

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

November 8, 2017

Scott Baker Liberty Crop Protection, LLC 4850 Hahns Peak Dr. Suite 200 Loveland, CO 80538

Subject: Label and CSF Amendment – Added corn use to the label; New Basic CSF Product Name: Liberty Bifen FC EPA Registration Number: 89168-36 Application Date: 25-May-2017 Decision Number: 529987

Dear Mr. Baker

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

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

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

• Basic CSF dated 10/24/2017

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

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Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Matthew Aubuchon by phone at 703 347-0477, or via email at <u>Aubuchon.Matthew@epa.gov</u>.

Sincerely,

Kable Bo Davis, Product Manager 3 Invertebrate and Vertebrate Branch 1 Registration Division (7505P) Office of Pesticide Programs

Enclosure

# **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.

# LIBERTY BIFEN FC

GROUP 3 INSECTICIDE

For Mixing directly with liquid fertilizer to control listed soil insect pests

 Active Ingredient:
 By Wt.

 Bifenthrin\*:
 17.15%

 Other Ingredients:\*\*
 82.85%

 TOTAL
 100.00%

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

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

This product contains 1.5 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.)

See other panels for additional precautionary information.

EPA Reg. No. 89168-36

EPA Est.

	ACCEPTED	Net Contents: Gallons	012915RD110717		
	11/08/2017	Formulated for:	01291310110717		
	Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the	Liberty Crop Protection LLC			
	pesticide registered under	1880 Fall River Drive, Suite 100			
	EPA Reg. No. 89168-36	Loveland, CO 80538			
		FIRST AID			
If Swallow	ed • Call poison control	center or doctor immediately for treatme	nt advice.		
	<ul> <li>Do not give any liqu</li> </ul>	id to the person.			
	<ul> <li>Do not induce vomi</li> </ul>	ting unless told to do so by the poison co	ntrol center or doctor.		
	<ul> <li>Do not give anything by mouth to an unconscious person.</li> </ul>				
If In Eyes	If In Eyes • Hold eye open and rinse slowly and gently with water for 15-20 minutes.				
	• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye				
	Call a poison control center or doctor for treatment advice.				
If On Skin	Take off contaminated clothing.				
	Rinse skin immedia	• Rinse skin immediately with plenty of water for 15-20 minutes.			
	Call a poison control center or doctor for treatment advice.				
HOTLINE N	HOTLINE NUMBER - Have the product container or label with you when calling a poison control center				
or doctor,	or doctor, or going for treatment. FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE CALL: 1-800-222-				
1222. FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident call 1-800-424-9300.					
NOTE TO	NOTE TO PHYSICIAN - This product is a pyrethroid. If large amounts have been ingested, the stomach				
and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or					
alcohol m	alcohol may increase absorption and should be avoided. Contains petroleum distillates. Vomiting may				
cause asp	cause aspiration pneumonia.				

#### PRECAUTIONARY STATEMENTS

#### Hazards to Humans (and Domestic Animals)

**Warning** - May be fatal if swallowed. Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

#### Personal Protective Equipment:

Applicators and other handlers (other than mixers and loaders) must wear: Long-sleeved shirt and long pants, Waterproof gloves, Shoes plus socks and Protective eyewear (goggles, face shield, or safety glasses) Mixers and Loaders must wear: Long-sleeved shirt and long pants, Waterproof gloves, 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 exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### **User Safety Recommendations**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing 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 runoff 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 foraging 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.

#### DIRECTIONS FOR USE RESTRICTED USE PESTICIDE

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

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

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

# AGRICULTURAL USE REQUIREMENTS

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

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls, Chemical-resistant gloves, such as Barrier Laminate or Nitrile Rubber or Neoprene Rubber or Viton, Shoes plus Socks and Protective Eyewear (goggles, face shield, or safety glasses)

#### **Resistance Management**

Some pests are known to develop resistance to insecticides that have been used repeatedly. While the development of insect resistance is well understood, it is not easily predicted. Therefore insecticides should be used in conjunction with the resistance management strategies in the area. Consult the local or State agricultural advisors for details. If insect resistance should develop in the area, this product used alone may not continue to provide sufficient levels of pest control. If the reduced levels of control cannot be attributed to improper application techniques, improper use rates, improper application timing, unfavorable weather conditions or abnormally high pest pressure, a resistant strain may have developed.

To reduce the potential for pesticide resistance, use this product in a rotation program with other classes of chemistry and modes of action. Apply this product at the labeled rates and in accordance with the use directions. It is not recommended to use less than labeled rates alone or in tank mixtures. It is not recommended to use reduced rates of the tank mix partner. For optimum performance, scout fields carefully and begin applications when pests are smaller rather than larger. If resistance is suspected, contact the local or State agricultural advisors.

# **Application and Mixing Instructions**

Liberty Bifen FC is an insecticide/miticide that contains 1.5 pounds of bifenthrin per gallon. Liberty Bifen FC can be mixed directly with liquid fertilizer or with water. The rate of application is variable according to pest pressure, timing of treatments and field scouting. Use lower rates under light to moderate pest infestations, and higher rates under heaver pest pressure. In arid climates, applications rates are generally higher. Fill the tank one-half full with liquid fertilizer or water and begin spray tank agitation. Add the proper amount of Liberty Bifen FC and then add the rest of the fertilizer or water. Maintain agitation until the mixture has been applied.

# SHAKE WELL BEFORE USING

Agitate the Liberty Bifen FC spray solutions in nurse tanks prior to moving the solution to spray system.

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 streams that drain into coastal marshes.

Liberty Bifen FC can be applied in-furrow with the seed, as a T-band (band over the open furrow), as a broadcast application, as a band over the row or as a transplant-water drench during setting. Refer to the table s below for pest control or suppression instructions.

Liberty Bifen FC can be mixed with commonly used liquid starter or pop-up fertilizers. Follow liquid fertilizer recommendations regarding seed safety and use guidelines. Conduct a preliminary jar test using the Page 3 of 31

appropriate ratio of fertilizer and Liberty Bifen FC. Do not allow a tank mixture to set overnight, but if this occurs agitate tank mixture prior to application.

#### **Crop Rotation Restrictions**

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

#### **Tank Mixtures**

Liberty Bifen FC may be applied in tank mixtures with other products approved for use on registered crops. Observe all restrictions and precautions which appear on the labels of these products. To insure successful applications, product compatibility tests should be conducted.

#### Maximum Allowable Liberty Bifen FC Use Per Acre Per Season

Refer to the individual crop sections for maximum allowable Liberty Bifen FC usage per acre per season. The maximum allowable use must include all registered use patterns including at-plant, soil applied and/or foliar applications for the 12 month period. The 12 month period is to begin upon the initial application to the acre.

#### **BUFFER ZONES**

#### Vegetative Buffer Zones

Construct and maintain a minimum 10 foot wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds). Only apply products containing 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. 21pp. <u>http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf.</u> **Buffer Zone for Ground Application (groundboom, overhead or airblast)** – Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, 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, 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, streams, marshes, natural ponds, estuaries, and commercial fish ponds).

#### Spray Drift Requirements

#### Wind Direction and Speed

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

#### **Temperature Inversion**

Do not make aerial or ground applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

#### **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. Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift to aquatic areas.

# Additional Requirements for Ground Applications

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

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

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

# Additional Requirements for Aerial Applications

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

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

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

When applications are made with a crosswind, 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.

# BRASSICAS

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

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5-7 inch band (T-band) over the open seed furrow, or in-furrow with the seed. Cutworm and armyworm treatments may be applied as broadcast treatments to the soil surface.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grubs			
Seedcorn maggot			
Cabbage maggot			
Root maggots			
Root aphids			
Army cutworm			
Cutworm spp.			
Armyworm spp.			

# **Restrictions**:

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.5 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

# **BUSHBERRIES (FOLIAR)**

Blueberry, highbush and lowbush, Currant, Elderberry, Gooseberry, Huckleberry

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below.

PEST	USE RATES		
	Fluid oz/acre	Pound ai/acre	
Blueberry maggot,	3.4 to 8.5	0.04 to 0.1	
Fruitworms,			
Lecanium scale (crawlers)			
Plum curculio			
Obliquebanded leaf roller			
Red banded leafroller			
Variegated leafroller			
Spanworm			
Leafhoppers			
Aphids			
Banks Grass Mite	6.8 to 8.5	0.08 to 0.1	
Twospotted Spider Mite			
Carmine Mite			
Pacific Spider Mite			
Lygus Spp.			
Restrictions:			
Apply in a minimum of 2 gallons of finished spray per acre by air or i	in a minimum of 10 gal	lons finished spray	
per acre with ground equipment. Thorough coverage is essential to			
Do not apply more than 0.5 pound active ingredient per acre per se	ason.		

Do not make applications less than 7 days apart.

# CILANTRO, CORIANDER

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band) in-furrow with the seed, or broadcast to the soil surface.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear	Pound ai/acre
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Flea beetle larvae			
Cutworm spp.			
Armyworm spp.			

# **Restrictions**:

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.5 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

**CITRUS (BARE SOIL SURFACE UNDER DRIP LINE)** When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply Liberty Bifen FC by ground equipment to bare soil beneath citrus trees. Liberty Bifen FC must be uniformly applied from the trunk to the drip line of tree. Apply in a minimum of 40 gallons of dilute spray per acre.

Greater spray volume should insure greater uniformity of coverage. A pre and post application irrigation may aid in the uniformity of coverage as well.

Liberty Bifen FC protects citrus tree roots from Diaprepes and other citrus root weevil feeding by forming a barrier which provides contact activity on newly hatched larvae (neonates). As citrus root weevil eggs hatch in new foliage, neonates fall to the soil surface beneath the tree and come in contact with Liberty Bifen FC as they attempt to burrow into the root zone. Disturbance of the soil beneath trees should be minimized.

Timing of Liberty Bifen FC applications is critical. Current information suggests that peak emergence of adult Diaprepes Weevil varies by citrus growing region and these emergence peaks can be dramatically affected by environmental factors, such as soil moisture. Typically, two peaks are observed for Diaprepes, first in spring then late summer or early fall. Southern Blue-Green and Blue-Green Citrus Weevils and Fuller Rose Beetle typically exhibit a single emergence peak in the spring. Brown and Little Leaf Notchers typically exhibit three emergence peaks, spring, summer and fall. Since emergence varies seasonally and by location, timing of Liberty Bifen FC application can be accurately forecast by observing adults. Adults are most active early morning and late afternoon; numbers can be estimated by trapping throughout spring and summer (emergence periods). Egg laying will occur for 8 to 10 weeks following adult emergence from the soil; larval invasion of the soil will begin 2 to 3 weeks following adult emergence. It is critical to have the Liberty Bifen FC soil barrier in place prior to drop of the neonates.

Liberty Bifen FC is one of several effective tools in an integrated pest management program for Citrus Root Weevils. Application of Liberty Bifen FC should be used in conjunction with good cultural practices, biological control of larvae and foliar control of adults. Consult local university extension personnel for current information to protect citrus trees from Citrus Root Weevils and other pests.

Apply to individual citrus resets, when not in solid planted rows, using hand gun or shielded sprayer.

Peak emergence of Diaprepes root weevil generally occurs in the spring. Depending on weather conditions, a minor emergence of Diaprepes root weevil may also occur in the fall.

If the citrus grove to be treated is in an area where weather conditions are conducive to primary emergence occurring in the spring, 42.5 fluid ounces formulated product should be used to obtain the longest residual management of Diaprepes root weevil. If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 21.25 fluid ounces formulated product can be applied early season and 21.25 fluid ounces formulated product can be applied later in the season.

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Asian cockroach (Blattélla asahìnae)	8.5 to 21.25	0.1 to 0.25
Diaprepes Root Weevil <i>(Diaprepes abbreviatus)</i> Southern Blue Green Citrus Root Weevil <i>(Pachnaeus litus)</i> Blue Green Citrus Root Weevil <i>(Pachnaeus opalus)</i>	21.25 to 42.5	0.25 to 0.50
Brown Leaf Notcher ( <i>Epicaerus mexicanus</i> ) Little Leaf Notcher ( <i>Artipus floridanus</i> )		

#### **Restrictions**:

Do not apply through irrigation systems.

Do not allow any application of Liberty Bifen FC to contact fruit or foliage.

Do not apply more than a total of 42.5 fluid ounces of formulated product (0.5 pound active ingredient) per acre per year.

Apply the specified dosage in a minimum of 40 gallons of finished spray per acre.

Do not apply by air.

# CORN (AT PLANT)

# Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed, Sweet Corn, Sweet Corn Grown for Seed

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band (T band) over an open furrow, or in-furrow with the seed. Position the spray nozzle behind the planter shoe in front of the press wheel centered over the row. For Army cutworm, Stalkborer, Cutworm spp., True armyworm or Armyworm spp., apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), in-furrow with the seed, or broadcast to the soil surface.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear	Pound ai/acre
Corn Rootworm larvae	6.8 to 17.0	0.39 to 0.98	0.08 to 0.2
(Northern, Southern and			
Western)			
Wireworm	3.4 to 13.6	0.2 to 0.78	0.04 to 0.16
Grape colaspis			
Grubs			
Seedcorn maggot			
Root aphids			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			
Stalkborer			
Seed corn beetle			
Sugarcane beetle			

Do not apply more than 0.2 pound active per acre per season as an at-plant application.

**For field corn**- Do not apply more than 0.3 pound active ingredient per acre per season including ppi, atplant, pre-emergence, and foliar applications of other bifenthrin products.

**For sweet corn**- Do not apply more than 0.2 pound active ingredient per acre total per season including ppi, at-plant, pre-emergence, and foliar applications of other bifenthrin products.

# CORN (PRE & PPI)

Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed, Sweet Corn, Sweet Corn Grown for Seed

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. For PPI treatments, the 4 to 5.3 fluid oz/A rate must be used. Liberty Bifen FC can be tank mixed and applied with PPI herbicides. Incorporation of Capture should not be any deeper than the intended planting depth and no deeper than 3 inches. Incorporation depth should be close to the intended seed planting depth.

For PRE treatments, the 3.4 fluid oz/A rate may be applied and can be tank mixed and applied with PRE herbicides.

PEST	USE RATES			
	Fluid oz/acre	Pound ai/acre		
Black Cutworm	4 to 5.3	0.047 to 0.062		
Grape colaspis	Pre-Plant Incorporated (PPI)	Pre-Plant Incorporated (PPI)		
White Grub				
Wireworm				
Seedcorn Maggot				
Armyworm spp.				
Seed corn beetle				
Black Cutworm 3.4		0.04		
Armyworm spp.	Pre-Emergence (PRE)	Pre-Emergence (PRE)		
Stalkborer				
Seed corn beetle				

**For field corn**- Do not apply more than 0.3 pound active ingredient per acre total per season including ppi, at-plant, pre-emergence, and foliar applications of other bifenthrin products.

**For sweet corn** - Do not apply more than 0.2 pound active ingredient per acre total per season including ppi, at-plant, pre-emergence, and foliar applications of other bifenthrin products.

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

Apply as directed using the rates in the table below.

PEST	RATE	APPLICATION INSTRUCTIONS
Aphids	2.8 to 8.6 fl. oz.	Apply in a minimum of 2 to 5 gallons of finished spray
Army Cutworm	(0.033 to 0.10	per acre by aircraft or in a minimum of 10 gallons per
Beet Armyworm	lb. ai)	acre with ground equipment. To improve control by
Cereal Leaf Beetle	per acre	aircraft, use 5 gallons of finished spray per acre
Chinch Bug		particularly when initial populations are heavier than
Common Stalk Borer		normal. When applying by air, 1 to 2 quarts of
Corn Earworm		emulsified oil may be substituted for 1 to 2 quarts of
Corn Rootworm Adult		water in the finished spray.
Cucumber Beetle Adults		
Cutworm Species		Thorough coverage is essential to achieve control.
European Corn Borer		
Fall Armyworm		To Control Ear-Attacking Pests: Apply LIBERTY Bifen FC
Flea Beetle		just before silking and repeat as necessary to maintain
Grasshoppers		control but do not exceed maximum application rates
Greenbug		and reapplication intervals listed elsewhere in this
Japanese Beetle Adult		section.
Sap Beetle		
Southern Armyworm		Southwestern Corn Borer, European Corn Borer: Make
Southern Corn Leaf Beetle		application for corn borer control with initial application
Southwestern Corn Borer		at or shortly before egg hatch.
Stinkbugs		
Tarnished Plant Bug		For Control Of Other Insect Pests: Apply when pests
True Armyworm		first appear and repeat as necessary but do not exceed
or		maximum application rates and reapplication intervals
Armyworm Species		listed elsewhere in this section.
Webworms		
Western Bean Cutworm		
Yellowstriped Armyworm		
Banks Grass Mite	6.9 to 8.6 fl. oz.	Apply for <b>Banks Grass Mite</b> control when colonies first
Carmine Mite	(0.08-0.10 lb.	form prior to leaf damage or discoloration and before
Twospotted Spider Mite	ai)	dispersal above the bottom third of the plant.
	per acre	
		For Twospotted Spider Mite and Carmine Mite control,
		apply when colonies first form prior to leaf damage or
		discoloration and before widespread mite dispersal
		throughout the canopy. Higher rates will be necessary
		for heavier initial populations and corn under heat or
		drought stress. Field experience with dimethoate at 0.5
		Ib. active per acre in tank mixture has demonstrated

good control under these conditions.
<b>For Mite Control In Texas, New Mexico, Oklahoma, and</b> <b>Arizona:</b> Apply in a minimum of 5 gallons of finished spray per acre by aircraft or in a minimum of 10 gallons per acre with ground equipment.

- Do not apply more than 0.3 pound active ingredient per acre per season including pre and ppi, at-plant, plus foliar applications.
- 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.
- Use of LIBERTY Bifen FC on corn is prohibited in all coastal counties.

# SWEET CORN (GRAIN AND SILAGE), SWEET CORN GROWN FOR SEED

#### (FOLIAR USE)

Apply as directed using the rates in the table below.

PEST	RATE	APPLICATION INSTRUCTIONS
Aphids	2.8 to 8.6 fl.	Apply in a minimum of 2 gallons of finished spray per
Army Cutworm	oz. (0.033-	acre by air or in a minimum of 10 gallons per acre
Beet Armyworm	0.10 lb. ai) per	with ground equipment.
Cereal Leaf Beetle	acre	
Chinch Bug		When applying by air, 1 to 2 quarts of emulsified oil
Common Stalk Borer		may be substituted for 1 to 2 quarts of water in the
Corn Earworm		finished spray.
Corn Rootworm Adults		
Cucumber Beetle Adult		Thorough coverage is essential to achieve control.
Cutworm Species		
European Corn Borer		To Control Ear-Attacking Pests: Apply LIBERTY Bifen
Fall Armyworm		FC when silking begins and repeat as necessary to
Flea Beetle		maintain control but do not exceed maximum
Grasshoppers		application rates and reapplication intervals listed
Greenbugs		elsewhere in this section.
Japanese Beetle Adult		
Sap Beetle		Southwestern Corn Borer, European Corn Borer:
Southern Armyworm		Make 2 applications for corn borer with the initial
Southern Corn Leaf Beetle		application at or shortly before egg hatch.
Southwestern Corn Borer		
Stinkbugs		For Control Of Other Insect Pests: Apply when pests
Tarnished Plant Bug		first appear and repeat as necessary but do not
True Armyworm		exceed maximum application rates and reapplication
or Armyworm Species		intervals listed elsewhere in this section.
Webworms		
Western Bean Cutworm		
Yellowstriped Armyworm		
Banks Grass Mite	6.9 to 8.6 fl.	Apply for Banks Grass Mite control when colonies
Carmine Mite	oz. (0.08-0.10	first form prior to leaf damage or discoloration and

Twospotted Spider Mite	lb. ai) per acre	before dispersal above the bottom third of the plant.
		For <b>Twospotted Spider Mite</b> and <b>Carmine Mite</b> control, apply when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy.
		Higher rates will be necessary for heavier initial populations and corn under heat or drought stress.

#### **RESTRICTIONS:**

• Do not apply more than 0.2 pound active ingredient (12.8 ounces formulated product) per acre per season.

- Do not apply within one day of harvest.
- Do not graze livestock in treated areas or cut treated crops for feed within 1 day of 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.
- Use of LIBERTY BIFEN FC on corn is prohibited in all coastal counties.

# COTTON

Apply as directed using the rates in the table below.

PEST	RATE	APPLICATION INSTRUCTIONS	
European Corn Borer Soybean	2.3-8.6 fl.	LIBERTY Bifen FC may be applied in water or refined	
(Banded) Thrips Tobacco	oz./acre	vegetable oil (soybean/cottonseed).	
Thrips			
	(0.02-0.10	Application in Water: Apply in a minimum of 5 gallons per	
	lb. ai/acre)	acre with ground equipment or 1 gallon per acre by aircraft.	
Boll Weevil	4.3-8.6 fl.	When applying by air, 1 quart of emulsified oil may be	
Bollworm	oz./acre	substituted for one quart of water in the finished spray.	
Cabbage Looper			
Cotton Aphid	(0.04-0.10	ULV Application: Apply the recommended rate of LIBERTY	
Cotton Fleahopper	lb. ai/acre)	Bifen FC in refined vegetable oil in a minimum of 1 quart of	
Cotton Leafperforator		finished spray per acre with aircraft calibrated to give	
Cutworms		adequate coverage.	
Fall Armyworm			
Plant Bugs		To Control Boll Weevil: Apply LIBERTY Bifen FC at an	
Saltmarsh Caterpillar		interval of 3 to 4 days until pest numbers are reduced to	
Southern Garden Leafhopper		acceptable levels.	
Stink Bugs			
Tobacco Budworm		To Control Mites and Aphids: Apply when pests first	
Whitefly		appear. Repeat as necessary to maintain control but do not	
Yellowstriped Armyworm		exceed maximum application rates and reapplication	
Beet Armyworm	5.1-8.6 fl.	intervals listed elsewhere in this section. Higher rates will	
Carmine Spider Mite	oz./acre	be required once a damaging threshold is established.	
<i>Lygus</i> spp.			
Pink Bollworm	(0.06-0.10		
Twospotted Spider Mite	lb. ai/acre		
RESTRICTIONS:			
<ul> <li>Do not apply more than 0.5 pound active ingredient per acre per season</li> </ul>			

• Do not apply more than 0.5 pound active ingredient per acre per season.

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- Do not apply within 14 days of harvest.
- Do not graze livestock in treated areas or cut treated crops for feed.
- Do not make more than 10 synthetic pyrethroid applications (of one product or combinations or

products) to a cotton crop in one growing season.

#### **CUCURBITS**

Chayote (fruit), Chinese waxgourd (Chinese preserving melon), Citron melon, Cucumber, Gherkin, Gourd, edible Lagenaria spp. (includes hyotan, 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. mixta; C. pepo) includes acorn squash, spaghetti squash), Watermelon (includes hybrids and/or varieties of Citrullus spp.).

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. To control rootworm larvae, apply as a 5 to 7 inch band over an open furrow (T-band), or in-furrow with the seed.

To control wireworm, grubs, and fleabeetle larvae, apply as a 5 to 7 inch band over an open furrow (T-band), or in-furrow with the seed or transplant.

To control army cutworm, cutworm spp, true armyworm and armyworm spp, apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), in-furrow with the seed, broadcast to the soil surface or banded over the row.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Cucumber beetle larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grubs			
Flea beetle larvae			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			
Restrictions:			

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.3 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

#### DRIED BEANS AND PEAS

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, Catjang, Cowpea, Crowder pea, Moth bean, Mung bean, Rice bean, Southern pea, Urd bean; Broad bean (dry), Chickpea, Guar, Lablab bean, Lentil; Pea (Piscum), Field pea, Pigeon pea

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, 5 to 7 inch band (T-band) over an open furrow, or in-furrow with the seed. Apply broadcast to the soil surface for control of Army cutworm, Cutworm spp., True armyworm, or Armyworm spp.

PEST	USE RATES			
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre	
Corn rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1	
Grape colaspis	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08	
Wireworm				
Grubs				
Root maggot				
Army cutworm				
Cutworm spp.				
True armyworm				
Armyworm spp.				

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.2 lb. active ingredient (17.0 ounces formulated) to peas or 0.3 lb. active ingredient (25.5 ounces formulated) to beans per acre per season including at-plant plus foliar applications of other bifenthrin products.

#### EGGPLANT

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast to the soil surface for control of Army Cutworm, Cutworm Species, True Armyworm or Armyworm species.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grubs			
Root maggot			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			

#### **Restrictions:**

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.2 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

#### HEAD LETTUCE

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast to the soil surface for control of Army cutworm, Cutworm spp., True armyworm, armyworm spp. or bulb mites.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1

3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
	3.4 to 6.8	3.4 to 6.8 0.2 to 0.39

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.5 pound active ingredient per acre per season including at-plant plus foliar

applications of other bifenthrin products.

#### LEAFY BRASSICAS, TURNIP GREENS

Broccoli Raab, Bok Choy, Collards, Kale, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens, Turnip Greens

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T- band), or in-furrow with the seed. Apply broadcast over the soil surface for control of Army cutworm, Cutworm spp., True armyworm or armyworm spp.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grubs			
Root maggot			
Lettuce root aphid			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			
True armyworm			

#### **Restrictions:**

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.4 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

# LEAFY PETIOLE VEGETABLES (FOLIAR)

Celery, Cardoon, Chinese celery, Celtuce, Florence fennel, Rhubarb, Swiss chard When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons of finished spray per acre with ground equipment. When applying by air, 1 to 2 quarts of emulsified oil may be substituted for 1 to 2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Cutworms	3.4 to 8.5	0.04 to 0.1
Corn Earworm		
Tobacco		
Budworm		
Saltmarsh Caterpillar		
Leafhoppers		
Flea Beetles		
Imported		
Cabbageworm		
Cucumber Beetles		
Aphids		
Whitefly		
Armyworms		
Loopers		
Stink Bugs		
Crickets		
Ground Beetles		
Thrips		
Wireworm (adults)		
Diamondback Moth		
Banks Grass Mite	6.8 to 8.5	0.08 to 0.1
Twospotted Spider Mite		
Carmine Mite		
Pacific Spider Mite		
Lygus Spp.		
Restrictions:		
Do not apply more than 0.	5 lb. active ingredient per acre per seaso	on.
Do not make applications I		
Do not apply within 7 days	of harvest.	

# OKRA

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), in-furrow with the seed, or broadcast to the soil surface.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Armyworm			
Cutworm			
Flea beetle larvae			

#### **Restrictions:**

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.2 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

# PEANUT\* (FOLIAR)

Apply as directed using the rates in the table below.

PEST	RATE	APPLICATION INSTRUCTIONS
Beet Armyworms	2.5 to 8.6 fl.	Apply foliar treatments in at least 10 gallons per acre at
Corn earworm	oz. (0.033 to	the rate of 8.6 fl. oz. (0.1 lb. active ingredient) per acre at
Cucumber Beetles	0.1 lb. ai) per	a minimum of 14 days intervals.
Cutworm species	acre	
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		
Aphids	6.9 to 8.6 fl. oz.	
Spider Mites	(0.08 to 0.1 lb.	
Thrips	ai) per acre	
Whitefly		
RESTRICTIONS:		
<ul> <li>Do not feed green immature</li> </ul>	re plants and pean	ut hay to livestock.

- Do not apply more than 0.5 pound active ingredient per acre per season.
- Do not apply within 14 days of harvest.
- \* Not for use in California.

# **PEPPERS (BELL and NON-BELL)**

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast over the soil surface for control of Army cutworm, Cutworm spp., True armyworm, Armyworm spp. or Stalk borer.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grubs			
Root maggot			
Flea beetle larvae			
Pepper maggot			
Root aphid			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			
Stalk borer			

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.2 pound active ingredient ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

# ROOT CROPS (FOLIAR)

Apply as directed using the rates in the table below.

CROP	PEST	RATE	APPLICATION INSTRUCTIONS	
Burdock, edible	Aphids	6.9 to 8.6 fl. oz.	Apply foliar treatments in at	
Carrot	Beet Armyworm	(0.08 to 0.10 lb.	least 25 gallons per acre.	
Celeriac	Celery leaftier	ai) per acre		
Chervil, turnip rooted	Corn Earworm			
Chicory	Cross-Striped			
Ginseng	Cabbageworm			
Horseradish	Cutworms			
Parsley, turnip rooted	Diamondback moth			
Parsnip	European Corn Borer			
Radish	Fall Armyworm			
Radish, oriental	Flea Beetles			
Rutabaga	Green Cloverworms			
Salsify	Hornworms			
Salsify, black	Imported Cabbageworm			
Salsify, Spanish	Loopers			
Skirret	Southern Armyworm			
Turnip	Spider Mites			
	Tobacco Budworm			
	Velvetbean Caterpillar			
	Whitefly			
	Yellowstriped Armyworm			
<b>RESTRICTIONS:</b>	•	•		
• Do not make applicat	ions less than 7 days apart.			
<ul> <li>Do not apply more the</li> </ul>	an 0.5 pound active per acre p	per season.		
• Do not apply within 2	1 days of harvest.			
Garden Beet	Aphids	6.9 to 8.6 fl. oz.	Apply foliar treatments in at	
	Flea Beetles	(0.08 to 0.10 lb.	least 25 gallons per acre.	
	Lepidopterous Larvae	ai) per acre		
	Spider Mites			
	Whitefly			
<b>RESTRICTIONS:</b>				
<ul> <li>Do not make applicat</li> </ul>	ions less than 7 days apart.			
<ul> <li>Do not apply more than 0.4 lb. active ingredient per acre per season.</li> </ul>				
Do not apply within 1 day of harvest.				

# SOD FARMS (FOLIAR)

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a broadcast treatment.

Use higher volumes up to 10 gallons of carrier per 1000 square feet to get uniform coverage when treating dense grass foliage.

Irrigation to treated area within a few hours following application can improve efficacy to sub-surface pests including mole crickets.

The application rates listed in the following table will provide excellent control of the respective pests under typical conditions. However, at the discretion of the applicator, Liberty Bifen FC may be applied at up to 0.4 fluid oz. per 1000 square feet to control each of the pests listed in this table. The higher application rates should be used when maximum residual control is desired or heavy pest populations occur.

PEST	USE RA	TES
	Fluid oz/acre	Fluid oz/ 1000 sq. ft.
Armyworms <sup>1</sup>	2.8 to 4.35	0.066 to 0.1
Cutworms <sup>1</sup>		
Sod Webworm <sup>1</sup>		
Annual Bluegrass Weevil (Hyperodes) (Adult) <sup>2</sup>	4.35 to 8.7	0.1 to 0.2
Banks Grass Mite <sup>6</sup>		
Billbugs (Adult) <sup>3</sup>		
Black Turfgrass Ataenius (Adult) <sup>4</sup>		
Crickets		
Earwigs		
Grasshoppers		
Mealybugs		
Mites <sup>6</sup>		
Chinch Bugs <sup>5</sup>	8.7 to 17.42	0.2 to 0.4
Japanese Beetle (Adult)		
Mole Cricket (Adult) <sup>7</sup>		
Mole Cricket (Nymph) <sup>8</sup>		

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.

# Comments

**1** Armyworms, Cutworms and Sod Webworms: To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the grass area is being maintained at a mowing height of greater than 1 inch, then higher application rates (up to 0.4 fluid oz. per 1000 square feet) may be required during periods of high pest pressure.

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

**3 Billbug adults:** Applications should be made when adult billbugs are first observed during April and May. Degree day models have been developed to optimize application timing. Consult your State Cooperative Extension Service for information specific to your region. In temperate regions, spring applications targeting billbug adults will also provide control of over-wintered chinch bugs.

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

**5 Chinch Bugs:** Chinch Bugs infest the base of grass plants and are often found in the thatch layer. Irrigation of the grass area before treatment will optimize the penetration of the insecticide to the area where the chinch bugs are located. Use higher volume applications if the thatch layer is excessive or if a relatively long mowing height is being maintained. Chinch Bugs can be one of the most difficult pests to control in grasses Page 18 of 31

and the higher application rates (up to 0.4 fluid oz. per 1000 square feet) may be required to control populations that contain both nymphs and adults during the middle of the summer.

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

**7 Mole Cricket adults:** Achieving acceptable control of adult mole crickets is difficult because preferred grass areas are subject to continuous invasion during the early spring by this extremely active stage. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized. Grass areas that receive pressure from adult mole crickets should be treated at peak egg hatch to ensure optimum control of subsequent nymph populations (see below).

**8 Mole Cricket nymphs:** Grass areas that received intense adult mole cricket pressure in the spring should be treated immediately prior to peak egg hatch. Optimal control is achieved at this time because young nymphs are more susceptible to insecticides and they are located near the soil surface where the insecticide is most concentrated. Control of larger, more damaging, nymphs later in the year may require both higher application rates and more frequent applications to maintain acceptable control. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized.

#### SOYBEANS

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast over the soil surface for control of Army cutworm, Cutworm spp., True armyworm, or Armyworm spp.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grape colaspis			
Grubs			
Root maggot			
Seedcorn maggot			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			
Seed corn beetle			
Restrictions:		· · ·	
Do not apply more than 0	1 nound active ingredien	t par acro par caacap ac ap at p	lant application

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.2 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

#### SOYBEANS (PPI & PRE)

For PPI treatments, the 4 to 5.3 fluid oz/A rate must be used. Liberty Bifen FC can be tank mixed and applied with PPI herbicides. Incorporation of Liberty Bifen FC should not be any deeper than the intended planting depth and no deeper than 3 inches. Incorporation depth should be close to the intended seed planting depth.

For PRE treatments, the 3.4 fluid oz/A rate may be applied and can be tank mixed and applied with PRE herbicides.

PEST	USE RATES				
	Fluid oz/acre	Pound ai/acre			
Black Cutworm	4 to 5.3	0.47 to 0.062			
White grub	Pre-Plant Incorporated	Pre-Plant Incorporated			
Wireworm	(PPI)	(PPI)			
Seed corn Maggot					
Armyworm spp.					
Seed corn beetle					
Black Cutworm	3.4 Pre-Emergence	0.04 Pre-Emergence			
Armyworm	(PRE)	(PRE)			
Stalkborer					
Seed corn beetle					
Restrictions:					
Do not apply more than 0.1 pound active ingredient per acre per season as PPI or PRE application.					
Do not apply more than 0.2 pound active ingredient per acre per season including at-plant plus					
foliar applications of other bifenthrin products.					

# SOYBEAN (FOLIAR)

Apply as directed using the rates in the table below.

PEST	RATE	APPLICATION INSTRUCTIONS
Alfalfa Caterpillar	2.8 to 8.6 fl. oz.	Apply as a foliar treatment using at least of 10 gallons per
Aphids	(0.033 to 0.1lb.	acre at the rate of 8.6 fl. oz. (0.1 lb.) per acre at a minimum of
Aster Leafhopper	ai) per acre	30 day intervals.
Bean Leaf Beetle		
Beet Armyworm <sup>1</sup>		<sup>1</sup> Pyrethroid resistance is common for Beet Armyworm and
Cloverworm		Tobacco
Corn Earworm		Budworm. Consult your local or state agricultural authority to
Corn Rootworm Adult		determine if resistant pest populations are in your area. If so
Cucumber Beetles		refer to
Cutworms		the Resistance Management statement in the Directions For
European Corn Borer		Use
Fall Armyworm		section of this label.
Flea Beetle		
Grasshoppers		
Imported cabbageworm		
Japanese Beetle Adult		
Leafhoppers		
Leafminer		
Loopers		
Mexican Bean Beetle		
Adult		
Pea Leaf Weevil		
Pea Weevil		
Plant Bug		
Saltmarsh caterpillar		

Sap Beetle	
Southern Armyworm	
Stink Bugs	
Tarnished Plant Bug	
Thrips	
Tobacco budworm <sup>1</sup>	
Webworms	
Western Bean Cutworm	
Whitefly	
Yellowstriped	
Armyworm	
Lygus Species	6.9 to 8.6 fl. oz.
Whitefly	(0.08 to 0.10 lb.
Two-Spotted Spider	ai) per acre
Mite	
<b>RESTRICTIONS:</b>	
• Do not apply more than	n 0.3 pound active i

- Do not apply more than 0.3 pound active ingredient per acre per season.
- Do not apply within 18 days of harvest.

#### **SPINACH**

Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast to the soil surface for control of Army cutworm, Cutworm spp., True armyworm, or Armyworm spp.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grubs			
Root maggot			
Seedcorn maggot			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			
Restrictions:	1		

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.4 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

# SPINACH (FOLIAR)

Apply as directed using the rates in the table below.

PEST	RATE	APPLICATION INSTRUCTIONS
Armyworms	2.8 to 8.6 fl. oz.	Apply the specified dosage in 5-50 gallons of finished
Colorado Potato Beetle	(0.033 to 0.10 lb.	spray per acre by air or 10-50 gallons of finished spray
Corn Earworm	ai) per acre	per acre by ground.
Cucumber Beetles		
Cutworms		For control of Whiteflies, apply foliar treatments of
European Corn Borer		LIBERTY Bifen FC by ground or air at rates of up to 0.5 pt.

	(0.1 lb active) per acre at minimum 7-day intervals up to a maximum of 4 applications.
6.9 to 8.6 fl. oz.	
(0.08 to 0.10 lb.	
ai) per acre	
ess than 7 days apart	t.
	(0.08 to 0.10 lb. ai) per acre

- Do not apply more than 0.4 pound active ingredient per acre per season.
- Do not apply within 40 days of harvest.

#### SUCCULENT PEAS AND BEANS

Pea (Pisum spp.): Dwarf pea, Edible-pod pea, English pea, 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, Cowpea, Moth bean, Southern pea, Yardlong bean, Jackbean, Soybean (immature seed), Sword bean

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T- band), or in-furrow with the seed. Apply broadcast over the soil surface for control of Army cutworm, Cutworm spp., True armyworm, or Armyworm spp.

	USE RATES		
PEST	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grape colaspis			
Grubs			
Root maggot			
Seedcorn maggot			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			

#### **Restrictions:**

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.2 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

# TOBACCO (PRE-TRANSPLANT and AT-TRANSPLANT)

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. **Pre-transplant soil applications:** 

Use of suitable equipment to incorporate into top 4" of the soil is required to control below ground pests.

### At-transplant water treatment application:

Apply 0.0625 to 0.1 pound ai/A in a water treatment application volume of 10 to 200 gal/A.

PEST	USE RATES		
	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Cutworm spp.	3.4 to 8.5	0.2 to 0.49	0.04 to 0.1
Flea beetle larvae			
White grubs			
Wireworm			
Mole cricket			
Armyworm spp.			
Stalkborer			
Restrictions:			
Do not apply more than 0	.2 pound active ingredient	per acre per season.	
Do not apply later than la	yby.		
May be tank mixed with C	Command, Spartan and oth	ner herbicides approved for tobac	co use.

# **TOBACCO (FOLIAR)**

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply 0.04 to 0.10 lb ai/A per foliar application up to, and including, layby in a minimum of 10 gal/A. Do not make more than 2 foliar applications per season.

PEST	USE I	RATES
	Fluid oz/acre	Pound ai/acre
Aphid spp.	3.4 to 8.5	0.04 to 0.1
Armyworm spp.		
Chinch bugs		
Cutworm spp.		
Flea beetle (Adults)		
Grasshoppers		
Green bugs		
Japanese beetles		
Stink Bugs		
Thrips		
White flies		
Tarnished plant bugs		
Hornworm	6.8 to 8.5	0.08 to 0.1
Tobacco Budworm		
Spider mites	8.5	0.1
Lygus spp.		
Restrictions:		
Do not make more than 2 foliar applica	tions per season.	
Do not apply more than 0.2 pounds act	ive ingredient per acre per seasor	۱.
Do not apply later than layby.		

May be tank mixed with herbicides approved for tobacco use.

\*See resistance management statement under "Directions for Use" section.

# TOMATOES

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Apply as a 5 to 7 inch band over the row on the soil surface, a 5 to 7 inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast to the soil surface for control of Army cutworm, Cutworm spp., True armyworm, Armyworm spp. or Stalkborer.

	USE RATES		
PEST	Fluid oz/acre	Fluid oz/1000 Linear ft.	Pound ai/acre
Rootworm larvae	6.8 to 8.5	0.39 to 0.49	0.08 to 0.1
Wireworm	3.4 to 6.8	0.2 to 0.39	0.04 to 0.08
Grubs			
Root maggot			
Flea beetle larvae			
Army cutworm			
Cutworm spp.			
True armyworm			
Armyworm spp.			
Stalkborer			

# **Restrictions:**

Do not apply more than 0.1 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.32 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

# **TUBEROUS AND CORM VEGETABLES (AT-PLANT)**

Potato, Sweet potato, Arracacha, Arrowroot, Chinese artichoke, Jerusalem artichoke, Edible canna, Cassava (bitter and sweet), Chayote (root), Chufa, Dasheen (taro), Ginger, Leren, Tanier, Turmer, Yam bean, True yam.

When applied as directed, Liberty Bifen FC will provide control of the pests listed in the table below. Liberty Bifen FC may be applied as a soil incorporated broadcast, directed bed spray or a T-band spray into the planting furrow for the control of wireworms, rootworms, sweet potato flea beetle and white grubs. Apply Liberty Bifen FC at the rate of 0.15 to 0.3 pounds active ingredient (12.75 to 25.5 fluid ounces formulated) per acre in a minimum of 10 gallons per acre of spray.

PEST	USE RATES		
	Fluid oz/acre	Pound ai/acre	
Wireworms	12.75 to 25.5	0.15 to 0.3	
Grape colaspsis			
White grub			
Sweet potato flea beetle			
Rootworms			
Restrictions:			

Do not apply more than 0.3 pound active ingredient per acre per season as an at-plant application. Do not apply more than 0.5 pound active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

# TUBEROUS AND CORM VEGETABLES (LAY-BY)

Potato, Sweet potato, Arracacha, Arrowroot, Chinese artichoke, Jerusalem artichoke, Edible canna, Cassava (bitter and sweet), Chayote (root), Chufa, Dasheen (taro), Ginger, Leren, Tanier, Turmer, Yam bean, True yam.

When applied as directed, Liberty Bifen FC will provide control of the following pests listed in the table below. Liberty Bifen FC may be applied as one or more soil directed and incorporated treatments at cultivation or lay-by for the control of wireworms, rootworms and white grubs. Apply Liberty Bifen FC to

the drill area and incorporate by cultivation equipment set to throw soil towards the drill area. Apply Liberty Bifen FC at a rate of 0.15 to 0.3 pound active ingredient (12.75 to 25.5 fluid ounces formulated) per acre in a minimum of 10 gallons per acre of spray.

	USE RATE	ES
PEST	Fluid oz/acre	Pound ai/acre
Wireworms	12.75 to 25.5	0.15 to 0.3
Grape colaspsis		
White grub		
Rootworms		
Restrictions:		
Do not apply more than 0.	5 pound active ingredient per acre pe	er season including soil plus foliar

# applications of other bifenthrin products.

# TUBEROUS AND CORM VEGETABLES (FOLIAR)

Apply as directed using the rates in the table below.

CROP	PEST	APPLICATION INSTRUCTIONS
Potato	Corn wireworm	Foliar Application: Apply LIBERTY Bifen FC to
Sweet potato	Tobacco wireworm	control the adult life stages of flea beetles, click
Arracacha	Southern potato	beetles (wireworms), cucumber beetles
Arrowroot	wireworm	(rootworms), Whitefringed beetles and May/June
Chinese artichoke	Japanese beetle grubs	beetles (White grubs). Apply at the rate of 0.1 lbs.
Jerusalem artichoke	June beetle	active ingredient (8.6 ounce formulated product) per
Edible canna	Sweetpotato flea beetle	acre in 10 gallons of spray by ground equipment and
Cassava (bitter & sweet)	Cucumber beetle	3 gallons of spray by air.
Chayote (root)	Sweetpotato Weevil	
Chufa	Banded Cucumber	
Dasheen (taro)	Beetle	
Ginger	Black flea beetle	
Leren	Whitefringed beetle	
Tanier	White grub	
Turmer	Sugarcane beetle	
Yam bean	Rootworms	
True yam		
RESTRICTIONS		

# **RESTRICTIONS:**

- Do not make more than 2 foliar applications per season no sooner than 21 days apart.
- Do not apply more than 0.5 lb. active ingredient per acre per season, including soil application.
- Do not apply within 21 days of harvest.

# **APPLICATIONS INSTRUCTIONS – ORNAMENTALS\***

\* NOT FOR USE IN CALIFORNIA TO CONTROL LISTED INSECT PESTS ON ORNAMENTALS AND TREES (INCLUDING FIELD AND CONTAINER GROWN NURSERY STOCK, CHRISTMAS TREES, INTERIORSCAPES AND PLANTSCAPES, LAWNS, TREES AND SHRUBS, AND ON GOLF COURSES AND SOD FARMS).

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

# **PRODUCT INSTRUCTIONS**

LIBERTY Bifen FC mixes with water and other aqueous carriers to control listed insects and mites on trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in interiorscapes, including hotels, Page 25 of 31

shopping malls, office buildings, etc. and outdoor plantscapes such as, but not limited to, nurseries, residential dwellings, parks, institutional buildings, recreational areas, athletic fields, golf courses, sod farms, and home lawns. Non-bearing crops are perennial crops that will not produce a harvestable raw agricultural commodity during the season of application.

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

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

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

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

# **APPLICATION RATES**

# TRUNK SPRAYS TO ORNAMENTAL TREES (including Christmas trees)

# For Control of Bark Beetles and Boring Beetles

Refer to the table below. Application rates and timing differ according to the target pest and other factors specific to each local situation. Consult your local State Extension specialist or other qualified expert for recommendations. **Note:** Do not apply more than 12.8 fl. oz. (0.2 lbs. AI) per acre of this product to trees. Repeat application may be necessary if reinfestation is likely.

PEST	RATE	SPRAY VOLUME	USE INSTRUCTIONS
Dandroctonus bark beetles	21 - 43 fl. oz.	Use 1-4 gallons	Make applications to the trunk of
such as mountain pine beetle,	per 100 gallons	of finished spray	the tree with a hydraulic sprayer
southern pine beetle, western	(0.25 – 0.5 lb. Al	per tree.	in the early spring or prior to
pine beetle, and black	per 100 gallons)		adult beetle flight and tree
turpentine beetle.			infestation.
Engraver beetle ( <i>lps</i> spp.)	21 - 43 fl. oz.	Use 10-14	Apply spray directly to the main
	per 100 gallons	gallons of	trunk from the base of the tree
	(0.25 – 0.5 lb. Al	finished spray	to at least half-way into the live
	per 100 gallons)	per tree.	crown. Spray until the bark is
			thoroughly wet.
Other bark beetles such as	21 - 43 fl. oz.	Use 2-5 gallons	Make applications of a spray
ambrosia beetles, elm bark	per 100 gallons	of finished spray	mixture to the trunk, scaffolding
beetles, and metallic wood	(0.25 – 0.5 lb. Al	per tree.	and limbs of the tree with a
borers such as emerald ash	per 100 gallons)		hydraulic sprayer in the early
borer.			spring or prior to adult beetle

<b>Clearwing moth borers</b> such as ash borer, banded ash clearwing, dogwood borer, lesser peachtree borer, lilac borer, oak borer, peachtree borer, rhododendron borer	8.6 – 17.2 fl. oz. per 100 gallons (0.1 – 0.2 lb. Al per 100 gallons)	Use 1-4 gallons of finished spray per tree.	flight and tree infestations. Spray until the bark is thoroughly wet. Apply to the branches and trunks prior to adult emergence. Spray until the bark is thoroughly wet. For maximum residual control, use highest recommended rate.
<b>Coleopteran borers</b> such as bronze birch borer, flatheaded apple tree borer			

# Treatment of Infested Trees to Control Emerging Brood

Make applications of a spray mixture containing 2.0 pints of LIBERTY Bifen FC per 100 gallons of water to trees that still have beetles in the bark. Apply spray directly to the main trunk from the base of the tree to at least half-way into the live crown. Spray until the bark is thoroughly wet (usually 1 to 4 gallons of spray per tree). Do not apply more than 0.2 lbs. AI (19.4 fl. oz.) of this product to trees per acre.

Trees on which all needles have turned brown generally have been vacated and should not be sprayed unless infestation is confirmed. To confirm an infestation, scrape off the outer bark to determine if trees are still infested. If live infestations remain in the trunks, fell the trees and cut into sections. Spray the trunk and large limbs and turn sections so that all of the surface area can be treated. Do not apply more than 0.2 lbs. AI (19.4 fl. oz.) of this product to trees per acre.

# FOLIAR SPRAYS TO ORNAMENTALS AND TREES

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

For applications to ornamentals (including but not limited to trees, shrubs, ground covers, bedding plants and foliage plants, conifers (field and container grown), Christmas Trees and pine seed orchards) apply 0.06 to 0.44 fl. oz. LIBERTY Bifen FC per 1,000 sq. ft. or 2.4 to 19.4 fl. oz. per 100 gallons. LIBERTY Bifen FC may be diluted and applied in various volumes of water providing that the maximum label rate (0.44 fl. oz. per 1,000 sq. ft. or 19.4 fl. oz. per 100 gallons) is not exceeded. LIBERTY Bifen FC may be applied through low volume application equipment by dilution with water or other carriers and providing that the maximum label rate (0.44 fl. oz. per 1,000 sq. ft. or 19.4 fl. oz. per 100 gallons) is not exceeded.

# Calculating Dilution Rates Using the Ornamental Application Rates Table and the LIBERTY Bifen FC Dilution Chart

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

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

For example, to control black vine weevil adults on rhododendron, the **Ornamental Application Rates** table shows that 0.12 to 0.20 fl. oz. of this product should be applied per 1,000 sq. ft. You select an application rate of 0.20 fl. oz. per 1,000 sq. ft. because maximum residual control is desired. Your Page 27 of 31

application volume is approximately 300 gallons per acre which is equivalent to 6.9 gallons per 1,000 sq. ft. Consulting the **Ornamental Dilution Chart** shows that you should dilute 0.72 fl. oz. of this product in 10 gallons of water.

LIBERTY Bifen FC ORNAMENTAL DILUTION CHART							
Application	Fluid Ounces (mL) of LIBERTY Bifen FC diluted to the Volumes of Finished Spray						
Rate	1 Ga	llon	5 Gallons		10 Gallons		100 Gallons
Fl. oz./1,000 sq. ft.	Fl. oz.	mL	Fl. oz.	mL	Fl. oz.	mL	Fl. oz.
0.06	0.018	0.5	0.09	2.6	0.18	5.3	1.8
0.12	0.036	1.1	0.18	5.3	0.36	10.6	3.6
0.20	0.072	2.1	0.36	10.6	0.72	21.3	7.2
0.44	0.144	4.3	0.72	21.3	1.44	42.6	14.4

<u>(17.15)(Fl. Oz. of LIBERTY Bifen FC added to tank)</u> =Percent Active Ingredient of Spray Mix (gallons of finished spray mix)(128)

# ORNAMENTAL AND TREE FOLIAR APPLICATION RATES

The application rates listed in the following table will provide excellent control of the noted pests under typical conditions. However, at the discretion of the applicator, this product may be applied at up to 0.44 fl. oz. per 1,000 sq. ft (19.4 fl. oz. per 100 gallons) to control each of the pest listed in this table. The higher application rates should be used when maximum residual control is desired.

PEST	RATES	USE INSTRUCTIONS
Bagworms <sup>1</sup>	0.06 – 0.12 fl. oz. per	<sup>1</sup> Bagworms: For best results, apply when
Cutworms	1,000 sq. ft.	larvae begin to hatch and spray larvae
Elm Leaf Beetles		directly. Applications when larvae are
Fall Webworms	(1.8 – 3.8 fl. oz. per 100	young will be most effective.
Gypsy Moth Caterpillars	gallons)	
Lace Bugs		<sup>2</sup> Beetles, Scale Crawlers, Twig Borers, and
Leaf Feeding Caterpillars		Weevils: May treat trunks, stems and twigs
Tent Caterpillars		in addition to plant foliage.
Tussock moth		
Adelgids	0.12 – 0.20 fl. oz. per	<sup>3</sup> Spider Mites: LIBERTY Bifen FC provides
Ants (Excluding fire, carpenter,	1,000 sq. ft.	optimal twospotted spider mite control
harvester, and pharaoh ants)		when applied during spring to mid-
Aphids	(3.6 – 7.2 fl. oz. per 100	summer. Higher application rates and/or
Bees	gallons)	more frequent treatments may be
Beet Armyworm		required for acceptable twospotted spider
Beetles <sup>2</sup>		mite control during mid- to late-summer.
Black Vine Weevil (Adults)		The addition of a surfactant or horticultural
Scales, such as		oil may increase the effectiveness of this
Brown Soft Scales		product. Combinations of this product with
California Red Scale (Crawlers) <sup>2</sup>		other registered miticides have also proven
Elongated Hemlock Scale		effective. Alternately, LIBERTY Bifen FC
Pine Needle Scales (crawlers) <sup>2</sup>		applications may be rotated with those of
San Jose Scales (Crawlers) <sup>2</sup>		other products that have different modes of
Broad Mites		action in control programs that are
Budworms		designed to manage resistance by

Cicadas		twospotted spider mites. Consult your local
Citrus Thrips		Cooperative Extension Service for
Clover Mites		resistance management recommendations
Crickets		in your region.
Earwigs		in your region.
European Red Mite		
Flea Beetles		
Fungus Gnats (Adults)		
Glassywinged Sharpshooter		
Grasshoppers		
Japanese Beetle (Adult)		
Leafhoppers		
Leafrollers		
Mealybugs Mites		
Nantucket Pine Tip Moth		
Pillbugs		
Pine sawflies		
Plant Bugs (including <i>Lygus</i> spp.)		
Psyllids+		
Spider Mites <sup>3</sup>		
Spittlebugs		
Thrips		
Tip Moths		
Treehoppers		
Twig Borers <sup>2</sup>		
Weevils <sup>2</sup> such as		
White Pine Weevil		
Pales Weevil		
Diaprepes adults		
Orchid Weevil		
White flies		
Zimmerman pine moths		
Leafminers	0.20 – 0.44 fl. oz. per	
Pecan Leaf Scorch Mite	1,000 sq. ft.	
Pine Shoot Beetle (Adults)		
Spider Mites <sup>3</sup>	(7.2 – 14.4 fl. oz. per	
	100 gallons)	

# STORAGE AND DISPOSAL

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

# **Pesticide Storage**

DO NOT STORE BELOW 40°F.

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. Call CHEMTREC (Transportation and Spills): (800) 424-9300.

To confine spill: Dike surrounding area or absorb with sand, cat litter or commercial clay. Place damaged package in a holding container. Identify contents.

# Pesticide Disposal

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

# **Container Handling**

**Non-refillable container (in sizes 5 gallons or less)** - Do not reuse or refill this container. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds, pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after flow begins to drip. Repeat this procedure two more times Then offer for recycling if available, 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.

**Non-refillable container (in sizes greater than 5 gallons)** - Do not reuse or refill this container. Triple rinse or pressure rinse. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip back and forth several times. Turn the container over onto its other end and tip back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Returnable/Refillable Containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

# CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of LIBERTY CROP PROTECTION LLC or Seller, TO THE EXTENT CONSISTENT WITH APPLICABLE LAW All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold LIBERTY CROP PROTECTION LLC and Seller harmless for any claims relating to such factors.

LIBERTY CROP PROTECTION LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or LIBERTY CROP PROTECTION LLC, and TO THE EXTENT CONSISTENT WITH APPLICABLE LAW Buyer and User assume the risk of any such use. LIBERTY CROP PROTECTION LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

To the extent consistent with applicable law, neither LIBERTY CROP PROTECTION LLC nor Seller shall be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF LIBERTY CROP PROTECTION LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF LIBERTY CROP PROTECTION, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT. LIBERTY CROP PROTECTION LLC and Seller offer this product, and Buyer and User accept it, subject to the

foregoing conditions of Sale and Limitation of Warranty and Liability which may not be modified except by written agreement signed by a duly authorized representative of LIBERTY CROP PROTECTION LLC.