

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

August 23, 2017

Dr. Matthew Brooks Director Representative LG Life Sciences c/o Ag-Chem Consulting 12208 Quinque Lane Clifton, VA 20124

Subject: Notification per PRN 98-10 –Minor changes to label Product Name: LAMBDASTAR 1 CS EPA Registration Number: 71532-25 Application Date: 7/25/2017 Decision Number: 531942

Dear Mr. Brooks:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped "Notification" and will be placed in our records.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you have any questions, you may contact Angela Hollis at 703-347-0216 or via email at hollis.angela@epa.gov.

Sincerely

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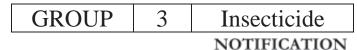
Michael Wagman, Acting Product Manager 4 Invertebrate and Vertebrate Branch 1

For:

Elizabeth Fertich, Acting Product Manager 3 Registration Division (7505P) Office of Pesticide Programs

#### 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.



# LAMBDASTAR 1 CS Insecticide

For the Control of listed Insect Pests on Selected Crops Contains the same active ingredient as Warrior® Insecticide. 71532-25

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

08/23/2017

Contains 1 lb. of active ingredient per gallon.

[See inside booklet for additional Precautionary Statement, [First Aid,] and Directions for Use.]

# 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 Chem, Ltd. 128 YEOUI-DAERO, YEONGDEUNGPO-GU SEOUL 07336

	FIRST AID					
If swallowed						
	• Call a poison control center or doctor immediately for treatment advice.					
	• Have person sip a glass of water if able to swallow					
	• Do not induce vomiting unless told to do so by the poison control center or					
	doctor.					
	• Do not give anything by mouth to an unconscious person.					
If in eyes	• Hold eye open and rinse slowly and gently with water 15-20 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	• Take off contaminated clothing.					
	• Rinse skin immediately with plenty of water for 15-20 minutes.					
	• Call a poison control center or doctor for treatment advice.					
If inhaled	• Move person to fresh air.					
	• If person is not breathing, call 911 or an ambulance, then give artificial					
	respiration, preferably by mouth-to-mouth if possible.					
	• Call a poison control center or doctor for further treatment advice.					
Have the product contain	iner or label with you when calling a poison control center or doctor, or going for					
treatment. You may als	to call 1-800-222-1222 for emergency medical treatment information.					

# 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  $\geq 14$  mils
- Shoes plus socks
- Protective eyewear

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

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**

#### Users should:

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

#### **Environmental Hazards**

This pesticide is extremely toxic to fish and aquatic organisms and toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment 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.

# DIRECTIONS FOR USE

#### **Restricted Use Pesticide**

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.

This labeling must be in the possession of the user at the time of application.

#### 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 acreinch 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**

Target PestsIb. a.i/Aft. oz./ARemarksAlfalfa Caterpillar0.015-0.0251.92 - 3.20Apply only to fields planted to pure stands of alfalfa.Cutworm spp. Green CloverwormApply only to fields planted to pure stands of alfalfa.Laghopper spp. Looper spp. Threecornered Alfalfa Hopper Velvetbcan CaterpillarApply as required by scouting. Timing and frequency of applications schuld be based upon insect populations reaching locally determined comonic thresholds. Consult your local advisor or extension office for details.Mebworm spp.0.02-0.032.56 - 3.84Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.Blue Alfalfa Sede Spp. Blue Alfalfa Aphid Clover Root Carculio spp. (Adult) Clover Root Carculio spp. (Adult) Clover Root Carculio (Adult) Clover Root Carculio (Adult) Clover Root Carculio (Adult) Com Earworm Compa Aphid Crome Lawrom Compa Aphid Green Paach Aphid <sup>4</sup> Halt Amyworm <sup>1</sup> Green Paach Aphid <sup>4</sup> Halt Anyworm <sup>1</sup> Green Paach Aphid <sup>4</sup> Hapanse Beetle (Adult) Meakow Spittlebug Mexisting from a cool evening and/or morning drig and bp advisable to remove be shelters. Meakon Spittlebug Meakon Spittlebug0.033.84Blot Alfalfa Meevil Paabapi0.033.84Blot Alfalfa Meevil Paabapi0.033.84	Alfalfa Caterpillar       0.015-0.025       1.92 – 3.20       Apply only to fields planted to pure stands of alfalfa.         Cutworm spp.       Green Cloverworm       alfalfa.         Leafhopper spp.       Looper spp.         Looper spp.       Consult your local advisor         Velvetbean Caterpillar       0.02-0.03       2.56 – 3.84         Mifalfa Seed Chalcid (Adult)       0.02-0.03       2.56 – 3.84         Alfalfa Veevil       Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.         Biaser Beetle spp.       Blue Alfalfa Aphid         Clover Lad Weevil spp.       Covera Root Borer (Adult)         Clover Root Borer (Adult)       Covepa Aphid         Cowpea Aphid       Covepa Aphid         Cowpea Curculio (Adult)       Grand paplication when bees are actively foraging by applying during the early morning or during the evening hours. Be aware of bee hazard for graging and/or morning dew. It may be advisable to remove bee shelters.         Meadow Spittlebug       Avoid application when bees are actively foraging and first and second instar only.         Spent Alfalfa Aphid       Pea Aphid         Pail Armyworm       Avoid direct application. Avoid direct application. Avoid direct application to be shelters.         Meadow Spittlebug       Pea Aphid         Pea Weevil (Adult)       Pea		R	ate		
Army cutworm Cutworm spp. Green Cloverworm Leafhopper spp. Threecornered Alfalfa Hopper Velvetbean Caterpillar Webworm spp.alfalfa.Afalfa Seed Chalcid (Adult) Alfalfa Seed Chalcid (Adult) Bliser Beetle spp. Blue Alfalfa Aphid Clover Root Curculio spp. (Adult) Clover Root Curculio (Adult) Cowpea Aphid Grape Colaspis (Adult) Green June Beetle (Adult) Mexican Bean Beetle (Adult) Mexican Bean Beetle Pea Aphid Pea Weevil (Adult) Pea Weevil (Adult) <b< th=""><th>Army cutwormalfalfa.Cutworm spp. Green CloverwormalfalfaLeafhopper spp. Threecornered Alfalfa Hopper Velvetbean Caterpillar0.02-0.032.56 - 3.84Apply as required by scouting. Timing and frequency of applications should be based upon insect populations and the population of the sholds. Consult your local advisor or extension office for details.Webworm spp.0.02-0.032.56 - 3.84Alfalfa Seedi (Adult) Blister Beetle spp.0.02-0.032.56 - 3.84Blue Alfalfa Aphid Clover Root Curculio spp. (Adult) Clover Root Spp. (Adult) Clover Root Spp. (Adult) Cucumber Beetle Spp. (Adult) Cucumber Beetle Spp. (Adult) Cucumber Beetle Spp. (Adult) Green June Beetle (Adult) Meadow Spittebug Meadow S</th><th><b>Target Pests</b></th><th>lb. a.i/A</th><th>fl. oz./A</th><th></th></b<>	Army cutwormalfalfa.Cutworm spp. Green CloverwormalfalfaLeafhopper spp. Threecornered Alfalfa Hopper Velvetbean Caterpillar0.02-0.032.56 - 3.84Apply as required by scouting. Timing and frequency of applications should be based upon insect populations and the population of the sholds. Consult your local advisor or extension office for details.Webworm spp.0.02-0.032.56 - 3.84Alfalfa Seedi (Adult) Blister Beetle spp.0.02-0.032.56 - 3.84Blue Alfalfa Aphid Clover Root Curculio spp. (Adult) Clover Root Spp. (Adult) Clover Root Spp. (Adult) Cucumber Beetle Spp. (Adult) Cucumber Beetle Spp. (Adult) Cucumber Beetle Spp. (Adult) Green June Beetle (Adult) Meadow Spittebug Meadow S	<b>Target Pests</b>	lb. a.i/A	fl. oz./A		
Clover Root Curculio spp. (Adult) Clover Stem Borer (Adult)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.Cowpea Aphid Cowpea Weevil (Adult)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.Mexican Bean Beetle Pea Aphid Stink Bug spp.1Path Bug spp. including Lygus spp. <sup>3</sup> Sweet Clover Weevil (Adult) Thrips spp. <sup>4</sup> 1.1Sweet Clover Weevil (Adult) Thrips spp. <sup>4</sup> 0.033.8484	Clover Root Curculio spp. (Adult) Clover Stem Borer (Adult)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.Cowpea Aphid Cowpea Weevil (Adult) Egyptian Alfalfa Weevil Fall Armyworm1Avoid 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.Green Pune Beetle (Adult) Meadow Spittlebug Mexican Bean Beetle Pea Aphid Pea Weevil (Adult)For control of first and second instar only. 2 Suppression only.Pant Bug spp. including Lygus spp.3 Sweet Clover Weevil (Adult) Thrips spp.40.033.84Botch Leafminer3 Botth Leafminer30.033.84	Alfalfa Caterpillar Army cutworm Cutworm spp. Green Cloverworm Leafhopper spp. Looper spp. Threecornered Alfalfa Hopper Velvetbean Caterpillar Webworm spp. Alfalfa Seed Chalcid (Adult) Alfalfa Weevil Armyworm Bean Leaf Beetle (Adult) Blister Beetle spp. Blue Alfalfa Aphid Clover Leaf Weevil spp.	0.015-0.025	1.92 - 3.20	<ul> <li>Apply only to fields planted to pure stands of alfalfa.</li> <li>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.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to</li> </ul>	
Plant Bug spp. including Lygus spp.33 See resistance statement under GENERAL INFORMATION.Spotted Alfalfa AphidINFORMATION.Stink Bug spp. Sweet Clover Weevil (Adult) Thrips spp.44 Does not include Western Flower Thrips.Western Yellow-striped Armyworm Whitefringed Beetle spp. (Adult) Yellow-striped Armyworm0.033.84	Plant Bug spp. including Lygus spp. <sup>3</sup> 3 See resistance statement under GENERAL         Spotted Alfalfa Aphid       INFORMATION.         Stink Bug spp.       4 Does not include Western Flower Thrips.         Sweet Clover Weevil (Adult)       4 Does not include Western Flower Thrips.         Thrips spp. <sup>4</sup> Western Yellow-striped Armyworm         Whitefringed Beetle spp. (Adult)       9         Yellow-striped Armyworm       0.03         Beet Armyworm <sup>1,3</sup> 0.03         Blotch Leafminer <sup>3</sup> 3.84	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			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.	
Blotch Leafminer <sup>3</sup>	Blotch Leafminer <sup>3</sup> Spider Mites <sup>1</sup>	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			<ul> <li><sup>2</sup> Suppression only.</li> <li><sup>3</sup> See resistance statement under GENERAL INFORMATION.</li> </ul>	
		Blotch Leafminer <sup>3</sup>	0.03	3.84		

#### ALAFAFA AND ALFALFA GROWN FOR SEED

Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.
Do not apply within 1 day of harvest for forage or within 7 days of harvest for hay.

#### CANOLA

	R	ate	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
Armyworm spp.	0.015-0.03	1.92-3.84	Apply as required by scouting, usually at
Cabbage Seedpod Weevil			intervals of 5 or more days. Timing and
Cutworm spp.			frequency of applications should be based
Diamondback Moth			upon insect populations reaching locally
Flea Beetle			determined economic threshold. Consult your
Grasshoppers			local advisor or extension office for details.
Looper spp.			
Lygus Bug			Ground application: Apply in a minimum of
Cabbage Aphid	0.03	3.84	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.

• 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

		Rate				
Target Pests	s –	lb. a.i./A	fl. oz./A		Remarks	
Corn Rootworm Larva	ie	0.005 lb.	0.66 fl. oz.	Banded Applicat	t <b>ions:</b> Apply a	t planting as a 5-7
(Western, Northern, S	Southern,	a.i. per	per 1,000 ft.	inch T-band spray	ed across the	open seed furrow
Mexican)	]	1,000 ft. of	of row <sup>2</sup>	between the furro	w openers and	the press wheels
Cutworm spp.		row <sup>2</sup>		or as a band appli	cation behind	the press wheel.
Lesser Cornstalk Bore	r					-
Red Imported Fire An	t <sup>1</sup>			In-Furrow Appli	ications: App	ly into the seed
Seedcorn Beetle				furrow through sp	oray nozzles o	r microtubes behind
Seedcorn Maggot				the planter furrow	openers and	in front of the press
White Grub spp.				wheel.	-	_
Wireworm spp.						
				Apply a minimun	n of 3 gallons	of finished spray
				per acre.	C	
				1		
				<sup>1</sup> Suppression onl	у.	
<sup>2</sup> Lbs. a	i. and fl. oz./A of l	LambdaStar 1 C	CS applied at 0.66 f	1. oz./1000 ft. of row for	various row space	ings:
Row Spacing	40''	38''	36''	34''	32''	30''
Linear Ft./A	13,068	13,756	14,520	- ,	16,335	17,424
Lbs. a.i./A	0.067	0.07	0.075	0.079	0.084	0.09
FI. 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.

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

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

• 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).

Corn (Foliar): Sweet Corn

	R	ate	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
Aphid spp. <sup>2,3</sup>	0.02-0.03	2.56-3.84	Apply as required by scouting, or
Armyworm <sup>1</sup>			locally prescribed corn growth
Aster Leafhopper			stages, usually at intervals of 4 or
Beet Armyworm <sup>1,3</sup>			more days. Timing and frequency of
Chinch Bug			applications should be based upon
Common Cornstalk Borer			insect populations reaching locally
Corn Earworm			determined economic thresholds or
Cutworm spp.			other locally recommended methods
European Corn Borer			and should be targeted for control
Fall Armyworm <sup>1</sup>			before insects enter the stalk or ear.
Flea Beetle spp.			Consult your local advisor or extension
Grasshopper spp.			office for details.
Japanese Beetle (Adult)			
Mexican Corn Rootworm Beetle (Adult)			Ground application: Apply in a
Northern Corn Rootworm Beetle (Adult)			minimum of 10 gallons per acre using
Sap Beetle (Adult)			sufficient spray volume to obtain full
Southern Armyworm <sup>1</sup>			coverage of foliage or target areas.
Southern Corn Rootworm Beetle (Adult)			
Southwestern Corn Borer			Air application: Apply in a minimum
Spider Mite spp. <sup>2</sup>			of 2 gallons per acre using sufficient
Stink Bug spp.			spray volume to obtain full coverage of
Tarnished Plant Bug			foliage or target areas.
Webworm spp.			
Western Bean Cutworm			Adult corn rootworm beetles
Western Corn Rootworm Beetle (Adult)			( <i>Diabrotica</i> species): Use a minimum of
Yellow-Striped Armyworm <sup>1</sup>			3.2 fl. oz. per acre (0.025 lb. a.i. per acre)
Corn Silkfly $(Adult)^2$	0.03	3.84	as part of an aerial applied corn
			rootworm control program.
			1
			<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.
• Do not apply within 1 day of harvest.			

• Do not apply within 1 day of harvest.

• 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.

• Do not feed treated corn fodder or silage to meat or dairy animals within 21 days after last treatment.

• Do not apply more than 0.48 lb. a.i. (3.84 pts.) per acre per crop from at-plant and foliar applications.

Sorghum (Grain)

	R	ate		
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks	
Cutworm spp. Sorghum Midge	0.015-0.02	1.92-2.56	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect	
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.	0.02-0.03	2.56-3.84	<ul> <li>populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to</li> </ul>	
Yellow-striped Armyworm <sup>1</sup> Webworm spp. Chinch Bug Mexican Rice Borer <sup>2</sup> Rice Stalk Borer <sup>2</sup> Sugarcane Borer <sup>2</sup>	0.03	3.84	obtain full coverage of foliage or target areas. Sorghum Midge control: Begin applications when 25% of the sorghum heads have emerged and are in tip bloom. Repeat applications at 5-day intervals if needed.	
			<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.	
• Do not apply within 30 days			LambdaStar 1 CS may only suppress heavy infestations and/or subsequent migrations. <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.	

• Do not apply within 30 days of harvest.

• Do not apply more than 0.08 lb. a.i. (0.64 pt.) per acre per season.

• Do not apply more than 0.06 lb. a.i. (0.48 pt.) per acre per season after crop emergence.

• Do not apply more than 0.02 lb. a.i. (0.16 pt.) per acre per season once crop is in soft dough stage.

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

Rate			
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks
Army Cutworm Cutworm 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
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	<ul> <li>applications should be based upon insect</li> <li>populations reaching locally determined economic thresholds. Consult your local advisor or extension office for details.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> </ul>
Grass Sawfly	0.025-0.03	3.20-3.84	Chinch Bug control: Repeat applications at 3- to
Chinch Bug Corn Leaf Aphid <sup>2</sup> Greenbug <sup>1</sup> , <sup>2</sup> Mite Spp. <sup>2</sup>	0.03	3.84	<ul> <li>5-day intervals if needed. LambdaStar 1 CS may only suppress heavy infestations and/or migrations.</li> <li>Greenbug: 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.</li> <li><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.</li> <li><sup>2</sup>Suppression only.</li> <li><sup>3</sup>See resistance statement under GENERAL INFORMATION.</li> <li><sup>4</sup> Make applications when adults emerge.</li> </ul>

• Do not apply within 30 days of harvest.

• 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.

• Do not apply more than 0.06 lb. a.i. (0.48 pt.) per acre per season.

#### **CEREAL GRAINS** Rice, Wild Rice

	Ra	te	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
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	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. 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.
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	<ul> <li>LambdaStar 1CS can be applied to cereal grains (rice and wild rice) that have been treated with propanil-containing products.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: 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.</li> <li>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.</li> <li>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.</li> </ul>

California: 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.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.
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.

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- Do not apply within 21 days of harvest. Do not release flood water within 7 days of an application. •
- •
- Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season. Do not apply more than 0.04 lb. a.i. (0.32 pt.) per acre within 21 to 27 days of harvest. •
- Do not use treated rice fields for the aquaculture of edible fish and crustacea.
- Do not apply as an ultra-low volume (ULV) spray. •

# 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

	Rate		
Target Pests	lb. a.i./A	fl. oz./A	Remarks
Alfalfa Looper Cabbage Looper Cabbage Webworm Cutworm spp. Imported Cabbageworm Southern Cabbageworm 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	0.015-0.025	2.56-3.84	<ul> <li>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.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li><sup>1</sup>For control of first and second instar only.</li> <li><sup>2</sup>Suppression only.</li> <li><sup>3</sup>See resistance statement under GENERAL INFORMATION.</li> </ul>
Vegetable Weevil (Adult) Whitefly spp. <sup>2,3</sup>			

#### COTTON

	Ra	te	
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks
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
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	<ul> <li>extension office for details.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per</li> </ul>
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	<ul> <li>acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>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.</li> <li>Under light bollworm/budworm infestation levels, 0.02 lb. a.i./A may be applied in conjunction with intense field monitoring,</li> <li>Boll Weevil: Spray on a 3- to 5-day schedule.</li> <li>Cotton Bollworm, Tobacco Budworm: When applied according to label directions LambdaStar 1 CS also provides ovicidal control of unhatched <i>Heliothis</i> spp, eggs.</li> <li><sup>1</sup>For control of first and second instar only.</li> <li><sup>2</sup>Suppression only.</li> <li><sup>3</sup>See resistance statement under GENERAL INFORMATION.</li> </ul>

• Do not apply within 21 days of harvest.

• Do not graze livestock in treated areas.

Do not apply more than 0.2 lb. a.i. (1.6 pts.) per acre per season.
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.

#### **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 *Cucurnis 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. *melopepo*) — 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 *Citrulius lanatus* 

Blister Beetle spp.of 5 or more days. Timing and freq applications should be based upon in populations reaching locally determ economic thresholds. Consult your or extension office for details.Cucumber Beetle spp.Use higher application volumes and foliage is dense, pest populations are ad a relarge, weather conditions are ad as plant size increases. Use higher a presidual.Flea Beetle spp.Use higher application volumes and foliage is dense, pest populations are ad as plant size increases. Use higher a residual.Leafbopter spp.Insects that bore or tunnel into leav stems or fruit must be controlled be penetration. Only exposed insects ( adults) can be controlled with folian of Lambdastar 1CS.Squash Bug spp.Ground application: Apply in a m gallons per acre using sufficient spra obtain full coverage of foliage or tar obtain full coverage of foliage or tar is prive spn.0.033.84		Ra	nte		
Blister Beetle spp.       of 5 or more days. Timing and freq         Cabbage Looper       applications should be based upon if         Corn Earworm       consistent spp.         Cucumber Beetle spp.       populations reaching locally determ         Cucumber Beetle spp.       Use higher application volumes and foliage is dense, pest populations are ad as plant size increases. Use higher application volumes and foliage is dense, pest populations are ad as plant size increases. Use higher residual.         Leaffooted Bug       use higher application volumes and foliage is dense, pest populations are ad as plant size increases. Use higher residual.         Lygus Bug spp. <sup>1</sup> Melonworm         Pickleworm       Insects that bore or tunnel into leav stems or fruit must be controlled be penetration. Only exposed insects (adults) can be controlled with foliar of Lambdastar 1CS.         Squash Bug spp.       Squash Bug spp.         Stink Bug spp.       Ground application: Apply in a minim gallons per acre using sufficient spra obtain full coverage of foliage or tar thrips spp. <sup>1,3</sup> Nebworm spp.       0.03       3.84         Aphid spp. <sup>1</sup> 0.03       3.84	<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks	
Whitefly spp. <sup>1,3</sup> <sup>2</sup> Does not include Western Flower Th <sup>3</sup> Suppression only.	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. Stink Bug spp. Stink Bug spp. Thrips spp. <sup>1,2</sup> Tobacco Budworm <sup>1</sup> Webworm spp. Aphid spp. <sup>1</sup> Leafminer spp. <sup>1,3</sup> Spider Mite spp. <sup>3</sup>		2.56-3.84	Use higher application volumes and/or rates wher 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.	

• Do not apply within 1 day of harvest.

• Do not apply more than 0.18 lb. a.i. (1.44 pts.) per acre per season.

# FRUITING VEGETABLES:

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

	Rate		
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks
Cabbage Looper	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals of 5
Cutworm spp.			or more days. Timing and frequency of applications
Hornworm spp.			should be based upon insect populations reaching locally
Aphid spp <sup>2,3</sup>	0.02-0.03	2.56-3.84	determined economic thresholds. Consult your local
Beet Armyworm <sup>1,3</sup>			advisor or extension office for details.
Blister Beetle spp.			
Colorado Potato Beetle <sup>3</sup>			Ground application: Apply in a minimum of 10
			gallons per acre using sufficient spray volume to obtain
Cucumber Beetle spp. (Adult)			full coverage of foliage or target areas.
European Corn Borer <sup>4</sup>			
Fall Armyworm <sup>1</sup>			Air application: Apply in a minimum of 2 gallons per
Flea Beetle spp.			acre using sufficient spray volume to obtain full
Grasshopper spp.			coverage of foliage or target areas.
Japanese Beetle (Adult)			
Leafhopper spp.			<sup>1</sup> For control of first and second instar only.
Leafminer spp. <sup>2</sup>			<sup>2</sup> Suppression only.
Meadow Spittlebug Pepper Weevil (Adult) <sup>2</sup>			<sup>3</sup> See resistance statement under
			GENERAL INFORMATION.
Plant Bug spp. Southern Armyworm <sup>1</sup>			<sup>4</sup> For control before the larva bores
			into the plant stalk or fruit.
Spider Mite spp. <sup>2</sup> Stalk Borer <sup>4</sup>			<sup>5</sup> Does not include Western Flower Thrips.
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>			
renow surped Armyworm			
• Do not apply within 5 days of			

• Do not apply more than 0.36 lb. a.i. (2.88 pts.) per acre per season.

#### **GRASS FORAGE, FODDER AND HAY**

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

RA	TE	REMARKS
lb.a.i./A	fl.oz./A	1
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.
0.02-0.03	2.56-3.84	<ul> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>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.</li> <li>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.</li> <li>Greenbug is known to have many biotypes.</li> <li>Lambdastar 1CS may provide suppression only. In this situation, a second application using an alternative chemistry may be needed.</li> <li>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.</li> <li>Grass grown for seed: <ul> <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> </li> <li><sup>1</sup>Best control is obtained before insects begin to roll leaves.</li> <li><sup>2</sup>See resistance statement under GENERAL INFORMATION.</li> </ul>
	<b>lb.a.i./A</b> 0.015-0.025	0.015-0.025 1.92-3.2

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.

• Do not apply more than 0.09 lb. a.i. (0.72 pt.) per acre per season.

#### 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 arietimum* - Chickpea (garbanzo bean); *Cyamopsis tetragonoloba* – guar; *Lablab pupureus* - Lablab bean (hyacinth bean); *Lens esculata* - Lentils

	I	Rate	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
Cutworm spp.	0.015-0.025	1.92-3.20	
Green Cloverworm			Apply as required by scouting,
Imported Cabbageworm			usually at intervals of 5 or mor
Mexican Bean Beetle			
Saltmarsh Caterpillar			days. Timing and frequency of
Velvetleaf Caterpillar			applications should be based
Alfalfa Caterpillar	0.02-0.03	2.56-3.84	upon insect populations
Aphid spp <sup>4</sup>			reaching locally determined
Armyworm <sup>2</sup>			economic thresholds. Consult
Bean Leaf Beetle			your local advisor or extension
Bean Leafskeletonizer			office for details.
Blister Beetle spp.			office for details.
Corn Earworm			Ground application: Apply i
Corn Rootworm Beetle spp. (Adult)			
Cucumber Beetle spp. (Adult)			a minimum of 10 gallons per
Curculio and Weevil spp. <sup>1</sup> (foliage			acre using sufficient spray
and pod			volume to obtain full coverage
feeding adults and larvae)			of foliage or target areas.
European Corn Borer			
Fall Armyworm <sup>2</sup>			Air application: Apply in a
Flea Beetle spp. (Adult)			minimum of 2 gallons per acre
Flea Hopper spp.			using sufficient spray volume
Grasshopper spp.			obtain full coverage of foliage
Japanese Beetle (Adult)			or target areas.
Leafhopper spp.			of target areas.
Leaftier spp.			<sup>1</sup> For control before the larva
Looper spp.			
Meadow Spittlebug			bores into the plant stalk or
Painted Lady Butterfly (larva)			pods.
Plant Bug spp. Including Lygus spp. <sup>4</sup>			<sup>2</sup> For control of the first and
Stalk Borer <sup>1</sup>			second instar only.
Stink Bug spp.			<sup>3</sup> For suppression only.
Three-cornered Alfalfa Hopper			<sup>4</sup> See resistance statement under
Thrips spp <sup>4,5</sup>			GENERAL INFORMATION.
Tobacco Budworm <sup>4</sup>			<sup>5</sup> Does not include Western
Webworm spp.			Flower Thrips.
Western Bean Cutworm			riower rimps.
Western Yellow-striped Armyworm <sup>2</sup>			
Yellow-striped Armyworm <sup>2</sup>			
Beet Armyworm <sup>3,4</sup>	0.03	3.84	
Leafminer spp <sup>3,4</sup>	0.02	5.01	
Lesser Cornstalk Borer <sup>3</sup>			
Soybean Looper <sup>3,4</sup>			
Spider Mite Spp <sup>3</sup>			
Whitefly spp <sup>3,4</sup>			

• For dried shelled legume vegetables, do not apply within 21 days of harvest.

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

	Rate		
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks
Target PestsBean Leaf BeetleCabbage LooperCorn EarwormCutworm spp.Green CloverwormMexican Bean BeetleMexican Corn Rootworm Beetle(Adult)Northern Corn Rootworm Beetle(Adult)Painted Lady (Thistle) CaterpillarPotato LeafhopperSaltmarsh CaterpillarSouthern Corn Rootworm Beetle(Adult)Southern Corn Rootworm Beetle(Adult)Soybean Aphid <sup>4</sup> Three-Cornered Alfalfa HopperThrips spp. <sup>5</sup> Velvetbean CaterpillarWestern Corn Rootworm Beetle(Adult)Western Corn Rootworm Beetle(Adult)	<b>Ib. a.i./A</b> 0.015-0.025	<b>11. 02./A</b> 1.92-3.20	RemarksApply 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.Ground application:Apply in a minimum of 10 gallons per acre using sufficient spray volume to 
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> Beet Armyworm <sup>2,3</sup> Lesser Cornstalk Borer <sup>2</sup> Soybean Looper <sup>2,3</sup> Spider Mite spp. <sup>2</sup>	0.025-0.03	3.20-3.84	<ul> <li><sup>3</sup>See resistance statement under GENERAL INFORMATION.</li> <li><sup>4</sup>Use lower rates for early season applications and/or lighter populations.</li> <li><sup>5</sup>Does not include Western Flower Thrips.</li> </ul>

• 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)

	Ra	ate	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
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	<ul> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>'For control of first and second instar only.</li> <li><sup>2</sup>Suppression only.</li> <li><sup>3</sup>See resistance statement under GENERAL INFORMATION.</li> </ul>
<ul><li>Do not apply within 1 day of harve</li><li>Do not apply more than 0.3 lb. a.i.</li></ul>		re per season.	

#### ONION (BULB) AND GARLIC

	Rate		
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks
Cutworm spp. Seedcorn Maggot (Adult) Onion Maggot (Adult) Leafminer spp. (Adult) Armyworm spp. <sup>1</sup> Onion Thrips <sup>3</sup> Tobacco Thrips <sup>3</sup> Western Flower Thrips <sup>2,3</sup>	0.015-0.025	1.92-3.20           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. <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.
Flower Thrips <sup>2,3</sup> Aphid spp. <sup>2</sup> Plant Bug spp. Stink Bug spp.			Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas. Use the higher label rates as thrips population increases and avoid rescue situations.
			<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.
• Do not apply within 14 da	avs of harvest		<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.

Do not apply within 14 days of harvest.Do not apply more than 0.24 lb. a.i. (1.92 pts.) per acre per season.

#### PEANUT

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

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><li>Do not apply within 14 day</li><li>Do not apply more than 0.</li></ul>		ot.) per acre per	season.

#### **POME FRUITS**

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

	Rat	te	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
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	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 50 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 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas. <sup>1</sup> Suppression only.

Do not apply more than 0.2 lb. a.i. (1.6 pts.) per acre per year.
Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per year post bloom.

#### **STONE FRUITS**

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

	R	ate	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
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	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. <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.

• Do not apply within 14 days of harvest.

• Do not apply more than 0.2 lb. a.i. (1.6 pts.) per acre per year.

• Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per year post bloom.

#### SUGARCANE

	Rat	e	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
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 Cranefly Yellow Sugarcane Aphid <sup>3</sup>	0.025-0.04	3.20-5.12	<ul> <li>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.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li><sup>1</sup>For control before the larva bores into the plant stalk.</li> <li><sup>2</sup>Suppression only of beetles active above ground.</li> <li><sup>3</sup>See resistance statement under GENERAL INFORMATION.</li> </ul>

• Do not apply within 21 days of harvest.

• Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per season.

#### SUNFLOWER

	Rate			
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks	
Cutworm spp.	0.015-0.025	1.92-3.20	Apply as required by scouting, usually at intervals	
Sunflower Beetle			of 5 or more days. Timing and frequency of	
Banded Sunflower Moth	0.02-0.03	2.56-3.84	applications should be based upon insect	
Fall Armyworm <sup>1</sup>			populations reaching locally determined economic	
Grasshopper spp.			thresholds. Consult your local advisor or extension	
Head-Clipper Weevil (Adult)			office for details.	
Japanese Beetle (Adult)				
Leafhopper spp.			<b>Ground application:</b> Apply in a minimum of 10	
Meadow Spittlebug			gallons per acre using sufficient spray volume to	
Painted Lady (Thistle)			obtain full coverage of foliage or target areas.	
Caterpillar				
Seed Weevil (Adult)			<b>Air application:</b> Apply in a minimum of 2 gallons	
Spotted Cabbage Looper			per acre using sufficient spray volume to obtain full	
Stem Weevil (Adult)			coverage of foliage or target areas.	
Stink Bug spp.				
Sunflower Maggot (Adult)			<sup>1</sup> Use control of first and second instar only.	
Sunflower Moth			<sup>2</sup> Suppression only.	
Woollybear Caterpillar			<sup>3</sup> See resistance statement under GENERAL	
Beet Armyworm <sup>2,3</sup>	0.03	3.84	INFORMATION.	
Spider Mite spp. <sup>2</sup>				
spider tille spp.				

Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.
Do not apply more than 0.09 lb. a.i. (0.72 pt.) per acre per season after bloom initiation.
Do not apply as a ultra-low volume (ULV) spray.

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

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

Webworm spp.					
• Do not apply within 40 days of h	narvest.				
• Do not apply more than 0.09 lb.	• Do not apply more than 0.09 lb, a.i. (0.72 pt.) per acre per year.				

#### **TREE NUTS**

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

	Rate			
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks	
Target PestsAntsChinch BugCodling MothFilbertwormLeaffooted BugLeafroller spp.Navel OrangewormPeach Twig BorerPlant Bug spp.Stink Bug spp.Walnut AphidWalnut Husk Fly spp. (Adult)	<b>lb. a.i./A</b> 0.02-0.04	fl. oz./A 2.56-5.12	<ul> <li>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.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to</li> </ul>	
wannut Husk Fly spp. (Adult)			obtain full coverage of foliage or target areas.	

• Do not apply within 14 days of harvest.

• Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per year.

• Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per year post bloom.

#### Pecan

	Ra	ate	
Target Pests	lb. a.i./A	fl. oz./A	Remarks
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	<ul> <li>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.</li> <li>Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> </ul>
• Do not apply within 14 days of	harvest.		

• Do not apply more than 0.16 lb. a.i. (1.28 pts.) per acre per year.

• Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per year post bloom.

#### 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 lb. a.i./A fl. oz./A		REMARKS	
Cutworm spp. Leafhopper spp. Saltmarsh Caterpillar Sweet Potato Hornworm Woolybear Caterpillar spp. Aphid spp. <sup>1</sup>	0.015-0.025	1.92-3.20 2.56-3.84	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 <b>Ground application:</b> Apply in a minimum of	
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.			<ul> <li>10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas.</li> <li>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.</li> <li>Insects that bore or tunnel into leaves, vines, stems, tubers or corms must be controlled befor penetration. Only exposed insects (larvae and/or adults) can be controlled with foliar applications of LambdaStar 1CS.</li> <li><sup>1</sup>See resistance statement under GENERAL INFORMATION.</li> <li><sup>2</sup>Does not include Western Flower Thrips.</li> </ul>	
Leafminer spp. <sup>1,3</sup> Whitefly spp. <sup>1,3</sup> Spider Mite spp. <sup>3</sup> • Do not apply within 7 days o	0.03	3.84	<sup>3</sup> Suppression only.	

• Do not apply more than 0.12 lb. a.i. (0.96 pt.) per acre per season.

# NON-AGRICULTURAL USES

# **CONIFER AND DECIDUOUS TREES**

Plantations, Nurseries

	Rate			
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks	
Bagworm Balsam Twig Aphid Balsam Twig Aphid Birch Leafminer Black Pine Weevil Elm Leaf Beetle European Elm Bark Beetle Gypsy Moth Japanese Beetle June Beetle spp. Leaf 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 Tip Moth spp. Pine Tortoise Scale Pine Weevil spp. Poplar Aphid spp. Spruce Budworm Tent Caterpillar spp. Tussock Moth spp. Webworm spp.	0.02-0.04	2.56-5.12	Ground application: Apply in a minimum of 10 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas. Air application: Apply in a minimum of 2 gallons per acre using sufficient spray volume to obtain full coverage of foliage or target areas. 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. <sup>1</sup> Suppression only.	
• Do not apply more than 0.24 lb.				

# **CONIFER AND DECIDUOUS TREES**

Seed Orchards

	Rate		
<b>Target Pests</b>	lb. a.i./A	fl. oz./A	Remarks
Coneworm spp. Seed Bug spp. Thrips spp.	See Remarks	See Remarks	<ul> <li>For high volume sprayers, dilute 5.12 fl. oz. per 100 gallons of water and apply 5-10 gallons of finished spray per tree.</li> <li>For low volume sprayers, dilute 20 fl. oz. per 100 gallons of water and apply 100 gallons of finished spray per acre.</li> <li>For aerial applications, apply 15 fl. oz. per acre in a minimum of 10 gallons finished spray per acre.</li> </ul>
• Do not apply more than 0.5 lb. a.i.	(4 pts.) per acre p	per year.	

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

Target Pests	Remarks
See specific crop instructions in sections above for specific pest and rate information.	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.
	When foliage is dense/large, insect populations are high or larval stages are large, use the highest labeled rate for that crop-pest combination.
	Repeat as necessary to maintain control.
	Do not apply more than 0.2lb a.i. (1.6 pts. or 25.6 fl. Oz. of product) per year.
	Do not graze livestock in treated areas.

## **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:** 

For Containers equal to or less than 5 Gallons : 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.

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 Chem, 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 Chem, LTD. and Seller harmless for any claims relating to such factors.

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