OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION
WASHINGTON, D.C. 20460

January 28th, 2026

Kyleigh Toomey
Label Facilitator
Atticus, LLC
5000 CentreGreen Way, Suite 100
Cary, NC 27513

Subject: Label Amendment - Registration Review Mitigation for Lambda-cyhalothrin
Product Name: A115.02
EPA Registration Number: 91234-55
Case Number: 673544
Application Date: December 9, 2021

Dear Kyleigh Toomey:

The Agency, in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Lambda-cyhalothrin Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

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 Assurance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling and must be used at your next label printing. You must submit one copy of the final printed labeling before you release the product for

shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions about this letter, please contact Concepción Rodríguez by phone at 202-566-0820, or via email at rodriguez.concepcion@epa.gov.

Sincerely,

Maryam K. Muhammad-Perch, Team Lead
Risk Management and Implementation Branch 4
Pesticide Re-Evaluation Division
Office of Pesticide Programs

ENCLOSURE: Stamped label

ACCEPTED
01/28/2026
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 91234-55

[Note to reviewer: [Text] in brackets denotes optional or explanatory language]
[Note to reviewer: {Text} in braces denotes where in the final label text will appear]

{BOOKLET FRONT PANEL LANGUAGE}

RESTRICTED USE PESTICIDE

DUE TO TOXICITY TO FISH AND AQUATIC ORGANISMS

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS, OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

LAMBDA-CYHALOTHRIN	GROUP 3A	INSECTICIDE

A115.02[™]

[*Alternate Brand Name:* Serpent 1 EC]

[For Outdoor Use Only]

ACTIVE INGREDIENT:	**(% By Weight)**
Lambda-cyhalothrin[1] [1α(*S**),3α(Z)]-(±)-cyano-(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2- dimethylcyclopropanecarboxylate	13.1%
OTHER INGREDIENTS:	86.9%
TOTAL:	100.0%

[1]Synthetic pytrethroid Contains petroleum distillate. Contains 1 pound active ingredient per gallon.

Contains lambda-cyhalothrin, the active ingredient used in Karate®.

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO

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.)

See inside label booklet for additional Precautionary Statements and Directions for Use.

FIRST AID	
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 in eyes:	• Hold eye open and rinse slowly and gently with water for 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 swallowed:	• Call a poison control center or doctor immediately for treatment advice. • Do not give any liquid to the person. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If 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 treatment advice
NOTE TO PHYSICIAN: Contains petroleum distillate - vomiting may cause aspiration pneumonia.	
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency medical assistance, call SafetyCall: **1-844-685-9173**.	

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300 or +1 703-527-3887 (collect calls accepted)

[**A115.02™**] is not manufactured, or distributed by Syngenta Crop Protection, LLC, seller of Karate®.

EPA Reg. No.: 91234-55
EPA Est. No.:
Net Contents:

Manufactured For:
Atticus, LLC
940 NW Cary Parkway, Suite 200
Cary, NC 27513

{LANGUAGE INSIDE BOOKLET}

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER/PELIGRO

Corrosive. Causes skin burns. May be fatal if swallowed or inhaled. Causes substantial but temporary eye injury. Do not get in eyes on skin or clothing. Do not breathe vapor or spray mist. Harmful if absorbed through skin. Wear protective clothing, gloves, eyewear (goggles, face shield, or safety glasses) and respirator as indicated under **Personal Protective Equipment**. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco, or using the toilet. 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)

Applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, nitrile rubber, neoprene rubber or viton >14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading
- For exposures in enclosed areas, wear a minimum of a NIOSH-approved elastomeric half mask respirator with organic vapor (OV) cartridges; OR a NIOSH-approved gas mask with OV canisters; OR a NIOSH-approved powered air purifying respirator with OV cartridges.
- For exposures in outdoor areas, wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any R or P filter; OR a NIOSH-approved powered air purifying respirator with HE filters.

Mixers, loaders, and applicators making foliar broadcast spray treatments using mechanically pressurized handguns on nurseries or drench/soil/ground directed liquid treatment using a mechanically pressurized handguns on nurseries must wear:

- Long-sleeved shirt, long pants
- Shoes and socks
- Chemical-resistant gloves made of barrier laminate, nitrile rubber, neoprene rubber or viton >14 mils
- A minimum of a NIOSH-approved particulate filtering facepiece respirator with any R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any R or P filter; OR a NIOSH-approved powered air purifying respirator with HE filters.

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.

For terrestrial use: 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 and other pollinating insects exposed to direct treatment or residues in/on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are foraging the treatment area**. Protect pollinating insects by following label directions intended to minimize drift and to reduce risk to these organisms.**

PHYSICAL OR CHEMICAL HAZARDS

Combustible liquid. Do not use or store near heat or open flame. Do not mix or allow contact with oxidizing agents. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

RESTRICTED USE PESTICIDE

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

For outdoor use only.

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 State or Tribal 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. Refer to **Specific Use Directions** for the REIs for specific activities for corn.

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 over long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, nitrile rubber, neoprene rubber or viton >14 mils

- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR PEST CONTROL, AND/OR ILLEGAL RESIDUES.

USE DIRECTIONS

Initial and residual control are contingent upon thorough crop coverage. Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. Apply in a minimum of 2 gal. per acre by air or 10 gal. per acre by ground unless otherwise specified in this label. When foliage is dense or pest pressure is high (heavier insect or egg pressure, larger larval stages), use of higher application volumes and/or higher use rates may improve initial and residual control.

For cutworm control, **A115.02** may be applied before, during or after planting. For soil incorporated applications, use higher rates for improved control.

Removable chemical extraction probes (also known as "stingers") used in suction/extraction systems must be rinsed within the pesticide container prior to removal.

Do not apply as foliar broadcast application using a mechanically pressurized handgun on Brassica (head and stem), Cucurbit Vegetables, Fruiting Vegetables, Garlic, Legume Vegetables, Lettuce (head and leaf), Onion (dry bulb), Tobacco, Tuberous and Corm Vegetables.

Do not apply as a foliar broadcast application using a mechanically pressurized handgun on orchards and vineyards.

Do not apply as a soil, drench, or ground-directed application using a mechanically pressurized handgun on orchards and vineyards.

RESISTANCE MANAGEMENT

For resistance management, **A115.02** contains a Group 3A insecticide. Any insect population may contain individuals naturally resistant to **A115.02** and other Group 3A insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance, take the following steps:

- Rotate the use of **A115.02** or other Group 3A insecticides within a growing season, or among growing seasons, with different groups that control the same pests.
- Use tank mixtures with insecticides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
    - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
    - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
    - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pests.
    - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
    - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit

only for the period where both insecticides are active.

- Adopt an integrated pest management program for insecticide/acaricides use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which considers cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact Atticus, LLC at (984) 465-4800.

In New York State, a 25 ft. 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 and ground application. For aerial applications, the 25 ft. vegetated, non-cropped buffer strip for runoff protection would be part of the larger buffer zone required for spray drift.

VEGETATIVE FILTER STRIPS

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

Only apply products containing lambda-cyhalothrin onto fields where a maintained vegetative filter strip of **at least 25 feet** exists between the field edge and where a down gradient aquatic habitat exists. This minimum required width of 25 feet may be reduced or removed under the following conditions:

- For Western irrigated agriculture, a maintained vegetative filter strip of at least 10 feet wide is required. Western irrigated agriculture is defined as irrigated farmland in the following states: WA, OR, CA, ID, NV, UT, AZ, MT, WY, CO, NM, and TX (west of I-35).
    - For Western irrigated agriculture, if a sediment control basin is present, a vegetative filter strip is not required.
- In all other areas, a vegetative filter strip with a minimum width of 25 feet is required, unless the following conditions are met. The vegetative filter strip requirement may be reduced from 25 feet to 15 feet if at least one of the following applies:
    - The area of application is considered prime farmland (as defined in 7 CFR § 657.5).
    - Conservation tillage is being implemented on the area of application. Conservation tillage is defined as any system that leaves at least 30% of the soil surface covered by residue after planting. Conservation tillage practices can include mulch-till, no-till, or strip-till.
    - A functional terrace system is maintained on the area of application.
    - Water and sediment control basins for the area of application are functional and maintained.
    - The area of application is less than or equal to 10 acres.

For further guidance on vegetated filter strips, refer to the following publication for information on constructing and maintaining effective buffers: Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. https://www.regulations.gov/document?D=EPA-HQ-OPP-2008-0331-0175.

BUFFER ZONES TO WATER BODIES

Ground Application

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

Ultra Low Volume (ULV) Aerial Application

- Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, and commercial fish ponds). Applications made by mosquito control districts and other public health officials are exempt from this requirement.

Non-ULV Aerial Application

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

RAIN-RELATED STATEMENTS

For Outdoor, Non-Agricultural Uses:

- Do not make applications during rain. Avoid making applications when rainfall is expected before the product has sufficient time to dry (minimum 4 hours).
- Rainfall within 24 hours after application may cause unintended runoff of pesticide application.

MANDATORY SPRAY DRIFT MANAGEMENT

Aerial Applications:

- Do not release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to select nozzle and pressure that deliver medium or coarser droplets in accordance with the most current version of the American Society of Agricultural & Biological Engineers Standard 641 (ASABE S641).
- Do not apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- If the windspeed is 10 miles per hour or less, applicators must use ½ swath displacement upwind at the downwind edge of the field. When the windspeed is between 11-15 miles per hour, applicators must use ¾ swath displacement upwind at the downwind edge of the field.
- Do not apply during temperature inversions.

Airblast Applications:

- Sprays must be directed into the canopy.
- Do not apply when wind speeds exceed 15 mph at the application site.
- User must turn off outward pointing nozzles at row ends and when spraying outer row.
- Do not apply during temperature inversions.

Ground Boom Applications:

- User must only apply with the release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use a medium or coarser droplet size in accordance with the most current version of the American Society of Agricultural & Biological Engineers Standard 572 (ASAE S572).
- Do not apply when wind speeds exceed 15 mph at the application site.
- Do not apply during temperature inversions.

Boomless Ground Applications:

- Applicators are required to select nozzle and pressure that deliver a medium or coarser droplet size in accordance with the most current version of the American Society of Agricultural & Biological Engineers Standard 572 (ASAE S572) for all applications.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- **Volume** - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- **Pressure** - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- **Spray Nozzle** - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- **Adjust Nozzles** - Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT - Aircraft

Higher release heights increase the potential for spray drift.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Handheld Technology Applications:

Take precautions to minimize spray drift.

CHEMIGATION

SPRINKLER IRRIGATION APPLICATION

Apply **A115.02** at rates and timing described elsewhere in this label. As local recommendations differ, consult your local State Extension Service or other local experts for recommendations on adjuvant or diluent types, rates and mixing instructions. These recommendations should be proven, through university and extension field trials, to be effective with **A115.02** applied by chemigation.

Check the irrigation system to insure uniform application of water to all areas. 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 specified rate of **A115.02** 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 **A115.02** 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.

It is not recommended that **A115.02** be applied 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:

- 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.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- 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.
- 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.
- The system must contain a functional check valve. Vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water- source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick- closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 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.
- Any alternatives to the above required safety devices must conform to the list of EPA-approved alternative devices.
- Do not apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.
- Do not apply through chemigation systems connected to public water systems.

POLLINATOR BEST MANAGEMENT BEST PRACTICES

Following best management practices can help reduce risk to terrestrial pollinators. Examples of best management practices include applying pesticides in the evening and at night when pollinators are not foraging and checking to confirm hive locations before spraying. For additional resources on pollinator best management practices, visit https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators.

MANAGED POLLINATOR PROTECTION PLANS

Managed pollinator protection plans are developed by states/tribes to promote communication between growers, landowners, farmers, beekeepers, pesticide users, and other pest management professionals to reduce exposure of bees to pesticides. If available, visit state plans for additional information on how to protect pollinators.

HOW TO REPORT BEE KILLS

It is recommended that users contact both the state lead agency and the U.S. Environmental Protection Agency to report bee kills due to pesticide application. Bee kills can be reported to EPA at beekill@epa.gov. To contact your state lead agency, see the current listing of state pesticide regulatory agencies at the National Pesticide Information Center's website: http://npic.orst.edu/reg/state_agencies.html.

SPECIFIC USE DIRECTIONS
AGRICULTURAL USES

ALFALFA AND ALFALFA GROWN FOR SEED

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Alfalfa Caterpillar Army Cutworm Cutworm species Green Cloverworm Leafhopper species Looper species Threecornered Alfalfa Hopper Velvetbean Caterpillar Webworm species	0.015 - 0.025	1.92 - 3.20
Alfalfa Seed Chalcid (Adult) Alfalfa Weevil Armyworm Bean Leaf Beetle (Adult) Blister Beetle species Blue Alfalfa Aphid Clover Leaf Weevil species Clover Root Borer (Adult) Clover Root Curculio species (Adult) Clover Stem Borer (Adult) Corn Earworm Cowpea Aphid Cowpea Curculio (Adult) Cowpea Weevil (Adult) Cucumber Beetle species (Adult) Egyptian Alfalfa Weevil Fall Armyworm[1] Grape Colaspis (Adult) Grasshopper species Green June Beetle (Adult) Green Peach Aphid[3] Japanese Beetle (Adult)	0.02 - 0.03	2.56 - 3.84

Meadow Spittlebug Mexican Bean Beetle Pea Aphid Pea Weevil (Adult) Plant Bug species including Lygus species[3] Spotted Alfalfa Aphid Stink Bug species Sweet Clover Weevil (Adult) Thrips species[4] Western Yellowstriped Armyworm Whitefringed Beetle species (Adult) Yellowstriped Armyworm		
Beet Armyworm[1,3] Blotch Leafminer[3] Spider Mites[2]	0.03	3.84

Application Instructions for Alfalfa and Alfalfa Grown for Seed:

- Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. Apply in a minimum of 2 gal. per acre by air or 10 gal. per acre by ground. When foliage is dense and/or pest populations are high.
- 5-10 gal. per acre by air or 20 gal. 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. Do not apply directly to bee shelters.
- Do not apply more than 0.03 lb. ai (3.84 fl. oz. or 0.24 pt. of product) per acre per cutting.
- Do not apply more than 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) per acre per season.
- Do not apply within 1 day of harvest for forage or within 7 days of harvest for hay.

[1] Use higher rates for large larvae.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

[4] Does not include Western Flower Thrips.

CANOLA

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Armyworm species Cabbage Seedpod Weevil Cutworm species Diamondback Moth Flea Beetle Grasshoppers Looper species Lygus Bug	0.015 – 0.03	1.92 – 3.84
Cabbage Aphid	0.03	3.84

Application Instructions for Canola:

- 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.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply a minimum of 2 gal. of water per acre.
- Do not apply within 7 days of harvest.
- Do not apply more than 0.09 lb. ai (11.52 fl. oz. or 0.72 pt. of product) per acre per year.

CEREAL GRAINS

Corn (at Plant): Field Corn, Popcorn, Seed Corn, Sweet Corn

Target Pest	Rate	
	lb. ai	fl. oz.
Corn Rootworm Larvae: Mexican Northern Southern Western Cutworm species Lesser Cornstalk Borer Seedcorn Beetle Seedcorn Maggot White Grub species Wireworm species	0.005 lb. ai per 1000 ft. of row†	0.66 fl. oz. per 1000 ft. of row†

Application Instructions for Corn (at Plant): Field Corn, Popcorn, Seed Corn, Sweet Corn:

- **Banded Applications** - 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.
- **In-Furrow Applications** - 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 gal. finished spray per acre.
- 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. ai (11.52 fl. oz. or 0.72 pt. of product) per acre per crop at plant.
- **For field corn, popcorn, and seed corn**: do not apply more than 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) per acre per crop from at plant and foliar applications.
- **For sweet corn**: do not apply more than 0.48 lb. ai (61.44 fl. oz. or 3.84 pt. of product) per acre per crop from at plant and foliar applications.
- **Field corn, seed; Popcorn, seed; Sweet corn, grain and seed post-emergence foliar applications:** Do not apply more than 0.032 lb. ai/acre per application.

†lbs. ai and fl. oz./A of A115.02 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. ai/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

CEREAL GRAINS

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

Target Pests	**Rate**	
	lb. ai/A	**fl. oz./A**
Corn Earworm[1] Cutworm species Green Cloverworm Meadow Spittlebug Western Bean Cutworm[1]	0.015 – 0.025	1.92 – 3.20
Armyworm[2] Bean Leaf Beetle Bird Cherry-Oat Aphid[3] Cereal Leaf Beetle Corn Leaf Aphid[3] Corn Rootworm Beetle (Adult): Mexican Northern Southern Western English Grain Aphid[3] European Corn Borer[1] Fall Armyworm[2] Flea Beetle species Grasshopper species Hop Vine Borer[1] Japanese Beetle (Adult) Lesser Cornstalk Borer Sap Beetle (Adult) Seed corn Beetle Southwestern Corn Borer[1] Stalk Borer[1] Stink Bug species Tobacco Budworm[1,4] Webworm species Yellowstriped Armyworm[2]	0.02 – 0.03	2.56 – 3.84
Beet Armyworm[4] Chinch Bug Greenbug[3,4] Mexican Rice Borer[1] Rice Stalk Borer[1] Southern Com Leaf Beetle[3] Sugarcane Borer[1]	0.03	3.84

Application Instructions for Corn (Foliar): Field Corn, Popcorn, Seed Corn:

- 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.

- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of target location. When applying by air, apply in a minimum of 2 gal. of water per acre.
- For chinch bug control, 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. **A115.02** may only suppress heavy infestations and/or subsequent migrations.
- For control of adult corn rootworm beetles *(Diabrotica* species) as part of an aerial applied corn rootworm control program use a minimum of 0.03 lb. ai (3.84 fl. oz. of product) per acre.
- Do not apply within 21 days 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 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) per acre per crop from at plant and foliar application.
- Do not apply more than 0.06 lb. ai (7.68 fl. oz. or 0.48 pt. of product) per acre after silk initiation. Do not apply more than 0.03 lb. ai (3.84 fl. oz. or 0.24 pt. of product) per acre after corn has reached the milk stage (yellow kernels with milky fluid).
- **Field corn, seed; Popcorn, seed post-emergence foliar applications:** Do not apply more than 0.032 lb. ai/acre per application.
- **Reentry Interval (REI):**
    - **Hand detasseling or mechanically assisted detasseling of field corn or popcorn grown for seed:** 48 hours

[1] For control before the larva bores into the plant stalk or ear.
[2] Use higher rates for large larvae.
[3] Suppression only.
[4] See **Resistance Management** under **Use Directions**.

CEREAL GRAINS
Corn (Foliar): Sweet Corn

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Aphid Species[2,3]	0.02 - 0.03	2.56 - 3.84
Armyworm[1]		
Aster Leafhopper		
Beet Armyworm[1,3]		
Chinch Bug		
Common Cornstalk Borer		
Corn Earworm		
Corn Rootworm Beetle (Adult):		
Mexican		
Northern		
Southern		
Western		
Cutworm species		
European Corn Borer		
Fall Armyworm[1]		
Flea Beetle species		
Grasshopper species		
Japanese Beetle (Adult)		
Sap Beetle (Adult)		
Southern Armyworm[1]		
Southwestern Corn Borer		
Spider Mite species[2]		

Stink Bug species Tarnished Plant Bug Webworm species Western Bean Cutworm Yellowstriped Armyworm[1]		
Corn Silkfly (Adult)[2]	0.03	3.84

Application Instructions for Corn (Foliar): Sweet Corn:

- 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.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of foliage and ears (if present). When applying by air, apply in a minimum of 2 gal. of water per acre.
- For control of adult corn rootworm beetles *(Diabrotica* species) as part of an aerial applied corn rootworm control program use a minimum of 0.025 lb. ai (3.2 fl. oz. of product) per acre.
- 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 animal within 21 days after last treatment.
- Do not apply more than 0.48 lb. ai (61.44 fl. oz. or 3.84 pt. of product) per acre per crop from at plant and foliar applications.
- **Sweet corn, grain and seed post-emergence foliar applications:** Do not apply more than 0.032 lb. ai/acre per application.
- **Reentry Interval (REI):**
    - **Hand detasseling or mechanically assisted detasseling of sweet corn grown for seed:** 48 hours
    - **Hard harvesting of sweet corn grown for grain:** 48 hours

[1] Use higher rates for large larvae.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

CEREAL GRAINS
Rice, Wild Rice

Target Pests	Rate	
	lb. ai./A	fl. oz./A
Bird Cherry-Oat Aphid Cinch Bug Fall Armyworm Grasshopper species Greenbug Leafhopper species Rice Stink Bug Riceworm Rice Water Weevil (Adult) Sharpshooter species True Armyworm Yellow Sugarcane Aphid Yellowstriped Armyworm	0.025 – 0.04	3.20 – 5.12
European Corn Borer[1] Mexican Rice Borer[1] Rice Seed Midge[1] Rice Stalk Borer[1] Sugarcane Borer[1]	0.03 – 0.04	3.84 – 5.12

Application Instructions for Rice, Wild Rice:

- Apply as required by scouting. Timing and frequency of application should be based upon insect populations reaching locally determined economic thresholds. Determine the need for repeat applications, usually at intervals of 5-7 days, by scouting.
- **A115.02** can be safely used when propanil products are being used for weed control.
- Apply by air or by ground equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. of water (or a total carrier volume) per acre but ensure sufficient volume is used to provide adequate coverage. 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.
- 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.
- 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.
- **California:** In addition to above directions for control of rice water weevil in water seeded rice, **A115.02** 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. **A115.02** may only provide suppression. If satisfactory control is not achieved with the first application of **A115.02**, 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.
- Mixers/loaders supporting aerial applications to wild rice at a rate of 0.04 lb. ai. per acre, and treating 1,200 acres (or more) per day must wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any R or P filter; OR a NIOSH-approved powered air purifying respirator with HE filters.
- Do not release flood water within 7 days of an application.
- Do not apply more than 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) per acre per season.
- Do not apply more than 0.04 lb. ai (5.12 fl. oz. or 0.32 pt. of product) per acre within 21 to 27 days of harvest.
- Do not apply within 21 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.

[1] For control before the larvae bores into the plant stalk.

CEREAL GRAINS
Sorghum (Grain)

Target Pests	Rate	
	lb. ai/A	**fl. oz./A**
Cutworm species Sorghum Midge	0.015 – 0.02	1.92 – 2.56
Armyworm Beet Armyworm[3] Corn Earworm European Corn Borer[2] Fall Armyworm[1] Flea Beetle species Grasshopper species Lesser Cornstalk Borer[2] Southwestern Corn Borer[2] Stink Bug species Webworm species Yellowstriped Armyworm[1]	0.02 – 0.03	2.56 – 3.84
Chinch Bug Mexican Rice Borer[2] Rice Stalk Borer[2] Sugarcane Borer[2]	0.03	3.84

Application Instructions for Sorghum (Grain):

- 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.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of target location. When applying by air, apply in a minimum of 2 gal. of water per acre.
- For 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.
- For chinch bug control, 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 - 5-day intervals if needed. **A115.02** may only suppress heavy infestations and/or subsequent migrations.

- Do not apply more than 0.08 lb. ai (10.24 fl. oz. or 0.64 pt. of product) per acre per season.
- Do not apply more than 0.06 lb. ai (7.68 fl. oz. or 0.48 pt. of product) per acre per season after crop emergence.
- Do not apply more than 0.02 lb. ai (2.56 fl. oz. or 0.16 pt. of product) per acre per season once crop is in soft dough stage.
- Do not apply within 30 days of harvest.

[1] Use higher rates for large larvae.

[2] For control before the larva bores into the plant stalk.

[3] See **Resistance Management** under **Use Directions**.

CEREAL GRAINS

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

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Army Cutworm Cutworm species	0.015 – 0.025	1.92 – 3.20
Armyworm Bird Cherry-Oat Aphid[1] Cereal Leaf Beetle English Grain Aphid[1] Fall Armyworm Flea Beetle species Grasshopper species Hessian Fly[4] Orange Blossom Wheat Midge Russian Wheat Aphid[1] Stink Bug species Yellowstriped Armyworm	0.02 – 0.03	2.56 – 3.84
Grass Sawfly	0.025 – 0.03	3.20 – 3.84
Chinch Bug Corn Leaf Aphid[2] Greenbug[1,3] Mite species[2]	0.03	3.84

Application Instructions for Buckwheat, Barley, Oats, Rye, Triticale, Wheat, Wheat Hay:

- 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.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. of water per acre.
- For chinch bug control, repeat applications at 3 - 5-day intervals if needed. **A115.02** may only suppress heavy infestations and/or migrations.
- Greenbug is known to have many biotypes. **A115.02** may provide suppression only. In this situation, a second application using an alternative chemistry may be needed.
- 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 treatment. Do not feed treated straw to meat or dairy animals within 30 days after the last treatment.
- Do not apply more than 0.06 lb. ai (7.68 fl. oz. or 0.48 pt. of product) per acre per season.

[1] Best control is obtained before insects begin to roll leaves. Once crop has started to boot, **A115.02** may provide suppression only. Higher rates and increased coverage will be necessary.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

[4] Make applications when adults emerge.

COLE CROPS (HEAD AND STEM *BRASSICA*)

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

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Alfalfa Looper Cabbage Looper Cabbage Webworm Cutworm species Imported Cabbageworm Southern Cabbageworm	0.015 - 0.025	1.92 - 3.20
Aphid species [2,3] Armyworm Beet Armyworm [1,3] Corn Earworm Diamondback Moth [3] Fall Armyworm [1] Flea Beetle species Grasshopper species Japanese Beetle (Adult) Leafhopper species Meadow Spittlebug Plant Bug species including Lygus species [3] Spider Mite species [2] Stink Bug species Thrips species [2] Vegetable Weevil (Adult) Whitefly species [2,3] Yellowstriped Armyworm	0.02 - 0.03	2.56 - 3.84

Application Instructions for Cole Crops (Head and Stem Brassica):

- 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.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. of water per acre.
- Do not apply within 1 day of harvest.
- Do not apply more than 0.24 lb. ai (30.72 fl. oz. or 1.92 pt. of product) per acre per season.

[1] For control of first and second instar only.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

COTTON

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Cutworm species Soybean Thrips Tobacco Thrips	0.015 - 0.02	1.92 - 2.56
Cabbage Looper Cotton Fleahopper Cotton Leafperforator Cotton Leafworm Lygus Bug species[3] Pink Bollworm Saltmarsh Caterpillar	0.02 - 0.03	2.56 - 3.84
Bandedwing Whitefly [2,3] Beet Armyworm[1,3] Boll Weevil Brown Stink Bug Cotton Aphid [2,3] Cotton Bollworm European Corn Borer Fall Armyworm Green Stink Bug Southern Green Stink Bug Sweetpotato Whitefly[2,3] Tobacco Budworm[3] Twospotted Spider Mite[2]	0.025 - 0.04	3.20 - 5.12

Application Instructions for Cotton:

- 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.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage.
- Applications may also be made with equipment adapted and calibrated for ULV sprays. **A115.02** may be mixed with once-refined vegetable oil and applied in a minimum of at least one qt. of finished spray /A.
- Under light bollworm/budworm infestation levels, 0.02 lb. ai (2.56 fl. oz. of product) per acre may be applied in conjunction with intense field monitoring.
- For boll weevil control spray on a 3 – 5 day schedule.
- When applied according to label directions for control of cotton bollworm and tobacco budworm, **A115.02** also provides ovicidal control of unhatched *Heliothine* species eggs.
- Do not apply within 21 days of harvest.
- Do not graze livestock in treated areas.
- Do not apply more than 0.2 lb. ai (25.6 fl. oz. or 1.6 pt. of product) 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.

[1] For control of first and second instar only.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

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. *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*

Target Pests	Rate	
	lb. ai/A	**fl. oz./A**
Armyworm species[1] Blister Beetle species Cabbage Looper Corn Earworm Cricket species Cucumber Beetle species (adults) Cutworm species Flea Beetle species Grasshopper species June Beetle species Leaffooted Bug Leafhopper species Lygus Bug species[1] Melonworm Pickleworm Plant Bug species Rindworm species complex Saltmarsh Caterpillar Squash Beetle Squash Bug species Squash Vine Borer species Stink Bug species Thrips species[1,2] Tobacco Budworm[1] Webworm species	0.02-0.03	2.56-3.84
Aphid species[1] Leafminer species[1,3] Spider Mite species[3] Whitefly species[1,3]	0.03	3.84

Application Instructions for Cucurbit Vegetables:

- 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.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of all plant parts. When applying by air, apply in a minimum of 2 gal. total solution per acre. When applying by ground, a minimum of 10 gal. total solution per acre is recommended.
- 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 **A115.02**.
- Do not apply more than 0.18 lb. ai (23 fl. oz. or 1.44 pt. of product) per acre per season.

- Do not apply within 1 day of harvest.

[1] See **Resistance Management** under **Use Directions**.
[2] Does not include Western Flower Thrips
[3] Suppression only.

FRUITING VEGETABLES
Eggplant; Ground cherry; Pepino; Peppers (bell and nonbell); Tomatillo; Tomato

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Cabbage Looper Cutworm species Hornworm species	0.015 - 0.025	1.92 - 3.20
Aphid species [2,3] Beet Armyworm [1,3] Blister Beetle species Colorado Potato Beetle [3] Cucumber Beetle species (Adult) European Corn Borer [4] Fall Armyworm [1] Flea Beetle species Grasshopper species Japanese Beetle (Adult) Leafhopper species Leafminer species [2] Meadow Spittlebug Pepper Weevil (Adult) Plant Bug species Southern Armyworm [1] Spider Mite species [2] Stalk Borer [4] Stink Bug species Thrips [5] Tobacco Budworm [3] Tomato Fruitworm Tomato Pinworm Tomato Psyllid [2,3] Vegetable Weevil (Adult) Whitefly species [2,3] Yellowstriped Armyworm [1]	0.02 - 0.03	2.56 - 3.84

Application Instructions for Fruiting Vegetables:

- 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.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. of water per acre.
- Do not apply within 5 days of harvest.
- Do not apply more than 0.36 lb. ai (46.08 fl. oz. or 2.88 pt. of product) per acre per season.

[1] For control of first and second instar only.
[2] Suppression only.
[3] See **Resistance Management** under **Use Directions**.
[4] For control before the larva bores into the plant stalk or fruit.
[5] Does not include Western Flower Thrips.

GRASS FORAGE, FODDER AND HAY

Pasture and Rangeland; Grass; Grass Grown for Hay or Silage and Grass Grown for Seed

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Army Cutworm Cutworm species Essex Skipper Range Caterpillar Striped Grass Looper	0.015 - 0.025	1.92 - 3.2
Beet Armyworm Billbug species[3] Bird Cherry-Oat Aphid[1] Black Grass Bug Black Turfgrass Beetle (adult) Blue Stem Midge Cereal Leaf Beetle Chinch Bug Crane Fly species Cricket species English Grain Aphid[1] Fall Armyworm Flea Beetle species Grass Mealybug Grass Sawfly (adult) Grasshopper species Green June Beetle (adult) Greenbug[1,2] Japanese Beetle (adult) Katydid species Leafhopper species Mite species[3] Russian Wheat Aphid[1] Southern Armyworm Spittlebug species Stink Bug species Sugarcane Aphid Thrips species Tick species True Armyworm Webworm species Yellowstriped Armyworm	0.02 - 0.03	2.56 - 3.84

Application Instructions for Grass Forage, Fodder and Hay:

- Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. total solution per acre. When applying by ground, a minimum of 7 gal. total solution per acre is recommended.
- 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.
- For chinch bug control, **A115.02** may only suppress heavy infestations and/or migrations. In this situation, a second application using an alternative chemistry may be needed.
- Greenbug is known to have many biotypes. **A115.02** may provide suppression only. In this situation, a

second application using an alternative chemistry may be needed.

- 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.

  Grass grown for seed:
  - 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.
- Do not apply more than 0.03 lb. ai (3.84 fl. oz. or 0.24 pt. of product) 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. ai. per acre which have not been cut between applications.
- Do not apply more than 0.09 lb. ai (11.52 fl. oz. or 0.72 pt. of product) per acre per season.

[1] Best control is obtained before insects begin to roll leaves.
[2] See **Resistance Management** under **Use Directions**.
[3] Suppression only

LEGUME VEGETABLES (BEANS AND PEAS)
Edible Podded (Only) including: *Canavalia ensiformis* – jackbean; *Canavalia gladiate* - sword bean; *Glycine max* – soybean (immature seed); **Edible Podded Succulent Shelled or Dried Shelled including:-** *Cajanus cajan* - Pigeon pea; *Phaseolus* species - includes: field, kidney, lima, navy, pinto, runner, snap, tepary and wax beans; *Pisum* species including: dwarf, edible-pod, English, field, garden, green, snow and sugar snap peas; *Vigna* species - includes: adzuki, asparagus, moth, mung, rice, urd and yard long beans, black- eye pea, catjang, Chinese longbean, cowpea, Crowder pea, and Southern pea; **Succulent Shelled or Dried Shelled** including: *Vicia faba.* - broadbean (favabean); **Dried Shelled (Only) including:** *Cicer arietimum* - chickpea (garbanzo bean), *Cyamopsis tetragonoloba* – guar, *Lablab pupureus* - Lablab bean (hyacinth bean), *Lupinus* species - includes: grain, sweet, white and sweet white lupines, *Lens esculata* - Lentils

Target Pests	Rate	
	lb. ai/A	fl. oz /A
Cutworm species Green Cloverworm Imported Cabbageworm Mexican Bean Beetle Saltmarsh Caterpillar Velvetleaf Caterpillar	0.015 - 0:025	1.92 - 3.20
Alfalfa Caterpillar Aphid species [4] Armyworm[2] Bean Leaf Beetle Bean Leafskeletonizer Blister Beetle species Corn Earworm Corn Rootworm Beetle species (Adult) Cucumber Beetle species (Adult) Curculio and Weevil species [1] (foliage and pod feeding adults and larvae) European Corn Borer Fall Armyworm[2] Flea Beetle species (Adult) Flea Hopper species Grasshopper species Japanese Beetle (Adult) Leafhopper species Leaftier species	0.02 - 0.03	2.56 - 3.84

Looper Species Meadow Spittlebug Painted Lady Butterfly (larvae) Plant Bug species Including Lygus species[4] Stalk Borer[1] Stink Bug species Threecornered Alfalfa Hopper Thrips species[4,5] Tobacco Budworm Webworm species Western Bean Cutworm[2] Western Yellowstriped Armyworm Yellowstriped Armyworm[2]		
Beet Armyworm[3,4] Leafminer species[3,4] Lesser Cornstalk Borer[3] Soybean Looper[3,4] Spider Mite species[3] Whitefly species[3,4]	0.03	3.84
Application Instructions for Legume Vegetables (Beans and Peas): • 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. • Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water per acre. • For edible podded and succulent shelled legume, vegetables, do not apply within 7 days of harvest. • For dried shelled legume vegetables, do not apply within 21 days of harvest. • Do not apply more than 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) 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.		

[1] For control before the larva bores into the plant stalk or pods.

[2] Use higher rates for large larvae.

[3] For suppression only.

[4] See **Resistance Management** under **Use Directions**.

[5] Does not include Western Flower Thrips.

LEGUME VEGETABLES (SOYBEANS)

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Bean Leaf Beetle Cabbage Looper Corn Earworm Corn Rootworm Beetle (Adult): Mexican Northern Southern Western Cutworm Species Green Cloverworm Mexican Bean Beetle Painted Lady (Thistle) Caterpillar Potato Leafhopper Saltmarsh Caterpillar Soybean Aphid[4] Threecornered Alfalfa Hopper Thrips species[5] Velvetbean Caterpillar Woolybear Caterpillar	0.015 - 0.025	1.92 - 3.20
Armyworm[1] Blister Beetle species European Corn Borer Fall Armyworm[1] Grasshopper species Japanese Beetle (Adult) Plant Bug species Silverspotted Skipper Stink Bug species Tobacco Budworm[3] Webworm species Yellowstriped Armyworm[1]	0.025 - 0.03	3.20 - 3.84
Beet Armyworm[2,3] Lesser Cornstalk Borer[2] Soybean Looper[2,3] Spider Mite species[2]	0.03	3.84

Application Instructions for Legume Vegetables (Soybeans):

- 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.
- Do not graze or harvest treated soybean forage, straw or hay for livestock feed.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. of water per acre.
- For control of adult corn rootworm beetles *(Diabrotica* species) as part of an aerial applied corn rootworm control program use a minimum of 0.02 lb. ai (2.56 fl. oz. of product) per acre.
- Do not apply within 30 days of harvest.
- Do not apply more than 0.06 lb. ai (7.68 fl. oz. or 0.48 pt. of product) per acre per season.

[1] Use higher rates for large larvae.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

[4] Use lower rates for early season applications and/or lighter populations.

[5] Does not include Western Flower Thrips.

LETTUCE (HEAD AND LEAF)

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Alfalfa Looper Cabbage Looper Cutworm species Green Cloverworm Imported Cabbageworm Saltmarsh Caterpillar	0.015 - 0.025	1.92 - 3.20
Aphid species[2,3] Armyworm Beet Armyworm[1,3] Corn Earworm Diamondback Moth[3] European Corn Borer Fall Armyworm[1] Flea Beetle species Grasshopper species Japanese Beetle (Adult) Leafhopper species Meadow Spittlebug Plant Bug species including *Lygus* species[3] Southern Armyworm Spider Mite species[2] Stink Bug species Tobacco Budworm[3] Vegetable Weevil (Adult) Whitefly species[2,3]	0.02 - 0.03	2.56 - 3.84

Application Instructions for Lettuce (Head and Leaf):

- 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.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. of water per acre.
- Do not apply within 1 day of harvest.
- Do not apply more than 0.3 lb. ai (38.4 fl. oz. or 2.4 pt. of product) per acre per season.

[1] For control of first and second instar only.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

ONION (BULB) AND GARLIC

Target Pests	Rate	
	lb. ai/A	fl. oz. /A
Cutworm species Leafminer species (Adult) Onion Maggot (Adult) Seedcorn Maggot (Adult)	0.015 - 0.025	1.92 - 3.20
Aphid species[2] Armyworm species[1] Flower Thrips[2,3] Onion Thrips[3] Plant Bug species Stink Bug species Tobacco Thrips[3] Western Flower Thrips[3]	0.02 - 0.03	2.56 - 3.84

Application Instructions for Onion (Bulb) and Garlic:

- 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.
- Use the higher label rates as thrips population increases and avoid rescue situations.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. of water per acre.
- For thrips control by aerial application, the addition of 1% COC v/v, 1/4% NIS v/v or a silicone adjuvant (follow manufacturers use directions) may enhance the deposition of the spray and increase plant coverage.
- Do not apply within 14 days of harvest.
- Do not apply more than 0.24 lb. ai (30.72 fl. oz. or 1.92 pt. of product) per acre per season.

[1] For control of the first and second instar only.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

PEANUTS

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Cutworm species Green Cloverworm Potato Leafhopper Red-necked Peanut Worm Threecornered Alfalfa Hopper Velvetbean Caterpillar	0.015 - 0.025	1.92 - 3.20
Bean Leaf Beetle Corn Earworm Fall Armyworm[1] Grasshopper species Southern Corn Rootworm (Adult) Stink Bug Species Tobacco Thrips Vegetable Weevil Whitefringed Beetle (Adult)	0.02 - 0.03	2.56 - 3.84
Aphid species[2] Beet Armyworm[2,3] Lesser Cornstalk Borer[2] Soybean Looper[2,3] Spider Mite species[2]	0.03	3.84

Application Instructions for Peanuts:

- 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.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. of water per acre.
- Do not apply within 14 days of harvest.
- Do not apply more than 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) per acre per season.

[1] Use higher rates for large larvae.

[2] Suppression only.

[3] See **Resistance Management** under **Use Directions**.

POME FRUITS

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

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Apple Aphid Apple Maggot (Adult) Cherry Fruit Fly species (Adult) Codling Moth Green Fruitworm Japanese Beetle Leafhopper species Leafroller species Lesser Appleworm Omnivorous Leafroller Orange Tortrix Oriental Fruit Moth Pear Psylla[1] Pear Sawfly Periodical Cicada Plant Bug species Plum Curculio Rosy Apple Aphid San Jose Scale (fruit infestations only) Spirea Aphid[1] Stink Bug species Tent Caterpillar species Tentiform Leaf Miner species Tree Borer species Tufted Apple Budworm Webworm species	0.02 - 0.04	2.56 - 5.12

Application Instructions for Pome Fruits:

- 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 recommendations.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage or target area. When applying by air, apply in a minimum of 5 gal. of water per acre, but use higher volumes as appropriate for thorough coverage.
- Do not apply within 21 days of harvest.
- Do not apply more than 0.2 lb. ai (25.6 fl. oz. or 1.6 pt. of product) per acre per year. Do not apply more than 0.16 lb. ai (20.48 fl. oz. or 1.28 pt. of product) per acre per year post bloom.
- Do not apply more than 0.04 lb. ai/acre per application.

[1] Suppression only

STONE FRUITS

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

Target Pests	Rate	
	lb. ai/A	fl. oz./A
American Plum Borer Apple Maggot (Adult) Black Cherry Aphid Cherry Fruit Fly species (Adult) Codling Moth Green Fruitworm Japanese Beetle June Beetle Leafhopper species Leafroller species Oriental Fruit Moth Peach Twig Borer Peachtree Borer species Pear Sawfly Periodical Cicada Plant Bug species Plum Curculio Rose Chafer Stink Bug species Tent Caterpillar species Thrips species	0.02 - 0.04	2.56 - 5.12

Application Instructions for Stone Fruits:

- 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 and IPM recommendations.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage or target area. When applying by air, apply a minimum of 5 gals. of water per acre, but use higher volumes as appropriate for thorough coverage.
- Do not apply within 14 days of harvest.
- Do not apply more than 0.2 lb. ai (25.6 fl. oz. or 1.6 pt. of product) per acre per year. Do not apply more than 0.16 lb. ai (20.48 fl. oz. or 1.28 pt. of product) per acre per year post bloom.
- Do not apply more than 0.04 lb. ai/acre per application.

SUGARCANE

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Mexican Rice Borer[1] Pygmy Mole Cricket Rice Stalk Borer[1] Sugarcane Aphid[3] Sugarcane Beetle (Adult)[2] Sugarcane Borer[1] West Indian Crane fly Yellow Sugarcane Aphid[3]	0.025 - 0.04	3.20 - 5.12
Application Instructions for Sugarcane: • 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. • Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage or target area. When applying by air, apply a minimum of 2 gal. of water per acre. • Do not apply within 21 days of harvest. • Do not apply more than 0.16 lb. ai (20.48 fl. oz. or 1.28 pt. of product) per acre per season.		

[1] For control before the larva bores into the plant stalk.

[2] Suppression only of beetles active above ground.

[3] See **Resistance Management** under **Use Directions**.

SUNFLOWER

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Cutworm species Sunflower Beetle	0.015 - 0.025	1.92 - 3.20
Banded Sunflower Moth Fall Armyworm[1] Grasshopper species Head-Clipper Weevil (Adult) Japanese Beetle (Adult) Leafhopper species Meadow Spittlebug Painted Lady (Thistle) Caterpillar Seed Weevil (Adult) Spotted Cabbage Looper Stem Weevil (Adult) Stink Bug species Sunflower Maggot (Adult) Sunflower Moth Woollybear Caterpillar	0.02 - 0.03	2.56 - 3.84
Beet Armyworm[2,3] Spider Mite species[2]	0.03	3.84
Application Instructions for Sunflowers: • 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. • Apply with ground or air equipment using sufficient water to obtain full coverage of sunflower heads and/or foliage. When applying by air, apply in a minimum of 2 gal. of water per acre. • Do not apply within 45 days of harvest. • Do not apply more than 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) per acre per season. Do not apply more than 0.09 lb. ai (0.72 pt.) /A per season after bloom initiation.		

• Do not apply as an ultra-low volume (ULV) spray.

[1] Use higher rates for large larvae.
[2] Suppression only.
[3] See **Resistance Management** under **Use Directions**.

TOBACCO

Target Pests	Rate	
	lb. ai/A	**fl. oz./A**
Armyworm species[1] Blister Beetle species Cabbage Looper Corn Earworm Cucumber Beetle species (Adult) Cutworm species Grasshopper species Japanese Beetle (Adult) Katydid species Plant Bug species[3] Potato Tuberworm Salt Marsh Caterpillar Stinkbug species Tobacco Aphid species[2,3] Tobacco Budworm[3] Tobacco Flea Beetle (Adult) Tobacco Hornworm Tobacco Thrips species[2] Tomato Hornworm Tree Cricket species Vegetable Weevil (Adult) Webworm species	0.015 - 0.03	1.92 - 3.84

Application Instructions for Tobacco:

- 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.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. When applying by air, apply in a minimum of 2 gal. of water per acre.
- Do not apply within 40 days of harvest.
- Do not apply more than 0.09 lb. ai (11.52 fl. oz. or 0.72 pt. of product) per acre per year.

[1] For control of first and second instars only.
[2] Suppression only.
[3] See **Resistance Management** under **Use Directions**.

TREE NUTS

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

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Ants Chinch Bug Codling Moth Filbertworm Leaffooted Bug Leafroller species Navel Orangeworm Peach Twig Borer Plant Bug species Stink Bug species Walnut Aphid Walnut Husk Fly species (Adult)	0.02 - 0.04	2.56 - 5.12

Pecans

Target Pests	Rate	
	lb. ai/A	fl. oz./A
Hickory Shuckworm Pecan Aphid species Pecan Casebearer species Pecan Phylloxera species Pecan Spittlebug Pecan Weevil Stink Bug species	0.02 - 0.04	2.56 - 5.12

Application Instructions for Tree Nuts:

- 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.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage or target area. When applying by air, apply in a minimum of 5 gal. of water per acre, hut use higher rates as appropriate for thorough coverage.
- Do not apply within 14 days of harvest.
- Do not apply more than 0.16 lb. ai (20.48 fl. oz. or 1.28 pt. of product) per acre per year.
- Do not apply more than 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) 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. ai/A	fl. oz./A
Cutworm species Leafhopper species Saltmarsh Caterpillar Sweet Potato Hornworm Woolybear Caterpillar species	0.015 - 0.025	1.92 - 3.20
Aphid species[1] Armyworm species[1] Blister Beetle species Colorado Potato Beetle[1] Corn Earworm Cricket species Cucumber Beetle species (adults) European Corn Borer Flea Beetle species (adults) Grasshopper species Looper species[1] Lygus Bug species[1] Plant Bug species Potato Psyllid Potato Tuberworm Stink Bug species Sweet Potato Leaf Beetle (adults) Sweet Potato Vine Borer Thrips species[1,2] Tortoise Beetle species Webworm species Weevil species (adults)	0.02 - 0.03	2.56 - 3.84
Leafminer species[1,3] Whitefly species[1,3] Spider Mite species[3]	0.03	3.84

Application Instructions for Tuberous and Corm Vegetables:

- 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.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of all above ground plant parts. When applying by air, apply in a minimum of 2 gal. total solution per acre. When applying by ground, a minimum of 10 gal. total solution per acre is recommended.
- 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, tubers or corms must be controlled before penetration. Only exposed insects (larvae and/or adults) can be controlled with foliar applications of **A115.02**.
- Do not apply more than 0.12 lb. ai (15.36 fl. oz. or 0.96 pt. of product) per acre per season.
- Do not apply within 7 days of harvest.

[1] See **Resistance Management** under **Use Directions**.
[2] Does not include Western Flower Thrips.
[3] Suppression only.

NON-AGRICULTURAL USES

CONIFER AND DECIDUOUS TREES

Plantations and Nurseries

Target Pests	Rate	
	lb. ai/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 species Leaf Beetle species Leafroller species May Beetle species Mealybug species[1] Pales Weevil Pine Chafer Pine Colaspis Beetle Pine Conelet Bug Pine Leaf Chermid Pine Needle Scale Pine Sawfly species Pine Tip Moth species Pine Tortoise Scale Pine Weevil species Poplar Aphid species Sawfly species Spittlebug species Spruce Budworm Tent Caterpillar species Tussock Moth species Webworm species	0.02 - 0.04	2.56 - 5.12

Application Instructions for Conifer and Deciduous Trees:

- 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.
- Apply with ground equipment using sufficient water to obtain full coverage of target site. When applying by air, apply a minimum of 2 gal. of water per acre.
- Do not apply more than 0.24 lb. ai (30.72 fl. oz. or 1.92 pt. of product) per acre per year.

For outdoor applications to commercial nurseries:

- Do not apply when the wind speed is greater than 15 mph.
- Applicators are required to select the nozzle and pressure that deliver a medium or coarser droplet size in accordance with the most current version of the American Society of Agricultural & Biological Engineers Standard 572 (ASAE S572).
- For soil or foliar applications, do not apply by ground equipment within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish farm ponds.

[1] Suppression only.

CONIFER AND DECIDUOUS TREES
Seed Orchards

Target Pests	Rate
Coneworm species Seed Bug species Thrips species	**For high volume sprayers:** dilute 5.12 fl. oz. per 100 gal. of water and apply 5-10 gal. of finished spray per tree. **For low volume sprayers:** dilute 20 fl. oz. per 100 gal. of water and apply 100 gal. of finished spray per acre. **For aerial applications:** apply 15 fl. oz. per acre in a minimum of 10 gal. finish spray per acre.
Application Restriction for Conifer and Deciduous Trees - Seed Orchards: • Do not apply more than 0.5 lb. ai (64 fl. oz. or 4 pt. of product) per acre per year.	

NON-CROPLAND (Crop Outlets, including turn rows, wind rows, hedge rows, field borders and buffer zones)(EXCLUDING PUBLIC LAND)

Target Pests	Rate	
	lb. ai/A	fl. oz./A
See **Crop Outlets** on this label for target pest and rates.	See Crop Outlets	See Crop Outlets
Application Instructions for Non-Cropland (Excluding Public Land): • Spray non-cropland adjacent to agricultural areas to control migratory insects, which may threaten crops. • Follow **Use Directions**, rates and spray recommendations found elsewhere in this label for the adjacent crop outlet and target pests. • Use highest labeled rates for dense/large foliage, high insect populations and larger larval stages. • Repeat as necessary to maintain control. • Do not exceed 0.2 lb. ai (25.6 fl. oz. or 1.6 pt. of product) per acre per year. • Do not graze livestock in treated areas.		

RATE CONVERSION CHART

Lb. AI 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 or disposal.

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

PESTICIDE DISPOSAL: 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 HANDLING:

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

For packages up to 5 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For packages greater than 56 gallons: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

For refillable containers: Refill this container with this product only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. For final disposal, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities**.**

Container Disposal – Returnable/Refillable Sealed Container: Do not rinse container. Do not break seals. Replace the dust cover/cap and return container, intact to point of purchase.

LIMITATION OF WARRANTY AND LIABILITY

IMPORTANT: READ BEFORE USE. Read the entire Directions for Use, Conditions of Warranties and Limitations of Liability before using this product. If these terms and conditions are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Disclaimer of Warranties and Limitations of Liability. **CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, injury, and other unintended consequences may result because of such factors as manner of use or application (including misuse), the presence of other materials, weather conditions, and other unknown factors, all of which are beyond the control of ATTICUS, LLC. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, ATTICUS, LLC makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond statements on this label. **LIMITATIONS OF LIABILITY:** To the extent consistent with applicable law, neither ATTICUS, LLC the manufacturer, nor the Seller shall be liable for any indirect, special, incidental or consequential damages resulting from the use, handling, application, storage, or disposal of this product. To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use, handling, application, or storage of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid.

{LANGUAGE ON LABEL AFFIXED TO CONTAINER}

RESTRICTED USE PESTICIDE

DUE TO TOXICITY TO FISH AND AQUATIC ORGANISMS
FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS, OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

LAMBDA-CYHALOTHRIN	GROUP	3A	INSECTICIDE

A115.02™

[*Alternate Brand Name:* Serpent 1 EC]
Contains lambda-cyhalothrin, the active ingredient used in Karate®.
[For Outdoor Use Only]

ACTIVE INGREDIENT: **(% By Weight)**

Lambda-cyhalothrin[1][1α(*S**),3α(Z)]-(±)-cyano-(3-phenoxyphenyl) methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate.....13.1%
OTHER INGREDIENTS 86.9%
TOTAL 100.0%

[1] Synthetic pyrethroid

Contains petroleum distillates.
Contains 1 pound of active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO

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.)

FIRST AID	
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 in eyes:	• Hold eye open and rinse slowly and gently with water for 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 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 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 treatment advice
NOTE TO PHYSICIAN: Contains petroleum distillate - vomiting may cause aspiration pneumonia.	
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency medical assistance, call SafetyCall: **1-844-685-9173**.	

For Chemical Emergency
Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300 or +1 703-527-3887 (collect calls accepted)

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER/PELIGRO

Corrosive. Causes skin burns. May be fatal if swallowed or inhaled. Causes substantial but temporary eye injury. Do not get in eyes on skin or clothing. Do not breathe vapor or spray mist. Harmful if absorbed through skin. Wear protective clothing, gloves, eyewear (goggles, face shield, or safety glasses) and respirator as indicated under **Personal Protective Equipment**. 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.

ENVIRONMENTAL HAZARDS: This pesticide is extremely toxic to fish and aquatic organisms and toxic to wildlife. **For terrestrial use:** 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 and other pollinating insects exposed to direct treatment or residues in/on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are foraging treatment area. **Protect pollinating insects by following label directions intended to minimize drift and to reduce risk to these organisms**.

PHYSICAL OR CHEMICAL HAZARDS: Combustible liquid. Do not use or store near heat or open flame. Do not mix or allow contact with oxidizing agents. Hazardous chemical reaction may occur.

STORAGE AND DISPOSAL

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

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

PESTICIDE DISPOSAL: 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 HANDLING:

Nonrefillable Container: Do not reuse or refill this container. Triple rinse container (or equivalent) 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. Then offer for recycling, if available, or puncture and dispose of in a sanitary landfill, or incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Container Disposal – Returnable/Refillable Sealed Container: Do not rinse container. Do not break seals. Replace the dust cover/cap and return container, intact to point of purchase.

See inside label booklet for additional Precautionary Statements and Directions for Use.

[**A115.02™**] is not manufactured, or distributed by Syngenta Crop Protection, LLC, seller of Karate®.

Manufactured for:
Atticus, LLC
940 NW Cary Parkway, Suite 200
Cary, NC 27513

EPA Reg. No. 91234-55
EPA Est. No. _____

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