



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460**

**OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION**

July 19, 2022

Generic Crop Science, LLC
c/o Annette Marine
Agent
Wagner Regulatory Associates, Inc.
P.O. Box 640
7217 Lancaster Pike, Suite A
Hockessin, Delaware 19707

Subject: Label and CSF Amendment – Add uses for Bushberries, Leafy Petiole Vegetables, and Strawberry; Add alternate CSF 7 and revise alternate CSF 2
Product Name: GCS Bifenthrin 2EC
EPA Registration Number: 94730-8
Application Date: January 19, 2022, January 6, 2022
Decision Number: 581871, 581869

Dear Annette Marine:

The amended label and Confidential Statements of Formula (CSFs) referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, are acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. 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 18 months from the date of this letter. After 18 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.

Please note that the record for this product currently contains the following CSF(s):

- Basic CSF dated 4/6/2022
- Alternate CSF 1 dated 4/6/2022
- Alternate CSF 2 dated 6/22/2022
- Alternate CSF 3 dated 4/6/2022
- Alternate CSF 4 dated 4/6/2022
- Alternate CSF 5 dated 3/28/2022
- Alternate CSF 6 dated 3/28/2022

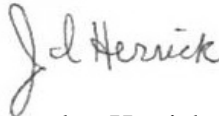
- Alternate CSF 7 dated 1/6/2022

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 FIFRA 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) lists 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.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions, please contact Elizabeth Andrews at 202-566-2467 or by email at Andrews.Elizabeth@epa.gov.

Sincerely,



Jacquelyn Herrick, Product Manager 03
Invertebrate & Vertebrate Branch 1
Registration Division (7505T)
Office of Pesticide Programs

Enclosure

[MASTER LABEL]

RESTRICTED USE PESTICIDE

Toxic to fish and aquatic organisms

For retail sale to and use only by certified applicators or persons under their direct supervision and only for the uses covered by the certified applicator's certification.

ACCEPTED

07/19/2022

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

94730-8

BIFENTHRIN

GROUP

3A

INSECTICIDE

GCS BIFENTHRIN 2EC

[ABN: Farmers First Bifenthrin 2EC Insecticide]

[ABN: Farmers First Bifenthrin 2EC]

[ABN: Bifenthrin 2EC Insecticide]

For use to Control Listed Insects and Mites on Artichokes, Brassicas, Bushberries, Caneberries, Canola, Cilantro, Citrus, Coriander, Corn, Cotton, Crambe, Cucurbits, Dried Beans and Peas, Fruiting Vegetables, Grapes¹, Head Lettuce, Hops, Leafy Brassicas, Leafy Petioles Vegetables, Mayhaw¹, Okra, Peanuts¹, Pears, Rapeseed, Root Crops, Soybeans¹, Spinach, Strawberries, Succulent Peas and Beans, Tobacco, and Tuberous and Corm Vegetables.

For use to Control Listed Insect Pests on Ornamentals and Trees¹ (Field and Container Grown Nursery Stock, Christmas Trees, Interiorscapes and Plantscapes, Lawns, Trees and Shrubs, and on Golf Courses and Sod Farms²).

¹Not for use in California.

²Do not use this product on golf courses and sod farms in Nassau or Suffolk County, New York.

ACTIVE INGREDIENT:

Bifenthrin: (2 methyl[1,1'-biphenyl]-3-yl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethyl-cyclopropanecarboxylate*

WT. BY %

..... 25.0%

OTHER INGREDIENTS:** 75.0%

TOTAL: 100.0%

GCS Bifenthrin 2EC contains 2 pounds active ingredient per gallon.
*Cis isomers 97% minimum, trans isomers 3% maximum.

**Contains petroleum distillates

**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 this label, find someone to explain it to you in detail.)

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> • Immediately call a poison control center or doctor. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
IF IN EYES:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF INHALED:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
HOTLINE NUMBERS	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For 24-Hour Medical Emergency Assistance (Human or Animal), call: 1-800-222-1222 . For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), call CHEMTREC: 1-800-424-9300 .	
NOTE TO PHYSICIAN	
This product is a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and should be avoided. This product contains a petroleum distillate. Vomiting may cause aspiration pneumonia.	

[Optional referral statements when booklets and container labels are used:]

[See label booklet for [complete] [additional] [First Aid,] [Precautionary Statements,] [Directions For Use,] and [Storage and Disposal.]]

Manufactured For [By]:
Generic Crop Science, LLC
1887 Whitney Mesa Dr., #9740
Henderson, NV 89014

EPA Reg. No.: 94730-8
EPA Est. No.: XXXXX-XX-XXX

Net Contents: _____ [Gals./L]

[Contains bifenthrin, the active ingredient used in Bifen 25% EC.]

[GCS Bifenthrin 2EC is not manufactured, or distributed by Atticus, LLC, seller of Bifen 25% EC.]

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

WARNING

May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Harmful if inhaled or absorbed through skin. Avoid breathing vapor or spray mist. Avoid contact with skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below.

Handlers who may be exposed to the dilute through application or other tasks must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, made of barrier laminate, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, or Viton ≥ 14 mils
- Shoes plus socks

Handlers who may be exposed to the concentrate through mixing, loading, application, or other tasks must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, made of barrier laminate, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, or Viton ≥ 14 mils
- Shoes plus socks
- Protective eyewear

Mixers and loaders supporting aerial applications to cotton must wear at a minimum:

- long-sleeved shirt and long pants,
- chemical-resistant gloves,
- shoes plus socks”

Mixers, loaders, and applicators using mechanically pressurized handguns for applications to tobacco must wear at a minimum:

- long-sleeved shirt and long pants,
- chemical-resistant gloves,
- shoes plus socks”

Mixers, loaders, and applicators using mechanically pressurized handguns for applications to tuberous and corm vegetables must wear at a minimum:

- long-sleeved shirt and long pants,
- chemical-resistant gloves,
- shoes plus socks

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 exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS**Users should:**

- Wash hands 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 invertebrates. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not make applications 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 washwater.

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 while bees are actively visiting the treatment area. **Protect pollinating insects by following label directions intended to minimize drift and reduce risk to these organisms.**

For outdoor use only. The use of [GCS Bifenthrin 2EC] {or} [this product] is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species.

PHYSICAL/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.

All outdoor spray applications must be limited to spot or crack-and-crevice treatments only, except for the following permitted uses:

1. Application to pervious surfaces such as soil, lawn, turf, and other vegetation;
2. Perimeter band treatments of 7 feet wide or less from the base of a man-made structure to pervious surfaces (e.g., soil, mulch, or lawn);
3. Applications to underside of eaves, soffits, doors, or windows permanently protected from rainfall by a covering, overhang, awning, or other structure;
4. Applications around potential exterior pest entry points into man-made structures such as doorways and windows, when limited to a band not to exceed one inch;
5. Applications to vertical surfaces (such as the side of a man-made structure) directly above impervious surfaces (e.g., driveways, sidewalks, etc.), up to 2 feet above ground level;
6. Applications to vertical surfaces directly above pervious surfaces, such as soil, lawn, turf, mulch or other vegetation) only if the pervious surface does not drain into ditches, storm drains, gutters, or surface waters.

Spot treatments must not exceed two square feet in size (for example, 2 ft. by 1 ft. or 4 ft. by 0.5 ft.).

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

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

- Coveralls
- Chemical-resistant gloves, made of barrier laminate, nitrile rubber, neoprene rubber, or Viton
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protections Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is to produce agricultural plants on farms, forests, nurseries, and greenhouses.

Do not allow people or pets on treated areas until the spray has dried.

RESISTANCE MANAGEMENT

[GCS Bifenthrin 2EC] {or} [this product] contains a Group 3A Insecticide. With repeated use of Group 3A insecticide as the primary method of control in the same field or in successive years, insect/mite populations can develop resistant biotypes. If this occurs, insect/mite biotypes with acquired resistance to Group 3A insecticides may eventually dominate the insect/mite population. This may result in partial or total loss of control of those species by [GCS Bifenthrin 2EC] {or} [this product] or other Group 3A insecticides.

To delay development of insecticide resistance, the following practices are suggested:

- Base insecticide applications on comprehensive IPM programs. This program should include an insect management program that includes cultural and biological control where possible.
- Use good resistance management strategies established for the use area. This may include the use of insecticide rotations or tank mixes with other groups of insecticide and miticides in an IPM program.
- Always apply [GCS Bifenthrin 2EC] {or} [this product] at the labeled rates and according to label directions. Do not use less than label rates alone or in tank mixtures unless directed otherwise in supplemental labeling supplied by Generic Crop Science, LLC.
- Monitor treated populations in the field for loss of control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain may be present. Immediately consult your local Generic Crop Science, LLC representative or agricultural advisor for the best alternative method of control for your area.
- Do not treat seedling plants grown for transplant in greenhouses, shade houses, or field plots.
- Consult your local extension specialist, certified crop advisor, and/or manufacturer for insecticide resistance management and/or

IPM guidance for the specific site and resistant pest problems.

APPLICATIONS INSTRUCTIONS

The rate of [GCS Bifenthrin 2EC] {or} [this product] applied will vary according to pest pressure and timing of application. Use lower rates under light to moderate infestations and higher labeled rates under heavy insect pressure and for mite control. Arid climates generally require higher labeled rates.

Unless otherwise specified for a specific crop, apply when pest population reaches economic (damaging) threshold and repeat as necessary to maintain control. Thorough coverage is essential to achieve control.

In the **Application Instructions** section of the label for each crop, the application rate when applied by ground and/or air is listed as an amount of spray per acre. In all cases, this refers to finished spray per acre.

USE RESTRICTIONS – Water Protection and Rain-Related Restrictions:

- **DO NOT** spray the product into fish pools, ponds, streams, or lakes.
- **DO NOT** apply directly to sewers or storm drains, or to any area like a drain or gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur.
- **DO NOT** allow the product to enter any drain during or after application.
- **DO NOT** apply directly to impervious horizontal surfaces such as sidewalks, driveways, and patios except as a spot or crack-and-crevice treatment.
- **DO NOT** apply or irrigate to the point of runoff
- **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.
- Treat surfaces to ensure thorough coverage but avoid runoff.
- To treat insects harbored in voids and cracks-and-crevices, applications must be made in such a manner to limit dripping and avoid runoff onto untreated structural surfaces and plants.

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 (ASABE 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.

CHEMIGATION USE DIRECTIONS

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 systems. Do not apply this product through any other type of irrigation system.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. Contact your State Agricultural Extension Service specialists, equipment manufacturers, or other experts for consultation on the suitability of the equipment setup to obtain effective control of the target insect pests.

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. Failure to cease application during a mechanical stoppage may result in undesirable residues to adjacent area.

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.

Do not apply when wind speed favors drift beyond the area intended for treatment.

For sprinkler irrigation, meter **[GCS Bifenthrin 2EC]** {or} [this product] at a continuous uniform rate during the entire irrigation period. To ensure accurate application over the treated area, apply in sufficient volume of water or other diluent. If non-emulsified oil is used as the diluent, use 1 - 2 pints per acre. Maintain continuous agitation of the pesticide supply tank for the duration of the application period. When chemigation systems are used, 0.50 inch per acre of irrigation water is suggested except that for Low Energy Precision Application (LEPA) irrigation, a minimum of 0.75 inch of water per acre is suggested.

BUFFER ZONES

Vegetative Buffer Strip

Construct and maintain a vegetative filter strip according to the width specified below 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 bifenthrin onto fields where a maintained vegetative buffer 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 Zone for Ground Application (ground boom, overhead chemigation, or airblast)

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

Buffer Zone for ULV Aerial Application

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

Buffer Zone for Non-ULV Aerial Application

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

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 (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.

Ground Boom Applications:

- User must only apply with the nozzle height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to select nozzle and pressure that deliver medium or coarser droplets (ASABE S572).
- **DO NOT** apply when wind speeds exceed 15 mph 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. Avoid applications during temperature inversions.

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.

ROTATIONAL CROPS

If applying to crops for which Bifenthrin tolerances exist, the crops may be rotated at any time. All other crops may be rotated 30 days following the final application of [GCS Bifenthrin 2EC] {or} [this product].

MIXING INSTRUCTIONS

The spray tank must be clean, thoroughly rinsed, and decontaminated before adding either [GCS Bifenthrin 2EC] {or} [this product] alone or with tank mix combinations (see **GCS Bifenthrin 2EC in Tank Mixtures** section below). If water is used as the carrier, use clean water.

For aerial applications made on brassicas (see **FOOD CROPS** section of the label below for full list of approved brassicas), canola, crambe, rapeseed, foliar applications on corn, cucurbits (see **FOOD CROPS** section of the label below for full list of approved cucurbits), eggplant, grapes, head lettuce, and succulent peas and beans (see **FOOD CROPS** section of the label below for full list of approved succulent peas and beans), 1 - 2 quarts of emulsified oil may be substituted for 1 - 2 quarts of water in the finished spray. For aerial applications made on cotton, 1 quart of emulsified oil may be substituted for 1 quart of water in the finished spray. Thorough coverage is essential to achieve control.

GCS Bifenthrin 2EC Used Alone: When [GCS Bifenthrin 2EC] {or} [this product] is used alone, add the labeled amount to the spray tank when the tank is half filled with water or other carrier; then add the rest of the water or other carrier (as permitted on this label). Provide sufficient agitation during mixing and application to maintain a uniform emulsion.

GCS Bifenthrin 2EC with Fertilizer: Fill the spray tank approximately one-half full with water and/or liquid fertilizer, add the proper amount of [GCS Bifenthrin 2EC] {or} [this product], and then add the rest of the water and/or fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform spray mixture.

Perform a jar compatibility test with the appropriate ratio of [GCS Bifenthrin 2EC] {or} [this product] and fertilizer to ensure the mixture will stay in solution. Maintain constant agitation during mixing and application.

GCS Bifenthrin 2EC in Tank Mixtures: It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

If a tank mixture is used, perform a compatibility test before actual tank mixing. Test all untried mixtures using proper ratios and mixing sequences of all ingredients to be included in the mixture. Once compatibility is confirmed for the tank mix, fill the tank half-full with water or other carrier. Start and continue agitation throughout mixing following conventional mixing order practices. [GCS Bifenthrin 2EC] {or} [this product] may be applied in tank mixtures with other products approved for use on registered crops. Observe all restrictions and precautions which appear on the labels of these products.

POLLINATOR 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 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.

FOOD CROPS - USE INSTRUCTIONS

ARTICHOKE

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Artichoke Plume Moth Cribrate Weevil	0.10	6.4	Repeat as necessary to maintain control, but do not apply more often than 15-day intervals. Ground Application: Apply in water in a minimum of 75 gallons per acre as a full cover spray. Air Application: Apply in water in a minimum of 10 gallons per acre.
Restrictions:			
<ul style="list-style-type: none"> Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season. Do not apply within 5 days of harvest (PHI). 			

BRASSICAS

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Head and Stem Brassica Vegetables Including: Broccoli Chinese Broccoli (Gai Lon, White Flowering Broccoli) Brussels Sprouts Cauliflower Cavalo Broccolo Kohlrabi Cabbage Chinese Cabbage (Napa) Chinese Mustard Cabbage (Gai Choy)	Aphids Armyworms Corn Earworm Crickets Cucumber Beetle Cutworms Diamondback Moth Flea Beetle Ground Beetles Imported Cabbageworm Leafhoppers Loopers Saltmarsh Caterpillar Stink Bugs Thrips Tobacco Budworm Whitefly Wireworm (Adults)	0.033 - 0.10	2.1 - 6.4	Ground Application: Apply in water in a minimum of 10 gallons per acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Emulsified oil may be substituted for water. See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water. Repeat applications if needed to maintain control, but do not make applications less than 7 days apart.
	Banks Grass Mite Carmine Mite <i>Lygus</i> spp. Pacific Spider Mite	0.08 - 0.10	5.12 - 6.4	

Two-spotted Spider Mite	
Restrictions:	
<ul style="list-style-type: none"> Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season. Do not make more than 5 applications after bloom. Do not apply within 7 days of harvest (PHI). 	

BUSHBERRIES

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Blueberry (Highbush and Lowbush) Currant Elderberry Gooseberry Huckleberry	Aphids Blueberry Maggot Fruitworms Japanese Beetle Leafhoppers Leaf Rollers Plum Curculio Spanworm	0.033 - 0.10	2.1 - 6.4	Aerial Application: Apply a minimum of 2 gallons of finished spray per acre. Ground Application: Apply using a minimum of 10 gallons of finished spray per acre.
	Carmine Mite <i>Lygus</i> spp. Pacific Spider Mite Two-Spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	
Restrictions:				
<ul style="list-style-type: none"> Do not make applications less than 7 days apart. Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season. Do not apply within 1 day of harvest (PHI). 				

CANE BERRIES

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Caneberries including: Blackberries Bingleberries Dewberries Loganberries Lowberries Marionberries Ollalieberries Raspberries Youngberries	Leafrollers Orange Tortrix Root Weevils	0.05 - 0.10	3.2 - 6.4	Apply by air or ground equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons per acre by air and 50 gallons per acre by ground). Ground Application: Apply in water in a minimum of 50 gallons per acre. Air Application: Apply in water in a minimum of 10 gallons per acre. A total of 2 applications may be made. Apply one application pre bloom, and a second post bloom.
	Spider Mites Raspberry Crown Borer	0.10	6.4	
Restrictions:				
<ul style="list-style-type: none"> Do not apply more than 0.20 lb. a.i. (12.8 ounces formulated) per acre per season. Do not apply within 3 days of harvest (PHI). 				

CANOLA, CRAMBE, RAPESEED

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Armyworms Cutworms Diamondback Moth Flea Beetles Flea Hoppers Grasshoppers Loopers <i>Lygus</i> Bugs Other Lepidopterous Larvae Plant Bugs Seedpod Weevil Stink Bugs Thrips Whitefly	0.033 - 0.04	2.1 - 2.6	Ground Application: Apply in water in a minimum of 10 gallons per acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Emulsified oil may be substituted for water. See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water. Repeat applications if needed to maintain control, but do not make applications less than 14 days apart.
Restrictions:			

- Do not apply more than 0.08 lb. a.i. (5.12 ounces formulated) per acre per season.
- Do not apply within 35 days of harvest (PHI).

CHRISTMAS TREES (For use only in Washington and Oregon.)

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Root Weevil Spruce Spider Mite	0.06 - 0.10	3.9 - 6.4	<p>Ground Application: Apply in water in a minimum of 20 gallons per acre.</p> <p>Air Application: Apply in water in a minimum of 5 gallons per acre.</p> <p>[GCS Bifenthrin 2EC] {or} [this product] is usually not phytotoxic to Christmas trees. However, make applications to a small representative group of plants to ensure that a particular variety grown under current conditions is not unusually sensitive to [GCS Bifenthrin 2EC] {or} [this product].</p> <p>Maintain a minimum of 21 days between applications.</p>
Restrictions:			
<ul style="list-style-type: none"> • Do not apply more than 0.10 lb. a.i. (6.4 ounces formulated) per acre per season. • Do not make more than 3 applications in a crop year. • Do not make applications through irrigation systems. 			

CILANTRO, CORIANDER

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Beet Armyworm Cabbage Looper Cutworm Flea Beetle Grasshoppers Leafminer Saltmarsh Caterpillar Spotted Cucumber Beetle Thrips Whitefly	0.033 - 0.10	2.1 - 6.4	<p>Ground Application: Apply in water in a minimum of 10 gallons per acre.</p> <p>Air Application: Apply in water in a minimum of 2 gallons per acre.</p> <p>Apply in sufficient water to obtain thorough coverage.</p>
Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	
Restrictions:			
<ul style="list-style-type: none"> • Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season. • Do not make applications less than 7 days apart. • Do not apply within 3 days of harvest (PHI). 			

CITRUS

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Blue Green Citrus Root Weevil (<i>Pachnaeus opalus</i>) Brown Leaf Notcher (<i>Epicaerus mexicanus</i>) Diaprepes Root Weevil (<i>Diaprepes abbreviatus</i>) Little Leaf Notcher (<i>Artipus floridanus</i>) Southern Blue Green Citrus Root Weevil (<i>Pachnaeus litus</i>)	0.25 - 0.50	16 - 32	<p>Ground Application: Apply in water in a minimum of 40 gallons per acre.</p> <p>Greater spray volumes increase uniformity of coverage. Also, coverage uniformity may be aided by using a pre- and post-irrigation application.</p> <p>Use a handgun or shielded sprayer to apply to individual citrus trees if they are not planted in solid rows.</p> <p>[GCS Bifenthrin 2EC] {or} [this product] protects citrus tree roots from Diaprepes and other citrus root weevil feeding by forming a barrier which provides contact activity on newly hatched larvae (neonates). As citrus root weevil eggs hatch in new foliage, neonates fall to the soil surface beneath the tree and come in contact with [GCS Bifenthrin 2EC] {or} [this product] as they attempt to burrow into the root zone. Disturbance of the soil beneath trees should be minimized.</p> <p>All citrus root weevils have a similar life cycle. They have three immature stages: egg, larva, and pupa. Adult weevils emerge from the soil and lay eggs on host plants above ground, the larvae enter the soil</p>

		<p>to feed on roots, and the pupae and teneral adult stages are spent below ground. Adults emerge beneath citrus trees throughout the year; it is at this time that [GCS Bifenthrin 2EC] {or} [this product] applications must be timed. Peak adult emergence varies within and among species and by region. Peak emergence for the blue-green citrus root weevil is normally April and May. Diaprepes adult emergence from the soil appears to be triggered by the onset of regular rainfall events and can have two emergence peaks, in mid-May to mid-July and/or late-August to mid-October. The second peak is variable and may relate to host plant availability. Little leaf notcher has three generations per year. Although there is considerable overlap of generations, adults appear most abundant in April/May, July/August, and October/November.</p> <p>For best control of emerging root weevils, apply [GCS Bifenthrin 2EC] {or} [this product] to the soil beneath the citrus trees from the trunk to the drip line of the tree.</p> <p>[GCS Bifenthrin 2EC] {or} [this product] protects citrus tree roots from citrus root weevils by forming a barrier which provides contact activity on neonate larvae when they fall to the ground shortly after hatching from eggs which were oviposited in the citrus tree foliage.</p> <p>Once application is made, be careful not to disturb the treated soil.</p> <p>In areas where only a spring emergence is expected, use 32 ounces of [GCS Bifenthrin 2EC] {or} [this product]. In areas where a second emergence is expected, use 16 ounces of [GCS Bifenthrin 2EC] {or} [this product] in the early season and 16 ounces of [GCS Bifenthrin 2EC] {or} [this product] later in the season.</p> <p>If the length of control of [GCS Bifenthrin 2EC] {or} [this product] is not sufficient to cover the emergence of the root weevil, use other pest control measures from State Agricultural Extension Specialists or other local experts.</p>
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Restrictions:

- Do not apply through irrigation systems.
- Do not allow any application of [GCS Bifenthrin 2EC] {or} [this product] to contact fruit or foliage.
- Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per year.
- Do not apply by air.
- Do not apply within 1 day of harvest (PHI).

CONIFER SEED ORCHARDS

(For Use Only in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, Virginia)

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Cone Worms Seed Bugs Seed Worms	0.10 - 0.20	6.4 - 12.8	<p>Ground Application: Apply in water in a minimum of 100-500 gallons per acre</p> <p>Air Application: Apply in water in a minimum of 10 gallons per acre or 0.50 gallon refined vegetable oil per acre.</p> <p>Apply in sufficient water to obtain thorough coverage.</p> <p>Begin applications 7 days after peak pollen flight and continue on 30-day intervals up to a maximum of 0.60 lb. active per acre per season.</p>

Restriction:

- Do not make more than 6 applications per season or apply more than 0.60 lb. a.i. (38.4 ounces formulated) per acre per season.

CORN: FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED

(AT-PLANTING)

Pest	Dosage		Application Instructions
Corn Rootworm (Larvae) Northern Southern	0.0046 lb. a.i. per 1,000 linear	0.30 fl. oz. per 1,000 linear ft. of	<p>Ground Application: Apply in water in a minimum of 3 gallons per acre.</p> <p>For use on corn at-planting, apply a 5-inch to 7-inch T-band over the</p>

Western	ft. of row	row	open seed furrow.
Army Cutworm Cutworm Species Grubs Seedcorn Beetle Seedcorn Maggot True Armyworm or Armyworm Species Wireworms	0.0023 - 0.0046 lb. a.i. per 1,000 linear ft. of row	0.15 - 0.30 fl. oz. per 1,000 linear ft. of row	Center the spray nozzle over the row behind the planter shoe in front of the press wheel. In-furrow pop-up fertilizers may be used alone or in tank mixtures with [GCS Bifenthrin 2EC] {or} [this product]. See the section entitled MIXING INSTRUCTIONS, GCS Bifenthrin 2EC with Fertilizer for additional instructions and precautions when mixing with fertilizers.

Restrictions:

- Do not apply to soil where there is greater than 30% cover of crop residue remaining.
- Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.
- Do not apply more than 0.10 lb. a.i. (6.4 ounces formulated) per acre per season as an at-plant application.
- Do not apply within 30 days of harvest (PHI).

Row Spacings (Inches)¹	40"	38"	36"	30"
GCS Bifenthrin 2EC (pounds a.i. per acre)	0.060	0.064	0.069	0.080
GCS Bifenthrin 2EC (formulated ounces per acre)	3.9	4.1	4.4	5.12

¹Use this table to determine the [GCS Bifenthrin 2EC] {or} [this product] needs per acre.

CORN: FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED (PRE & PPI)

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Armyworm spp. Black Cutworm Seedcorn Maggot Stalk Borer White Grub Wireworm	0.047 - 0.062 Pre-Plant Incorporated (PPI)	3 - 4 Pre-Plant Incorporated (PPI)	Ground Application: Apply in water in a minimum of 3 gallons per acre. Use the labeled dosage as a pre-plant incorporated treatment either alone or in tank mix combination with registered pre-plant incorporated herbicides.
Black Cutworm Armyworm spp. Stalk Borer	0.040 lb./a.i. per acre Pre- Emergence (PRE)	2.56 fl. oz. per acre Pre- Emergence (PRE)	Incorporate [GCS Bifenthrin 2EC] {or} [this product] to the intended planting depth, but no deeper than 3". The 3 - 4 fl. oz. rate must be applied as PPI and can be tank mixed and applied with PPI herbicides. The 2.56 fl. oz. rate may be applied PRE and can be tank mixed and applied with PRE herbicides.

CORN: FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED (FOLIAR)

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Army Cutworm Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm (Adults) Cucumber Beetle (Adults) Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle (Adults) Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer	0.033 - 0.10	2.1 - 6.4	Ground Application: Apply in water in a minimum of 10 gallons per acre, except see specific comment below for TX, NM, OK, and AZ mite control. Air Application: Apply in water in a minimum of 2 - 5 gallons per acre, except see specific comment below for TX, NM, OK, and AZ mite control. In all states, insect control will be improved by increasing the finished spray per acre to 5 gallons. In Texas, New Mexico, Oklahoma, and Arizona: Use a minimum of 10 gallons of water per acre by ground and 5 gallons of water per acre by air whenmaking applications to control mites. Emulsified oil may be substituted for water. See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water. Make applications of [GCS Bifenthrin 2EC] {or} [this product] as

Stink Bugs Tarnished Plant Bug True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm			necessary to maintain control being careful not to exceed reapplication intervals or maximum dosage rates specified in this section. For pests which attack the ear, apply just before silking. For corn borer control, make application just before or at egg hatch.
Banks Grass Mite Carmine Mite Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	For mite control, apply when colonies first form prior to leaf damage and before they disperse into the canopy (for Banks Grass Mite - before dispersal into the upper 2/3 of the plant). Use higher labeled rates of [GCS Bifenthrin 2EC] {or} [this product] when pest pressure is severe or crop is under stress from drought and/or heat. When these conditions exist, tank mixtures with dimethoate have shown good control. Apply for Banks Grass Mite control when colonies first form prior to leaf damage or discoloration and before dispersal above the bottom third of the plant. For Two-Spotted Spider Mite and Carmine Mite control: apply when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy. Higher labeled rates will be necessary for heavier initial populations and corn under heat or drought stress. Field experience with dimethoate at 0.50 lb. active per acre in tank mixture has demonstrated good control under these conditions. For Mite Control in Texas, New Mexico, Oklahoma, and Arizona: Apply in a minimum of 5 gallons of finished spray per acre by aircraft or in a minimum of 10 gallons per acre with ground equipment.

Restrictions:

- Do not apply more than 0.30 lb. a.i. (19.2 ounces formulated) per acre per season including PRE and PPI, at-planting, plus foliar applications.
- Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application.
- Use of ultra-low volume (ULV) application on corn is prohibited.
- Do not make aerial or ground applications to corn if heavy rainfall is imminent.
- Do not apply within 30 days of harvest (PHI).

CORN: SWEET CORN, SWEET CORN GROWN FOR SEED (AT-PLANTING)

Pest	Dosage		Application Instructions
Corn Rootworm (Larvae) Northern Southern Western	0.0046 lb. a.i. per 1,000 linear ft. of row	0.30 fl. oz. per 1,000 linear ft. of row	Ground Application: Apply in water in a minimum of 3 gallons per acre. For use on corn at-planting, apply in a 5-inch to 7-inch T-band over the open seed furrow. Center the spray nozzle over the row behind the planter shoe in front of the press wheel.
Army Cutworm Cutworm Species Grubs Seedcorn Beetle Seedcorn Maggot True Armyworm or Armyworm Species Wireworms	0.0023 - 0.0046 lb. a.i. per 1,000 linear ft. of row	0.15 - 0.30 fl. oz. per 1,000 linear ft. of row	In-furrow pop-up fertilizers may be used alone or in tank mixtures with [GCS Bifenthrin 2EC] {or} [this product]. See the section entitled MIXING INSTRUCTIONS, GCS Bifenthrin 2EC with Fertilizer for additional instructions and precautions when mixing with fertilizers.

Restrictions:

- Do not apply to soil where there is greater than 30% cover of crop residue remaining.
- Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.
- Do not apply more than 0.10 lb. a.i. (6.4 ounces formulated) per acre per season as an at-plant application.
- Do not apply within 30 days of harvest (PHI).

Row Spacings (Inches) ¹	40"	38"	36"	30"
GCS Bifenthrin 2EC (pounds a.i. per acre)	0.060	0.064	0.069	0.080
GCS Bifenthrin 2EC (formulated ounces per acre)	3.9	4.1	4.4	5.12

¹Use this table to determine the **[GCS Bifenthrin 2EC]** {or} [this product] needs per acre.

**CORN: SWEET CORN, SWEET CORN GROWN FOR SEED
(FOLIAR)**

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Army Cutworm Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm (Adults) Cucumber Beetle (Adults) Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbugs Japanese Beetle (Adults) Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stink Bugs Tarnished Plant Bug True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033 - 0.10	2.1 - 6.4	<p>Ground Application: Apply in water in a minimum of 10 gallons per acre.</p> <p>Air Application: Apply in water in a minimum of 2 gallons per acre. Emulsified oil may be substituted for water.</p> <p>See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water. Make applications of [GCS Bifenthrin 2EC] {or} [this product] as necessary to maintain control being careful not to exceed reapplication intervals or maximum dosage rates specified in this section.</p> <p>For pests which attack the ear, apply just before silking.</p> <p>For corn borer control, make application just before or at egg hatch.</p> <p>For mite control, apply when colonies first form prior to leaf damage and before they disperse into the canopy (for Banks Grass Mite - before dispersal into the upper 2/3 of the plant). Use higher labeled rates of [GCS Bifenthrin 2EC] {or} [this product] when pest pressure is severe or crop is under stress from drought and/or heat. When these conditions exist, tank mixtures with dimethoate have shown acceptable control.</p>
Banks Grass Mite Carmine Mite Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	
<p>Restrictions:</p> <ul style="list-style-type: none"> Do not apply more than 0.20 lb. a.i. (12.8 ounces formulated) per acre per season. Do not graze livestock in treated areas or cut treated crops for feed within 1 day of the last application. Use of ultra-low volume (ULV) application on corn is prohibited. Do not make aerial or ground applications to corn if heavy rainfall is imminent. Do not apply within 1 day of harvest (PHI). 			

COTTON

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
European Corn Borer Soybean (Banded) Thrips Tobacco Thrips	0.02 - 0.10	1.3 - 6.4	<p>Ground Application: Apply in water in a minimum of 5 gallons per acre.</p>
Boll Weevil Bollworm Cabbage Looper Cotton Aphid Cotton Fleahopper Cotton Leafperforator Cutworms Fall Armyworm Plant Bugs Saltmarsh Caterpillar Southern Garden Leafhopper Stink Bugs Tobacco Budworm Whitefly Yellowstriped Armyworm	0.04 - 0.10	2.6 - 6.4	<p>Air Application: Apply in water in a minimum of 1 gallon per acre. Emulsified oil may be substituted for water.</p> <p>See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water.</p> <p>ULV Application: Apply in a minimum of 1 qt. per acre using refined vegetable oil with aircraft calibrated to give adequate coverage.</p> <p>Make applications of [GCS Bifenthrin 2EC] {or} [this product] as necessary to maintain control being careful not to exceed reapplication intervals or maximum dosage rates specified in this section.</p>
Beet Armyworm Carmine Spider Mite <i>Lygus</i> spp. Pink Bollworm	0.06 - 0.10	3.8 - 6.4	<p>To Control Boll Weevil: Apply [GCS Bifenthrin 2EC] {or} [this product] at 3- to 4-day intervals until pest populations are reduced below economic threshold levels.</p>

Two-spotted Spider Mite			<p>To Control Mites and Aphids: Apply when pests first appear. Repeat as necessary to maintain control without exceeding maximum application rates and reapplication intervals. Use higher labeled rates when an economic threshold has been established.</p>
<p>Restrictions:</p> <ul style="list-style-type: none"> Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season. Do not graze livestock in treated areas or cut treated crops for feed. Do not make more than 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season. Synthetic pyrethroid products include Ambush®, Ammo®, Asana® XL, Baythroid®, Capture®, Danitol®, Karate®, Mustang®, and Scout X-TRA®. Do not apply within 14 days of harvest (PHI). 			

CUCURBITS

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Chayote (Fruit) Chinese waxgourd (Chinese preserving melon) Citron Melon Cucumber Gherkin Edible Gourd (includes hyotan, cucuzza), <i>Luffa</i> spp. (includes hechima, Chinese okra) <i>Momordica</i> spp. (includes balsam apple, balsam pear, bitter melon, Chinese cucumber) Muskmelon (hybrids and/or cultivars of <i>Cucumis melo</i>) (includes true cantaloupe, cantaloupe, casaba, creshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon) Pumpkin (<i>Cucurbita</i> spp.) Squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini) Squash, winter (includes butternut squash, calabaza, hubbard squash, (<i>C. mixta</i> ; <i>C. pepo</i>) includes acorn squash, spaghetti squash) Watermelon (includes hybrids and/or varieties of <i>Citrullus</i> spp.)	Aphids Armyworms Cabbage Looper Corn Earworm Cucumber Beetles Cutworms Grasshoppers Leafhoppers Melonworms Pickleworms Plant Bug Rindworms Squash Bugs Squash Vine Borer Stink Bugs Tobacco Budworm	0.04 - 0.10	2.6 - 6.4	<p>Ground Application: Apply in water in a minimum of 20 gallons per acre.</p> <p>Air Application: Apply in water in a minimum of 5 gallons per acre. Emulsified oil may be substituted for water.</p> <p>See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water.</p>
	Banks Grass Mite Carmine Mite <i>Lygus</i> spp. Two-spotted Spider Mite Whitefly	0.08 - 0.10	5.12 - 6.4	
<p>Restrictions:</p> <ul style="list-style-type: none"> Do not apply more than 0.30 lb. a.i. (19.2 ounces formulated) per acre per season. Do not make more than 2 applications after bloom. Repeat applications if needed to maintain control, but do not make applications less than 7 days apart. Do not apply within 3 days of harvest (PHI). 				

DRIED BEANS AND PEAS

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
<p>Dried cultivars of Bean (<i>Lupinus</i> spp.)</p> Grain Lupin Sweet Lupin White Lupin White Sweet Lupin <p>Bean (<i>Phaseolus</i> spp.)</p> Field Bean Kidney Bean Lima Bean (dry) Navy Bean Pinto Bean	Aster Leafhopper Flea Beetle Grasshoppers Leafhoppers	0.025 - 0.10	1.6 - 6.4	<p>Ground Application: Apply in water in a minimum of 10 gallons per acre.</p> <p>Air Application: Apply in water in a minimum of 2 gallons per acre.</p> <p>Emulsified oil may be substituted for water. See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water.</p> <p>Thorough coverage is essential to achieve</p>
	Alfalfa Caterpillar Aphids Beet Armyworm Bean Leaf Beetle Cloverworm Corn Earworm Corn Rootworm (Adults) Cucumber Beetles	0.033 - 0.10	2.1 - 6.4	

Tepary Bean Bean (<i>Vigna</i> spp.) Adzuki Bean Blackeyed Pea Catjang Cowpea Crowder Pea Moth Bean Mung Bean Rice Bean Southern Pea Urd Bean Broad bean (dry) Chickpeas Guar Lablab Bean Lentils Pea (<i>Pisum</i> spp.) Field Pea Pigeon Pea	Cutworms European Corn Borer Fall Armyworm Imported Cabbageworm Japanese Beetle (Adults) Leafminer Loopers Mexican Bean Beetle Pea Weevil Pea Leaf Weevil Plant Bug Saltmarsh Caterpillar Sap Beetle Southern Armyworm Stink Bugs Tarnished Plant Bug Thrips Tobacco Budworm Webworms Western Bean Cutworm Whitefly Yellowstriped Armyworm			control.
	Banks Grass Mite Carmine Mite <i>Lygus</i> spp. Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	

Restrictions:

- Do not apply more than 0.20 lb. a.i. (12.8 ounces formulated) to peas.
- Do not make applications less than 7 days apart.
- Do not apply within 14 days of harvest (PHI).

FRUITING VEGETABLES

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Eggplant Groundcherry Pepino Pepper (Bell and Non-Bell)	Armyworms (including Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm) Cabbage Loopers Colorado Potato Beetle Corn Earworm Cucumber Beetles European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Plant Bugs Stink Bugs Thrips Tomato Hornworm Tomato Pinworm Vegetable Leafminer Whitefly	0.033 - 0.10	2.1 - 6.4	Ground Application: Apply in water in a minimum of 10 gallons per acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Emulsified oil may be substituted for water, see section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water.
	Banks Grass Mite Broad Mite Carmine Mite <i>Lygus</i> spp. Pacific Spider Mite Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	

Restrictions:

- To maintain a proper spray interval, do not make applications less than 7 days apart.
- Do not apply more than 0.20 lb. a.i. (12.8 ounces formulated) per acre per season.
- Do not apply within 7 days of harvest (PHI).

Tomatoes	Aphids	0.033 - 0.08	2.1 - 5.2	Ground Application: Apply in water
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Tomatillo[*]	Armyworms (including Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm) Bean Leaf Beetle Cabbageworms Carmine Mite Cloverworm Corn Earworm Corn Rootworm Cucumber Beetle Cutworms Diamondback Moth European Corn Borer Flea Beetles Flea Hoppers Grasshoppers Japanese Beetle (Adults) Leafhoppers Loopers <i>Lygus</i> spp. Melonworms Pea Weevil Pea Leaf Weevil Pickleworms Plant Bugs Rindworms Saltmarsh Caterpillar Sap Beetle Seedpod Weevil Squash Bugs Stink Bug spp. Tobacco Budworm Tarnished Plant Bug Thrips Whitefly			in a minimum of 15 gallons per acre. Air Application: Apply in water in a minimum of 3 gallons per acre.
	Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	

Restrictions:

- To maintain a proper spray interval, do not make applications less than 10 days apart.
- Do not make more than 4 applications per season.
- Do not apply within 1 day of harvest (PHI).

[*Not registered for sale or use in California.]

GRAPES[*]

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Cutworms Eastern Grape Leafhopper Grape Berry Moth Japanese Beetle (adults) Lady Beetle (<i>Scymnus</i>) Variegated Leafhopper Western Grape Leafhopper	0.05 - 0.10	3.2 - 6.4	Ground Application: Apply in water in a minimum of 25 gallons per acre. Air Application: Apply in water in a minimum of 10 gallons per acre. Emulsified oil may be substituted for water. See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water.
Black Vine Weevil Glassy-winged Sharpshooter Two-spotted Spider Mite	0.10	6.4	

Restrictions:

- Do not apply more than 0.10 lb. a.i. (6.4 ounces formulated) per acre per season.
- Do not apply within 30 days of harvest (PHI).

[*Not registered for sale or use in California.]

HOPS

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Armyworms Cutworms Leafrollers	0.06 - 0.10	3.8 - 6.4	Ground Application: Apply in water in a minimum of 100 - 150 gallons per acre in early season; 200 - 250 gallons per acre late season. Air Application: Apply in water in a minimum of 10 gallons per acre.

Loopers			Make a directed spray up the vine 3 ft. and the soil surface 1.5 - 2 ft. on either side of the plant to control root weevil.
Root Weevils	0.05 - 0.10	3.2 - 6.4	
Two-spotted Spider Mite	0.10	6.4	
Restrictions:			
<ul style="list-style-type: none"> Do not apply more than 0.10 lb. a.i. (6.4 ounces formulated) per acre per application. Do not apply more than 0.30 lb. a.i. (19.2 ounces formulated) per acre per season. To maintain a proper spray interval, do not make applications less than 21 days apart. Use of ultra-low volume (ULV) application on hops is prohibited. Do not apply within 14 days of harvest (PHI). 			

LEAFY BRASSICAS AND TURNIP GREENS[*]

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Broccoli Raab Bok Choy Kale Mizuna Mustard Greens Mustard Spinach Rape Greens Turnip Greens[*]	Aphids Armyworms Corn Earworm Crickets Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Grasshoppers Ground Beetles Imported Cabbageworm Japanese Beetle (Adults) Leafhoppers Loopers Saltmarsh Caterpillar Stink Bugs Thrips Tobacco Budworm Whitefly Wireworm (Adults)	0.033 - 0.10	2.1 - 6.4	<p>Ground Application: Apply in water in a minimum of 10 gallons per acre.</p> <p>Air Application: Apply in water in a minimum of 2 gallons per acre. Emulsified oil may be substituted for water.</p> <p>See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water.</p> <p>Thorough coverage is essential to achieve control.</p>
	Banks Grass Mite Two-spotted Spider Mite Carmine Mite Pacific Spider Mite <i>Lygus</i> spp.	0.08 - 0.10	5.12 - 6.4	
Restrictions:				
<ul style="list-style-type: none"> Do not apply more than 0.40 lb. a.i. (25.6 ounces formulated) per acre per season. Repeat applications if needed to maintain control, but do not make applications less than 7 days apart. Do not apply within 7 days of harvest (PHI). 				
[*Not registered for sale or use in California.]				

LEAFY PETIOLE VEGETABLES

Crop	Pest	Dosage		Application Instructions
		Lbs. A.i./A	Fl. Oz./A	
Cardoon Celery Celtuce Chinese Celery Florence Fennel Rhubarb Swiss Chard	Aphids Armyworms Corn Earworm Crickets Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Ground Beetles Leafhoppers Loopers Stink Bugs Thrips Wireworm (Adults)	0.033 - 0.10	2.1 - 6.4	<p>Aerial Application: Apply in a minimum of 2 gallons per acre.</p> <p>Ground Application: Apply in a minimum of 10 gallons per acre.</p> <p>Thorough coverage is essential to achieve control.</p>
	Carmine Mite <i>Lygus</i> spp. Pacific Spider Mite Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	

Restrictions:

- Do not apply more than 0.50 lb. a.i. (32 fl. oz. formulated) per acre per season.
- Do not make applications less than 7 days apart.
- Repeat applications if necessary to maintain control.
- Do not apply within 7 days of harvest (PHI).

LETTUCE, HEAD

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Armyworms Corn Earworm Cucumber Beetles Cutworms Diamondback Moth Flea Beetle Imported Cabbageworm Leafhoppers Loopers Saltmarsh Caterpillar Stink Bug spp. Tobacco Budworm Whitefly	0.033 - 0.10	2.1 - 6.4	Ground Application: Apply in water in a minimum of 15 gallons per acre. Air Application: Apply in water in a minimum of 5 gallons per acre. Emulsified oil may be substituted for water. See section entitled MIXING INSTRUCTIONS for details on the amount of oil to use in the spray tank in lieu of water.
Carmine Mite <i>Lygus</i> spp. Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	

Restrictions:

- To maintain a proper spray interval, do not make applications less than 7 days apart.
- Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season.
- Do not apply within 7 days of harvest (PHI).

MAYHAW[*]

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl Oz./A	
Plum Curculio	0.08 - 0.10	5.12 - 6.4	Ground Application: Apply in water in a minimum of 28 gallons of finished spray per acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Apply in sufficient water to obtain uniform coverage as needed.

Restrictions:

- Do not apply more than 0.20 lb. a.i. (12.8 ounces formulated) per acre per season.
- To maintain a proper spray interval, do not make applications less than 7 days apart.
- Do not apply within 30 days of harvest (PHI).

[*Not registered for sale or use in California.]

OKRA

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Armyworms Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Japanese Beetle (Adults) Leafminers Loopers Stink bugs Thrips Whitefly	0.033 - 0.10	2.1 - 6.4	Ground Application: Apply in water in a minimum of 10 gallons of finished spray per acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Apply in sufficient water to obtain uniform coverage as needed.
Broad Mite Carmine Mite <i>Lygus</i> spp.	0.08 - 0.10	5.12 - 6.4	

Two-spotted Spider Mite			
Restrictions:			
<ul style="list-style-type: none"> To maintain a proper spray interval, do not make applications less than 7 days apart. Do not apply more than 0.20 lb. a.i. (12.8 ounces formulated) per acre per season. Do not apply within 7 days of harvest (PHI). 			

PEANUT[*]

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Beet Armyworm Corn Earworm Cutworm Species Fall Armyworm Grasshoppers Green Cloverworm Leafhoppers Lesser Cornstalk Borer Loopers Rednecked Peanut Worm Southern Armyworm Southern Corn Rootworm Stink Bugs Threecornered Alfalfa Hopper Velvetbean Caterpillar Yellowstriped Armyworm	0.033 - 0.10	2.1 - 6.4	Ground Application: Apply in water in a minimum of 10 gallons of finished spray per acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Apply in sufficient water to obtain uniform coverage as needed.
Aphids Spider Mites Thrips Whitefly	0.06 - 0.10	3.8 - 6.4	
Restrictions:			
<ul style="list-style-type: none"> Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season. To maintain a proper spray interval, do not make applications less than 14 days apart. Do not feed immature plants and peanut hay to livestock. Do not apply within 14 days of harvest (PHI). 			
[*Not registered for sale or use in California.]			

PEARS

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Codling Moth Cutworms Green Fruitworm Leafhoppers Leafminers Leafrollers <i>Lygus</i> spp. Plant Bugs Plum Curculio San Jose Scale (Crawlers) Stink Bugs Tarnished Plant Bugs	0.04 - 0.20	2.6 - 12.8	Ground Application: Apply in water in a minimum of 200 gallons per acre (dilute) and 50 gallons per acre (concentrate). Air Application: Apply in water in a minimum of 10 gallons per acre by air.
Two-spotted Spider Mite Yellow Mite	0.06 - 0.20	3.8 - 12.8	
European Red Mite	0.08 - 0.20	5.12 - 12.8	
Restrictions:			
<ul style="list-style-type: none"> Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season with no more than 0.45 (28.8 ounces formulated) pound active per acre applied after petal fall. To maintain a proper spray interval, do not make applications less than 30 days apart. Do not graze livestock in treated orchards or cut treated cover crops for feed. Do not apply within 14 days of harvest (PHI). 			

ROOT CROPS (except Sugar Beets[*])

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Burdock, edible Carrot	Aphids Beet Armyworm	0.08 - 0.10	5.12 - 6.4	Ground Application: Apply in water in a minimum of 25 gallons of finished spray per

Celeriac Chervil, Turnip rooted Chicory Ginseng Horseradish Parsley, Turnip rooted Parsnip Radish Radish, Oriental Rutabaga Salsify Salsify, Black Salsify, Spanish Skirret Turnip	Celery Leaf-tier Corn Earworm Cross-Striped Cabbageworm Cutworm Species Diamondback moth European Corn Borer Fall Armyworm Flea Beetles Green Cloverworm Hornworms Imported Cabbageworm Loopers Southern Armyworm Spider Mites Tobacco Budworm Velvetbean Caterpillar Whitefly Yellowstriped Armyworm			acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Apply in sufficient water to obtain uniform coverage as needed.
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Restrictions:

- Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season.
- To maintain a proper spray interval, do not make applications less than 7 days apart.
- Do not apply within 21 days of harvest (PHI).

[*Not registered for sale or use in California.]

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Garden Beet	Aphids Flea Beetles Lepidopterous (Larvae) Spider Mites Whitefly	0.08 - 0.10	5.12 - 6.4	Ground Application: Apply in water in a minimum of 25 gallons of finished spray per acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Apply in sufficient water to obtain uniform coverage as needed.

Restrictions:

- Do not apply more than 0.40 lb. a.i. (25.6 ounces formulated) per acre per season.
- To maintain a proper spray interval, do not make applications less than 7 days apart.
- Do not apply within 1 day of harvest (PHI).

SOYBEANS[*]

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Alfalfa Caterpillar Aphids Aster Leafhopper Bean Leaf Beetle Beet Armyworm ¹ Cloverworm Corn Earworm Corn Rootworm (Adults) Cucumber Beetles Cutworms Dectes Stem Borer European Corn Borer Fall Armyworm False Chinch Bug Flea Beetle Grasshoppers Imported Cabbageworm Japanese Beetle (Adults) Leafhoppers Leafminers Loopers Mexican Bean Beetle (Adults) Pea Leaf Weevil Pea Weevil	0.033 - 0.10	2.1 - 6.4	Ground Application: Apply in water in a minimum of 10 gallons per acre. Air Application: Apply in water in a minimum of 2 gallon per acre. ¹ Pyrethroid resistance is common for Beet Armyworm and Tobacco Budworm. Consult your local extension specialist, certified crop advisor, and/or manufacturer for insecticide resistance management and/or IPM guidance for the specific site and resistant pest problems.

Plant Bug Saltmarsh Caterpillar Sap Beetle Southern Armyworm Soybean Aphid Spittle Bugs Stink Bugs Tarnished Plant Bug Thrips Tobacco Budworm ¹ Webworms Western Bean Cutworm Whitefly Velvet Bean Caterpillar Yellowstriped Armyworm			
<i>Lygus</i> spp. Whitefly Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	
Restrictions:			
<ul style="list-style-type: none"> To maintain a proper spray interval, do not make applications less than 30 days apart. Do not apply more than 0.30 lb. a.i. (12.8 ounces formulated) per acre per season. Do not apply within 18 days of harvest (PHI). 			
[*Not registered for sale or use in California.]			

SPINACH

Pests	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Armyworms Colorado Potato Beetle Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Thrips Tomato Hornworm Tomato Pinworm Whitefly	0.033 - 0.10	2.1 - 6.4	<p>Ground Application: Apply in water in a minimum of 10 gallons per acre.</p> <p>Air Application: Apply in water in a minimum of 5 gallons per acre.</p> <p>For whitefly control either at-planting or as a foliar treatment, apply up to 6.4 oz. (0.10 lb. active) per acre being careful not to exceed reapplication intervals or maximum dosage rates specified in this section.</p>
Banks Grass Mite Broad Mite Carmine Mite <i>Lygus</i> spp. Pacific Spider Mite Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	
Restrictions:			
<ul style="list-style-type: none"> To maintain a proper spray interval, do not make applications less than 7 days apart. Do not apply more than 0.40 lb. a.i. (25.6 ounces formulated) per acre per season. Do not apply within 40 days of harvest (PHI). 			

STRAWBERRY

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Aphids Armyworms Flea Beetles <i>Heliothis</i> spp. Leafrollers <i>Lygus</i> spp. Plant Bugs Spittlebugs Stink Bugs Strawberry Clipper	0.04 - 0.20	2.56 - 12.8	<p>Apply when pest populations reach damaging thresholds and repeat as necessary at 7- to 14-day intervals.</p> <p>Aerial Application: Aerial application is prohibited in Florida. Apply specified rate in a minimum of 5 gallons per acre.</p> <p>Ground Application: Apply a full cover spray in a minimum of 50 gallons of finished spray per acre.</p> <p>CALIFORNIA SPECIFIC REQUIREMENTS FOR STRAWBERRY HARVESTERS:</p>

Strawberry Sap Beetle			Harvesters and other personnel performing tasks with all day foliage contact in treated fields within five (5) days of application must wear a long-sleeved shirt, long pants, and shoes plus socks. Following treatment of strawberry fields at rates of Sharda Bifenthrin 2E greater than 0.1 lb. a.i./acre harvesters must wear gloves for five (5) days following application.
Strawberry Root Weevil	0.05 - 0.20	3.2 - 12.8	
Black Vine Weevil			
Spider Mites	0.1 - 0.20	6.4 - 12.8	
Restrictions:			
<ul style="list-style-type: none"> Do not apply more than 0.50 lb. a.i. (32 ounces formulated product) per acre per season. No pre-harvest interval required. 			

SUCCULENT PEAS AND BEANS

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Pea (<i>Pisum</i> spp.) Dwarf Pea Edible-pod Pea English Pea Garden Pea Green Pea Snow Pea Sugar Snap Pea	Aster Leafhopper Flea Beetle Grasshoppers[*] Leafhoppers	0.025 - 0.10	1.6 - 6.4	Ground Application: Apply in water in a minimum of 10 gallons per acre. Air Application: Apply in water in a minimum of 2 gallons per acre. Emulsified oil may be substituted for water.
	Alfalfa Caterpillar Aphids Bean Leaf Beetle Beet Armyworm Cloverworm Corn Earworm Corn Rootworm (Adults) Cucumber Beetle Cutworms European Corn Borer Fall Armyworm Grasshoppers Japanese Beetle (Adults) Loopers Pea Leaf Weevil Pea Weevil Plant Bugs Sap Beetle Southern Armyworm Stink Bugs Tarnished Plant Bug Thrips Webworms Western Bean Cutworm Whitefly Yellowstriped Armyworm	0.033 - 0.10	2.1 - 6.4	
Bean (<i>Phaseolus</i> spp.) Broadbean (Succulent) Lima Bean (Green) Runner Bean Snap Bean Wax Bean	Banks Grass Mite Carmine Mite <i>Lygus</i> spp. Two-spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	See section entitled MIXING INSTRUCTIONS for details on amount of oil to use in the spray tank.
Bean (<i>Vigna</i> spp.) Asparagus Bean Blackeyed Pea Chinese Longbean Cowpea Moth Bean Southern Pea Yardlong Bean Jackbean Pigeon Pea Soybean (Immature Seed) Sword Bean				
Restrictions:				
<ul style="list-style-type: none"> Do not apply more than 0.20 lb. a.i. (12.8 ounces formulated product) per acre per season. Do not apply within 3 days of harvest (PHI). 				
[*Not registered for sale or use in California.]				

TOBACCO

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Armyworm spp. Cutworm spp. Mole Crickets Stalk Borers Tobacco Flea Beetle (Larvae) White Grubs Wireworms	0.0625 - 0.10	4.0 - 6.4	Pre-Transplant Soil Applications: Apply 0.0625 - 0.10 lb. a.i. per acre in a minimum of 10 gallons per acre to control soil pests. Use of suitable equipment to incorporate into top 4" of the soil is required to control below- ground pests. Transplant Water Treatment Application: Apply 0.0625 - 0.10 lb. a.i. per acre in a water treatment application volume of 10 - 200 gallons per acre.
Aphid spp. Armyworm spp.	0.04 - 0.10	2.56 - 6.4	Foliar Applications: Apply 0.04 - 0.10 lb. a.i. per acre foliar application up to and including lay-by in a minimum of 10 gallons

Cutworm spp. Chinch Bugs Flea Beetle (Adults) Cucumber Beetle Grasshoppers Green Bugs Japanese Beetles Saltmarsh Caterpillar Stink Bugs Tarnished Plant Bugs Thrips Tobacco Budworm Tobacco Hornworm Whiteflies			per acre.
Spider Mites <i>Lygus</i> spp.	0.10	6.4	
Restrictions:			
<ul style="list-style-type: none"> For foliar applications, do not make more than 2 applications per season. May be tank mixed with Command®, Spartan®, and other herbicides approved for tobacco use. For all applications, do not apply more than 0.20 lb. a.i. (12.8 ounces formulated) per acre per season. Do not apply later than lay-by. 			

TREE NUTS CROPS

Tree Nut Crops: Almond, Beech nut, Brazil nut, Bitternut, Cashew, Chestnut, Chinquapin, Filbert (hazelnut), Hickory nut, Macadamia nut (bush nut), Pecan, pistachio, and Walnut (Black & English)

Pest	Dosage		Application Instructions
	Lb. A.i./A	Fl. Oz./A	
Black Pecan Aphid Codling Moth Filbert Worm Hickory Shuckworm Leaffooted Bugs Navel Orangeworm Oblique Banded Leafroller Peach Twig Borer Pecan Leaf Casebearer Pecan Nut Casebearer Pecan Phylloxera Plant Bugs Stink Bugs Walnut Aphid Yellow Pecan Aphid	0.052 - 0.20	3.2 - 12.8	<p>Ground Application: Apply as a dilute (minimum of 200 gallons of finished spray per acre) or concentrate (minimum of 50 gallons of finished spray per acre) spray in sufficient water to provide thorough coverage.</p> <p>Air Application: Apply in a minimum of 10 gallons of finished spray per acre.</p>
European Red Mite Pecan Weevil Spider Mites	0.08 - 0.20	5.1 - 12.8	
Walnut Husk Fly	0.10 - 0.20	6.4 - 12.8	
Restrictions:			
<ul style="list-style-type: none"> Minimum spray intervals: Apply [GCS Bifenthrin 2EC] {or} [this product] as needed to maintain control, but not apply at intervals sooner than 15 days. Observe a 21-day Pre-Harvest Interval (PHI) for Pecans and a 7-day Pre-Harvest Interval (PHI) for all other registered tree nut crops. Do not exceed 0.20 lb. a.i. per acre per application; do not exceed 0.50 lb. a.i. per acre per season. Do not graze livestock in treated orchards or cut treated cover crops for feed. Do not apply within 21 days of harvest (PHI) for Pecans. Do not apply within 7 days of harvest (PHI) for all other nut crops. 			

TUBEROUS AND CORM VEGETABLES

Crop	Pest	Dosage		Application Instructions
		Lb. A.i./A	Fl. Oz./A	
Arracacha Arrowroot Chinese Artichoke Jerusalem Artichoke Edible Canna Cassava (Bitter and Sweet) Chayote (Root)	Corn Wireworm	0.30	19.2	<p>In-Furrow planting Time Treatment: [GCS Bifenthrin 2EC] {or} [this product] may be applied as an in-furrow planting time treatment for the control of wireworms, rootworms, and white grubs. Apply [GCS Bifenthrin 2EC] {or} [this product] at the rate of 0.30 lb. a.i. per acre as an in-furrow spray or T-band spray at-planting time.</p> <p>Lay-By Treatment: [GCS Bifenthrin 2EC] {or} [this</p>
	Tobacco Wireworm	(at-plant)	(at-plant)	
	Japanese Beetle	0.05 - 0.15	3.2 - 9.6	
	Grubs	(lay-by)	(lay-by)	
	June Beetle			
	Southern Potato Wireworm			
Banded Cucumber Beetle	0.033 - 0.10	2.1 - 6.4		
Black Flea Beetle	(foliar)	(foliar)		
Cucumber Beetle				

Chufa Dasheen (Taro) Ginger Leren Potato Sweet Potato Tanier Turmeric Yam Bean True Yam	Rootworms Sugarcane Beetle Sweet Potato Flea Beetle Sweet Potato Weevil Whitefringed Beetle White Grub		product] may be applied as a lay-by treatment for the control of wireworms, rootworms, and white grubs. Apply [GCS Bifenthrin 2EC] {or} [this product] to the drill area and cover with soil utilizing cultivation equipment set to throw soil to the drill area. Apply [GCS Bifenthrin 2EC] {or} [this product] as a banded spray over the row at a rate of 0.05 - 0.15 lb. a.i. per acre (3.2 - 9.6 ounces formulated) in 10 gallons per acre of spray. Foliar Spray: [GCS Bifenthrin 2EC] {or} [this product] may be applied as a foliar spray for the control of the adult life stages of flea beetles, click beetles (wireworms), cucumber beetles (rootworms), whitefringed beetles, and May/June beetles (white grubs). Apply [GCS Bifenthrin 2EC] {or} [this product] at the rate of 0.033 - 0.10 lb. a.i. per acre (2.1 - 6.4 ounces formulated) in 10 gallons of spray by ground and 3 gallons of spray by air.
Restrictions: <ul style="list-style-type: none"> • For foliar applications, do not make more than 2 foliar applications per season and do not make application less than 21 days apart. • Do not apply more than 0.50 lb. a.i. (32 ounces formulated) per acre per season, including soil applications. • Do not apply within 21 days of harvest (PHI). 			

ORNAMENTALS* - USE INSTRUCTIONS

TO CONTROL LISTED INSECT PESTS ON ORNAMENTALS AND TREES (INCLUDING FIELD AND CONTAINER GROWN NURSERY STOCK¹, CHRISTMAS TREES, INTERIORSCAPES AND PLANTSCAPES², LAWNS², TREES² AND SHRUBS², AND ON GOLF COURSES² AND SOD FARMS¹).

*NOT REGISTERED FOR SALE OR USE IN CALIFORNIA.

¹Agricultural uses covered by WPS.

²Non-agricultural uses not covered by WPS.

Do not use this product on golf courses and sod farms in Nassau or Suffolk County, New York.

For use on plants intended for aesthetic purposes or climatic modifications and being grown in interior plantscapes and on outdoor ornamentals, Christmas trees, nurseries, lawns, sod farms and golf courses.

[GCS Bifenthrin 2EC] {or} [this product] mixes with water and other aqueous carriers to control a broad assortment of insects and mites on trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in interiorscapes, including: hotels, shopping malls, office buildings, and outdoor plantscapes nurseries, residential dwellings, parks, institutional buildings, recreational areas, athletic fields, golf courses, sod farms, and home lawns. Non-bearing crops are perennial crops that will not produce a harvestable raw agricultural commodity in 365 days following application.

[GCS Bifenthrin 2EC] {or} [this product] may be tank-mixed with other products, including insect growth regulators. When tank mixing [GCS Bifenthrin 2EC] {or} [this product] with other products observe all precautions and limitations on each separate product label. The addition of spreader stickers is not necessary. The physical compatibility of [GCS Bifenthrin 2EC] {or} [this product] may vary with different sources of pesticide products, and local cultural practices. Any tank mixture which has not been previously tested must be prepared on a small scale (pint or quart jar), using the proper proportions of chemicals and water to ensure the physical compatibility of the mixture.

The following procedure is recommended for preparation of a new tank mix, unless specified otherwise in label directions:

1. Add wettable powders to tank water
2. Agitate
3. Add fluids and flowables
4. Agitate
5. Add emulsifiable concentrates
6. Agitate

If a mixture is found to be incompatible following the order of addition, try reversing the order of addition, or increase the volume of water. **Note:** If the tank mixture is found to be compatible after increasing the amount of water then the sprayer will need to be recalibrated for a higher volume application. Do not allow tank mix to stand overnight. When using tank mixes, observe all restrictions and precautions which appear on the labels of these products. Provide constant agitation to keep the mixture in solution.

APPLICATION INSTRUCTIONS

**TRUNK SPRAYS TO ORNAMENTAL TREES (including Christmas trees)
For Control of Bark Beetles and Boring Beetles**

Refer to the table below. Application rates and timing differ according to the target pest and other factors specific to each local situation. Consult your local State Extension specialist or other qualified expert for recommendations. **Note:** Do not apply more than 12.8 fl. oz. (0.20 lb. a.i.) per acre of this product to trees. Repeat application may be necessary if reinfestation is likely.

Pest	Dosage	Spray Volume	Remarks and Restrictions
Dendroctonus bark beetles such as mountain pine beetle, Southern pine beetle, Western pine beetle, and black turpentine beetle.	16 - 32 fl. oz. per 100 gallons (0.25 - 0.50 lb. a.i. per 100 gallons)	Use 1 - 4 gallons of finished spray per tree.	Make applications to the trunk of the tree with a hydraulic sprayer in the early spring or prior to adult beetle flight and tree infestation.
Engraver beetle (<i>Ips</i> spp.)	16 - 32 fl. oz. per 100 gallons (0.25 - 0.50 lb. a.i. per 100 gallons)	Use 10 - 14 gallons of finished spray per tree.	Apply spray directly to the main trunk from the base of the tree to at least half-way into the live crown. Spray until the bark is thoroughly wet.
Other bark beetles such as ambrosia beetles, elm bark beetles, and metallic wood borers such as emerald ash borer.	16 - 32 fl. oz. per 100 gallons (0.25 - 0.50 lb. a.i. per 100 gallons)	Use 2 - 5 gallons of finished spray per tree.	Make applications of a spray mixture to the trunk, scaffolding and limbs of the tree with a hydraulic sprayer in the early spring or prior to adult beetle flight and tree infestations. Spray until the bark is thoroughly wet.
Clearwing moth borers such as ash borer, banded ash clearwing, dogwood borer, lesser peachtree borer, lilac borer, oak borer, peachtree borer, and rhododendron borer.	6.4 - 12.8 fl. oz. per 100 gallons (0.10 - 0.20 lb. a.i. per 100 gallons)	Use 1 - 4 gallons of finished spray per tree.	Apply to the branches and trunks prior to adult emergence. Spray until the bark is thoroughly wet. For maximum residual control, use highest recommended label rate.
Coleopteran borers such as bronze birch borer and flatheaded apple tree borer.			

Treatment of Infested Trees to Control Emerging Brood

Make applications of a spray mixture containing 2 pints of [GCS Bifenthrin 2EC] {or} [this product] per 100 gallons of water to trees that still have beetles in the bark. Apply spray directly to the main trunk from the base of the tree to at least half-way into the live crown. Spray until the bark is thoroughly wet (usually 1 - 4 gallons of spray per tree). Do not apply more than 0.20 lb. a.i. (12.8 fl. oz.) of this product to trees per acre.

Trees on which all needles have turned brown generally have been vacated and must not be sprayed unless infestation is confirmed. To confirm an infestation, scrape off the outer bark to determine if trees are still infested. If live infestations remain in the trunks, fell the trees, and cut into sections. Spray the trunk and large limbs and turn sections so that all of the surface area can be treated. Do not apply more than 0.20 lb. a.i. (12.8 fl. oz.) of this product to trees per acre.

FOLIAR SPRAYS TO ORNAMENTALS AND TREES

(Field and Container Grown Nursery Stock, Christmas Trees, Interiorscapes and Plantscapes, Lawns, Trees and Shrubs, and on Golf Courses and Sod Farms)

For applications to ornamentals (trees, shrubs, ground covers, bedding plants and foliage plants, conifers (field and container grown), Christmas Trees and pine seed orchards) apply 0.04 - 0.32 fl. oz. [GCS Bifenthrin 2EC] {or} [this product] per 1,000 sq. ft. or 1.8 - 14.4 fl. oz. per 100 gallons. [GCS Bifenthrin 2EC] {or} [this product] may be diluted and applied in various volumes of water providing that the maximum label rate (0.32 fl. oz. per 1,000 sq. ft. or 14.4 fl. oz. per 100 gallons) is not exceeded. [GCS Bifenthrin 2EC] {or} [this product] may be applied through low volume application equipment by dilution with water or other carriers and providing that the maximum label rate (0.32 fl. oz. per 1,000 sq. ft. or 14.4 fl. oz. per 100 gallons) is not exceeded.

Calculating Dilution Rates Using the Ornamental Application Rates Table and the GCS Bifenthrin 2EC Dilution Chart

Use the following steps to determine the appropriate dilution of this product required to control the specific pests:

1. Find the least susceptible target pest (the pest that requires the highest labeled application rate for control).
2. Select an application rate in terms of fluid ounces of this product.
3. Find your application volume and how much spray you want to prepare.
4. Use the **GCS BIFENTHRIN 2EC ORNAMENTAL DILUTION CHART** to determine the appropriate volume of this product that must be mixed in your desired volume of water.

For example, to control black vine weevil adults on rhododendron, the **ORNAMENTAL AND TREE FOLIAR APPLICATION RATES** table shows that 0.08 - 0.16 fl. oz. of this product must be applied per 1,000 sq. ft. You select an application rate of 0.16 fl. oz. per 1,000 sq. ft. because maximum residual control is desired. Your application volume is approximately 300 gallons per acre which is equivalent to 6.9 gallons per 1,000 sq. ft. Consulting the **GCS BIFENTHRIN 2EC ORNAMENTAL DILUTION CHART** shows that you must dilute 0.24 fl. oz. of this product in 10 gallons of water.

GCS BIFENTHRIN 2EC ORNAMENTAL DILUTION CHART				
Application Rate	Fluid Ounces (mL) of GCS Bifenthrin 2EC diluted to the Volumes of Finished Spray			
	1 Gallon	5 Gallons	10 Gallons	100 Gallons

Fl. Oz./1,000 Sq. Ft.	Fl. Oz.	mL	Fl. Oz.	mL	Fl. Oz.	mL	Fl. Oz.
0.04	0.018	0.5	0.09	2.6	0.18	5.3	1.8
0.08	0.036	1.1	0.18	5.3	0.36	10.6	3.6
0.16	0.072	2.1	0.36	10.6	0.72	21.3	7.2
0.32	0.144	4.3	0.72	21.3	1.44	42.6	14.4

(7.9)(Fl. Oz. of **GCS Bifenthrin 2EC** added to tank = Percent Active Ingredient of Spray Mix
(gallons of finished spray mix)(128)

ORNAMENTAL AND TREE FOLIAR APPLICATION RATES

The application rates listed in the following table will provide control of the noted pests under typical conditions. However, at the discretion of the applicator, this product may be applied at up to 0.32 fl. oz. per 1,000 sq. ft. (14.4 fl. oz. per 100 gallons) to control each of the pest listed in this table. The higher application rates must be used when maximum residual control is desired.

Pest	Dosage	Remarks and Restrictions
Bagworms ¹ Cutworms Elm Leaf Beetles Fall Webworms Gypsy Moth Caterpillars Lace Bugs Leaf Feeding Caterpillars Tent Caterpillars Tussock Moth	0.04 - 0.08 fl. oz. per 1,000 sq. ft. (1.8 - 3.8 fl. oz. per 100 gallons)	¹ Bagworms: For best results, apply when larvae begin to hatch and spray larvae directly. Applications when larvae are young will be most effective. ² Beetles, Scale Crawlers, Twig Borers, and Weevils: May treat trunks, stems, and twigs in addition to plant foliage. ³ Spider Mites: [GCS Bifenthrin 2EC] {or} [this product] provides optimal two-spotted spider mite control when applied during spring to mid-summer. Higher application rates and/or more frequent treatments may be required for acceptable two-spotted spider mite control during mid- to late-summer. The addition of a surfactant or horticultural oil may increase the effectiveness of this product. Combinations of this product with other registered miticides have also proven effective. Alternately, [GCS Bifenthrin 2EC] {or} [this product] applications may be rotated with those of other products that have different modes of action in control programs that are designed to manage resistance by two-spotted spider mites. Consult your local Cooperative Extension Service for resistance management recommendations in your region.
Adelgids Ants Aphids Bees Beet Armyworm Beetles ² Black Vine Weevil (Adults) Scales, such as Brown Soft Scales California Red Scale (Crawlers) ² Elongated Hemlock Scale Pine Needle Scales (Crawlers) ² San Jose Scales (Crawlers) ² Broad Mites Budworms Cicadas Citrus Thrips Clover Mites Crickets Earwigs European Red Mite Flea Beetles Fungus Gnats (Adults) Glassy-winged Sharpshooter Grasshoppers Japanese Beetle (Adults) Leafhoppers Leafrollers Mealybugs Mites Spruce Spider Mite Mosquitoes Nantucket Pine Tip Moth Pillbugs Pine Sawflies Plant Bugs (including <i>Lygus</i> spp.) Psyllids Scorpions Spider Mites ³ Spiders Spittlebugs	0.08 - 0.16 fl. oz. per 1,000 sq. ft. (3.6 - 7.2 fl. oz. per 100 gallons)	

Thrips Tip Moths Treehoppers Twig Borers ² Wasps Weevils ² such as White Pine Weevil Pales Weevil Diaprepes (Adults) Orchid Weevil Whiteflies Zimmerman Pine Moths		
Leafminers Pecan Leaf Scorch Mite Pine Shoot Beetle (Adults) Spider Mites ³	0.16 - 0.32 fl. oz. per 1,000 sq. ft. (7.2 - 14.4 fl. oz. per 100 gallons)	

BROADCAST SPRAYS TO TURFGRASS (including lawns, golf courses, sod farms, parks, etc.)

Apply [GCS Bifenthrin 2EC] {or} [this product] as a broadcast treatment. Use higher volumes up to 10 gallons of carrier per 1,000 square feet to get uniform coverage when treating dense grass foliage.

For low water volume usage, less than 2 gallons/1,000 sq. ft., addition of a non-ionic or silicone-based surfactant (0.25% v/v) is recommended. Irrigation to treated area within a few hours following application can improve efficacy to sub-surface pests such as, but not limited to, mole crickets.

Restrictions:

- In New York State, this product may NOT be applied to any grass or turf area within 100 ft. of a water body (lake, pond, river, stream, wetland, or drainage ditch).
- In New York State, do not make a single repeat application of this product if there are signs of renewed insect activity, but not sooner than 2 weeks after the first application.
- Do not use this product on golf courses and sod farms in Nassau or Suffolk County, New York.

Spray Drift Precautions (For Turf & Ornamental Uses)

- Do not apply when wind conditions favor downwind drift to nearby water bodies.
- Do not apply when wind velocity exceeds 10 mph. Avoid application when wind gusts approach 10 mph.
- Apply using nozzles that provide the largest droplet size compatible with adequate coverage

Turfgrass Application Rates

The application rates listed in the following table will provide control of the respective pests under typical conditions. However, at the discretion of the applicator, [GCS Bifenthrin 2EC] {or} [this product] may be applied at up to 0.32 fl. oz. per 1,000 sq. ft. to control each of the pests listed in this table. The higher application rates must be used when maximum residual control is desired or heavy pest populations occur.

Pest	Dosage
Armyworms ¹ Cutworms ¹ Sod Webworm ¹	0.05 - 0.08 fl. oz. per 1,000 sq. ft.
Annual Bluegrass Weevil (<i>Hyperodes</i>) (Adults) ² Banks Grass Mite ⁶ Billbugs (Adults) ³ Black Turfgrass Ataenius (Adults) ⁴ Crickets Earwigs Grasshoppers Mealybugs Mites ⁶	0.08 - 0.16 fl. oz. per 1,000 sq. ft.
Ants Chinch Bugs ⁵ Japanese Beetle (Adults) Mole Cricket (Adults) ⁹ Mole Cricket (Nymph) ¹⁰	0.16 - 0.32 fl. oz. per 1,000 sq. ft.

¹**Armyworms, Cutworms and Sod Webworms:** To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the grass area is being maintained at a mowing height of greater than 1", then higher application rates (up to 0.32 fl. oz. per 1,000 sq. ft.) may be required during periods of high pest pressure.

²**Annual Bluegrass Weevil (*Hyperodes*) adults:** Applications must be timed to control adult weevils as they leave their overwintering sites and move into grass areas. This movement generally begins when Forsythia is in full bloom and concludes when flowering dogwood (*Cornus florida*) is in full bloom. Consult your State Cooperative Extension Service for more specific information regarding application timing.

³**Billbug adults:** Applications must be made when adult billbugs are first observed during April and May. Degree day models have been developed

to optimize application timing. Consult your State Cooperative Extension Service for information specific to your region. In temperate regions, spring applications targeting billbug adults will also provide control of over-wintered chinch bugs.

⁴Black Turfgrass Ataenius adults: Applications must be made during May and July to control the first and second generation of black turfgrass ataeenius adults, respectively. The May application must be timed to coincide with the full bloom stage of Vanhoutte spiraea (*Spiraea vanhouttei*) and horse chestnut (*Aesculus hippocastanum*). The July application must be timed to coincide with this blooming of Rose of Sharon (*Hibiscus syriacus*).

⁵Chinch Bugs: Chinch Bugs infest the base of grass plants and are often found in the thatch layer. Irrigation of the grass area before treatment will optimize the penetration of the insecticide to the area where the chinch bugs are located. Use higher volume applications if the thatch layer is excessive or if a relatively long mowing height is being maintained. Chinch bugs can be one of the most difficult pests to control in grasses and the higher application rates (up to 0.32 fl. oz. per 1,000 sq. ft.) may be required to control populations that contain both nymphs and adults during the middle of the summer.

⁶Mites: To ensure optimal control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application, five to seven days after the first, may be necessary to achieve acceptable control.

⁹Mole Cricket adults: Achieving acceptable control of adult mole crickets is difficult because preferred grass areas are subject to continuous invasion during the early spring by this extremely active stage. Applications must be made as late in the day as possible and must be watered in with up to 0.50" of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized. Gross areas that receive pressure from adult mole crickets must be treated at peak egg hatch to ensure optimum control of subsequent nymph populations (see below).

¹⁰Mole Cricket nymphs: Grass areas that received intense adult mole cricket pressure in the spring must be treated immediately prior to peak egg hatch. Optimal control is achieved at this time because young nymphs are more susceptible to insecticides and they are located near the soil surface where the insecticide is most concentrated. Control of larger, more damaging nymphs later in the year may require both higher application rates and more frequent applications to maintain acceptable control. Applications must be made as late in the day as possible and must be watered in with up to 0.50" of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized.

GCS BIFENTHRIN 2EC LAWN DILUTION CHART

Application Volume: Gallons/ 1,000 Sq. Ft.	Application Rate: Fl. Oz./ 1,000 Sq. Ft.	Fluid Ounces (mL) of GCS Bifenthrin 2EC diluted to the Volumes of Finished Spray						
		1 Gallon		5 Gallons		10 Gallons		100 Gallons
		Fl. Oz.	mL	Fl. Oz.	mL	Fl. Oz.	mL	Fl. Oz.
1	0.05	0.05	1.48	0.25	7.39	0.50	14.8	5.00
1	0.08	0.08	2.37	0.40	11.83	0.80	23.7	8.00
1	0.16	0.16	4.73	0.80	23.66	1.60	47.3	16.00
1	0.32	0.32	9.46	1.60	47.32	3.20	94.6	32.00
2	0.05	0.025	0.74	0.13	3.70	0.25	7.4	2.50
2	0.08	0.040	1.18	0.20	5.91	0.40	11.8	4.00
2	0.16	0.080	2.37	0.40	11.83	0.80	23.7	8.00
2	0.32	0.160	4.73	0.80	23.66	1.60	47.3	16.00
3	0.05	0.017	0.49	0.08	2.46	0.17	4.9	1.67
3	0.08	0.027	0.79	0.13	3.94	0.27	7.9	2.67
3	0.16	0.053	1.58	0.27	7.89	0.53	15.8	5.33
3	0.32	0.107	3.15	0.53	15.77	1.07	31.5	10.67
4	0.05	0.013	0.37	0.06	1.85	0.13	3.7	1.25
4	0.08	0.020	0.59	0.10	2.96	0.20	5.9	2.00
4	0.16	0.040	1.18	0.20	5.91	0.40	11.8	4.00
4	0.32	0.080	2.37	0.40	11.83	0.80	23.7	8.00
5	0.05	0.010	0.30	0.05	1.48	0.10	3.0	1.00
5	0.08	0.016	0.47	0.08	2.37	0.16	4.7	1.60
5	0.16	0.032	0.95	0.16	4.73	0.32	9.5	3.20
5	0.32	0.064	1.89	0.32	9.46	0.64	18.9	6.40
10	0.05	0.005	0.15	0.03	0.74	0.05	1.5	0.50
10	0.08	0.008	0.24	0.04	1.18	0.08	2.4	0.80
10	0.16	0.016	0.47	0.08	2.37	0.16	4.7	1.60
10	0.32	0.032	0.95	0.16	4.73	0.32	9.5	3.20

Attention

- Do not apply to pets, crops, or sources of electricity.
- Firewood is not to be treated.
- Do not allow spray to contact food, foodstuffs, food contacting surfaces, food utensils or water supplies.
- Do not apply this pesticide in livestock buildings (barns).
- Keep children and pets off treated areas following application until the spray has dried.
- Do not apply by air.
- Do not use in greenhouses.
- Do not apply this product through any type of irrigation system. Do not apply when a temperature inversion exists.
- Do not apply for surface feeding pests if rain is expected within 12 hours (or whatever time is necessary for the spray to dry).
- For turf treatment, apply with nozzles not more than 2 ft. above the grass.
- Do not apply within 25 ft. of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds.

- Do not apply when grass areas are waterlogged or the soil is saturated with water (i.e., will not accept irrigation).
- Vinyl and Aluminum Siding: Do not spray directly onto vinyl or aluminum siding. If [GCS Bifenthrin 2EC] {or} [this product] inadvertently contacts vinyl and aluminum siding (particularly lightly colored, aged, weathered, or otherwise damaged), it may result in staining, bleaching or discoloration. Wash off thoroughly with detergent and water. Factors such as extreme heat and direct sunlight can promote damage when using emulsifiable concentrates. Avoid application to vinyl or aluminum siding while exposed to direct sunlight or during the heat of the day.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE:

Keep out of reach of children and animals. Store in original containers only, in a cool, dry place and avoid excess heat. Do not freeze. Do not store below 40°F. Carefully open containers. If crystals are observed, warm material to above 60°F by placing container in warm location. Shake or roll container periodically to redissolve solids. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

In case of spill, avoid contact, isolate area, and keep out animals and unprotected persons. Confine spills. **To confine spill:** If liquid, dike surrounding area or absorb with sand, cat litter, or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

PESTICIDE DISPOSAL:

Pesticide wastes are toxic. 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 of the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

[For plastic containers less than or equal to 5 gallons: 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 by incineration.]

[For plastic containers greater than 5 gallons: 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. Fill the container ¼ full with water. Recap 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.]

[Returnable/Refillable Containers: Refill this container with pesticide only. Do not reuse this container for any other purpose. Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase. 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.]

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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. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of Generic Crop Science, LLC or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Generic Crop Science, LLC and Seller harmless for any claims relating to such factors.

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