

83222-1

10/01/2008

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460-0001

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Jane M. Miller  
Biologic Inc.  
115 Obtuse Hill  
Brookfield, CT 06804

OCT 1 2008

Subject: Updated Spray Drift Language for Pyrethroid  
Agricultural Use Product as per EPA letter dated February  
21, 2008.

Dear Ms Miller:

The Agency is in receipt of your Application for Pesticide  
Notification dated September 2, 2008 for the following product:

Bifen 2EC AG Insecticide/Miticide (EPA Reg. No. 83222-1).

Registration Division (RD) has conducted a review of this request  
for it applicability under PRN 98-10 and finds that the action(s)  
requested fall within the scope of PRN 98-10. The label submitted  
with the application has been stamped "Notification" and will be  
placed in our records.

Note under Buffer Zones correct "ponds" to read "natural ponds"  
and "streams" to read "permanent streams". Also, "On page 5 delete  
the third paragraph. This information is already given under Buffer  
Zones". The correct webmail address is  
[www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf](http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf).

If you have any questions, please call me at (703) 305-6100.

Sincerely,

*George T. LaRocca*

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



United States  
**Environmental Protection Agency**  
 Washington, DC 20460

<input type="checkbox"/>	Registration
<input checked="" type="checkbox"/>	Amendment
<input type="checkbox"/>	Other

OPP Identifier Number

**Application for Pesticide - Section I**

1. Company/Product Number 83222-1	2. EPA Product Manager G. LaRocca	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Bifen 2 AG Gold	PM# 13	
5. Name and Address of Applicant (Include ZIP Code) J. Oliver Products, LLC 3187 Robertson Gin Road Hernando, MS 38632 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. <b>NOTIFICATION</b> Product Name <b>OCT I 2008</b>	

**Section - II**

<input checked="" type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

This is a label amendment to update the spray drift language for pyrethroid agricultural use products as per the EPA letter dated February 21, 2008. I certify that the only changes made on the label are those necessary to comply with EPA's letter of February 21, 2008. This action will not fall within the scope of PRIA.

**Section - III**

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Metal	<input type="checkbox"/> Plastic
* Certification must be submitted	If "Yes" Unit Packaging wgt.	No. per container	If "Yes" Package wgt	No. per container	<input type="checkbox"/> Glass
					<input type="checkbox"/> Paper
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/>	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other _____		

**Section - IV**

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Jane M. Miller	Title Agent	Telephone No. (Include Area Code) (203) 740-1200
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Agent	
4. Typed Name Jane M. Miller	5. Date September 2, 2008	

3/2006



September 2, 2008

Document Processing Desk  
Office of Pesticide Programs (7504P)  
US Environmental Protection Agency  
One Potomac Yard  
2777 S. Crystal Drive  
Room S-4900, 4<sup>th</sup> Floor  
Arlington, VA 22202

Attention: Mr. George LaRocca (PM #13)

RE: J. Oliver Products; Bifen 2 AG Gold; EPA Reg. No. 83222-1  
Response to EPA Letter Dated February 21, 2008  
Updated Spray Drift Language for Pyrethroid Agricultural Products.  
Application for Pesticide Amendment

Dear Mr. LaRocca:

In response to the Agency's letter dated February 21, 2008, please find enclosed the revised labeling to comply with the updated spray drift language for pyrethroid agricultural use products. J. Oliver Products has submitted a label amendment in June 2008 for this product to add uses to the label. This amendment has not been approved as yet, so we have used the June 26, 2007 approved label as a template for this action.

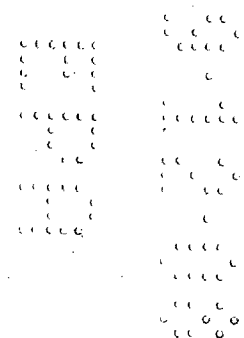
The following documents are enclosed to complete this registration action:

1. Application for Pesticide Amendment (EPA Form 8570-1)
2. One (1) copy of marked draft labeling with the additional text underlined and deleted text lined out.
3. Two (2) copies of clean draft labeling.

Should you have any questions, or wish to reach me, please feel free to contact our office at 203-740-1200.

Sincerely,

Jane Miller  
Agent to J. Oliver Products



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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.

**BIFEN 2 AG GOLD  
INSECTICIDE/MITICIDE**

**NOTIFICATION**

**OCT 1 2008**

**By Wt.**

**Active Ingredient:**

**Bifenthrin\***

(2 methyl[1,1'-biphenyl]-3-yl) methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-

2,2-dimethylcyclopropanecarboxylate .....

25.1%

**Other Ingredients\*\*:** .....

74.9%

**TOTAL:** .....

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.)

FIRST AID	
If swallowed	<ul style="list-style-type: none"> <li>Call 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>

**NOTE TO PHYSICIAN**

This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. Contains petroleum distillates. Vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**EMERGENCY NUMBERS:**

- Transportation or spill, call CHEMTREC 800-424-9300.

EPA Reg. No.: 83222-1

EPA Est. No.\*: 53888-TX-002

44616-MO-001

\*The first letters of the batch code indicate the producing establishment: PT= 53883-TX-002; MO = 44616-MO-001

**Net Contents**

**Manufactured for:**  
**J OLIVER PRODUCTS**  
**Hernando, MS**

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

**Warning**

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

**Personal Protective Equipment:**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions or 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, or Nitrile rubber or neoprene rubber or Viton.
- Shoes plus socks

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

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, Nitrile rubber, neoprene rubber, or Viton.
- Shoes plus socks
- Protective eyewear

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

**USER SAFETY RECOMMENDATIONS**

Users should:

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

**Environmental Hazards**

This pesticide is extremely toxic to fish and aquatic invertebrates. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not make applications when weather conditions favor drift from treated areas. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters and rinsate.

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

The use of Bifenthrin is prohibited in areas that may result in exposure of endangered species to Bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species.

**Physical/Chemical Hazards**

Combustible - 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.

### AGRICULTURAL USE REQUIREMENTS

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

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

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

- Coveralls.
- Chemical-resistant gloves, such as Barrier Laminate or Nitrile Rubber or Neoprene Rubber or Viton.
- Shoes plus socks.

### STORAGE AND DISPOSAL

**Pesticide Storage:** Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not store this product near fertilizers, seeds, or other pesticides. 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. Damaged or leaking containers that contain product that cannot be used immediately should be transferred to suitable sound containers and properly marked. Reclose all partially used containers by thoroughly tightening screw cap. Do not put concentrate or dilute material into food or drink containers

Opened partially used pesticides should be stored in original containers when possible. When transfer to another container is necessary because of leakage or damage, carefully mark and identify contents of the new container. Keep containers closed when not in use.

For safety and prevention of unauthorized use, all pesticides should be stored in locked facilities. To prevent accidental misuse, different pesticides should be stored in separate areas with enough distance between to provide clear identification.

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.

### 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.

BIFEN 2 AG GOLD should be applied continuously for the duration of the water application. To insure accurate application over the area to be treated, BIFEN 2 AG GOLD should be diluted in sufficient. A minimum of 0.5 inch per acre of irrigation water is recommended when using chemigation. Agitation generally is not required when a suitable diluent is used. A diluent test should be conducted to ensure that phase separation would 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.

### BUFFER ZONES

#### Vegetative Buffer Strip

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

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

For guidance, refer to the following publication for information on constructing and maintaining effective buffers:

- Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21 pp. <http://www.in.csusda/v/technical/agronom/newconbuf.pdf>

#### Buffer Zone for Ground Application (groundboom, overhead chemigation, or airblast)

Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marches, 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, 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, ponds, estuaries, and commercial fish ponds).

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## SPRAY DRIFT REQUIREMENTS

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.

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 FARM PONDS.

Do not make applications 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 in cotton. Use of ultra low volume (ULV) application on corn and hops is prohibited.

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.

### Wind Direction and Speed

Only apply this product if the wind direction favors on-target deposition.

Do not apply when wind velocity exceeds 15 mph.

### Temperature Inversions

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 coarse spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In condition of low humidity and high temperature, applicators should use a coarser droplet size.

### Ground Application

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.

### Aerial Application

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 80% rotor diameter.

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

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

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



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**Resistance Management**

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 J. Oliver Products representative or agricultural advisor for the best alternative method of control in your area.

**Rotational Crops**

If applying to crops for which Bifenthrin tolerances exist, the crops may be rotated at any time. All other crops may be rotated 30 days following the final application of Bifenthrin.

**Tank-Mixture**

BIFEN 2 AG GOLD may be applied in tank mixtures with other products approved for use on registered crops. When tank mixing, observe all restrictions and limitations specified on the label of each product; always follow the most restrictive labeling. Test for compatibility of products before mixing.

**Application Instructions**

Application rates are variable according to pest pressure, timing of sprays, and field scouting. Under light to moderate infestation, use lower rates. Under heavy insect pressure and for mite control, use higher rates. Generally, arid climates require higher rates.

**SPRAY DRIFT PRECAUTIONS**

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.

**Spray Drift Management**

Avoid spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops.

1. The distance of the outer most nozzles on the boom must not exceed ¾ the length of the wingspan or rotor diameter.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

**Additional drift precautions specific to BIFEN 2 AG GOLD applied in the vicinity of aquatic areas (such as lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds):**

- Do not make applications 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 in cotton. Use of ultra low volume (ULV) application on corn and hops is prohibited.
- 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.

**INDEX TO CROPS LISTED ON THIS LABEL**  
**THIS PRODUCT IS NOT FOR SALE OR USE IN THE STATE OF CALIFORNIA.**

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

**ARTICHOKE**

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
Cribrate Weevil Artichoke Plume Moth	0.10	6.4	<p>Make application when pest infestations reach damaging threshold. Repeat application at 15-day intervals, if necessary to maintain control.</p> <p><b>Application by ground:</b> Apply as a full cover spray in water in a minimum of 75 gallons of finished spray per acre.</p> <p><b>Application by air:</b> Apply specified dosage in water in a minimum of 10 gallons per acre.</p> <p>Do not apply more than 0.5 lb. A/A per season.</p> <p>Bifen 2EC may be applied within 5 days of harvest (PHI).</p>

**BRASSICAS**

CROP	PEST	DOSAGE		REMARKS AND RESTRICTIONS
		LB A/A	FL OZ/A	

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Head and Stem Brassica Vegetables including: Broccoli Chinese Broccoli (gailon, white flowering broccoli) Brussels Sprouts Cauliflower Cavalo Broccolo Kohlrabi Cabbage Chinese Cabbage (napa) Chinese Mustard Cabbage (gai choy)	Cutworms 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	0.033-0.10	2.1-6.4	<p><b>By Air:</b> Apply in water in a minimum of 2 gallons of finished spray 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.</p> <p><b>By Ground:</b> Apply in water in a minimum of 10 gallons per acre.</p> <p>Thorough coverage is essential to achieve control.</p> <p>Do not apply more than 0.5 lb active ingredient (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 (PHI).</p>
	Banks Grass Mite Twospotted Spider Mite Pacific Spider Mite Carmine Mite Lygus spp.	0.08-0.10	5.12-6.4	

**CANEBERRIES**

CROP	PEST	DOSAGE		REMARKS AND RESTRICTIONS
		LB AI/A	FL OZ/A	
Caneberries including: Blackberries Bingleberries Dewberries Lowberries Marionberries Olallieberries Youngberries Loganberries Raspberries	Leafrollers Orange Tortrix Root Weevils	0.05-0.10	3.2-6.4	<p>By air or ground equipment: Use in sufficient water to obtain full coverage of foliage (minimum of 10 gallons per acre by air and 50 gallons per acre by ground).</p> <p>One application may be made pre-bloom and a second application may be made post bloom.</p> <p>Crown Borer: Make application in water of 0.1 lb ai/acre post-harvest (fall) or prebloom (spring). Apply as a drench application directed at the crown of plains in a minimum of 200 gallons water per acre.</p>

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	Spider Mites	0.10	6.4	<p>Greater efficacy is observed when higher water gallonages (up to 400 Gallons/acre) or when an application is made prior to a significant rainfall event.</p> <p>Do not make both pre-bloom foliar and pre-bloom drench applications.</p> <p>Do not apply more than 0.2 lb. AI/A per season.</p> <p>Do not apply within 3 days of harvest (PHI).</p>
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**CANOLA, CRAMBE, RAPESEED**

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB AI/A	FL OZ/A	
Aphids Cutworms Diamondback Moth Loopers Other Lepidopterous Larvae Flea Beetle Flea Hopper Grasshopper Plant Bug Stink Bugs Seedpod Weevil Thrips Whitefly Armyworms	0.033-0.04	2.1-2.6	<p><b>By Air:</b> Apply in water in a minimum of 2 gallons of finished spray 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.</p> <p><b>By Ground:</b> Apply in water in a minimum of 10 gallons per acre.</p> <p>Thorough coverage is essential to achieve control.</p> <p>A maximum of no more than 0.08 lb active ingredient (5.12 ounces formulated product) can be applied per acre per season. Do not apply within 14 days of last application.</p> <p>Do not apply within 35 days of harvest (PHI).</p>

**CITRUS (except Florida)**

PEST	DOSAGE	REMARKS AND RESTRICTIONS
<i>Diaprepes</i> 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> ) Brown Leaf Notcher ( <i>Epicaerus mexicanus</i> ) Little Leaf Notcher ( <i>Artipus floridanus</i> )	16-32 ounces (0.25-0.50 pound active) per acre	<p>Make application by ground equipment to bare soil beneath citrus trees; applying uniformly from the trunk to the drip line of the tree. Make application in water in a minimum of 40 gallons of dilute spray per acre.</p> <p>By forming a barrier which provides contact activity on newly hatched larvae (neonates), this product protects citrus tree roots from <i>Diaprepes</i> Weevil and other citrus root weevil feeding.</p> <p>Application timing is very critical. According to current information peak emergence of the adult</p>

<p>Fire Ants (<i>Solenopsis spp</i>) Asian Cockroach (<i>Blattella asahinae</i>)</p>	<p>6.4 – 16 fl. ounces (0.1- 0.25 lb a.i.) per acre</p>	<p>Diaprepes Weevil varies by citrus growing region. These emergence peaks can be affected dramatically by environmental factors, such as soil moisture. Two peaks are typically observed – first in the spring and then later summer or early fall. Typically, Southern Blue Green and Blue Green Citrus Weevils and Fuller Rose Beetle exhibit a single emergence peak in the spring. The Brown and Little Leaf Notchers usually exhibit three emergence peaks – spring, summer and fall. Timing of application can be accurately forecast by observing adults, since emergence varies seasonally and by location.</p> <p>Adults are most active during early morning and late afternoon. An estimation of numbers can be made by trapping throughout spring and summer (emergence periods). Following adult emergence from the soil, egg laying will occur for 8 to 10 weeks. Laval invasion of the soil will begin 2 to 3 weeks following adult emergence. Prior to drop of the neonates, it is critical to have BIFEN 2 AG GOLD soil barrier in place.</p> <p>Make application to individual citrus resets. When not in solid planted rows, using hand-gun or shielded sprayer.</p> <p>Generally the peak emergence of Diaprepes root weevil occurs during the spring. A minor emergence of Diaprepes root weevil may also occur in the fall, depending on weather conditions.</p> <p>Use 32 fluid ounces formulated product to obtain the longest residual management of Diaprepes root weevil, if the citrus grove to be treated is in an area where weather conditions are conducive to primary pest infestations occurring in the spring.</p> <p>Where the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, apply 16 fluid ounces formulated product and apply 16 fluid ounces formulated product later in the season.</p> <p>If infestation extends beyond the residual protection of Bifen AG 2EC, additional management strategies should be used (i.e. foliar adult control or soil larvae control such as nematodes). Contact your state agricultural Extension Specialist as to the recommendation suited for local conditions.</p> <p>Do not apply through irrigation systems.</p> <p>Do not allow any application of BIFEN 2 AG GOLD to contact fruit or foliage.</p> <p>Make application by ground equipment only. Air</p>
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		<p>applications are prohibited.</p> <p>Do not apply more than a total of 32 fluid ounces of formulated product (0.5 lb. a.i.) per acre per year.</p> <p>Apply the specified dosage in water in a minimum of 30 gallons of finished spray per acre.</p> <p>The PHI (preharvest interval) is 1 day.</p>
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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	BIFEN 2 AG GOLD may be applied in water or refined vegetable oil (soybean/cottonseed).
Boll Weevil Bollworm Cabbage Looper Cotton Aphid Cotton Fleahopper Cotton Leafperforator Cutworms Fall Armyworm Plant Bugs Saltmarsh Caterpillar Southern Garden Leafhopper Stink Bugs Tobacco Budworm Whitefly Yellow Striped Armyworm	0.04-0.10	2.6-6.4	<p><b>Application in Water:</b> (Air Application) – 1 gallon per acre. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray.</p> <p>(Ground Application) – Make application in water in a minimum of 5 gallons per acre.</p> <p><b>ULV Application:</b> Apply the recommended rate of BIFEN 2 AG Gold in refined vegetable oil in a minimum of 1 quart of finished spray per acre with aircraft calibrated to give adequate coverage.</p> <p><b>Boll Weevil Control:</b> Make application at an interval of 3 to 4 days until pest numbers are reduced to acceptable levels.</p> <p><b>Mites and Aphids Control:</b> Make application when pests first appear. Repeat as necessary to maintain control. Make application at higher rates once a damaging threshold is established.</p>
Beet Armyworm Carmine Spider Mite Lygus spp. Pink Bollworm Twospotted Spider Mite.	0.06-0.10	3.8-6.4	<p>Do not apply more than 0.5 pound active ingredient per acre per season.</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</p>

			<p>Scout X-TRA®.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed.</p> <p>The preharvest interval (PHI) is 14 days.</p>
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**FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED  
(AT PLANT USE)**

PEST	DOSAGE		REMARKS AND RESTRICTIONS
Corn Rootworm, Larvae Northern Southern Western	0.0046 lb AI per 1,000 linear feet of row	0.30 fluid ounce s per 1,000 linear feet of row	<p>Make application 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. The table below should be used to determine the BIFEN 2 AG GOLD needs per acre. The application should be made in water in a minimum of 3 gallons of finished spray per acre.</p> <p>To ensure uniform mixing and application, mix BIFEN 2 AG GOLD with water or fertilizer in the following manner:</p> <p>(1) Fill the spray tank approximately one-half full with water or liquid fertilizer,</p> <p>(2) While agitating, add the proper amount of BIFEN 2 AG GOLD then</p> <p>(3) Add the rest of the water or fertilizer. Continue agitation.</p> <p>(4) To maintain a uniform spray mixture, a sufficient agitation during mixing and application should be provided.</p> <p>Applications of BIFEN 2 AG GOLD alone or in recommended tank mixtures, in conjunction with in furrow pop-up fertilizers may be used. Perform a jar compatibility test with the appropriate ratio of BIFEN 2 AG GOLD and fertilizer to ensure the mixture will stay in solution. Constant agitation should be maintained during mixing and application.</p> <p>Do not apply to soil where there is greater than 30% cover of crop residue remaining.</p> <p>Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.</p> <p>Do not apply more than 0.1 pound active per acre per season as an at plant application.</p> <p>The Preharvest Interval (PHI) is 30 days.</p>
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 to 0.0046 lb AI per 1,000 linear feet of row	0.15 to 0.30 fluid ounce s per 1,000 linear feet of row	<p>Applications of BIFEN 2 AG GOLD alone or in recommended tank mixtures, in conjunction with in furrow pop-up fertilizers may be used. Perform a jar compatibility test with the appropriate ratio of BIFEN 2 AG GOLD and fertilizer to ensure the mixture will stay in solution. Constant agitation should be maintained during mixing and application.</p> <p>Do not apply to soil where there is greater than 30% cover of crop residue remaining.</p> <p>Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.</p> <p>Do not apply more than 0.1 pound active per acre per season as an at plant application.</p> <p>The Preharvest Interval (PHI) is 30 days.</p>
Row Spacings (inches)			40      38      36      30
BIFEN 2 AG GOLD(pounds ai per acre)			0.060      0.064      0.069      0.080
BIFEN 2 AG GOLD(formulated product, ounces per acre)			3.9      4.1      4.4      5.12

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

PEST	DOSAGE		REMARKS AND RESTRICTIONS
Black Cutworm White Grub Wireworm Seedcorn Maggot Armyworm spp. Stalkborer	0.047 to 0.062 pound AI/A Pre- Plant Incorporated (PPI)	3 to 4 fl. oz./A Pre- Plant Incorporated (PPI)	The 3-4 oz./A rate must be applied as Pre-Plant Incorporated (PPI) and can be tank mixed and applied with PPI herbicides. Do not incorporate any deeper than the intended planting depth and no deeper than 3 inches. Incorporation depth should be close to the intended seed planting depth.
Black Cutworm Armyworm spp. Stalkborer	0.040 LB AI/A Pre- emergence (PRE)	2.56 FL. OZ./A Pre- emergence (PRE)	The 2.56 oz./A rate may be applied in water Pre-Emergence (PRE) and can be tank mixed and applied with PRE herbicides.

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

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/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 Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stinkbugs Tarnished Plant Bug True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033-0.10	2.1-6.4	<p><b>By Air:</b> Make application in water in a minimum of 2-5 gallons of finished spray per acre by aircraft. Use 5 gallons of finished spray per acre particularly when initial populations are heavier than normal to improve control by aircraft. 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray when applying by air.</p> <p><b>By Ground:</b> Make application in water in a minimum of 10 gallons per acre with ground equipment.</p> <p>Thorough coverage is essential to achieve control when applying by air or ground.</p> <p><b>Ear-Attacking Pests Control:</b> Make application just before silking. Repeat as necessary to maintain control.</p> <p><b>Southwestern Corn Borer, European Corn Borer:</b> Initial application for corn borer control should be made at or shortly before egg hatch.</p> <p><b>Other Insect Pests Control:</b> Make application when infestation first appears. Repeat as necessary.</p> <p><b>Mite Control:</b> Make application 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.</p> <p><b>Twospotted Spider Mite and Carmine Mite Control:</b> Make application when colonies first form prior to leaf damage or discoloration and before wide-spread mite dispersal throughout the canopy.</p> <p>Higher rates will be necessary for heavier initial pest 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.</p>
Banks Grass Mite Carmine Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	<p><b>Mite Control in Texas, New Mexico, Oklahoma, and Arizona:</b></p> <p><b>By Air:</b> Make application in water in a minimum of 5 gallons of finished spray per acre.</p> <p><b>By Ground:</b> Apply in water in a minimum of 10 gallons per acre.</p> <p>Do not apply more than 0.3 pound active per acre per season including pre and ppi, at plant, plus foliar applications.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application.</p> <p>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> <p>Use of this product on corn is prohibited in all coastal counties.</p> <p>The pre-harvest interval (PHI) is 30 days.</p>
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**SWEET CORN (GRAIN AND SILAGE)  
SWEET CORN GROWN FOR SEED  
(AT PLANT USE)**

PEST	DOSAGE		REMARKS AND RESTRICTIONS
Corn Rootworm, Larvae Northern Southern Western	0.0046 pound active per 1,000 linear feet of row	0.30 fluid ounce s per 1,000 linear feet of row	<p>Make application as a 5 to 7 inch T-band treatment over an open seed furrow. The spray nozzle should be positioned behind the planter shoe, in front of the press wheel centered over the row. Use the table below to determine the BIFEN 2 AG GOLD needs per acre. Make application in water in a minimum of 3 gallons of finished spray per acre.</p> <p>To ensure uniform mixing and application, mix BIFEN 2 AG GOLD with water or fertilizer in the following manner:</p> <p>(5) Fill the spray tank approximately one-half full with water or liquid fertilizer,</p> <p>(6) While agitating, add the proper amount of BIFEN 2 AG GOLD then</p> <p>(7) Add the rest of the water or fertilizer. Continue agitation.</p> <p>(8) To maintain a uniform spray mixture, a sufficient agitation during mixing and application should be provided.</p> <p>Applications of BIFEN 2 AG GOLD alone or in recommended tank mixtures, in conjunction with in furrow pop-up fertilizers may be used. Perform a jar compatibility test with the appropriate ratio of BIFEN 2 AG GOLD and fertilizer to ensure the mixture will stay in solution. Constant agitation should be maintained during mixing and application.</p> <p>Do not apply to soil where there is greater than 30% cover of crop residue remaining.</p> <p>The pre-harvest interval (PHI) is 30 days.</p> <p>Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.</p> <p>Do not apply more than 0.1 pound active per acre per season as an at plant application.</p>
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 ounce s per 1,000 linear feet of row	
Row Spacings (inches)			40      38      36      30
BIFEN 2 AG GOLD(pounds ai per acre)			0.060      0.064      0.069      0.080
BIFEN 2 AG GOLD(formulated ounces per acre)			3.9      4.1      4.4      5.12

**SWEET CORN (GRAIN AND SILAGE)  
SWEET CORN GROWN FOR SEED  
(FOLIAR USE)**

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	

<p>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 Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stinkbugs Tarnished Plant Bug True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm</p>	<p>0.033-0.10</p>	<p>2.1-6.4</p>	<p><b>By Air:</b> Make application in water in a minimum of 2 gallons of finished spray per acre. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray.</p> <p><b>By Ground:</b> Apply in water in a minimum of 10 gallons per acre.</p> <p>Thorough coverage is essential to achieve control.</p> <p><b>Ear-Attacking Pests Control:</b> Make application when silking begins. 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>Other Insect Pests Control:</b> Make application when infestation first appear. Repeat as necessary.</p> <p><b>For Control of Mites:</b> Make application 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>Twospotted Spider Mite and Carmine Mite Control:</b> Make application when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy. Heavier initial populations and corn under heat or drought stress will require higher rates.</p>
<p>Banks Grass Mite Carmine Mite Twospotted Spider Mite</p>	<p>0.08-0.10</p>	<p>5.12-6.4</p>	<p>Do not make more than 0.2 pounds active ingredient (12.8 ounces formulated product) per acre per season.</p> <p>Do not graze livestock in treated areas of 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>If heavy rainfall is imminent, do not make aerial or ground applications to corn.</p> <p>Use of BIFEN 2 AG GOLD on corn is prohibited in all coastal counties.</p> <p>The pre-harvest interval (PHI) is 1 day.</p>

CUCURBITS

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), ( <i>Luffa</i> spp.) (includes hechima, Chinese okra), ( <i>Momordica</i> spp.) (includes balsam apple, balsam pear, bitter melon, Chinese cucumber) Muskmelon (hybrids and/or cultivars of <i>Cucumis melo</i> ) (includes true cantaloupe, cantaloupe casaba, crenshaw melon, golden, pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon) Pumpkin ( <i>Cucurbita</i> spp.) Squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini) Squash, winter (includes butternut squash, calabaza, hubbard squash ( <i>C. mixta</i> ; <i>C. pepo</i> ), includes acorn squash, spaghetti squash) Watermelon, (includes hybrids and or varieties of <i>Citrullis</i> spp.)	Aphids Cutworm Cabbage Looper Leafhoppers Cucumber Beetles Squash Bugs Melonworm Pickleworm Plant Bug Stink Bugs Rindworm Squash Vine Borer Armyworms Corn Earworm Tobacco Budworm Grasshopper	0.04-0.10	2.6-6.4	<p><b>By Air:</b> Make application in water in a minimum of 5 gallons of finished spray per acre. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray.</p> <p><b>By Ground:</b> Apply in water in a minimum of 20 gallons per acre.</p> <p>Thorough coverage is essential to achieve control.</p> <p>Do not apply more than 0.3 lb active ingredient (19.2 ounces formulated product) per acre per season.</p> <p>Do not make more than two applications after bloom.</p> <p>Do not make applications less than 7 days apart.</p>
	Whitefly Banks Grass Mite Twospotted Spider Mite Carmine Mite Lygus spp.	0.08-0.10	5.12-6.4	

**EGGPLANT**

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

**GRAPES**

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
Cutworms Eastern Grape Leafhopper Grape berry moth Japanese Beetles (adult) Variegated Leafhopper Western Grape Leafhopper	0.05 to 0.10	3.2 to 6.4	<p><b>By Air:</b> Make application in water in a minimum of 10 gallons of finished spray. 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.</p> <p><b>By Ground:</b> Apply in water in a minimum of 25 gallons of finished spray.</p> <p>Thorough coverage is essential to achieve control.</p>
Black Vine Weevil Glasywinged Sharpshooter Twospotted Spider Mite	0.10	6.4	<p>When pest pressure is moderate to severe, use higher rate.</p> <p>Do not apply more than 0.10 lb ai per acre per season.</p> <p>The pre-harvest interval (PHI) is 30 days.</p>

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**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	<p>Do not exceed 0.1 lb ai per acre <b>per application</b>. Do not exceed 0.3 lb ai per acre <b>per season</b>.</p> <p>A spray interval of 21 days between applications must be maintained.</p> <p>The pre-harvest interval (PHI) is 14 days.</p> <p><b>Ground Application:</b> Full coverage in water is essential for best results. Early Season Recommendations: 100 – 150 gallons per acre. Late Season Recommendations: 200 – 250 gallons per acre.</p> <p><b>Root Weevil Control:</b> Direct 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.</p> <p><b>Air Application for late season control of twospotted spider mites:</b> Apply no less than 6.4 oz (0.1 lb ai) per application in water in a minimum of 10 gallons per acre.</p> <p>Use of ultra low volume (ULV) application on hops is prohibited.</p>
Root Weevils	0.05-0.1	3.2-6.4	
Twospotted spider mite	0.1	6.4	

**LETTUCE, HEAD**

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB AI/A	FL OZ/A	
Aphids Armyworms Corn Earworm Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Imported Cabbageworm Leafhoppers Loopers Salt Marsh Caterpillar Stink Bug spp. Tobacco Budworm Whitefly	0.033-0.10	2.1-6.4	<p><b>By Air:</b> Make application in water in 5 gallons per acre. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray.</p> <p><b>By Ground:</b> Apply in water as necessary for insect control using a minimum of 15 gallons of finished spray per acre.</p> <p>Thorough coverage is essential to achieve control.</p> <p>Do not make applications less than 7 days apart.</p> <p>A maximum of 0.5 lb active ingredient may be applied per acre per season.</p> <p>The pre-harvest interval (PHI) is 7 days.</p>
Lygus, spp. Carmine Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	

## PEARS

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
Aphids Coddling Moth Cutworms Green Fruitworm Leafhoppers Leafminers Leafrollers Lygus spp. Plant Bugs Plum Curculio San Jose Scale (Crawlers) Stink Bugs Tarnished Plant Bugs	0.04 to 0.2	2.6 to 12.8	<p><b>Ground Application:</b> Make application as a dilute (minimum of 200 gallons of finished spray per acre) or concentrate (minimum of 50 gallons of finished spray per acre) spray in sufficient water to provide thorough coverage.</p> <p><b>Air Application:</b> Apply the specified dosage in water in a minimum of 10 gallons per acre by air.</p> <p>Do not apply more than 0.5 pound active per acre per season with no more than 0.45 pound active per acre applied after petal fall.</p> <p>Apply as necessary to maintain control using a minimum of 30-day spray interval.</p> <p>Do not graze livestock in treated orchards or cut treated cover crops for feed.</p>
Twospotted Spider Mite Yellow Mite	0.06 to 0.2	3.8 to 12.8	The pre-harvest interval (PHI) is 14 days.
European Red Mite	0.08 to 0.2	5.12 to 12.8	

## PEPPERS, BELL AND NON-BELL

PEST	DOSAGE		REMARKS AND RESTRICTIONS
	LB A/A	FL OZ/A	
Armyworms Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Thrips Whitefly	0.033-0.1	2.1-6.4	<p>Make application in sufficient water to obtain uniform coverage. Apply as needed. <b>By Air:</b> Make application in water using a minimum of 2 gallons per acre. <b>By Ground:</b> Apply with ground equipment in water using a minimum of 10 gallons of finished spray per acre.</p> <p>Do not make applications less than 7 days apart.</p> <p>Do not apply more than 0.20 pound active ingredient per acre per season.</p> <p>The pre-harvest interval (PHI) is 7 days.</p>
Lygus spp. Broad Mite Carmine Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	

## SPINACH

PESTS	DOSAGE	REMARKS AND RESTRICTIONS
Colorado Potato Beetle Tomato Pinworm Tomato Hornworm Armyworms Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Thrips Whitefly	2.1 to 6.4 ounces (0.033 to 0.10 pound active) per acre	<p><b>Whitefly Control: Ground or Air Application:</b> Apply foliar treatments of BIFEN 2 AG GOLD at rates of up to 0.4 pt. (0.1 lb active) per acre at minimum 7-day intervals up to a maximum of 4 applications.</p> <p><b>Fire Ant Control:</b> Apply to the soil (at planting) or as a foliar treatment by ground or air at rates of up to 0.4 pt. (0.1 lb active) per acre at minimum 7-day intervals up to a maximum of 4 applications.</p> <p>Apply the specified dosage in water in 5-50 gallons of finished spray per acre by air or 10-50 gallons of finished spray per acre by ground.</p> <p>Do not make applications less than 7 days apart.</p>
Broad Mite Banks Grass Mite Twospotted Spider Mite Carmine Mite Pacific Spider Mite Lygus spp. Fire Ants	5.12 to 6.4 ounces (0.08 to 0.10 pound active) per acre	<p>Do not apply more than 0.4 pounds active ingredient per acre per season.</p> <p>The preharvest interval (PHI) is 40 days.</p>





**TOMATOES**

PEST	DOSAGE	REMARKS AND RESTRICTIONS
Aphids Armyworms – Including: Beat Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm Bean Leaf Beetle Cabbageworm Carmine Mite Cloverworm Corn Earworm Corn Rootworm Cucumber Beetles Cutworms Diamondback Moth European Corn Borer Flea Beetles Flea Hopper 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	2.1-5.2 fluid ounces (0.033-0.08 pound active) per acre	Make application in water as necessary for insect control. Use a minimum of 15 gallons of finished spray per acre with ground equipment.  Thorough coverage is essential to achieve control.  Do not make applications less than 10 days apart.  A maximum of 4 applications may be applied per season.  The pre-harvest interval (PHI) is 1 day.

**WARRANTY**

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