

70506-58

06/04/2007

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

WASHINGTON, D.C. 20460

JUN 4 2007

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Timothy M. Formella  
Senior Regulatory Manager  
United Phosphorus, Inc.  
423 Riverside Plaza  
Trenton, NJ 08611

Subject: Amendment – Incorporates revised warranty statement and July 2006  
Notification.  
Bifenture EC-CA Agricultural Insecticide  
EPA Reg. No. 70506-58  
Your submission dated April 16, 2007

Dear Mr. Formella:

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. On pages 11 and 14, Under Field Corn (grain and silage) popcorn, Field Corn grown for seed (foliar Use) and Sweet corn grown for seed (Foliar Use), re-instate "Use of Bifenture EC-CA on corn is prohibited in all coastal counties".

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 of my team at (703) 305-7460.

Sincerely,

A handwritten signature in cursive that reads "BeWanda Alexander for".

George T. LaRocca  
Product Manager 13  
Insecticide Branch  
Registration Division (7505C)

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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-CA AGRICULTURAL INSECTICIDE**

**FOR SALE AND USE ONLY IN CALIFORNIA.**

<b>Active Ingredient:</b>	<b>By Wt.</b>
<b>Bifenthrin*</b> (2 methyl[1,1'-biphenyl]-3-yl) methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate.....	25.1%
<b>Other Ingredients**:</b> .....	74.9%
<b>TOTAL</b> .....	100.0%

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

\*\*Contain xylene range aromatic solvents

This product contains 2 pounds active ingredient per gallon.

**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.)

<b>FIRST AID</b>	
If swallowed	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
If in eyes	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
If inhaled	<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 by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
If on skin or clothing	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b>	
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 1-866-767-5089.	

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

ACCEPTED with COMMENTS In EPA Letter Dated JUN 4 2007 Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 70506-58



Manufactured for:  
United Phosphorus, Inc.  
423 Riverview Plaza • Trenton, NJ 08611  
1-800-247-1557 • [www.upi-usa.com](http://www.upi-usa.com)

EPA Reg. No. 70506-58  
EPA Est. No.  
Net Contents

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

May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield or safety glasses). Harmful if absorbed through the 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.

<p><b>USER SAFETY RECOMMENDATIONS</b></p> <p>Users should:</p> <ul style="list-style-type: none"> <li>• Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.</li> <li>• Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.</li> </ul>
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**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.

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

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of

insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternative method of control in your area.

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#### 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, nitrile rubber, neoprene rubber or Viton.
- Shoes plus socks.

#### STORAGE AND DISPOSAL

**Pesticide Storage:** Do not freeze. Do not store below 40°F. If crystals are observed, warm material to above 60°F by placing in warm location. Shake or roll container periodically to redissolve solids.

Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills.

**To Confine Spill:** If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

**Container Disposal:** Metal or Plastic Container: Triple rinse (or equivalent), then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Do not cut or weld metal containers.

**Returnable, Refillable Containers:** Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.

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### Special Equipment

The registration of Bifenture EC-CA Agricultural Insecticide in California requires that the product be used in closed systems that meet the criteria for closed system as established by the California Department of Food and Agriculture. The criteria and a list of the closed systems meeting the criteria are available through the California Department of Food and Agriculture.

### Rotational Crops

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-Mixture

Bifenture EC-CA Agricultural Insecticide may be applied in tank mixtures with other products approved for use on cotton. Observe all restrictions and precautions which appear on the labels of these products. Test for compatibility of products before using.

### Application Instructions

Rate of application is variable according to pest pressure, timing of sprays, and field scouting. Use lower rates under light to moderate infestations; higher rates under heavy insect pressure and for mite control. Arid climates generally require higher rates.

Use of Bifenture EC-CA is prohibited in all coastal counties.

### 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.

For LEPA irrigation a minimum of 0.75 inch of water per acre is recommended. Where non-emulsified oils are used as the diluent, 1 to 2 pints per acre is recommended.

Results from utilizing chemigation have been variable and depend upon the set up and calibration of equipment. Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. Contact your State Agricultural Extension Service specialists, equipment manufacturers or other experts for consultation on the suitability of the equipment set up to obtain effective control of the target insect pests.

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.

Bifenture EC-CA Agricultural Insecticide should be applied continuously for the duration of the water application. Bifenture EC-CA Agricultural Insecticide should be diluted in sufficient volume to ensure accurate application over the area to be treated. When using chemigation, a minimum of 0.5 inch per acre of irrigation water is recommended. Agitation generally is not required when a suitable diluent is used. A diluent test should be conducted to ensure that phase separation will not occur during dilution and application. Failure to achieve a uniform dilution throughout the time of application may result in undesirable residues or less than desirable control.

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Spray Drift Precautions

OBSERVE THE FOLLOWING PRECAUTIONS WHEN SPRAYING IN THE VICINITY OF AQUATIC AREAS SUCH AS LAKES, RESERVOIRS, RIVERS, PERMANENT STREAMS, MARSHES, OR NATURAL PONDS, ESTUARIES, AND COMMERCIAL FISH FARMS:

Do not apply by ground equipment within 25 feet, or by air within 150 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds. Increase the buffer zone to 450 feet when ultra low volume (ULV) application is made.

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

Use the largest droplet size consistent with good pest control. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.

Spray should be released at the lowest height consistent with pest control and flight safety. Applications more than 10 feet above the crop canopy should be avoided.

Make aerial or ground applications when the wind velocity favors on target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph.

Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.

Do not cultivate within 10 feet of the aquatic areas so as to allow growth of a vegetative filter strip.

Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift to aquatic areas. Avoid spraying during conditions of low humidity and/or high temperature.

Do not make aerial or ground applications during 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.

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**INDEX TO CROPS LISTED ON THIS LABEL**

Artichokes  
Brassicas  
Caneberries  
Canola, Crambe, Rapeseed  
Cotton  
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (At Plant Use)  
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (Foliar Use)  
Sweet Corn, Sweet Corn Grown for Seed (At Plant Use)  
Sweet Corn, Sweet Corn Grown for Seed (Foliar Use)  
Cucurbits  
Eggplant  
Hops  
Lettuce, Head  
Peppers, Bell and Non-Bell  
Succulent Peas and Beans  
Tomatoes  
Spinach

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## ARTICHOKES

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A.I./A	FL .OZ./A	
Artichoke Plume Moth Cribrate Weevil	0.10	6.4	<p>Apply when pest population reaches damaging threshold and repeat as necessary to maintain control, but not more often than 15 day intervals.</p> <p><b>Application by ground:</b> Apply a full cover spray in a minimum of 75 gallons of finished spray per acre.</p> <p><b>Application by air:</b> Apply specified dosage in a minimum of 10 gallons per acre.</p> <p>A 5-day preharvest interval must be observed.</p>

## BRASSICAS

CROP	PEST	DOSAGE		REMARKS AND RESTRICTIONS
		LB AI/A	FL OZ/A	
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	Armyworms Corn Earworm Crickets Cutworms Diamondback Moth Flea Beetles Imported Cabbageworm Loopers Saltmarsh Caterpillar Whitefly	0.033-0.10	2.1-6.4	<p>Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.</p> <p>Do not apply more than 0.5 lb. a.i. (1 quart) per acre per season.</p> <p>Do not make more than 5 applications after bloom.</p> <p>Do not make applications less than 7 days apart.</p> <p>Do not apply within 7 days of harvest.</p>
	Lygus spp.	0.08-0.10	5.12-6.4	



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**CANEBERRIES**

CROP	PEST	DOSAGE		REMARKS AND RESTRICTIONS
		LB A/A	FL OZ/A	
Caneberries including: Bingleberries Blackberries Dewberries Loganberries Lowberries Marionberries Olallieberries Raspberries Youngberries	Leafrollers Orange Tortrix Root Weevils	0.05-0.10	3.2-6.4	Apply by air or ground equipment using sufficient water to obtain full coverage of foliage (minimum of 10 gallons per acre by air and 50 gallons per acre by ground).
	Spider Mites	0.10	6.4	One application may be made pre-bloom and a second application may be made post bloom.  Do not apply within 3 days of harvest.

**CANOLA, CRAMBE, RAPESEED**

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
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	2.1-2.6	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.  Do not apply more than 0.08 lb. a.i. (5.12 ounces formulated product) per acre per season. Do not make applications less than 14 days apart.  Do not apply within 35 days of harvest.

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COTTON

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB AI/A	FL OZ/A	
European Corn Borer Soybean (Banded) Thrips Tobacco Thrips	0.02-0.10	1.3-6.4	<p>Bifenture EC-CA may be applied in water or refined vegetable oil (soybean/cottonseed).</p> <p><b>Application in Water:</b> Apply in a minimum of 5 gallons per acre with ground equipment or 1 gallon per acre by aircraft. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray.</p>
Boll Weevil Bollworm Cabbage Looper Cotton Aphid Cotton Fleahopper Cotton Leafperforator Cutworms Fall Armyworm Lygus spp. Plant Bugs Saltmarsh Caterpillar Southern Garden Leafhopper Stink Bugs Tobacco Budworm Whitefly Yellow Striped Armyworm	0.04-0.10	2.6-6.4	<p><b>To Control Boll Weevil:</b> Apply Bifenture EC-CA at an interval of 3 to 4 days until pest numbers are reduced to acceptable levels.</p> <p><b>To Control Mites and Aphids:</b> Apply when pests first appear. Repeat as necessary to maintain control. Higher rates will be required once a damaging threshold is established.</p> <p>Do not apply more than 0.3 pound a.i. per acre per season.</p> <p>Do not make more than 3 applications per growing season.</p> <p>Do not apply within 14 days of harvest.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed.</p> <p>Do not make more than 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season. Synthetic pyrethroid products include Ambush®, Ammo®, Asana® XL, Baythroid®, Capture®, Danitol®, Karate®, Mustang®, and Scout X-TRA®.</p>
Beet Armyworm Carmine Spider Mite Pink Bollworm Twospotted Spider Mite	0.06-0.10	3.8-6.4	<p>All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.</p>

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

11/22

PEST	DOSAGE		REMARKS AND RESTRICTIONS			
Corn Rootworm, Larvae Mexican Northern Southern Western	0.0046 lb. a.i. per 1,000 linear feet of row	0.30 fluid ounces per 1,000 linear feet of row	Apply as a 5 to 7 inch T-band treatment over an open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. Use the table below to determine the Bifenture EC-CA needs per acre. Apply in a minimum of 3 gallons of finished spray per acre.  Mix Bifenture EC-CA with water or fertilizer in the following manner. Fill the spray tank approximately one-half full with water or liquid fertilizer, add the proper amount of Bifenture EC-CA. Then add the rest of the water or fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform spray mixture.			
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 to 0.0046 lb. a.i. per 1,000 linear feet of row	0.15 to 0.30 fluid ounces per 1,000 linear feet of row	Applications of Bifenture EC-CA alone or in recommended tank mixtures, in conjunction with in furrow pop-up fertilizers may be used. A jar compatibility test should be performed with appropriate ratio of Bifenture EC-CA and fertilizer to ensure mixture will stay in solution. Constant agitation should be maintained during mixing and application.  Do not apply to soil where there is greater than 30% cover of crop residue remaining.  Do not apply within 30 days of harvest.  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 pound active per acre per season as an at plant application.			
Row Spacings (inches)			40	38	36	30
Bifenture EC-CA Agricultural Insecticide (pounds a.i. per acre)			0.060	0.064	0.069	0.080
Bifenture EC-CA Agricultural Insecticide (formulated product, ounces per acre)			3.9	4.1	4.4	5.12

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

12/22

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A.I./A	FL OZ/A	
Aphids Army Cutworm Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm Adults Cucumber Beetle Adult Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle Adult Leafhopper 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	2.1-6.4	Apply in a minimum of 2-5 gallons of finished spray per acre by aircraft or in a minimum of 10 gallons per acre with ground equipment. To improve control by aircraft, use 5 gallons of finished spray per acre particularly when initial populations are heavier than normal. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.  <b>To Control Ear-Attacking Pests:</b> Apply Bifenture EC-CA just before silking and repeat as necessary to maintain control.  <b>Southwestern Corn Borer, European Corn Borer:</b> Make application for corn borer control with initial application at or shortly before egg hatch.  <b>For Control of Other Insect Pests:</b> Apply when pests first appear and repeat as necessary.  <b>For Control of Mites:</b> Apply for Banks Grass Mite control when colonies first form prior to leaf damage or discoloration and before dispersal above the bottom third of the plant.  <b>For Twospotted Spider Mite and Carmine Mite Control:</b> Apply when colonies first form prior to leaf damage or discoloration and before wide-spread mite dispersal throughout the canopy.
Banks Grass Mite Carmine Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	Higher rates will be necessary for heavier initial populations and corn under heat or drought stress. Field experience with dimethoate at 0.5 lb. active per acre in tank mixture has demonstrated good control under these conditions.  Do not apply more than 0.2 pound active per acre per season. Do not apply within 30 days of harvest. Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application. Use of ultra low volume (ULV) application on corn is prohibited. Do not make aerial or ground applications to corn if heavy rainfall is imminent.

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**SWEET CORN  
SWEET CORN GROWN FOR SEED  
(AT PLANT USE)**

PEST	DOSAGE		REMARKS AND RESTRICTIONS			
Corn Rootworm, Larvae Mexican Northern Southern Western	0.0046 pound active per 1,000 linear feet of row	0.30 fluid ounces per 1,000 linear feet of row	Apply as a 5 to 7 inch T-band treatment over an open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. Use the table below to determine the Bifenture EC-CA needs per acre. Apply in a minimum of 3 gallons of finished spray per acre.  Mix Bifenture EC-CA with water or fertilizer in the following manner. Fill the spray tank approximately one-half full with water or liquid fertilizer, add the proper amount of Bifenture EC-CA then add the rest of the water or fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform spray mixture.			
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 to 0.0046 pound active per 1,000 linear feet of row	0.15 to 0.30 fluid ounces per 1,000 linear feet of row	Applications of Bifenture EC-CA alone or in recommended tank mixtures, in conjunction with in furrow pop-up fertilizers may be used. A jar compatibility test should be performed with appropriate ratio of Bifenture EC-CA and fertilizer to ensure mixture will stay in solution. Constant agitation should be maintained during mixing and application.  Do not apply to soil where there is greater than 30% cover of crop residue remaining. Do not apply within 30 days of harvest. 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 pound active per acre per season as an at plant application.			
Row Spacings (inches)			40	38	36	30
Bifenture EC-CA (pounds a.i. per acre)			0.060	0.064	0.069	0.080
Bifenture EC-CA (formulated ounces per acre)			3.9	4.1	4.4	5.12

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SWEET CORN  
SWEET CORN GROWN FOR SEED (FOLIAR USE)

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
Aphids Army Cutworm Aster Leafhopper Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm Adults Corn Silkfly Cucumber Beetle Adult Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle Adult Leafhopper 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	2.1-6.4	<p>Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.</p> <p><b>To Control Ear-Attacking Pests:</b> Apply Bifenture EC-CA when silking begins and repeat as necessary to maintain control.</p> <p><b>Southwestern Corn Borer, European Corn Borer:</b> Make 2 applications for corn borer control with the initial application at or shortly before egg hatch.</p> <p><b>For Control of Other Insect Pests:</b> Apply when pests first appear and repeat as necessary.</p> <p><b>For Control of Mites:</b> Apply for Banks Grass Mites control when colonies first form from prior to leaf damage or discoloration and before dispersal above the bottom third of the plant.</p> <p><b>For Twospotted Spider Mite and Carmine Mite Control:</b> Apply when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy.</p> <p>Higher rates will be necessary for heavier initial populations and corn under heat or drought stress.</p>
Banks Grass Mite Carmine Mite Pacific Spider Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	<p>Do not apply more than 0.2 pounds a.i. (12.8 ounces formulated product) per acre per season.</p> <p>Do not apply within one day of harvest.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed within 1 day of the last application.</p> <p>Use of ultra low volume (ULV) application on corn is prohibited.</p> <p>Do not make aerial or ground applications to corn if heavy rainfall is imminent.</p>

CUCURBITS

15/22

CROP	PEST	DOSAGE		REMARKS AND RESTRICTIONS
		LB AI/A	FL OZ/A	
Chayote (fruit) Chinese waxgourd (Chinese preserving melon) Citron melon Cucumber Gherkin Gourd, edible (includes hyloan, cucuzza), (Luffa spp.) includes hechima, Chinese okra, (Momordica 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 (Cucurbita spp.) Squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini) Squash, winter (includes butternut squash, calabaza, hubbard squash (C. mixte; C. pepo), includes acorn squash, spaghetti squash) Watermelon, (includes hybrids and/or varieties of Citrullis spp.)	Aphids Cutworm Cabbage Looper Leafhoppers Cucumber Beetles Squash Bugs Armyworms Melonworm Pickworm Plant Bug Stink Bug Rindworm Squash Vine Borer Corn Earworm Tobacco Budworm Grasshopper	0.04- 0.10	2.6-6.4	Apply in a minimum of 5 gallons of finished spray per acre by air or in a minimum of 20 gallons per acre with ground equipment. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.  Do not apply more than 0.3 lb. a.i. (19.2 ounces formulated product) per acre per season.  Do not make more than two applications after bloom.  Do not make applications less than 7 days apart.  Do not apply within 3 days of harvest.
	Whitefly Banks Grass Mite Twospotted Spider Mite Carmine Mite Lygus spp	0.08- 0.10	5.12-6.4	

16/22

EGGPLANT

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB AI/A	FL OZ/A	
Armyworms Cabbage Looper Colorado Potato Beetle Corn Earworm Cucumber Beetle European Corn Borer Flea Beetle Plant Bug Stink Bug Thrips Tomato Hornworm Tomato Pinworm Vegetable Leafminer Whitefly	0.033-0.10	2.1-6.4	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.  Do not make applications less than 7 days apart.  Do not apply more than 0.2 lb. a.i. (12.8 ounces formulated product) per acre per season.  Do not apply within 9 days of harvest.
Banks Grass Mite Carmine Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	

HOPS

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB AI/A	FL OZ/A	
Aphids Armyworms Cutworms Leafrollers Loopers	0.06-0.1	3.8-6.4	Do not exceed 0.1 lb. a.i. per acre per application. Do not exceed 0.3 lb. a.i. per acre per season.  A spray interval of 21 days between applications must be maintained.  A 14 day pre-harvest interval must be observed.
Root Weevils	0.05-0.1	3.2-6.4	
Twospotted Spider Mite	0.1	6.4	<b>Application by ground:</b> For best results, full coverage is essential. Early season recommend 100-150 gallons of spray per acre. Late season recommend 200-250 gallons of spray per acre.  For Root Weevil control, make a directed spray to the base of the plant. Spray up the vine 3 feet and the soil surface 1.5 to 2 feet on either side of the plant.  <b>Application by air for late season control of twospotted spider mites:</b> Apply no less than 6.4 oz (0.1 lb. a.i.) per application in a minimum of 10 gallons per acre.  Use of ultra low volume (ULV) application on hops is prohibited.



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LETTUCE, HEAD

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
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	2.1-6.4	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. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.  Do not make applications less than 7 days apart.  A maximum of 0.5 lb. a.i. may be applied per acre per season.  Do not apply within 7 days of harvest.
Carmine Mite Lygus spp. Twospotted Spider Mite	0.08-0.10	5.12-6.4	

PEPPERS, BELL AND NON-BELL

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
Aphids Armyworms Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafhoppers Leafminers Loopers Pepper Weevil Stink Bug spp. Tobacco Budworm Thrips Whitefly	0.033-0.1	2.1-6.4	Apply using sufficient water to obtain uniform coverage. Apply as needed. Apply with ground equipment using a minimum of 10 gallons of finished spray per acre or a minimum of 2 gallons per acre by aircraft.  Do not make applications less than 7 days apart.  Do not apply more than 0.20 pound a.i. per acre per season.  Do not apply within 7 days of harvest.
Broad Mite Carmine Mite Lygus spp. Twospotted Spider Mite	0.8-0.10	5.12-6.4	

18/22

SUCCULENT PEAS AND BEANS

CROP	PEST	DOSAGE		REMARKS AND RESTRICTIONS
		LB A/A	FL OZ/A	
Bean (Phaseolus spp.): Broadbean (succulent) Lima bean (green) Runner bean Snap bean Wax bean	Aster Leafhopper Flea Beetle Grasshoppers Leafhoppers	0.025-0.10	1.6-6.4	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.
Bean (Vigna spp.): Asparagus bean Blackeyed pea Chinese longbean Cowpeas Moth bean Southern pea Yardlong bean Jackbean	Alfalfa Caterpillar Aphids Bean Leaf Beetle Beet Armyworm Cloverworm Corn Earworm Corn Rootworm, Adult Cucumber Beetles Cutworms European Corn Borer Fall Armyworm Japanese Beetle, Adult Loopers Pea Leaf Weevil Pea Weevil Plant Bug Sap Beetle Southern Armyworm Stink Bugs Tarnished Plant Bug Thrips Webworms Western Bean Cutworm Whitefly Yellowstriped Armyworm	0.033-0.10	2.1-6.4	
Pea (Pisum spp.) Dwarf pea Edible-pod pea English pea Garden pea Green pea Snow pea Sugar snap pea Pigeon pea Soybean (immature seed) Sword bean	Banks Grass Mite Carmine Mite Lygus spp. Twospotted Spider Mite	0.08-0.10	5.12-6.4	

TOMATOES

19/22

PEST	DOSAGE		REMARKS AND RESTRICTIONS	
	LB A.I./A	FL .OZ./A		
Aphids	0.033 – 0.08	2.1 – 5.2	Apply in water with ground equipment as necessary for insect control using a minimum of 15 gallons of finished spray per acre.	
Armyworms			Thorough coverage is essential to achieve control.	
Including: Beet			Do not make applications less than 10 days apart.	
Armyworm, Fall			A maximum of 0.32 lb a.i. may be applied per acre per season.	
Armyworm,				
Southern Yellow-Striped				
Armyworm				
Bean Leaf Beetle				
Cabbageworm				Do not apply within 1 day of harvest.
Carmine Mite				
Cloverworm				
Corn Earworm				
Corn Rootworm				
Cucumber Beetles				
Cutworms				
Diamondback				
Moth				
European Corn				
Borer				
Flea Beetles				
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				
Two Spotted				
Spider Mite				
Whitefly				

SPINACH

20/22

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
Armyworms Colorado Potato Beetle Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Thrips Tomato Hornworm Tomato Pinworm Whitefly	0.033-0.10	2.1-6.4	Whiteflies: make up to 4 foliar treatments of Bifenture EC-CA by ground or air at rates of up to 0.4 pint (0.1 lb a.i.) per acre. Repeat application at 7-day intervals.  Fire Ants: make up to 4 applications of Bifenture EC-CA to the soil at planting or as a foliar treatment by ground or air at rates up to 0.4 pint (0.1 lb a.i.) per acre. Repeat application at 7-day intervals.  Apply in water at 10 – 50 gallons/A by ground or 5 – 50 gallons/A by air.  Do not make applications less than 7 days apart.  Do not apply more than 0.4 lb a.i. per acre per season.
Banks Grass Mite Broad Mite Carmine Mite Fire Ants Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.8-0.10	5.12-6.4	Do not apply within 40 days of harvest.

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READ BEFORE USING PRODUCT**

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