

34704-983

11/22/2013

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



OFFICE OF  
CHEMICAL SAFETY AND  
POLLUTION PREVENTION

November 22, 2013

Mr. Premjit Halarnkar  
Loveland Products, Inc.  
P.O. Box 1286  
Greeley, CO 80632-1286

Subject: Amended label to add pollinator protection language  
Product Name: Sherpa Insecticide  
EPA Reg. No. 34704-983  
EPA Decision No. 483665  
Submission dated September 24, 2013; resubmission dated November 22, 2013

Dear Dr. Halarnkar:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act is acceptable. A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release the product for shipment with the new labeling. See 40 CFR 156.10(a)(6).

Under 40 CFR 152.130(d), EPA may establish dates by which all product distributed or sold by the registrant must bear revised labeling. The following paragraphs set forth the schedule for ensuring that that your product bears revised labeling within a reasonable time period:

- Any product released for shipment after 2/28/14 must bear the new label.

If these conditions are not complied with, EPA will take appropriate action against this registration. If you have any questions please contact Julie Chao at 703-308-8735 or [chao.julie@epa.gov](mailto:chao.julie@epa.gov).

Regards,

A handwritten signature in black ink that reads "Venus Eagle".

Venus Eagle, Product Manager (01)  
Insecticide-Rodenticide Branch  
Registration Division (7505P)

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# SHERPA<sup>®</sup>

I N S E C T I C I D E

For control of listed insects infesting various crops.

**ACTIVE INGREDIENT:**

Imidacloprid, 1-[(6-Chloro-3-pyridinyl)methyl]-N-nitro-2 imidazolidinimine ..... 17.4%

**OTHER INGREDIENTS:** ..... 82.6%

**TOTAL** ..... 100.0%

Contains 1.6 pounds of imidacloprid per gallon.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

**SHAKE WELL BEFORE USING.**

**FIRST AID**

**If on skin or clothing:**

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 20 minutes.
- Call a poison control center or doctor for treatment advice.

**If swallowed:**

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

**If in eyes:**

- Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

Have a 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:** No specific antidote is available. Treat the patient symptomatically.

**EPA REG. NO. 34704-983**

**EPA EST. NO. 34704-MS-001**

**NET CONTENTS 1.0 GAL (3.78 L)**

EXP 09/13 Bees

**ACCEPTED  
NOV 22 2013**

**Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended, for the  
pesticide registered under:**

EPA. Reg. No: 34704-983

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**SHERPA® INSECTICIDE**  
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**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**  
**CAUTION**

Harmful if absorbed through skin. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wear long-sleeved shirt and long pants, socks, shoes, and chemical resistant gloves made out of material such as nitrile, butyl, neoprene, barrier laminate, polyvinyl chloride or viton.

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants,
- Chemical-resistant gloves made of any waterproof material such as, barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton,
- Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment, PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Controls Statements:**

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

**USER SAFETY RECOMMENDATIONS**

**User should:**

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

**ENVIRONMENTAL HAZARDS**

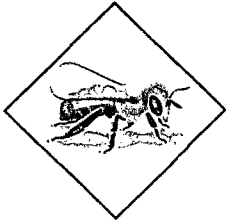
Do not apply directly to water, areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

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/plants or weeds if bees are foraging. This product is toxic to wildlife and highly toxic to aquatic invertebrates.

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

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## PROTECTION OF POLLINATORS



**APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.**



**Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.**

**This product can kill bees and other insect pollinators.**

Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications.
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the application site.
- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at: <http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency.

For contact information for your state, go to: [www.aapco.org/officials.html](http://www.aapco.org/officials.html). Pesticide incidents should also be reported to the National Pesticide Information Center at: [www.npic.orst.edu](http://www.npic.orst.edu) or directly to EPA at: [beekill@epa.gov](mailto:beekill@epa.gov)

## DIRECTIONS FOR USE

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

See individual crops for specific pollinator protection application restrictions. If none exist under the specific crop, for foliar applications, follow these application directions for crops that are contracted to have pollinator services or for food/feed and commercially grown ornamentals that are attractive to pollinators:



### FOR CROPS UNDER CONTRACTED POLLINATION SERVICES

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless the following condition has been met:

If an application must be made when managed bees are at the treatment site, the beekeeper providing the pollination services must be notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

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**FOR FOOD/FEED CROPS AND COMMERCIALY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS**

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:

- The application is made to the target site after sunset
- The application is made to the target site when temperatures are below 55 °F
- The application is made in accordance with a government-initiated public health response
- The application is made in accordance with an active state-administered apiary registry program where beekeepers are notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

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

**AGRICULTURAL USE REQUIREMENTS**

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

**Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.**

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls,
- Chemical-resistant gloves made of any waterproof material such as, barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton,
- Shoes plus socks.

**OBSERVE THE FOLLOWING PRECAUTIONS WHEN MIXING AND APPLYING IN THE VICINITY OF AQUATIC AREAS SUCH AS LAKES; RESERVOIRS; RIVERS; PERMANENT STREAMS; MARSHES OR NATURAL PONDS; ESTUARIES AND COMMERCIAL FISH FARM PONDS.**

**Spray Drift Management**

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

**Mixing and Loading Requirements**

To avoid potential contamination of groundwater, the use of a properly designed and maintained containment pad for mixing and loading of any pesticide into application equipment is recommended. If containment pad is not used, maintain a minimum distance of 25 feet between mixing and loading areas and potential surface to ground water conduits such as field sumps, uncased well head, sinkholes or field drains.

**For Aerial Applications**

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

**Importance of Droplet Size**

An important factor influencing drift is droplet size. Small droplets (<150-200 microns) drift to a greater extent than large droplets. Within typical equipment specifications, applications must be made to deliver the largest droplet spectrum that provides sufficient control and coverage. Formation of very small droplets may be minimized by appropriate nozzle selection.

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Release the spray at the lowest possible height consistent with good pest control and flight safety. Avoid applications more than 10 feet above the crop canopy.

**Wind Speed Restrictions**

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size, canopy and equipment specifications determine drift potential at any given wind speed. Do not apply when winds are greater than 15 mph and avoid gusty and windless conditions. Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.

**Restrictions During Temperature Inversions**

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

**Airblast (Air Assist) Specific Instructions for Tree Crops and Vineyards**

Airblast sprayers carry droplets into the canopy of trees/vines via a radially, or laterally directed air stream. The following specific drift management practices must be followed:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy;
- Block off upward pointed nozzles when there is no overhanging canopy;
- Use only enough air volume to penetrate the canopy and provide good coverage;
- Do not allow the spray to go beyond the edge of the cultivated area (i.e., turn off sprayer when turning at end rows);
- Only spray inward, toward the orchard or vineyard, for applications to the outside rows.

**No-Spray Zone Requirements for Foliar Applications**

Do not apply by ground within 25 feet, or by air within 150 feet of lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries and commercial fish farm ponds.

**Runoff Management**

Do not cultivate within 10 feet of the aquatic areas to allow growth of a vegetative filter strip. When used on erodible soils, best management practices for minimizing runoff must be employed. Consult your local Natural Resources Conservation Service for recommendations in your use area.

**Endangered Species Notice**

Under the Endangered Species Act, it is a Federal offense to use any pesticide in a manner that results in the death of a member of an endangered species. Consult your local county bulletin, County Extension Agent, or Pesticide State Lead Agency for information concerning endangered species in your area.

**Resistance Management**

Some insects are known to develop resistance to insecticides after repeated use. As with any insecticide, the use of this product must conform to resistance management strategies established for the use area.

Sherpa Insecticide contains a Group 4A Insecticide called imidacloprid. Insect biotypes with acquired or inherent tolerance to group 4A products may eventually dominate the insect population if Group 4A products are used repeatedly as the predominant method for control for targeted species. This may eventually result in partial or total loss of control of those species by Sherpa Insecticide and to other Group 4A products.

The active ingredient in Sherpa Insecticide is a member of neonicotinoid chemical group. Avoid using a block of more than three consecutive applications of Sherpa Insecticide and/or other Group 4A products having the same or similar mode of action. Following a neonicotinoid block of treatments, Loveland Products, Inc. strongly encourages the rotation to a block of applications with effective products of a different mode before using additional applications of neonicotinoid products. Using a block rotation or windowed approach, along with other IPM practices, is considered an effective use strategy for preventing or delaying an insect's pest's ability to develop resistance to this class of chemistry.

Foliar applications of Sherpa Insecticide or other Group 4A products from the neonicotinoid chemical class must not be used on crops previously treated with a long-residual, soil-applied product from the neonicotinoid chemical class.

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Other Group 4A, neonicotinoid products used as foliar treatments include; Actara®, Assail®, Calypso®, Centric®, Intruder™, Leverage® and Trimax™. Other 4A Group, neonicotinoid products used as soil treatment include: Admire® and Platinum®.

Contact your local extension specialist, certified crop advisor and/or product manufacturer for additional Insecticide Resistance Action Committee (IRAC) on the web at <http://irac-online.org/>.

**Application Directions**

**Restriction: Do not apply Sherpa Insecticide in enclosed structures such as greenhouses or planthouses.**

Apply Sherpa Insecticide as a directed or broadcast foliar spray. Thorough coverage of foliage is necessary without runoff for optimum insecticidal efficacy. Use adequate spray volumes, properly calibrated application equipment and Vader® spray adjuvant to obtain thorough coverage. To optimize deposition, penetration, and translocation, use 0.125 to 0.25% v/v of Vader. Other adjuvants must be used at 0.25 to 0.50% v/v. Failure to provide adequate coverage and retention of Sherpa Insecticide on leaves and fruit may result in loss of insect control or delay in onset of activity. Apply Sherpa Insecticide with properly calibrated ground or aerial application equipment. Minimum spray volumes unless otherwise specified on crop specific application sections are 10 gallons/Acre by ground application and 5.0 gallons per acre through aerial equipment. Or apply Sherpa Insecticide by overhead chemigation (see additional CHEMIGATION DIRECTIONS FOR USE section below) if allowed in crop specific application section.

Sherpa Insecticide use on crops grown for production of true seed intended for private or commercial planting is not advised but may be allowed under state-specific 24(c) labeling.

Restriction: Regardless of formulation or method of application, apply no more than 0.5 pound active ingredient imidacloprid per acre per year, including seed treatment, soil, and foliar uses, unless specified within a crop-specific application section for a given crop.

**Mixing Instructions**

To prepare the application mixture, add a portion of the required amount of water to the spray tank and with agitation add Sherpa Insecticide. Complete filling tank with balance of water needed. Maintain sufficient agitation during both mixing and application. Sherpa Insecticide may also be used with other pesticides and/or fertilizer solutions. Please see Compatibility Note below. When tank mixtures of Sherpa Insecticide and other pesticides are involved, prepare the tank mixture as above and follow suggested Mixing Order below.

**Mixing Order**

When pesticide mixtures are needed, add wettable powders first, Sherpa Insecticide, or other flowables second, and emulsifiable concentrates last. Ensure good agitation as each component is added. Do not add an additional component until the previous is thoroughly mixed. If a fertilizer solution is added, a fertilizer pesticide compatibility agent may be needed. Maintain constant agitation during both mixing and application to ensure uniformity of spray mixture.

**Compatibility Note**

Test compatibility of the intended tank mixture before adding Sherpa Insecticide to the spray or mix tank. Add proportionate amounts of each ingredient in the appropriate order, to a pint or quart jar, cap, shake for 5 minutes, and let set for 5 minutes. Poor mixing or formation of precipitates that do not readily re-disperse indicates an incompatible mixture that must not be used. For further information, contact your local Loveland Products, Inc. representative.

**CHEMIGATION DIRECTIONS FOR USE**

Refer to DIRECTIONS FOR USE section before proceeding with chemigation application.

**Types of Irrigation Systems**

Chemigation applications of Sherpa Insecticide may be made to crops through overhead sprinkler chemigation systems if specified in crop-specific recommendations sections. Do not apply Sherpa Insecticide through any other type of irrigation system.

**Water Volume**

Sherpa Insecticide chemigation applications must be made as concentrated as possible. Retention of Sherpa Insecticide on target site of insect infestation is necessary for optimum activity. Chemigation of Sherpa Insecticide in water volumes exceeding 0.10 inches/Acre is not advised.

**Uniform Water Distribution and System Calibration**

The irrigation system must provide uniform distribution of treated water. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, you must contact State Extension Service specialists, equipment manufacturers or other experts.

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**Chemigation Monitoring**

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 must the need arise.

**Drift**

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

**Required System Safety Devices**

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 normally 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.

**Using Water Public Water Systems**

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system must be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional automatic quick-closing check valve to prevent the flow of fluid back toward the injection. The pesticide injection pipeline must contain a functional normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

**ROTATIONAL CROPS\***

Treated areas may be replanted with any crop specified on an imidacloprid label, or any crop for which a tolerance exists for the active ingredient, as soon as practical following the last application. For crops not listed on an imidacloprid label, or for crops for which no tolerances for the active ingredient have been established, a 12-month plant-back interval must be observed.

**IMMEDIATE PLANT-BACK**

All crops on this label plus the following crops not on this label: barley, canola, cardoon, Chinese celery, corn (field, sweet and pop), cel-tuce, cranberry\*, cucurbits, Florence fennel, leafy petioles\*, mustard seed\*, rapeseed, rhubarb, sorghum, sugar beet, Swiss chard, and wheat.

**30-DAY PLANT-BACK**

Cereals (including buckwheat, millet, oats, rice, rye and triticale), safflower

**10-MONTH PLANT-BACK:**

Onion and bulb vegetables

**12-MONTH PLANT-BACK**

All other crops

\*Cover crops for soil building or erosion control may be planted any time, but do not graze or harvest for food or feed.

**FIELD CROPS**

Apply specified rate per acre as a broadcast or directed foliar spray as pest populations begin to build. Thorough uniform coverage is necessary to achieve insect control. VADER spray adjuvant may be used to improve coverage. Sherpa Insecticide may not knockdown established and heavy insect populations. Two applications may be required to achieve control. Scout fields and retreat if needed. Sherpa Insecticide may be tank mixed with other insecticides as for knockdown of pests or for improved control of other pests.



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**COTTON**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Bandedwinged whitefly	
Bollworm/Budworm (ovicidal effect)	2.5 - 5.0
Cotton aphid	
Cotton fleahopper	
Green stink bug	
Plant bugs (excludes <i>Lygus Hesperus</i> )	
Southern green stink bug	

**Pests Suppressed**

<i>Lygus</i> bug ( <i>Lygus Hesperus</i> )	
Whiteflies (other than bandedwinged whitefly)	3.8 - 5.0

**Restrictions**

Pre-harvest Interval (PHI): **14 days**  
 Minimum interval between applications: **7 days**  
 Maximum Sherpa Insecticide allowed per year: **25.0 fluid ounces/Acre** (0.31 lb. AI/A)  
 Do not graze treated fields after any application of Sherpa Insecticide.  
 Apply Sherpa Insecticide through properly calibrated ground, aerial or chemigation application equipment.

**Tank Mix Directions**

<b>Pests Controlled (in addition to pests listed above)</b>	<b>Sherpa Insecticide Rate fluid ounces/Acre</b>	<b>Bidrin® 8* Rate fluid ounces/Acre</b>
<b>For early season control of:</b>		
Thrips	2.5 - 3.8	1.6 - 3.2
<b>For mid to late season control of:</b>		
Cotton leafperforator		
Grasshoppers	2.5 - 3.8	4.0 - 8.0
Plant bugs		
Saltmarsh caterpillar		
Stink bugs (including Brown stink bug)		

**Tank Mix Directions**

\*Refer to the Bidrin 8 product label: follow the most restrictive precautions and limitations on the labeling of all products used in mixtures.

**PEANUT<sup>1</sup>**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Leafhoppers	3.5
Whiteflies	

**Restrictions**

Pre-Harvest Interval (PHI): **14 days**  
 Minimum interval between applications: **5 days**  
 Maximum Sherpa Insecticide allowed per year: **10.5 fluid ounces/Acre** (0.13 lb. AI/A)

<sup>1</sup>Use not permitted in California unless otherwise directed by state-specific 24(c) labeling.

**POTATO**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Colorado potato beetle	3.8
Flea beetles	
Leafhoppers	
Psyllids	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**  
 Minimum interval between applications: **7 days**  
 Maximum number of Sherpa Insecticide allowed per year: **16.0 fluid ounces/Acre** (0.2 lb. AI/A)

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**SOYBEAN<sup>1</sup>**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Bean leaf beetle	3.75
Cucumber beetles/Rootworm adults	
Japanese beetle (adults)	
Leafhoppers	
Whiteflies	

**Restrictions**

Pre-Harvest Interval (PHI): **21 days**  
Minimum interval between applications: **7 days**  
Maximum amount allowed per year: **11.25 fluid ounces/Acre** (0.14 lb. AI/A)

<sup>1</sup>Use not permitted in California unless otherwise directed by state-specific 24(c) labeling.

**TOBACCO**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	2.0 - 4.0
Flea Beetles	
Japanese beetle	4.0

**Restrictions**

Pre-Harvest Interval (PHI): **14 days**  
Minimum interval between applications: **7 days**  
Maximum number of Sherpa Insecticide allowed per year: **22.4 fluid ounces/Acre** (0.28 lb. AI/A)

**VEGETABLE and SMALL FRUIT CROPS**

Apply specified rate per acre as a broadcast or directed foliar spray as pest populations begin to build. Thorough uniform coverage is necessary to achieve insect control. VADER spray adjuvant may be used to improve coverage. Sherpa Insecticide may not knockdown established and heavy insect populations. Two applications may be required to achieve control. Scout fields and retreat if needed. Sherpa Insecticide may be tank mixed with other insecticides for knockdown of pests or for improved control of other pests.

**FRUITING VEGETABLES<sup>1</sup>**

**Crops of Crop Group 8 Plus Okra, including:** Eggplant, Ground cherry, Okra, Pepper (including bell, chili, cooking, pimento and sweet), Tomato, Pepinos, Tomatillo

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Colorado potato beetle	3.8 - 6.2
Leafhoppers	
Whiteflies	
Pepper weevil	6.2

**Restrictions**

Pre-Harvest Interval (PHI): **0 days**  
Minimum interval between applications: **5 days**  
Maximum Sherpa Insecticide allowed per crop season: **19.2 fluid ounces/Acre** (0.24 lb. AI/A)

**Applications**

For pepper weevil, apply specified dosage of Sherpa Insecticide by ground equipment only, timing applications prior to a damaging population becoming established. Good coverage of foliage and fruit is necessary for insect control. Applications of Sherpa Insecticide must be incorporated into a full-season program, where alternations of effective products from multiple classes of chemistry and different modes of action are utilized in a blocked or windowed approach. For additional information, please contact your Loveland Products, Inc. representative, Extension Specialist or crop advisor.  
When targeting adult whiteflies, use higher listed rates.

<sup>1</sup>Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

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**GLOBE ARTICHOKE**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	4.0 - 10.0
Leafhoppers	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **14 days**

Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.50 lb. AI/A)

**HERBS**

**Crops of Crop Subgroup 19A including:** Angelica, Balm (lemon balm), Basil (fresh and dried), Borage, Bumet, Camomile, Catnip, Chervil (dried), Chinese chive, Chive, Clary, Coriander (cilantro or Chinese parsley leaves), Costmary, Culantro (leaf), Curry (leaf), Dillweed, Horehound, Hyssop, Lavender, Lemongrass, Lovage (leaf), Marigold, Marjoram, Nasturtium, Parsley (dried), Pennyroyal, Rosemary, Rue, Sage, Savory (summer and winter), Sweet bay (bay leaf), Tansy, Tarragon, Thyme, Wintergreen, Woodruff, Wormwood.

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Flea beetles	3.5
Leafhoppers	
Whiteflies	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **5 days**

Maximum SHERPA Insecticide allowed per crop season: **10.5 fluid ounces/Acre** (0.13 lb. AI/A)

**Applications**

Apply SHERPA Insecticide through properly calibrated ground and aerial application equipment. Thorough coverage with direct contact of the spray material to the target pests is required for insect control. The addition of an organosilicone-based spray adjuvant at a rate not to exceed the adjuvant manufacturer's approved use rate may improve coverage and control.

**Note**

Not all crops and/or varieties listed above have been tested for phytotoxic effects. Without specific knowledge about a particular crop and variety, Loveland Products, Inc. strongly recommends that only small areas or numbers of plants of each be treated and evaluated prior to commercial use.

**BRASSICA (COLE) LEAFY VEGETABLES<sup>1</sup>**

**Crops of Crop Group 5 including:** Broccoli, Broccoli raab (*rapini*), Brussels sprouts, Cabbage, Cauliflower, Cavalo broccoli, Chinese (gai Lon) broccoli, Chinese (bok choy) cabbage, Chinese (napa) cabbage, Chinese mustard (gai choy) cabbage, Collards, Kale, Kohlrabi, Mizuna, Mustard greens, Mustard spinach, Rape greens

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Flea beetles	3.8
Leafhoppers	
Whiteflies	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **5 days**

Maximum SHERPA Insecticide allowed per crop season: **19.2 fluid ounces/Acre** (0.24 lb.. AI/Acre)

<sup>1</sup>Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

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**LEAFY GREEN VEGETABLES<sup>1</sup>**

**Crops of Crop Subgroup 4A Plus Watercress including:** Amaranth (leafy amaranth, Chinese spinach, tampala), Arugula (roquette), Chervil, Chrysanthemum (edible leaved and garland), Corn salad, Cress (garden), Cress (upland, yellow rocket, winter cress), Dandelion, Dock (sorrel), Endive (escarole), Lettuce (head and leaf), Orach, Parsley, Purslane (garden and winter), Raddicchio (red chickory), Spinach (including New Zealand and vine (Malabar spinach, Indian spinach)), Watercress (commercial production only. Applications must not be made to native cress growing in streams or other bodies of water). Watercress (upland)

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Flea beetles	3.8
Leafhoppers	
Whiteflies	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **5 days**

Maximum Sherpa Insecticide allowed per crop season: **19.2 fluid ounces/Acre** (0.24 lb. AI/A)

**Applications**

For applications made to watercress, production fields must be drained of water at least 24 hours prior to application and water must not be reapplied to the field for a minimum of 24 hours following the application. Applications must be made to fully leafed-up canopies only.

<sup>1</sup>Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

**LEGUME VEGETABLES<sup>1</sup>**

**Crops of Crop Group 6 (except soybean, dry) including:** Edible Podded and Succulent Shelled Pea and Bean and Dried Shelled Pea and Bean

Bean (*Lupinus* spp., includes grain lupin, sweet lupin, white lupin, and white sweet lupin)

Bean (*Phaseolus* spp., includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean)

Bean (*Vigna* spp., includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, yardlong bean)

Pea (*Pisum* spp. includes dwarf pea, edible-pod pea, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea)

Other Beans and Peas (broad bean (fava)), chickpea (garbanzo bean), guar, jackbean, Lablab bean (hyacinth bean), lentil, pigeon pea, soybean (immature seed), sword bean)

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Leafhoppers	3.5
Whiteflies	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **7 days**

Maximum Sherpa Insecticide allowed per crop season: **10.5 fluid ounces/Acre** (0.13 lb. AI/A)

<sup>1</sup>Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

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**ROOT, TUBEROUS, and CORM VEGETABLES<sup>1</sup>**

**Crops of Crop Group 1 (except sugarbeet) plus Kava including:** Arracacha, Arrowroot, Artichoke (Chinese and Jerusalem), Beet (garden)<sup>2</sup>, Burdock (edible)<sup>2</sup>, Canna (edible, Queensland arrowroot), Carrot<sup>2</sup>, Cassava (bitter & sweet)<sup>2</sup>, Celeriac<sup>2</sup>, Chayote (root), Chervil (turnip-rooted)<sup>2</sup>, Chickory<sup>2</sup>, Chufa, Dasheen (taro)<sup>2</sup>, Ginger, Ginseng, Horseradish, Kava<sup>2,3</sup>, Leren, Parsley (turnip-rooted), Parsnip<sup>2</sup>, Radish<sup>2</sup>, Oriental radish (diakon)<sup>2</sup>, Rutabaga<sup>2</sup>, Salsify (black)<sup>2</sup>, Salsify (oyster plant), Salsify (Spanish), Skirret, Sweetpotato<sup>2</sup>, Tanier (cocoyam)<sup>2</sup>, Tumeric, Turnip<sup>2</sup>, Yam bean (jicama, manioc pea), Yam (true)<sup>2</sup>

**For applications on potato see Field Crops section**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Flea beetles	3.5
Leafhoppers	
Whiteflies	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**  
Minimum interval between applications: **5 days**  
Maximum Sherpa Insecticide allowed per crop season: **3.5 fluid ounces/Acre** (0.043 lb. AI/A) on radish; **10.5 fluid ounces/Acre** (0.13 lb. AI/A) on other crops  
Maximum Sherpa Insecticide applications per crop season: **1** on radish; **3** on other crops

<sup>1</sup>Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.  
<sup>2</sup>Tops or greens from these crops may be utilized for food or feed.  
<sup>3</sup>Use not permitted in California unless otherwise directed by state-specific 24(c) labeling.

**STRAWBERRY**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Spittlebugs	3.8
Whiteflies	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**  
Maximum interval between applications: **5 days**  
Maximum Sherpa Insecticide allowed per crop season: **11.4 fluid ounces/Acre** (0.14 lb. AI/A)  
Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

**TREE, BUSH and VINE CROPS**

Apply specified rate per acre as a broadcast or directed foliar spray as pest populations begin to build. Thorough uniform coverage is necessary to achieve insect control. VADER spray adjuvant may be used to improve coverage. Sherpa Insecticide may not knockdown established and heavy insect populations. Two applications may be required to achieve control. Scout fields and retreat if needed. Sherpa Insecticide may be tank mixed with other insecticides for knockdown of pests or for improved control of other pests.

Aerial application of Sherpa Insecticide may result in slower activity and reduced control relative to results from ground application. For tree and vine crops, recommended application rates are based on full-size, mature trees or vines.

**BANANA AND PLANTAIN**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Leafhoppers	8.0
Thrips	

**Restrictions**

Pre-Harvest Interval (PHI): **0 day**  
Minimum interval between applications: **14 days**  
Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.5 lb. AI/A)

**Applications**

Apply specified dosage of Sherpa Insecticide as a broadcast or directed spray to infested area insuring thorough coverage. Apply Sherpa Insecticide through properly calibrated ground or aerial application equipment. Aerial application of Sherpa Insecticide may result in slower activity and reduced control relative to results from ground application.  
Addition of an organosilicone adjuvant at a rate not to exceed 2.0 fluid ounces/100 gallons, finished spray solution may improve coverage and pest control.

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**BUSHBERRY**

**Crops of Crop Subgroup 13B including:** Blueberry, Currant, Elderberry, Gooseberry, Huckleberry, Juneberry, Lingonberry, Salal

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Leafhoppers/Sharpshooters	3.0 - 4.0
Blueberry maggot	
Japanese beetles (adults)	6.0 - 8.0
Thrips (foliage feeding thrips only)	

**Restrictions**

Pre-Harvest Interval (PHI): **3 days**  
 Minimum Interval between applications: **7 days**  
 Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.5 lb. AI/A)  
 Maximum number of Sherpa Insecticide applications per year: **5**  
 Maximum application volume (water): **20.0 GPA** – ground; **5.0 GPA** – aerial.  
 Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

**CANE BERRY<sup>1</sup>**

**Crops of the Caneberry Crop Subgroup 13A including:** Blackberry (*Rubus* spp. - including Andean Blackberry, Arctic blackberry, Bingleberry, Black satin berry, Boysenberry, Brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyene blackberry, Common blackberry, Coryberry, Darrowberry, Dewberry, Dirksen thornless berry, Evergreen blackberry, Himalayaberry, Hullberry, Lavacaberry, Loganberry, Lowberry, Lucretiaberry, Mammoth blackberry, Marionberry, Moras, Mures deronce, Nectarberry, Northern dewberry, Ollalieberry, Oregon evergreen berry, Phenomenalberry, Rangeberry, Ravenberry, Rosberry, Shawnee blackberry, Southern dewberry, Tayberry, Youngberry, Zanzamora, and varieties and/or hybrids of these) **Raspberry** (*Rubus* spp. - including Bababerry, Black raspberry, Blackcap, Caneberry, Frambueso, Himbeere, Keriiberry, Mayberry, Red raspberry, Thimbleberry, Tulameen, Yellow raspberry, and varieties and/or hybrids of these, and Wild raspberry)

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Leafhoppers	8.0
Thrips	

**Restrictions**

Pre-Harvest Interval (PHI): **3 day**  
 Minimum interval between applications: **7 days**  
 Maximum Sherpa Insecticide allowed per year: **24.0 fluid ounces/Acre** (0.3 lb. AI/A)  
 Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

<sup>1</sup>Use not permitted in California unless otherwise directed by state-specific 24(c) labeling.

**CITRUS**

**Crops of Crop Group 10 including:** Calamondin, Citrus citron, Citrus hybrids (includes chironja, tangelo and tangor), Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Pummelo, Orange (sweet and sour), Satsuma mandarin, and other cultivars and/or hybrids of these

<b>Pests Controlled</b>	<b>Rate fluid ounces/100 gallons</b>	<b>Rate fluid ounces/Acre</b>
Aphids		
Asian citrus psyllid	3.5 - 5.0	10.0 - 20.0
Black fly	(for dilute applications)	(depending on tree size, target pest and infestation pressure)
Leafhoppers/Sharpshooters		
Leafminers		
Mealy bugs		
Scales		
Whiteflies		
Thrips (foliage feeding thrips only)	3.5 - 5.0	10.0 - 20.0

**Restrictions**

Pre-Harvest Interval (PHI): **0 days**  
 Minimum interval between applications: **10 days**  
 Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.5 lb. AI/A)  
 Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

**Applications**

Scales – time applications to the crawler stage. Treat each generation.  
 Where concentrated applications are appropriate, increase the spray solution concentration to apply an equivalent rate per acre to than applied in the diluted application. The 20.0 fluid ounce/Acre rate is based on full sized trees. This rate may be reduced proportionally for smaller trees.

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**COFFEE**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Leafhoppers	8.0
Whiteflies	
<b>Pest Suppressed</b>	
Scales	8.0

**Restrictions:**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **7 days**

Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.5 lb. AI/A)

Do not apply pre-bloom or when bees are foraging.

**Applications:**

Apply specified dosage of Sherpa Insecticide as a broadcast or directed spray to infested area insuring thorough coverage. Apply Sherpa Insecticide through properly calibrated ground or aerial application equipment. Aerial application of Sherpa Insecticide may result in slower activity and reduced control relative to results from ground application.

**GRAPE**

**Including:** American bunch grape, Muscadine grape and Viniferous grape.

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Leafhoppers/Sharpshooters	
Mealybugs	3.0 - 4.0
Grapeleaf skeletonizer	3.8 - 4.0

**Restrictions**

Pre-Harvest Interval (PHI): **0 days**

Minimum interval between applications: **14 days**

Maximum Sherpa Insecticide allowed per year: **8.0 fluid ounces/Acre** (0.1 lb. AI/A)

Apply Sherpa Insecticide by ground application only.

**HOP**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	8.0

**Restrictions**

Pre-Harvest Interval (PHI): **28 days**

Minimum interval between applications: **21 days**

Maximum Sherpa Insecticide allowed per year: **24.0 fluid ounces/Acre** (0.30 lb. AI/A)

**POME FRUIT**

**Crops of Crop Group 11 including:** Apple, Crabapple, Loquat, Mayhaw, Pear (including Oriental pear), Quince

<b>Pests Controlled</b>	<b>Rate fluid ounces/100 gallons</b>	<b>Rate fluid ounces/Acre<sup>1</sup></b>
Leafhoppers	1.0 - 2.0	4.0 - 8.0
Aphids (except wooly apple aphid)		
Apple maggot	2.0	8.0
Leafminers		
San Jose scale		
<b>FOR PEAR, ONLY</b>		
Mealybugs	5.0	20.0
Pear psylla		

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **10 days**

Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.5 lb. AI/A)

Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

**Applications:**

Apple maggot - Combined with manufacturer's approved rate of a sticker, such as Nu Film 17®.

Leafminer - for first generation leafminer control, make application as soon as pollination is complete and bees are removed from the orchard. Greatest leafminer control will result from the earliest possible application. For second and succeeding generations of leafminer, insect control is obtained from applications made early in the adult flight against eggs and early instar larvae. A second application may be required 10 days later if severe pressure continues or if generations are overlapping. A single application may result in suppression only. Sherpa Insecticide will not control late instar larvae.

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***POME FRUIT cont'd.:***

Mealybugs – apply maximum gallonage for tree with ground equipment. Ensure good spray coverage of the trunk and scaffolding limbs or other resting sites of mealybugs.

Rosy apple aphid – apply prior to leafrolling caused by rosy apple aphid.

San Jose scale – time applications to the crawler stage. Treat each generation.

<sup>1</sup>The amount of Sherpa Insecticide required per acre will depend on tree size and volume of foliage present. The rate per acre is based on a standard of 400 gallons of dilute spray solution per acre for large trees. To calculate the rate needed on smaller trees, multiply the pest specific rate (e.g., for aphid control, 2 fluid ounces/100 gallons) times the number of 100 gallons of spray solution required to thoroughly wet foliage just prior to the point of runoff, on one acre of the trees being treated. For concentrate sprays, apply the same amount of Sherpa Insecticide per acre as would be applied in a dilute spray based on tree size and foliage volume.

**POMEGRANATE**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	8.0
Leafhoppers/Sharpshooters	
Whiteflies	
<b>Pest Suppressed</b>	
Scales	8.0

**Restrictions:**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **7 days**

Maximum Sherpa Insecticide allowed per year: **24.0 fluid ounces/Acre** (0.3 lb. AI/A)

Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

**STONE FRUIT**

**Crops of Crop Group 12 including:** Apricot, Cherry (including sweet and tart), Nectarine, Peach, Plum (including Chickasaw, Damson and Japanese), Plumcot, Prune (fresh and dried)

<b>Pests Controlled</b>	<b>Rate fluid ounces/100 gallons</b>	<b>Rate fluid ounces/Acre</b>
Aphids		
Green June beetle	2.0	4.0 - 8.0
Japanese beetle		
Leafhoppers/Sharpshooters		
Plant bugs		
Rose chafer		
San Jose scale		
Cherry fruit fly (maggot of Eastern and Western)	2.0	8.0
<b>Pests Suppressed</b>		
Plum curculio		
Stink bugs	2.0	8.0

**Restrictions for Apricot, Nectarine, Peach:**

Pre-Harvest Interval (PHI): **0 days**

Minimum interval between applications: **7 days**

Maximum Sherpa Insecticide allowed per year: **24.0 fluid ounces/Acre** (0.30 lbs. AI/A)

Minimum application volume (water): **50 GPA** – ground application; **25 GPA** – aerial application

Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

**Restrictions for Cherries, Plums, Plumcot, Prune:**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **10 days**

Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.50 lbs. AI/A)

Minimum application volume (water): **50 GPA** – ground application; **25 GPA** – aerial application.

Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.



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**TREE NUTS**

**Crops of Crop Group 14 except Almond including:** Beechnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert, Hickory nut, Macadamia nut, Pecan, Pistachio, Walnut [black and English]

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids (except Black pecan aphid)	3.5 - 7.0
Leafhoppers/Sharpshooters	
Phylloxera spp. (leaf infestations)	
Spittlebugs	
Whiteflies	8.0
Black pecan aphid	
Mealybugs	
San Jose scale	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**  
Minimum interval between applications: **6 days**  
Maximum Sherpa Insecticide allowed per year: **28.8 fluid ounces/Acre** (0.36 lb. AI/A)  
Minimum application volume (water): **50 GPA** - ground application, **25 GPA** - aerial application  
Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

**Applications:**

Applications for control of San Jose scale should be timed according to crawler stage, treating each successive generation. Two applications on a 10 to 14 day interval may be required to achieve control.

**TROPICAL FRUIT**

**Including:** Acerola, Atemoya, Avocado, Birida, Black sapote, Canistel, Cherimoya, Custard Apple, Feijoa, Jaboticaba, Guava, Llama, Longan, Lychee, Mamey sapote, Mango, Papaya, Passionfruit, Persimmon, Pulasan, Rambutan, Sapodilla, Soursop, Spanish lime, Star apple, Starfruit, Sugar apple, Wax jambu

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	8.0
Leafhoppers/Sharpshooters	
Mealybugs	
Thrips (foliage feeding thrips only)	
Whiteflies	8.0
Scales	

**Pests Suppressed**

Pre-Harvest Interval (PHI): **7 days**  
Minimum interval between applications: **10 days**  
Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.50 lb. AI/A)  
Maximum number of Sherpa Insecticide applications per year: **5**  
Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

**OTHER SITES**

Apply specified rate per acre as a broadcast or directed foliar spray as pest populations begin to build. Thorough uniform coverage is necessary to achieve insect control. VADER spray adjuvant may be used to improve coverage. Sherpa Insecticide may not knockdown established and heavy insect populations. Two applications may be required to achieve control. Scout fields and retreat if needed. Sherpa Insecticide may be tank mixed with other insecticides for knockdown of pests or for improved control of other pests.

**POPLAR/COTTONWOOD<sup>1</sup>**

Includes members of the genus *Populus* grown for pulp or timber

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	4.0 - 8.0
Leaf beetles	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**  
Minimum interval between applications: **10 days**  
Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.50 lb. AI/A)  
Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

<sup>1</sup>Use not permitted in California unless otherwise directed by state-specific 24(c) labeling.

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**CHRISTMAS TREE**

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids	
Adelgids	4.0 - 8.0
Sawflies	

**Restrictions**

Pre-Harvest Interval (PHI): **7 days**

Minimum interval between applications: **7 days**

Maximum Sherpa Insecticide allowed per year: **40.0 fluid ounces/Acre** (0.50 lb. AI/A)

Gall-forming adelgids – time applications to coincide with full bud-swell or first bud break of earliest bud-breaking trees. Once galls form, spraying will be ineffective.

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE:** Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Handle and open container in a manner as to prevent spillage. If the container is leaking, invert to prevent leakage. If container is leaking or material spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below. In spill or leak incidents, keep unauthorized people away.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**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.

**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 1/4 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 1/4 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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