

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

January 12, 2009

Rebecca Clemmer
United Phosphorus, Inc.
630 Freedom Center, Suite 402
King of Prussia, PA 19406

Subject: Amendment – Adding crops/use sites: Dried Beans and Peas, Tobacco, Christmas Trees (limited states), and Conifer Seed Orchards (limited states)
Bifenture EC Agricultural Insecticide
EPA Reg. No. 70506-57
Your submission dated October 10, 2008

Dear Ms. Clemmer:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable subject to the comments listed below. Two (2) copies of the finished labeling must be submitted prior to releasing the product for shipment. A stamped copy of the label is enclosed for your records.


1. Make the following revisions under *Fruiting Vegetables* section:
 - a. Add, "0.033-0.08 lb ai, (2.1-5.2 fl. oz. product)" to the Rate Bifenture EC/acre for tomato and tomatillo on page 18.
 - b. Replace "Apply in at least 2 gallons finished spray per acre by air or at least 10 gallons per acre by ground" with "Apply in at least 3 gallons finished spray per acre by air or at least 15 gallons per acre by ground".
 - c. Delete, "When application is made by air 1-2 qts. Emulsified oil may replace 1-2 qts. Of water in the finished spray".
 - d. Replace "Do not apply more than 0.2 lb a.i. (12.8 fl. oz. product) per acre per season" with "Do not make more than 4 applications per season".

2. Under *Root Crops (except Sugar Beets)*, add, "Ground application" to "Apply in at least 25 gallons per acre".
3. Under *Soybean*, add, "Ground application" to "Make foliar applications in at least 10 gallons per acre".
4. Delete the section on *SOD Farms*, this use is not cited on the me-too product.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

If you have any questions regarding this action, please contact BeWanda Alexander at (703) 305-7460.

Sincerely,



Richard Gebken

Interim Product Manager 13
Insecticide Branch
Registration Division (7505P)

Enclosure

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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.

BIFENTURE™ EC AGRICULTURAL INSECTICIDE

Active Ingredient: **Bifenthrin*** (2 methyl[1,1'-biphenyl]-3-yl) methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate 25.1%
Inert Ingredients:** 74.9%
TOTAL 100.0%

By Wt.

*Cis isomers 97% minimum, trans isomers 3% maximum.

**Contain xylene range aromatic solvents

This product contains 2 pounds active ingredient per gallon.

ACCEPTED
with COMMENTS
In EPA Letter Dated
JAN 12 2009
 Under the Federal Insecticide,
 Fungicide, and Rodenticide Act,
 as amended, for the pesticide
 registered under EPA Reg. No.
70506-57

KEEP OUT OF REACH OF CHILDREN WARNING AVISO

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

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

FIRST AID	
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Do not induce vomiting unless told to do so by the 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 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.
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.
NOTE TO PHYSICIAN This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. Contains petroleum distillates. Vomiting may cause aspiration pneumonia. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR EMERGENCY MEDICAL ASSISTANCE, CALL THE ROCKY MOUNTAIN POISON CONTROL CENTER 1-866-673-6671.	

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident,
 call CHEMTREC 1-800-424-9300.**



Manufactured for:
 United Phosphorus, Inc.
 630 Freedom Business Center, Suite 402
 King of Prussia, PA 19406 1-800-438-6071 • www.upi-usa.com

EPA Reg. No. 70506-57
 EPA Est. No.
 Net Contents:

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PRECAUTIONARY STATEMENTS**Hazards to Humans and Domestic Animals****Warning**

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 absorbed through skin or inhaled. Avoid breathing spray mist. Avoid contact with skin. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category E 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 barrier laminate, Nitrile rubber, neoprene rubber or Viton
- 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 such as barrier laminate, Nitrile rubber, neoprene rubber, or Viton
- Shoes plus socks
- Protective eyewear

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

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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 run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

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

The use of bifenthrin 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

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.

Resistance:

Any insect/mite population may contain individual insects that may develop resistance to a specific pesticide product used in consecutive generations to control these pests. Prediction of resistance development is uncertain. Follow appropriate resistance management

strategies. Contact your local extension specialist or certified crop advisors for any additional pesticide resistance management and/or Integrated Pest Management recommendations for the specific site and pest problems in your area. If resistance to this product develops in your area, you may find reduced control from this product or other products with a similar mode of action. If poor performance cannot be related to improper application methods or extreme weather, it is possible that a resistant strain of insect may be present. If poor control occurs and resistance is a reasonable cause, immediately consult with your local UPI representative or agricultural advisor for the best alternative method of control for 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 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 nitrile rubber or neoprene rubber or Viton.
- Shoes plus socks.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store above 40°F.

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 Disposal:

Triple rinse container promptly after emptying. If recycling is not available, puncture and dispose of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned stay out of smoke.

For containers smaller than 5 gallons, triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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.

For containers larger than 5 gallons, triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ 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. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

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.

Use a minimum of 0.75 inch of water per acre for LEPA irrigation. Use 1 to 2 pints per acre of non-emulsified oils when used as the diluent.

The set up and calibration of chemigation equipment are important to achieve control of target insect pests. 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 advice on the suitability of the equipment set up for optimum control of the target insect pests.

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A person knowledgeable of the chemigation system and responsible for its operations, 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 areas.

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.

Apply Bifenture EC Agricultural Insecticide continuously for the duration of the water application. Dilute Bifenture EC Agricultural Insecticide in sufficient volume to ensure accurate application over the area to be treated. Use a minimum of 0.5 inch per acre of irrigation water for application by chemigation. No agitation is required if a suitable diluent is used. Conduct a diluent test to check that phase separation will not occur during dilution and application. If uniform dilution is not achieved during the entire period of application, undesirable residues or less than desirable control may occur.

Rotation Crop Restrictions

Crops for which bifenthrin tolerances exist may be rotated at any time. All other crops may be rotated 30 days after the last application.

Tank-Mixes

Apply Bifenture EC Agricultural Insecticide with other products registered for the same crops. Read and follow all applicable directions, restrictions, and precautions on the EPA-registered labels for other tank mix partners.

Spray Drift Requirements

Maintain and calibrate all aerial and ground application equipment using appropriate carriers.
Do not use ultra low volume (ULV) applications to corn and hops.

Select the appropriate nozzle sizes to form the largest spray droplets that provide sufficient coverage and control. Minimize the formation of very small droplets by pointing the nozzles away from the air stream, and by avoiding excessive spray boom pressure.

Do not apply the spray at heights greater than 10 feet above the crop canopy, but at the lowest height to ensure pest control and flight safety.

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 Inversions

Do not make aerial or ground applications into temperature inversions.

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

Droplet Size

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

Do not make aerial or ground application to corn if heavy rainfall is imminent.

Buffer Zones

Vegetative Buffer Strip

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

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

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: *Conservation Buffers to Reduce Pesticide Losses*. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21 pp. <http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf>.

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).

Additional Requirements for Ground Applications

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

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.

Instructions for Application

The following Directions for Use tables provide, in some cases, rate ranges. Use the lower application rates when insect pressure is light to moderate. Use the higher application rates when insect populations are high, when treating mites and when climate is arid.

Cultivation within 10 feet of a water body is prohibited to allow for the growth of a vegetated filter strip.

In New York State this product may not be applied within 100 feet (using ground equipment) to 300 feet (using aerial equipment) of coastal marshes or permanent streams that drain into coastal marshes.

INDEX TO CROPS LISTED ON THIS LABEL

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Artichokes
Beans and Peas (Dry)
Beans and Peas (Succulent)
Beets, Garden (see Root Crops)
Brassica
Caneberries
Canola, Crambe, Rapeseed
Christmas Trees (WA and OR only)
Cilantro, Coriander
Citrus
Conifer Seed Orchards (AL, AR, FL, GA, LA, MS, OK, SC, TN, TX, VA only)
Cotton
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (At Planting Use)
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (PRE & PPI)
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (Foliar Use)
Sweet Corn, Sweet Corn Grown for Seed (At Planting Use)
Sweet Corn, Sweet Corn Grown for Seed (Foliar Use)
Cucurbits
Fruiting Vegetables
Grapes
Hops
Leafy Brassica Greens (Crop Subgroup 5-B)
Lettuce, Head
Mayhaw
Okra
Peanut
Pears
Root Crops (except Sugarbeets)
Soybean
Spinach
Tobacco
Tomatoes, Tomatillos (see under Fruiting Vegetable instructions)
Tuberous and Corm Vegetables (Crop Subgroup 1-C)

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ARTICHOKES

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Artichoke Plume Moth Cribrate Weevil	0.10 lb. ai (6.4 fl. oz. product)	Begin applications when pest population reaches damaging levels and repeat as necessary to maintain control. Apply in water in a minimum of 75 gallons of spray/A by ground or in a minimum of 10 gallons/A by air. Do not make applications less than 15 days apart. Do not apply more than 0.5 lb. a.i. /A (one quart product) per season.	5

SUCCULENT PEAS AND BEANS

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Pea (Pisum spp.) Dwarf pea Edible-pod pea English pea	Flea Beetle Aster Leafhopper Leafhoppers	0.025-0.10 lb. ai (1.6-6.4 fl. oz. product)	Apply in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. When applying by air, substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired.	3
Garden pea Green pea Snow pea Sugar snap pea Pigeon pea Bean (Phaseolus spp.): Broadbean (succulent) Lima bean (green) Runner bean Snap bean Wax bean Bean (Vigna spp.): Asparagus bean Blackeyed pea Chinese longbean Cowpeas Moth bean Southern pea Yardlong bean Jackbean Soybean (immature seed) Sword bean	Aphids Armyworms Beet Fall Southern Yellowstriped Beetles Bean Leaf Cucumber Japanese (adult) Mexican Bean Sap Bugs Plant Bugs Stink Bugs Tarnished Plant Bugs Alfalfa Caterpillar Cloverworm European Corn Borer Cutworms Western Bean Cutworm Corn Earworm Loopers Corn Rootworm (Adult) Thrips Webworms Pea Weevil Pea Leaf Weevil Whitefly Imported Cabbageworm Saltmarsh Caterpillar Tobacco Budworm Leafminers Banks Grass Mite Carmine Mite Lygus Spp. Twospotted Spider Mite	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	For best control thorough coverage is necessary. Do not apply more than 0.2 lb. a.i. (12.8 fl. oz. product) per acre per season.	
		0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)		

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DRIED BEANS AND PEAS

Not for this use in California unless accompanied by supplemental labeling

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Dried cultivars of: Bean (Lupinus) Bean (Phaseolus) Field Bean Kidney Bean Lima Bean (dry) Navy Bean Pinto Bean Tepary Bean Bean (Vigna) Adzuki Bean Blackeyed Pea Cajiang Cowpea Crowder Pea Moth Bean Mung Bean Rice Bean Southern Pea Urd Bean Broad Bean (dry) Chickpea Guar Lablab Bean Lentil Pea (Pisum) Field Pea Pigeon Pea	Flea Beetle Aster Leafhopper Leafhoppers Aphids Armyworms Beet Fall Southern Yellowstriped Beetles Bean Leaf Cucumber Japanese (adult) Mexican Bean Sap Bugs Plant Bugs Stink Bugs Tarnished Plant Bugs Alfalfa Caterpillar Cloverworm European Corn Borer Cutworms Western Bean Cutworm Corn Earworm Loopers Corn Rootworm (Adult) Thrips Webworms Pea Weevil Pea Leaf Weevil Whitefly Imported Cabbageworm Saltmarsh Caterpillar Tobacco Budworm Leafminers Grasshoppers	0.025-0.10 lb ai (1.6-6.4 fl. oz. product) 0.033-0.10 lb ai (2.1-6.4 fl. oz. product)	Apply in a minimum of 10 gallons/A by ground or a minimum of 2 gallons/A by air. When applying by air, substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary. Do not apply more than 0.2 lb. a.i. (12.8 fl. oz. product) per acre per season to peas. Do not apply more than 0.3 lb. a.i. (12.8 fl. oz. product) per acre per season to beans. Do not make applications less than 7 days apart.	14
	Banks Grass Mite Carmine Mite Lygus Spp. Twospotted Spider Mite	0.08-0.10 lb ai (5.12-6.4 fl. oz. product)		

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BRASSICA

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Head and Stem Brassica Vegetables including: Broccoli Brussels Sprouts Cabbage Cauliflower Cavalo Broccolo Chinese Broccoli (gai lon, white flowering broccoli) Chinese Cabbage (napa) Chinese Mustard Cabbage (gai choy) Kohlrabi	Aphids Armyworms Corn Earworm Crickets Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Ground Beetles Imported Cabbageworm Leafhoppers Loopers Saltmarsh Caterpillar Stink Bugs Thrips Tobacco Budworm Whitefly Wireworm (Adults)	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 10 gallons spray/A by ground or in a minimum of 2 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired when applying by air. For best control thorough coverage is necessary. Do not apply more than 0.5 lb a.i. (1 quart product) per acre per season. Do not make more than 5 applications after bloom. Do not make applications less than 7 days apart.	7
	Banks Grass Mite Carmin Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)		

CANEBERRIES

Including Bingleberries, Blackberries, Dewberries, Loganberries, Lowberries, Marionberries, Olallieberries, Raspberries, Youngberries

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Leafrollers Orange Tortrix Root Weevils	0.05-0.10 lb. ai (3.2-6.4 fl. oz. product)	Apply in water in a minimum of 50 gallons/A by ground or in a minimum of 10 gallons/A by air. For best control thorough coverage of foliage is necessary.	3
Raspberry Crown Borer Spider Mites	0.10 lb. ai (6.4 fl. oz. product)	Make one prebloom application and if necessary one postbloom application. For Crown Borer apply as a drench either post-harvest (fall) or pre-bloom (spring), using 0.1 lb ai/A in at least 200 gallons of water/A. Direct the spray at the crown of the plant. For best results, apply at higher water gallonages (up to 400 gal/A) or prior to a significant rainfall. Do not apply both pre-bloom foliar and pre-bloom drench applications. Do not apply more than 0.2 lb. a.i. /A per season.	

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CANOLA, CRAMBE, RAPESEED

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Armyworms Cutworms Diamondback Moth Flea Beetle Flea Hopper Grasshopper Loopers Other Lepidopterous Larvae Plant Bug Seedpod Weevil Stink Bugs Thrips Whitefly	0.033-0.04 lb. ai (2.1-2.6 fl. oz. product)	Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired when applying by air. For best control thorough coverage is necessary. Do not apply more than 0.08-lb. a.i. (5.12 fl. oz. product) per acre per season. Do not make applications less than 14 days apart.	35

CHRISTMAS TREES

For use only in Washington and Oregon

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS
Root Weevil Spruce Spider Mite	0.06-0.1 lb ai (3.9-6.4 fl oz product)	Apply in water in a minimum of 20 gallons/A by ground, or in a minimum of 5 gallons/A by air. Do not apply more than 3 times in a crop year. Do not apply more than 0.1 lb ai (6.4 fl oz product)/A per treatment. Do not apply through any type of irrigation system. Do not make applications less than 21 days apart. Although this product is not expected to be phytotoxic to Christmas trees, it is recommended that application be made to a small representative group of plants to ensure that a particular variety is not unusually sensitive.

CILANTRO, CORIANDER

Not for this use in California unless accompanied by supplemental labeling.

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Beet Armyworm Cabbage Looper Cutworms Flea Beetles Grasshoppers Leafminers Saltmarsh Caterpillar Spotted Cucumber Beetle Thrips Whitefly	0.033 - 0.10 lb. ai (2.1 - 6.4 fl. oz. product)	For best control, thorough coverage is necessary. Apply as needed. Apply in water in a minimum of 10 gallons of spray/A by ground or in a minimum of 2 gallons/A by air. Do not make applications less than 7 days apart. Do not apply more than 0.50 lb. a.i. /A per season.	3
Two Spotted Spider Mite	0.08 - 0.10 lb. ai (5.12 - 6.4 fl. oz. product)		

13/28

CITRUS

Not for this use in California unless accompanied by supplemental labeling

PEST	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
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 lb ai (16-32 fl oz product)	<p>Apply by ground in a minimum of 40 gallons of dilute spray per acre. Make uniform application to bare soil beneath the tree from the trunk to the drip line of the tree.</p> <p>Use a higher spray volume to insure uniformity of coverage. Pre- and post-application irrigation may also aid in uniform coverage. Bifenture protects tree roots from root weevils by forming a barrier of pesticide through which they must burrow when the neonates fall from the tree after hatching. After application minimize disturbance of the soil beneath the trees to maintain this barrier.</p> <p>It is important to time applications correctly. Peak emergence of adult Diaprepes Weevil varies by citrus growing region and is also dramatically affected by environmental factors such as soil moisture. Typically, two peaks are observed for Diaprepes, first in spring and then in late summer or early fall. For Southern Blue-Green and Blue-Green Citrus Weevils and Fuller Rose Beetle, a single emergence peak in the spring is typical. Brown and Little Leaf Notchers typically have three emergence peaks in spring, summer and fall.</p> <p>Since emergence varies seasonally and by location, observation of adults is the most accurate way to forecast timing of applications. Numbers of adults can be estimated by trapping during spring and summer during the active early morning and later afternoon periods. Egg laying occurs for 8-10 weeks following emergence from the soil, and larval invasion of the soil begins 2-3 weeks following adult emergence. It is critical to have the Bifenture EC soil barrier in place before the neonates drop.</p> <p>Use Bifenture EC in conjunction with other tools in an integrated pest management program for citrus Root Weevils. Good cultural practices, biological control of larvae and foliar control of adults are all important. Local university extension personnel can provide the most current information to protect citrus trees.</p> <p>Additional information:</p> <p>Apply to individual citrus trees, when not in solid planted rows, using a hand-gun or shielded sprayer.</p> <p>Note that although peak emergence of Diaprepes occurs in the spring, weather conditions can cause a minor emergence of this pest in the fall.</p> <p>Use the highest rate if the citrus grove to be treated is in an area where weather conditions are conducive to primary emergence in the spring. This will provide the longest residual management of Diaprepes Root Weevil.</p> <p>Use the lower rate if the citrus grove is in an area where weather conditions will promote more than one peak of pest emergence, and make a second application later in the season.</p> <p>Do not apply through irrigation systems.</p> <p>Do not allow Bifenture EC to contact fruit or foliage.</p> <p>Do not apply more than a total of 32 fl oz product (0.5 lb ai)/A per year.</p> <p>Do not apply by air.</p>	1
Asian Cockroach (<i>Blattella asahinae</i>) Fireants (<i>Solenopsis spp.</i>)	0.1-0.25 lb ai (6.4-16 fl oz product)		

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CONIFER SEED ORCHARDS

For use only in the states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, and Virginia

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS
Cone Worms Seed Bugs Seed Worms	0.1-0.2 lb ai (6.4-12.8 fl oz)	Apply in water in a minimum of 100-500 gallons/A by ground. Apply in water in a minimum of 10 gallons/A or in refined vegetable oil in a minimum of 0.5 gallons/A by air. For best control thorough coverage is necessary. Begin application 7 days following peak pollen flight and repeat at 30 day intervals to a maximum of 0.6 lb ai/A per season. Do make more than six applications per season, or apply more than 38.4 fl oz product/A per season.

COTTON

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
European Corn Borer Soybean (Banded) Thrips Tobacco Thrips	0.02-0.10 lb. ai (1.3-6.4 fl. oz. product)	Apply Bifenture EC in water or refined soybean/cottonseed oil. Apply in water in a minimum of 5 gallons/A by ground or a minimum of 1 gallon/A by air. Substitute 1 quart of emulsified oil for 1 quart water if desired when applying by air. ULV Application: Apply in refined vegetable oil in a minimum of 1 quart/A with aircraft calibrated to give adequate coverage.	14
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 Yellow Striped Armyworm	0.04-0.10 lb. ai (2.6-6.4 fl. oz. product)	Boll Weevil: Apply Bifenture EC every 3 to 4 days until control is acceptable. Mites and Aphids: Apply when pests first appear. Repeat as necessary to maintain control. Use the higher rates once a damaging threshold is established. Apply no more than 0.5 lb. a.i/A per season in all states except California. In California, apply no more than 0.3 lb a.i. per acre per season.	
Beet Armyworm Carmine Spider Mite Lygus spp. Pink Bollworm Twospotted Spider Mite	0.06-0.10 lb. ai (3.8-6.4 fl. oz. product)	No more than 10 synthetic pyrethroid applications (of one product or combination of products, including Ambush [®] , Ammo [®] , Asana [®] XL, Baythroid [®] , Capture [®] , Danitol [®] , Karate [®] , Mustang [®] , and Scout X-TRA [®]) may be made to a cotton crop in one growing season. Do not graze livestock in treated areas or cut treated crops for feed.	

**FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED
(AT PLANTING USE)**

PESTS CONTROLLED	RATE BIFENTURE EC	APPLICATION INSTRUCTIONS	PHI (days)
Corn Rootworm Larvae Northern Mexican	0.0046 lb ai (0.30 fl. oz. product) per 1,000 linear	Apply as a 5 to 7 inch T-band at planting over the open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. The table below describes the amount of Bifenture EC needed per acre. Apply in water in a minimum of 3 gallons/A.	30

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Southern Western	feet of row	When using Bifenture EC with fertilizers, check to be sure all components are compatible. For mixture with water or fertilizer, use the following procedure. Fill the spray tank approximately one-half full with water or liquid fertilizer; add the proper amount of Bifenture EC; then add the rest of the water or fertilizer. Sufficient agitation during mixing and application is required to ensure a uniform mixture.	
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 – 0.0046 lb ai (0.15 - 0.30 fl. oz. product) per 1,000 linear feet of row	Only apply to soil when there is less 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 0.1 lb. ai/A per season at planting.	

Row spacings	40 in.	38 in.	36 in.	30 in.
Bifenture EC (lb. a.i. per acre)	0.060	0.064	0.069	0.080
Bifenture EC (formulated product, ounces per acre)	3.9	4.1	4.4	5.12

FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED**Pre-Plant Incorporated (PPI) and Pre-Emergence (PRE)**

PESTS CONTROLLED	RATE BIFENTURE EC	APPLICATION INSTRUCTIONS
Armyworm spp. Black Cutworm Seedcorn Maggot Stalkborer White Grub Wireworm	0.047 to 0.062 lb. a.i./A (3-4 fl. oz/A product) Pre-Plant Incorporated (PPI)	Incorporate Bifenture EC close to the expected depth of the seed, but no deeper than 3 inches. PPI: Use the 3-4 oz./A rate only. Apply alone or with PPI herbicides as a tank mix. PRE: Use the 2.56 oz/A rate when tankmixing and applying with PRE herbicides.
Armyworm spp. Black Cutworm Stalkborer	0.040 lb. a.i./A (2.56 fl. oz./A product) Pre-emergence (PRE)	

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

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
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 Leafhoppers	0.033-0.10 lb ai (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2-5 gallons/A by air. For heavy infestations, use 5 gallons of finished spray per acre by aircraft. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary. Ear-Attacking Pests: Apply Bifenture EC just before silking. Southwestern Corn Borer, European Corn Borer: Apply at or shortly before egg hatch. Other Insect Pests: Apply when insects first appear. Repeat as needed. Banks Grass Mites: Apply when colonies first form before leaf damage or discoloration and prior to movement above the bottom third of the plant.	30

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Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stinkbugs Tarnished Plant Bug Thrips True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm		<p>Twospotted Spider Mite and Carmine Mite: Apply when colonies first form before leaf damage or discoloration and before wide-spread mite movement throughout the canopy. Use the higher rates if heavier insect pressure is noted and corn is under heat or drought stress. Tank mixtures with dimethoate at 0.5 lb. a.i. per acre are effective under these conditions.</p> <p>Mite Control in Texas, New Mexico, Oklahoma, and Arizona: Apply in water in a minimum of 10 gallons/A ground or in a minimum of 5 gallons/A by air. Repeat applications as necessary to maintain control, but do not apply more than 0.3 lb. active ingredient per acre per season including PRE & PPI, at plant plus foliar applications.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application.</p> <p>Do not apply by ultra low volume (ULV) application on corn.</p> <p>If heavy rainfall is imminent, do not make aerial or ground applications to corn.</p> <p>Use of Bifenture EC Agricultural Insecticide on corn is prohibited in all coastal counties.</p>	
Banks Grass Mite Carmine Mite Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)		

SWEET CORN
SWEET CORN GROWN FOR SEED
(AT PLANTING USE)

PESTS CONTROLLED	RATE BIFENTURE EC	APPLICATION INSTRUCTIONS	PHI (days)
Corn Rootworm Larvae Northern Mexican Southern Western	0.0046 lb. ai (0.30 fl.oz. product) per 1,000 linear feet of row	<p>Apply at planting over the open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. The table below describes the amount of Bifenture EC needed per acre. Apply in a minimum of 3 gallons of finished spray per acre.</p> <p>When using Bifenthrin EC with fertilizers, check to be sure all components are compatible. For mixture with water or fertilizer, use the following procedure. Fill the spray tank approximately one-half full with water or liquid fertilizer; add the proper amount of Bifenture EC; then add the rest of the water or fertilizer. Sufficient agitation during mixing and application is required to ensure a uniform mixture.</p> <p>Only apply to soil where there is less than 30% cover of crop residue remaining.</p> <p>Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.</p> <p>Do not apply more than 0.1 lb. ai/A per season at planting.</p>	30
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 – 0.0046 lb. ai (0.15 - 0.30 fl.oz. product) per 1,000 linear feet of row		

Row Spacings	40 in.	38 in.	36 in.	30 in.
Bifenture EC (lb. a.i. per acre)	0.060	0.064	0.069	0.080
Bifenture EC (formulated product, ounces per acre)	3.9	4.1	4.4	5.12

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SWEET CORN
SWEET CORN GROWN FOR SEED
(FOLIAR USE)

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Army Cutworm Aster Leafhopper Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm Adults Corn Silkworm Cucumber Beetle Adults Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle Adults Leafhoppers Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stinkbugs Tarnished Plant Bug Thrips True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	<p>Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. For heavy infestations by aircraft, use 5 gallons of finished spray per acre. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control, thorough coverage is necessary.</p> <p>Ear-Attacking Pests: Apply Bifenture EC just before silking.</p> <p>Southwestern Corn Borer, European Corn Borer: Apply twice, with the first application at or shortly before egg hatch.</p> <p>Other Insect Pests: Apply when insects first appear. Repeat as needed.</p> <p>Mite Control: Apply when colonies first form before leaf damage or discoloration and prior to widespread movement throughout the canopy. For Banks Grass Mite, apply prior to movement above the bottom third of the plant.</p> <p>Use the higher rates if heavier insect pressure is noted and corn is under heat or drought stress.</p> <p>Repeat applications as necessary, but do not apply more than 0.2 lb. a.i. (12.8 fl. oz. product) per acre per season.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed within 1 day of the last application.</p> <p>Do not apply by ultra low volume (ULV) on corn.</p> <p>If heavy rainfall is imminent, do not make aerial or ground applications to corn.</p>	1
Banks Grass Mite Carmin Mite Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)	<p>Use of Bifenture EC on corn is prohibited in all coastal counties.</p>	

18/28

CUCURBITS

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Chayote (fruit)	Aphids	0.04-0.10 lb. ai	Apply in water in a	3
Chinese waxgourd	Armyworms	(2.6-6.4 fl. oz. product)	minimum of 20 gallons/A by	
(Chinese preserving melon)	Cabbage Looper		ground or in a minimum of 5	
Citron melon	Corn Earworm		gallons/A by air. Substitute	
Cucumber	Cucumber Beetles		1-2 quarts of emulsified oil	
Gherkin	Cutworm		for 1-2 quarts water if	
Gourd, edible	Grasshopper		desired.	
(includes hyloan,	Leafhoppers		For best control thorough	
cucuzza), (<i>Luffa</i>	Melonworm		coverage is necessary.	
spp.) (includes	Pickleworm			
hechima, Chinese	Plant Bug		Do not apply more than 0.3	
okra), (<i>Momordica</i>	Rindworm		lb. a.i. (19.2 fl. oz. product)	
spp.) (includes	Squash Bugs		per acre per season.	
balsam apple,	Squash Vine Borer			
balsam pear, bitter	Stink Bugs		Do not apply more than	
melon, Chinese	Tobacco Budworm		twice after bloom.	
cucumber)				
Muskmelon (hybrids	Banks Grass Mite	0.08-0.10 lb. ai	Do not make applications	
and/or cultivars	Carmine Mite	(5.12-6.4 fl. oz. product)	less than 7 days apart.	
of <i>Cucumis melo</i>)	Lygus spp			
(includes	Twospotted Spider			
true cantaloupe,	Mite			
Cantaloupe,	Whitefly			
casaba, crenshaw				
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>Citrullis</i>				
spp.)				

19/28

FRUITING VEGETABLES

Eggplant, bell and non-bell pepper, pepino*, groundcherry*, tomato, tomatillo*

*Not for this use in California unless accompanied by supplemental labeling.

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Eggplant Pepper (bell and non- bell) Pepino Groundcherry	Armyworms (including: Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm) Cabbage Looper Colorado Potato Beetle Corn Earworm Cucumber Beetle Cutworms European Corn Borer Flea Beetle Leafhoppers Leafminers Loopers Pepper Weevil Plant Bug Stink Bug Thrips Tomato Pinworm Tomato Hornworm Vegetable Leafminer Whitefly	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in at least 2 gallons finished spray per acre by air or at least 10 gallons per acre by ground. When application is made by air, 1-2 qts. emulsified oil may replace 1-2 qts of water in the finished spray. For best control thorough coverage is necessary. Do not make applications less than 7 days apart. Do not apply more than 0.2 lb. a.i. (12.8 fl. oz. product) per acre per season.	7
	Banks Grass Mite Broad Mite Carmine Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)		

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Tomato Tomatillo	Aphids Armyworms (including: Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm) Bean Leaf Beetle Cabbageworm Carmin Mite Cloverworm Corn Earworm Corn Rootworm Cucumber Beetle Cutworms Diamondback Moth European Corn Borer Flea Beetle Fleahopper Grasshopper Japanese Beetle (adult) Leafhoppers Loopers Lygus spp. Melonworm Pea Weevil Pea Leaf Weevil Pickleworm Plant Bug Rindworm Salt Marsh Caterpillar Sap Beetle Seedpod Weevil Squash Bugs Stink Bug spp. Tobacco Budworm Tarnished Plant Bug Thrips Whitefly		Apply in at least 2 gallons finished spray per acre by air or at least 10 gallons per acre by ground. When application is made by air, 1-2 qts. emulsified oil may replace 1-2 qts. of water in the finished spray. For best control thorough coverage is necessary. Do not make applications less than 7 days apart. Do not apply more than 0.2 lb. a.i. (12.8 fl. oz. product) per acre per season.	1
	Two Spotted Spider Mite	0.08-0.10 lb ai (5.12-6.4 fl. oz product)		

GRAPES

Not for this use in California unless accompanied by supplemental labeling.

PESTS CONTROLLED	RATE BIFENTURE ECACRE	APPLICATION INSTRUCTIONS	PHI (days)
Cutworms Eastern Grape Lady Beetle (<i>Scymnus</i>) Leafhopper Grape Berry Moth Japanese Beetle (adult) Variegated Leafhopper Western Grape Leafhopper	0.05-0.10 lb. ai (3.2 to 6.4 fl. oz. product)	Apply in a minimum of 25 gallons/A by ground or in a minimum of 10 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary. Use the higher rate when insect pressure is moderate to severe. Do not apply more than 0.10 lb. a.i. per acre per season.	30
Black Vine Weevil Glassywinged Sharpshooter Twospotted Spider Mite	0.10 lb. ai (6.4 fl. oz. product)		

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HOPS

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Armyworms Cutworms Leafrollers Loopers	0.06-0.1 lb. ai (3.8-6.4 fl. oz. product)	Do not apply more than 0.1 lb. a.i. per acre per application . Do not apply more than 0.3 lb. a.i. per acre per season . Do not make applications less than 21 days apart. By ground: Full coverage is necessary for best results. For early season, use 100-150 gallons of spray per acre. For late season, use 200-250 gallons of spray per acre.	14
Root Weevils	0.05-0.1 lb. ai (3.2-6.4 fl. oz. product)	Root Weevil: direct the spray to the base of the plant. Spray 3 feet up the vine and the soil surface 1.5 to 2 feet around the plant.	
Twospotted Spider Mite	0.1 lb. ai (6.4 fl. oz. product)	Twospotted spider mites, for late season control: Apply at least 6.4 fl. oz. (0.1 lb. a.i.) per application in a minimum of 10 gallons per acre by air. Do not apply by ultra low volume (ULV) application to hops.	

LEAFY BRASSICAS Crop Subgroup 5-B

Not for this use in California unless accompanied by supplemental labeling.

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Broccoli raab Chinese cabbage (bok choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens	Aphids Armyworms Corn Earworm Crickets Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Grasshoppers Ground Beetles Imported Cabbageworm Japanese Beetles (adults) Leafhoppers Loopers Saltmarsh Caterpillar Stink Bugs Thrips Tobacco Budworm Whitefly Wireworm (adults)	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. For best control thorough coverage of foliage is necessary. When applied by air, 1 to 2 quarts of emulsified oil may be substituted for 1 to 2 quarts of water in the finished spray. Do not make applications less than 7 days apart. Do not apply more than 0.4 lb. a.i. /A per season.	7
	Banks Grass Mite Carmine Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08 - 0.10 lb. ai (5.12 - 6.4 fl. oz. product)		

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LETTUCE, HEAD

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Armyworms Cabbage Maggot Corn Earworm Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Grasshoppers Imported Cabbageworm Leafhoppers Loopers Salt Marsh Caterpillar Stink Bug spp. Thrips Tobacco Budworm Whitefly	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 15 gallons/A by ground or in 5 gallons/A by air. For air application, substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary. Do not make applications less than 7 days apart. Do not apply more than 0.5 lb. a.i. per acre per season.	7
Carmine Mite Lygus, spp. Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)		

MAYHAW

Not for this use in California unless accompanied by supplemental labeling.

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Plum Curculio	0.08 - 0.10 lb. ai (5.12 - 6.4 fl. oz. product)	Apply in at least 28 gallons per acre. Do not apply more than once every 7 days. Do not apply more than 0.2 lb. ai/A per season.	30

OKRA

Not for this use in California unless accompanied by supplemental labeling.

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Armyworms Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Japanese Beetles (adult) Leafminers Loopers Stink Bugs Thrips Whitefly	0.033 - 0.10 lb. ai (2.1 - 6.4 fl. oz. product)	For best control, thorough coverage is necessary. Apply as needed. Apply in water in a minimum of 10 gallons of spray/A by ground or in a minimum of 2 gallons/A by air. Do not make applications less than 7 days apart. Do not apply more than 0.20 lb. a.i. /A per season.	7

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Broad Mite Carmine Mite Lygus spp. Two Spotted Spider Mite	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)		
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PEANUT

Not for this use in California unless accompanied by supplemental labeling.

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Beet Armyworm Corn Earworm Cutworm spp. 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 lb. ai (2.1 – 6.4 fl. oz. product)	Apply in at least 10 gallons of water. Do not apply more than once every 14 days. Do not feed green immature plants and peanut hay to livestock. Do not apply more than 0.5 lb. ai/A per season.	14
Aphids Spider Mites Thrips Whitefly	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)		

PEARS

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Codling Moth Cutworms Green Fruitworm Leafhoppers Leafminers Leafrollers Lygus spp. Plant Bugs Plum Curculio San Jose Scale (Crawlers) Stink Bugs Tarnished Plant Bugs	0.04-0.2 lb. ai (2.6 to 12.8 fl. oz. product)	By ground: 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. For best control thorough coverage is necessary. By air: Apply in a minimum of 10 gallons per acre. Do not apply more than 0.5 lb. active per acre per season with no more than 0.45 lb. active per acre applied after petal fall. Apply as necessary to maintain control and repeat applications at 30 day intervals.	14
Twospotted Spider Mite Yellow Mite	0.06-0.2 lb. ai (3.8 to 12.8 fl. oz. product)	Do not graze livestock in treated orchards or cut treated cover crops for feed.	
European Red Mite	0.08-0.2 lb. ai (5.12 to 12.8 fl. oz. product)		

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ROOT CROPS (except Sugarbeets)**Not for these uses in California unless accompanied by supplemental labeling.**

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Edible burdock, Carrot, Celeriac, Chervil, Chicory, Ginseng, Horseradish, Parsley, Parsnip, Radish, Oriental radish, Rutabaga, Salsify, Black salsify, Spanish salsify, Skirret, Turnip	Aphids Beet Armyworm Celery Leaf Tier Corn Earworm Cross-striped Cabbageworm Cutworms Diamondback Moth European Corn Borer Fall Armyworm Fire Ants Flea Beetles Green Cloverworm Hornworms Imported Cabbageworm Loopers Southern Armyworm Spider Mites Tobacco Budworm Velvetbean Caterpillar Whitefly Yellowstriped Armyworm	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)	Apply in at least 25 gallons per acre. Do not apply more than once every 7 days. Do not apply more than 0.5 lb. ai/A per season.	21
Garden Beets	Aphids Fire Ants Flea Beetles Lepidopterous Larvae Spider Mites Whitefly	0.08-0.10 lb ai (5.12-6.4 fl. oz. product)	Make foliar applications in a minimum of 25 gal/A. Do not apply more than 0.4 lb ai/A per season. Do not apply more often than every 7 days.	1

SOYBEAN**Not for this use in California unless accompanied by supplemental labeling.**

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Alfalfa Caterpillar Aphids Aster Leafhopper Bean Leaf Beetle Beet Armyworm* Cloverworm Corn Earworm Corn Rootworm Adult Cucumber Beetles Cutworms European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Imported Cabbageworm Japanese Beetle Adult Pea Leaf Weevil Pea Weevil Plant Bug Saltmarsh Caterpillar Sap Beetle Southern Armyworm	0.033 - 0.10 lb. ai (2.1 – 6.4 fl. oz. product)	Make foliar applications in at least 10 gallons per acre. Do not apply more than once every 30 days. Do not apply more than 0.3 lb. ai/A per season. *Because pyrethroid resistance is common for Beet Armyworm and Tobacco Budworm, consult your local or state agricultural authorities to find out if resistant pest populations are in the treatment area. If so, refer to the resistance information in the Directions for Use section of this label.	18

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Stink Bugs Tarnished Plant Bug Thrips Tobacco Budworm* Webworms Western Bean Cutworm Whitefly Yellowstriped Armyworm Soybean Aphid			
Lygus spp. Whitefly Two-spotted Spider Mite	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)		

SPINACH

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Armyworms Colorado Potato Beetle Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Tomato Pinworm Tomato Hornworm Thrips Whitefly	0.033 to 0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in water at 10-50 gallons/A by ground or 5-50 gallons /A by air. Whiteflies: make up to 4 foliar treatments of Bifenture EC by ground or air at rates of up to 0.4 pt. (0.1 lb. active) per acre Repeat applications at 7 day intervals. Fire ants: make up to 4 applications of Bifenture EC to the soil at planting or as a foliar treatment by ground or air at rates of up to 0.4 pt. (0.1 lb. active) per acre. Repeat application at 7 day intervals. Do not make applications less than 7 days apart. Do not apply more than 0.4 lb. a.i. per acre per season.	40
Broad Mite Banks Grass Mite Carmine Mite Fire Ants Lygus spp. Twospotted Spider Mite Pacific Spider Mite	0.08-0.10 lb. ai (5.12 to 6.4 fl. oz. product)		

TOBACCO

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PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI
Armyworm spp. Cutworm spp Mole Crickets Stalkborers Tobacco Flea Beetle (larvae) White Grubs Wireworms	0.0625-0.10 lb ai (4.0-6.4 fl. oz. product)	Pre-transplant soil application: Apply specified rate in a minimum of 10 gal/A. To control below-ground pests, use equipment which will incorporate the application into the top 4" of soil. At-transplant water treatment application: Apply specified rate in a water treatment volume of 10-200 gal/A.	Do not apply later than layby. Do not apply more than 0.2 lb ai/A per season.
Aphid spp. Armyworm spp. Chinch Bugs Cucumber Beetles Flea Beetle (Adults) Stink Bugs Japanese Beetles Grasshoppers Cutworm spp.	0.04-0.10 lb ai (2.56-6.4 fl. oz. product)	Foliar application: Apply specified rate in a minimum of 10 gal/A up to and including layby. Do not make more than 2 foliar applications per season. May be tank mixed with other herbicides registered for tobacco use. *See Resistance section on this label for more information.	

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Tarnished Plant Bugs Green Bugs Saltmarsh Caterpillar Thrips Tobacco Budworm* Tobacco Hornworm Whiteflies		
Lygus spp. Spider Mites	0.1 lb ai (6.4 fl. oz. product)	

TUBEROUS AND CORM VEGETABLES (Crop Subgroup 1C)

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Potato Sweet Potato Arracacha Arrowroot Artichoke (Chinese and Jerusalem) Edible Canna Cassava (bitter and sweet) Chayote (root) Chufa Dasheen Ginger Leren Tanier Turmeric Yam Bean True Yam	Banded Cucumber Beetle Black Flea Beetle Corn Wireworm Cucumber Beetle Japanese Beetle Grubs June Beetle Rootworms Southern Potato Wireworm Sugarcane Beetle Sweetpotato Flea Beetle Sweetpotato Weevil Tobacco Wireworm Whitefringed Beetle White Grub	At-Plant 0.30 lb. ai (19.2 fl. oz. product) At Cultivation or Lay-By 0.05 – 0.15 lb. ai (3.2 – 9.6 fl. oz. product) Foliar 0.033 – 0.10 lb. ai (2.1 – 6.4 fl. oz. product)	Bifenture EC may be applied at planting time for the control of wireworms, rootworms and white grubs. Apply at the rate of 0.3 lb a.i./A as a soil incorporated broadcast, directed bed spray or T-band spray into the planting furrow. Bifenture EC may be applied as a cultivation or lay-by treatment for the control of wireworms, rootworms, and white grubs. Apply to the drill area and cover with soil utilizing cultivation equipment set to throw soil to the drill area. Apply as a banded spray over the row at a rate of 0.05 to 0.15 lb a.i./A (3.2 to 9.5 fluid ounces product) in 10 gallons of spray per acre. Bifenture EC may be applied as a foliar spray for the control of the adult life stages of flea beetles, click beetles (wireworms), cucumber beetles (rootworms), white fringed beetles, and May/June beetles (white grubs). Apply at a rate of 0.033 to 0.1 lb a.i./A (2.1 to 6.4 fluid ounces product) in 10 gallons of spray by ground or 3 gallons of spray by air. Do not make more than 2 foliar applications per season. Do not make applications less than 21 days apart. Do not apply more than 0.5 lb. a.i. /A per season, including soil application.	21

SOD FARMS**Not for use in California unless accompanied by supplemental labeling.**

In New York State, this product may NOT be applied to any grass or turf area within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

In New York State, DO make a single repeat application of this product if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

PEST	RATE BIFENTURE EC/ACRE	RATE BIFENTURE EC FL OZ/1000 SQ FT.
Armyworms ¹ Cutworms ¹ Sod Webworm ¹	0.03-0.05 lb ai (2.2-3.5 fl oz product)	0.05-0.08 fl oz product
Annual Bluegrass Weevil (Hyperodes) (Adult) ² Banks Grass Mite ⁶ Billbugs (Adult) ³ Black Trufgrass Ataenius (Adult) ⁴ Crickets Earwigs	0.05-0.11 lb ai (3.5-7.0 fl oz product)	0.08-0.16 fl oz product

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Fleas (Adult) Grasshoppers Mealybugs Mites ⁶		
Ants Chinch Bugs ⁵ Fleas (Larvae) ⁷ Imported Fire Ants ⁸ Japanese Beetle (Adult) Mole Cricket (Adult) ⁹ Mole Cricket (Nymph) ¹⁰ Ticks ¹¹	0.11-0.21 lb ai (7.0-14.0 fl oz product)	0.16-0.32 fl oz product
<p>Footnotes</p> <p>1 <u>Armyworms, Cutworms, and Sod Webworms</u>: for best control, delay watering (irrigation) or mowing for 24 hours after application. Higher application rates (up to 0.32 fl oz pr 1000 sq ft) may be required if grass is being maintained at a mowing height of greater than 1" in periods of high pest pressure.</p> <p>2 <u>Annual Bluegrass Weevil (<i>Hyperodes</i>) Adults</u>: Time applications to control adult weevils as they leave their overwintering sites and move into grass. Generally, this movement begins when Forsythia is in full bloom and finishes when flowering dogwood is in full bloom. Your State Cooperative Extension Services can give more specific information regarding the timing of applications.</p> <p>3 <u>Billbug Adults</u>: Apply when adult billbugs are first seen during April and May. Consult degree day models to optimize application timing, and consult your State Cooperative Extension Service for information specific to your region. In temperate regions, apply in spring to also provide control of over-wintered chinch bugs.</p> <p>4 <u>Black Turfgrass Taenius Adults</u>: Apply during May and July to control the first and second generations, respectively. Time the May application to coincide with the full bloom stage of Vanhoutte spiraea (<i>Spiraea vanhouttei</i>) and horse chestnut (<i>Aesculus hippocastanum</i>). Time the July application to coincide with the blooming of Rose of Sharon (<i>Hibiscus syriacus</i>).</p> <p>5 <u>Chinch Bugs</u>: irrigate the grass area before treatment to optimize penetration of the product to the base of grass plants and the thatch layer, where chinch bugs are found. If the thatch layer is excessive or if a relatively long mowing height is being maintained, use higher volume applications. Chinch Bugs are difficult to control in grasses and the higher labeled application rates may be necessary to control populations containing both nymphs and adults during the middle of the summer.</p> <p>6 <u>Mites</u>: for best control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application timed five to seven days after the first may be necessary for acceptable control.</p> <p>7 <u>Flea Larvae</u>: These pests develop in the soil of shaded areas accessible to pets and other animals. When treating these areas, use a higher application volume to ensure the insecticide penetrates into the soil. Note: if the lawn area is being treated with this product at 0.10 fl oz/1000 sq ft for adult flea control, then the larval application rate may be achieved by increasing the application volume two-to four-fold.</p> <p>8 <u>Imported Fire Ants</u>: For best control, combine broadcast applications (to control foraging workers and newly mated fly-in queens) with mound drenches (to eliminate existing colonies). If the soil is not moist, irrigate before application or use a high volume application. For broadcast treatments, use 0.32 fl oz/1000 sq ft. Treat mounds by diluting 0.05 fl oz Bifenture EC per gallon of water, and apply 1 to 2 gallons of finished spray per mound. Treat the mounds with enough force to break the apex and allow the solution to flow into the ant tunnels. Also treat a four-foot diameter circle around the mound. For best results, apply in cool weather (65 – 80° F) or in early morning or late evening hours.</p> <p>9 <u>Mole Cricket Adults</u>: Adult mole crickets are difficult to control because preferred grass areas are continuously invaded during the early spring. Apply as late in the day as possible, and water in with up to 0.5 inches of water immediately following treatment. If the soil is not moist, irrigate before application to bring the crickets closer to the soil surface and maximize exposure to the insecticide. In grass areas that receive pressure from adult mole crickets, treat at peak egg hatch to ensure control of subsequent nymph populations (see footnote 10).</p> <p>10 <u>Mole Cricket Nymphs</u>: In grass areas that receive intense pressure from adult mole crickets, treat immediately before peak egg hatch. Best control is achieved at that time because young nymphs are more susceptible to insecticides and they are located near the soil surface. To control larger, more damaging nymphs later in the year a higher application rate and more frequent applications may be necessary. Apply as late in the day as possible and water in with up to 0.5 inches of water immediately following treatment. If the soil is not moist, irrigate before application to bring the crickets closer to the soil surface and maximize exposure to the insecticide.</p> <p>11 <u>Ticks (including ticks that may transmit Lyme Disease and Rocky Mountain Spotted Fever)</u>: Do not make spot applications, but treat the entire area where exposure to ticks may occur. When treating areas with dense ground cover or heavy leaf litter, use higher spray volumes. Note that ticks may be reintroduced from surrounding areas or on host animals and retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Limit repeat application to no more than once per seven days, and only if there are signs of renewed activity. <u>Deer Ticks (<i>Ixodes</i> sp.)</u>: This pest has a complex life-cycle that ranges over a two-year period and involves four life stages. Apply in the late fall and/or early spring to control adult ticks (usually located on brush or grass above the soil surface), and in mid to late spring to control larvae and nymphs (found in the soil and leaf litter). <u>American Dog Ticks</u>: These ticks congregate along paths or roadways where humans are likely to be encountered. Apply as necessary from mid-spring to early fall to control larvae, nymphs, and adults.</p>		

**IMPORTANT INFORMATION
READ BEFORE USING PRODUCT**

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

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