spider mite			
	Twospotted spider mite			

- Do not apply more than 0.5 lb ai (32 oz formulated)/A/season.
- Do not make more than 5 applications after bloom.
- Do not make applications less than 7 days apart.
- Do not apply within 7 days of harvest.

**BUSHBERRIES**

CROP	PEST	DOSAGE		REMARKS
		LB AI/A	FL OZ/A	
Blueberry, highbush and lowbush	Aphids	0.033-0.10	2.1-6.4	Apply in a minimum of 2 gals of finished spray/A by air or in a minimum of 10 gals/A with ground equipment. Thorough coverage is essential to achieve control.
Currant	Blueberry maggot			
Elderberry	Fruitworms			
Gooseberry	Japanese beetle			
Huckleberry	Leafhoppers			
	Leaf rollers			
	Plum curculio			
	Spanworm			
	Carmine mite	0.08-0.10	5.12-6.4	
	Lygus spp.			
	Pacific Spider Mite			
	Twospotted spider mite			

- Do not apply more than 0.5 lb ai (32 oz formulated)/A/season.
- Do not make applications less than 7 days apart.
- Do not apply within 1 day of harvest.



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CANE BERRIES

CROP	PEST	DOSAGE		REMARKS
		LB AI/A	FL OZ/A	
Caneberries including: Bingleberries Blackberries Dewberries Loganberries Lowberries Marionberries Olallieberries Raspberries Youngberries	Leafrollers Orange tortrix Root weevils	0.05-0.10	3.2-6.4	Apply by air or ground equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gals/A by air and 50 gals/A by ground). One application may be made pre-bloom and a second application may be made post-bloom. For <b>Crown borer</b> , apply 0.1 lb ai (6.4 oz formulated)/A post-harvest (fall) or pre-bloom (spring) as a drench application directed at the crown of plants in a minimum of 200 gals/water/A. Greater efficacy is observed at higher water gallonages (up to 400 gals) or in an application prior to a significant rainfall event. Do not make both pre-bloom foliar and pre-bloom drench applications.
	Raspberry crown borer† Spider mites	0.10	6.4	
	†Not permitted in CA.			

- Do not apply within 3 days of harvest.
- Do not exceed 0.2 lb ai (12.8 oz formulated)/A/season.

CANOLA, CRAMBE, RAPESEED

CROP	PEST	DOSAGE		REMARKS
		LB AI/A	FL OZ/A	
Canola Crambe Rapeseed	Aphids Armyworms Cutworms Diamondback moths Flea beetle Flea hopper Grasshopper Loopers Other Lepidopterous larvae Plant bug Seedpod weevil Stink bugs Thrips Whitefly	0.033-0.04	2.1-2.6	Apply in a minimum of 2 gals of finished spray/A by air or in a minimum of 10 gals/A with ground equipment. When applying by air, 1-2 qts of emulsified oil may be substituted for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.

- Do not apply more than 0.08 lb ai (5.12 oz formulated)/A/season.
- Do not make applications less than 14 days apart.
- Do not apply within 35 days of harvest.

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**CHRISTMAS TREES (For Use Only in Washington and Oregon)**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Root weevil Spruce spider mite	0.06-0.1	3.9-6.4	<b>Ground application:</b> Apply in water in a minimum of 20 gals/A. <b>Air application:</b> Apply in water in a minimum of 5 gals/A. Sniper is generally not phytotoxic to Christmas trees. However, applications should be made to a small representative group of plants to ensure that a particular variety grown under current conditions is not unusually sensitive to Sniper. Maintain a minimum of 21 days between applications.

- Do not apply more than 0.1 lb ai (6.4 ozs formulated)/A/treatment.
- Do not make more than 3 applications in a crop year.
- Do not make applications through irrigation systems.

**CILANTRO, CORIANDER**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Beet armyworm Cabbage looper Cutworms Flea beetle Grasshoppers Leafminers Saltmarsh caterpillar Spotted cucumber beetle Thrips Whitefly	0.033-0.10	2.1-6.4	Apply using sufficient water to obtain uniform coverage. Apply as needed. Apply with ground equipment using a minimum of 10 gals of finished spray/A or a minimum of 2 gals/A by aircraft.
Twospotted spider mite	0.08-0.10	5.12-6.4	

- Do not make applications less than 7 days apart.
- Do not apply more than 0.50 lb ai (32 oz formulated)/A/season.
- Do not apply within 3 days of harvest.

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CITRUS (1 day PHI)\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Blue-green citrus root weevil ( <i>Pachnaeus opalus</i> )	0.25-0.50	16-32	The use of this product protects citrus tree roots from <i>Diaprepes</i> and other citrus root weevil feeding by creating a barrier. As Citrus root weevil eggs hatch, the newly hatched larvae (neonates) fall to the soil surface beneath the tree and come into contact with this product as they attempt to burrow into the root zone. Disturbance of the soil beneath the tree should be minimized.
Brown leaf notcher ( <i>Epicaerus mexicanus</i> )			
Diaprepes root weevil ( <i>Diaprepes abbreviatus</i> )			
Little leaf notcher ( <i>Artipus floridanus</i> )			
Southern blue-green citrus root weevil ( <i>Pachnaeus litus</i> )			
Asian cockroach ( <i>Blatella asahinae</i> )	0.1-0.25	6.4-16	Timing of application is very important. Peak emergence of <i>Diaprepes</i> adults varies by citrus growing region, and environmental factors such as soil moisture can affect emergence. Usually, two peaks occur for <i>Diaprepes</i> , first in the spring then late summer or early fall. Southern blue-green and Blue-green citrus weevils and Fuller rose beetle usually have a single emergence peak in the spring. Brown and Little leaf notchers usually have three emergence peaks, spring, summer and fall. Since emergence varies by region and season, the best way to time application is to observe the adults. By trapping adults when they are most active (in the morning or/and late afternoon) during the spring and summer emergence periods, an estimation of numbers can be obtained. Eggs are laid 8 to 10 weeks following the adult emergence from the soil; larvae invasion into the soil will begin 2 to 3 weeks following adult emergence. This product must be applied prior to the dropping of the neonates. Consult local university extension personnel for current information to protect citrus trees from Citrus root weevils and other pests. Apply this product by ground equipment to bare soil beneath citrus trees. This product must be uniformly applied from the trunk to the drip line of the tree, apply in a minimum of 40 gals of dilute spray/A. Greater spray volume should insure greater uniformity of coverage. A pre- and post-application irrigation may aid in the uniformity of coverage as well.
Fire ant ( <i>Solenopsis</i> spp.)			
			Apply to individual citrus resets, when not in solid planted rows, using hand-gun or shielded sprayer. Peak emergence of <i>Diaprepes</i> root weevil generally occurs in the spring. Depending on weather conditions, a minor emergence of <i>Diaprepes</i> root weevil may also occur in the fall.

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EPA REG. NO. 34704-858**

**CITRUS (1 day PHI)\* cont'd.:**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
			<p>If the citrus grove to be treated is in an area where weather conditions are conducive to primary emergence occurring in the spring, 32 fl oz formulated product should be used to obtain the longest residual management of <i>Diaprepes</i> root weevil.</p> <p>If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 16 fl oz formulated product can be applied early season and 16 fl oz formulated product can be applied later in the season.</p> <p>If emergence extends beyond the residual protection of this product, grower is advised to use additional management strategies (i.e. foliar adult control or soil larvae control such as nematodes). Contact your state agricultural Extension Specialist as to the recommendation suited for local conditions.</p>

- \*Not for use in California unless allowed by an approved supplemental labeling.
- Do not apply through irrigation systems.
  - Do not allow any application of this product to contact fruit or foliage.
  - Do not apply more than a total of 32 fl oz of formulated product (0.5 lb ai)/A/year.
  - Apply the specified dosage in a minimum of 40 gals of finished spray/A.
  - Ground application only. Do not apply by air.

**CONIFER SEED ORCHARDS**

**(For Use Only in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, Virginia)**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Cone worms	0.1-0.2	6.4-12.8	<p><b>Ground application:</b> Apply in water in a minimum of 100-500 gals/A.</p> <p><b>Air application:</b> Apply in water in a minimum of 10 gals/A or 0.5 gal refined vegetable oil/A.</p> <p>Apply in sufficient water to obtain thorough coverage.</p> <p>Begin applications 7 days after peak pollen flight and continue on 30 day intervals up to a maximum of 0.6 lb ai/A/season.</p>
Seed bugs			
Seed worms			

- Do not make more than six applications per season or apply more than 0.6 lb. ai (38.4 oz formulated)/A/season.

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**CORN  
FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED (AT PLANT USE)**

PEST	DOSAGE		REMARKS
	LB AI	FL OZ	
Corn rootworm larvae Northern Southern Western	0.0046 per 1,000 linear ft/row	0.30 per 1,000 linear ft/row	Apply as a 5 to 7 inch T-band treatment over an open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. Use the table below to determine this product's needs per acre. Apply in a minimum of 3 gals of finished spray/A. Mix this product with water or fertilizer in the following manner. Fill the spray tank, approximately one-half full with water or liquid fertilizer, add the proper amount of this product then add the rest of the water or fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform spray mixture. Applications of this product alone or in recommended tank mixtures, in conjunction with in-furrow pop-up fertilizers may be used. A jar compatibility test should be performed with appropriate ratio of this product and fertilizer to ensure mixture will stay in solution. Constant agitation should be maintained during mixing and application.
Army cutworm	0.0023-0.0046	0.15-0.30	
Cutworm spp.	per 1,000	per 1,000	
Grubs	linear ft/row	linear ft/row	
Seed corn beetle			
Seed corn maggot			
True armyworm or Armyworm spp.			
Wireworm			

- Do not apply to soil where there is greater than 30% cover of crop residue remaining.
- Do not apply within 30 days of harvest.
- Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.
- Do not apply more than 0.1 lb ai (6.4 oz formulated)/A/season as an at plant application.

Row Spacings (inches)	40	38	36	30
Sniper (lbs ai/A)	0.060	0.064	0.069	0.080
Sniper (formulated oz/A)	3.9	4.1	4.4	5.12

**FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED (PRE & PPI)**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Armyworm spp.	0.047-0.062	3-4	The 3-4 oz/A rate must be applied as PPI and can be tankmixed and applied with PPI herbicides. Incorporation of this product should not be any deeper than the intended planting depth and no deeper than 3 inches. Incorporation depth should be close to the intended seed planting depth.
Black cutworm	Pre-Plant	Pre-Plant	
Seedcorn maggot	Incorporated	Incorporated	
Stalkborer	(PPI)	(PPI)	
White grub			
Wireworm			
Armyworm spp.	0.040	2.56	The 2.56 oz/A rate may be applied PRE and can be tankmixed and applied with PRE herbicides.
Black cutworm	Pre-Emergence	Pre-Emergence	
Stalkborer	(PRE)	(PRE)	

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**FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED (FOLIAR USE)**

PEST	DOSAGE	
	LB AI/A	FL OZ/A
Aphids	0.033-0.10	2.1-6.4
Army cutworm		
Beet armyworm		
Cereal leaf beetle		
Chinch bug		
Common stalk borer		
Corn earworm		
Corn rootworm adults		
Cucumber beetle adult		
Cutworm spp.		
European corn borer		
Fall armyworm		
Flea beetle		
Grasshoppers		
Greenbug		
Japanese beetle adult		
Sap beetle		
Southern armyworm		
Southern corn leaf beetle		
Southwestern corn borer		
Stink bug		
Tarnished plant bug		
True armyworm or Armyworm species		
Webworms		
Western bean cutworm		
Yellowstriped armyworm		
Banks grass mite	0.08-0.10	5.12-6.4
Carmine mite		
Twospotted spider mite		

**Restrictions - Corn**

- Do not apply more than 0.3 lb ai (19.2 oz formulated)/A/season including PRE & PPI, at plant, plus foliar applications. In California do not exceed the maximum rate of 0.2 lb ai/A/season.
- Do not apply within 30 days of harvest.
- Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application.
- Use of ultra low volume (ULV) application on corn is prohibited.
- Do not make aerial or ground applications to corn if heavy rainfall is imminent.
- Use of this product on corn is prohibited in all coastal counties.

**Remarks - Corn**

**General:** Apply in a minimum of 2-5 gals of finished spray/A by aircraft or in a minimum of 10 gals/A with ground equipment. To improve control by aircraft, use 5 gals of finished spray/A particularly when initial populations are heavier than normal. See specific comment below for TX, NM, OK, and AZ mite control. When applying by air, 1-2 qts of emulsified oil may be substituted for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.

**To control ear-attacking pests:** Apply this product just before silking and repeat as necessary to maintain control but do not exceed maximum application rates and reapplication intervals listed elsewhere in this section.

**Southwestern corn borer, European corn borer:** Make application for corn borer control with initial application at or shortly before egg hatch.

**For control of other insect pests:** Apply when pests first appear and repeat as necessary but do not exceed maximum application rates and reapplication intervals listed elsewhere in this section.

**For Control of mite:**

Apply for Banks grass mite control when colonies first form prior to leaf damage or discoloration and before dispersal above the bottom third of the plant.

For Twospotted spider mite and Carmine mite control, apply when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy.

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Higher rates will be necessary for heavier initial populations and corn under heat or drought stress. Field experience with dimethoate at 0.5 lb ai/A in tank mixture has demonstrated good control under these conditions.

**For mite control in Texas, New Mexico, Oklahoma, Arizona:** Apply in a minimum of 5 gals of finished spray/A by aircraft or in a minimum of 10 gals/A with ground equipment.

**SWEET CORN (GRAIN AND SILAGE)  
SWEET CORN GROWN FOR SEED (AT PLANT USE)**

PEST	DOSAGE		REMARKS
	LB AI	FL OZ	
Corn rootworm larvae	0.0046	0.30	Apply as a 5 to 7 inch T-band treatment over an open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. Use the table below to determine the Sniper needs per acre. Apply in a minimum of 3 gals of finished spray/A. Mix this product with water or fertilizer in the following manner. Fill the spray tank approximately one-half full with water or or liquid fertilizer, add the proper amount of Sniper then add the rest of the water or fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform spray mixture. Applications of this product alone or in recommended tank mixtures, in conjunction with in-furrow pop-up fertilizers may be used. A jar compatibility test should be performed with appropriate ratio of this product and fertilizer to ensure mixture will stay in solution. Constant agitation should be maintained during mixing and application.
Northern	per 1,000	per 1,000	
Southern	linear ft/row	linear ft/row	
Western			
Mexican (California)			
Army cutworm	0.0023-0.0046	0.15-0.30	
Cutworm spp.	per 1,000	per 1,000	
Grubs	linear ft/row	linear ft/row	
Seed corn beetle			
Seed corn maggot			
True armyworm or Armyworm spp.			
Wireworm			

- Do not apply to soil where there is greater than 30% cover of crop residue remaining.
- Do not apply within 30 days of harvest.
- Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.
- Do not apply more than 0.1 lb ai (6.4 oz formulated)/A/season as an at-plant application.

Row Spacings (inches)	40	38	36	30
Sniper (lbs ai/acre)	0.060	0.064	0.069	0.080
Sniper (formulated oz/A)	3.9	4.1	4.4	5.12

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**SWEET CORN (GRAIN AND SILAGE)  
SWEET CORN GROWN FOR SEED (FOLIAR USE)**

PEST	DOSAGE	
	LB AI/A	FL OZ/A
Aphids	0.033-0.10	2.1-6.4
Army cutworm		
Beet armyworm		
Cereal leaf beetle		
Chinch bug		
Common stalk borer		
Corn earworm		
Corn rootworm adults		
Corn silk fly (California)		
Cucumber beetle adult		
Cutworm spp.		
European corn borer		
Fall armyworm		
Flea beetle		
Grasshoppers		
Greenbug		
Japanese beetle adult		
Sap beetle		
Southern armyworm		
Southern corn leaf beetle		
Southwestern corn borer		
Stinkbugs		
Tarnished plant bug		
True armyworm or Armyworm spp.		
Webworms		
Western bean cutworm		
Yellowstriped armyworm		
Banks grass mite	0.08-0.10	5.12-6.4
Carmine mite		
Pacific spider mite (California)		
Twospotted spider mite		

**Restrictions - Sweet Corn**

- Do not apply more than 0.2 lb ai (12.8 oz formulated)/A/season.
- Do not apply within one day of harvest.
- Do not graze livestock in treated areas or cut treated crops for feed within 1 day of the last application.
- Use of ultra low volume (ULV) application on corn is prohibited.
- Do not make aerial or ground applications to corn if heavy rainfall is imminent.
- Use of this product on corn is prohibited in all coastal counties.

**Remarks - Sweet Corn**

**General:** Apply in a minimum of 2 gals of finished spray per acre by air in a minimum of 10 gals/A with ground equipment. When applying by air, 1-2 qts of emulsified oil may be substituted for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.

**To control ear-attacking pests:** Apply this product before silking begins and repeat as necessary to maintain control but do not exceed maximum application rates and reapplication intervals listed elsewhere in this section.

**Southwestern corn borer, European corn borer:** Make 2 applications for corn borer control with initial application at or shortly before egg hatch.

**For control of other insect pests:** Apply when pests first appear and repeat as necessary but do not exceed maximum application rates and reapplication intervals listed elsewhere in this section.

**For Control of Mites:**

Apply for mite control when colonies first form prior to leaf damage or discoloration and before dispersal above the bottom third of the plant.

Higher rates will be necessary for heavier initial populations and corn under heat or drought stress.



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**COTTON**

PEST	DOSAGE	
	LB AI/A	FL OZ/A
European corn borer	0.02-0.10	1.3-6.4
Soybean (banded) thrips		
Tobacco thrips		
Boll weevil	0.04-0.10	2.6-6.4
Bollworm		
Cabbage looper		
Cotton aphid		
Cotton fleahopper		
Cotton leafperforator		
Cutworms		
Fall armyworm		
Plant bugs		
Saltmarsh caterpillar		
Southern garden leafhopper		
Stink bugs		
Tobacco budworm		
Whitefly		
Yellowstriped armyworm		
Beet armyworm	0.06-0.10	3.8-6.4
Carmine spider mite		
<i>Lygus</i> spp. (except California)		
Pink bollworm		
Twospotted spider mite		

**Restrictions - Cotton**

- Do not apply more than 0.5 lb ai (32 oz formulated)/A/season in all states except CA.
- Do not apply within 14 days of harvest.
- Do not graze livestock in treated areas or cut treated crops for feed.
- Do not make more than 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season. Synthetic pyrethroid products include Ambush®, Ammo®, Asana® XL, Baythroid®, Capture®, Danitol®, Karate®, Mustang® and Sniper®.

**Remarks - Cotton**

This product may be applied in water or refined vegetable oil (soybean/cottonseed).

**Application in Water:** Apply in a minimum of 5 gals/A with ground equipment or 1 gal/A by aircraft. When applying by air, one qt of emulsified oil may be substituted for 1 qt of water in the finished spray.

**ULV Application:** Apply the recommended rate of this product in refined vegetable oil in a minimum of 1 qt of finished spray/A with aircraft calibrated to give adequate coverage.

**To Control Boll Weevil:** Apply this product at an interval of 3 to 4 days until pest numbers are reduced to acceptable levels.

**To Control Mites and Aphids:** Apply when pests first appear. Repeat as necessary to maintain control. Higher rates will be required once a damaging threshold is established.

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**CUCURBITS**

CROP	PEST	DOSAGE		REMARKS
		LB AI/A	FL OZ/A	
Chayote (fruit)	Aphids	0.04-0.10	2.6-6.4	Apply in a minimum of 5 gals of finished spray/A by air or in a minimum of 20 gals/A with ground equipment. When applying by air, 1-2 qts of emulsified oil may be substituted for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.
Chinese waxgourd	Armyworms			
(Chinese preserving melon)	Cabbage looper			
Citron Melon	Corn earworm			
Cucumber	Cucumber beetles			
Gherkin	Cutworms			
Gourd, edible (includes hyotan, cucuzza)	Grasshopper			
<i>Luffa</i> spp.	Leafhoppers			
(includes hechima, Chinese okra)	Melonworm			
<i>Momordica</i> spp.	Pickleworm			
(includes balsam apple)	Plant bug			
balsam pear	Rindworm			
bitter melon	Squash bugs			
Chinese cucumber)	Squash vine borer			
Muskmelon	Stink bugs			
(hybrids and/or cultivars of <i>Cucumis melo</i> )	<b>Tobacco budworm</b>			
(includes true cantaloupe cantaloupe casaba crenshaw melon golden pershaw melon honeydew melon honey balls mango melon Persian melon pineapple melon Santa Claus melon and snakemelon)	Banks grass mite	0.08-0.10	5.12-6.4	
Pumpkin ( <i>Cucurbita</i> spp.)	Carmine mite			
Squash, summer (includes crookneck squash scallop squash straightneck squash vegetable marrow zucchini)	<i>Lygus</i> spp.			
Squash, winter (includes butternut squash calabaza hubbard squash ( <i>C. mixta</i> ; <i>C. pepo</i> includes acorn squash spaghetti squash)	Twospotted spider mite			
Watermelon (includes hybrids and/or varieties of <i>Citrullus</i> spp.)	Whitefly			

- Do not apply more than 0.3 lb ai (19.2 oz formulated)/A/season.
- Do not make more than two applications after bloom.
- Do not make applications less than 7 days apart.
- Do not apply within 3 days of harvest.

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**DRIED BEANS AND PEAS such as:**

Dried cultivars of: Bean (*Lupinus* spp.): Grain lupin, Sweet lupin, White lupin, White sweet lupin, Bean (*Phaseolus* spp.): Field bean, Kidney bean, Lima bean (dry), Navy bean, Pinto bean, Tepary bean; Bean (*Vigna* spp.): Adzuki bean, Blackeyed pea, Catjang, Cowpea, Crowder pea, Moth bean, Mung bean, Rice bean, Southern pea, Urd bean; Broad bean (dry), Chickpea, Guar, Lablab bean, Lentil; Pea (*Pisum* spp.): Field pea; Pigeon pea.

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aster leafhopper	0.025-0.10	1.6-6.4	Apply in a minimum of 2 gals of finished spray/A by air or in a minimum of 10 gals/A with ground equipment. When applying by air, 1- 2 qts of emulsified oil may be substituted for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.
Flea beetle			
Grasshoppers			
Leafhoppers			
Alfalfa caterpillar	0.033-0.10	2.1-6.4	
Aphids			
Bean leaf beetle			
Beet armyworm			
Cloverworm			
Corn earworm			
Corn rootworm, adults			
Cucumber beetles			
Cutworms			
European corn borer			
Fall armyworm			
Imported cabbageworm			
Japanese beetle (adult)			
Leaf miner			
Loopers			
Mexican bean beetle			
Pea leaf weevil			
Pea weevil			
Plant bug			
Saltmarsh caterpillar			
Sap beetle			
Southern armyworm			
Stink bugs			
Tarnished plant bug			
Thrips			
Tobacco budworm			
Webworms			
Western bean cutworm			
Whitefly			
Yellowstriped armyworm			
Banks grass mite	0.08-0.10	5.12-6.4	
Carmine mite			
<i>Lygus</i> spp.			
Twospotted spider mite			

- Do not apply more than 0.2 lb ai (12.8 oz formulated) to peas, or 0.3 ai (19.2 oz formulated) to beans A/season.
- Do not apply within 14 days of harvest.
- Do not make applications less than 7 days apart.

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**FRUITING VEGETABLES**

CROP	PEST	DOSAGE		REMARKS
		LB AI/A	FL OZ/A	
Eggplant	Armyworms spp.	0.033-0.10	2.1-6.4	Apply in a minimum of 2 gals of finished spray/A by air or in a minimum of 10 gals/A with ground equipment. When applying by air, 1-2 qts of emulsified oil may be substituted for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.
Groundcherry	including			
Pepino	Beet armyworm			
Pepper (bell & non-bell)	Fall armyworm			
	Southern yellowstriped armyworm			
	Cabbage looper			
	Colorado potato beetle			
	Corn Earworm			
	Cucumber beetle			
	Cutworms			
	European corn borer			
	Flea beetle			
	Leafminers			
	Loopers			
	Pepper weevil			
	Plant bugs			
	Stink bugs			
Thrips				
Tomato hornworm				
Tomato pinworm				
Vegetable leafminer				
Whitefly				
	Banks grass mite	0.08-0.10	5.12-6.4	
	Broad mite			
	Carmine mite			
	<i>Lygus</i> spp.			
	Pacific spider mite			
	Twospotted spider mite			

- Do not make applications less than 7 days apart.
- Do not apply more than 0.2 lb ai (12.8 oz formulated)/A/season.
- Do not apply within 7 days of harvest.

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**GRAPES\***

Apply as directed using the rates in the table below.

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Cutworms	0.05-0.10	3.2-6.4	Apply in a minimum of 10 gals of finished spray by air or in a minimum of 25 gals of finished spray with ground equipment. When applying by air, 1 to 2 qts of emulsified oil may be substituted for 1 to 2 qts of water in the finished spray. Thorough coverage is essential to achieve control. When pest pressure is moderate to severe, use higher rate.
Eastern grape leafhopper			
Grape berry moth			
Japanese beetles adults			
Lady beetle (Scymnus)			
Variiegated leafhopper			
Western grape leafhopper	0.10	6.4	
Black vine weevil			
Glassywinged sharpshooter			
Twospotted spider mite			

**RESTRICTIONS:**

- \*Not for use in California unless allowed by an approved supplemental labeling.
- Do not apply more than 0.10 lb ai (6.4 oz formulated)/A/season.
- Do not apply within 30 days of harvest.

**HOPS**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids	0.06-0.10	3.8-6.4	<b>Application by ground:</b> For best results, full coverage is essential. Early season rates, use 100-150 gals/spray/A. Late season rates, use 200-250 gals/spray/A. For Root weevil control, make a directed spray to the base of the plant. Spray up the vine 3 ft and the soil surface 1.5-2 ft on either side of plant. <b>Application by air for late season control of Twospotted spider mites:</b> Apply no less than 6.4 oz (0.1 lb ai) per application in a minimum of 10 gals/A.
Armyworms			
Cutworms			
Leafrollers			
Loopers			
Root weevils	0.05-0.10	3.2-6.4	
Twospotted spider mite			

- Do not exceed 0.1 lb ai (6.4 oz formulated)/A/application.
- Do not exceed 0.3 lb ai (19.2 oz formulated)/A/season.
- A spray interval of 21 days between applications must be maintained.
- A 14-day pre-harvest interval must be observed.
- Use of ultra low volume (ULV) application on hops is prohibited.

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**LEAFY BRASSICAS such as:**

Broccoli raab, Bok choy, Collards, Kale, Mizuna, Mustard greens, Mustard spinach, Rape greens, Turnip greens\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids	0.033-0.10	2.1-6.4	Apply in a minimum of 2 gals of finished spray/A by air or in a minimum of 10 gals/A with ground equipment. When applying by air, 1- 2 qts of emulsified oil may be substituted for 1- 2 qts of water in the finished spray. Thorough coverage is essential to achieve control.
Armyworms			
Corn earworm			
Crickets			
Cucumber beetles			
Cutworms			
Diamondback moth			
Flea beetles			
Grasshoppers			
Ground beetles			
Imported cabbageworm			
Japanese beetle (adult)			
Leafhoppers			
Loopers			
Saltmarsh caterpillar			
Stink bugs			
Thrips			
Tobacco budworm			
Whitefly			
Wireworm (adults)			
Banks grass mite	0.08-0.10	5.12-6.4	
Carmine mite			
<i>Lygus</i> spp.			
Pacific spider mite			
Twospotted spider mite			

- \* Not for use in California unless allowed by an approved supplemental labeling.
- Do not apply more than 0.4 lb ai (25.6 oz formulated)/A/season.
- Do not make applications less than 7 days apart.
- Do not apply within 7 days of harvest.

**LEAFY PETIOLE VEGETABLES**

CROP	PEST	DOSAGE		REMARKS			
		LB AI/A	FL OZ/A				
Cardoon	Aphids	0.033-0.10	2.1-6.4	Apply in a minimum of 2 gals of finished spray/A by air or in a minimum of 10 gals/A with ground equipment. Thorough coverage is essential to achieve control.			
Celery	Armyworms						
Celtuce	Corn earworm						
Chinese celery	Crickets						
Florence fennel	Cucumber beetles						
Rhubarb	Cutworms						
Swiss chard	Diamondback moth						
	Flea beetles						
	Ground beetles						
	Imported cabbageworm						
	Leafhoppers						
	Loopers						
	Stink bugs						
	Thrips						
	Wireworm (adults)						
	Carmine mite				0.08-0.10	5.12-6.4	
	<i>Lygus</i> spp.						
	Pacific Spider mite						
	Twospotted spider mite						

- Do not apply more than 0.5 lb ai (32 oz formulated)/A/season.
- Do not make applications less than 7 days apart.
- Do not apply within 7 days of harvest.

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**LETTUCE, HEAD**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids	0.033-0.10	2.1-6.4	Apply in water as necessary for insect control using a minimum of 15 gals of finished spray/A with ground equipment and 5 gals/A by air. When applying by air, 1-2 qts of emulsified oil may be substituted for for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.
Armyworms			
Corn earworm			
Cucumber beetles			
Cutworms			
Diamondback moth			
Flea beetles			
Imported cabbageworm			
Leafhoppers			
Loopers			
Saltmarsh caterpillar			
Stinkbug spp.			
Tobacco budworm			
Whitefly			
Carmine mite	0.08-0.10	5.12-6.4	
<i>Lygus</i> spp.			
Twospotted spider mite			
<ul style="list-style-type: none"> <li>• Do not make applications less than 7 days apart.</li> <li>• A maximum of 0.5 lb ai (32 oz formulated) may be applied/A/season.</li> <li>• Do not apply within 7 days of harvest.</li> </ul>			

**MAYHAW\***

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Plum curculio	0.08-0.10	5.12-6.4	Apply in water in a minimum of 28 gals of finished spray per acre.
<ul style="list-style-type: none"> <li>*Not for use in California unless allowed by an approved supplemental labeling.</li> <li>• Apply no more than once every 7 days.</li> <li>• Do not apply more than 0.2 lb ai (12.8 oz formulated)/A/season.</li> <li>• Do not apply within 30 days of harvest.</li> </ul>			

**OKRA**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids	0.033-0.10	2.1-6.4	Apply using sufficient water to obtain uniform coverage. Apply as needed, with ground equipment using a minimum of 10 gals of finished spray per acre or a minimum of 2 gals/A by aircraft.
Armyworms			
Corn earworm			
Cucumber beetles			
Cutworms			
European corn borer			
Flea beetles			
Japanese beetle (adult)			
Leafminers			
Loopers			
Stink bugs			
Thrips			
Whitefly			
Broad mite	0.08-0.10	5.12-6.4	
Carmine mite			
<i>Lygus</i> spp.			
Twospotted spider mite			
<ul style="list-style-type: none"> <li>• Do not make applications less than 7 days apart.</li> <li>• Do not apply more than 0.2 lb ai (12.8 oz formulated)/A/season.</li> <li>• Do not apply within 7 days of harvest.</li> </ul>			

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PEANUT\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Beet armyworm	0.033-0.10	2.1-6.4	Apply in a minimum of 10 gals/A with ground equipment or 2 gals/A by aircraft.
Corn earworm			
Cutworm spp.			
Fall armyworm			
Grasshoppers			
Green cloverworm			
Leafhoppers			
Lesser cornstalk borer			
Loopers			
Rednecked peanut worm			
Southern armyworm			
Southern corn rootworm			
Stink bugs			
Threecornered alfalfa hopper			
Velvetbean caterpillar			
Yellowstriped armyworm			
Aphids	0.06-0.10	5.12-6.4	
Spider mites			
Thrips			
Whitefly			

- \*Not for use in California unless allowed by an approved supplemental labeling.
- Do not apply more than 0.5 lb ai (32 oz formulated)/A/season.
  - Do not apply within 14 days of harvest.
  - Do not feed green immature plants and peanut hay to livestock.
  - To maintain a proper spray interval, do not make applications less than 14 days apart.

PEARS

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids	0.04-0.2	2.6-12.8	<b>Application by ground:</b> Apply as a dilute (minimum of 200 gals of finished spray/A) or concentrate (minimum of 50 gals of finished spray per acre) spray in sufficient water to provide thorough coverage. <b>Application by air:</b> Apply the specified dosage in a minimum of 10 gals/A by air. Apply as necessary to maintain control.
Codling moth			
Cutworms			
Green fruitworm			
Leafhoppers			
Leafminers			
Leafrollers			
<i>Lygus</i> spp.			
Plant bugs			
Plum curculio			
San Jose scale (crawlers)			
Stink bugs			
Tarnished plant bugs	0.06-0.2	3.8-12.8	
Twospotted spider mite			
Yellow mite			
European red mite	0.08-0.2	5.12-12.8	

- Do not apply more than 0.5 lb ai (32 oz formulated)/A/season with no more than 0.45 lb ai (28.8 oz formulated)/A applied after petal fall.
- Apply up to 14 days prior to harvest.
- Do not graze livestock in treated orchards or cut treated cover crops for feed.
- To maintain a proper spray interval, do not make applications less than 30 days apart.



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**ROOT CROPS (Except Sugar Beets)\***

<b>CROP</b>	<b>PEST</b>	<b>DOSAGE LB AI/A</b>	<b>FL OZ/A</b>	<b>REMARKS</b>
Burdock, edible	Aphids	0.08-0.10	5.12-6.4	Apply foliar treatments in at least 25 gals water/A.
Carrot	Beet armyworm			
Celeriac	Celery leaf-tier			
Chervil, turnip rooted	Corn earworm			
Chicory	Cross-striped cabbageworm			
Ginseng	Cutworms			
Horseradish	Diamondback moth			
Parsley, turnip rooted	European corn borer			
Parsnip	Fall armyworm			
Hornworms	Fire ants			
Radish	Flea beetles			
Radish, oriental	Green cloverworm			
Rutabaga	Imported cabbageworm			
Salsify	Loopers			
Salsify, black	Southern armyworm			
Salsify, Spanish	Spider mites			
Skirret	Tobacco budworm			
Turnip	Velvetbean caterpillar			
	Whitefly			
	Yellowstriped armyworm			

- Apply no more than once every 7 days.
- Do not apply more than 0.5 lb ai (32 oz formulated)/A/season.
- Do not apply within 21 days of harvest.

Garden beet	Aphids	0.08-0.10	5.12-6.4	<b>Ground application:</b> Apply in water in a minimum of 25 gals of finished spray/A. <b>Air application:</b> Apply in water in a minimum of 2 gals/A. Apply in sufficient water to obtain uniform coverage as needed.
	Fire ants			
	Flea beetles			
	Lepidopterous larvae			
	Spider mites			
	Whitefly			

- \*Not for use in California unless allowed by an approved supplemental labeling.
- Apply no more than once every 7 days.
  - Do not apply more than 0.4 lb ai (25.6 oz formulated)/A/season.
  - Do not apply within 1 day of harvest.

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**SOYBEANS\***

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Alfalfa caterpillar	0.033-0.10	2.1-6.4	Apply in a minimum of 10 gals/A with ground equipment or 2 gals/A by aircraft. *Pyrethroid resistance is common for Beet armyworm and Tobacco budworm. Please consult your local or state agricultural authority to determine if resistance pest populations are in your area. If so refer to the resistance management statement in the DIRECTIONS FOR USE section of this label.
Aphids			
Armyworm*			
Blister beetle			
Cowpea curculio			
Cloverworm			
Corn earworm			
Corn rootworm (adult)			
Cucumber beetles			
Dectes stem borer			
European corn borer			
False chinch bug			
Imported cabbageworm			
Japanese beetle adult			
Leafhoppers			
Leafminers (adult)			
Leaf skeletonizers			
Lesser cornstalk borer			
Loopers			
Mexican bean beetle			
Pea leaf weevil			
Saltmarsh caterpillar			
Seedcorn maggot (adult)			
Spittlebug			
Stink bugs			
Three-cornered alfalfa hopper			
Thrips			
Tobacco budworm*			
Velvetbean caterpillar			
Webworms			
Woollybear caterpillar			
<i>Lygus</i> spp.	0.08 - 0.10	5.12-6.4	
Twospotted spider mite			
Whitefly			

- \* Use not permitted in California.
- Do not apply more than 0.3 lb ai (12.8 oz formulated)/A/season.
- To maintain a proper spray interval, do not make applications less than 30 days apart.
- Do not apply within 18 days of harvest.

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**SPINACH**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Armyworms	0.033-0.10	2.1-6.4	<b>Ground Application:</b> Apply in water in a minimum of 10 gals/A. <b>Air Application:</b> Apply in water in a minimum of 5 gals/A. For control of Whiteflies apply foliar this product by ground or air at rates of up to 0.4 pt (0.1 lb ai)/A at a minimum 7-day intervals up to a maximum of 4 applications. For control of Fire ants, apply this product to the soil (at planting) or as a foliar treatment by ground or air at rates up to 0.4 pt (0.1 lb ai)/A at a minimum of 7-day intervals up to a maximum of 4 applications.
Colorado potato beetle			
Corn earworm			
Cucumber beetles			
Cutworms			
European corn borer			
Flea beetles			
Leafminers			
Loopers			
Pepper weevil			
Thrips			
Tomato pinworm			
Tomato hornworm			
Whitefly			
Banks grass mite	0.08-0.10	5.12-6.4	
Broad mite			
Carmine mite			
Fire ants			
<i>Lygus</i> spp.			
Pacific spider mite			
Twospotted spider mite			

- To maintain a proper spray interval, do not make applications less than 7 days apart.
- Do not apply more than 0.4 lb ai (25.6 oz formulated)/A/season.
- Do not apply within 40 days of harvest.

**SUCCULENT PEAS AND BEANS**

CROP	PEST	DOSAGE		REMARKS
		LB AI/A	FL OZ/A	
Pea ( <i>Pisum</i> spp.):	Aster leafhopper	0.025-0.10	1.6-6.4	Apply in a minimum of 2 gals of finished spray /A by air or in a minimum of 10 gals/A with ground equipment. When applying by air, 1-2 qts of emulsified oil may be substituted for 1-2 qts of water in the finished spray. Thorough coverage is essential to achieve control.
Dwarf pea	Flea beetle			
Edible-pod pea	Grasshoppers			
English pea	Leafhoppers			
Garden pea	Alfalfa Caterpillar	0.033-0.10	2.1-6.4	
Green pea	Aphids			
Pigeon pea	Bean leaf beetle			
Snow pea	Beet armyworm			
Sugar snap pea	Cloverworm			
Bean ( <i>Phaseolus</i> spp.):	Corn earworm			
Broadbeans	Corn rootworm (adult)			
(succulent)	Cucumber beetles			
Lima bean (green)	Cutworms			
Runner bean	European corn borer			
Snap bean	Fall armyworm			
Wax bean	Japanese beetle (adult)			
Bean ( <i>Vigna</i> spp.):	Loopers			
Asparagus bean	Pea leaf weevil			
Blackeyed pea	Pea weevil			
Chinese longbean	Plant bug			
Cowpea	Sap beetle			
Jackbean	Southern armyworm			
Moth bean	Stink bugs			
Southern pea	Tarnished plant bug			
Soybean	Thrips			
(immature seed)	Webworms			
Sword bean	Western bean cutworm			
Yardlong bean	Whitefly			
	Yellowstriped armyworm			

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**Succulent Peas And Beans cont'd.:**

CROP	PEST	DOSAGE		REMARKS
		LB AI/A	FL OZ/A	
	Banks grass mite	0.08-0.10	5.12-6.4	
	Carmin mite			
	<i>Lygus</i> spp.			
	Twospotted spider mite			

- Do not apply more than 0.2 lb ai (12.8 oz. formulated) /A/season.
- Do not apply within 3 days of harvest.

**TOBACCO**

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Armyworm spp.	0.0625-0.10	4.0-6.4	<b>Pre-transplant soil applications:</b> Apply 0.0625 to 0.1 lb ai/A in a minimum of 10 gal/A to control soil pests. Use of suitable equipment to incorporate into top 4" of the soil is required to control below ground pests. <b>At-transplant water treatment application:</b> Apply 0.0625 to 0.1 lb ai/A in a water treatment application volume of 10 to 200 gal/A.
Cutworm spp.			
Mole cricket			
Stalkborers			
Tobacco flea beetle (larvae)			
White grubs			
Wireworm			
Aphid spp.	0.04-0.10	2.56-6.4	<b>Foliar applications:</b> Apply 0.04 to 0.10 lb ai/A/foiar application up to, and including, layby in a minimum of 10 gal/A.
Armyworm spp.			
Chinch bugs			
Cucumber beetle			
Cutworms spp.			
Flea beetle (adults)			
Grasshoppers			
Green bugs			
Japanese beetles			
Saltmarsh caterpillar			
Stink bugs			
Tarnished plant bugs			
Thrips			
Tobacco budworm			
Tobacco hornworm			
Whiteflies			
<i>Lygus</i> spp.	0.10	6.4	
Spider mites			

- Do not apply more than 0.2 lb ai (12.8 oz formulated)/A/season.
- Do not apply later than layby.
- May be tank mixed with other herbicides approved for tobacco use.
- Do not make more than 2 foliar applications per season.

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**TOMATOES/TOMATILLO\***

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids	0.033-0.08	2.1-5.12	<b>Ground application:</b> Apply in water as necessary for insect control using a minimum of 15 gals of finished spray/A. <b>Air application:</b> Apply in water in a minimum of 3 to 5 gals/A. Thorough coverage is essential to achieve control.
Armyworms Including:			
Beet armyworm			
Fall armyworm			
Southern yellowstriped armyworm			
Bean leaf beetle			
Cabbageworm			
Carmine mite			
Cloverworm			
Corn earworm			
Corn rootworm			
Cucumber beetles			
Cutworms			
Diamondback moth			
European corn borer			
Flea beetles			
Flea hoppers			
Grasshoppers			
Japanese beetle (adult)			
Leafhoppers			
Loopers			
<i>Lygus</i> spp.			
Melonworm			
Pea weevil			
Pea leaf weevil			
Pickleworm			
Plant bug			
Rindworms			
Saltmarsh caterpillar			
Sap beetle			
Seedpod weevil			
Squash bugs			
Stink bug spp.			
Tarnished plant bug			
Thrips			
Tobacco Budworm			
Whitefly			
Twospotted spider mite	0.08-0.10	5.12-6.4	

\*Not for use on Tomatillo in California unless accompanied by an approved supplemental labeling.

- Do not make applications less than 10 days apart.
- A maximum of 4 applications may be applied per season.
- Do not apply within 1 day of harvest.

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**TREE NUTS CROPS**

Such as: Almond, Beech nut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (hazelnut), Hickory nut, Macadamia nut (bush nut), Pecan, and Pistachio

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Black pecan aphid	0.05-0.20	3.2-12.8	<b>Application by ground:</b> Apply as a dilute (minimum of 200 gals of finished spray/A) or concentrate (minimum of 50 gals of finished spray/A) spray in sufficient water to provide thorough coverage. <b>Application by air:</b> Apply the specified dosage in a minimum of 10 gals of finished spray/A.
Codling moth			
Filbert worm			
Hickory shuckworm			
Leaffooted bugs			
Navel orangeworm			
Obliquebanded leafroller			
Peach twig borer			
Pecan leaf casebearer			
Pecan nut casebearer			
Pecan phylloxera			
Plant bugs			
Stink bugs			
Walnut aphid			
Yellow pecan aphid			
European red mite	0.08-0.20	5.1-12.8	
Spider mites			
Fire ants	0.1-0.20	6.4-12.8	
Walnut husk fly			

- Minimum Spray intervals: Apply Sniper as needed to maintain control, but do not apply at intervals sooner than 15 days.
- Observe a 21-day Pre Harvest Interval (phi) for Pecans and a 7-day Pre Harvest Interval (phi) for all other registered tree nut crops.
- Do not exceed 0.2 lb ai (12.8 oz formulated)/A/application; do not exceed 0.50 lb ai (32 oz formulated)/A/season.
- Do not graze livestock in treated orchards or cut treated cover crops for feed.

**TUBEROUS AND CORM VEGETABLES:**

Arracacha; Arrowroot; Artichoke, Chinese; artichoke, Jerusalem; Bean, Canna, edible; Cassava, bitter and sweet; Chayote (root); Chufa; Dasheen (taro); Ginger; Leren; Potato; Sweet potato; Tanier; Turmeric; Yam; Yam, true.

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Corn wireworm	0.15-0.30	9.6-19.2	Sniper may be applied as an in-furrow planting time treatment for the control of wireworms, rootworms, and white grubs. Apply Sniper at the rate of 0.3 lbs ai (19.2 oz formulated)/A as an in-furrowspray or T-band spray at planting time. Sniper may be applied as a layby treatment for the control of wireworms, rootworms, and white grubs. Apply Sniper to the drill area and cover with soil utilizing cultivation equipment set to throw soil to the drill area. Apply Sniper as a banded spray over the row at a rate of 0.05-0.15 lbs ai/A (3.2-9.6 ozs formulated) in 10 gals/A/spray. Sniper may be applied as a foliar spray for the control of the adult life stages of flea beetles, click beetles (wireworms), cucumber beetles (rootworms), white fringed beetles and May/June beetles (white grubs). Apply Sniper at the rate of 0.033- 0.1 lbs ai/A (2.1 to 6.4 ozs formulated) in a minimum of 10 gals of spray by ground and 3 gals of spray by air.
Tobacco wireworm	(at-plant)	(at-plant)	
Japanese beetle grubs	0.05-0.15	3.2-9.6	
June beetle	(at cultivation or layby)		
Southern potato wireworm			
Banded cucumber beetle	0.033-0.10	2.1-6.4	
Black flea beetle	(foliar)	(foliar)	
Cucumber beetle			
Rootworms			
Sugarcane beetle			
Sweet potato flea beetle			
Sweet potato weevil			
White grub			
Whitefringed beetle			

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- Do not make more than 2 foliar applications per season no sooner than 21 days apart.
- Do not apply more than 0.5 lb ai (32 oz formulated)/A/season, including soil application.
- Do not apply within 21 days of harvest.

**SOD FARMS\***

Apply as a broadcast treatment. Use higher volumes up to 10 gals/carrier/1000 sq ft to get uniform coverage when treating dense grass foliage.

For low water volume usage, less than 2 gals/1000 sq ft, addition of a non-ionic or silicone based surfactant (0.25% by volume) is recommended. Irrigation to treated area within a few hours following application can improve efficacy to sub-surface pests such as, but not limited to, mole crickets.

The application rates listed in the following table will provide excellent control of the respective pests under typical conditions. However, at the discretion of the applicator, Sniper may be applied at up to 0.32 fl oz/1000 sq ft to control each of the pests listed in this table. The higher application rates should be used when maximum residual control is desired or heavy pest populations occur.

PEST	FL OZ/A	FL OZ/1000 SQ FT	LBS AI/A
Armyworms <sup>1</sup>	2.2-3.5	0.05-0.08	0.03-0.05
Cutworms <sup>1</sup>			
Sod webworm <sup>1</sup>			
Annual bluegrass weevil ( <i>Hyperodes</i> ) (adult) <sup>2</sup>	3.5-7.0	0.08-0.16	0.05-0.11
Banks grass mite <sup>6</sup>			
Billbugs (adult) <sup>3</sup>			
Black turfgrass ataeenius (adult) <sup>4</sup>			
Crickets			
Earwigs			
Fleas (adult)			
Grasshoppers			
Mealybugs			
Mites <sup>6</sup>			
Ants			
Chinch bugs <sup>5</sup>			
Fleas (larvae) <sup>7</sup>			
Imported fire ants <sup>8</sup>			
Japanese beetle (adult)			
Mole cricket (adult) <sup>9</sup>			
Mole cricket (nymph) <sup>10</sup>			
Ticks <sup>11</sup>			

**In New York State, this product may NOT be applied to any grass or turf area within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).**

**In New York State, do make a single repeat application of this product if there are signs of renewed insect activity, but not sooner than two weeks after the first application.**

**Spray Drift Precautions (For turf uses)**

- Do not apply when wind conditions favor downwind drift to nearby water bodies.
- Do not apply when wind velocity exceeds 10 miles per hour.
- Avoid application when wind gusts approach 10 mph.
- Apply using nozzles that provide the largest droplet size compatible with adequate coverage.

**Comments**

**<sup>1</sup>Armyworms, Cutworms and Sod Webworms:** To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the grass area is being maintained at a mowing height of greater than 1 inch, then higher application rates (up to 0.32 fl oz/1000 sq ft) may be required during periods of high pest pressure.

**<sup>2</sup>Annual Bluegrass Weevil (*Hyperodes*) adults:** Applications should be timed to control adult weevils as they leave their overwintering sites and move into grass areas. This movement generally begins when *Forsythia* is in full bloom and concludes when flowering dogwood (*Comus florida*) is in full bloom. Consult your State Cooperative Extension Service for more specific information regarding application timing.

**<sup>3</sup>Billbug adults:** Applications should be made when adult billbugs are first observed during April and May. Degree day models have been developed to optimize application timing. Consult your State Cooperative Extension Service for information specific to your region. In temperate regions, spring applications targeting billbug adults will also provide control of over-wintered chinch bugs.

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**4Black Turfgrass Ataenius adults:** Applications should be made during May and July to control the first and second generation of black turfgrass ataenius adults, respectively. The May application should be timed to coincide with the full bloom stage of Vanhoutte spiraea (*Spiraea vanhoutte*) and horse chestnut (*Aesculus hippocastanum*). The July application should be timed to coincide with the blooming of Rose of Sharon (*Hibiscus syriacus*).

**5Chinch Bugs:** Chinch bugs infest the base of grass plants and are often found in the thatch layer. Irrigation of the grass area before treatment will optimize the penetration of the insecticide to the area where the chinch bugs are located. Use higher volume applications if the thatch layer is excessive or if a relatively long mowing height is being maintained. Chinch bugs can be one of the most difficult pests to control in grasses and the higher application rates (up to 0.32 fl oz/1000/sq ft) may be required to control populations that contain both nymphs and adults during the middle of the summer.

**6Mites:** To ensure optimal control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application, five to seven days after the first, may be necessary to achieve acceptable control.

**7Flea larvae:** Flea larvae develop in the soil of shaded areas that are accessible to pets or other animals. Use a higher volume application when treating these areas to ensure penetration of the insecticide into the soil. Note: if the lawn area is being treated with this product at 0.10 fl oz/1000 sq ft for adult flea control, then the larval application rate may be achieved by increasing the application volume two- to four-fold.

**8Imported Fire Ants:** Control will be optimized by combining broadcast applications that will control foraging workers and newly mated fly-in queens with mound drenches that will eliminate existing colonies. If the soil is not moist, then it is important to irrigate before application or use a high volume application. Broadcast treatments should apply 0.32 fl oz/1,000 sq ft. Mounds should be treated by diluting 0.05 fl oz of Sniper/gal of water and applying 1 to 2 gals/finished spray per mound. The mounds should be treated with sufficient force to break their apex and allow the insecticide solution to flow into the ant tunnels. A four ft diameter circle around the mound should also be treated. For best results, apply in cool weather (65–80°F) or in early morning or late evening hours.

**9Mole Cricket adults:** Achieving acceptable control of adult mole crickets is difficult because preferred grass areas are subject to continuous invasion during the early spring by this extremely active stage. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized. Grass areas that receive pressure from adult mole crickets should be treated at peak egg hatch to ensure optimum control of subsequent nymph populations (see below).

**10Mole Cricket nymphs:** Grass areas that received intense adult mole cricket pressure in the spring should be treated immediately prior to peak egg hatch. Optimal control is achieved at this time because young nymphs are more susceptible to insecticides and they are located near the soil surface where the insecticide is most concentrated. Control of larger, more damaging, nymphs later in the year may require both higher application rates and more frequent applications to maintain acceptable control. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized.

**11Ticks (Including ticks that may transmit Lyme Disease and Rocky Mountain Spotted Fever):** Do not make spot applications. Treat the entire area where exposure to ticks may occur. Use higher spray volumes when treating areas with dense ground cover or heavy leaf litter. Ticks may be reintroduced from surrounding areas on host animals. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed activity. Repeat application should be limited to no more than once per seven days.

**Deer Ticks (*Ixodes sp.*)** have a complicated life cycle that ranges over a two year period and involves four life stages. Applications should be made in the late fall and/or early spring to control adult ticks that are usually located on brush or grass above the soil surface and in mid to late spring to control larvae and nymphs that reside in the soil and leaf litter.

**American dog ticks** may be a considerable nuisance in suburban settings, particularly where homes are built on land that was previously field or forest. These ticks commonly congregate along paths or roadways where humans are likely to be encountered. Applications should be made as necessary from mid-spring to early fall to control American dog tick larvae, nymphs and adults.

**\*This use is not permitted in California unless allowed by supplemental labeling.**

Dealers Should Sell In Original Packages Only.



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**STORAGE AND DISPOSAL**

**PESTICIDE STORAGE:** Do not freeze. Do not store below 40°F. If crystals are observed, warm material to above 60°F by placing container in warm location. Shake or roll container periodically to re-dissolve solids.

Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

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

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

**PESTICIDE DISPOSAL:** Pesticide wastes are 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 of the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL: Nonrefillable container.** Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at [www.acrecycle.org](http://www.acrecycle.org). Triple rinse or pressure rinse container (or equivalent) promptly after emptying. If recycling is not available, puncture and dispose of in a sanitary landfill or incinerate or if allowed by states and local authorities, by burning. If burned stay out of smoke.

**For packages up to 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 ¼ 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. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ 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. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**For packages greater than 56 gallons:** 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 refillable containers:** 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 help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC - 1-800-424-9300.**

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