



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs

Registration Division (H7505C)

401 "M" St., S.W.

Washington, D.C. 20460

EPA Reg.

Number:

34704-983

Date of Issuance:

Term of Issuance: Conditional

Name of Pesticide Product:

Sherpa

NOTICE OF PESTICIDE:

Registration
 Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Mr. John T. Tice
Loveland Products, Inc.
P. O. Box 1286
Greeley, Colorado 80632-1286

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A). Once a pesticide is registered, however, it is not regarded as permanently acceptable. Registration does not eliminate the need for continual reassessment of pesticides. If the Agency determines that, at any time, additional data are required to maintain in effect an existing registration, the Agency will require submission of such data under FIFRA section (3)(c)(2)(B).

- 1. Revise the EPA Registration Number to read, EPA Reg. No. "34704-983".

Signature of Approving Official:

Dani Daniel
Insecticide-Rodenticide Branch
Registration Division (7505P)

Date:

JAN 31 2008

2. Based upon the submitted acute toxicology data amend the Hazards to Humans and Domestic Animals to read as:

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.

3. Based upon the submitted acute toxicology data, reorder the First Aid statement as follows:

If on skin...

If swallowed ...

If in eyes ... (Protective eyewear may be specified, if appropriate).

4. Beginning on page two of the label, make the following text labels: throughout the label replace the word "should" with the word "must". The word "must" suggest a definite fact; while "should" suggest a possibility.

Also remove from the text and section titles the following words: "recommended" and "general". Once again these words are too vague and suggest nothing definite.

5. Within eighteen months of the date of this registration, submit to the Agency the required one year storage stability study (830.6317) for the proposed product under warehouse conditions. The corrosion characteristics study (830.6320) may be carried out concurrently. It is recommended that observations be made at 0, 3, 6, 9, and 12 months.

6. Submit two copies of your final printed label before you release the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(a). Your release for shipment of the product constitute acceptance of these conditions.

A stamped copy of the label is enclosed for your records. If you have any questions regarding this notice, please contact me (703) 305-5409.

Enclosure:

ACCEPTED
with COMMENTS
In EPA Letter Dated:

JAN 31 2008

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under EPA Reg. No.
34704-985



SHERPA®

For control of certain insects infesting various crops.

ACTIVE INGREDIENT:	
Imidacloprid, 1-[(6-Chloro-3-pyridinyl)methyl]-N-nitro-2-imidazoliminine	17.4%
INERT INGREDIENTS:	82.6%
TOTAL 100.0%	

Contains 1.6 pounds of imidacloprid per gallon spray adjuvant

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID

If Swallowed:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • 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.
If on Skin or Clothing:	<ul style="list-style-type: none"> • 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.

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:
1-800-301-7976.

Note to Physician: No specific antidote is available. Treat the patient symptomatically.

EPA REG. NO. 34704-

EPA EST. NO. 34704-MS-1

NET CONTENTS 1 GAL. (3.78 L)

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PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing.

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, and 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 or weeds if bees are visiting the treatment area. 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.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 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, and shoes plus socks.

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: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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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SHERPA
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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 groundwater conduits such as field sumps, uncased well head, sinkholes or field drains.

For Aerial Applications

The spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should 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 should 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.

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 Recommendations 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 should 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 should 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 should 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 and to other Group 4A products.

The active ingredient in SHERPA is a member of neonicotinoid chemical group. Avoid using a block of more than 3 consecutive applications of SHERPA 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 or other Group 4A products from the neonicotinoid chemical class should not be used on crops previously treated with a long-residual, soil-applied product from the neonicotinoid chemical class.

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

SHERPA should be applied 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 .125 - .25% v/v of VADER. Other adjuvants should be used at .25 - .50% v/v. Failure to provide adequate coverage and retention of SHERPA on leaves and fruit may result in loss of insect control or delay in onset of activity. SHERPA may be applied with properly calibrated ground or aerial application equipment. Minimum recommended spray volumes unless otherwise specified on crop specific recommended application sections are 10 gallons/Acre by ground application and 5 gallons/Acre through aerial equipment. SHERPA may also be applied by overhead chemigation (see additional CHEMIGATION DIRECTIONS FOR USE section below) if allowed in crop specific recommended application section.

SHERPA use on crops grown for production of true seed intended for private or commercial planting is generally not recommended but may be allowed under State specific supplemental labeling. As with any insecticide, care should be taken to minimize exposure of SHERPA to honey bees and other pollinators. Use of SHERPA on crops requiring bee pollination should be avoided during bloom and a minimum of 10 days prior to bloom. Additional information on SHERPA uses for these crops and other questions may be obtained from the Cooperative Extension Service, PCAs, consultants or local Loveland Products, Inc. representatives.

Do not apply more than 0.5 lbs. active ingredient per acre, per crop season, regardless of formulation or method of application, unless specified within a crop specific recommended applications 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. Complete filling tank with balance of water needed. Maintain sufficient agitation during both mixing and application. SHERPA may also be used with other pesticides and/or fertilizer solutions. Please see Compatibility Note below. When tank mixtures of SHERPA and other pesticides are involved, prepare the tank mixture as recommended above and follow suggested Mixing Order below.

Mixing Order

When pesticide mixtures are needed, add wettable powders first, SHERPA, 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 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 should not be used. For further information, contact your local Loveland Products, Inc. representative.

CHEMIGATION DIRECTIONS FOR USE

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

Types of Irrigation Systems

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

Water Volume

SHERPA chemigation applications should be made as concentrated as possible. Retention of SHERPA on target site of insect infestation is necessary for optimum activity. Chemigation of SHERPA in water volumes exceeding 0.10 inches/Acre are not recommended.

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 should 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 should 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 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 should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and 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 now tolerances for the active ingredient have been established, a 12-month plant-back interval should 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), Celtuce, 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), soybeans, safflower

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

Recommended Applications – SHERPA

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

COTTON

Pests Controlled	Rate fluid ounces/Acre
Aphids	
Flea hoppers	3.8
Plant bugs (east of Rocky Mountains)	
Pests Suppressed	
Lygus bug (west of Rocky Mountains)	
Whiteflies	3.8

Notes and Restrictions

Pre-harvest Interval (PHI): 14 days
Minimum interval between applications: 7 days
Maximum SHERPA allowed per season: 22 fluid ounces/Acre (0.28 lb. AI/A)

Cotton cont'd.:

Notes and Restrictions

Maximum number of SHERPA applications per crop season: 6
Do not graze treated fields after any application of SHERPA.

Applications

Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground, aerial or chemigation application equipment.

POTATO

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

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days
Minimum interval between applications: 7 days
Maximum number of SHERPA allowed per crop season: 15.0 fluid ounces/Acre (0.19 lb. AI/A)

Applications

Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial application equipment.

TOBACCO

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

Notes and Restrictions

Pre-Harvest Interval (PHI): 14 days
Minimum interval between applications: 7 days
Maximum number of SHERPA allowed per crop season: 22.0 fluid ounces/Acre (0.28 lb. AI/A)

Applications

Apply specified dosages of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial application equipment.

VEGETABLE and SMALL FRUIT CROPS

Recommended Applications – SHERPA

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

FRUITING VEGETABLES^{1/}

Eggplant, Ground cherry, Okra^{1/}, Pepper (including bell, chili, cooking, pimento and sweet), Tomato, Pepinos, Tomatillo

Pests Controlled	Rate fluid ounces/Acre
Aphids	
Colorado potato beetle	3.8
Leafhoppers	
Whiteflies	
Pepper weevil (Pepper only)	6.2

Notes and Restriction

Pre-Harvest Interval (PHI): 0 days
Minimum interval between applications: 5 days
Maximum SHERPA allowed per crop season: 18.8 fluid ounces/Acre (0.24 lb. AI/A)

Applications

For all pests listed above except pepper weevil, apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial application equipment. For pepper weevil, apply specified dosage of SHERPA as a broadcast or directed spray by ground equipment to infested area, timing applications prior to a damaging population becoming established. Good coverage of foliage and fruit is necessary for optimal control. Applications of SHERPA 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.

^{1/} Not for use on crops grown for seed unless allowed by state-specific supplemental labeling.

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GLOBE ARTICHOKE

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

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days
 Minimum interval between applications: 14 days
 Maximum SHERPA allowed per crop season: 40.0 fluid ounces/Acre (0.50 lb. A/A)
Applications
 Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial equipment.

HEAD and STEM BRASSICA VEGETABLES^{1/2}

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, Turnip (tops or leaves)

LEAFY VEGETABLES^{1/2}

Amaranth (leafy amaranth, Chinese spinach, tampala), Arugula (rocket), Chervil, Chrysanthemum (edible leaved and garland), Cilantro, 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 chicory), 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) ^{1/}

Pests Controlled	Rate fluid ounces/Acre
Aphids	
Flea beetles	3.8
Whiteflies	

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days
 Minimum interval between applications: 5 days
 Maximum SHERPA allowed per crop season: 18.8 fluid ounces/Acre (0.23 lb. A/A)
 Do Not apply to native cress growing in streams or other bodies of water.
Applications
 Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial equipment.

^{1/} Use not permitted in California unless otherwise directed by supplemental labeling.
^{2/} Not for use on crops grown for seed unless allowed by state-specific supplemental labeling.

LEGUMES VEGETABLES^{1/2} (except soybean, dry)

Edible Podded and Succulent Shelled Pea^{1/2} 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 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)

Pests Controlled	Rate fluid ounces/Acre
Aphids	
Leafhoppers	3.5
Whiteflies	

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days
 Minimum interval between applications: 7 days
 Maximum SHERPA allowed per crop season: 10.5 fluid ounces/Acre (0.13 lb. A/A)
Applications
 Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial equipment.

^{1/} Not for use on crops grown for seed unless allowed by state-specific supplemental labeling.

ROOT, TUBEROUS, and CC VEGETABLES^{1/2}

Arracacha, Arrowroot, Artichoke (Chinese and Jerusalem), Beet (garden)^{2/}, Burdock (edible)^{2/}, Canna (edible, Queensland arrowroot), carrot^{2/}, Cassava (bitter & sweet)^{2/}, Celeriac^{2/}, Chayote (root), Chervil (turnip-rooted)^{2/}, Chickory^{2/}, Chufa, Dasheen (taro)^{2/}, Ginger, Ginseng, Horseradish, Leren, Parsley (turnip-rooted), Parsnip^{2/}, Radish^{2/}, Oriental radish (diakon)^{2/}, Rutabaga^{2/}, Salsify (black)^{2/}, Salsify (oyster plant), Salsify (Spanish), Skirret, Sweetpotato, Tanier (cocoyam)^{2/}, Turmeric, Turnip^{2/}, Yam bean (jicama, manioc pea), Yam (true)^{2/}

For recommended applications on potato see Field Crops section

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

Note and Restrictions

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

Applications

Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial equipment.

^{1/} Not for use on crops grown for seed unless allowed by state-specific supplemental labeling.
^{2/} Tops or greens from these crops may be utilized for food or feed.

STRAWBERRY

Pests Controlled	Rate fluid ounces/Acre
Aphids	
Spittlebugs	3.8
Whiteflies	

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days
 Minimum interval between applications: 5 days
 Maximum SHERPA allowed per crop season: 11.3 fluid ounces/Acre (0.14 lb. A/A)
 Do not apply during bloom or within 10 days prior to bloom or when bees are actively foraging.

Applications

Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated or aerial equipment.

TREE, BUSH and VINE CROPS

Recommended Applications - SHERPA

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

BUSHBERRY

Pests Controlled	Rate fluid ounces/Acre
Aphids	
Leafhoppers/Sharpshooters	3.0 - 4.0
Japanese beetles (adults)	6.0 - 8.0
Thrips	
Blueberry maggot	8.0

Notes and Restrictions

Pre-Harvest Interval (PHI): 3 days
 Minimum Interval between applications: 7 days
 Maximum SHERPA allowed per crop season: 40.0 fluid ounces/Acre (0.5 lb. A/A)
 Maximum number of SHERPA applications per crop season: 5
 Maximum application volume (water): 20.0 GPA - ground; 5.0 GPA - aerial.
 Do not apply pre-bloom or during bloom or when bees are actively foraging.

Applications

Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial equipment.

CITRUS

Calamondin, Citrus citron, Citrus hybrids (includes chironja, tangelo and tangor), Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Pummelo, Orange (sweet and sour), Tangelo, Satsuma mandarin, White sapote (Casimiroa spp.), and other cultivars and/or hybrids of these

Pests Controlled	Rate fluid ounces/100 gallons	Rate fluid ounces/Acre
Aphids		
Black fly		
Leafhoppers/Sharpshooters	3.5 - 5.0	10.0 - 20.0
Leafminers	(for dilute applications)	(depending on tree size, target pest and infestation pressure)
Mealy bugs		
Scales		
Whiteflies		
Pests suppressed		
Thrips	3.5 - 5.0	10.0 - 20.0

Citrus cont'd.:

Notes and Restrictions

Pre-Harvest Interval (PHI): 0 days

Minimum interval between applications: 10 days

Maximum SHERPA allowed per crop season: 40.0 fluid ounces/Acre (0.5 lb. A/A)

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

Applications

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

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.

GRAPE

American bunch grape, Muscadine grape and Vinerous grape.

Pests Controlled	Rate fluid ounces/Acre
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Leafhoppers/Sharpshooters

Mealybugs 3.0 – 3.8

Grapeleaf skeletonizer^{1/} 3.8

Notes and Restrictions

Pre-Harvest Interval (PHI): 0 days

Minimum interval between applications: 14 days

Maximum SHERPA allowed per crop season: 7.5 fluid ounces/Acre (0.1 lb. A/A)

Applications

Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial equipment.

^{1/}Grapeleaf skeletonizer control can be expected from ground applications that provide thorough coverage of foliage. Aerial applications may provide suppression.

HOP

Pests Controlled	Rate fluid ounces/Acre
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Aphids 8.0

Notes and Restrictions

Pre-Harvest Interval (PHI): 28 days

Minimum interval between applications: 21 days

Maximum SHERPA allowed per crop season: 24.0 fluid ounces/Acre (0.30 lb. A/A)

Applications

Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial equipment.

PECAN^{1/}

Pests Controlled	Rate fluid ounces/Acre
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Aphids (use higher rate for Black pecan aphid)

Phylloxera 3.5 to 7.0

Spittlebugs

Notes and Restrictions

Do not apply after shuck split.

Pre-Harvest Interval (PHI): 7 days

Minimum interval between applications: 10 days

Maximum SHERPA allowed per crop season: 28.0 fluid ounces/Acre (0.35 lb. A/A)

Applications

Apply specified dosage of SHERPA as a broadcast or directed spray to infested area ensuring thorough coverage. SHERPA may be applied through properly calibrated ground or aerial equipment.

^{1/}Use not permitted in California unless otherwise directed by supplemental labeling.

POME FRUIT

Apple, Crabapple, Loquat, Mayhaw, Pear (including Oriental pear), Quince

Pests Controlled	Rate fluid ounces/100 gallons	Rate fluid ounces/Acre ^{1/}
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Leafhoppers 1.0 – 2.0 4.0 – 8.0

Aphids (except wooly apple aphid)

Leafminers 2.0 8.0

San Jose scale

FOR PEAR, ONLY

Mealybugs 5.0 20.0

Pear psylla

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days

Minimum interval between applications: 10 days

Maximum SHERPA allowed per crop season: 40.0 fluid ounces/Acre (0.5 lb. A/A)

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

Applications

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

Pome Fruit cont'd.:

Leafhoppers – apply low rate to moderate populations of white apple leafhoppers and high rate for high populations or for other leafhopper species. Apply SHERPA while most leafhoppers are in the nymphal stage.

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, optimal 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 will not control late instar larvae.

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.

^{1/}The amount of SHERPA 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 per acre as would be applied in a dilute spray based on tree size and foliage volume.

STONE FRUIT

Apricot, Cherry (including sweet and tart), Nectarine, Peach, Plum (including Chickasaw, Darnson and Japanese), Plumcot, Prune (fresh and dried)

Pests Controlled	Rate fluid ounces/100 gallons	Rate fluid ounces/Acre
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Aphids

Green June beetle

Leafhoppers/Sharpshooters 2.0 4.0 – 8.0

Plant bugs

Rose chafer

San Jose scale

Cherry fruit fly (maggot of Eastern and Western) 2.0 8.0

Pests Suppressed

Plum curculio

Stink bugs 2.0 8.0

Notes and Restrictions for Apricot, Nectarine, Peach:

Pre-Harvest Interval (PHI): 0 day

Minimum interval between applications: 7 days

Maximum SHERPA allowed per crop season: 24.0 fluid ounces/Acre (0.30 lbs. A/A)

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

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

Notes and Restrictions for Cherries, Plums, Plumcot, Prune:

Pre-Harvest Interval (PHI): 7 day

Minimum interval between applications: 10 days

Maximum SHERPA allowed per crop season: 40.0 fluid ounces/Acre (0.50 lbs. A/A)

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

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

Applications

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

TROPICAL FRUIT

Acerola, Avocado, Black sapote, Canistel, Feijoa, Jaboticaba, Guava, Longan, Lychee, Mamey sapote, Mango, Papaya, Passionfruit, Pulasan, Rambutan, Sapodilla, Spanish lime, Star apple, Starfruit, Wax jambu

Pests Controlled	Rate fluid ounces/Acre
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Aphids

Leafhoppers/Sharpshooters

Thrips 8.0

Whiteflies

Pests Suppressed

Scales 8.0

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days

Minimum interval between applications: 10 days

Maximum SHERPA allowed per crop season: 40.0 fluid ounces/Acre (0.50 lb. A/A)

Maximum number of SHERPA applications per crop season: 5

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

Applications

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

SHERPA
EPA REG. NO. 34704-

OTHER CROPS

Recommended Applications - SHERPA

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

POPLAR/COTTONWOOD¹

(Includes members of the genus Populus grown for pulp or timber)

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

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days

Minimum interval between applications: 10 days

Maximum SHERPA allowed per crop season: 40.0 fluid ounces/Acre (0.50 lb. A/A)

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

Applications

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

¹Use not permitted in California unless otherwise directed by supplemental labeling.

CHRISTMAS TREE

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

Notes and Restrictions

Pre-Harvest Interval (PHI): 7 days

Minimum interval between applications: 7 days

Maximum SHERPA allowed per crop season: 40.0 fluid ounces/Acre (0.50 lb. A/A)

Applications

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

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.

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