

279-3108

01/17/2008

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

January 17, 2008

Christopher Davis  
FMC Corp  
1735 Market Street  
Philadelphia, PA 19103

Subject: Amendment – Adding additional uses (mayhaw, ground cherry, pepino, peanut, pistachio, root vegetable [except sugar beets], garden beet roots and tops)  
Brigade WSB Insecticide/Miticide  
EPA Reg. No. 279-3108  
Your submission dated August 14, 2006

Dear Mr. Davis:

The amendment referred to above, submitted in connection with registration under FIFRA section 3(c)(7)(B), is acceptable provided that you:

1. Submit and/or cite all data or other material required for registration/re-registration of your product under FIFRA section 3(c)(5) or FIFRA section 4 when the Agency requires all registrants of similar products to submit such data.
2. You agree that the subject registrations are conditional under the same terms and conditions for data generation as stipulated in the Agency's November 15, 1993 and November 15, 2004 letters for use of these products on cotton.
3. You agree that the current synthetic pyrethroid mitigation measures are interim in nature and may be reconsidered or modified after review and evaluation of the Spray drift Task Force data.
4. FMC understands that it is the US EPA intent to complete the reviews of all relevant data and other information that are available to the agency, and to make FIFRA 3(c)(5) or other appropriate regulatory decisions for cotton- use synthetic pyrethroids and other crops conditionally registered based on the Agency's review of such data/information and considering statutory and regulatory criteria for such decisions.

5. You will submit additional information regarding aspirated grain fractions (AGF) in soybeans. "The AGF samples were collected and classified via sieve. After classification, the fractions were recombined to produce the AGF samples. The study report indicates that the AFGs were recombined as per the specifications of the Study Director; however, the report does not indicate the final makeup of AFG samples in terms of percent composition based upon particle size. This information must be submitted prior to granting of a permanent registration for soybeans.
  
6. Submit to the Agency an estuarine/marine fish life-cycle test (Guideline 72-5) using the TGAI of bifenthrin within 51 months from the date of this letter. Also, submit an estuarine/marine aquatic invertebrate life-cycle test (guideline 72-4) using the TGAI of bifenthrin within 15 months from the date of this letter. The preferred test species is the mysid (*Americamysis bahia*).
  
7. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:
  - A. On page 12, under Brassicas make the following revisions and additions.
    - a. Re-instate "Apply in a minimum of 5 gallons of finished spray per acre by air or in a minimum of 20 gallons per acre with ground equipment" and "Do not apply more than 0.5lb active ingredient (80oz formulated per acre per season".
    - b. Add "Do not make applications less than 7 days apart".
    - c. Add "Do not make more than 5 applications after bloom.
    - d. Change 3 to 7 days for PHI i.e. Do not apply within 7 days of harvest.
  
  - B. On page 13 under "Cucurbits" make the following revisions and additions.
    - a. Re-instate "Apply in a minimum of 5 gallons of finished spray per acre by air or in a minimum of 20 gallons per acre with ground equipment." And "Do not apply more than 0.3lbs active ingredient (48.0 oz formulated) per acre per season.
    - b. Add, "Do not make more than two applications after bloom".
    - c. Add, "Do not make applications less than 7 days apart.

- C. Add in parenthesis "(except sugar beets)" following the heading Root Crops.
  - D. Under Fruiting Vegetables the dosage for eggplant, pepper, ground cherry, and pepino must be the same as tomatoes. Delete the higher rate 16.0 oz (0.10 ai/a).
  - E. Make the following revisions the Warranty and Liability statement:
    - a. Replace "To the extent allowed by law" with "To the extent consistent with applicable law" and add the phrase to the front of the statement "FMC makes no warranties of merchantability or of fitness ... etc".
    - b. Replace "The Directions for use of this product should be followed carefully" with "The Directions for use of this product must be followed carefully"
7. Submit three (3) copies of your final printed labeling before you release the product for shipment.

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

A stamped copy of the label is enclosed for your records.

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

Sincerely yours,



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

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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 those uses covered by the certified applicator's certification.

# BRIGADE<sup>®</sup> WSB

## Insecticide/Miticide

EPA Reg. No. 279-3108

EPA Est. No. 279-NY-1

**Active Ingredient:**

Bifenthrin: (2 methyl[1,1'-biphenyl]-3-yl)  
methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-  
2,2-dimethyl-cyclopropanecarboxylate\*

**By Wt.**

10.0%  
90.0%  
100.0%

**Inert Ingredients:\*\***

\*\*Cis isomers 97% minimum, trans isomers 3% maximum.  
U.S. Patent No. 4,238,505

ACCEPTED  
with COMMENTS  
In EPA Letter Dated  
JAN 17 2008  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No.  
279-3108

### 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:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.  
**If Inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.  
**If 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 or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

#### HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.

**Note to Physician:** 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 may increase absorption and so should be avoided.

**For Emergency Assistance Call (800) 331-3148.**

FMC Corporation  
Agricultural Products Group  
Philadelphia, PA 19103

**Net Contents:**

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## PRECAUTIONARY STATEMENTS

### Hazards to Humans (and Domestic Animals)

May be fatal if swallowed. Harmful if inhaled or absorbed through skin. Causes moderate eye irritation. Avoid breathing vapor or spray mist. Avoid contact with skin, eyes or clothing.

**Personal Protective Equipment (PPE):** Applicators and other handlers (other than mixers and loaders) must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

**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, 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.
- Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### Environmental Hazards

This pesticide is extremely toxic to fish 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 wash waters.

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

### 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 through any type of irrigation system.

**Resistance.** Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state agricultural authorities or universities 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 pest may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternative method of control for your area.

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.

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### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry intervals. 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; Waterproof gloves; and Shoes plus socks.

See supplemental label for directions for use in California.

### STORAGE AND DISPOSAL

#### Pesticide Storage

Keep out of reach of children and animals. Store in original containers only. Store in a cool dry place and avoid excess heat. Do not store at temperatures below 32°F (0°C). Rough handling may cause breakage, especially at low temperatures. Allow to warm above 50°F (10°C) before use. Do not allow inner bags to become wet during storage. Do not handle inner bag with wet hands or wet gloves. Do not put concentrate or diluted 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 FMC: (800) 331-3148.

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

When all water-soluble bags are used, the outer package should be clean and may be disposed of in a sanitary landfill, by incineration or if allowed by state and local authorities, by burning. If burned, stay out of smoke. If the outer container contacts formulated product in any way, it must be triple rinsed with clean water. Add rinsate to the spray tank and dispose of the outer package as described above.

### GENERAL INSTRUCTIONS

Unless otherwise directed by registered supplemental labeling, follow the Directions for Use in each crop group section.

The product in this outer package is a wettable powder formulation of the insecticide bifenthrin, packaged in a translucent, water soluble bag. Do not allow the inner bag to become wet before adding it to the spray or nurse tank. Do not handle the inner bag with wet hands or wet gloves. Rough handling may cause breakage. Do not store at temperatures below 32°F (0°C). Allow to warm above 50°F (10°C) before use. Cooler water temperatures increase the time needed for the inner bag to dissolve completely.

Brigade WSB insecticide needs to be diluted with water prior to spray application. Do not use nozzle screens (e.g., strainers) greater than 50 mesh size. Determine the number of water-soluble bag(s) to make up necessary spray suspension.

Calculate the number of bags needed for the recommended rate and number of acres to be treated by using the following equation:

Recommended		# Acres to be	
Rate for Pest	x	Treated with	
<u>(Active/Acre)</u>		<u>Tankload #</u>	= of Brigade Water Soluble Bags
0.05 (amt. ai in each bag)			to use for acres to be treated.

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**Do not break bags.** When the equation results in less than a whole number of bags, use the next higher whole number of bags.

Fill the spray tank 1/2 full with water. Open the outer wrapper of this product and immediately dump required contents into the spray tank. Allow the water-soluble bag(s) to dissolve completely. Start agitation in the tank. Air agitation is not recommended. Mix thoroughly to fully disperse and suspend the wettable powder. Fill the spray tank with the required amount of water. Maintain agitation during storage in nurse or supply tank and during application.

Mix as needed; do not store diluted material.

### Rotational Crops

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-Mixture

Brigade WSB Insecticide/Miticide may be applied in tank mixtures with other products approved for use on registered crops. Observe all restrictions and precautions that appear on the labels of these products. Test for compatibility of products before mixing using a standard jar test or other similar method.

### Application Instructions

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

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.

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

### Artichoke

Crop	Pest	Dosage* oz/A (lb ai/A)	Directions
Artichoke	Cribrate Weevil Artichoke Plume Moth	16.0 (0.10)	<p>Apply when pest population reaches damaging threshold and repeat as necessary to maintain control, but not more often than 15-day intervals.</p> <p>Do not exceed 2 bags (0.10 lb ai/A) between bud formation and harvest of an individual fruit.</p> <p><b>Application by ground:</b> Apply a full cover spray in a minimum of 75 gallons of finished spray per acre.</p> <p><b>Application by air:</b> Apply specified dosage in a minimum of 10 gallons per acre.</p> <p>Do not exceed 10 bags (0.5 lb ai) per acre per season.</p> <p>Do not apply within 5 days of harvest</p> <p>*1 bag = 0.05 lb ai</p>

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**Hops\***

Crop	Pest	Dosage** oz/A (lb ai/A)	Directions
Hops	Aphids Armyworms Cutworms Leafrollers Loopers	9.6 to 16.0 (0.06 to 0.1)	Do not exceed 2 bags (0.1 lb ai) per acre per application.  Do not exceed 6 bags (0.3 lb ai) per acre per season.
	Root Weevils	8.0 to 16.0 (0.05 to 0.1)	A spray interval of 21 days between applications must be maintained.
	Twospotted spider mite	16.0 (0.10)	Do not apply within 14 days of harvest  <b>Application by ground:</b> For best results, full coverage is essential. Early season recommend 100-150 gallons of spray per acre. Late season recommend 200-250 gallons of spray per acre.  For Root Weevil control, make a directed spray to the base of the plant. Spray up the vine 3 feet and the soil surface 1.5 to 2 feet on either side of the plant.  <b>Application by air for late season control of twospotted spider mites:</b> Apply no less than 16 oz. (0.1 lb ai) per application in a minimum of 10 gallons per acre.  **1 bag = 0.05 lb ai = 8 oz formulated product

\* Not for use in California



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### Strawberries

Crop	Pest	Dosage* oz/A (lb ai/A)	Directions
Strawberries	Aphids Armyworms Fleabeetles Heliiothis spp. Leafrollers Lygus spp. Plant Bugs Spittlebugs Stink Bugs Strawberry Clipper Strawberry Sap Beetle	6.4 to 32.0 (0.04 to 0.2)	Apply when pest populations reach damaging thresholds and repeat as necessary at 7-14 day intervals.  Do not apply more than 0.5 lb ai (80 oz formulated) per acre per season.  No pre-harvest interval is required.
	Strawberry Root Weevil Black Vine Weevil	8.0 to 32.0 (0.05 to 0.2)	<b>Application by ground:</b> Apply a full cover spray in a minimum of 50 gallons of finished spray per acre.
	Spider mites	16 to 32.0 (0.1 to 0.2)	<b>Application by air (Aerial application is prohibited in Florida):</b> Apply specified dosage in a minimum of 5 gallons per acre.  *1 bag = 0.05 lb ai = 8 oz formulated product

**CALIFORNIA SPECIFIC REQUIREMENTS FOR STRAWBERRY HARVESTERS:** Harvesters and other personnel performing tasks with all-day foliage contact in treated fields within five (5) days of application must wear a long-sleeved shirt, long pants, and shoes plus socks.

Following treatment of strawberry fields at rates of Brigade® WSB greater than 0.1 lb ai/acre, harvesters must wear gloves for five (5) days following application.

### Caneberries

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
Caneberries Including: Blackberries Bingleberries Dewberries Lowberries Marionberries Ollalieberries Youngberries Loganberries Raspberries	Leafrollers Orange Tortrix Root Weevils Black Vine Weevil	8.0 to 16.0 (0.05 to 0.1)	Apply by air or ground equipment using sufficient water to obtain full coverage of foliage. (Minimum of 10 gallons per acre by air and 50 gallons per acre by ground).
	Twospotted Spider Mite Carmine Mite Raspberry Crown Borer	16.0 (0.1)	One application may be made pre-bloom and a second application may be made post bloom.  For Crown Borer, apply 0.1 lb ai / a, post-harvest (fall) or pre-bloom (spring), as a drench application directed at the crown of plants in a minimum of 200 gallons water / acre. Greater efficacy is observed at higher water gallonages (up to 400 gallons/a) or in an application prior to a significant rainfall event. Do not make both pre-bloom foliar and pre-bloom drench applications.  Do not exceed 0.2 lb ai (32 oz formulated) per acre per season.  Do not apply within 3 days of harvest.  *1 bag = 0.05 lb ai = 8 oz formulated product

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**Pears**

Crop	Pest	Dosage* oz/A (lb./ai/A)	Directions
Pears	Aphids Codling Moth Cutworms Green Fruitworm Leafhoppers Leafminers Leafrollers Lygus spp. Plant Bugs Plum Curculio San Jose Scale (Crawlers) Stink Bugs Tarnished Plant Bugs	6.4 to 32.0 (0.04 to 0.2)	<b>Application by ground:</b> Apply as a dilute (minimum of 200 gallons of finished spray per acre) or concentrate (minimum of 50 gallons of finished spray per acre) spray in sufficient water to provide thorough coverage.  <b>Application by air:</b> Apply the specified dosage in a minimum of 10 gallons per acre by air.
	Yellow Spider Mite	9.6 to 32.0 (0.06 to 0.2)	Do not apply more than 0.5 pound active (80 oz formulated) per acre per season with no more than 0.45 pound active per acre applied after petal fall. Apply as necessary to maintain control using a minimum of 30-day spray interval.
	European Red Mite Twospotted Spider Mite	12.8 to 32.0 (0.08 to 0.2)	Do not apply within 14 days of harvest.  Do not graze livestock in treated orchards or cut treated cover crops for feed.  *1 bag = 0.05 lb ai = 8 oz formulated product

**Tree Nut Crops**

Crop	Pest	Dosage* oz/A (lb./ai/A)	Directions
Almond Beech nut Brazil nut Butternut Cashew Chestnut Chinquapin Filbert (hazelnut) Hickory nut Macadamia nut (bush nut), Pecan Pistachio Walnut (black and English)	Black Pecan Aphid Codling Moth Filbert Worm Hickory Shuckworm Leaffooted Bugs Navel Orangeworm Oblique banded Leafroller Peach Twig Borer Pecan Leaf Casebearer Pecan Nut Casebearer Pecan Phylloxera Plant Bugs Stink Bugs Walnut Aphid Yellow Pecan Aphid	8.0 to 32.0 (0.05 to 0.20)	<b>Application by ground:</b> Apply as a dilute (minimum of 200 gallons of finished spray per acre) or concentrate (minimum of 50 gallons of finished spray per acre) spray in sufficient water to provide thorough coverage.  <b>Application by air:</b> Apply the specified dosage in a minimum of 10 gallons of finished spray per acre.  Minimum Spray Intervals: Apply Brigade WSB as needed to maintain control, but do not apply at intervals sooner than 15 days.  Observe a 21 day Pre Harvest Interval (phi) for Pecans and a 7-day pre-harvest interval (phi) for all other registered tree nut crops.  Do not exceed 0.2 lb ai per acre per application; do not exceed 0.50 lb ai (80 oz formulated) per acre per season.  Do not graze livestock in treated orchards or cut treated cover crops for feed.
	European Red Mite Spider Mites	12.8 to 32.0 (0.08 to 0.20)	
	Fire Ants Walnut Husk Fly	16.0 to 32.0 (0.1 to 0.2)	

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### Citrus

Crop	Pest	Dosage* oz/A (lb./ai/A)	Directions
Citrus	Diaprepes Root Weevil  Southern Blue Green Citrus Root Weevil  Blue Green Citrus Root Weevil Brown Leaf Notcher Little Leaf Notcher	40.0 to 80.0 (0.25 to 0.50)	<p>Apply Brigade WSB by ground equipment to bare soil beneath citrus trees. Brigade WSB 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.</p> <p>Brigade WSB 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 Brigade WSB as they attempt to burrow into the root zone.</p>

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	<p>Fireant Asian Cockroach</p>	<p>16.0 to 40.0 (0.1 to 0.25)</p>	<p>Disturbance of the soil beneath trees should be minimized.</p> <p>Timing of Brigade WSB 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 Brigade WSB 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 2-3 weeks following adult emergence. It is critical to have the Brigade WSB soil barrier in place prior to drop of the neonates.</p> <p>Brigade WSB is one of several effective tools in an integrated pest management program for Citrus Root Weevils. Application of Brigade WSB 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.</p> <p><b>Additional Instructions:</b> Apply to individual citrus resets, when not in solid planted rows, using handgun or shielded sprayer.</p> <p>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.</p> <p>If the citrus grove to be treated is in an area where weather conditions are conducive to primary emergence occurring in the spring, 0.50 pound active (80 oz formulated) should be used to obtain the longest residual management of Diaprepes root weevil.</p> <p>If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 0.25 pound active (40 oz formulated) can be applied early season and 0.25 pound active can be applied later in the season.</p> <p>Do not apply through irrigation systems.</p> <p>Do not allow any application of Brigade WSB to contact fruit or foliage.</p> <p>Do not apply more than a total of 0.5 lb. a.i. (80 oz formulated) per acre per year.</p> <p>Do not apply within 1 day of harvest.</p> <p>Apply the specified dosage in a minimum of 40 gallons of finished spray per acre.</p> <p>Ground application only. Do not apply by air.</p>
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**Cotton**

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
Cotton	European Corn Borer Soybean (Banded) Thrips Tobacco Thrips	3.2 to 16.0 (0.02 to 0.10)	Brigade WSB may be applied in water.
	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 Yellow Striped Armyworm	6.4 to 16.0 (0.04 to 0.10)	<p>Apply in a minimum of 10 gallons per acre with ground equipment or 2 gallons per acre by aircraft.</p> <p><b>To Control Boll Weevil:</b> Apply Brigade WSB at an interval of 3 to 4 days until pest numbers are reduced to acceptable levels.</p> <p><b>To Control Mites and Aphids:</b> Apply when pests first appear. Repeat as necessary to maintain control. Higher rates will be required once a damaging threshold is established.</p>
	Beet Armyworm Carmine Spider Mite Lygus Spp. Pink Bollworm Twospotted Spider Mite Whitefly	9.6 to 16.0 (0.06 to 0.10)	<p>Do not apply more than 0.5 pound active (80 oz formulated) per acre per season.</p> <p>Do not apply within 14 days of harvest.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed.</p> <p>Do not make more than 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season. Synthetic pyrethroid products include Ambush®, Ammo®, Asana® XL, Baythroid®, Capture®, Danitol®, Karate®, Mustang®, and Scout X-TRA®.</p> <p>*1 bag = 0.05 lb ai = 8 oz formulated product</p>

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### SUCCULENT PEAS AND BEANS

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
Pea ( <i>Pisum</i> spp.): Dwarf pea, Edible-pod pea, English pea, Garden pea, Green pea, Snow pea, Sugar snap pea Pigeon pea Bean ( <i>Phaseolus</i> spp.): Broadbean (succulent) Lima bean (green) Runner bean, Snap bean, Wax bean Bean ( <i>Vigna</i> spp.): Asparagus bean, Blackeyed pea, Chinese longbean, Cowpea, Moth bean, Southern pea Yardlong bean Jackbean Soybean (immature seed) Sword bean	Wireworm Maggot Grubs	8.0 to 16.0 (0.05 - 0.10)	<b>Planting Time Use:</b> For Wireworm, maggot or grubs, apply in-furrow with the seed or transplant.
	Flea Beetle Grasshoppers Aster Leafhopper Leafhoppers	4.0 to 16.0 (0.025 - 0.10)	<b>Foliar Use:</b> Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment.
	Aphids Beet Armyworm Fall Armyworm Southern Armyworm Yellowstriped Armyworm Bean Leaf Beetle Cucumber Beetles Japanese beetle Adult Sap Beetle Plant Bug Stink Bugs Tarnished Plant Bug Alfalfa Caterpillar Cloverworm European Corn Borer Cutworms Western Bean Cutworm Corn Earworm Loopers Corn Rootworm Adult Thrips Webworms Pea Weevil Pea Leaf Weevil	5.3 to 16.0 (0.033 - 0.10)	Thorough coverage is essential to achieve control.  Do not apply more than 0.2 lb. active ingredient (32.0 oz formulated) per acre per season including at plant applications.  Do not apply within 3 days of harvest.  *1 bag = 0.05 lb ai = 8 oz formulated product
	Banks Grass Mite Twospotted Spider Mite Carmine Mite Lygus Spp Whitefly	12.8 to 16.0 (0.08 - 0.10)	

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**BRASSICAS**

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
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)	Wireworm Maggot Grubs	8.0 to 16.0 (0.05 - 0.10)	<b>Planting Time Use:</b> For Wireworm, maggot or grubs, apply in-furrow with the seed or transplant.
	Cutworms Corn Earworm Tobacco Budworm Saltmarsh Caterpillar Leafhoppers Flea Beetles Imported Cabbageworm Cucumber Beetles Aphids Armyworms Loopers Stink Bugs Crickets Ground Beetles Thrips Wireworm (adults) Diamondback Moth	5.3 to 16.0 (0.033 - 0.10)	<b>Foliar Use:</b> Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment.  Thorough coverage is essential to achieve control.  Do not apply more than 0.2 lb. active ingredient (32.0 oz formulated) per acre per season including at plant applications.  Do not apply within 3 days of harvest.
			*1 bag = 0.05 lb ai = 8 oz formulated product
	Banks Grass Mite Twospotted Spider Mite Carmine Mite Pacific Spider Mite Lygus Spp. Whitefly	12.8 to 16.0 (0.08 - 0.10)	

**CANOLA, CRAMBE, RAPESEED**

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
Canola Crambe Rapeseed	Aphids Cutworms Diamondback Moth Loopers Other Lepidopterous Larvae Flea Beetle Flea Hopper Grasshopper Plant Bug Stink Bugs Seedpod Weevil Thrips Armyworms	5.3 to 6.4 (0.033 - 0.04)	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment.  Thorough coverage is essential to achieve control.  Do not apply more than 0.08 lb active ingredient (12.8 oz formulated) per acre per season.  Do not make applications less than 14 days apart.  Do not apply within 35 days of harvest.  *1 bag = 0.05 lb ai = 8 oz formulated product

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### CUCURBITS

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
Chayote (fruit) Chinese waxgourd (Chinese preserving melon)	Wireworm Maggot Grubs	8.0 to 16.0 (0.05 - 0.10)	<b>Planting Time Use:</b> For Wireworm, maggot or grubs, apply in-furrow with the seed or transplant.
Citron melon Cucumber Gherkin Gourd, edible (includes hyotan, 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>Citrullus</i> spp.).	Aphids Cutworms Cabbage Looper Leafhoppers Cucumber Beetles Squash Bugs Melonworm Pickleworm Plant Bug Stink Bugs Rindworm Squash Vine Borer Armyworms Corn Earworm Tobacco Budworm Grasshopper	8.0 to 16.0 (0.05 - 0.10)	<b>Foliar Use:</b> Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment.  Thorough coverage is essential to achieve control.  Do not apply more than 0.2 lb. active ingredient (32.0 oz formulated) per acre per season including at plant applications.  Do not apply within 3 days of harvest.
			*1 bag = 0.05 lb ai = 8 oz formulated product
	Whitefly Banks Grass Mite Twospotted Spider Mite Carmine Mite Lygus Spp.	12.8 to 16.0 (0.08 - 0.10)	



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### LETTUCE, HEAD

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
Lettuce, Head	Aphids Armyworms Corn earworm Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Imported Cabbageworm Leafhoppers Loopers Salt Marsh Caterpillar Stink bug Spp. Tobacco Budworm	5.3 to 16.0 (0.033 - 0.10)	Apply in water as necessary for insect control using a minimum of 20 gallons of finished spray per acre with ground equipment and 5 gallons per acre by air.  Thorough coverage is essential to achieve control.  Do not make applications less than 7 days apart.  A maximum of 0.5 lb. active ingredient (80 oz formulated) may be applied per acre per season.
	Lygus Spp. Carmine Mite Two Spotted Spider Mite Whitefly	12.8 to 16.0 (0.08 - 0.10)	Do not apply within 7 days of harvest.  *1 bag = 0.05 lb ai = 8 oz formulated product

### SPINACH

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
Spinach	Colorado Potato Beetle Tomato Pinworm Tomato Hornworm Armyworms Corn earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Thrips	5.3 to 16.0 (0.033 to 0.10)	For control of fire ants apply Brigade WSB to the soil (at planting) or as a foliar treatment by ground or air at rates of up to 0.1 lb active (16 oz. formulated) per acre at minimum 7-day intervals up to a maximum of 4 applications.  Do not apply within 40 days of harvest.  Apply the specified dosage in 5-50 gallons of finished spray per acre by air or 10-50 gallons finished spray per acre by ground.
	Broad Mite Banks Grass Mite Twospotted Spider Mite Carmine Mite Pacific Spider Mite Lygus Spp. Fire Ants Whitefly	12.8 to 16.0 (0.08 to 0.10)	Do not make applications less than 7 days apart.  Do not apply more than 0.4 pounds active ingredient per acre per season.  For control of whiteflies apply foliar treatments of Brigade WSB by ground or air at rates up to 0.1 lb active (16 oz. formulated) per acre at minimum 7-day intervals up to a maximum of 4 applications.  *1 bag = 0.05 lb ai = 8 oz formulated product

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**GRAPES**

Crop	Pest	Dosage* oz./A (lb. ai/A)	Directions
Grapes	Cutworms Eastern grape leafhopper Grape berry moth Japanese beetles adults Variegated leafhopper Western grape leafhopper	8.0 to 16.0 (0.05 - 0.10)	Apply in a minimum of 10 gallons of finished spray by air or in a minimum of 25 gallons of finished spray with ground equipment.  Thorough coverage is essential to achieve control.  When pest pressure is moderate to severe, use higher rate.
	Black vine weevil Glassywinged sharpshooter Twospotted spider mite	16.0 (0.10)	Do not apply more than 0.10 lb ai per acre per season.  Do not apply within 30 days of harvest. *1 bag = 0.05 lb ai = 8 oz formulated product

**SOYBEAN**

Crop	Pest	Dosage* oz/A (lb ai/A)	Directions.
Soybean	Soybean Aphid	5.3 to 16.0 (0.033 to 0.10)	Apply foliar treatments in at least 10 gallons per acre at the rate of 16 oz/ (0.1 lb active) per acre at a minimum of 30 days intervals.  Do not apply more than 0.3 lb ai per acre per season.  Do not apply within 18 days of harvest  *1 bag = 0.05 lb ai = 8 oz formulated product
	Spider mites	12.8 to 16.0 (0.08 to 0.10)	

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### FRUITING VEGETABLES

Crop	Pest	Dosage* oz/A (lb ai/A)	Directions
Eggplant Pepper (Bell & Non-Bell) Groundcherry Pepino	Amyworms Cabbage Looper Colorado Potato Beetle Corn Earworm Cucumber Beetle Cutworms European Corn Borer Flea Beetle Leafminers Loopers Pepper weevil Plant Bug Stink Bug Thrips Tomato Pinworm Tomato Hornworm Vegetable Leafminer Whitefly	5.3 to 16.0 (0.033 to 0.10)	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.  Do not make applications less than 7 days apart.  Do not apply more than 0.2 lb active ingredient (32.0 ounces formulated) per acre per season.  Do not apply within 7 days of harvest
	Banks Grass Mite Twospotted Spider Mite Pacific Spider Mite Lygus Spp. Broad Mite Carmine Mite Two Spotted Spider Mite	12.8 to 16.0 (0.08 to 0.10)	
Tomato Tomatillo	Aphids Armyworms Including: Beet 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	5.3 to 12.8 (0.033 to 0.08)	Apply in water as necessary for insect control using 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.  Do not apply within 1 day of harvest.  *1 bag = 0.05 lb ai = 8 oz formulated product

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**PEANUT**

Crop	Pest	Dosage* oz/A (lb ai/A)	Directions
Peanut	Beet armyworm Corn earworm Cutworm spp. Fall armyworm Grasshoppers Green cloverworm Leafhoppers Lesser cornstalk borer Loopers Rednecked peanut worm Southern armyworm Southern corn rootworm Stink bugs Threecornered alfalfa hopper Velvetbean caterpillar Yellowstriped armyworm	5.3-16.0 (0.033-0.1)	Apply foliar treatments in at least 10 gallons per acre at the rate of 16.0 oz/ (0.1 lb active) per acre at a minimum of 14 days intervals.  Do not apply more than 0.5 lb ai per acre per season.  Do not apply within 14 days of harvest  *1 bag = 0.05 lb ai = 8 oz formulated product
	Aphids Spider mites Thrips Whitefly	5.12-6.4 (0.08-0.1)	

**ROOT CROPS**

Crop	Pest	Dosage* oz/A (lb ai/A)	Directions
Burdock, edible Carrot Celeriac Chervil, turnip rooted Chicory Ginseng Horseradish Parsley, turnip rooted Parsnip Radish Radish, oriental Rutabaga Salsify Salsify, black Salsify, Spanish Skirret Turnip	Spider mites Fire Ants Flea Beetles Whitefly Aphids Beet armyworm Celery leaf tier Corn earworm Cross-striped cabbageworm Cutworms Diamondback moth European corn borer Fall armyworm Green cloverworm Hornworms Imported cabbageworm Loopers Southern armyworm Tobacco budworm Velvetbean caterpillar Yellowstriped armyworm	12.8-16.0 (0.08-0.10)	Apply foliar treatments in at least 25 gallons per acre.  Apply no more than once every 7 days.  Do not apply more than 0.5 lb ai per acre per season.  Do not apply within 21 days of harvest
Garden Beet	Spider mites Fire Ants Lepidopterous larvae Flea Beetles Whitefly Aphids	12.8-16.0 (0.08-0.10)	Apply foliar treatments in at least 25 gallons per acre.  Apply no more than once every 7 days.  Do not apply more than 0.4 lb ai per acre per season.  Do not apply within 1 day of harvest  *1 bag = 0.05 lb ai = 8 oz formulated product

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### MAYHAW

Crop	Pest	Dosage* oz/A (lb ai/A)	Directions
Mayhaw	Plum Curculio	12.8-16.0(0.08-0.10)	<p>Apply foliar treatments in at least 28 gallons per acre.</p> <p>Apply no more than once every 7 days.</p> <p>Do not apply more than 0.2 lb ai per acre per season.</p> <p>Do not apply within 30 days of harvest *1 bag = 0.05 lb ai = 8 oz formulated product</p>

#### Spray Drift Precautions

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 apply by ground equipment within 25 feet, or by air within 150 feet of lakes; reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds.

Use of ultra low volume (ULV) application on hops is prohibited.

Do not make aerial or ground applications during temperature inversions or if heavy rainfall is imminent. 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.

Make aerial or ground applications when the wind velocity favors on target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph. Inclusion of a compatible drift reducing agent is encouraged.

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

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

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

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

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

#### Dealers Should Sell in Original Packages Only.

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**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 should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result

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Amendment: Add new crops