

279-3332

10/27/2008

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

**OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES**

**OCT 27 2008**

Christopher Davis  
FMC Corp. Agricultural Products Group  
1735 Market Street  
Philadelphia, PA 19103

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

Dear Mr. Davis:

The Agency is in receipt of your Applications for Pesticide  
Notification dated October 20, 2008 for the following product:

Brigadire ® Insecticide, EPA Reg. No. 279-3332

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 labels submitted  
with the applications has been stamped "Notification" and will be  
placed in our records.

Note under Additional Requirements for Aerial Applications,  
change the word "greated" to "greater".

If you have any questions, please call me at (703) 305-6701.

Sincerely,

Richard Gebken  
Product Manager 10  
Insecticide Branch  
Registration Division (7505P)



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

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

OPP Identifier Number

**Application for Pesticide - Section I**

1. Company/Product Number 279-3332	2. EPA Product Manager LaRocca	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Brigadier Insecticide	PM# 13	
5. Name and Address of Applicant (Include ZIP Code) FMC Corporation 1735 Market Street Philadelphia, PA 19103 <input type="checkbox"/> Check if this is a new address	6. Expedited Review <b>NOTIFICATION</b> with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. <u>OCT 27 2008</u> Product Name _____	

**Section - II**

<input 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 checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

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

-Add spray drift language per Agency letter of February 21, 2008

Certification Statement:

I certify that the only changes made on the label are those necessary to comply with EPA's letter of February 21, 2008

**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	If "Yes" Unit Packaging wgt. No. per container		<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted		If "Yes" Package wgt. No. per container			
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 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 Christopher Davis	Title Registration Manager	Telephone No. (Include Area Code) 215-299-6334
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 or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Registration Manager	
4. Typed Name Christopher Davis	5. Date 10/20/08	

# FMC Agricultural Products

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**FMC Corporation**  
1735 Market Street  
Philadelphia, PA 19103  
  
215.299.6000 Phone  
215.299.6468 Fax  
  
www.fmc.com

October 20, 2008

Mr. George LaRocca, PM-13  
United States Environmental Protection Agency  
Document Processing Desk (AMEND)(E-SUB)  
Office of Pesticide Programs (H7504P)  
Room S-4900, One Potomac Yard  
2777 South Crystal Drive  
Arlington, VA 22202

Dear Mr. LaRocca:

**Subject: Brigadier<sup>®</sup> Insecticide, EPA Reg. No. 279-3332  
Amendment to Label- Updated Spray Drift Language**

FMC is amending the label for the subject product as required under the Agency's letter of February 21, 2008: Updated Spray Drift Language for Pyrethroid Agricultural Use Products.

To support this submission and to process this request, enclosed please find the following:

- Completed Application for Pesticide (EPA Form 8570-1) form
- Two copies of the draft labeling, including one with the change hi-lited
- Completed Certification with Respect to Label Integrity form
- A Compact Disk containing the label as amended

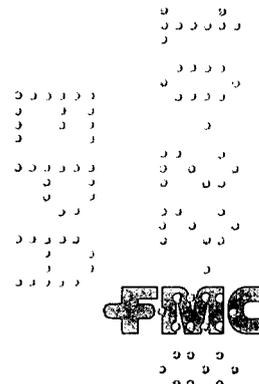
**Since this amendment is Agency initiated, it is not covered under the EPA's Fee for Service categories for label amendments, and there is no fee required.**

FMC trusts that this information is sufficient for the Agency to process this submission. If the Agency has any questions concerning this matter, please feel free to contact me at (215) 299-6334.

Sincerely,



Christopher Davis  
Registration Manager, FMC Corporation





Handwritten Copy

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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.

**DRAFT**

**NOTIFICATION**

OCT 27 2008

GROUP	3	INSECTICIDE
GROUP	4A	INSECTICIDE



EPA Reg. No. 279-3332

EPA Est. No.

<b>Active Ingredient:</b>	<b>By Wt.</b>
Bifenthrin: (2 methyl [1,1'-biphenyl]-3-yl) Methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2, 2-dimethyl-cyclopropanecarboxylate*	11.30%
Imidacloprid*, 1-[(6-Chloro-3-pyridonyl) methyl]-N-nitro -2-Imidazolidinimine	11.30%
<b>Other Ingredients:</b>	<b>77.40%</b>
	<b>100.0%</b>

\*\*Cis isomers 97% minimum, trans isomers 3% maximum. This product contains 2lbs. active ingredient per gallon U.S. Patent No. 4,238,505

**KEEP OUT OF REACH OF CHILDREN  
WARNING  
AVISO**

This label must be in the possession of the user at the time of application. Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See other panels for additional precautionary information.

FIRST AID	
<b>If Swallowed:</b>	<ul style="list-style-type: none"> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Do not give any liquid to the person.</li> <li>Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in Eyes:</b>	<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>
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 contains 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.	
<b>For Emergency Assistance Call (800) 331-3148.</b>	

**PRECAUTIONARY STATEMENTS**

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

**Warning**

May be fatal if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

**Personal Protective Equipment:**

Applicators and other handlers must wear:

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

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.

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.



FMC Corporation  
Agricultural Products Group  
1735 Market Street  
Philadelphia, PA 19103

Net Contents:

## AGRICULTURAL USE REQUIREMENTS

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

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls, Chemical-resistant gloves, such as Barrier Laminate or Nitrile Rubber or Neoprene Rubber or Viton, and Shoes plus socks.

## 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. U-Turn® Container: Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.

## Application Instructions

Rate of application is variable according to pest. Use lower rates under light to moderate infestations; higher rates under heavy insect pressure. Arid climates generally require higher rates.

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) or 300 feet (using aerial equipment) of coastal marshes or streams that drain into coastal marshes.

## ROTATIONAL CROPS

Plant back restrictions are determined by the crop. Crops that have tolerances for both bifenthrin and imidacloprid may be rotated at any time. Crops with tolerances for bifenthrin and not imidacloprid can be rotated 12 months following the final application of Brigadier. Crops that have tolerances for imidacloprid and not bifenthrin may be rotated 30 days following the final application of Brigadier. Below is a list of plant back restrictions:

### Immediate plant back:

Crops on this label, as well as, corn (all), tobacco, tomatoes, eggplant, peppers, bell and non-bell, okra, caneberries, citrus, , artichoke, lettuce (head), grapes, spinach, pears, hops, legume vegetables (edible podded), root tuberous and corn vegetables (except sugar beet), cilantro and coriander, soybeans and strawberries.

### 30 Day plant back:

Cereals, brassica (head & stem), cucurbits, safflower

### 10 Month plant back:

Onion and bulb vegetables

### 12 Month plant back:

All other crops

## MAXIMUM ALLOWABLE USE PER SEASON

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

## Tank-Mixture

Brigadier Insecticide may be applied in tank mixtures with other products approved for use on registered crops. Observe all restrictions and precautions which appear on the labels of these products. Test for compatibility of products before mixing.

## BUFFER ZONES

### Vegetative Buffer Zones

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

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

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

**Buffer Zone for Ground Application (groundboom, overhead chemigation, or airstream) –** Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, 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,

## Environmental Hazards

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

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

The chemical imidacloprid demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

## 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.

## RESISTANCE MANAGEMENT

Some insects are known to develop resistance to products with the same chemical class used repeatedly for control. Brigadier contains Group 3 and Group 4 Insecticides. Although pest resistance can not be predicted, a general rule to reduce the onset of resistance pest species to Brigadier is do not consecutively and repeatedly apply Group 3 and/or Group 4 Insecticides during a growing season for control particular pest target. Consult your local or state agricultural authorities or your FMC representative for more specific details on insect resistance management strategies.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternative method of control for your area.

## STORAGE AND DISPOSAL

### Pesticide Storage

If storing this product below freezing, user should shake or roll the container to ensure proper product consistency. Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal. In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC: 1-(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.

ivers, 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).

**Spray Drift Requirements**

**Wind Direction and Speed**

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

**Temperature Inversion**

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

**Droplet Size**

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

**Additional Requirements for Ground Applications**

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

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

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

**Additional Requirements for Aerial Applications**

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

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

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

When applications are made with a 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.

**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. Increase the buffer zone to 450 feet when ultra low volume (ULV) application is made in cotton.

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

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

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

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

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

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

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

Do not make aerial or ground applications during temperature inversions. Temperature 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.

**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 operation, 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. Brigadier2SC insecticide should be applied continuously for the duration of the water application. Brigadier should be diluted in sufficient volume to ensure accurate application over the area to be treated. When using chemigation, a minimum of 0.5 inch per acre of irrigation water is recommended. Agitation generally is not required when a suitable diluent is used. A diluent test should be conducted to ensure that phase separation will not occur during dilution and application. Failure to achieve a uniform dilution throughout the time of application may result in undesirable residues or less than desirable control.

**ARTICHOKE (Globe)**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Leafhopper spp. Cribrate Weevil Artichoke Plume Moth	6.4 – 12.8	0.1 – 0.2

**Restrictions:**

Preharvest Interval (PHI): 7 Days

Minimum interval between applications: 15 Days

Maximum amount of Brigadier allowed per season: 25.6 oz (0.4 lb ai/a)

Maximum amount of Imidacloprid allowed per season: 0.5 lb ai/a.  
Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.5 lb ai/a.  
Examples of other products containing bifenthrin are Capture® and Brigade®.

### BRASSICA (Head and Stem)

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

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp.	3.8 – 6.1	0.06 – 0.095
Armyworm spp.		
Budworm		
Corn Earworm		
Crickets		
Cucumber Beetle		
Cutworm spp.		
Diamondback Moth		
Ground Beetle		
Imported Cabbageworm		
Leafhopper spp.		
Loopers		
Lygus spp.		
Saltmarsh Caterpillar		
Stink bug spp.		
Thrips		
Tobacco Budworm		
Whitefly		
Wireworm (adults)		

**Restrictions:**

Preharvest Interval (PHI): 7 Days

Minimum interval between applications: 7 Days

Maximum amount of Brigadier allowed per season: 30.72 oz (0.48 lb ai/a)

Maximum amount of Imidacloprid allowed per season: 0.24 lb ai/a.  
Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.5 lb ai/a.  
Examples of other products containing bifenthrin are Capture® and Brigade®.

Apply Brigadier up to 5 applications after bloom.

### BRASSICA (Leafy)

Leafy Brassica Vegetables: Broccoli Raab, Bok Choy, Collards, Kale, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens.

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp.	4.24 – 6.1	0.066 – 0.095
Armyworm spp.		
Budworm		
Corn Earworm		
Crickets		
Cucumber Beetle		
Cutworm spp.		
Diamondback Moth		
Ground Beetle		
Imported Cabbageworm		
Leafhopper spp.		
Loopers		
Lygus spp.		
Saltmarsh Caterpillar		
Stink bug spp.		
Thrips		
Tobacco Budworm		
Whitefly		
Wireworm (adults)		

**Restrictions:**

Preharvest Interval (PHI): 7 Days

Minimum interval between applications: 7 Days

Maximum amount of Brigadier allowed per season: 30.72 oz (0.48 lb ai/a)

Maximum amount of Imidacloprid allowed per season: 0.24 lb ai/a.  
Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.5 lb ai/a.  
Examples of other products containing bifenthrin are Capture® and Brigade®.

Apply Brigadier up to 5 applications after bloom.

### CILANTRO and CORIANDER

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid Spp.	4.24 – 5.5	0.066 – 0.086
Beet Armyworm		
Cabbage Looper		
Cutworm spp.		
Flea beetle		
Grasshopper		
Leafhopper spp.		
Leafminer		
Saltmarsh caterpillar		
Spotted Cucumber Beetle		
Thrips		
Whitefly		

**Restrictions:**

Preharvest Interval (PHI): 7 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 16.64 oz (0.26 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.13 lb ai/a.  
Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.50 lb ai/a.  
Examples of other products containing bifenthrin are Capture® and Brigade®.

### COTTON

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Cotton Aphid	3.8 – 7.7	0.06 – 0.12
Cotton Fleahopper		
Lygus Spp.		
Southern Garden Leafhopper		
Stink Bug spp.		
Beet Armyworm	5.1 – 7.7	0.08 – 0.12
Bollworm		
Cabbage Looper		
Cotton Leafperforator		
Cutworm spp.		
European Corn Borer		
Fall Armyworm		
Pink Bollworm		
Saltmarsh Caterpillar		
Tobacco Budworm		
Thrips		
Whitefly		
Yellow Striped Armyworm		

**Restrictions:**

Preharvest Interval (PHI): 14 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 39.68 oz (0.62 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.31 lb ai/a.  
Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.50 lb ai/a.  
Examples of other products containing bifenthrin are Capture® and Brigade®.

Do not graze livestock in treated areas or cut treated crops for feed.

Do not make more than 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season. Synthetic pyrethroid products include Ambush®, Ammo®, Asana® XL, Baythroid®, Capture®, Danitol®, Karate®, Mustang Max®, and Scout X-TRA®.

**REMARKS—Cotton**

Brigadier may be applied in water or refined vegetable oil (soybean/cottonseed).

**Application in Water:** Apply in a minimum of 5 gallons per acre with ground equipment or 1 gallon per acre by aircraft. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray.

**ULV Application:** Apply the recommended rate of Brigadier in refined vegetable oil in a minimum of 1 quart of finished spray per acre with aircraft calibrated to give adequate coverage.

**EGGPLANT**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Leafhopper spp. Lygus spp. Thrips	3.8 – 9.85	0.06 – 0.15
Armyworm Colorado potato beetle Corn earworm Cucumber Beetle Cutworms European Corn Borer Flea Beetles Leafminers Loopers Whitefly	5.1 – 9.85	0.08 – 0.15

**Restrictions:**

Preharvest Interval (PHI): 7 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 25.6 oz (0.4 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.24 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.20 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

**GRAPES**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Glassywinged sharpshooter Variegated leafhopper Western grape leafhopper Eastern grape leafhopper	3.8 – 6.4	0.06 – 0.10
Black vine weevil Cutworm spp. Grape berry moth Grapeleaf skeletonizer Japanese beetles (adult) Mealybug	5.1 – 6.4	0.08 – 0.10

**Restrictions:**

Preharvest Interval (PHI): 30 days.

Minimum interval between applications: 14 days.

Maximum amount of Brigadier allowed per season: 12.8 oz (0.10 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.10 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.10 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

**HEAD LETTUCE**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre

Aphid spp. Leafhopper spp. Lygus spp. Stink bug spp.	3.8 – 6.1	0.06 – 0.095
Armyworm Corn earworm Cucumber Beetles Cutworm spp. Diamondback Moth Flea Beetle Imported Cabbageworm Loopers Salt Marsh Caterpillar Tobacco Budworm	5.1 – 6.1	0.08 – 0.095

**Restrictions:**

Preharvest Interval (PHI): 7 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 30.72 oz (0.48 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.24 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.50 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

**OKRA**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Lygus spp. Stink bug spp. Thrips	3.8 – 9.8	0.06 – 0.15
Armyworm Corn earworm Cucumber Beetle Cutworms European Corn Borer Flea Beetles Leafminer Loopers Japanese Beetle (adult) Whitefly	5.1 – 9.8	0.08 – 0.15

**Restrictions:**

Preharvest Interval (PHI): 7 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 25.6 oz (0.4 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.24 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.20 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

**PEARS**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Leafhopper spp. Lygus spp. Stink Bug spp.	3.8 – 12.8	0.06 – 0.2
Codling Moth Cutworm spp. Green Fruitworm Leafminer Leafroller Plum Curculio	5.1 – 12.8	0.08 – 0.2

**Restrictions:**

Preharvest Interval (PHI): 14 days.

Minimum interval between applications: 30 days.

Maximum amount of Brigadier allowed per season: 128 oz (1.0 lb ai/a); 115 oz (0.9 lb ai/a) applied after petal fall.

Maximum amount of Imidacloprid allowed per season: 0.50 lb ai/a.; 0.45 lb ai/a applied after petal fall. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.50 lb ai/a.; 0.45 lb ai/a applied after petal fall. Examples of other products containing bifenthrin are Capture® and Brigade®.

**PEPPERS**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Leafhopper spp.	3.8 – 9.8	0.06 – 0.15
Cribrate Weevil Artichoke Plume Moth	5.1 – 9.8	0.08 – 0.15

**Restrictions:**

Preharvest Interval (PHI): 7 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 25.6 oz (0.4 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.24 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.20 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

**POTATO**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Leafhopper spp. Banded Cucumber beetle Black flea beetle Colorado potato beetle Cucumber beetle Flea beetles June beetle Potato psyllid Sugarcane beetle Sweetpotato flea beetle Sweetpotato weevil Whitefringed beetle	4.8 – 6.14	0.075 – 0.096

**Restrictions:**

Preharvest Interval (PHI): 21 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 25.6 oz (0.40 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.20 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.50 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

Apply a Maximum of 2 applications per season.

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®.

**REMARKS:**

Brigadier may be applied in water or refined vegetable oil (soybean/cottonseed).

**Application in Water:** Apply in a minimum of 5 gallons per acre with ground equipment or 1 gallon per acre by aircraft. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray.

**SPINACH**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Lygus spp. Thrips	3.8 – 6.14	0.06 – 0.096

Armyworm Colorado Potato Beetle Corn earworm Cucumber Beetles Cutworm spp. European Corn Borer Fire Ants Flea Beetle Leafminer Loopers Pepper Weevil Tomato Hornworm Tomato Pinworm Whitefly	5.1 – 6.14	0.08 – 0.096
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**Restrictions:**

Preharvest Interval (PHI): 40 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 30.7 oz (0.48 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.24 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.40 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

Apply a maximum of 4 applications per season.

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®.

**REMARKS:**

Brigadier may be applied in water or refined vegetable oil (soybean/cottonseed).

**Application in Water:** Apply in a minimum of 5 gallons per acre with ground equipment or 2.5 gallons per acre by aircraft. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray.

**SUCCULENT BEANS**

Crops in the Succulent Pea and Bean group, Pea (Pisum spp.): Dwarf pea, Edible-pod pea, English pea, Garden pea, Green pea, Snow pea, Sugar snap pea, Pigeon pea; Bean (Phaseolus spp.): Broadbean (succulent), Lima bean (green), Runner bean, Snap bean, Wax bean; Bean (Vigna spp.): Asparagus bean, Blackeyed pea, Chinese longbean, Cowpea, Moth bean, Southern pea, Yardlong bean., Jackbean, Soybean (immature seed), Sword bean

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Grasshopper Leafhopper spp. Lygus spp. Thrips	3.8 – 5.5	0.06 – 0.086
Alfalfa Caterpillar Bean Leaf Beetle Beet Armyworm Cloverworm Corn Earworm Corn Rootworm (adult) Cucumber Beetle Cutworm spp. European Corn Borer Fall Armyworm Flea Beetle Japanese beetle (adult) Looper spp. Pea Leaf Weevil Pea Weevil Sap Beetle (adult) Southern Armyworm Webworm Whitefly Yellowstriped Armyworm	5.1 – 5.5	0.08 – 0.086

**Restrictions:**

Preharvest Interval (PHI): 7 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 16.6 oz (0.26 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.13 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.20 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

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®.

**REMARKS:**

Brigadier may be applied in water or refined vegetable oil (soybean/cottonseed).

**Application in Water:** Apply in a minimum of 5 gallons per acre with ground equipment or 1 gallon per acre by aircraft. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray

**TOBACCO**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Lygus spp. Aphid spp. Stink Bug spp. Thrips	3.8 – 6.4	0.06 – 0.1
Armyworm spp. Chinch Bugs Cutworm spp. Cutworm ssp. Flea Beetle (Adults) Grasshoppers Japanese Beetles Stalkborers Whiteflies	5.1 – 6.4	0.08 – 0.1

**Restrictions:**

Preharvest Interval (PHI): 14 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 25.6 oz (0.4 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.28 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.30 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

Apply a maximum of 2 applications per season.

Do not apply later than layby.

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®.

**REMARKS:**

Brigadier may be applied in water or refined vegetable oil (soybean/cottonseed).

**Application in Water:** Apply in a minimum of 10 gallons per acre with ground equipment or 5 gallon per acre by aircraft. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray

**TOMATO**

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Flea Hopper Leafhopper spp. Lygus spp. Squash bug Stink bug spp. Thrips	3.8 – 9.85	0.06 – 0.15

Armyworm spp. Bean Leaf Beetle Cabbageworm Cloverworm Colorado potato beetle Corn earworm Corn Rootworm Cucumber Beetle Cutworms Diamondback Moth European Corn Borer Flea Beetle Grasshopper Japanese Beetle (adult) Loopers Melonworm Pea Leaf Weevil Pea Weevil Pepper weevil Pickleworm Rindworm Salt Marsh Caterpillar Sap Beetle Seedpod Weevil	5.1 – 9.85	0.04 – 0.15
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**Restrictions:**

Preharvest Interval (PHI): 1 day.

Minimum interval between applications: 10 days.

Maximum amount of Brigadier allowed per season: 30.72 oz (0.48 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.24 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.32 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

**REMARKS:**

Brigadier may be applied in water or refined vegetable oil (soybean/cottonseed).

**Application in Water:** Apply in a minimum of 15 gallons per acre with ground equipment or 1 gallon per acre by aircraft. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray

**TUBEROUS and CORM VEGETABLES**

Tuberous and Corm vegetables (except Radish and Sugarbeet) such as: Sweet potato, Arracacha, Arrowroot, Chinese artichoke, Jerusalem artichoke, Edible canna, Cassava (bitter and sweet), Chayote (root), Chufa, Dasheen (taro), Ginger, Leren, Tanier, Turner, Yam bean, True yam

PEST	USE RATES	
	Fluid oz/acre	Pound ai/acre
Aphid spp. Leafhopper spp.	3.8 – 7.7	0.06 – 0.12
Banded Cucumber beetle Black flea beetle Colorado potato beetle Cucumber beetle Flea beetles June beetle Potato psyllid Sugarcane beetle Sweetpotato flea beetle Sweetpotato weevil Whitefly Whitefringed beetle	5.1 – 7.7	0.08 – 0.12

**Restrictions:**

Preharvest Interval (PHI): 21 days.

Minimum interval between applications: 7 days.

Maximum amount of Brigadier allowed per season: 16.64 oz (0.26 lb ai/a).

Maximum amount of Imidacloprid allowed per season: 0.13 lb ai/a. Examples of other products containing imidacloprid are: Admire®, Provado®, and Gaucho®.

Maximum amount of Bifenthrin allowed per season: 0.50 lb ai/a. Examples of other products containing bifenthrin are Capture® and Brigade®.

**Dealers Should Sell in Original Packages Only.  
Conditions of Sale and Limitation of Warranty and Liability:**

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

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