

71532-25

5/31/2011

1 of 37



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

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

MAY 31 2011

Dr. Matthew Brooks  
Ag-Chem Consulting  
Representative for LG Life Science, Ltd.  
12208 Quinque Lane  
Clifton, VA 20124

Subject: Notification per PRN 2007-4

EPA Registration Number: 71532-25  
Lambdastar 1CS Insecticide

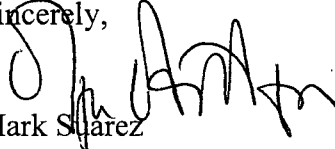
Date of submission: May 18, 2011

Dear Dr. Brooks:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration (PRN) 2007-4 for the abovementioned product. The Registration Division (RD) has conducted a review of this request and finds that the actions requested fall within the scope of PRN 2007-4. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have questions regarding this letter, please contact Olga Odiott at (703) 308-9369.

Sincerely,

  
Mark Suarez  
Product Manager 13  
Insecticide Branch  
Registration Division (7505P)

20237



United States  
Environmental Protection Agency  
Washington, DC 20460

<input type="checkbox"/>	Registration
<input type="checkbox"/>	Amendment
<input checked="" type="checkbox"/>	Other

OPP Identifier Number

### Application for Pesticide - Section I

1. Company/Product Number LG Life Sciences / 71532-25	2. EPA Product Manager Mark Suarez	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) LG Life Sciences / Lambdastar 1 CS	PM# 13	
5. Name and Address of Applicant (Include ZIP Code) LG Life Sciences c/o Ag-Chem Consulting 12208 Quinque Lane Clifton, VA 20124 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

### Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

Notification of Revised Storage and Disposal Section

This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40CFR152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under section 12 and 14 of FIFRA.

### Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Metal	<input type="checkbox"/> Plastic
* Certification must be submitted				<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
If "Yes" Unit Packaging wgt. 1 gal	No. per container 4	If "Yes" Package wgt.	No. per container	Other (Specify) _____	
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 1 gal, 2.5 gal, 110 gal, 250gal		5. Location of Label Directions <input checked="" type="checkbox"/> On Container	
6. Manner in Which Label is Affixed to Product <input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other _____		

### Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Dr. Matthew Brooks	Title Regulatory Consultant	Telephone No. (Include Area Code) 703-266-0123
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Regulatory Consultant	
4. Typed Name Dr. Matthew Brooks	5. Date 05-18-11	



**RESTRICTED USE PESTICIDE**  
 Due to Toxicity to Fish and Aquatic Organisms

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

<b>GROUP</b>	<b>3</b>	<b>Insecticide</b>
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**LAMBDASTAR 1 CS**  
**Insecticide**

**NOTIFICATION**  
**MAY 31 2011**

*For the Control of listed Insect Pests on Selected Crops*  
*Contains the same active ingredient as Warrior® Insecticide.*

Active Ingredient:	
Lambda-cyhalothrin.....	12.00%
Inert Ingredients:.....	88.00%
Total	100.00%

Contains 1 lb. of active ingredient per gallon.

**KEEP OUT OF REACH OF CHILDREN**  
**WARNING/AVISO**

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

EPA Registration No. 71532-25

EPA Est. No. 5905-AR-01  
 5905-GA-01  
 5905-IA-01  
 44616-MO-01  
 66196-CA-01  
 71532-KOR-01

Net Contents: \_\_\_\_\_ Gallons

Manufactured By:  
 LG Life Sciences, Ltd.  
 910 Sylvan Avenue  
 Englewood Cliffs, NJ 07632

<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call 1-800-222-1222 for emergency medical treatment information.</p>	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**WARNING**

May be fatal if swallowed. Causes moderate eye irritation. Harmful if absorbed through skin or inhaled. Avoid breathing vapor or spray mist. Avoid contact with skin, eyes, or clothing. Wear appropriate protective clothing and eyewear as specified in the Personal Protective Equipment (PPE) section of this label. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Skin exposure may also result in a sensation described as a tingling, itching, burning, or prickly feeling. Onset may occur immediately to 4 hours after exposure and may last 2 to 30 hours, without damage. Wash exposed areas once with soap and water. Relief from the skin sensation may be obtained by applying an oil-based cream.

**Personal Protective Equipment (PPE)**

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

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate or viton ≥14 mils
- Shoes plus socks
- Protective eyewear



**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 24 hours.**

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

- Coveralls worn over short-sleeved shirt or short pants.
- Chemical-resistant gloves, such as barrier laminate or viton  $\geq 14$  mils
- Shoes plus socks
- Protective eyewear

**GENERAL INFORMATION**

Apply in sufficient water for thorough coverage of listed crops unless otherwise specifically noted. Rate of application should be based upon pest pressure, timing of sprays and field scouting. Use higher rates under heavy pest pressure and lower rates under low to moderate pest pressure. For ground and air applications, unless otherwise noted, the following spray volumes are recommended:

**Row Crops:** By ground, apply in a minimum of 10 gallons of finished spray per acre. By air, apply in a minimum of 2 gallons of finished spray per acre.

**Orchard and Vine Crops:** By ground, apply in a minimum of 50 gallons of finished spray per acre. By air, apply in a minimum of 10 gallons of finished spray per acre.

For cutworm control, LambdaStar 1 CS may be applied before, during, or after planting. For soil incorporated applications, use higher rates for improved control.

**Resistance**

LambdaStar 1 CS is a Group 3 Insecticide (contains the active ingredient lambda-cyhalothrin). Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state agricultural authorities for details.

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

**BUFFER ZONE**

**Vegetative Buffer Strip**

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

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

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

*Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services.*  
USDA, NRCS. 2000. Fort Worth, Texas. 21 pp.  
<http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf>

In the State of New York, a 25 foot vegetated, non-cropped buffer strip untraversed by drainage tiles must be maintained between a treated field and a coastal salt marsh or stream that drains into a coastal salt marsh, for both aerial or ground application. For aerial applications, the 25 foot vegetated non-cropped buffer strip for runoff protection would be part of the larger 150 foot buffer strip (or 450 foot buffer strip for ULV application) required for spray drift.

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

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

**Buffer Zone for ULV Aerial Application**

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

**Buffer Zone for Non-ULV Aerial Application**

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

**SPRAY DRIFT REQUIREMENTS**

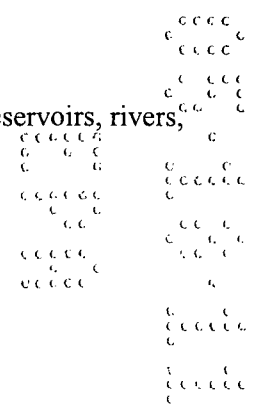
**Wind Direction and Speed**

Only apply this product if the wind direction favors on-target deposition.

Do not apply when the wind velocity exceeds 15 mph.

**Temperature Inversion**

Do not make aerial or ground applications into temperature inversions.





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

**Droplet Size**

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

**Additional Requirements for Ground Applications**

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

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

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

**Additional Requirements for Aerial Applications**

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

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

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

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

**TANK MIX APPLICATION**

Fill the spray tank at least one-third full of clean water or diluent. With the pump and agitator running continuously, add the recommended amount of each product in the tank mix to the spray tank and allow to fully disperse, adding LambdaStar 1 CS last. Add the remainder of water or diluent to the spray tank. Follow the precautions and limitations of the most restricted product in the tank mixture.

**Compatibility testing for tank mixing partners:** Test compatibility of the intended tank mixture by adding proportionate amounts of each ingredient to a pint or quart jar, cap, shake, and let set 15 minutes. Formation of precipitates that do not readily redisperse indicates an incompatible mixture that should not be used.

LambdaStar 1 CS is an aqueous based formulation. It is recommended that no type of non-emulsifiable

oils be used in combination with LambdaStar 1 CS. If adjuvants are used, use only:

- Nonionic Surfactant (NIS) containing at least 75% surface agent, or
- Non-phytotoxic Crop Oil Concentrate (COC) including once refined Vegetable Oil concentrate (VOC), or
- Methylated Seed Oils (MSO) containing a minimum of 17% emulsifier.

Adjuvants other than NIS or COC may be used providing the product meets the following criteria:

1. Contains only EPA exempt ingredients.
2. Is non-phytotoxic to the target crop.
3. Is compatible in mixture (may be established through a jar test).
4. Is supported locally for use with LambdaStar 1 CS on the target crop through proven field trials and through university and extension recommendations.

In addition, the following may be used as diluents:

Crop Oil Concentrate Methylated  
Seed Oils  
Urea-Ammonium Nitrate

It is recommended that the following not be used in combination with LambdaStar 1 CS as diluents or adjuvants:

Non-emulsifiable Oils  
Diesel Fuel  
Straight Mineral Oil

## **CHEMIGATION**

### **Sprinkler Irrigation Application**

Apply LambdaStar 1 CS at rates and timing described elsewhere in this label. Consult your local State Extension Service or other local experts for recommendations pertinent for your area.

Thorough coverage of foliage is required for good control. Good agitation in the pesticide supply tank should be maintained prior to and during the entire application period.

Apply by injecting the recommended rate of LambdaStar 1 CS into the irrigation system using a metering device that will introduce a constant flow and by distributing the product to the target area in 0.1-0.2 acre-inch of water. In general, use the least amount of water required for proper distribution and coverage. It is recommended that the product be injected into the main irrigation line ahead of a right angle turn in the line to insure adequate dispersion or mixing in the irrigation water. Once the application is completed, flush the entire irrigation and injection system with clean water before stopping the system.

In addition to the above recommendations, if application is being made during a normal irrigation set of a stationary sprinkler, the recommended rate of LambdaStar 1 CS for the area covered should be injected into the system only during the end of the irrigation set for sufficient time to provide adequate coverage and product distribution.

Do not apply LambdaStar 1 CS through an irrigation system connected to a public water system. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

### **Use Precautions - Sprinkler Irrigation Application**

A. Apply this product only through (sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move) irrigation system(s). Do not apply this product through any other type of irrigation system.

B. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

C. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

D. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

E. 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.

F. 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.

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

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

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

J. 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.

K. 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.

L. Do not apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.

M. Do not apply through chemigation systems connected to public water systems.

**SPECIFIC USE DIRECTIONS – AGRICULTURAL USES**

**ALAFABA AND ALFALFA GROWN FOR SEED**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Alfalfa Caterpillar Army cutworm Cutworm spp. Green Cloverworm Leafhopper spp. Looper spp. Threecornered Alfalfa Hopper Velvetbean Caterpillar Webworm spp.	0.015-0.025	1.92 – 3.20	Apply only to fields planted to pure stands of alfalfa.  Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Alfalfa Seed Chalcid (Adult) Alfalfa Weevil Armyworm Bean Leaf Beetle (Adult) Blister Beetle spp. Blue Alfalfa Aphid Clover Leaf Weevil spp. Clover Root Borer (Adult) Clover Root Curculio spp. (Adult) Clover Stem Borer (Adult) Corn Earworm Cowpea Aphid Cowpea Curculio (Adult) Cowpea Weevil (Adult) Cucumber Beetle Spp. (Adult) Egyptian Alfalfa Weevil Fall Armyworm <sup>1</sup> Grape Colaspis (Adult) Grasshopper spp. Green June Beetle (Adult) Green Peach Aphid <sup>3</sup> Japanese Beetle (Adult) Meadow Spittlebug Mexican Bean Beetle Pea Aphid Pea Weevil (Adult) Plant Bug spp. including Lygus spp. <sup>3</sup> Spotted Alfalfa Aphid Stink Bug spp. Sweet Clover Weevil (Adult) Thrips spp. <sup>4</sup> Western Yellow-striped Armyworm Whitefringed Beetle spp. (Adult) Yellow-striped Armyworm	0.02-0.03	2.56 – 3.84	<b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  When foliage is dense and/or pest populations are high 5-10 gallons per acre by air or 20 gallons per acre by ground and higher use rates are recommended. Use higher rates for increased residual control.  Avoid application when bees are actively foraging by applying during the early morning or during the evening hours. Be aware of bee hazard resulting from a cool evening and/or morning dew. It may be advisable to remove bee shelters during and for 2-3 days following application. Avoid direct application to bee shelters.  <sup>1</sup> For control of first and second instar only. <sup>2</sup> Suppression only. <sup>3</sup> See resistance statement under GENERAL INFORMATION. <sup>4</sup> Does not include Western Flower Thrips.
Beet Armyworm <sup>1,3</sup> Blotch Leafminer <sup>3</sup> Spider Mites <sup>1</sup>	0.03	3.84	
<ul style="list-style-type: none"> <li>• Do not apply more than 0.03 lb. a.i. (0.24 pt.) per acre per cutting.</li> <li>• Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.</li> <li>• Do not apply within 1 day of harvest for forage or within 7 days of harvest for hay.</li> </ul>			

**CANOLA**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Armyworm spp. Cabbage Seedpod Weevil Cutworm spp. Diamondback Moth Flea Beetle Grasshoppers Looper spp. Lygus Bug	0.015-0.03	1.92-3.84	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold. Consult your local advisor or extension office for details.  <b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.
Cabbage Aphid	0.03	3.84	

• Do not apply within 7 days of harvest  
• Do not apply more than 0.09 lb. a.i. (0.72 pt.) per acre per year.

**CEREAL GRAINS:**

**Corn (At-Plant):** Field Corn, Popcorn, Seed Corn, Sweet Corn

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Corn Rootworm Larvae (Western, Northern, Southern, Mexican) Cutworm spp. Lesser Cornstalk Borer Red Imported Fire Ant <sup>1</sup> Seedcorn Beetle Seedcorn Maggot White Grub spp. Wireworm spp.	0.005 lb. a.i. per 1,000 ft. of row <sup>2</sup>	0.66 fl. oz. per 1,000 ft. of row <sup>2</sup>	<b>Banded Applications:</b> Apply at planting as a 5-7 inch T-band sprayed across the open seed furrow between the furrow openers and the press wheels or as a band application behind the press wheel.  <b>In-Furrow Applications:</b> Apply into the seed furrow through spray nozzles or microtubes behind the planter furrow openers and in front of the press wheel.  Apply a minimum of 3 gallons of finished spray per acre.  <sup>1</sup> Suppression only.

<sup>2</sup>Lbs. a.i. and fl. oz./A of LambdaStar 1 CS applied at 0.66 fl. oz./1000 ft. of row for various row spacings:

Row Spacing	40"	38"	36"	34"	32"	30"
Linear Ft./A	13,068	13,756	14,520	15,374	16,335	17,424
Lbs. a.i./A	0.067	0.07	0.075	0.079	0.084	0.09
Fl. oz./A	8.6	9.1	9.6	10.1	10.8	11.5

- Do not harvest or graze livestock or cut treated crops for feed within 21 days of at-plant application.
- Do not apply more than 0.09 lb. a.i. (0.72 pt.) per acre per crop at-plant
- For field corn, popcorn, and seed corn, do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per crop from at-plant and foliar applications.
- For sweet corn do not apply more than 0.48 lb. a.i. (3.84 pts.) per acre per crop from at-plant and foliar applications.

**CEREAL GRAINS**

Corn (Foliar): Field Corn, Popcorn, Seed Corn

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Corn Earworm <sup>1</sup> Cutworm spp. Green Cloverworm Meadow Spittlebug Western Bean Cutworm <sup>1</sup>	0.015-0.025	1.92-3.20	Apply as required by scouting or locally prescribed corn growth stages, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds or other locally recommended methods. Consult your local advisor or extension office for details.
Armyworm <sup>2</sup> Bean Leaf Beetle Bird Cherry-Oat Aphid <sup>3</sup> Cereal Leaf Beetle Corn Leaf Aphid <sup>3</sup> English Grain Aphid <sup>3</sup> European Corn Borer <sup>1</sup> Fall Armyworm <sup>2</sup> Flea Beetle spp. Grasshopper spp. Hop Vine Borer <sup>1</sup> Japanese Beetle (Adult) Lesser Cornstalk Borer Mexican Corn Rootworm Beetle (Adult) Northern Corn Rootworm Beetle (Adult) Sap Beetle (Adult) Seedcorn Beetle Southern Corn Rootworm Beetle (Adult) Southwestern Corn Borer Stalk Borer <sup>1</sup> Stink Bug spp. Tobacco Budworm <sup>1,4</sup> Webworm spp. Western Corn Rootworm Beetle (Adult) Yellow-striped Armyworm <sup>2</sup>	0.02-0.03	2.56-3.84	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Chinch bug control:</b> Begin applications when bugs migrate from small grains or grass weeds to small corn. Direct spray to the base of corn plants. Repeat applications at 3-5 day intervals if needed. LambdaStar 1 CS may only suppress heavy infestations and/or subsequent migrations.</p> <p><b>Adult corn rootworm beetles (<i>Diabrotica</i> species):</b> Use a minimum of 3.84 fl. oz. per acre (0.03 lb. a.i. per acre) as part of an aerial-applied corn rootworm control program.</p> <p><sup>1</sup>For control before the larva bores into the plant stalk or ear. <sup>2</sup> For control of first and second instar only. <sup>3</sup>Suppression only. <sup>4</sup>See resistance statement under GENERAL INFORMATION.</p>
Beet Armyworm <sup>2,4</sup> Chinch Bug Green Bug <sup>3,4</sup> Mexican Rice Borer <sup>1</sup> Rice Stalk Borer <sup>1</sup> Southern Corn Leaf Beetle <sup>3</sup> Sugarcane Borer <sup>1</sup>	0.03	3.84	

- Do not apply within 21 days of harvest.
- Do not allow livestock to graze in treated areas or harvest treat corn forage as feed for meat or dairy animals within 1 day after last treatment. Do not feed treated corn fodder or silage to meat or dairy animals within 21 days after last treatment.
- Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per crop from at-plant and foliar applications.
- Do not apply more than 0.06 lb. a.i. (0.48 pt.) after silk initiation.
- Do not apply more than 0.03 lb. a.i. (0.24 pt.) after corn has reached the milk stage (yellow kernels with milky fluid).

**CEREAL GRAINS**

Corn (Foliar): Sweet Corn

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Aphid spp. <sup>2,3</sup> Armyworm <sup>1</sup> Aster Leafhopper Beet Armyworm <sup>1,3</sup> Chinch Bug Common Cornstalk Borer Corn Earworm Cutworm spp. European Corn Borer Fall Armyworm <sup>1</sup> Flea Beetle spp. Grasshopper spp. Japanese Beetle (Adult) Mexican Corn Rootworm Beetle (Adult) Northern Corn Rootworm Beetle (Adult) Sap Beetle (Adult) Southern Armyworm <sup>1</sup> Southern Corn Rootworm Beetle (Adult) Southwestern Corn Borer Spider Mite spp. <sup>2</sup> Stink Bug spp. Tarnished Plant Bug Webworm spp. Western Bean Cutworm Western Corn Rootworm Beetle (Adult) Yellow-Striped Armyworm <sup>1</sup>	0.02-0.03	2.56-3.84	Apply as required by scouting, or locally prescribed corn growth stages, usually at intervals of 4 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds or other locally recommended methods and should be targeted for control before insects enter the stalk or ear. Consult your local advisor or extension office for details.  <b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Adult corn rootworm beetles (<i>Diabrotica</i> species):</b> Use a minimum of 3.2 fl. oz. per acre (0.025 lb. a.i. per acre) as part of an aerial applied corn rootworm control program.
Corn Silkfly (Adult) <sup>2</sup>	0.03	3.84	<sup>1</sup> For control of first and second instar only. <sup>2</sup> Suppression only. <sup>3</sup> See resistance statement under GENERAL INFORMATION.
<ul style="list-style-type: none"> <li>• Do not apply within 1 day of harvest.</li> <li>• Do not allow livestock to graze in treated areas or harvest treated corn forage as feed for meat or dairy animals within 1 day after last treatment.</li> <li>• Do not feed treated corn fodder or silage to meat or dairy animals within 21 days after last treatment.</li> <li>• Do not apply more than 0.48 lb. a.i. (3.84 pts.) per acre per crop from at-plant and foliar applications.</li> </ul>			

**CEREAL GRAINS**  
Sorghum (Grain)

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Cutworm spp. Sorghum Midge	0.015-0.02	1.92-2.56	<p>Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.</p> <p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p>
Armyworm Beet Armyworm <sup>1,3</sup> Corn Earworm European Corn Borer <sup>2</sup> Fall Armyworm <sup>1</sup> Flea Beetle spp. Grasshopper spp. Lesser Cornstalk Borer <sup>2</sup> Southwestern Corn Borer <sup>2</sup> Stink Bug spp. Yellow-striped Armyworm <sup>1</sup> Webworm spp.	0.02-0.03	2.56-3.84	
Chinch Bug Mexican Rice Borer <sup>2</sup> Rice Stalk Borer <sup>2</sup> Sugarcane Borer <sup>2</sup>	0.03	3.84	
			<p><b>Sorghum Midge control:</b> Begin applications when 25% of the sorghum heads have emerged and are in tip bloom. Repeat applications at 5-day intervals if needed.</p> <p><b>Chinch Bug control:</b> Begin applications when bugs migrate from small grains or grass weeds to small sorghum. Direct spray to the base of sorghum plants. Repeat applications at 3- to 5-day intervals if needed.</p> <p>LambdaStar 1 CS may only suppress heavy infestations and/or subsequent migrations.</p> <p><sup>1</sup> For control of first and second instar only. <sup>2</sup> For control before the larva bores into the plant stalk. <sup>3</sup> See resistance statement under GENERAL INFORMATION.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 30 days of harvest.</li> <li>• Do not apply more than 0.08 lb. a.i. (0.64 pt.) per acre per season.</li> <li>• Do not apply more than 0.06 lb. a.i. (0.48 pt.) per acre per season after crop emergence.</li> <li>• Do not apply more than 0.02 lb. a.i. (0.16 pt.) per acre per season once crop is in soft dough stage.</li> </ul>			



**CEREAL GRAINS**

Barley, Buckwheat, Oats, Rye, Wheat, Wheat Hay, Triticale

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Army Cutworm Cutworm spp.	0.015-0.025	1.92-3.20	<p>Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.</p> <p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p>
Armyworm Bird Cherry-Oat Aphid <sup>1</sup> Cereal Leaf Beetle English Grain Aphid <sup>1</sup> Fall Armyworm Flea Beetle spp. Grasshopper spp. Hessian Fly <sup>4</sup> Orange Blossom Wheat Midge Russian Wheat Aphid <sup>1</sup> Stink Bug spp. Yellow-striped Armyworm	0.02-0.03	2.56-3.84	
Grass Sawfly	0.025-0.03	3.20-3.84	
Chinch Bug Corn Leaf Aphid <sup>2</sup> Greenbug <sup>1,2</sup> Mite Spp. <sup>2</sup>	0.03	3.84	
<ul style="list-style-type: none"> <li>• Do not apply within 30 days of harvest.</li> <li>• Do not allow livestock to graze in treated areas or harvest treated wheat forage as feed for meat or dairy animals within 7 days after last treatment. Do not feed treated straw to meat or dairy animals within 30 days after last treatment.</li> <li>• Do not apply more than 0.06 lb. a.i. (0.48 pt.) per acre per season.</li> </ul>			<p><b>Chinch Bug control:</b> Repeat applications at 3- to 5-day intervals if needed. LambdaStar 1 CS may only suppress heavy infestations and/or migrations.</p> <p><b>Greenbug:</b> Known to have many biotypes. LambdaStar 1 CS may provide suppression only. In this situation, a second application using an alternative chemistry may be needed.</p> <p><sup>1</sup> Best control is obtained before insects begin to roll leaves. Once wheat has started to boot, LambdaStar 1 CS may provide suppression only. Higher rates and increased coverage will be necessary.</p> <p><sup>2</sup>Suppression only.</p> <p><sup>3</sup>See resistance statement under GENERAL INFORMATION.</p> <p><sup>4</sup> Make applications when adults emerge.</p>

## CEREAL GRAINS

Rice, Wild Rice

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Bird Cherry-Oat Aphid Chinch Bug Fall Armyworm Grasshopper spp. Greenbug Leafhopper spp. Rice Stink Bug Riceworm Rice Water Weevil (Adult) Sharpshooter spp. True Armyworm Yellow Sugarcane Aphid Yellowstriped Armyworm	0.025-0.04	3.20-5.12	<p>Mixers/loaders supporting aerial applications to wild rice at a rate of 0.04 lb. a.i. per acre, and treating 1200 acres (or more) per day must wear dust-mist respirator.</p> <p>Apply as required by scouting. Timing and frequency of application should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details. Determine the need for repeat applications, usually at intervals of 5-7 days, by scouting.</p>
European Corn Borer <sup>1</sup> Mexican Rice Borer <sup>1</sup> Rice Seed Midge <sup>1</sup> Rice Stalk Borer <sup>1</sup> Sugarcane Borer <sup>1</sup>	0.03-0.04	3.84-5.12	<p>LambdaStar 1CS can be applied to cereal grains (rice and wild rice) that have been treated with propanil-containing products.</p> <p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas. In addition, adding an emulsifiable crop oil (e.g., 1 pt. per acre) when lower aerial application volumes are used is recommended to help improve coverage, reduce evaporation, and improve efficacy.</p> <p>For control of rice water weevil in dry seeded rice, make a foliar application as indicated by scouting for the presence of adults and/or feeding scars, usually within a time-frame of 0-5 days after permanent flood establishment. Do not exceed 10 days from starting permanent flood until insecticide application unless scouting indicates weevils have not been previously present. Adults may also be treated at later stages of rice development to reduce overwintering populations.</p> <p>For control of rice water weevil in water seeded rice, make the first foliar application after pinpoint flood as indicated by scouting for the presence of adults and/or feeding scars usually when rice has emerged 0.5 inch above the waterline. Under conditions of prolonged migration into the field, start field scouting for rice water weevil adults and/or feeding scars 3-5 days after the initial treatment and, if needed, apply a second application within 7-10 days of the first application. Adults may also be treated at later stages of rice development to reduce overwintering populations.</p>

		<p><u>California:</u> In addition to above directions for control of rice water weevil in water seeded rice, LambdaStar 1CS may be applied at the 1-3 leaf growth stage, with the majority at the 2 leaf growth stage. Adults are vulnerable on levees and in the water. Larvae are vulnerable while feeding on the leaf prior to entering the soil. Monitor for adults, based upon field history and density of population. Monitor field edges and levee areas for adults. Treat in the following manner: a) spray the inside perimeter of the field, or b) spray the entire field.</p> <p>Greenbug is known to have many biotypes. LambdaStar 1CS may only provide suppression. If satisfactory control is not achieved with the first application of LambdaStar 1CS, a resistant biotype may be present. Use alternate chemistry for control.</p> <p>For control of stem borers, scout fields, when rice growth is near panicle differentiation, for early symptoms of damaging populations exhibited as discoloration (orange—tan) around the junction of the leaf sheath and leaf blade which is caused by feeding of young larvae within the sheath. Applications must be made before larvae bore into rice stems. Make the first application at panicle differentiation to 2 inch panicle for partial control. Make the second application at boot to heading for maximum control. All rice varieties are susceptible to stem borer damage, but Cocodrie and Priscilla are particularly susceptible.</p> <p><sup>1</sup>For control before the larvae bores into the plant stalk.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 21 days of harvest.</li> <li>• Do not release flood water within 7 days of an application.</li> <li>• Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.</li> <li>• Do not apply more than 0.04 lb. a.i. (0.32 pt.) per acre within 21 to 27 days of harvest.</li> <li>• Do not use treated rice fields for the aquaculture of edible fish and crustacea.</li> <li>• Do not apply as an ultra-low volume (ULV) spray.</li> </ul>		

**COLE CROPS (HEAD AND STEM BRASSICA)**

Broccoli, Brussels Sprouts, Cabbage, Cavalo Broccolo, Cauliflower, Chinese Broccoli (gai lon), Chinese Cabbage (napa), Chinese Mustard Cabbage (gai choy), Kohlrabi

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Alfalfa Looper Cabbage Looper Cabbage Webworm Cutworm spp. Imported Cabbageworm Southern Cabbageworm	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Aphid spp. <sup>2,3</sup> Armyworm Beet Armyworm <sup>1,3</sup> Corn Earworm Diamondback Moth <sup>3</sup> Fall Armyworm <sup>1</sup> Flea Beetle spp. Grasshopper spp. Japanese Beetle (Adult) Leafhopper spp. Meadow Spittlebug Plant Bug spp. including Lygus spp. <sup>3</sup> Spider Mite spp. <sup>2</sup> Stink Bug spp. Thrips spp. <sup>2</sup> Vegetable Weevil (Adult) Whitefly spp. <sup>2,3</sup> Yellow-striped Armyworm	0.02-0.03	2.56-3.84	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup>For control of first and second instar only. <sup>2</sup>Suppression only. <sup>3</sup>See resistance statement under GENERAL INFORMATION.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 1 day of harvest.</li> <li>• Do not apply more than 0.24 lb. a.i. (1.92 pts.) per acre per season.</li> </ul>			

## COTTON

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Cutworm spp. Soybean Thrips Tobacco Thrips	0.015-0.02	1.92-2.56	Apply as required by scouting, usually at intervals of 5-7 days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Cabbage Looper Cotton Fleahopper Cotton Leafperforator Cotton Leafworm Lygus Bug spp. <sup>3</sup> Pink Bollworm Saltmarsh Caterpillar	0.02-0.03	2.56-3.84	<b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.
Bandedwing Whitefly <sup>2,3</sup> Beet Armyworm <sup>1,3</sup> Boll Weevil Brown Stink Bug Cotton Aphid <sup>2,3</sup> Cotton Bollworm European Corn Borer Fall Armyworm Green Stink Bug Southern Green Stink Bug Sweetpotato Whitefly <sup>2,3</sup> Tobacco Budworm <sup>3</sup> Two-spotted Spider Mite <sup>2</sup>	0.025-0.04	3.20-5.12	Applications may also be made with equipment adapted and calibrated for ULV sprays. LambdaStar 1 CS may be mixed with once-refined vegetable oil and applied in a minimum of at least 1 qt. of finished spray per acre.  Under light bollworm/budworm infestation levels, 0.02 lb. a.i./A may be applied in conjunction with intense field monitoring.  <b>Boll Weevil:</b> Spray on a 3- to 5-day schedule.  <b>Cotton Bollworm, Tobacco Budworm:</b> When applied according to label directions LambdaStar 1 CS also provides ovicidal control of unhatched <i>Heliothis</i> spp, eggs.  <sup>1</sup> For control of first and second instar only. <sup>2</sup> Suppression only. <sup>3</sup> See resistance statement under GENERAL INFORMATION.
<ul style="list-style-type: none"> <li>• Do not apply within 21 days of harvest.</li> <li>• Do not graze livestock in treated areas.</li> <li>• Do not apply more than 0.2 lb. a.i. (1.6 pts.) per acre per season.</li> <li>• Do not make more than a total of 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season.</li> </ul>			

**CUCURBIT VEGETABLES**

Chayote (fruit); Chinese Waxgourd (Chinese preserving melon); Citron Melon; Cucumber; Gherkin; Gourd (edible) [*Lagenaria* species—includes: hyotan, cucuzza; *Luffa acutangula*, *L. cylindrical* - includes: hechima, Chinese okra] *Momordica* species — includes: balsam apple, balsam pear, bitter melon, Chinese cucumber; Muskmelon (hybrids and/or cultivars of *Cucumis melo*) — includes: true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, snake melon; Pumpkin; Squash, summer (*Cucurbita pepo* var. *meloepo*) — includes: crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini; Squash, winter (*Cucurbita maxima*; *C. moschata*)— includes butternut squash, calabaza, hubbard squash (*C. mixta*; *C. pepo*) - includes: acorn squash, spaghetti squash; Watermelon — includes: hybrids and/or varieties of *Citrullus lanatus*

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Armyworm spp. Blister Beetle spp. Cabbage Looper Corn Earworm Cricket spp. Cucumber Beetle spp. (adults) Cutworm spp. Flea Beetle spp. Grasshopper spp. June Beetle spp. Leaffooted Bug Leafhopper spp. Lygus Bug spp. <sup>1</sup> Melonworm Pickleworm Plant Bug spp. Rindworm spp. complex Saltmarsh Caterpillar Squash Beetle Squash Bug spp. Squash Vine Borer spp. Stink Bug spp. Thrips spp. <sup>1,2</sup> Tobacco Budworm <sup>1</sup> Webworm spp.	0.02-0.03	2.56-3.84	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.  Use higher application volumes and/or rates when foliage is dense, pest populations are high, larvae are large, weather conditions are adverse and/or as plant size increases. Use higher rates for longer residual.  Insects that bore or tunnel into leaves, vines, stems or fruit must be controlled before penetration. Only exposed insects (larvae and/or adults) can be controlled with foliar applications of Lambdastar 1CS.  <b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.
Aphid spp. <sup>1</sup> Leafminer spp. <sup>1,3</sup> Spider Mite spp. <sup>3</sup> Whitefly spp. <sup>1,3</sup>	0.03	3.84	<sup>1</sup> See resistance statement under GENERAL INFORMATION. <sup>2</sup> Does not include Western Flower Thrips <sup>3</sup> Suppression only.
<ul style="list-style-type: none"> <li>Do not apply within 1 day of harvest.</li> <li>Do not apply more than 0.18 lb. a.i. (1.44 pts.) per acre per season.</li> </ul>			

**FRUITING VEGETABLES:**

Tomato and Tomatillo, Peppers (bell and non-bell), Eggplant, Ground Cherry, Pepino

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Cabbage Looper Cutworm spp. Hornworm spp.	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Aphid spp. <sup>2,3</sup> Beet Armyworm <sup>1,3</sup> Blister Beetle spp. Colorado Potato Beetle <sup>3</sup> Cucumber Beetle spp. (Adult) European Corn Borer <sup>4</sup> Fall Armyworm <sup>1</sup> Flea Beetle spp. Grasshopper spp. Japanese Beetle (Adult) Leafhopper spp. Leafminer spp. <sup>2</sup> Meadow Spittlebug Pepper Weevil (Adult) <sup>2</sup> Plant Bug spp. Southern Armyworm <sup>1</sup> Spider Mite spp. <sup>2</sup> Stalk Borer <sup>4</sup> Stink Bug spp. Thrips <sup>5</sup> Tobacco Budworm <sup>3</sup> Tomato Fruitworm Tomato Pinworm Tomato Psyllid <sup>2,3</sup> Vegetable Weevil (Adult) Whitefly spp. <sup>2,3</sup> Yellow-striped Armyworm <sup>1</sup>	0.02-0.03	2.56-3.84	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup>For control of first and second instar only.  <sup>2</sup>Suppression only.  <sup>3</sup>See resistance statement under GENERAL INFORMATION.  <sup>4</sup>For control before the larva bores into the plant stalk or fruit.  <sup>5</sup>Does not include Western Flower Thrips.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 5 days of harvest.</li> <li>• Do not apply more than 0.36 lb. a.i. (2.88 pts.) per acre per season.</li> </ul>			

**GRASS FORAGE, FODDER AND HAY**

Pasture and Rangeland Grass, Grass Grown for hay or Silage and Grass Grown for Seed

TARGET PESTS	RATE		REMARKS
	lb.a.i./A	fl.oz./A	
Army Cutworm Cutworm spp. Essex Skipper Range Caterpillar Striped Grass Looper	0.015-0.025	1.92-3.2	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Beet Armyworm Billbug spp. <sup>3</sup> Bird Cherry-Oat Aphid <sup>1</sup> Black Grass Bug Black Turfgrass Beetle (adult) Blue Stem Midge Cereal Leaf Beetle Chinch Bug Crane Fly spp. Cricket spp. English Grain Aphid <sup>1</sup> Fall Armyworm Flea Beetle spp. Grass Mealybug Grass Sawfly (adult) Grasshopper spp. Green June Beetle (adult) Greenbug <sup>1,2</sup> Japanese Beetle (adult) Katydid spp. Leafhopper spp. Mite species <sup>3</sup> Russian Wheat Aphid <sup>1</sup> Southern Armyworm Spittlebug spp. Stink Bug spp. Sugarcane Aphid Thrips spp. Tick spp. True Armyworm Webworm spp. Yellowstriped Armyworm	0.02-0.03	2.56-3.84	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p>Use higher application volumes and rates when foliage is dense, pest populations are high, larvae are large and/or weather conditions are adverse. Use higher rates for longer residual.</p> <p>For chinch bug control, Lambdastar 1CS may only suppress heavy infestations and/or migrations. In this situation, a second application using an alternative chemistry may be needed.</p> <p>Greenbug is known to have many biotypes. Lambdastar 1CS may provide suppression only. In this situation, a second application using an alternative chemistry may be needed.</p> <p>Pasture and rangeland grass may be used for grazing or cut for forage 0 days after application. Do not cut grass to be dried and harvested for hay until 7 days after the last application.</p> <p>Grass grown for seed:</p> <ul style="list-style-type: none"> <li>• Straw and mature seed (seed screenings) may be used as feed 7 days after the last application. Regrowth of grass grown for seed may be used for grazing, cut for forage or cut to be dried and harvested for hay.</li> </ul> <p><sup>1</sup>Best control is obtained before insects begin to roll leaves.  <sup>2</sup>See resistance statement under GENERAL INFORMATION.  <sup>3</sup>Suppression only.</p>
<ul style="list-style-type: none"> <li>• Do not apply more than 0.03 lb. a.i. (0.24 pt.) per acre per cutting for pastures, rangeland and grasses grown for seed. A minimum re-treatment interval (RTI) of 30 days is required for pastures and rangeland receiving 0.03 lb. a.i. per acre which have not been cut between applications.</li> <li>• Do not apply more than 0.09 lb. a.i. (0.72 pt.) per acre per season.</li> </ul>			



**LEGUME VEGETABLES (BEANS AND PEAS) Edible Podded (only)**

*Canavalia gladiata*- sword bean; *Canavalia ensiformis* – jackbean; *Glycine max* - Soybean (immature seed);

**Edible Podded, Succulent Shelled or Dried Shelled** - *Phaseolus* spp. (includes: field, kidney, lima, navy, pinto, runner, snap, tepary, and wax beans); *Vigna* spp. (includes: adzuki, asparagus, moth, mung, rice, urd and yard long beans, black-eyed pea, catjang, Chinese longbean, cowpea, Crowder pea, and Southern pea); *Pisum* spp. (includes: dwarf, edible-pod, English, field, garden, green, snow and sugar snap peas); *Cajanus cajan* - Pigeon pea; **Succulent Shelled or Dried Shelled** - *Vicia faba*.- broadbean (favabean) **Dried Shelled (only)** *Lupinus* spp. (includes: grain, sweet, white and sweet white lupines); *Cicer arietinum* - Chickpea (garbanzo bean); *Cyamopsis tetragonoloba* – guar; *Lablab purpureus* - Lablab bean (hyacinth bean); *Lens esculata* - Lentils

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Cutworm spp. Green Cloverworm Imported Cabbageworm Mexican Bean Beetle Saltmarsh Caterpillar Velvetleaf Caterpillar	0.015-0.025	1.92-3.20	<p>Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.</p> <p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup>For control before the larva bores into the plant stalk or pods. <sup>2</sup>For control of the first and second instar only. <sup>3</sup>For suppression only. <sup>4</sup>See resistance statement under GENERAL INFORMATION. <sup>5</sup>Does not include Western Flower Thrips.</p>
Alfalfa Caterpillar Aphid spp. <sup>4</sup> Armyworm <sup>2</sup> Bean Leaf Beetle Bean Leafskeltonizer Blister Beetle spp. Corn Earworm Corn Rootworm Beetle spp. (Adult) Cucumber Beetle spp. (Adult) Curculio and Weevil spp. <sup>1</sup> (foliage and pod feeding adults and larvae) European Corn Borer Fall Armyworm <sup>2</sup> Flea Beetle spp. (Adult) Flea Hopper spp. Grasshopper spp. Japanese Beetle (Adult) Leafhopper spp. Leaf-tier spp. Looper spp. Meadow Spittlebug Painted Lady Butterfly (larva) Plant Bug spp. Including Lygus spp. <sup>4</sup> Stalk Borer <sup>1</sup> Stink Bug spp. Three-cornered Alfalfa Hopper Thrips spp. <sup>4,5</sup> Tobacco Budworm <sup>4</sup> Webworm spp. Western Bean Cutworm Western Yellow-striped Armyworm <sup>2</sup> Yellow-striped Armyworm <sup>2</sup>	0.02-0.03	2.56-3.84	
Beet Armyworm <sup>3,4</sup> Leafminer spp. <sup>3,4</sup> Lesser Cornstalk Borer <sup>3</sup> Soybean Looper <sup>3,4</sup> Spider Mite Spp <sup>3</sup> Whitefly spp. <sup>3,4</sup>	0.03	3.84	
<ul style="list-style-type: none"> <li>• For edible podded and succulent shelled legume vegetables, do not apply within 7 days of harvest.</li> <li>• For dried shelled legume vegetables, do not apply within 21 days of harvest.</li> </ul>			

- Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.
- For succulent and dried shelled peas and beans, do not graze livestock in treated areas or harvest vines for forage or hay.

**LEGUME VEGETABLES:**

Soybean

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Bean Leaf Beetle Cabbage Looper Corn Earworm Cutworm spp. Green Cloverworm Mexican Bean Beetle Mexican Corn Rootworm Beetle (Adult) Northern Corn Rootworm Beetle (Adult) Painted Lady (Thistle) Caterpillar Potato Leafhopper Saltmarsh Caterpillar Southern Corn Rootworm Beetle (Adult) Soybean Aphid <sup>4</sup> Three-Cornered Alfalfa Hopper Thrips spp. <sup>5</sup> Velvetbean Caterpillar Western Corn Rootworm Beetle (Adult) Woollybear Caterpillar	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.  <b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Adult Corn Rootworm Beetles (<i>Diabrotica</i> species):</b> As part of an aerial applied corn rootworm control program, use a minimum of 2.56 fl. oz. (0.02 lb. a.i.) per acre.
Armyworm <sup>1</sup> Blister Beetle spp. European Corn Borer Fall Armyworm <sup>1</sup> Grasshopper spp. Japanese Beetle (Adult) Plant Bug spp. Silverspotted Skipper Stink Bug spp. Tobacco Budworm <sup>3</sup> Webworm spp. Yellow-striped Armyworm <sup>1</sup>	0.025-0.03	3.20-3.84	<sup>1</sup> Use higher rates for large larvae. <sup>2</sup> Suppression only. <sup>3</sup> See resistance statement under GENERAL INFORMATION. <sup>4</sup> Use lower rates for early season applications and/or lighter populations. <sup>5</sup> Does not include Western Flower Thrips.
Beet Armyworm <sup>2,3</sup> Lesser Cornstalk Borer <sup>2</sup> Soybean Looper <sup>2,3</sup> Spider Mite spp. <sup>2</sup>	0.03	3.84	

- Do not apply within 30 days of harvest.
- Do not apply more than 0.06 lb. a.i. (0.48 pt.) per acre per season.
- Do not graze or harvest treated soybean forage, straw, or hay for livestock feed.

**LETTUCE (HEAD AND LEAF)**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Alfalfa Looper Cabbage Looper Cutworm spp. Green Cloverworm Imported Cabbageworm Saltmarsh Caterpillar	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect p populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Aphid spp. <sup>2,3</sup> Armyworm Beet Armyworm <sup>1,3</sup> Corn Earworm Diamondback Moth <sup>3</sup> European Corn Borer Fall Armyworm <sup>1</sup> Flea Beetle spp. Grasshopper spp. Japanese Beetle (Adult) Leafhopper spp. Meadow Spittlebug Plant Bug spp. including Lygus spp. <sup>3</sup> Southern Armyworm Spider Mite spp. <sup>2</sup> Stink Bug spp. Tobacco Budworm <sup>3</sup> Vegetable Weevil (Adult) Whitefly spp. <sup>2,3</sup>	0.02-0.03	2.56-3.84	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup>For control of first and second instar only. <sup>2</sup>Suppression only. <sup>3</sup>See resistance statement under GENERAL INFORMATION.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 1 day of harvest.</li> <li>• Do not apply more than 0.3 lb. a.i. (2.4 pts.) per acre per season.</li> </ul>			

**ONION (BULB) AND GARLIC**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Cutworm spp. Seedcorn Maggot (Adult) Onion Maggot (Adult) Leafminer spp. (Adult)	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals of 5 or more days, Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Armyworm spp. <sup>1</sup> Onion Thrips <sup>3</sup> Tobacco Thrips <sup>3</sup> Western Flower Thrips <sup>2,3</sup> Flower Thrips <sup>2,3</sup> Aphid spp. <sup>2</sup> Plant Bug spp. Stink Bug spp.	0.02-0.03	2.56-3.84	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p>Use the higher label rates as thrips population increases and avoid rescue situations.</p> <p><b>Thrips control by aerial application:</b> The addition of 1 % COC v/v, 1/4% NIS v/v, or a silicone adjuvant (follow manufacturer's use directions) may enhance the deposition of the spray and increase plant coverage.</p> <p><sup>1</sup>For control of the first and second instar only. <sup>2</sup>Suppression only. <sup>3</sup>See resistance statement under GENERAL INFORMATION.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 14 days of harvest.</li> <li>• Do not apply more than 0.24 lb. a.i. (1.92 pts.) per acre per season.</li> </ul>			

**PEANUT**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Cutworm spp. Green Cloverworm Potato Leafhopper Rednecked Peanut Worm Threecornered Alfalfa Looper Velvetbean Caterpillar	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Bean Leaf Beetle Corn Earworm Fall Armyworm <sup>1</sup> Grasshopper spp. Southern Corn Rootworm (Adult) Stink Bug spp. Tobacco Thrips Vegetable Weevil Whitefringed Beetle (Adult)	0.02-0.03	2.56-3.84	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup> Use higher rates for large larvae. <sup>2</sup>Suppression only. <sup>3</sup>See resistance statement under GENERAL INFORMATION.</p>

Aphid spp. <sup>2</sup> Beet Armyworm <sup>2,3</sup> Lesser Cornstalk Borer <sup>2</sup> Soybean Looper <sup>2,3</sup> Spider Mite spp. <sup>2</sup>	0.03	3.84	
<ul style="list-style-type: none"> <li>• Do not apply within 14 days of harvest.</li> <li>• Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.</li> </ul>			

**POME FRUITS**

Apple, Crabapple, Loquat, Mayhaw, Oriental Pear, Pear, Quince

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Apple Aphid Apple Maggot (Adult) Cherry Fruit Fly spp. (Adult) Leafroller spp. Codling Moth Green Fruitworm Japanese Beetle Leafhopper spp. Leafroller spp. Lesser Appleworm Omnivorous Leafroller Orange Tortrix Oriental Fruit Moth Pear Psylla <sup>1</sup> Pear Sawfly Periodical Cicada Plant Bug spp. Plum Curculio Rosy Apple Aphid San Jose Scale (fruit infestations only) Spirea Aphid <sup>1</sup> Stink Bug spp. Tent Caterpillar spp. Tentiform Leaf Miner spp. Tree Borer spp. Tufted Apple Budworm Webworm spp.	0.02-0.04	2.56-5.12	<p>Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.</p> <p><b>Ground application:</b> Apply in a minimum of 50 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup>Suppression only.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 21 days of harvest.</li> <li>• Do not apply more than 0.2 lb. a.i. (1.6 pts.) per acre per year.</li> <li>• Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per year post bloom.</li> </ul>			

**STONE FRUITS**

Apricot, Sweet and Tart Cherry, Nectarine, Peach, Plum, Chickasaw Plum, Damson Plum, Japanese Plum, Plumcot, Prune

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
American Plum Borer Apple Maggot (Adult) Black Cherry Aphid Cherry Fruit Fly spp. (Adult) Codling Moth Green Fruitworm Japanese Beetle June Beetle Leafhopper spp. Leafroller spp. Oriental Fruit Moth Peach Twig Borer Peachtree Borer spp. Pear Sawfly Periodical Cicada Plant Bug spp. Plum Curculio Rose Chafer Stink Bug spp. Tent Caterpillar spp. Thrips spp.	0.02-0.04	2.56-5.12	<p>Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds and IPM. Consult your local advisor or extension office for details.</p> <p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 14 days of harvest.</li> <li>• Do not apply more than 0.2 lb. a.i. (1.6 pts.) per acre per year.</li> <li>• Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per year post bloom.</li> </ul>			

**SUGARCANE**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Mexican Rice Borer <sup>1</sup> Pygmy Mole Cricket Rice Stalk Borer <sup>1</sup> Sugarcane Aphid <sup>3</sup> Sugarcane Beetle (Adult) <sup>2</sup> Sugarcane Borer <sup>1</sup> West Indian Crane fly Yellow Sugarcane Aphid <sup>3</sup>	0.025-0.04	3.20-5.12	<p>Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold. Consult your local advisor or extension office for details.</p> <p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup>For control before the larva bores into the plant stalk. <sup>2</sup>Suppression only of beetles active above ground. <sup>3</sup>See resistance statement under GENERAL INFORMATION.</p>
<ul style="list-style-type: none"> <li>• Do not apply within 21 days of harvest.</li> <li>• Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per season.</li> </ul>			

**SUNFLOWER**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Cutworm spp. Sunflower Beetle	0.015-0.025	1.92-3.20	<p>Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.</p> <p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup> Use control of first and second instar only.  <sup>2</sup>Suppression only.  <sup>3</sup>See resistance statement under GENERAL INFORMATION.</p>
Banded Sunflower Moth Fall Armyworm <sup>1</sup> Grasshopper spp. Head-Clipper Weevil (Adult) Japanese Beetle (Adult) Leafhopper spp. Meadow Spittlebug Painted Lady (Thistle) Caterpillar Seed Weevil (Adult) Spotted Cabbage Looper Stem Weevil (Adult) Stink Bug spp. Sunflower Maggot (Adult) Sunflower Moth Woollybear Caterpillar	0.02-0.03	2.56-3.84	
Beet Armyworm <sup>2,3</sup> Spider Mite spp. <sup>2</sup>	0.03	3.84	
<ul style="list-style-type: none"> <li>• Do not apply within 45 days of harvest.</li> <li>• Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.</li> <li>• Do not apply more than 0.09 lb. a.i. (0.72 pt.) per acre per season after bloom initiation.</li> <li>• Do not apply as a ultra-low volume (ULV) spray.</li> </ul>			

**TOBACCO (AIR DRIED)****Burley Tobacco and Flue-Cured Tobacco**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Armyworm spp. <sup>1</sup> Blister Beetle spp. Cabbage Looper Corn Earworm Cucumber Beetle spp. (Adult) Cutworm spp. Grasshopper spp. Japanese Beetle (Adult) Katydid spp. Plant Bug spp. <sup>3</sup> Potato Tuberworm Salt Marsh Caterpillar Stinkbug spp. Tobacco Aphid spp. <sup>2,3</sup> Tobacco Budworm <sup>2</sup> Tobacco Flea Beetle (Adult) Tobacco Hornworm Tobacco Thrips spp. <sup>2</sup> Tomato Hornworm Tree Cricket spp. Vegetable Weevil (Adult)	0.015-0.03	1.92-3.84	<p>Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold. Consult your local advisor or extension office for details.</p> <p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><sup>1</sup>For control of first and second instar only.  <sup>2</sup>Suppression only.  <sup>3</sup>See resistance statement under GENERAL INFORMATION.</p>

Webworm spp.			
<ul style="list-style-type: none"> <li>Do not apply within 40 days of harvest.</li> <li>Do not apply more than 0.09 lb. a.i. (0.72 pt.) per acre per year.</li> </ul>			

**TREE NUTS**

Almond, Beech Nut, Brazil Nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (Hazelnut), Hickory Nut, Macadamia Nut (Bush Nut), Pistachio, Walnut [Black, English (Persian)]

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Ants Chinch Bug Codling Moth Filbertworm Leaffooted Bug Leafroller spp. Navel Orangeworm Peach Twig Borer Plant Bug spp. Stink Bug spp. Walnut Aphid Walnut Husk Fly spp. (Adult)	0.02-0.04	2.56-5.12	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold. Consult your local advisor or extension office for details.  <b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.
<ul style="list-style-type: none"> <li>Do not apply within 14 days of harvest.</li> <li>Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per year.</li> <li>Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per year post bloom.</li> </ul>			

**Pecan**

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Hickory Shuckworm Pecan Aphid spp. Pecan Casebearer spp. Pecan Phylloxera spp. Pecan Spittlebug Pecan Weevil Stink Bug spp.	0.02-0.04	2.56-5.12	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold. Consult your local advisor or extension office for details.  <b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.  <b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.
<ul style="list-style-type: none"> <li>Do not apply within 14 days of harvest.</li> <li>Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per year.</li> <li>Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per year post bloom.</li> </ul>			



**TUBEROUS AND CORM VEGETABLES (Potato, Sweet Potato, Yams and Related)**

Arracacha Arrowroot, Artichoke (Chinese and Jerusalem only), Canna (edible), Cassava (bitter and sweet), Chayote (root), Chufa, Dasheen, Ginger, Leren, Potato, Sweet Potato, Tanier, Turmeric, Yam (bean and true)

TARGET PESTS	RATE		REMARKS
	lb. a.i./A	fl. oz./A	
Cutworm spp. Leafhopper spp. Saltmarsh Caterpillar Sweet Potato Hornworm Woollybear Caterpillar spp.	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.
Aphid spp. <sup>1</sup> Armyworm spp. <sup>1</sup> Blister Beetle spp. Colorado Potato Beetle <sup>1</sup> Corn Earworm Cricket spp. Cucumber Beetle spp. (adults) European Corn Borer Flea Beetle spp. (adults) Grasshopper spp. Looper spp. <sup>1</sup> Lygus Bug spp. <sup>1</sup> Plant Bug spp. Potato Psyllid Potato Tuberworm Stink Bug spp. Sweet Potato Leaf Beetle (adults) Sweet Potato Vine Borer Thrips spp. <sup>1,2</sup> Tortoise Beetle spp. Webworm spp. Weevil spp. (adults)	0.02-0.03	2.56-3.84	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p>Use higher application volumes and/or rates when foliage is dense, pest populations are high, larvae are large, weather conditions are adverse and/or as plant size increases. Use higher rates for longer residual.</p> <p>Insects that bore or tunnel into leaves, vines, stems, tubers or corms must be controlled before penetration. Only exposed insects (larvae and/or adults) can be controlled with foliar applications of LambdaStar 1CS.</p> <p><sup>1</sup>See resistance statement under GENERAL INFORMATION. <sup>2</sup>Does not include Western Flower Thrips. <sup>3</sup>Suppression only.</p>
Leafminer spp. <sup>1,3</sup> Whitefly spp. <sup>1,3</sup> Spider Mite spp. <sup>3</sup>	0.03	3.84	
<ul style="list-style-type: none"> <li>• Do not apply within 7 days of harvest.</li> <li>• Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.</li> </ul>			

### NON-AGRICULTURAL USES

#### CONIFER AND DECIDUOUS TREES

Plantations, Nurseries

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Bagworm Balsam Twig Aphid Balsam Wooly Aphid Birch Leafminer Black Pine Weevil Elm Leaf Beetle European Elm Bark Beetle Gypsy Moth Japanese Beetle June Beetle spp. Leaf Beetle spp. Leafroller spp. May Beetle spp. Mealybug spp. <sup>1</sup> Pales Weevil Pine Chafer Pine Colaspis Beetle Pine Conelet Bug Pine Leaf Chermid Pine Needle Scale Pine Sawfly spp. Pine Tip Moth spp. Pine Tortoise Scale Pine Weevil spp. Poplar Aphid spp. Sawfly spp. Spittlebug spp. Spruce Budworm Tent Caterpillar spp. Tussock Moth spp. Webworm spp.	0.02-0.04	2.56-5.12	<p><b>Ground application:</b> Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p><b>Air application:</b> Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</p> <p>To control exposed foliage, flower, cone, seed, and bark feeding insects, apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.</p> <p><sup>1</sup> Suppression only.</p>
<p>• Do not apply more than 0.24 lb. a.i. (1.92 pts.) per acre per year.</p>			

**CONIFER AND DECIDUOUS TREES**

Seed Orchards

Target Pests	Rate		Remarks
	lb. a.i./A	fl. oz./A	
Coneworm spp. Seed Bug spp. Thrips spp.	See Remarks	See Remarks	For high volume sprayers, dilute 5.12 fl. oz. per 100 gallons of water and apply 5-10 gallons of finished spray per tree.  For low volume sprayers, dilute 20 fl. oz. per 100 gallons of water and apply 100 gallons of finished spray per acre.  For aerial applications, apply 15 fl. oz. per acre in a minimum of 10 gallons finished spray per acre.
<ul style="list-style-type: none"> <li>• Do not apply more than 0.5 lb. a.i. (4 pts.) per acre per year.</li> </ul>			

**NON-CROPLAND  
(Excluding Public Land)**

Target Pests	Remarks
See specific crop instructions in sections above for specific pest and rate information.	<p>Spray non-cropland adjacent to agricultural areas to control insects which may migrate to and threaten crops. Follow the General Directions for Use instructions, application rates, and spray recommendations found elsewhere on this label for the specific crop.</p> <p>When foliage is dense/large, insect populations are high or larval stages are large, use the highest labeled rate for that crop-pest combination.</p> <p>Repeat as necessary to maintain control.</p> <p>Do not apply more than 0.2lb a.i. (1.6 pts. or 25.6 fl. Oz. of product) per year.</p> <p>Do not graze livestock in treated areas.</p>

**Rate Conversion Chart**

Lb. A.I. Per Acre	Fl. Oz. Per Acre	Pints Per Acre	Treated Acres Per Gallon
0.015	1.92	0.12	66
0.02	2.56	0.16	50
0.025	3.20	0.20	40
0.03	3.84	0.24	33
0.04	5.12	0.32	25

**STORAGE AND DISPOSAL**

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

**Pesticide Storage:** Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with sand, earth, or synthetic absorbent. Remove to chemical waste area.

**Pesticide Disposal:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

**Container Disposal:**

**Nonrefillable container.** Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available 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.

**Refillable Container.** Refill this container with Lambda-cyhalothrin 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by the state and local authorities, by burning. If burned, stay out of smoke.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of LG Life Sciences, LTD. or Seller. To the extent consistent with applicable law all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold LG Life Sciences, LTD. and Seller harmless for any claims relating to such factors.

LG Life Sciences, LTD. warrants that this product conforms to the chemical description on the label and

is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or LG Life Sciences, LTD. and Buyer and User assume the risk of any such use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW LG LIFE SCIENCES, LTD. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

To the extent consistent with applicable law in no event shall LG LIFE SCIENCES, LTD. or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF LG LIFE SCIENCES, LTD. AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF LG LIFE SCIENCES, LTD. OR SELLER, THE REPLACEMENT OF THE PRODUCT.

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