



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

April 15, 2020

Timothy M. Formella  
Senior Product Registration Manager  
FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104

Subject: Label Amendment – Adding eye protection early-entry PPE requirements and restricted usage in California for Leafy Vegetables, Leafy Brassica Greens, Pome Fruits and Stone Fruits  
Product Name: F9114 EC INSECTICIDE  
EPA Registration Number: 279-3426  
Application Dates: January 9, 2020; February 12, 2020  
Decision Numbers: 559284, 561119

Dear Mr. Formella:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is 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.

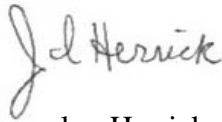
A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or 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.

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

Page 2 of 2  
EPA Reg. No. 279-3426  
Decision Nos. 559284, 561119

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 Dr. Helen Hull-Sanders by phone at 703-347-0243, or via email at [hull-sanders.helen@epa.gov](mailto:hull-sanders.helen@epa.gov).

Sincerely,

A handwritten signature in cursive script that reads "J. Herrick".

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

Enclosure

# RESTRICTED USE PESTICIDE

Due to toxicity to fish and aquatic organisms  
For retail sale to and use only by certified applicators, or persons under their direct supervision and only for those uses covered by the certified applicator's certification.

ZETA-CYPERMETHRIN

GROUP

3A

INSECTICIDE

## F9114 EC Insecticide

[ABN: Mustang Maxx Insecticide]

EPA Reg. No. 279-3426

EPA Est.

### Active Ingredient:

Zeta-cypermethrin\* S-Cyano (3-phenoxy-phenyl)methyl (+) cis/trans 3-(2,2-dichloro-ethenyl)-2,2 dimethylcyclopropane carboxylate.....

By Wt.

9.15%

### Other Ingredients\*\*

90.85%

100.0%

Contains 0.8 pounds active ingredient per gallon.

\* Cis/trans ratio: Max. 75% (±) cis and min. 25% (±) trans

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

FIRST AID	
<b>If Swallowed:</b>	<ul style="list-style-type: none"><li>- Call a poison control center or doctor immediately for treatment advice.</li><li>- Do not give liquid to the person.</li><li>- Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>- Do not give anything by mouth to an unconscious person.</li></ul>
<b>If in Eyes:</b>	<ul style="list-style-type: none"><li>- Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li><li>- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes.</li><li>- Call a poison control center or doctor for treatment advice.</li></ul>
<b>If on Skin or Clothing:</b>	<ul style="list-style-type: none"><li>- Take off contaminated clothing.</li><li>- Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>- Call a poison control center or doctor for treatment advice.</li></ul>
<b>If Inhaled:</b>	<ul style="list-style-type: none"><li>- Move person to fresh air.</li><li>- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>- Call a poison control center or doctor for further treatment advice</li></ul>
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.	
NOTE TO PHYSICIAN	
Contains petroleum distillate. Induced vomiting as first aid for this substance may result in increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent. Vomiting should be induced only under professional supervision. Skin exposure may also result in a sensation described as a tingling, itching, burning, or prickly feeling. Onset may occur immediately to 4 hours after exposure and may last 2 to 30 hours, without damage.	

### Net Contents:

Sold By  
FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104

**ACCEPTED**

04/15/2020

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under  
EPA Reg. No. 279-3426

## **PRECAUTIONARY STATEMENTS**

### **Hazards to Humans and Domestic Animals**

## **WARNING**

Contains Petroleum Distillate. May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Avoid contact with skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. 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. Wear protective eyewear (goggles, face shield, or safety glasses). Wear long-sleeved shirt and long pants, socks, shoes, and chemical resistant gloves (such as Barrier Laminate, Butyl Rubber, Viton, Barrier Laminate, Viton, Selection Category F, G).

### **Personal Protective Equipment:**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS. Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

Handlers who may be exposed to the dilute through application or other tasks must wear: Long-sleeved shirt and long pants, chemical-resistant gloves, such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate, and shoes plus socks. Wear protective eyewear such as goggles, face shield, or safety glasses.

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, such as Nitrile, Butyl, Neoprene, and/or Barrier Laminate, shoes plus socks, and protective eyewear such as goggles, face shield, or safety glasses.

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

### **User Safety Recommendations**

Users should:

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

### **Environmental Hazards**

This pesticide is extremely toxic to fish, aquatic invertebrates, oysters and shrimp. 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 apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash waters.

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

### **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.

### **Insect Resistance Management**

For resistance management, F9114 EC Insecticide contains a Group 3A insecticide. Any insect population may contain individuals naturally resistant to F9114 EC Insecticide and other Group 3A insecticides. The resistant individuals may dominate the insect population if this group of insecticides is used repeatedly in the same fields. Appropriate resistance-management strategies should be followed. To delay insecticide resistance, take the following steps:

- Rotate the use of F9114 EC Insecticide or other Group 3A insecticides within a growing season, or among growing seasons, with different groups that control the same pests.
- Use tank mixtures with insecticides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
  - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
  - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
  - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pests.
  - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
  - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticidal activity may offer an insect resistance management benefit only for the period where both insecticides are active.
- 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.
- Adopt an integrated pest management program for insecticides that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which considers cultural, biological, and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.

### **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, such as Barrier Laminate or Viton, shoes plus socks and protective eyewear such as goggles, face shield, or safety glasses.

## **Storage and Disposal**

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

**Pesticide Storage:** Store in a cool, dry, well-ventilated place under lock and key. Do not store below - 6.6°C (20°F). Do not use near heat, open flame or hot surfaces. Always store pesticides in the original container. Store away from food, pet food, feed, seed, fertilizers, and veterinary supplies. Place liquid formulations on lower shelves and dry formulations above. In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call CHEMTREC (Transportation and Spills): (800) 424-9300.

**Pesticide Disposal:** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

### **Container Handling**

**Nonrefillable Container:** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows:

**For containers equal to 5 gallons or less:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or incineration, or by other procedures approved by state and local authorities.

**For containers greater than 5 gallons:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or incineration, or by other procedures approved by state and local authorities.

### **Returnable/ Refillable Container.**

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. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or incineration, or by other procedures approved by state and local authorities.

## **Product Information**

### **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 any 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 nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must also 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.

F9114 EC Insecticide should be applied continuously for the duration of the water application. F9114 EC Insecticide should be diluted in sufficient volume to insure accurate application over the area to be treated. Use the appropriate amount of water to carry the product to the target pest. Agitation is not required when a suitable diluent is used.

## **BUFFER ZONES**

### **Vegetative Buffer Zones**

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

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

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: *Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21pp. [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs143\\_023819.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_023819.pdf).*

**Buffer Zone for Ground Application (groundboom, overhead chemigation, or airblast)** – Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

**Buffer Zone for ULV Aerial Application** - Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

**Buffer Zone for Non-ULV Aerial Application** – Do not apply within 150 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

## **Spray Drift Requirements**

### **Wind Direction and Speed**

Only apply this product if the wind direction favors on-target deposition. Do not apply when the wind velocity exceeds 15 mph.

### **Temperature Inversion**

Do not make aerial or ground applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid



areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface. Smoke that layers and moves laterally indicates an inversion.

### **Droplet Size**

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

### **Additional Requirements for Ground Applications**

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application. For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

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

### **Additional Requirements for Aerial Applications**

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

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

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

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

## **APPLICATION INSTRUCTIONS**

Use low rate under light to moderate infestation. Higher listed rates should be used under heavy insect pressure. The rate of application is variable according to insect pressure, timing of spray and field scouting. Do not exceed maximum allowable rate.

### **Preventive Use**

For cutworm, armyworm, or stalk borer control, F9114 EC Insecticide may be applied before, during, or after planting. For soil-incorporated applications, use higher rates for improved control. Do not exceed maximum allowable rate.

### **Rotational Crops**

With the exception of the crops listed below, do not plant rotational crops within 30 days of last application.

### **Tank-Mixture**

F9114 EC Insecticide may be applied in tank mixtures with other products approved for use on Alfalfa and Nongrass Animal Feeds; Artichoke, globe; Avocado; Barley; Berries; Black Sapote; Brassica Vegetables; Buckwheat; Bulb Vegetables; Canistel; Canola (Rapeseed); Corn; Cotton; Cucurbit Vegetables; Fruiting Vegetables; Grapes; Grass Forage, Fodder and Hay and Grass Grown for Seed; Leafy Vegetables; Legume Vegetables; Mamey Sapote; Mango; Oats; Papaya; Peanut; Pistachios; Pome Fruits; Rice; Root and Tuber Vegetables; Rye; Safflower; Sapodilla; Sorghum; Soybeans; Star Apple; Stone Fruits; Sugar Beets; Sugarcane; Sunflower; Tree Nuts; and Wheat. Follow the most restrictive directions and precautions which appear on the labels of these products. Test for compatibility of products before mixing.



**Maximum Usage When Applying Both Zeta-Cypermethrin and Cypermethrin Products to the Same Crop Within the Same Season.**

Do not apply more than the maximum seasonal total for either active ingredient when used alone, and do not apply more than the combined maximum seasonal total for both active ingredients as outlined in the table below.

Crop	Maximum Seasonal Total (lbs ai/acre)		Maximum Seasonal Total (lbs ai/acre) When Applying Cypermethrin and Zeta-Cypermethrin Products to the Same Crop	Maximum Seasonal Total (lbs ai/acre) When Applying Zeta- cypermethrin Products to the Same Crop
	Zeta-cypermethrin <i>F9114 EC Insecticide</i>	Cypermethrin	Zeta-cypermethrin plus Cypermethrin	Zeta-cypermethrin
Cotton	0.15	0.6	0.6	0.3
Field Corn	0.10	NA	NA	0.2
Sweet Corn	0.15	NA	NA	0.3
Eggplant	0.15	NA	NA	0.3
Pepper (Bell & Non-Bell)	0.15	NA	NA	0.3
Tomato	0.15	NA	NA	0.3
Head Lettuce	0.15	0.6	0.6	0.3
Head and Stem Brassica	0.15	0.6	0.6	0.3
Succulent Peas and Beans	0.15	NA	NA	0.3
Pecans	0.15	0.6	0.6	0.3
NA = Not Applicable				

**Maximum Seasonal Usage and PHI (Pre-Harvest Interval) for F9114 EC Labeled Crops**

Crop	Maximum Seasonal Total/Acre for F9114 EC		PHI (days)
	lbs ai	fl oz	
Alfalfa	0.05/cutting with a maximum of 3 cuttings per season, 0.15/season	8.0/cutting with a maximum of 24.0 per season	3 (cutting or grazing) 7 (harvesting seed)
Nongrass Animal Feeds (Forage, Fodder, Straw and Hay) Group except Alfalfa	0.025/cutting with a maximum of 3 cuttings per season, 0.75/season	4.0/cutting with a maximum of 12.0 per season	3 (cutting or grazing) 7 (harvesting seed)
Avocado, Black Sapote, Canistel, Mamey Sapote, Mango, Papaya, Sapodilla, Star Apple	0.15	24.0	1
Artichoke, globe	0.1	16.0	5
Barley	0.125	20.0	14
Berries	0.15	24.0	1
Brassica Vegetables	0.15	24.0	1
Bulb Vegetables	0.125	20.0	7
Citrus	0.1	16.0	1
Corn, sweet	0.15	24.0	3
Corn, field, seed, pop	0.10	16.0	7 (grain, stover, and forage)
Cotton	0.15	24.0	14
Cucurbit Vegetables	0.15	24.0	1
Fruiting Vegetables	0.15	24.0	1
Grapes	0.15	24.0	1
Grass Forage, Fodder, and Hay Group and Grass Grown for Seed	0.025/cutting	4.0/cutting	0 (Forage and Hay) 7 (Straw and Seed Screenings)
	Hay 0.10/season	16.0	
	Forage, Straw & Seed Screenings 0.125/season	20.0	
Leafy Vegetables	0.15	24.0	1
Legume Vegetables	0.15	24.0	1 (succulent shelled or edible-podded) 21 (dried shelled)
Oats	0.125	20.0	14
Canola (Rapeseed)	0.15	24.0	7
Pistachio	0.125	20.0	7
Safflower	0.075	12.0	14
Sunflower	0.125	20.0	30
Peanut	0.15	24.0	7
Pome Fruits	0.15	24.0	14
Rice and Wild Rice	0.10	16.0	14
Root and Tuber Vegetables (except Sugar Beet)	0.15	24.0	1
Rye	0.125	20.0	14
Sod Farms	0.125/season	20.0	0
Sorghum	0.125	20.0	14 (grain & fodder (stover)) 45 (forage (silage))
Soybeans	0.15	24.0	21
Stone Fruits	0.15	24.0	14
Sugar Beets	0.075	12.0	50
Sugarcane	0.10	16.0	21
Tree Nuts	0.125	20.0	7
Wheat	0.125	20.0	14

The REI (Restricted Entry Interval) is 12 hours for all labeled crops. Refer to the crop specific use directions for detailed information on application timing and any use restrictions.

## Nongrass Animal Feeds (Forage, Fodder, Straw and Hay) Group – Except Alfalfa and Alfalfa grown for seed

Velvet Bean; Clover (*Trifolium*, *Melilotus*); Kudzu; Lespedeza; Lupin; Sainfoin; Trefoil; Vetch; Crown Vetch; and Milk Vetch

Insects Controlled	Rate of Application	Method of Application
Alfalfa Caterpillar Alfalfa Looper Alfalfa Weevil Cutworms Egyptian Alfalfa Weevil (larvae & adult) Flea Beetles Green Cloverworm Hornworms Meadow Spittlebug Potato Leafhopper Velvetbean Caterpillar Webworms Blue Alfalfa Aphid <sup>1</sup> Green Peach Aphid <sup>1</sup> Pea Aphid <sup>1</sup> Spotted Alfalfa Aphid <sup>1</sup> Threecornered Alfalfa Hopper	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply as insects appear in sufficient volume of water to ensure thorough coverage of foliage. Use higher listed dosage for increased pest pressure or for increased residual pest control. Do not exceed maximum allowable rate.  Apply in a minimum of 2 gallons of finished spray per acre by aerial equipment or 10 gallons per acre by ground equipment. ULV oil spray application is prohibited. Higher volumes of finished spray may improve insect control under high
Armyworms Grasshoppers Plant Bugs (including <i>Lygus</i> spp. & Stink Bugs)	2.8 to 4.0 fl oz/A (0.0175 to 0.025 lbs ai/A)	temperatures, when foliage is dense and/or when insect pressure is high.
<ul style="list-style-type: none"> <li>• Do not make applications less than 7 days apart.</li> <li>• Do not apply more than 4 fluid ounces of product (0.025 pounds active ingredient) per acre per cutting with a maximum of 12 fluid ounces of product (0.075 pounds of active ingredient) per acre per season.</li> <li>• Applications may be made up to 3 days of cutting or grazing or up to 7 days of harvesting seed.</li> </ul> <p><sup>1</sup>Aphid control may be variable depending on species present and host-plant relationships.</p>		

**Alfalfa; Alfalfa grown for seed:** Lucerne, Sainfoin, Holy Clover, Esparcet, Birdsfoot Trefoil, and varieties and/or hybrids of these

Insects Controlled	Rate of Application	Method of Application
Alfalfa Caterpillar Alfalfa Looper Alfalfa Weevil Cutworms Egyptian Alfalfa Weevil (larvae & adult) Flea Beetles Green Cloverworm Hornworms Meadow Spittlebug Potato Leafhopper Velvetbean Caterpillar Webworms Blue Alfalfa Aphid <sup>1</sup> Green Peach Aphid <sup>1</sup> Pea Aphid <sup>1</sup> Spotted Alfalfa Aphid <sup>1</sup> Threecornered Alfalfa Hopper	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply as insects appear in sufficient volume of water to ensure thorough coverage of foliage. Use higher listed dosage for increased pest pressure or for increased residual pest control. Do not exceed maximum allowable rate.  Apply in a minimum of 2 gallons of finished spray per acre by aerial equipment or 10 gallons per acre by ground equipment. ULV oil spray application is prohibited. Higher volumes of finished spray may improve insect control under high temperatures, when foliage is dense and/or when insect pressure is high.
Armyworms Grasshoppers Plant Bugs (including <i>Lygus</i> spp. & Stink Bugs)	2.8 to 4.0 fl oz/A (0.0175 to 0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>Do not make applications less than 7 days apart.</li> <li>Do not apply more than 8 fluid ounces of product (0.05 pounds active ingredient) per acre per cutting with a maximum of 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Applications may be made up to 3 days of cutting or grazing or up to 7 days of harvesting seed.</li> </ul> <p><sup>1</sup>Aphid control may be variable depending on species present and host-plant relationships.</p>		

## Globe Artichoke

Insects Controlled	Rate of Application	Method of Application
Aphids <sup>1</sup> Artichoke Plume Moth Lygus Bug <sup>2</sup> Proba Bug	4.0 fl oz/A (0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold levels.  Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).  Follow appropriate spray drift precautions on this label.

- Do not apply more than 16.0 fluid ounces of product or 0.10 pounds of active ingredient per acre per season.
- Do not make applications less than 14 days apart.
- Do not apply within 5 days of harvest.

<sup>1</sup>Aids in control.

<sup>2</sup>See resistance statement under Directions For Use section

**Tropical Fruits:** Avocado, Black Sapote, Canistel, Mamey Sapote, Mango, Papaya, Sapodilla, Star Apple

Insects Controlled	Rate of Application	Method of Application
Avocado Lace Bug Avocado Leafhopper Avocado Leafroller Avocado Loopers Avocado Tree Girdler Avocado Whitefly Brown Soft Scale Caterpillars Mirids Omnivorous Loopers Orange Tortrix Scale Crawlers Spanworm Thrips Twig Borers	4.0 fl oz/A (0.025 lbs ai/A)	Apply by ground equipment using sufficient water to obtain full coverage of foliage in a minimum of 20 gallons for a concentrate spray or a minimum of 100 gallons for a dilute spray. Apply by air in a minimum of 10 gallons per acre.  Apply when insects first appear and repeat at 7 to 10 day intervals as needed to provide control.
<ul style="list-style-type: none"> <li>• Do not apply more than 24.0 fluid ounces of product or 0.15 pounds of active ingredient per acre per season.</li> <li>• Do not apply within 1 day of harvest.</li> </ul>		

**Barley (including malt barley), Buckwheat, Oats, and Rye**

Insects Controlled	Rate of Application	Method of Application
Cutworm spp., including Army Cutworm Painted Lady (Thistle) Caterpillar	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Do not exceed maximum allowable rate.
Armyworm, Southern Armyworm, True Armyworm, Yellow-Striped Cereal Leaf Beetle Flea Beetle spp. Pale Western Cutworm Plant Bug spp. Spittlebug Webworm spp.	1.76 to 4.0 fl oz/A (0.011 to 0.025 lbs ai/A)	Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).

Aphid spp. <sup>1,2</sup> Armyworm, Beet <sup>2</sup> Armyworm, Fall Chinch Bug Grass Sawfly Grasshopper spp. Greenbug <sup>1,2</sup> Stink Bug spp. Thrips spp. Wheat Stem Sawfly (adult) <sup>1</sup> Whitefly spp. <sup>1,2</sup>	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	For chinch bug control, begin applications when bugs migrate from small grains or grass weeds. Apply sufficient spray volume to penetrate the soil/stem interface, leaf collars, and sheaths.
<ul style="list-style-type: none"> <li>Do not apply more than 20.0 ounces of product or 0.125 pound of active ingredient per acre per season.</li> <li>Do not make applications less than 14 days apart.</li> <li>Do not apply within 14 days of harvest for grain, straw, and hay.</li> </ul> <p><sup>1</sup> Aids in control.  <sup>2</sup> See resistance statement under Directions For Use section</p>		

**Berries Crop Group:** Blackberry; Loganberry, Red and Black Raspberry; Blueberry, Highbush and Lowbush; Currant; Elderberry; Gooseberry; Huckleberry; and cultivars and/or hybrids of these

Insects Controlled	Rate of Application	Method of Application
Leafrollers Orange Tortrix Root Weevils Vinegar Flies (Adult) Spotted Wing Drosophila	4.0 fl oz/A (0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold levels. Do not exceed maximum allowable rate.  Apply by ground and air equipment using sufficient water to obtain full coverage of foliage (minimum of 20 gallons by ground and 2 gallons by air).
<ul style="list-style-type: none"> <li>Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Do not make applications less than seven days apart.</li> <li>Do not apply within 1 day of harvest.</li> </ul>		

**Head and Stem Brassica Vegetables:** Broccoli; Chinese Broccoli (gai lon, white flowering broccoli); Brussels Sprouts; Cauliflower; Cavalo broccolo; Kohlrabi; Cabbage; Chinese Cabbage (napa); Chinese Mustard Cabbage (gai choy)

**Leafy Brassica Greens**

**[Not for this use in California]**

Broccoli Raab (rapini); Chinese Cabbage (bok choy); Collards; Kale; Mizuna; Mustard Greens; Mustard Spinach; Rape Greens; and Turnip Greens

Insects Controlled	Rate of Application	Method of Application
Corn Earworm Cucumber Beetles Cutworm Diamondback Moth <sup>1</sup> Flea Beetles Imported Cabbageworm Leafhoppers Saltmarsh Caterpillar Southern Cabbageworm Tobacco Budworm <sup>1</sup>	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply in water as necessary for insect control using a minimum of 15 gallons of finished spray per acre with ground equipment and 5 gallons per acre by air.  Lower rates of F9114 EC should be used under light to moderate insect pressure.
Alfalfa Looper Armyworms Cabbage Looper Cabbage Webworm Crickets Grasshoppers Ground Beetles Leafminers (adults) Lygus Bugs Onion Thrips Stinkbugs Wireworm (adults) Aphids <sup>2</sup> Whiteflies <sup>3</sup>	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	Use higher listed rates to control heavy to extremely heavy insect populations.  In areas where arid climatic conditions persist, such as California and Arizona, higher listed rates may be required.
<ul style="list-style-type: none"> <li>Do not make applications less than 7 days apart.</li> <li>Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Do not apply within 1 day of harvest.</li> </ul> <p><sup>1</sup> See resistance statement under "Directions for Use" section.  <sup>2</sup>Aphid control may be variable depending on species present and host-plant relationships.  <sup>3</sup>Aids in control</p>		

**Bulb Vegetables (Allium spp.):** Garlic; Garlic, Great-Headed (elephant); Green Eschalots; Japanese Bunching Onions; Leeks; Onion, Dry Bulb and Green; Onion, Welch; Shallots, Dry Bulb and Green; Spring Onion or Scallions

Insects Controlled	Rate of Application	Method of Application
Armyworms Cutworms Leafminers (adults) Onion Maggot Adults Stink Bugs Aphids <sup>1</sup>	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply in a minimum of 20 gallons per acre with ground equipment or in a minimum of 3 gallons per acre by aircraft. Begin applications when



Onion Thrips	2.88 to 4.0 fl oz/A (0.018 to 0.025 lbs ai/A)	pests appear and repeat as necessary to maintain control.  To control Onion Thrips: Use higher listed rates as population increases and avoid rescue situations. Use of a crop oil concentrate at 16 fluid ounces per acre is recommended. Do not exceed maximum allowable rate.
<ul style="list-style-type: none"> <li>Do not make applications less than 7 days apart.</li> <li>Do not apply more than 20 fluid ounces of product (0.125 pound of active ingredient) per acre per season.</li> <li>Do not graze livestock in treated areas or cut treated crops for feed.</li> <li>Do not apply within 7 days of harvest.</li> </ul> <sup>1</sup> Aphid control may be variable depending on species present and host-plant relationships.		

**Citrus Fruits Crop Group:** Calamondin (*Citrus mitis*; *Citrofortunella mitis*); Citrus citron (*Citrus medica*); Citrus hybrids (*Citrus* spp.) (includes chironja, tangelo, tangor); Grapefruit (*Citrus paradisi*); Kumquat (*Fortunella* spp.); Lemon (*Citrus jambhiri*, *Citrus limon*); Lime (*Citrus aurantiifolia*); Mandarin (tangerine) (*Citrus reticulata*); Orange, sour (*Citrus aurantium*); Orange, sweet (*Citrus sinensis*); Pummelo (*Citrus grandis*, *Citrus maxima*); and Satsuma mandarin (*Citrus unshiu*)

Insects Controlled	Rate of Application	Method of Application
Asian Cockroach Beet Armyworm Blue-Green Citrus Root Weevils Cutworms Diaprepes Root Weevil Fire Ants Fuller Rose Beetle Glassy-Winged Sharpshooter Grasshopper Katydid Leafhoppers Leafrollers Leafminers* Little Leaf Notcher Loopers Orange Tortrix Orangedog Caterpillars Plantbugs Psyllids Thrips Whiteflies	4.0 fl oz/A (0.025 lbs ai/A)	Apply by ground equipment using sufficient water to obtain full coverage of foliage in a minimum of 20 gallons for concentrate spray or a minimum of 100 gallons for dilute spray. Apply by air in a minimum of 10 gallons per acre.  Begin applications when pest activity is noted.
<ul style="list-style-type: none"> <li>Do not apply more than 16 fluid ounces of product (0.10 pounds active ingredient) per acre per season.</li> <li>Do not make applications less than fourteen days apart.</li> <li>Do not apply within 1 day of harvest.</li> </ul>		

## Corn, Sweet

Insects Controlled	Rate of Application	Method of Application
Chinch Bug Corn Rootworm (Adult) Corn Silkfly Cutworms Flea Beetle Leafhoppers Japanese Beetle (Adult) Sap Beetle (adults) Tarnished Plant Bug	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply with ground or air equipment using sufficient water and application methods to insure thorough coverage of foliage. Apply in water using a minimum of 20 gallons of finished spray per acre with ground equipment and a minimum of 2 gallons per acre by air.
Armyworms Corn Borers Corn Earworm Grasshoppers Aphids <sup>1</sup>	2.8 to 4.0 fl oz/A (0.0175 to 0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>• Apply at minimum 3 to 5 day intervals or as needed for control.</li> <li>• Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>• Do not apply within 3 days of harvest of ears or forage or livestock grazing.</li> </ul> <p><sup>1</sup>Aphid control may be variable depending on species present and host-plant relationships.</p>		

## Corn (Field), Field Corn Grown for Seed, Popcorn

### At Plant Application

Insects Controlled	Rate of Application	Method of Application
Cutworms	0.16 fl oz per 1,000 linear feet of row (0.001 lbs ai per 1,000 linear feet of row)	Apply as an in-furrow, band or T-band treatment using a minimum 4" band. Use table below to determine the F9114 EC needs for each acre.
Row Spacings (inches)	40	30
F9114 EC (pounds ai per acre)	0.012	0.018
F9114 EC (formulated ounces per acre)	1.92	2.88
<ul style="list-style-type: none"> <li>• Do not apply more than 16 fluid ounces of product (0.10 pound of active ingredient) per acre per season including at-plant plus foliar applications of F9114 EC.</li> <li>• Do not apply within 7 days of harvest for grain, stover, and forage.</li> </ul>		

## Corn (Field), Field Corn Grown for Seed, Popcorn

### Foliar Use

Insects Controlled	Rate of Application	Method of Application
Cutworms	1.28 to 2.8 fl oz/A (0.008 to 0.0175 lbs ai/A)	Make applications when insect populations reach economic thresholds. Refer to local Cooperative Extension Pest Management Guidelines and/or scouting
Corn Earworm <sup>1</sup> Green Cloverworm Meadow Spittlebug Western Bean Cutworm <sup>1</sup>	1.76 to 4.0 fl oz/A (0.011 to 0.025 lbs ai/A)	

Bean Leaf Beetle Cereal Leaf Beetle Corn Borer, European Corn Borer, Southwestern Corn Rootworm Beetle Flea Beetle Grasshoppers Hop Vine Borer Hornworms Japanese Beetle (adult) Sap Beetle (adult) Southern Corn Leaf Beetle Stalk Borer Stink Bug Spp. Tobacco Budworm <sup>2</sup> Webworms Aphids <sup>3</sup>	2.72 to 4.0 fl oz/A (0.017 to 0.025 lbs ai/A)	results. Do not exceed maximum allowable rate.  Apply by air or by ground equipment using sufficient water to obtain full coverage of foliage (minimum of 2 gallons per acre by air and 10 gallons per acre by ground).  For chinch bug control, scout corn fields and make applications when bugs migrate from small grains or wild grasses to small corn. Direct spray to the base of plant. Repeat applications at 3 to 5 day intervals if needed. F9114 EC may only suppress heavy infestations and/or subsequent migrations.
Armyworms (including Fall Armyworms) Chinch Bug	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>Do not apply more than 16 fluid ounces of product (0.10 pound of active ingredient) per acre per season including At-Planting plus foliar applications of F9114 EC Insecticide.</li> <li>Do not apply within 7 days of harvest for grain, stover, and forage.</li> </ul> <p><sup>1</sup> For control before the larva bores into the plant stalk or ear.  <sup>2</sup> See resistance statement under "Directions for Use" section.  <sup>3</sup> Control may be variable depending on species present and host-plant relationships.</p>		

## Cotton

Insects Controlled	Rate of Application	Method of Application
<i>Preemergent Use:</i> Cutworms	1.28 to 1.92 fl oz/A (0.008 to 0.012 lbs ai/A)	Use F9114 EC in the time period from 14 days prior to planting up to emergence of the crop. Apply as a broadcast spray by ground or air, banded (including T-band) or in-furrow spray using sufficient spray volume to achieve adequate coverage. Reduced volumes of water may be used with specialized equipment. Use the higher listed rates of F9114 EC when incorporating into the soil.

<p>Cutworms Tobacco Thrips Soybean (banded) Thrips</p>	<p>1.28 to 1.92 fl oz/A (0.008 to 0.012 lbs ai/A)</p>	<p>F9114 EC may be applied in water or refined vegetable oil. When water is used, apply a minimum of one gallon of finished spray per acre by air or five gallons of finished spray with ground equipment. When applying in water by air, one quart of emulsified oil may be substituted for one quart of water in the finished spray. When using oil, use a minimum of one quart per acre in the finished spray. Control of lepidopteran eggs may be achieved with proper timing of applications.</p> <p>For boll weevil control, apply F9114 EC at a 3 to 4 day interval until pest numbers are reduced to acceptable levels.</p> <p>For control of grasshoppers, applications should be made based on careful field scouting. Do not exceed maximum allowable rate. Treatment decisions should be made based on evidence of feeding damage and presence of grasshoppers in cotton. Loss of cotyledon leaves in seedling cotton should be considered more important than leaf loss in older cotton. Applications should be made on a broadcast basis since grasshoppers are highly mobile.</p> <p>Adjust rates based on populations of grasshopper found in fields. Applications should be made on a three to five day schedule until grasshopper populations are under control or until foliage loss subsides. Increase application rates as grasshopper size and population density increases.</p>
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Armyworm, Fall Armyworm, Yellow Striped Boll Weevil Cabbage Looper Corn Borer, European Cotton Bollworm Cotton Fleahopper Cotton Leaf Perforator Pink Bollworm Saltmarsh Caterpillar Stink Bugs Tarnished Plant Bug Other Plant Bugs Tobacco Budworm <sup>1</sup>	2.64 to 3.6 fl oz/A (0.0165 to 0.0225 lbs ai/A)	
Armyworm, Beet <sup>2</sup> Cotton Aphid <sup>3</sup> Lygus Bugs Whiteflies <sup>4</sup>	2.8 to 4.0 fl oz/A (0.0175 to 0.025 lbs ai/A)	
Grasshoppers	3.0 to 4.0 fl oz/A (0.01875 to 0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Do not graze or feed cotton for forage.</li> <li>Do not apply within 14 days of harvest.</li> </ul> <p><sup>1</sup> See resistance statement under "Directions for Use" section.  <sup>2</sup> For control of beet armyworms only in the high plains of Texas, Arizona, and California.  <sup>3</sup> Aphid control may be variable depending on species present and host-plant relationships.  <sup>4</sup> Aids in control.</p>		

**Canola, Crambe, Rapeseed Borage, Cuphea, Echium, Flax, Gold of Pleasure, Hare's-Ear Mustard, Lesquerella, Lunaria, Meadowfoam, Milkweed, Mustard, Oil Radish, Poppy Seed, Sesame, and Sweet Rocket**

Insects Controlled	Rate of Application	Method of Application
Aphids Cutworms Diamondback Moth Loopers Lepidopterous Larvae Flea Beetle Fleahoppers Grasshopper Plant Bug Stink Bugs Seedpod Weevil Thrips Whitefly Armyworms	4.0 fl oz/A (0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold levels. Do not exceed maximum allowable rate.  Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).
<ul style="list-style-type: none"> <li>Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Do not make applications less than seven days apart.</li> <li>Do not apply within 7 days of harvest.</li> </ul>		

## Cucurbit Vegetables Group

Chayote (fruit); Chinese Waxgourd (Chinese Preserving Melon); Citron Melon; Cucumber; Gherkin; Gourd (edible) (including hyotan, cucuzza, hechima, Chinese okra); *Mormordica* spp. (includes balsam apple, balsam pear, bitter melon, Chinese cucumber); Muskmelon (hybrids and/or cultivars of *Cucumis melo*) (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon); Pumpkin; Summer Squash (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); Winter Squash (includes butternut squash, calabaza, hubbard squash, acorn squash, and spaghetti squash); Watermelon (includes hybrids and varieties)

Insects Controlled	Rate of Application	Method of Application
Cutworm spp.	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold levels. Do not exceed maximum allowable rate.
Cabbage Looper Cucumber Beetle spp. (adult) Leafhopper spp. Melonworm Pickworm Rindworm Squash Bug Squash Vine Borer	2.8 to 4.0 fl oz/A (0.0175 to 0.025 lbs ai/A)	Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).
Aphid spp. <sup>1, 2</sup> Armyworm, Beet <sup>1, 2</sup> Corn Earworm Leafminer <sup>1</sup> Plant Bug spp. Stinkbug spp.	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	Do not make applications less than 7 days apart.
<ul style="list-style-type: none"> <li>Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Do not apply within 1 day of harvest.</li> </ul> <p><sup>1</sup> Aids in control. <sup>2</sup> See resistance statement under "Directions For Use" section.</p>		

**Fruiting Vegetables (except Cucurbits):** Eggplant; Groundcherry (*Physalis* spp.); Okra; Pepino (Melon pear); Pepper (includes bell pepper, chili pepper, cooking pepper, pimento, sweet pepper); Tomatillo; Tomato

Insects Controlled	Rate of Application	Method of Application
Armyworm, Southern Armyworm, True Armyworm, Yellow-striped Celery Leaf Tier Colorado Potato Beetle Corn Borer, European Corn Borer, Southwestern Corn Earworm Cucumber Beetle Cutworm spp. Flea Beetle Garden Webworm Green Stink Bug Hornworms Leafminers (adults) Leafhopper spp. Meadow Spittlebug Pepper Maggot (adults) Pepper Weevil Plant Bug spp. Tobacco Budworm <sup>2</sup> Tomato Fruitworm Tomato Pinworm	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Do not exceed maximum allowable rate.  Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).
Aphid spp. <sup>2,3</sup> Armyworm, Beet <sup>2</sup> Armyworm, Fall Cabbage Looper Grasshoppers Lygus Bugs Brown Stink Bug Tomato Psyllid Thrips spp. <sup>1,2</sup> Whitefly spp. <sup>1,2</sup>	3.2 to 4.0 fl oz/A (0.020 to 0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>Do not make applications less than 7 days apart.</li> <li>Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Do not apply within 1 day of harvest.</li> </ul> <p><sup>1</sup> Aids in control  <sup>2</sup> See resistance statement under "Directions for Use" section.  <sup>3</sup> Aphid control may be variable depending on species present and host-plant relationships.</p>		

## Grape

Insects Controlled	Rate of Application	Method of Application
Asian Lady Bird Beetle Lady Bird Beetle Cutworm species	2.0 to 4.0 fl oz/A (0.0125 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally



Eastern Grape Leafhopper Variegated Leafhopper Western Grape Leafhopper Grape Berry Moth Japanese Beetle (adult) Vinegar Flies (Adult) Spotted Wing Drosophila	4.0 fl oz/A (0.025 lbs ai/A)	determined economic threshold levels. Do not exceed maximum allowable rate.  Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).
<ul style="list-style-type: none"> <li>Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Do not make applications less than seven days apart.</li> <li>Do not apply within 1 day of harvest.</li> </ul>		

### Grass Forage, Fodder, and Hay Group and Grass Grown for Seed and Pasture and Rangeland

Bahiagrass, Barnyardgrass, Bentgrass, Bermudagrass, Kentucky Bluegrass, Big Bluestem, Smooth Bromegrass, Buffalograss, Reed Canarygrass, Centipedegrass, Crabgrass, Cupgrass, Dallisgrass, Sand Dropseed, Kentucky Fescue, Meadow Foxtail, Eastern Gramagrass, Side-Oats Grama, Guinea Grass, Indian Grass, Johnsongrass, Lovegrass, Napiergrass, Oatgrass, Orchardgrass, Pangolagrass, Paspalum, Redtop, Italian Ryegrass, St. Augustine Grass, Sprangletop, Squirreltailgrass, Stargrass, Switchgrass, Timothy, Crested Wheatgrass, Wildrye Grass and Zoysia Grass. Also included are Sudangrass and Sorghum Forages and their hybrids

Insects Controlled	Rate of Application	Method of Application
Alfalfa Caterpillar Alfalfa Looper Alfalfa Weevil Cutworms Egyptian Alfalfa Weevil (larvae & adult) Flea Beetles Green Cloverworm Hornworms Meadow Spittlebug Potato Leafhopper Velvetbean Caterpillar Webworms Blue Alfalfa Aphid <sup>1</sup> Green Peach Aphid <sup>1</sup> Pea Aphid <sup>1</sup> Spotted Alfalfa Aphid <sup>1</sup> Threecornered Alfalfa Hopper	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply as insects appear in sufficient volume of water to ensure thorough coverage of foliage. Use higher listed dosage for increased pest pressure or for increased residual pest control. Do not exceed maximum allowable rate.  Apply in a minimum of 2 gallons of finished spray per acre by aerial equipment or 10 gallons per acre by ground equipment.  ULV oil spray application is prohibited. Higher volumes of finished spray may improve insect control under high temperatures, when foliage is dense and/or when insect pressure is high.
Armyworms Bermudagrass Stem Maggot Fly (adult only) <sup>2</sup> Cereal Leaf Beetle Chinch Bug Grass Mealybug Grasshoppers Plant Bugs (including <i>Lygus</i> spp. & Stink Bugs)	2.8 to 4.0 fl oz/A (0.0175 to 0.025 lbs ai/A)	

- Do not make applications less than 7 days apart for forage and hay; not less than 17 days for straw and seed screenings.
  - Do not spray livestock. Allow application to dry before letting livestock graze on treated area.
  - Do not apply more than 4 fluid ounces of product (0.025 pounds of active ingredient) per acre per cutting.
  - For hay, a maximum of 16 fluid ounces of product (0.10 pounds of active ingredient) per acre per season may be applied.
  - For forage, straw, and seed screenings, a maximum of 20 fluid ounces of product (0.125 pounds active ingredient) per acre per season may be applied.
  - Applications may be made up to harvest for forage and hay; within 7 days of harvest for straw and seed screenings.
- <sup>1</sup> Aphid control may be variable depending on species present and host-plant relationships.  
<sup>2</sup> Apply after cutting and as grass starts to resprout. Only controls the adult flies, does not control the larvae feeding inside grass stem.

**Leafy Vegetables (except Brassica)**  
**[Not for this use in California]**

Amaranth (leafy amaranth, Chinese spinach, tampala); Arugula (Roquette); Cardoon; Celery; Celery, Chinese; Celtuce; Chervil; Chrysanthemum, edible-leaved and garland; Cilantro (not for use on cilantro grown for seed or coriander); Corn Salad; Cress, Garden; Cress, Upland (yellow rocket, winter cress); Dandelion; Dock (sorrel); Endive (escarole); Fennel, Florence (finocchio); Lettuce, Head and Leaf; Orach; Parsley; Purslane, Garden; Purslane, Winter; Radicchio (red chicory); Rhubarb; Spinach (including New Zealand and vine, Malabar spinach, Indian spinach); Swiss Chard

Insects Controlled	Rate of Application	Method of Application
Corn Earworm Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Imported Cabbageworm Leafhoppers Saltmarsh Caterpillar Tobacco Budworm <sup>2</sup> Aphid spp. <sup>2,3</sup> Whitefly spp. <sup>1,2</sup>	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply in water as necessary for insect control using a minimum of 10 gallons of finished spray per acre with ground equipment and 5 gallons per acre by air.  Lower rates of F9114 EC should be used under light to moderate insect pressure. Use higher listed rates to control heavy to extremely heavy insect populations.
Armyworms Ground Beetles Crickets Loopers Lygus Bugs Onion Thrips Stink Bugs Wireworm (adults)	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	In areas where arid climatic conditions persist, such as California and Arizona, higher listed rates may be required.

- Do not make applications less than 7 days apart.
  - Do not apply more than 24 fluid ounces of product (0.15 pound active ingredient) per acre per season.
  - Do not make applications within 1 day of harvest.
- <sup>1</sup> Aids in control  
<sup>2</sup> See resistance statement under "Directions For Use" section  
<sup>3</sup> Aphid control may be variable depending on species present and host-plant relationships.

## Legume Vegetables

### Legume Vegetables - Dried (except Soybeans) - At-plant Application

#### Dried Shelled Pea and Bean (except Soybeans), Dried cultivars of bean (*Lupinus* spp.)

Grain Lupin, Sweet Lupin, White Lupin, and White Sweet Lupin; *Phaseolus* spp. Includes Field Bean, Kidney Bean, Lima Bean (dry), Navy Bean, Pinto Bean, Tepary Bean; Bean (*Vigna* spp.) includes Adzuki Bean, Blackeyed Pea, Catjang, Cowpea, Crowder Pea, Moth Bean, Mung Bean, Rice Bean, Southern Pea, Urd Bean; Broad Bean (dry); Chickpea; Guar; Lablab Bean; Lentil; Pea (*Pisum* spp.) includes Field Pea; Pigeon Pea.

Insects Controlled	Rate of Application	Method of Application
Cutworm spp. White grub Wireworm spp.	4.0 fl oz/A (0.025 lbs ai/A)	For Cutworm spp: Apply at planting on the soil surface in a 5 – 7 inch band in a minimum of 2 – 7 gallons per acre or broadcast in a minimum of 10 gallons per acre.  For White grubs and Wireworms: Apply in-furrow or in a 3 – 4 inch T-Band (band over the open furrow) at planting in a minimum of 2 – 7 gallons per acre.
<ul style="list-style-type: none"> <li>• <b>Maximum Amount per Application:</b> Do not apply more than 4.0 fluid ounces of product (0.025 pounds of active ingredient) per acre.</li> <li>• <b>Maximum Amount per Season:</b> Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season including at-plant plus foliar applications.</li> <li>• Do not apply within 21 days of harvest for dried shelled peas or beans.</li> </ul>		
Row spacing (inches)	Fl oz/ 1000 linear feet	Lbs ai/ 1000 linear feet
30	0.23	0.0014
20	0.15	0.00096
15	0.115	0.0007

### Legume Vegetables - Foliar Use

#### Succulent Edible-Podded Peas, Succulent Shelled Peas and Dried Shelled Peas (*Pisum* spp.)

Dwarf Pea; Edible-pod Pea; Snow Pea; Sugar Snap Pea; Pigeon pea; English Pea; Garden Pea; Green Pea; Lentil.

#### Succulent Edible-Podded Beans, Succulent Shelled Beans, and Dried Shelled Beans

Runner Bean; Snap Bean; Wax Bean; Asparagus Bean; Chinese Longbean; Moth Bean; Yardlong Bean; Jackbean; Soybean (immature seed); Swordbean; Lima Bean; Broad Bean (Fava Bean); Blackeyed Pea; Southern Pea; Grain Lupin; Sweet Lupin; White Lupin; White Sweet Lupin; Field Bean; Kidney Bean; Navy Bean; Pinto Bean; Tepary Bean; Adzuki Bean; Catjang; Crowder Pea; Moth Bean; Mung Bean; Rice Bean; Urd Bean; Chickpea (Garbanzo Bean); Guar; Lablab bean.

Insects Controlled	Rate of Application	Method of Application
Cutworm spp. Thistle Caterpillar (Painted Lady) Saltmarsh Caterpillar Silerspotted Skipper	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect

<p>Alfalfa Caterpillar  Armyworm, Southern  Armyworm, True  Armyworm, Yellow-Striped  Bean Leaf Beetle  Blister Beetle spp.  Colorado Potato Beetle  Corn Borer, European  Corn Borer, Southwestern  Corn Earworm  Corn Rootworm Beetle (adult)  Cowpea Curculio  Cucumber Beetle  Flea Beetle  Green Cloverworm  Ground Beetles  Imported Cabbageworm  Japanese Beetle  Leaf Skeletonizer spp.  Leafhopper spp.  Leafminers (adults)  Mexican Bean Beetle  Pea Weevil  Pea Leaf Weevil  Plant Bug spp.  Potato Leafhopper  Seedcorn Beetle  Seedcorn Maggot (adult)  Spittlebug  Three-Cornered Alfalfa Hopper  Tobacco Budworm <sup>2</sup>  Velvetbean Caterpillar  Webworm spp.  Woolly Bear Caterpillar</p>	<p>2.72 to 4.0  fl oz/A  (0.017 to 0.025 lbs ai/A)</p>	<p>populations reaching locally determined economic thresholds. Do not exceed maximum allowable rate.</p> <p>Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).</p>
<p>Aphid spp. <sup>2,3</sup>  Armyworm, Beet <sup>2</sup>  Armyworm, Fall  Grasshoppers  Lesser Cornstalk Borer <sup>1</sup>  Looper spp. <sup>2</sup>  Stink Bug spp.  Thrips spp. <sup>1,2</sup>  Whitefly spp. <sup>1,2</sup></p>	<p>3.2 to 4.0 fl oz/A  (0.020 to 0.025 lbs ai/A)</p>	
<ul style="list-style-type: none"> <li>Do not make applications less than 5 days apart.</li> <li><b>Maximum Amount per Season:</b> Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season including at-plant plus foliar applications.</li> <li>Do not apply within 1 day of harvest for succulent shelled or edible-podded peas or beans; within 21 days for dried shelled peas or beans</li> </ul> <p><sup>1</sup> Aids in control  <sup>2</sup> See resistance statement under "Directions For Use" section  <sup>3</sup> Aphid control may be variable depending on species present and host-plant relationships.</p>		

## Peanut

Insects Controlled	Rate of Application	Method of Application
Cutworm spp. Green Cloverworm Velvetbean Caterpillar Red-necked Peanut Worm	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold levels. Do not exceed maximum allowable rate.  Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).  Do not make applications less than 14 days apart.
Bean Leaf Beetle Leafhopper spp. Southern Corn Rootworm (adult) Vegetable Weevil Whitefringed Beetle (adult)	1.76 to 4.0 fl oz/A (0.011 to 0.025 lbs ai/A)	
Aphid spp. <sup>1, 2</sup> Armyworm, Beet <sup>1, 2</sup> Armyworm, Fall <sup>1, 2</sup> Corn Earworm Grasshopper spp. Lesser Cornstalk Borer <sup>1, 2</sup> Soybean Looper <sup>1, 2</sup> Stink Bug spp. <sup>1, 2</sup> Tobacco Thrips <sup>2</sup>	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>• Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>• Do not graze livestock in treated areas.</li> <li>• Do not use treated vines or hay for animal feed.</li> <li>• Do not apply within 7 days of harvest.</li> </ul> <p><sup>1</sup> Aids in control.  <sup>2</sup> See resistance statement under "Directions For Use" section.</p>		

## Pome Fruit Group

[Not for this use in California]

Apple; Crabapple; Loquat; Mayhaw; Pear; Oriental Pear; and Quince

Insects Controlled	Rate of Application	Method of Application
<p>Apple Maggot Codling Moth European Apple Sawfly Green Fruitworm Japanese Beetle Lesser Appleworm Oblique Banded Leafroller Oriental Fruit Moth Pandemis Leafroller Pear Psylla Plum Curculio Potato Leafhopper Redbanded Leafroller Rosy Apple Aphid Spirea Aphid Spotted Tentiform Leafminer Stink Bugs Tarnished Plant Bug Tufted Apple Bud Moth Variegated Leafroller White Apple Leafhopper</p>	<p>1.28 to 4.0 fl oz/A (0.008-0.025 lbs ai/A)</p>	<p>Begin applications at delayed dormant through first cover as common to the production areas and the target pest species. Apply in a full season spray program.</p> <p>Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold levels. Do not exceed maximum allowable rate.</p> <p>Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (for ground application use a minimum of 20 gallons for concentrate spray or a minimum of 100 gallons for dilute spray; for air application use a minimum of 10 gallons).</p> <p>Do not make applications less than 7 days apart.</p> <p>Avoid applications when honey bees are actively foraging by applying during the early morning or evening hours.</p>
<ul style="list-style-type: none"> <li>• Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>• Do not apply as a ULV spray.</li> <li>• Do not feed or allow livestock to graze on cover crops from treated orchards.</li> <li>• Do not apply within 14 days of harvest.</li> </ul>		

## Rice and Wild Rice

Insects Controlled	Rate of Application	Method of Application
Armyworm, Fall Armyworm, True Armyworm, Yellow Striped Grasshoppers Green Bug Leafhopper Spp. Rice Water Weevil (adult) Oat Birdcherry Aphid <sup>1</sup> Wild Rice Worm Mexican Rice Borer <sup>2</sup> Rice Stalk Borer <sup>2</sup> Sugarcane Borer <sup>2</sup>	3.2 to 4.0 fl oz/A (0.020 to 0.025 lbs ai/A)	Apply as needed based on pest thresholds determined by scouting practices. Refer to Extension Scouting guidelines for scouting techniques, pest thresholds and treatment timing and treatment intervals. Determine the need for repeat applications, usually at intervals of 7 days, by scouting. Do not exceed maximum allowable rate.
Chinch Bug Rice Stink Bug	2.64 to 4.0 fl oz/A (0.0165 to 0.025 lbs ai/A)	



		<p>F9114 EC can be safely applied in conjunction with approved rice herbicides.</p> <p>Apply by air or ground equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 5 gallons of water per acre. For increased control, crop oil concentrate at 16 fluid ounces per acre may be used.</p> <p>For control of rice water weevil in dry seeded rice, make a foliar application as indicated by scouting for the presence of adults and/or feeding scars, usually within a time-frame of 0-5 days after permanent flood establishment. Do not exceed 10 days from starting permanent flood until insecticide application unless scouting indicates adult weevils are not present. Adults may also be treated at later stages of rice development to reduce overwintering populations.</p> <p>For control of rice water weevil in water seeded rice, make the first application after flooding when scouting indicates the presence of adults and/or feeding scars. Application should usually begin when rice has emerged 0.5 inch above the waterline. Under conditions of prolonged migration into the field, start field scouting for rice water weevil adults and/or feeding scars 3-5 days after the initial treatment and, if needed, apply a second application within 7-10 days of the first application. Adults may also be treated at later stages of rice development to reduce overwintering populations.</p> <p>Green bug is known to have many biotypes. F9114 EC</p>
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		may only provide suppression. If satisfactory control is not achieved with the first application of F9114 EC, a resistant biotype may be present. Use alternate chemistry for control.
<ul style="list-style-type: none"> <li>Do not make applications less than 7 days apart.</li> <li>Do not release floodwater within 7 days of an application.</li> <li>Do not apply more than 16 fluid ounces of product (0.10 pound active ingredient) (1.0 pints) per acre per season.</li> <li>Do not use treated rice field for the aquaculture of edible fish and crustacea.</li> <li>Do not apply as an ultra-low volume (ULV) spray.</li> <li>Do not apply within 14 days of harvest.</li> </ul> <p><sup>1</sup> Aphid control may be variable depending on species present and host-plant relationships  <sup>2</sup> Control before larvae bore into the plant stalk</p>		

### Root and Tuber Vegetables Group 1 (except Sugar Beet)

Arracacha; Arrowroot; Artichoke (Chinese and Jerusalem); Garden Beet; Edible Burdock; Edible Canna; Carrot; Cassava (Bitter and Sweet); Celeriac (Celery Root); Chayote (Root); Turnip-Rooted Chervil; Chicory; Chufa; Dasheen (Taro); Ginger; Ginseng; Horseradish; Leren; Turnip-Rooted Parsley; Parsnip; Potato; Oriental Radish (Daikon); Radish; Rutabaga; Salsify (Oyster Plant); Black Salsify; Spanish Salsify; Skirret; Sweet Potato; Tanier (Cocoyam); Turmeric; Turnip; Yam Bean; and Yam (True).

Insects Controlled	Rate of Application	Method of Application
Cutworm spp.	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds levels. Do not exceed maximum allowable rate.
Cabbage Looper Cucumber Beetle European Corn Borer Fleabeetle spp. Leafhopper spp. Southern Corn Rootworm (adult) Vegetable Weevil Whitefringed Beetle (adult)	1.76 to 4.0 fl oz/A (0.011 to 0.025 lbs ai/A)	Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).
Aphid spp. <sup>1, 2</sup> Armyworm, Beet <sup>1, 2</sup> Armyworm, Yellowstriped Cabbage Maggot Colorado Potato Beetle <sup>2</sup> Grasshopper spp. Imported Cabbageworm Potato Leafhopper Tarnished Plant Bug	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	Do not make applications less than 4 days apart.
<ul style="list-style-type: none"> <li>Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>Leaves of Root and Tuber Vegetables cannot be used for food or feed.</li> <li>Do not apply within 1 day of harvest.</li> </ul> <p><sup>1</sup> Aids in control.  <sup>2</sup> See resistance statement under "Directions For Use" section.</p>		

## Safflower

Insects Controlled	Rate of Application	Method of Application
Cutworms <i>Lygus</i> spp.	4.0 fl oz/A (0.025 lbs ai/A)	<p>Apply as needed based on pest thresholds determined by scouting practices. Refer to Extension Scouting guidelines for scouting techniques, pest thresholds and treatment timing and treatment intervals.</p> <p>Determine the need for repeat applications, at a minimum of 14 day intervals, by scouting. Do not exceed maximum allowable rate.</p> <p>Apply with ground or air equipment using sufficient water and application methods to insure thorough coverage of foliage. Apply in water using a minimum of 5 gallons of finished spray per acre.</p>
<ul style="list-style-type: none"> <li>Do not apply more than 12 fluid ounces of product (0.075 pounds active ingredient) per acre per season.</li> <li>Do not apply within 14 days of harvest.</li> </ul>		

**Sod Farms:** Bahiagrass, Barnyardgrass, Bentgrass, Bermudagrass, Kentucky Bluegrass, Big Bluestem, Smooth Bromegrass, Buffalograss, Reed Canarygrass, Centipedegrass, Crabgrass, Cupgrass, Dallisgrass, Sand Dropseed, Kentucky Fescue, Meadow Foxtail, Eastern Gramagrass, Side-Oats Grama, Guinea Grass, Indian Grass, Johnsongrass, Lovegrass, Napiergrass, Oatgrass, Orchardgrass, Pangolagrass, Paspalum, Redtop, Italian Ryegrass, St. Augustine Grass, Sprangletop, Squirreltailgrass, Stargrass, Switchgrass, Timothy, Crested Wheatgrass, Wildrye Grass and Zoysia Grass. Also included are Sudangrass and Sorghum Forages and their hybrids.

Insects Controlled	Rate of Application	Method of Application
Alfalfa caterpillar Alfalfa looper Alfalfa weevil Ant spp. Blue alfalfa aphid <sup>2</sup> Cutworm spp. Egyptian alfalfa weevil Flea beetle spp. Green cloverworm Green peach aphid <sup>2</sup> Hornworm spp. Meadow spittlebug Pea aphid <sup>2</sup> Potato leafhopper Spotted alfalfa aphid <sup>1</sup> Threecornered alfalfa hopper Velvetbean caterpillar Webworm spp.	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Apply as insects appear in sufficient volume of water to ensure thorough coverage of foliage.  Use higher listed dosage for increased pest pressure or for increased residual pest control. Do not exceed maximum allowable rate.  Apply in a minimum of 2 gallons of finished spray per acre by aerial equipment or 10 gallons per acre by ground equipment.  ULV oil spray application is prohibited. Higher volumes of finished spray may improve insect control under high temperatures, when foliage is dense and/or when insect pressure is high.
Armyworm, southern Armyworm, true Armyworm, yellowstriped Cereal leaf beetle Chinch bug Grass mealybug Grasshopper spp. Plant bug spp. Stinkbug spp.	2.8 to 4.0 fl oz/A (0.0175 to 0.025 lbs ai/A)	
Armyworm, fall	3.2 – 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>Do not apply more than 4 fluid ounces of product (0.025 pounds of active ingredient) per acre per application.</li> <li>Do not apply more than 20 fluid ounces of product (0.125 pounds active ingredient) per acre per season.</li> <li>Applications may be made up to harvest.</li> </ul> <p><sup>1</sup> Aphid control may be variable depending on species present and host-plant relationships.</p>		

## Sorghum (Grain) and Millet

Insects Controlled	Rate of Application	Method of Application
Cutworm spp. Sorghum Midge	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Do not exceed maximum allowable rate.
Armyworm, Fall Armyworm, Southern Armyworm, True Armyworm, Yellow-Striped Corn Borer, European <sup>1</sup> Corn Borer, Southwestern <sup>1</sup> Corn Earworm Flea Beetle spp. Hornworms Stink Bug spp. Webworm spp.	1.76 to 4.0 fl oz/A (0.011 to 0.025 lbs ai/A)	
Aphid spp. <sup>2,3</sup> Armyworm, Beet <sup>3</sup> Chinch Bug False Chinch Bug Grasshopper spp. Lesser Cornstalk Borer <sup>1</sup> Thrips spp. <sup>3,4</sup> Whitefly spp. <sup>3,4</sup>	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air). The addition of one to two quarts of emulsified oil per acre to the spray solution may improve spray deposition and insect control.  For sorghum midge control, begin applications when 25% of the sorghum heads have emerged and are in tip bloom. Repeat applications at 10-day intervals if needed. For chinch bug control, begin applications when bugs migrate from small grains or grass weeds to small sorghum. Direct spray to the base of plants with sufficient spray volume to penetrate the soil/stem interface, leaf collars, and sheaths.
<ul style="list-style-type: none"> <li>Do not make applications less than 10 days apart.</li> <li>Do not apply more than 20 fluid ounces of product (0.125 pounds of active ingredient) per acre per season.</li> <li>Do not apply within 14 days of harvest for grain and stover; within 45 days of harvest for forage.</li> </ul> <p><sup>1</sup> For control before the larva bores into the plant stalk.  <sup>2</sup> Aphid control may be variable depending on species present and host-plant relationships.  <sup>3</sup> See resistance statement under "Directions For Use" section  <sup>4</sup> Aids in control</p>		

## Soybeans

Insects Controlled	Rate of Application	Method of Application
Cutworm spp. Painted Lady (Thistle) Caterpillar Saltmarsh Caterpillar Silverspotted Skipper	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Do not exceed maximum allowable rate.
Alfalfa Caterpillar Armyworm, Southern Armyworm, True Armyworm, Yellowstriped Bean Leaf Beetle <sup>1</sup> Blister Beetle spp. Colorado Potato Beetle Corn Borer, European Corn Earworm Corn Rootworm Beetle (adult) Cowpea Curculio Cucumber Beetle European Corn Borer Flea Beetle Green Cloverworm Hornworms Imported Cabbageworm Japanese Beetle Leaf Skeletonizer spp. Leafhopper spp. Leafminers (adults) Mexican Bean Beetle Pea Leaf Weevil Plant Bug spp. Potato Leafhopper Seedcorn Maggot (adult) Soybean Aphid Spittlebug Three-Cornered Alfalfa Hopper Tobacco Budworm <sup>2</sup> Velvetbean Caterpillar Webworm spp. Woollybear Caterpillar	2.8 to 4.0 fl oz/A (0.0175 to 0.025 lbs ai/A)	Apply with either aerial or ground equipment using sufficient spray volume to obtain full coverage of the plant and foliage. Use a minimum of 2 gallons of finished spray per acre by air or 10 gallons of finished spray per acre by ground. The addition of one to two quarts of emulsified oil per acre to the spray solution may improve spray deposition and insect control.
Armyworm, Beet Armyworm, Fall Grasshopper spp. Lesser Cornstalk Borer <sup>3</sup> Looper spp. <sup>2</sup> Stink Bug spp. Thrips spp. <sup>2,3</sup> Whitefly spp. <sup>2,3</sup>	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	
Kudzu Bug (aka bean Plataspid)	4.0 fl oz/A (0.025 lbs ai/A)	

- Do not make applications less than 7 days apart.
- Do not graze or harvest treated soybean forage, straw, or hay for livestock feed.
- Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.
- Do not apply within 21 days of harvest.

<sup>1</sup> Use higher listed dosage for increased pest pressure, increased residual pest control, or later-season applications. Do not exceed maximum allowable rate.

<sup>2</sup> See resistance statement under "Directions For Use" section

<sup>3</sup> Aids in control

## Stone Fruit Group

### [Not for this use in California]

Apricot; Cherry (Sweet and Tart); Nectarine; Peach; Plum (including Chickasaw Plum, Damson Plum, and Japanese Plum); Plumcot; and Prune (fresh)

Insects Controlled	Rate of Application	Method of Application
American Plum Borer Black Cherry Aphid Cherry Fruit Fly Green Fruitworm Leafrollers Leafhoppers Lesser Peach Tree Borer Peach Tree Borer Peach Twig Borer Plum Curculio Oriental Fruit Moth Rose Chafer Stink Bugs Tarnished Plant Bug Tufted Apple Budmoth Western Cherry Fruit Fly	1.28-4.0 fl oz/A (0.008-0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold levels. Do not exceed maximum allowable rate.  Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (for ground application use a minimum of 20 gallons for concentrate spray or a minimum of 100 gallons for dilute spray; for air application use a minimum of 10 gallons).  Do not make applications less than 7 days apart.
Vinegar Flies (Adult) Spotted Wing Drosophila	4.0 fl oz/A (0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>• Do not apply more than 24 fluid ounces of product (0.15 pounds of active ingredient) per acre per season.</li> <li>• Do not apply as a ULV spray.</li> <li>• Do not feed or allow livestock to graze on cover crops from treated orchards.</li> <li>• Do not apply within 14 days of harvest.</li> </ul>		



## Sugar Beet

Insects Controlled	Rate of Application	Method of Application
Foliar Application: Armyworms Blister Beetles Click Beetles Cutworms Flea Beetles Grasshoppers Heliothis spp. Leafhoppers Leafminer (adults) Loopers Lygus Bugs Sugar Beet Root Maggot (adult) Sugar Beet Crown Borer Thistle Caterpillar Webworms Zebra Caterpillar Aphids <sup>1</sup>	2.24 to 4.0 fl oz/A (0.014 to 0.025 lbs ai/A)	Make applications when insect populations reach economic threshold levels. Refer to local Cooperative Extension Pest Management Guidelines and/or scouting results.  Apply by air or by ground equipment using sufficient water to obtain full coverage of foliage (minimum of 2 gallons per acre by air and 10 gallons per acre by ground).
At Plant Application: Sugar Beet Root Maggot (larvae) <sup>2</sup>	4.0 fl oz/A (0.025 lbs ai/A)	For light to moderate infestations only. Make a 3-4 inch T-Band (band over the open furrow) at planting in a minimum of 3-5 gallons per acre.
White Grub Wireworm		Apply in-furrow or in a 3 - 4 inch T-Band (band over the open furrow) at planting in a minimum of 3-5 gallons per acre.
Cutworm species		Apply at planting on the soil surface in a 5-7inch band or broadcast in a minimum of 3-5 gallons per acre.
<ul style="list-style-type: none"> <li>Do not apply more than 12 fluid ounces of product (0.075 pounds of active ingredient) per acre per season including at plant plus foliar applications of F9114 EC.</li> <li>Do not apply within 50 days of harvest for tops or roots.</li> </ul> <p><sup>1</sup> Aphid control may be variable depending on species present and host-plant relationships.  <sup>2</sup> Suppression only</p>		

## Sugarcane

Insects Controlled	Rate of Application	Method of Application
Sugarcane Borer Mexican Rice Borer	3.0 to 4.0 fl oz/A (0.01875 to 0.025 lbs ai/A)	Make applications when insect populations reach economic thresholds. Refer to local Cooperative Extension Pest Management Guidelines and/or scouting results. Do not exceed maximum allowable rate.  Apply by air or ground equipment using sufficient water to obtain full coverage of foliage (minimum of 2 gallons per acre by air and 10 gallons per acre by ground).
<ul style="list-style-type: none"> <li>Do not make applications less than 21 days apart.</li> <li>Do not apply more than 16 fluid ounces of product (0.10 pounds of active ingredient) per acre per season.</li> <li>Do not apply within 21 days of harvest.</li> </ul>		

## Sunflower, Castor Oil Plant, Chinese Tallowtree, Euphorbia, Evening Primrose, Jojoba, Niger Seed, Rose Hip, Stokes Aster, Tallowwood, Tea Oil Plant, and Vernonia

### At-plant Application

Insects Controlled	Rate of Application	Method of Application
Cutworm spp. White Grub Wireworm	4.0 fl oz/A (0.025 lbs ai/A)	For White grubs and Wireworms: Apply in-furrow or in a 3 – 4 inch T-Band (band over the open furrow) at planting in a minimum of 3 – 5 gallons per acre.  For Cutworm spp: Apply at planting on the soil surface in a 5 – 7 inch band or broadcast in a minimum of 3 – 5 gallons per acre.
<ul style="list-style-type: none"> <li><b>Maximum Amount per Application:</b> Do not apply more than 4.0 fluid ounces of product (0.025 pound active ingredient) per acre per application.</li> <li><b>Maximum Amount per Season:</b> Do not apply more than 20 fluid ounces of product (0.125 pound active ingredient) per acre per season including at-plant plus foliar applications.</li> <li>Do not make more than 5 applications at the maximum rate per season.</li> <li><b>Grazing:</b> Do not graze livestock in treated areas or cut treated crops for feed.</li> <li>Do not apply within 30 days of harvest.</li> </ul>		

**Sunflower, Castor Oil Plant, Chinese Tallowtree, Euphorbia, Evening Primrose, Jojoba, Niger Seed, Rose Hip, Stokes Aster, Tallowwood, Tea Oil Plant, and Vernonia**

Foliar Use

Insects Controlled	Rate of Application	Method of Application
Thistle Caterpillar (Painted Lady) Cutworm species	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply with ground or air equipment using sufficient water and application methods to insure thorough coverage of foliage.  Apply in a minimum of 2 gallons of finished spray per acre by aerial equipment or 10 gallons per acre by ground equipment. Begin applications when pest appears and repeat as necessary to maintain control.  Do not make applications less than 7 days apart.  Use higher listed dosage for increased residual pest control.  Do not exceed maximum allowable rate.
Sunflower Beetle Sunflower Moth Sunflower Maggot Stem Weevil (adult) Grasshopper species Leafhopper species Head-Clipper Weevil (adult) Red Sunflower Seed Weevil (adult) Grey Sunflower Seed Weevil (adult) Saltmarsh Caterpillar Banded Sunflower Moth Armyworm Sunflower Butterfly Woolly Bear Caterpillar Japanese Beetle Webworm species	2.6 to 4.0 fl oz/A (0.016 to 0.025 lbs ai/A)	
Long-Horned Beetle (Dectes Stem Borer adult) Beet Armyworm Fall Armyworm Stink Bug Species Pale striped Flea Beetle	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	

- **Maximum Amount per Season:** Do not apply more than 20 fluid ounces of product (0.125 pound active ingredient) per acre per season including at-plant plus foliar applications.
- Do not make more than five applications at the maximum application rate per season.
- **Grazing:** Do not graze livestock in treated areas or cut treated crops for feed
- Avoid applications when honey bees are actively foraging by applying during the early morning or evening hours.
- Do not apply within 30 days of harvest.

**Tree Nuts Group:** Almond; Beech Nut; Brazil Nut; Butternut; Cashew; Chestnut; Chinquapin; Filbert (hazelnut); Hickory Nut; Macadamia Nut; Pecan; Pistachio; and Walnut (black and English).

Insects Controlled	Rate of Application	Method of Application
Black Pecan Aphid Codling Moth Filbert Worm Hickory Shuckworm Leaf-footed Bugs Navel Orangeworm Oblique-banded Leafroller Peach Twig Borer Pecan Leaf Casebearer Pecan Nut Casebearer Pecan Phylloxera Pecan Weevil Plant Bugs Stink Bugs Walnut Aphid Walnut Husk Fly Yellow Pecan Aphid	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold levels. Do not exceed maximum allowable rate.  Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).
<ul style="list-style-type: none"> <li>• Do not apply more than 20 fluid ounces of product (0.125 pounds of active ingredient) per acre per season.</li> <li>• Do not make applications less than seven days apart.</li> <li>• Do not apply within 7 days of harvest.</li> </ul>		

## Wheat and Triticale

Insects Controlled	Rate of Application	Method of Application
Cutworm spp., including Army Cutworm Painted Lady (Thistle) Caterpillar	1.28 to 4.0 fl oz/A (0.008 to 0.025 lbs ai/A)	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Do not exceed maximum allowable rate.  Apply by ground or air equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons by ground and 2 gallons by air).  For chinch bug control, begin applications when bugs migrate from small grains or grass weeds. Apply sufficient spray volume to penetrate the soil/stem interface, leaf collars, and sheaths.
Armyworm, Southern Armyworm, True Armyworm, Yellowstriped Cereal Leaf Beetle Flea Beetle spp. Pale Western Cutworm Plant Bug spp. Spittlebug Webworm spp.	1.76 to 4.0 fl oz/A (0.011 to 0.025 lbs ai/A)	
Aphid spp. <sup>1,2</sup> Armyworm, Beet <sup>2</sup> Armyworm, Fall Chinch Bug Grass Sawfly Grasshopper spp. Greenbug <sup>2,3</sup> Stink Bug spp. Thrips spp. <sup>2,3</sup> Wheat Stem Sawfly (adult) <sup>3</sup> Whitefly spp. <sup>2,3</sup>	3.2 to 4.0 fl oz/A (0.02 to 0.025 lbs ai/A)	
<ul style="list-style-type: none"> <li>Do not make applications less than 14 days apart.</li> <li>Do not apply more than 20 fluid ounces of product (0.125 pounds active ingredient) per acre per season.</li> <li>Do not apply within 14 days of harvest for grain, forage, and hay.</li> </ul> <p><sup>1</sup> Aphid control may be variable depending on species present and host-plant relationships.  <sup>2</sup> See resistance statement under "Directions For Use" section  <sup>3</sup> Aids in Control</p>		

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