



U.S. ENVIRONMENTAL PROTECTION AGENCY
 Office of Pesticide Programs
 Registration Division (7505P)
 1200 Pennsylvania Ave., N.W.
 Washington, D.C. 20460

EPA Reg. Number:
 279-3600

Date of Issuance:
 4/20/16

NOTICE OF PESTICIDE:

Registration
 Reregistration
 (under FIFRA, as amended)

Term of Issuance:
 Conditional

Name of Pesticide Product:
 CHA 1550-03

Name and Address of Registrant (include ZIP Code):

Janelle Gunning
 FMC Corporation
 1735 Market St.
 Philadelphia, PA 19103

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

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

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

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A). You must comply with the following conditions:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product under FIFRA when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:

Kable Bo Davis, Product Manager 3
 Invertebrate & Vertebrate Branch 1
 Registration Division (7505P)

Date:

4/20/16

2. You are required to comply with the data requirements described in the DCIs identified below:

- a. Gamma-Cyhalothrin GDCI-128807-1152
GDCI-128807-1103

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI listed above, you may contact the Chemical Review Manager in the Pesticide Reevaluation Division: <http://iaspub.epa.gov/apex/pesticides/f?p=chemicalsearch:1>

3. Submit one copy of the final printed label for the record before you release the product for shipment.

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

If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 10/12/2015
- Alternate CSF 1 dated 10/12/2015
- Alternate CSF 2 dated 10/12/2015

If you have any questions, please contact Maggie Rudick by phone at 703-347-0257, or via email at rudick.maggie@epa.gov.

Enclosure

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.

GROUP 3A INSECTICIDE

CHA 1550-03

EPA Reg No: 279-3600

EPA Est No:

Active Ingredient:

By Wt.

<i>Gamma</i> -cyhalothrin: Cyclopropanecarboxylic acid, 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-	14.56%
2,2-dimethyl,cyano (3-phenoxyphenyl) methyl ester.....	85.44%
Other Ingredients.....	100.0%

Contains 1.26 lb of active ingredient per gallon
 Contains petroleum distillate.

KEEP OUT OF REACH OF CHILDREN
WARNING
AVISO

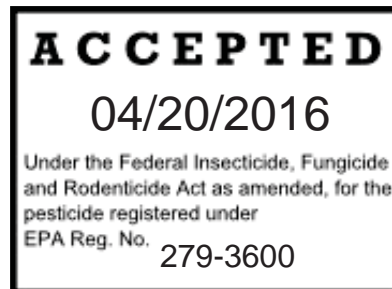
Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
 (If you do not understand the label, find someone to explain it to you in detail.)

See other panels for additional precautionary information.

FIRST AID	
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 mouth-to-mouth if possible. -Call a poison control center or doctor for further 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.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.	
NOTE TO PHYSICIAN	
Contains petroleum distillates. Vomiting may cause aspiration pneumonia. Induced vomiting as first aid for this substance may result in increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent. Vomiting should be induced only under professional supervision. 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.	
For Emergency Assistance Call (800) 331-3148.	

Net Contents: _____

Sold by:
 FMC Corporation
 Agricultural Products Group
 1735 Market Street
 Philadelphia, PA 19103



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PRECAUTIONARY STATEMENTS

Hazards to Humans (and Domestic Animals)

KEEP OUT OF REACH OF CHILDREN

WARNING

Contains Petroleum Distillates

May be fatal if swallowed. Harmful if inhaled. Avoid breathing spray mist. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals

Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash clothing before reuse.

Personal Protective Equipment (PPE)

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

Applicators and other handlers must wear:

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

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

Engineering Controls

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

Environmental Hazards

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

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are foraging the treatment area.

Physical and Chemical Hazards

Do not use or store near heat or open flame.

Directions for Use

RESTRICTED USE PESTICIDE

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

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

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 (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

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

- Coveralls
- Chemical-resistant gloves, such as barrier laminate or viton ≥ 14 mils
- Shoes plus socks

Storage and Disposal

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

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

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Nonrefillable containers 5 gallons or less:

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

Triple rinse or pressure 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 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.

Refillable containers 5 gallons or larger:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable containers 5 gallons or larger:

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

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **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.

Product Information

CHA 1550-03[®] insecticide is a microencapsulated synthetic pyrethroid insecticide that controls insects by contact and ingestion. CHA 1550-03 is intended for control of insect pests in alfalfa, canola, cole crops, corn, cotton, fruiting vegetables, legume vegetables, lettuce, onion, peanut, pome fruits, rice, grain sorghum, soybean, stone fruits, sugarcane, sunflower, tobacco, tree nuts including pecans, wheat, triticale, conifer and deciduous trees (plantations, nurseries and seed orchards) and non-cropland areas adjacent to crops.

Preventive Use

For cutworm, armyworm, or stalk borer control, CHA 1550-03 may be applied before, during, or after planting. For soil incorporated applications, use higher rates in rate range for improved control.

Use Restrictions

Apply in a minimum of 2 gallons per acre by air or 10 gallons per acre by ground unless otherwise specified in this label.

Use Precautions

Initial and residual insect control is contingent upon thorough crop coverage. Apply with ground or air equipment, using sufficient water to obtain full coverage of foliage. 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 label use rates may improve initial and residual control.

Resistance Management

Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or State agricultural authorities for details.

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

Buffer Zones

Vegetative Buffer Strip

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

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

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

Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. USDA, NRCS. 2000. Forth Worth, Texas. 21pp.

<http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf>

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

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

Buffer Zone for ULV Aerial Application

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

Buffer Zone for Non-ULV Aerial Application

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

In the State of New York, 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 or ground application. For aerial applications, the 25 ft. vegetated non-cropped buffer strip for runoff protection would be part of the larger 150 ft. buffer strip (or 450 ft. buffer strip for ULV application) required for spray drift.

Spray Drift Requirements

Observe the following precautions when spraying in the vicinity of aquatic areas such as lakes; reservoirs; rivers; permanent streams, marshes, or natural ponds; estuaries; and commercial fish farm ponds.

Wind Direction and Speed

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

Do not apply when the wind velocity exceeds 15 mph.

Temperature Inversion

Do not make aerial or ground applications into temperature inversions.

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

Droplet Size

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

Additional Requirements for Ground Applications

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

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

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

Additional Requirements for Aerial Applications

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

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

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

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

Shielded Sprayers: Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

Air Assisted (Air Blast) Field Crop Sprayers: It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment manufacturer and/or State Extension Service.

Air Assisted (Air Blast) Orchard/Tree Nursery: In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy.
- Spray must be shut off during row turns.
- Block off upward pointed nozzles when there is no over-hanging canopy.
- Use only enough air volume to penetrate the canopy and provide good coverage.
- **Do not** allow spray to go beyond the edge of the cultivated area. Spray the outside downwind row(s) only from outside the planting.

Tank Mix Application

When tank mixing with any other agricultural products, always add CHA 1550-03 last. Fill the tank with one-half to two-thirds volume of the mixing diluent. Make sure all other products are fully dispersed in the mixing diluent before adding the recommended rate of CHA 1550-03 to the tank. Add the remainder of the mixing diluent volume. For best results, it is recommended that mixing and spray equipment have continuous agitation. Follow the precautions and limitations of the most restricted product in the tank mixture.

While CHA 1550-03 has good flexibility for tank mixing with other agricultural products, a jar test for physical compatibility is recommended for untried mixtures using proper ratios and mixing sequences of all ingredients to be included in the mixture.

CHA 1550-03 is an aqueous-based formulation. It is recommended that no type of non-emulsifiable oils be used in combination with CHA 1550-03. If adjuvants are used, use only: nonionic surfactant (NIS) containing at least 75% surface agent or non-phytotoxic crop oil concentrate (COC), including once-refined vegetable oil concentrate (VOC), or methylated sunflower oils (MSO) containing a minimum of 17% emulsifier.

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

1. Contains only EPA exempt ingredients.
2. Is non-phytotoxic to the target crop.
3. Is compatible in mixture. (May be established through a jar test.)
4. Is supported locally for use with CHA 1550-03 on the target crop through proven field trials and through university and extension recommendations.

In addition, the following may be used as diluents:

- Crop oil concentrate
- Methylated sunflower oils
- Urea-ammonium nitrate

It is recommended that the following **not** be used in combination with CHA 1550-03 as diluents or adjuvants:

- Non-emulsifiable oils
- Diesel fuel
- Straight mineral oil
- Fertilizer products containing the micronutrient boron.

Chemigation

Apply CHA 1525-03 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 (see Tank Mix Application), rates, and mixing instructions. These recommendations should be proven, through university and extension field trials, to be effective with CHA 1525-03 applied by chemigation.

Sprinkler Irrigation Application

Apply CHA 1525-03 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 diluents types, (see **TANK MIX APPLICATION**) rates and mixing instructions. These recommendations should be proven, through university and extension field trials, to be effective with CHA 1525-03 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 recommended rate of CHA 1525-03 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 CHA 1525-03 on 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 CHA 1525-03 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 Restrictions—Sprinkler Irrigation Application

1. **Do not** apply this product through any type of irrigation system other than listed below in Use Precautions – Sprinkler Irrigation Applications, note A.
2. **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.
3. **Do not** apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.
4. **Do not** apply through chemigation systems connected to public water systems.

Use Precautions – Sprinkler Irrigation Applications

- A. Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- B. If you have any questions about calibration, you should contact State Extension Service Specialists, equipment manufacturers, or other experts.
- C. 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.
- D. 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 back-flow.
- E. The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
- F. 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.
- G. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- H. 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.
- I. 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 are capable of being fitted with a system interlock.
- J. Any alternatives to the above required safety devices must conform to the list of EPA-approved alternative devices.

Crop Specific Use Directions

Rate Conversion Chart			
lb ai/acre	fl oz/acre	pint/acre	treated acres/gallon
0.0075	0.77	0.05	167
0.01	1.02	0.06	125
0.0125	1.28	0.08	100
0.015	1.54	0.1	84
0.02	2.05	0.13	62

Maximum Seasonal Use Rates for Gamma and Lambda Cyhalothrin on Labeled Crops:

Crop	Maximum Rate for Either Product Used Alone (lb/ai/acre)¹	
	Gamma-cyhalothrin (e.g., CHA 1550-03)	Lambda-cyhalothrin²
Alfalfa	0.06	0.12
Canola	0.045	0.09
cole crops	0.12	0.24
corn	0.06	0.12
sweet corn	0.24	0.48
Cotton	0.1	0.2
Cucurbits	0.09	0.18
fruiting vegetables (except cucurbits)	0.18	0.36
grass forage, fodder and hay	0.045	0.09
legume vegetables	0.06	0.12
lettuce (head and leaf)	0.15	0.3
onion (bulb) and garlic	0.12	0.24
Peanut	0.06	0.12
pome fruits	0.1	0.2
rice and wild rice	0.06	0.12
seed vegetables	0.06	0.12
sorghum (grain)	0.04	0.08
Soybean	0.03	0.06
stone fruits	0.1	0.2
Sugarcane	0.08	0.16
Sunflower	0.06	0.12
tobacco (air dried)	0.045	0.09
tree nuts including pecans	0.08	0.16
tuberous & corm vegetables (potato, sweet potato, yams & related)	0.06	0.12
wheat, wheat hay and triticale	0.03	0.06
conifer and deciduous trees (plantations, nurseries and seed orchards)	0.12	0.24
non-cropland areas adjacent to crops	0.1	0.2

¹ **Note:** If both gamma-cyhalothrin and lambda-cyhalothrin are used on a crop during the same crop growing season, the amounts of each that can be used can be calculated as shown in the following examples:

Example 1: If the maximum use rate for lambda-cyhalothrin = 0.12 lb ai/acre/year and 0.06 lb ai has been applied, $(0.12 - 0.06) \div 2 = 0.03$ lb ai of gamma-cyhalothrin could be applied during the remainder of the crop use season.

Example 2: If the maximum use rate for gamma-cyhalothrin = 0.06 lb ai/acre/year and 0.03 lb ai has been applied, $(0.06 - 0.03) \times 2 = 0.06$ lb ai of lambda-cyhalothrin could be applied during the remainder of the crop use season.

² Includes any lambda-cyhalothrin product approved for crop uses.

Specific directions for use for labeled uses of CHA 1550-03 are provided in the following tables (crops and/or use sites are listed alphabetically):

Alfalfa, Including Alfalfa Grown for Seed		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
potato leafhopper Army Cutworm	0.005-0.015	0.51-1.54
alfalfa caterpillar cutworm spp. green cloverworm leafhopper spp. looper spp. threecornered alfalfa hopper velvetbean caterpillar webworm spp.	0.0075 - 0.0125	0.77 - 1.28
alfalfa seed chalcid (adult) alfalfa weevil armyworm bean leaf beetle (adult) blister beetle spp. blue alfalfa aphid clover leaf weevil spp. clover root borer (adult) clover root curculio spp. (adult) clover stem borer (adult) corn earworm cowpea aphid cowpea curculio (adult) cowpea weevil (adult) cucumber beetle spp. (adult) Egyptian alfalfa weevil fall armyworm (1) grape colaspis (adult) grasshopper spp. green June beetle (adult) green peach aphid (3) Japanese beetle (adult) meadow spittlebug Mexican bean beetle pea aphid pea weevil (adult) plant bug spp., including Lygus spp. (3) spotted alfalfa aphid stink bug spp. sweet clover weevil (adult) thrips spp. (4) western yellowstriped armyworm whitefringed beetle spp. (adult) yellowstriped armyworm	0.01 - 0.015	1.02 - 1.54
blotch leafminer (3) spider mites (2)	0.015	1.54

¹Use higher rates for large larvae.

²Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

⁴ **Does not include western flower thrips.**

Use Restrictions:

- **Do not** apply more than 0.015 lb ai/A (1.5 fl oz/a) per cutting. **Do not** apply more than 0.06 lb ai/A (6.15 fl oz/A) per season.
- **Preharvest Interval:** Do not apply within 1 day of harvest for forage or within 7 days of harvest for hay.

Remarks:

- 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 gallons per acre by air or 10 gallons per acre by ground. When foliage is dense and/or pest populations are high, 5 to 10 gallons per acre by air or 20 gallons per acre by ground and higher label use rates are recommended. Use higher rates in labeled use rate range 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 to 3 days following application. Avoid direct application to bee shelters.

Canola		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
armyworm spp. cabbage seedpod weevil cutworm spp. diamondback moth flea beetle grasshoppers looper spp. lygus bug	0.0075 - 0.015	0.77- 1.54
cabbage aphid	0.015	1.54

Use Restrictions:

- **Do not** apply more than 0.045 lb ai/A (4.6 fl oz/a) per year.
- **Preharvest Interval:** **Do not** apply within 7 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 in a minimum of 2 gallons of water per acre.

Cole Crops		
Brassica (head and stem), including but not limited to broccoli, brussel sprouts, cabbage, cavalo broccoli, cauliflower, Chinese broccoli (gai lon), Chinese cabbage (napa), Chinese mustard cabbage (gai choy) and kohlrabi		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
alfalfa looper cabbage looper cabbage webworm cutworm spp. imported cabbageworm southern cabbageworm	0.0075 - 0.0125	0.77 - 1.28
aphid spp. (2) (3) armyworm corn earworm diamondback moth (3) fall armyworm (1) flea beetle spp. grasshopper spp. Japanese beetle (adult) leafhopper spp. meadow spittlebug plant bug spp., including Lygus spp. (3) spider mite spp. (2) stink bug spp. thrips spp. (2) vegetable weevil (adult) whitefly spp. (2) (3) yellowstriped armyworm	0.01 - 0.015	1.02 - 1.54
garden symphylan (<i>Scutigera immaculate</i>) (CA) (4)	0.0125	1.28

¹ For control of first and second instars only.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

⁴ Use in California. For suppression apply as soil-applied treatment prior to planting. Apply with ground equipment in a minimum of 10 gallons per acre. Total lb ai/acre per season, 0.12 lb ai/A (12 fl oz/A).

Use Restrictions:

- **Do not** apply more than 0.12 lb ai/A (12 fl oz/A) per season.
- **Preharvest Interval:** Do not apply within 1 day of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons of water per acre.

Conifer and Deciduous Trees		
Plantations, nurseries and seed orchards		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
Bagworm balsam twig aphid balsam wooly aphid birch leafminer black pine weevil European elm bark beetle gypsy moth Japanese beetle june beetle spp. leaf beetle spp. leafroller spp. mealybug spp. (1) may beetle spp. pales weevil pine chafer pine colaspis beetle pine conelet bug pine leaf chermid pine needle scale pine sawfly spp. pine tip moth spp. pine tortoise scale pine weevil spp. poplar aphid spp. sawfly spp. spittlebug spp. spruce budworm tent caterpillar spp. tussock moth spp. webworm spp.	0.01 - 0.02	1.02 - 2.05
coneworm spp. seed bug spp.	See Remarks for pest-specific use directions	

¹Suppression only

Use Restrictions:

- **Do not** apply more than 0.12 lb ai/A (12 fl oz/A) per year.

Coneworm/Seed Bug/Thrips spp. in Seed Orchards:

- **Do not** apply more than 0.25 lb ai/A (25 fl oz/A) per year.

Remarks:

- 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 or air equipment, using sufficient water to obtain full coverage of target site. When applying by air, apply in a minimum of 2 gallons of water per acre.

Coneworm/Seed Bug/Thrips spp. in Seed Orchards:

- For high volume sprayers, dilute 2.05 fl oz per 100 gallons of water and apply 5 to 10 gallons of finished spray per tree.
- For low volume sprayers, dilute 8 fl oz per 100 gallons of water and apply 100 gallons of finished spray volume per acre.
- For aerial application, apply 6 fl oz per acre in a minimum of 10 gallons of finished spray per acre.

Corn (At Plant Soil Application)		
Field Corn, Popcorn, Seed Corn, Sweet Corn		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
cutworm spp. lesser cornstalk borer red imported fire ant (1) seedcorn beetle seedcotton maggot white grub spp. wireworm spp. (1)	0.0025 – 0.0065 lb ai per 1000 ft of row	0.26 - 0.66 fl oz per 1000 ft of row

¹Suppression only.

Use Restrictions:

- **Pre-harvest Interval:** Do not harvest or graze livestock or cut treated crops for feed within 21 days of at plant application.
- Do not apply more than 0.045 lb ai/A (4.6 fl oz/A) per crop at plant. For field corn, popcorn, and seed corn, do not apply more than 0.06 lb ai/A (6.15 fl oz/A) per crop from at plant and foliar applications. For sweet corn, do not apply more than 0.24 lb ai/A (24 fl oz/A) per crop from at plant and foliar applications.

Remarks:

- **Banded Applications:** Apply at planting as a 5 to 7 inch T-band sprayed across the open seed furrow between the furrow opener and the press wheel 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 opener and in front of the press wheel.
- Apply a minimum spray volume of 3 gallons per acre.

Fluid Ounces and Pounds Active Ingredient per Acre of CHA 1550-03 Applied at 0.66 fl oz per 1000 ft of Row for Various Row Spacings						
Row spacing	40"	38"	36"	34"	32"	30"
Linear ft/acre	13,068	13,756	14,520	15,374	16,335	17,424
Fl oz/acre	3.4	3.6	3.8	4.0	4.3	4.6
Lb ai/acre	0.034	0.035	0.037	0.040	0.042	0.045

Corn (Foliar Application)		
Field Corn, Popcorn, Seed Corn		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
Cutworm green cloverworm meadow spittlebug western bean cutworm (1)	0.0075 - 0.0125	0.77 - 1.28
armyworm (2) bean leaf beetle Bird-cherry oat aphid (3) Corn earworm (1) cereal leaf beetle corn leaf aphid (3) English grain aphid (3) European corn borer (1) fall armyworm (2) flea beetle spp. grasshopper spp. hop vine borer (1) hornworm spp. Japanese beetle (adult) lesser cornstalk borer (1) Mexican corn rootworm beetle (adult) northern corn rootworm beetle (adult) sap beetle (adult) southern corn rootworm beetle (adult) southwestern corn borer (1) stalk borer (1) stink bug spp. tobacco budworm (1) (4) webworm spp. western corn rootworm beetle (adult) yellowstriped armyworm (2)	0.01 - 0.015	1.02 - 1.54
chinch bug greenbug (3) (4) Mexican rice borer (1) rice stalk borer (1) southern corn leaf beetle (<i>Myochrous denticollis</i>) (3) (5) sugarcane borer (1)	0.015	1.54

¹ For control before larvae bore into the plant stalk or ear.

² Use higher rates for large larvae.

³ Suppression only

⁴ See resistance statement under Use Precautions and Restrictions.

⁵ for field and seed corn, may also be applied through chemigation equipment.

Use Restrictions:

- Do not allow livestock to graze in treated areas or harvest treated corn forage as food 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 the last treatment.
- Do not apply more than 0.06 lb ai/A (6.15 fl oz/A) per crop from at plant and foliar applications.

- Do not apply more than 0.03 lb ai (3.0 fl oz/ai) after silk initiation. Do not apply more than 0.015 lb ai (1.5 fl oz/ai) after corn has reached the milk stage (yellow kernels with milky fluid).
- **Preharvest Interval:** Do not apply within 21 days of harvest.

Remarks:

- Apply as required by scouting, or locally prescribed corn growth stages, usually at intervals of 7 days or more. 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 gallons 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- to 5-day intervals if needed. CHA 1550-03 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 upper end of rate range at 1.54 fl oz per acre (0.015 lb active ingredient per acre).
- For additional control, CHA 1550-03 may be tank mixed and applied with dimethoate

Sweet Corn (Foliar Application)		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
aphid spp. (3) (4) aster leafhopper chinch bug common cornstalk borer (1) Corn earworm (1) cutworm spp. European corn borer (1) fall armyworm (2) flea beetle spp. grasshopper spp. Japanese beetle (adult) Mexican corn rootworm beetle (adult) northern corn rootworm beetle (adult) sap beetle (adult) southern armyworm (2) southern corn rootworm beetle (adult) southwestern corn borer (1) spider mite spp. (3) stink bug spp. tarnished plant bug webworm spp. western bean cutworm (1) western corn rootworm beetle (adult) yellowstriped armyworm (2)	0.01 - 0.015	1.02 - 1.54
corn silkfly (adult) (3) southern corn leaf beetle (<i>Myochrous denticollis</i>)	0.015	1.54

¹ For control before larvae bore into the plant stalk or ear

² Use higher rates for large larvae.

³ Suppression only.

⁴ See resistance statement under Use Precautions and Restrictions.

Use Restrictions:

- Do not allow livestock to graze in treated areas or harvest treated corn forage as food 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 the last treatment.
- Do not apply more than 0.24 lb ai/A (24 fl oz/A) per crop from at plant and foliar applications.
- **Preharvest Interval:** Do not apply within 1 day of harvest.

Remarks:

- Apply as required by scouting, or locally prescribed corn growth stages, usually at intervals of 4 days or more. 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 gallons 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 1.28 fl oz per acre (0.0125 lb active ingredient per acre).
- For additional control, CHA 1550-03 may be tank mixed and applied with dimethoate

Cotton		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
cutworm spp. soybean thrips tobacco thrips	0.005- 0.01	0.51 - 1.02
cabbage looper cotton fleahopper cotton leafperforator cotton leafworm lygus bug spp. (3) pink bollworm (adult) saltmarsh caterpillar	0.01 - 0.015	1.02 - 1.54
bandedwing whitefly (2) (3) (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)	0.0125 - 0.02	1.28 - 2.05

¹ For control of first and second instars only.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

Use Restrictions:

- Do not graze livestock in treated areas.

- Do not apply more than 11 fl oz/ai (0.1 lb active ingredient) 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.
- **Preharvest Interval:** Do not apply within 21 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 to 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. CHA 1550-03 may be mixed with once-refined vegetable oil and applied in a minimum of at least 1 quart of finished spray per acre.
- Under light bollworm/budworm infestation levels, 0.01 lb active ingredient per acre may be applied in conjunction with intense field monitoring.
- For boll weevil control, spray on a 3- to 5-day schedule.
- When applied according to label directions for control of cotton bollworm and tobacco budworm, CHA 1550-03 also provides ovicidal control of unhatched *Heliothis* spp. eggs.

Cucurbit Vegetables			
Note: Numbers in parentheses refer to footnotes below table.			
Cucurbit Vegetables	Target Pests	Rate	
		lb ai/acre	fl oz/acre
Chayote (fruit) Chinese waxgourd (Chinese preserving melon) Citron melon Cucumber Gherkin Gourd (edible) <i>Lagenaria</i> spp. – includes: hyotan, cucuzza <i>Luffa acutangula</i> – includes hechima, Chineses okra <i>Momordica</i> spp.— includes balsam apple, balsam pear, bitter melon, Chinese cucumber Muskmelon (hybrids and cultivars of <i>Cucumis melo</i>) includes: true 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 (<i>Cucurbita</i>	Armyworm species (1) blister beetle species cabbage looper corn earworm cricket species cucumber beetle species (adult) 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	0.01 - 0.015	1.02 - 1.54

<p><i>pepo</i> var. <i>melo</i><i>pepo</i>) includes: crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini Squash, winter (<i>Cucurbita maxima</i>; <i>C. moschata</i>) includes: butternut squash, calabaza, hubbard squash</p> <p>(<i>C. mixta</i>; <i>C. pepo</i>) includes: acorn squash, spaghetti squash Watermelon – includes: hybrids and varieties of <i>Citrullus lanatus</i></p>	<p>aphid species (1) leafminer species (1) (3) whitefly species (1) (3) spider mite species (3)</p>	0.015	1.54
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¹ See Resistance statement under “Resistance Management” section of this label.

² Does not include Western flower thrips.

³ Suppression only.

Use Restrictions:

- Do not apply more than 0.09 lb ai/A (9 fl oz/A) per season.
- **Preharvest Interval:** Do not apply within 1 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons of water per acre.
- Use higher application values and rates when foliage is dense, pest populations are high, larvae are large or weather conditions are adverse. Use higher rates for longer residual control.
- Insects that bore or tunnel into leaves, vines, stems, or fruit must be controlled before penetration. Only exposed insects (larvae or adults) can be controlled with foliar applications of CHA 1550-03 herbicide.

Fruiting Vegetables (Except Cucurbits)		
Tomato, tomatillo, peppers (bell and non-bell), eggplant, ground cherry, okra, pepino		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
cabbage looper cutworm spp. hornworm spp.	0.0075 - 0.0125	0.77 - 1.28
aphid spp. (2) (3) blister beetle spp. Colorado potato beetle (3) cucumber beetle spp. (adult) European corn borer (4) fall armyworm (1) flea beetle spp. grasshopper spp. Japanese beetle (adult) leafhopper spp. leafminer spp. (2) meadow spittlebug pepper weevil (adult) (2) plant bug spp. southern armyworm (1) spider mite spp. (2) stalk borer (4) stink bug spp. thrips (3) (5) tobacco budworm (3) tomato fruitworm tomato pinworm tomato psyllid (2) (3) vegetable weevil (adult) whitefly spp. (2) (3) yellowstriped armyworm (1)	0.01 - 0.015	1.02 - 1.54
garden symphylan (<i>Scutigerella immaculate</i>) California (6)	0.0125	1.28

¹ For control of first and second instars only.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

⁴ For control before larvae bore into the plant stalk or fruit.

⁵ **Does not include western flower thrips**

⁶ Use in California. Suppression. Apply as soil-applied treatment prior to planting. Apply with ground equipment in a minimum of 10 gallons per acre. Total lb ai/acre per season, 0.18 lb /ai/acre (19.5 fl oz/acre).

Use Restrictions:

- Do not apply more than 0.18 lbai/A (18.5 fl oz/A) per acre per season.
- **Preharvest Interval:** Do not apply within 5 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons of water per acre.

Grass Forage, Fodder, and Hay		
<i>Gramineae</i> family; except sugarcane and those included in the cereal grains group. (Pasture and rangeland grass, grass grown for hay or silage, and grass grown for seed)		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
army cutworm cutworm species Essex skipper range caterpillar striped grass looper	0.0075 – 0.0125	0.77 – 1.28
billbug species (1) bird cherry-oat aphid (2) black grass bug black turfgrass beetle (adult) blue stem midge cereal leaf beetle chinch bug crane fly species cricket species English grain aphid (2) fall armyworm flea beetle species grass mealybug grass sawfly (adult) grasshopper species green June beetle greenbug (2) (3) Japanese beetle (adult) katydid species leafhopper species mite species (1) Russian wheat aphid (2) southern armyworm spittlebug species stink bug species sugarcane aphid thrips species tick species true armyworm webworm species yellowstriped armyworm	0.01 – 0.015	1.02 – 1.54

¹ Suppression only.

² Best control is obtained before insects begin to roll leaves.

³ See “Resistance” section in this label.

Use Restrictions:

- 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.
- Do not apply more than 0.015 lb ai (1.54 fl oz 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 0.015 lb ai/acre that have not been cut between applications
- Do not apply more than 0.045 lb ai/acre (4.6 fl oz/acre) per acre per season.

Remarks:

- 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 gallons of water per acre. When applying by ground, apply in a minimum of 7 gallons of water per acre.
- Use higher application volumes and rates when foliage is dense, pest populations are high, larvae are large, or weather conditions are adverse. Use higher rates for longer residual.
- For chinch bug control, CHA 1550-03™ insecticide may only suppress heavy infestations or migrations. In this situation, a second application using an alternative chemistry may be needed.
- Greenbug is known to have many biotypes. CHA 1550-03 may provide suppression only. In this situation, a second application using an alternative chemistry may be needed.
- Grass grown for seed:
 - Straw, hay, 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.

Legume Vegetables			
Note: Numbers in parentheses refer to footnotes below table.			
Crop/Variety	Target Pests	Rate	
		lb ai/acre	fl oz/acre
edible podded (only) <i>Canavalia gladiata</i> - sword bean <i>Canavalia ensiformis</i> - jackbean <i>Glycine max</i> - soybean - immature seed	cutworm spp. green cloverworm imported cabbageworm Mexican bean beetle saltmarsh caterpillar velvetleaf caterpillar	0.0075 - 0.0125	0.77- 1.28
	alfalfa caterpillar aphid spp. (4) armyworm (2) bean leaf beetle bean leafskeletonizer blister beetle spp. corn earworm corn rootworm beetle spp. (adult) cucumber beetle spp. (adult) curculio and weevil spp. (1) (foliage and pod feeding adults and larvae) European corn borer (1) fall armyworm (2) flea beetle spp. (adult) flea hopper spp. grasshopper spp. Japanese beetle (adult) leafhopper spp. leaf-tier spp. looper spp. meadow spittlebug painted lady butterfly (larvae) plant bug spp. including lygus spp. (4) stalk borer (1) stink bug spp. three-cornered alfalfa hopper thrips spp. (4) (5) tobacco budworm (4) webworm spp. western bean cutworm western yellowstriped armyworm (2) yellowstriped armyworm (2)	0.01 - 0.015	1.02- 1.54
edible podded, succulent shelled or dried shelled <i>Phaseolus spp.</i> - includes: field, kidney, lima, navy, pinto, runner, snap, tepary and wax beans <i>Vigna spp.</i> - includes: adzuki, asparagus, moth, mung, rice, urd and yardlong beans, black-eye pea, catjang, Chinese longbean, cowpea, crowder pea, and southern pea <i>Pisum spp.</i> - includes dwarf, edible-pod, English, field, garden, green, snow and sugar snap peas <i>Cajanus cajan</i> - pigeon peas succulent shelled or dried shelled <i>Vicia faba</i> broadbean (favabean) dried shelled (only) <i>Lupinus spp.</i> - includes: grain, sweet, white and sweet white lupines <i>Cicer arietinum</i> - chickpea (garbanzo bean) <i>Cyamopsis tetragonoloba</i> - guar <i>Lablab purpureus</i> - lablab bean (hyacinth bean) <i>Lens esculata</i> - Lentils	seed corn maggot (adult) (for use in Washington)	0.0125-0.015	1.28-1.54
	garden symphylan (<i>Scutigera immaculate</i>) California (6)	0.0125	1.28
	leafminer spp. (3) (4) lesser cornstalk borer (3) soybean looper (3) (4) spider mite spp. (3) whitefly spp. (3) (4)	0.015	1.54

¹ For control before larvae bore into the plant stalk or pods.

² Use higher rates for large larvae.

³ Suppression only.

⁴ See resistance statement under Use Precautions and Restrictions.

⁵ **Does not include western flower thrips.**

⁶ Use in California. For suppression apply as soil-applied treatment prior to planting. Apply with ground equipment in a minimum of 10 gallons per acre. Total lb ai/acre per season, 0.06 lb ai/acre (6.15 fl oz/acre).

Use Restrictions:

- Do not apply more than 0.06 lb ai/A (6.15 fl oz/A) per acre per season.
- For succulent and dried shelled peas and bean, **do not** graze livestock in treated areas or harvest vines for forage or hay.
- **Preharvest Interval:**
 - **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.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons of water per acre.

Lettuce (Head and Leaf)		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
alfalfa looper cabbage looper cutworm spp. green cloverworm imported cabbageworm saltmarsh caterpillar	0.0075 - 0.0125	0.77 - 1.28
aphid spp. (2) (3) armyworm (1) (3) corn earworm diamondback moth (3) European corn borer fall armyworm (1) flea beetle spp. grasshopper spp. Japanese beetle (adult) leafhopper spp. meadow spittlebug plant bug spp., including Lygus spp. (3) southern armyworm spider mite spp. (2) stink bug spp. tobacco budworm (3) vegetable weevil (adult) whitefly spp. (2) (3)	0.01 - 0.015	1.02 - 1.54
garden symphylan (<i>Scutigera immaculate</i>) California (4)	0.0125	1.28

¹ For control of first and second instars only.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

⁴ Use in California. For suppression apply as soil-applied treatment prior to planting. Apply with ground equipment in a minimum of 10 gallons per acre. Total lb ai/acre per season, 0.15 lb /ai/acre (15.4 fl oz/acre).

Use Restrictions:

- Do not apply more than 0.15 lb ai/A (15 fl oz/A) per acre per season.
- **Preharvest Interval:** Do not apply within 1 day of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons of water per acre.

Onion (Bulb) and Garlic		
Note: Numbers in parenthesis refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
cutworm spp. leafminer spp. (adult) onion maggot (adult) seedcorn maggot (adult)	0.0075 - 0.0125	0.77 - 1.28
aphid spp. (2) armyworm spp. (1) flower thrips (2) onion thrips plant bug spp. stink bug spp. tobacco thrips western flower thrips (2) (3)	0.01 - 0.015	1.02 - 1.54

¹ For control of first and second instars only.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

Use Restrictions:

- Do not apply more than 0.12 lbai/A (12 fl oz/A) per acre per season.
- **Preharvest Interval:** Do not apply within 14 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons of water per acre.
- For control of thrips by aerial application, the addition of 1% COC v/v, 0.25% NIS v/v or a silicone adjuvant may enhance the deposition of the spray and increase plant coverage. Follow adjuvant manufacturer's use directions.

Peanut		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
cutworm spp. green cloverworm potato leafhopper red-necked peanut worm three cornered alfalfa hopper velvetbean caterpillar	0.0075 - 0.0125	0.77 - 1.28
bean leaf beetle corn earworm fall armyworm (1) grasshopper spp. southern corn rootworm (adult) stink bug spp. tobacco thrips vegetable weevil whitefringed beetle (adult)	0.01 - 0.015	1.02 - 1.54
aphid spp. (2) lesser cornstalk borer (2) soybean looper (2) (3) spider mite spp. (2)	0.015	1.54

¹ Use higher rates for large larvae.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

Use Restrictions:

- Do not apply more than 0.06 lbai/A (6.15 fl oz/A) per acre per season.
- **Preharvest Interval:** Do not apply within 14 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 7 days or more. 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 gallons of water per acre.

Pome Fruits		
Apple, crabapple, loquat, mayhaw, oriental pear, pear, quince		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
apple aphid	0.01 - 0.02	1.02 - 2.05
apple maggot (adult)		
cherry fruit fly spp. (adult)		
codling moth		
green fruitworm		
Japanese beetle		
leafhopper spp.		
leafroller spp.		
lesser appleworm		
omnivorous leafroller		
orange tortrix		
Oriental fruit moth		
pear psylla (1)		
pear sawfly		
periodical cicada		
plant bug spp.		
plum curculio		
rosy apple aphid		
San Jose scale (fruit infestations only)		
spirea aphid (1)		
stink bug spp.		
tent caterpillar spp.		
tentiform leaf miner spp.		
tree borer spp.		
tufted apple budworm		

¹ Suppression only.

Use Restrictions:

- Do not apply more than 0.1 lb ai/A (10.5 fl oz/A)) per year. **Do not** apply more than 0.08 lb ai/A (8 fl oz/A) per year post bloom.
- **Preharvest interval:** Do not apply within 21 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 foliage or target area. When applying by air, apply in a minimum of 5 gallons of water per acre, but use higher volumes as appropriate for thorough coverage.

Rice and Wild Rice		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
bird cherry-oat aphid chinch bug fall armyworm grasshopper spp. greenbug leafhopper spp. rice stink bug rice water weevil (adult) riceworm sharpshooter spp. true armyworm yellowstriped armyworm yellow sugarcane aphid	0.0125 - 0.02	1.28 - 2.05
rice water weevil (wet-seeded rice in California) (1) European corn borer (2) Mexican rice borer (2) rice seed midge rice stalk borer (2) sugarcane borer (2)	0.015-0.02	1.54-2.05

¹ See "Remarks" below for application information.

² For control before larvae bore into the plant stalk.

Use Restrictions:

- Do not release flood water within 7 days of an application.
- Do not apply more than 0.06 lb ai/A (6.15 fl oz/A) per season. Do not apply more than 0.04 lb ai/A (4 fl oz/A) within 28 days of harvest or more than 0.02 lb ai/A (2 fl oz/A) within 21 days of harvest.
- Do not use treated rice fields for the aquaculture of edible fish and crustaceans.
- Do not apply as an ultra-low volume (ULV) spray.
- **Preharvest Interval:** Do not apply within 21 days of harvest.
 - **Preharvest interval for wild rice in Minnesota:** Do not apply within 7 days of harvest.

Remarks:

- Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Determine the need for repeat applications, usually at intervals of 5 to 7 days, by scouting.
- CHA 1550-03 can be used safely 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 gallons of water (or total carrier volume) per acre, but ensure sufficient volume is used to provide adequate coverage. The addition of emulsifiable crop oil at 1 pint per acre when lower aerial application volumes are used is recommended to 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 to 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 to 5 days after the initial treatment and, if needed, apply a second application within 7 to 10 days of the first application. Adults may also be treated at later stages of rice development to reduce over-wintering populations.

- **California:** In addition to above directions for control of rice water weevil in water seeded rice, CHA 1550-03 may be applied at the 1 to 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.
- 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 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.
- Greenbug is known to have many biotypes. CHA 1550-03 may provide only suppression. If satisfactory control is not achieved with the first application of CHA 1550-03, a resistant biotype may be present. Use alternate chemistry for control.

SEED VEGETABLES (Oregon; may apply only on seed carrot in Idaho)			
Note: Numbers in parentheses refer to footnotes below table.			
Crop	Target Pest	Rate	
		lb ai/acre	fl oz/acre
Seed Carrot Seed Dill Seed Parsley Seed Parsnip Seed Radish (except Daikon)	Lygus bug spp.	0.01 -0.015	1.02 – 1.54

Use Restrictions:

- This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or broadleaf weeds. Do not apply 1.54 fl oz/acre (0.015 lb ai/acre) to blooming seed crops. Apply 1.54 fl oz/acre only as a pre-bloom or post-bloom spray. Applications of 1.02 fl oz/acre (0.01 lb ai/acre) of CHA 1550-03 to blooming seed crops must be timed to coincide with periods of minimum bee activity between late evening and midnight. Be aware of bee activity resulting from a cool evening or morning dew. Avoid direct application to bee shelters/hives. It may be advisable to remove bee shelters/hives during and for 2 to 3 days following application.
- Do not apply more than 0.06 lb ai per acre per season.

Remarks:

- For applying with ground equipment (min. 10 gal/acre) or air (min. 2 gal/acre). For dense foliage or high pest population, higher use rates in higher volumes (10 gal/acre by air and 20 gal/acre by ground). Higher use rates can be used before crop bloom for increased residual control.
- To reduce potential for the development of insecticide resistance, if CHA 1550-03 is used as a pre-bloom spray, it is not advisable to use during bloom.
- Establish appropriate buffer zones and follow guidelines for spray drift as found in the sections of this label entitled “Buffer Zones” and “Spray Drift Requirements.”

Small Grains (barley, buckwheat, oats, rye, wheat, wheat hay, and triticale)		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
army cutworm cutworm spp.	0.0075 - 0.0125	0.77 - 1.28
Armyworm Bird Cherry oat aphid (1) cereal leaf beetle English grain aphid (1) fall armyworm flea beetle spp. grasshopper spp. Hessian fly (4) orange blossom wheat midge Russian wheat aphid (1) stink bug spp. yellowstriped armyworm Wheat stem maggot (5)	0.01 - 0.015	1.02 - 1.54
grass sawfly	0.0125 - 0.015	1.28 - 1.54
chinch bug corn leaf aphid (2) greenbug (1) (3) mite spp. (2)	0.015	1.54

¹ Best control is obtained before insects begin to roll leaves. Once wheat has started to boot, CHA 1550-03 may provide suppression only. Higher rates and increased coverage will be necessary.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

⁴ Make applications when adults emerge.

⁵ Apply from 5-leaf to flag leaf stages of wheat for suppression/control. Time application to control adult flies and maggots on the leaves and stems before maggots bore into stem. Use higher rates for heavier populations and adverse application conditions.

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Use Restrictions:

- **Do not** apply more than 0.03 lb ai/A (3 fl oz/A) per season.
- **Preharvest Interval: Do not** apply within 30 days of harvest.
- Do not allow livestock to graze in treated areas or harvest treated wheat forage as feed for meat or dairy animals within 7 days after last treatment. Do not feed treated straw to meat or dairy animals within 30 days after the last treatment.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons of water per acre.
- For chinch bug control, repeat applications at 3- to 5-day intervals if needed. CHA 1550-03 may only suppress heavy infestations and/or migrations.
- Greenbug is known to have many biotypes. CHA 1550-03 may provide suppression only. In this situation, a second application using an alternative chemistry may be needed.

Sorghum (Grain)		
Note: Numbers in parenthesis refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
cutworm spp. sorghum midge	0.0075 - 0.01	0.77 - 1.02
Armyworm corn earworm European corn borer (2) fall armyworm (1) flea beetle spp. hornworm spp. grasshopper spp. lesser cornstalk borer (2) southwestern corn borer (2) stink bug spp. webworm spp. yellowstriped armyworm (1)	0.01 - 0.015	1.02 - 1.54
chinch bug Mexican rice borer (2) rice stalk borer (2) sugarcane borer (2)	0.015	1.54

¹ Use higher rates for large larvae.

² For control before larvae bore into the plant stalk.

³ See resistance statement under Use Precautions and Restrictions.

Use Restrictions:

- Do not apply more than 0.04 lb ai/A (4 fl oz/A) per season.
- Do not apply more than 0.03 lb ai/A (3 fl oz/A) per season after crop emergence.
- Do not apply more than 0.01 lb ai/A (1 fl oz/A) per season once crop is in soft dough stage.
- **Preharvest Interval:** Do not apply within 30 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons 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- to 5-day intervals if needed. CHA 1550-03 may only suppress heavy infestations and/or subsequent migrations.

Soybean		
Note: Numbers in parenthesis refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
bean leaf beetle cabbage looper corn earworm cutworm spp. green cloverworm hornworm Mexican bean beetle Mexican corn rootworm beetle (adult) northern corn rootworm beetle (adult) painted lady (thistle) caterpillar potato leafhopper saltmarsh caterpillar southern corn rootworm beetle (adult) three-cornered alfalfa hopper thrips spp. (4) velvetbean caterpillar western corn rootworm beetle (adult) woollybear caterpillar	0.0075 - 0.0125	0.77 - 1.28
armyworm (1) blister beetle spp. European corn borer fall armyworm (1) grasshopper spp. Japanese beetle (adult) plant bug spp. silverspotted skipper soybean aphid stink bug spp. tobacco budworm (3) webworm spp. yellowstriped armyworm (1)	0.0125 - 0.015	1.28 - 1.54
lesser cornstalk borer (2) soybean looper (2) (3) spider mite spp. (2)	0.015	1.54

¹ Use higher rates for large larvae.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

⁴ Does not include western flower thrips

Use Restrictions:

- Do not graze or harvest treated soybean forage, straw, or hay for livestock feed.
- Do not apply more than 0.03 lb ai/A (3 fl oz/A) per season.
- **Preharvest Interval:** Do not apply within 45 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons 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 1.02 fl oz per acre (0.01 lb active ingredient per acre).

Stone Fruits		
Apricot, sweet and tart cherry, nectarine, peach, plum, chickasaw plum, damson plum, Japanese plum, plumcot, prune		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
American plum borer apple maggot (adult) black cherry aphid cherry fruit fly spp. (adult) codling moth green fruitworm Japanese beetle June beetle leafhopper spp. leafroller spp. oriental fruit moth peachtree borer spp. peach twig borer pear sawfly periodical cicada plant bug spp. plum curculio rose chafer stink bug spp. tent caterpillar spp. thrips spp.	0.01 - 0.02	1.02 - 2.05

Use Restrictions:

- Do not apply more than 0.1 lb ai/A (10 fl oz/A) per year.
- Do not apply more than 0.08 lb ai/A (8 fl oz/A) per year post bloom.
- **Preharvest interval:** Do not apply within 14 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 foliage or target area. When applying by air, apply in a minimum of 5 gallons of water per acre, but use higher volumes as appropriate for thorough coverage.

Sugarcane		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
Mexican rice borer (1) pygmy mole cricket rice borer (1) sugar cane aphid (3) sugarcane beetle (adult) (2) sugarcane borer (1) yellow sugarcane aphid (3) west Indian crane fly	0.0125 - 0.02	1.28 - 2.05

¹ For control before larvae bore into the plant stalk.

² Suppression only of beetles active above ground.

³ See resistance statement under Use Precautions and Restrictions.

Use Restrictions:

- Do not apply more than 0.08 lb ai/A (8 fl oz/A) per season.
- **Preharvest Interval:** Do not apply within 21 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 7 days or more. 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 the foliage or target area. When applying by air, apply in a minimum of 2 gallons of water per acre.

Sunflower		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
cutworm spp. sunflower beetle	0.0075 - 0.0125	0.77 - 1.28
red sunflower seed weevil	0.0075 - 0.015	0.77 - 1.54
banded sunflower moth fall armyworm (1) flea beetles grasshopper spp. head-clipper weevil (adult) Japanese beetle (adult) leafhopper spp. meadow spittlebug painted lady (thistle) caterpillar seed weevil (adult) spotted cabbage looper stem weevil (adult) stink bug spp. sunflower maggot (adult) sunflower moth woollybear caterpillar	0.01 - 0.015	1.02 - 1.54
alfalfa weevil (adult) hornworm	0.01-0.015	1.02-1.54
(3) spider mite spp. (2)	0.015	1.54

¹ For control of first and second instars only.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

Use Restrictions:

- Do not apply more than 0.06 lb ai/A (6.15 fl oz/A) per season.
- Do not apply more than 0.045 lb ai/A (4.6 fl oz/A) per season after bloom initiation.
- Do not apply as an ultra-low volume (ULV) spray.
- **Preharvest Interval:** Do not apply within 45 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 gallons of water per acre.

Tobacco (Air Dried)		
Burley tobacco and flue-cured tobacco		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
aphid spp. (2) (3) armyworm spp. (1) blister beetle spp. cabbage looper corn earworm cucumber beetle spp. (adult) cutworm spp. grasshopper spp. Japanese beetle (adult) katydid spp. plant bug spp. (3) saltmarsh caterpillar stinkbug spp. thrips spp. (2) tobacco budworm tobacco flea beetle (adult) tobacco hornworm tree cricket spp. vegetable weevil (adult) webworm spp.	0.0075 - 0.015	0.77 - 1.54

¹ For control of first and second instars only.

² Suppression only.

³ See resistance statement under Use Precautions and Restrictions.

Use Restrictions:

- Do not apply more than 0.045 lb ai/A (4.6 fl oz/A) per year.
- **Preharvest Interval:** Do not apply within 40 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 7 days or more. 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 the foliage. When applying by air, apply in a minimum of 2 gallons of water per acre.

Tree Nuts		
Almond, beech nut, Brazil nut, butternut, cashew, chestnut, chinquapin, filbert (hazelnut), hickory nut, macadamia nut (bush nut), black walnut, English walnut (Persian), Pecan, Pistachios		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
Ants chinch bug codling moth filbertworm hickory shuckworm leaffooted bug leafroller spp. navel orangeworm peach twig borer pecan aphid spp. Pecan casebearer spp. Pecan phylloxera spp Pecan spittlebug Pecan weevil plant bug spp. stink bug spp. walnut aphid walnut husk fly spp. (adult)	0.01 - 0.02	1.02 - 2.05

Use Restrictions:

- Do not apply more than 0.08 lb ai/A (8.3 fl oz/A) per year.
- Do not apply more than 0.06 lb ai/A (6.15 fl oz/A) per year post bloom.
- **Preharvest interval:** Do not apply within 14 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 5 days or more. 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 or target area. When applying by air, apply in a minimum of 5 gallons of water per acre, but use higher rates as appropriate for thorough coverage.

Tuberous and Corm Vegetables (potato, sweet potato, yams, and related)			
Note: Numbers in parentheses refer to footnotes below table.			
Crop	Target Pests	Rate	
		lb ai/acre	fl oz/acre
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)	cutworm species leafhopper species saltmarsh caterpillar sweet potato hornworm woolybear caterpillar species	0.0075 – 0.0125	0.77 – 1.28
	aphid species (1) armyworm species (1) blister beetle species Colorado potato beetle (1) corn earworm cricket species cucumber beetle species (adult) European corn borer flea beetle species (adult) grasshopper species loopers species (1) lygus bug species (1) plant bug species potato psyllid potato tuberworm stink bug species sweet potato leaf beetle (adult) sweet potato vine borer thrips species (1) (2) tortoise beetle species webworm species (adult) weevil species (adult)	0.01 – 0.015	1.02 – 1.54
	leafminer species (1) (3) spider mite species (3) whitefly species (1) (3)	0.015	1.54

¹ See **Resistance** section in this label.

² Does not include Western flower thrips.

³ Suppression only.

Use Restrictions:

- Do not apply more than 0.06 lb ai (6.15 fl oz of product) per acre per season.
- Do not apply within 7 days of harvest.

Remarks:

- Apply as required by scouting, usually at intervals of 7 days or more. 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 gallons of water per acre. When applying by ground, apply a minimum of 10 gallons of water per acre.
- Use higher application volumes and rates when foliage is dense, pest populations are high, larvae are large, or weather conditions are adverse. 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 or adults) can be controlled with foliar applications.

Non-Agricultural Uses		
Non-cropland areas adjacent to crops(excluding public land)		
Note: Numbers in parentheses refer to footnotes below table.		
Target Pests	Rate	
	lb ai/acre	fl oz/acre
Refer to crop-specific use directions	Use rates in crop-specific use directions	Use rates in crop-specific use directions

Use Restrictions:

- Do not exceed 0.1 lb ai/A (1 fl oz/A) per year.
- Do not graze livestock in treated areas

Remarks:

- Spray non-cropland adjacent to agricultural areas to control migratory insects that may threaten crops
- When treating areas adjacent to crops, refer to the specific use directions for the adjacent crop for target pests, rates, and spray recommendations.
- Use highest labeled rates for dense/tall foliage, high insect populations and/or larger larval stages.
- Repeat as necessary to maintain control.

Conditions of Sale and Limitation of Warranty and Liability:

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

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. To the extent consistent with applicable law, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and buyer assumes the risk of any such use.

To the extent consistent with applicable law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT. This Conditions of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.