

# RESTRICTED USE PESTICIDE

Toxic to fish and aquatic organisms.

For retail sale to and use only by certified applicators, or persons under their direct supervision and only for the uses covered by the certified applicator's certification.

GROUP

3A

INSECTICIDE

# BRIGADE<sup>®</sup>

## 2EC

INSECTICIDE / MITICIDE

### Active Ingredient:

Bifenthrin: (2 methyl[1,1'-biphenyl]-3-yl)  
methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-  
2,2-dimethyl-cyclopropanecarboxylate\* .....25.1%

### By Wt.

Other Ingredients:\*\* ..... 74.9%  
100.0%

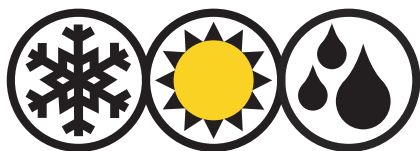
This product contains 2 pounds active ingredient per gallon.

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

\*\*Contains xylene range aromatic solvents.

EPA Reg. No. 279-3313

EPA Est. 279-NY-1



**ALL-WEATHER FORMULA**

**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

**If Swallowed:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Sold By

# FMC

FMC Corporation  
2929 Walnut Street  
Philadelphia PA 19104

**Net Contents: 1 Gallon**

**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. Contains petroleum distillate - vomiting may cause aspiration pneumonia.

### PRECAUTIONARY STATEMENTS

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

##### Warning

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:

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category E on an EPA chemical resistance category selection chart.

**Handlers who may be exposed to the dilute through application or other tasks must wear:** long-sleeved shirt and long pants, chemical-resistant gloves, such as Barrier Laminate or Nitrile Rubber or Neoprene Rubber or Viton, and shoes plus socks.

**Handlers who may be exposed to the concentrate through mixing, loading, application or other tasks must wear:** long-sleeved shirt and long pants, chemical-resistant gloves, such as Barrier Laminate or Nitrile Rubber or Neoprene Rubber or Viton, shoes plus socks, and protective eyewear.

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

### User Safety Recommendations

#### Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

## Environmental Hazards

This pesticide is extremely toxic to fish and aquatic invertebrates. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not make applications when weather conditions favor drift from treated areas. Drift and 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 Brigade 2EC is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species.

## Physical/Chemical Hazards

Do not use or store near heat or open flame.

## DIRECTIONS FOR USE

### RESTRICTED USE PESTICIDE

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

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

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

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

## 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.

## STORAGE AND DISPOSAL

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

### Pesticide Storage

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

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

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call **CHEMTREC (Transportation and Spills): FMC: 800-424-9300**.

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

### Pesticide Disposal

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

### Container Disposal

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

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

**Returnable/Refillable Containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. **Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.** Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

## 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.

Brigade® 2 EC insecticide/miticide should be applied continuously for the duration of the water application. Brigade 2 EC 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.

## 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 Brigade 2EC.

## Tank-Mixture

Brigade 2 EC Insecticide/Miticide 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 bifenthrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21pp. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs143\\_023819.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_023819.pdf).

**Buffer Zone for Ground Application (groundboom, overhead chemigation, or airblast)** – Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, natural ponds, estuaries, and commercial fish ponds).

**Buffer Zone for ULV Aerial Application** - Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, natural ponds, estuaries, and commercial fish ponds).

**Buffer Zone for Non-ULV Aerial Application** – Do not apply within 150 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, natural ponds, estuaries, and commercial fish ponds).

## Spray Drift Requirements

### Wind Direction and Speed

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

### Temperature Inversion

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

## Droplet Size

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

## 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.

## Application Instructions

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

Cultivation within 10 feet of a water body is prohibited to allow for the growth of a vegetated filter strip.

In New York State this product may not be applied within 100 feet (using ground equipment) to 300 feet (using aerial equipment) of coastal marshes or streams that drain into coastal marshes.

## COTTON

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
European Corn Borer Soybean (Banded) Thrips Tobacco Thrips	0.02-0.10	1.3 - 6.4	Brigade 2 EC may be applied in water or refined vegetable oil (soybean/cottonseed). <b>Application in Water:</b> Apply in a minimum of 5 gallons per acre with ground equipment or 1 gallon per acre by aircraft. When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray.
Boll Weevil Bollworm Cabbage Looper Cotton Aphid Cotton Fleahopper Cotton Leafperforator Cutworms Fall Armyworm Plant Bug Saltmarsh Caterpillar Southern Garden Leafhopper Stink Bugs Tobacco Budworm Whitefly Yellow Striped Armyworm	0.04 - 0.10	2.6 - 6.4	<b>ULV Application:</b> Apply the recommended rate of Brigade 2 EC in refined vegetable oil in a minimum of 1 quart of finished spray per acre with aircraft calibrated to give adequate coverage. <b>To Control Boll Weevil:</b> Apply Brigade 2 EC at an interval of 3 to 4 days until pest numbers are reduced to acceptable levels. <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.
Beet Armyworm Carmine Spider Mite Lygus Spp. Pink Bollworm Twospotted Spider Mite	0.06 - 0.10	3.8 - 6.4	

### RESTRICTIONS

Do not apply more than 0.5 pounds active (32 fl ounces product) per acre per season in all states except in California. For California do not apply more than 0.3 pounds active (19.2 fl ounces product) per acre per season.

Do not apply within 14 days of harvest.

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

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

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Corn Rootworm Larvae Northern Southern Western	0.0046 pound active per 1,000 linear feet of row	0.30 fluid ounces per 1,000 linear feet of row	Apply as a 5 to 7 inch T-band treatment over an open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. Use the table below to determine the Brigade 2EC needs per acre. Apply in a minimum of 3 gallons of finished spray per acre.  Mix Brigade 2EC with water or fertilizer in the following manner. Fill the spray tank approximately one-half full with water or liquid fertilizer, add the proper amount of Brigade 2EC, then add the rest of the water or fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform spray mixture.
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 to 0.0046 pound active per 1,000 linear feet of row	0.15 to 0.30 fluid ounces per 1,000 linear feet of row	Applications of Brigade 2EC alone or in recommended tank mixtures, in conjunction with in furrow pop-up fertilizers may be used. A jar compatibility test should be performed with appropriate ratio of Brigade 2EC and fertilizer to ensure mixture will stay in solution. Constant agitation should be maintained during mixing and application.

**RESTRICTIONS**

Do not apply to soil where there is greater than 30% cover of crop residue remaining.  
Do not apply within 30 days of harvest  
Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.  
Do not apply more than 0.1 pound active per acre per season as an at plant application.

Row Spacing (inches)	40	38	36	30
Brigade 2EC (pounds ai per acre)	0.060	0.064	0.069	0.080
Brigade 2EC (formulated ounces per acre)	3.9	4.1	4.4	5.12

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Black Cutworm White Grub Wireworm Seedcorn Maggot Armyworm spp. Stalkborer	Pre-Plant Incorporated (PPI) 0.047 to 0.062	Pre-Plant Incorporated (PPI) 3.0 to 4.0	The 3- 4oz/A rate must be applied as PPI and can be tankmixed and applied with PPI herbicides. Incorporation of Brigade should not be any deeper than the intended planting depth and no deeper than 3 inches. Incorporation depth should be close to the intended seed planting depth.
Black Cutworm Armyworm spp. Stalkborer	Pre-Emergence (PRE) 0.040	Pre-Emergence (PRE) 2.56	The 2.56 oz/A rate applied PRE and can be tankmixed and applied with PRE herbicides.

**RESTRICTIONS**

Do not apply more than 0.3 pound active per acre per season including pre & ppi, at plant, plus foliar applications.  
Do not apply within 30 days of harvest.  
Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application. Use of ultra low volume (ULV) application on corn is prohibited.  
Do not make aerial or ground applications to corn if heavy rainfall is imminent.

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Army Cutworm Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm Adults Cucumber Beetle Adult Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle Adult Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stinkbugs Tarnished Plant Bug True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033-0.10	2.1-6.4	Apply in a minimum of 2-5 gallons of finished spray per acre by aircraft or in a minimum of 10 gallons per acre with ground equipment. To improve control by aircraft, use 5 gallons of finished spray per acre particularly when initial populations are heavier than normal.  When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray.  Thorough coverage is essential to achieve control.  To control ear-attacking pests: Apply Brigade 2 EC just before silking and repeat as necessary to maintain control.  Southwestern Corn Borer, European Corn Borer: Make application for corn borer control with initial application at or shortly before egg hatch.  For control of other insect pests: Apply when pests first appear and repeat as necessary.  For Control of Mites: Apply for Banks Grass Mite control when colonies first form prior to leaf damage or discoloration and before dispersal above the bottom third of the plant.  For Twospotted Spider Mite and Carmine Mite control, apply when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy.
Banks Grass Mite Carmine Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	Higher rates will be necessary for heavier initial populations and corn under heat or drought stress. Field experience with dimethoate at 0.5 lb. active per acre in tank mixture has demonstrated good control under these conditions.  For mite control in Texas, New Mexico, Oklahoma, Arizona: Apply in a minimum of 5 gallons of finished spray per acre by aircraft or in a minimum of 10 gallons per acre with ground equipment.

**RESTRICTIONS**

Do not apply more than 0.3 pound active (19.2 fl ounces product) per acre per season including pre & ppi, at plant, plus foliar applications.  
Do not apply within 30 days of harvest.  
Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application.  
Use of ultra low volume (ULV) application on corn is prohibited.  
Do not make aerial or ground applications to corn if heavy rainfall is imminent.

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Corn Rootworm Larvae Northern Southern Western	0.0046 pound active per 1,000 linear feet of row	0.30 fluid ounces per 1,000 linear feet of row	Apply as a 5 to 7 inch T-band treatment over an open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. Use the table below to determine the Brigade 2EC needs per acre. Apply in a minimum of 3 gallons of finished spray per acre.
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 to 0.0046 pound active per 1,000 linear feet of row	0.15 to 0.30 fluid ounces per 1,000 linear feet of row	Mix Brigade 2EC with water or fertilizer in the following manner. Fill the spray tank approximately one-half full with water or liquid fertilizer, add the proper amount of Brigade 2EC, then add the rest of the water or fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform spray mixture.  Applications of Brigade 2EC alone or in recommended tank mixtures, in conjunction with in furrow pop-up fertilizers may be used. A jar compatibility test should be performed with appropriate ratio of Brigade 2EC and fertilizer to ensure mixture will stay in solution. Constant agitation should be maintained during mixing and application.

**RESTRICTIONS**

Do not apply more than 0.1 pound active per acre per season as an at plant application.  
Do not apply within 30 days of harvest.  
Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.  
Do not apply to soil where there is greater than 30% cover of crop residue remaining.

Row Spacing (inches)	40	38	36	30
Brigade 2EC (pounds ai per acre)	0.060	0.064	0.069	0.080
Brigade 2EC (formulated ounces per acre)	3.9	4.1	4.4	5.12

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Army Cutworm Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm Adults Cucumber Beetle Adult Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle Adult Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stinkbugs Tarnished Plant Bug True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033-0.10	2.1-6.4	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.  To control ear-attacking pests: Apply Brigade® 2EC when silking begins and repeat as necessary to maintain control.  Southwestern Corn Borer, European Corn Borer: Make 2 applications for corn borer control with the initial application at or shortly before egg hatch.  For control of other insect pests: Apply when pests first appear and repeat as necessary.  For Control of Mites: Apply for Banks Grass Mite control when colonies first form prior to leaf damage or discoloration and before dispersal above the bottom third of the plant.  For Twospotted Spider Mite and Carmine Mite control, apply when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy.  Higher rates will be necessary for heavier initial populations and corn under heat or drought stress.
Banks Grass Mite Carmine Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	

**RESTRICTIONS**

Do not apply more than 0.2 pounds active ingredient (12.8 fl ounces product) per acre per season.  
Do not apply within one day of harvest.  
Do not graze livestock in treated areas or cut treated crops for feed within 1 day of the last application.  
Use of ultra low volume (ULV) application on corn is prohibited.  
Do not make aerial or ground applications to corn if heavy rainfall is imminent.

## SUCCULENT PEAS AND BEANS

Pea (*Pisum* spp.): Dwarf pea, Edible-pod pea, English pea, Garden pea, Snow pea, Sugar snap pea, Pigeon pea, Bean (*Phaseolus* spp.), Broadbean succulent), Lima bean (green) Runner Bean, Snap bean, Wax bean (*Vigna* spp.), Asparagus bean, Blackeyed pea, Chinese long-bean, Cowpea, Moth bean, Southern pea, Yardlong bean, Jackbean, Soybean (immature seed), Sword Bean

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Flea Beetle Aster Leafhopper Leafhoppers	0.025 - 0.10	1.6 - 6.4	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment.
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 Whitefly Grasshoppers	0.033 - 0.10	2.1 - 6.4	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.
Banks Grass Mite Twospotted Spider Mite Carmine Mite Lygus Spp	0.08 - 0.10	5.12 - 6.4	

### RESTRICTIONS

Do not apply more than 0.2 pound active ingredient (12.8 fl ounces product) per acre per season.  
Do not make applications less than 3 days apart.  
Do not apply within 3 days of harvest.

## BRASSICAS

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Cutworms Corn Earworm Tobacco Budworm Saltmarsh Caterpillar Leafhoppers Flea Beetles Imported Cabbageworm Cucumber Beetles Aphids Whitefly Armyworms Loopers Stink Bugs Crickets Ground Beetles Thrips Wireworm (adults) Diamondback Moth	0.033 - 0.10	2.1 - 6.4	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.
Banks Grass Mite Twospotted Spider Mite Carmine Mite Pacific Spider Mite Lygus Spp.	0.08 - 0.10	5.12 - 6.4	

### RESTRICTIONS

Do not apply more than 0.5 pound active ingredient (32 fl ounces product) per acre per season.  
Do not make more than 5 applications after bloom.  
Do not make applications less than 7 days apart.  
Do not apply within 7 days of harvest.

## CANOLA, CRAMBE, RAPESEED

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Cutworms Diamondback Moth Loopers Other Lepidopterous Larvae Flea Beetle Flea Hopper Grasshopper Plant Bug Stink Bugs Seedpod Weevil Thrips Whitefly Armyworms	0.033 - 0.04	2.1 - 2.6	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.

### RESTRICTIONS

Do not apply more than 0.08 pound active ingredient (5.12 fl ounces product) per acre per season.  
Do not make applications less than 14 days apart.  
Do not apply within 35 days of harvest.

## CUCURBITS

Chayote (fruit), Chinese waxgourd (Chinese preserving melon), Citron melon, Cucumber Gherkin Gourd, edible (includes hyotan, cucuzza), (Luffa spp.) (includes hechima, Chinese okra), (Momordica spp.), (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), Muskmelon (hybrids and/or cultivars of *Cucumis melo*) (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon) Pumpkin (*Cucurbita* spp.) Squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini) Squash, winter (includes butternut squash, calabaza, hubbard squash (*C. mixta*; *C. pepo*) includes acorn squash, spaghetti squash) Watermelon (includes hybrids and/or varieties of *Citrullus* spp.).

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Cutworms Cabbage Looper Leafhoppers Cucumber Beetles Squash Bugs Melonworm Pickworm Plant Bug Stink Bugs Rindworm Squash Vine Borer Armyworms Corn Earworm Tobacco Budworm Grasshopper	0.04 - 0.10	2.6 - 6.4	Apply in a minimum of 5 gallons of finished spray per acre by air or in a minimum of 20 gallons per acre with ground equipment.  When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.
Whitefly Banks Grass Mite Twospotted Spider Mite Carmine Mite Lygus Spp.	0.08 - 0.10	5.12 - 6.4	

### RESTRICTIONS

Do not apply more than 0.3 pound lb active ingredient (19.2 fl ounces formulated product) per acre per season.  
Do not make more than two applications after bloom.  
Do not make applications less than 7 days apart.  
Do not apply within 3 days of harvest.

## LETTUCE, HEAD

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Armyworms Corn earworm Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Imported Cabbageworm Leafhoppers Loopers Salt Marsh Caterpillar Stink bug Spp. Tobacco Budworm Whitefly	0.033 - 0.10	2.1 - 6.4	Apply in water as necessary for insect control using a minimum of 15 gallons of finished spray per acre with ground equipment and 5 gallons per acre by air.  When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.
Lygus Spp. Carmine Mite Two Spotted Spider Mite	0.08 - 0.10	5.12 - 6.4	
<b>RESTRICTIONS</b> Do not apply more than 0.5 pound active ingredient (32 fl ounces product) per acre per season. Do not make applications less than 7 days apart. Do not apply within 7 days of harvest.			

## HOPS

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Armyworms Cutworms Leafrollers Loopers	0.06 - 0.10	3.8 - 6.4	<b>Application by ground:</b> For best results, full coverage is essential. Early season recommend 100-150 gallons of spray per acre. Late season recommend 200-250 gallons of spray per acre.
Root Weevils	0.05 - 0.10	3.2 - 6.4	
Twospotted spider mite	0.10	6.4	For Root Weevil control, make a directed spray to the base of the plant. Spray up the vine 3 feet and the soil surface 1.5 to 2 feet on either side of the plant.  <b>Application by air for late season control of twospotted spider mites:</b> Apply no less than 6.4 oz. (0.1 lb ai) per application in a minimum of 10 gallons per acre.
<b>RESTRICTIONS</b> Do not exceed 0.3 pound active ingredient (19.2 fl ounces product) per acre per season. Do not make applications less than 21 days apart. Do not apply within 14 days of harvest. Use of ultra low volume (ULV) application on hops is prohibited.			

## CANE BERRIES

Caneberries, Including: Blackberries, Bingleberries, Dewberries, Lowberries, Marionberries, Olallieberries, Youngberries, Loganberries, Raspberries

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Leafrollers Orange Tortrix Root Weevils	0.05 - 0.10	3.2 - 6.4	Apply by air or ground equipment using sufficient water to obtain full coverage of foliage. (minimum of 10 gallons per acre by air and 50 gallons per acre by ground).  One application may be made pre-bloom and a second application may be made post bloom.
Raspberry Crown Borer Spider Mites	0.10	6.4	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.
<b>RESTRICTIONS</b> Do not apply more than 0.2 pound active ingredient (12.8 fl ounces product) per acre per season. Do not apply within 3 days of harvest.			

## PEARS

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Codling Moth Cutworms Green Fruitworm Leafhoppers Leafminers Leafrollers Lygus spp. Plant Bugs Plum Curculio San Jose Scale (Crawlers) Stink Bugs Tarnished Plant Bugs	0.04 to 0.20	2.6 to 12.8	Application by ground: 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.  Application by air: Apply the specified dosage in a minimum of 10 gallons per acre by air.
Twospotted Spider Mite Yellow Mite	0.06 - 0.20	3.8 to 12.8	
European Red Mite	0.08 - 0.20	5.12 to 12.8	
<b>RESTRICTIONS</b> Do not apply more than 0.5 pound active ingredient (32 fl ounces product) per acre per season with no more than 0.45 pound active ingredient (28.8 fl ounces product) per acre applied after petal fall. Do not make applications less than 30 days apart. Do not apply within 14 days of harvest. Do not graze livestock in treated orchards or cut treated cover crops for feed			

## ARTICHOKE

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Cribrate Weevil Artichoke Plume Moth	0.10	6.4	Apply when pest population reaches damaging threshold and repeat as necessary to maintain control, but not more often than 15 day intervals.  Application by ground: Apply a full cover spray in a minimum of 75 gallons of finished spray per acre.  Application by air: Apply specified dosage in a minimum of 10 gallons per acre.
<b>RESTRICTIONS</b> Do not exceed 0.5 pound active ingredient (32 fl ounces product) per acre per season. Do not apply within 5 days of harvest.			

# CITRUS\*

PESTS	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
<p>Diaprepes Root Weevil (<i>Diaprepes abbreviatus</i>)</p> <p>Southern Blue Green Citrus Root Weevil (<i>Pachnaeus litus</i>)</p> <p>Blue Green Citrus Root Weevil (<i>Pachnaeus opalus</i>)</p> <p>Brown Leaf Notcher (<i>Epicaerus mexicanus</i>)</p> <p>Little Leaf Notcher (<i>Artipus floridanus</i>)</p>	0.25 - 0.50	16.0 – 32.0	<p>Apply Brigade 2EC by ground equipment to bare soil beneath citrus trees. Brigade 2EC 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.</p> <p>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 2EC 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 2EC as they attempt to burrow into the root zone. Disturbance of the soil beneath trees should be minimized.</p> <p>Timing of Brigade 2EC 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 2EC 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 2EC soil barrier in place prior to drop of the neonates.</p> <p>Brigade 2EC is one of several effective tools in an integrated pest management program for Citrus Root Weevils. Application of Brigade 2EC 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 hand-gun 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, 32 fluid ounces formulated product should be used to obtain the longest residual management of Diaprepes root weevil. If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 16 fluid ounces formulated product can be applied early season and 16 fluid ounces formulated product can be applied later in the season.</p>
<p>Fire ants (<i>Solenopsis</i> spp.)</p> <p>Asian cockroach (<i>Blattella asahinae</i>)</p>	0.1 - 0.25	6.4 – 16.0	<p>Timing of Brigade 2EC 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 2EC 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 2EC soil barrier in place prior to drop of the neonates.</p> <p>Brigade 2EC is one of several effective tools in an integrated pest management program for Citrus Root Weevils. Application of Brigade 2EC 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 hand-gun 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, 32 fluid ounces formulated product should be used to obtain the longest residual management of Diaprepes root weevil. If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 16 fluid ounces formulated product can be applied early season and 16 fluid ounces formulated product can be applied later in the season.</p>
<p><b>RESTRICTIONS</b> Do not apply more than 0.5 pound active ingredient (32 fl ounces active) per acre per year. Do not apply within 1 day of harvest. Do not apply through irrigation systems. Do not allow any application of Brigade 2EC to contact fruit or foliage. Apply the specified dosage in a minimum of 40 gallons of finished spray per acre. Ground application only. Do not apply by air. * This use is not permitted in California unless allowed by an approved supplemental label.</p>			

# SPINACH

PESTS	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
<p>Colorado Potato Beetle</p> <p>Tomato Pinworm</p> <p>Tomato Hornworm</p> <p>Armyworms</p> <p>Corn earworm</p> <p>Cucumber Beetles</p> <p>Cutworms</p> <p>European Corn Borer</p> <p>Flea Beetles</p> <p>Leafminers</p> <p>Loopers</p> <p>Pepper Weevil</p> <p>Thrips</p> <p>Whitefly</p>	0.033 - 0.10	2.1 - 6.4	<p>For control of whiteflies apply foliar treatments of Brigade® insecticide by ground or air at rates of up to 0.4 pt. (0.1 lb active) per acre at minimum 7- day intervals up to a maximum of 4 applications. Do not apply within 40 days of harvest.</p> <p>For control of fire ants apply Brigade® insecticide to the soil (at planting) or as a foliar treatment by ground or air at rates of up to 0.4 pt. (0.1 lb active) per acre at minimum 7-day intervals up to a maximum of 4 applications. Do not apply within 40 days of harvest.</p> <p>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.</p>
<p>Broad Mite</p> <p>Banks Grass Mite</p> <p>Twospotted Spider Mite</p> <p>Carmine Mite</p> <p>Pacific Spider Mite</p> <p>Lygus Spp.</p> <p>Fire Ants</p>	0.08 - 0.10	5.12 - 6.4	<p>Timing of Brigade 2EC 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 2EC 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 2EC soil barrier in place prior to drop of the neonates.</p> <p>Brigade 2EC is one of several effective tools in an integrated pest management program for Citrus Root Weevils. Application of Brigade 2EC 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 hand-gun 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, 32 fluid ounces formulated product should be used to obtain the longest residual management of Diaprepes root weevil. If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 16 fluid ounces formulated product can be applied early season and 16 fluid ounces formulated product can be applied later in the season.</p>
<p><b>RESTRICTIONS</b> Do not apply more than 0.4 pounds active ingredient (25.6 fl ounces product) per acre per season. Do not make applications less than 7 days apart. Do not apply within 40 days of harvest.</p>			

# GRAPES\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
<p>Cutworms</p> <p>Eastern grape leafhopper</p> <p>Grape berry moth</p> <p>Japanese beetles</p> <p>adults</p> <p>Lady Beetle (<i>Scymnus</i>)</p> <p>Variegated leafhopper</p> <p>Western grape leafhopper</p>	0.05 - 0.10	3.2 - 6.4	<p>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.</p> <p>When applying by air, 1 to 2 quarts of emulsified oil may be substituted for 1 to 2 quarts of water in the finished spray.</p> <p>Thorough coverage is essential to achieve control.</p>
<p>Black vine weevil</p> <p>Glassywinged sharpshooter</p> <p>Twospotted spider mite</p>	0.10	6.4	<p>When pest pressure is moderate to severe, use higher rate.</p>
<p><b>RESTRICTIONS</b> Do not apply more than 0.10 pound active ingredient (6.4 fl ounces product) per acre per season. Do not apply within 30 days of harvest. * This use is not permitted in California unless allowed by an approved supplemental label.</p>			

# OKRA\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
<p>Armyworms</p> <p>Corn earworm</p> <p>Cucumber Beetles</p> <p>Cutworms</p> <p>European Corn Borer</p> <p>Flea Beetles</p> <p>Leafminers</p> <p>Loopers</p> <p>Thrips</p> <p>Whitefly</p> <p>Aphids</p> <p>Japanese Beetle (Adult)</p> <p>Stink bugs</p>	0.033 to 0.10	2.1 to 6.4	<p>Apply using sufficient water to obtain uniform coverage. Apply as needed. Apply with ground equipment using a minimum of 10 gallons of finished spray per acre or a minimum of 2 gallons per acre by aircraft.</p>
<p>Lygus Spp.</p> <p>Broad Mite</p> <p>Carmine Mite</p> <p>Two Spotted Spider Mite</p>	0.08 to 0.10	5.12 to 6.4	<p>Timing of Brigade 2EC 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 2EC 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 2EC soil barrier in place prior to drop of the neonates.</p> <p>Brigade 2EC is one of several effective tools in an integrated pest management program for Citrus Root Weevils. Application of Brigade 2EC 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 hand-gun 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, 32 fluid ounces formulated product should be used to obtain the longest residual management of Diaprepes root weevil. If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 16 fluid ounces formulated product can be applied early season and 16 fluid ounces formulated product can be applied later in the season.</p>
<p><b>RESTRICTIONS</b> Do not apply more than 0.20 pound active ingredient (12.8 fl ounces product) per acre per season. Do not make applications less than 7 days apart. Do not apply within 7 days of harvest. * This use is not permitted in California unless allowed by an approved supplemental label.</p>			



## CILANTRO\*, CORIANDER\*

PEST	DOSAGE		REMARKS
	LB A/A	FL OZ/A	
Spotted Cucumber Beetle Beet Armyworm Cabbage Looper Aphids Whitefly Flea beetle Thrips Leafminer Cutworm Grasshoppers Saltmarsh caterpillar	0.033 to 0.10	2.1 to 6.4	Apply using sufficient water to obtain uniform coverage. Apply as needed.  Apply with ground equipment using a minimum of 10 gallons of finished spray per acre or a minimum of 2 gallons per acre by aircraft.
Two Spotted Spider Mite	0.08 to 0.10	5.12 to 6.4	
<b>RESTRICTIONS</b> Do not apply more than 0.50 pound active ingredient (32 fl ounces product) per acre per season. Do not make applications less than 7 days apart. Do not apply within 3 days of harvest. * This use is not permitted in California unless allowed by an approved supplemental label.			

## DRIED BEANS AND PEAS\*

Dried cultivars of: Bean (Lupinus), Bean (Phaseolus), Field bean, Kidney bean, Lima bean (dry), Navy bean, Pinto bean, Tepary bean, Bean (Vigna), Adzuki bean, Blackeyed pea, Catjang, Cowpea, Crowder pea, Moth bean, Mung bean, Rice bean, Southern pea, Urd bean, Broad bean (dry), Chickpea, Guar, Lablab bean, Lentil, Pea (Pisicum), Field pea, Pigeon pea

PEST	DOSAGE		REMARKS
	LB A/A	FL OZ/A	
Flea Beetle Aster Leafhopper Leafhoppers	0.025 to 0.10	1.6 to 6.4	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment.
Aphids Beet Armyworm Fall Armyworm Southern Armyworm Yellowstriped Armyworm Bean Leaf Beetle Cucumber Beetles Japanese beetle Adult Mexican Bean Beetle 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 Whitefly Imported cabbageworm Saltmarsh caterpillar Tobacco budworm Leafminer Grasshoppers	0.033 to 0.10	2.1 to 6.4	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.
Banks Grass Mite Twospotted Spider Mite Carmine Mite Lygus Spp.	0.08 to 0.10	5.12 to 6.4	
<b>RESTRICTIONS</b> Do not apply more than 0.2 pound active ingredient (12.8 fl ounces product) to peas, or 0.3 active ingredient (19.2 fl ounces product) to beans per acre per season. Do not make applications less than 7 days apart. Do not apply within 14 days of harvest. * This use is not permitted in California unless allowed by an approved supplemental label.			

## LEAFY BRASSICAS\*, TURNIP GREENS\*

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

PEST	DOSAGE		REMARKS
	LB A/A	FL OZ/A	
Cutworms Corn Earworm Tobacco Budworm Saltmarsh Caterpillar Leafhoppers Flea Beetles Imported Cabbageworm Cucumber Beetles Aphids Whitefly Armyworms Loopers Stink Bugs Crickets Ground Beetles Thrips Wireworm (adults) Diamondback Moth Japanese Beetle (adult) Grasshoppers Aphid	0.033 to 0.10	2.1 to 6.4	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment.  When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray.  Thorough coverage is essential to achieve control.
Banks Grass Mite Twospotted Spider Mite Carmine Mite Pacific Spider Mite Lygus Spp.	0.08 to 0.10	5.12 to 6.4	
<b>RESTRICTIONS</b> Do not apply more than 0.4 pound active ingredient (25.6 fl ounces product) per acre per season. Do not make applications less than 7 days apart. Do not apply within 7 days of harvest * This use is not permitted in California unless allowed by an approved supplemental label.			

## TUBEROUS AND CORM VEGETABLES\*

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Corn wireworm Tobacco wireworm	At-Plant 0.15 to 0.30	At-Plant 9.6 to 19.2	Brigade may be applied as a soil incorporated broadcast, directed bed spray or a T-band spray into the planting furrow for the control of wireworms, rootworms, sweet potato flea beetle and white grubs. Apply Brigade at the rate of 0.15 to 0.3 pounds active (9.6 to 19.2 ounces formulated) per acre in a minimum of 10 gallons per acre of spray.  Brigade may be applied as one or more soil directed and incorporated treatments at cultivation or lay-by for the control of wireworms, rootworms and white grubs. Apply Brigade to the drill area and incorporate by cultivation equipment set to throw soil towards the drill area. Apply Brigade at a rate of 0.05 to 0.15 pounds active (3.2 to 9.6 ounces formulated) per acre in a minimum of 10 gallons per acre of spray.
Southern potato wireworm Japanese beetle grubs June beetle Sweetpotato flea beetle Cucumber beetle Sweetpotato weevil Banded Cucumber beetle Black flea beetle Whitefringed beetle White grub Sugarcane beetle Rootworms	Cultivation or lay-by 0.05 to 0.15  Foliar 0.033 to 0.10	At Cultivation or lay-by 3.2 to 9.6  Foliar 2.1 to 6.4	Brigade may be applied as a foliar spray for the control of the adult life stages of flea beetles, click beetles (wireworms), cucumber beetles (rootworms), white fringed beetles and May/June beetles (white grubs).  Apply Brigade at the rate of 0.033 to 0.1 lbs active (2.1 to 6.4 ounces product) per acre in a minimum of 10 gallons of spray by ground and 3 gallons of spray by air.

### RESTRICTIONS

Do not apply more than 0.5 pound active ingredient (32 fl ounces product) per acre per season, including soil application.

Do not make more than 2 foliar applications per season.

Do not make applications less than 21 days apart.

Do not apply within 21 days of harvest.

\* This use is not permitted in California unless allowed by an approved supplemental label.

## SOYBEANS\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Alfalfa Caterpillar Aphids Armyworms** Bean Leaf Beetle Blister Beetle spp. Corn Earworm Corn Rootworm Adult Cowpea Curculio Cucumber Beetle Adult Cutworms Dectes Stem Borer European Corn Borer False Chinch Bug Flea beetle Grasshoppers Green cloverworm Hornworms Imported Cabbageworm Japanese beetle Adult Leaf Skeletonizer spp. Leafhoppers Leafminers Adults Lesser Cornstalk Borer Loopers Mexican Bean Beetle Painted Lady (Thistle) Caterpillar Pea Leaf Weevil Saltmarsh Caterpillar Seedcorn Maggot Adult Silverspotted Skipper Spittlebug Stink Bug Three-Cornered Alfalfa Hopper Thrips Tobacco Budworm** Velvetbean Caterpillar Webworm Woollybear Caterpillar	0.033-0.10	2.1-6.4	Apply in a minimum of 10 gallons per acre with ground equipment or 2 gallon per acre by aircraft  **Pyrethroid resistance is common for Beet Armyworm and Tobacco Budworm. Please consult your local or state agricultural authority to determine if resistance pest populations are in your area. If so refer to the resistance management statement in the DIRECTION FOR USE section of this label.
Lygus Species Whitefly Two Spotted Spider mites	0.08 to 0.10	5.12 to 6.4	

### RESTRICTIONS

Do not apply more than 0.3 pounds active ingredient (19.2 fl ounces product) per acre per season.

Do not make applications less than 30 days apart.

Do not apply within 18 days of harvest

\* This use is not permitted in California unless allowed by an approved supplemental label.

## TOBACCO\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Cutworm spp. Tobacco Flea Beetle (larvae) White Grubs Wireworms Mole Crickets Armyworm spp. Stalkborers	0.0625 - 0.10	4.0 - 6.4	<b>Pre-transplant soil applications:</b> Apply 0.0625- 0.1 lb ai/A in a minimum of 10 gal/A to control soil pests. Use of suitable equipment to incorporate into top 4" of the soil is required to control below ground pests.  <b>At-transplant water treatment application:</b> Apply 0.0625- 0.1 lb ai/A in a water treatment application volume of 10-200 gal/A
Aphid spp. Armyworm spp. Flea Beetle (Adults) Chinch Bugs Cucumber Beetle Stink Bugs Japanese Beetles Grasshoppers Cutworm spp. Tarnished Plant Bugs Green Bugs Saltmarsh Caterpillar Thrips Tobacco Budworm Tobacco Hornworm Whiteflies	0.04- 0.10	2.56 - 6.4	Foliar applications: Apply 0.04- 0.10 lb ai/A per foliar application up to, and including, layby in a minimum of 10 gal/A.
Spider mites Lygus spp.	0.1	6.4	

### RESTRICTIONS

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

Do not apply later than layby.

Do not make more than 2 foliar applications per season.

May be tank mixed with Command, Spartan and other herbicides approved for tobacco use.

\* This use is not permitted in California unless allowed by an approved supplemental label.

## EGGPLANT\*, PEPPER (BELL & NON-BELL)\*, GROUNDCHERRY\*, PEPINO\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Armyworms Including: Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm 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 Hornworm Tomato Pinworm Vegetable Leafminer Whitefly	0.033-0.10	2.1-6.4	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment.  When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.
Banks Grass Mite Broad Mite Carmine Mite Lygus Species Pacific Spider Mite Twospotted Spider Mite	0.08-0.10	5.12-6.4	

### RESTRICTIONS

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

Do not make applications less than 7 days apart.

Do not apply within 7 days of harvest

\* This use is not permitted in California unless allowed by an approved supplemental label.

## TOMATO\*, TOMATILLO\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
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 Species Melonworm Pea Weevil Pea Leaf Weevil Pickleworm Plant Bug Rindworm Salt Marsh Caterpillar Sap Beetle Seedpod Weevil Squash Bugs Stink bug Species Tobacco Budworm Tarnished Plant Bug Thrips Whitefly	0.033-0.08	2.1-5.2	Apply in water. Apply the specified dosage in 5 to 50 gallons of finished spray per acre by air or 10 to 50 gallons of finished spray per acre by ground.  Thorough coverage is essential to achieve control.
Twospotted Spider Mite	0.08-0.10	5.12-6.4	
<b>RESTRICTIONS</b> Do not apply more than 0.4 pound active ingredient (25.6 fl ounces product) per acre per season. Do not make applications less than 10 days apart. Do not apply within 1 day of harvest. * This use is not permitted in California unless allowed by an approved supplemental label.			

## PEANUT\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Beet armyworm Corn earworm Cutworm Species 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	0.033-0.1	2.1-6.4	Apply in a minimum of 10 gallons per acre with ground equipment or 2 gallon per acre by aircraft.
Aphids Spider mites Thrips Whitefly	0.08-0.1	5.12-6.4	
<b>RESTRICTIONS</b> Do not apply more than 0.5 pounds active ingredient (32 fl ounces product) ai per acre per season. Do not make applications less than 14 days apart. Do not apply within 14 days of harvest Do not feed green immature plants and peanut hay to livestock. * This use is not permitted in California unless allowed by an approved supplemental label.			

## ROOT CROPS (Except Sugar Beets)\*

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Beet armyworm Celery leaf tier Corn earworm Cross-striped cabbage-worm Cutworms Diamondback moth European corn borer Fall armyworm Fire Ants Flea Beetles Green cloverworm Hornworms Imported cabbageworm Loopers Southern armyworm Spider mites Tobacco budworm Velvetbean caterpillar Whitefly Yellowstriped armyworm	0.08-0.10	5.12-6.4	Apply foliar treatments in at least 25 gallons per acre.
<b>RESTRICTIONS</b> Do not apply more than 0.5 pounds active ingredients (32 fl ounces product) lb ai per acre per season. Do not make applications less than 7 days apart. Do not apply within 21 days of harvest * This use is not permitted in California unless allowed by an approved supplemental label.			

## GARDEN BEETS\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Aphids Fire Ants Flea Beetles Lepidopterous larvae Spider mites Whitefly	0.08-0.10	5.12-6.4	Apply foliar treatments in at least 25 gallons per acre.  Apply no more than once every 7 days.
<b>RESTRICTIONS</b> Do not apply more than 0.4 pounds active lb ai(25.6 fl ounces product) per acre per season. Do not make applications less than 7 days apart. Do not apply within 1 day of harvest * This use is not permitted in California unless allowed by an approved supplemental label.			

## MAYHAW\*

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Plum Curculio	0.08-0.1	5.12-6.4	Apply foliar treatments in at least 28 gallons per acre.
<b>RESTRICTIONS</b> Do not apply more than 0.2 pounds active ingredient (12.8 fl ounces product) lb ai per acre per season. Do not make applications less than 7 days apart. Do not apply within 30 days of harvest * This use is not permitted in California unless allowed by an approved supplemental label.			

## LEAFY PETIOLE VEGETABLES

Celery, Cardoon, Chinese celery, Celtuce, Florence fennel, Rhubarb, Swiss chard

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Cutworms Corn Earworm Leafhoppers Flea Beetles Imported Cabbageworm Cucumber Beetles Aphids Armyworms Loopers Stink Bugs Crickets Ground Beetles Thrips Wireworm (adults) Diamondback Moth	0.033 - 0.10	2.1 - 6.4	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment. Thorough coverage is essential to achieve control.
Twospotted Spider Mite Carmine Mite Pacific Spider Mite Lygus Spp.	0.08 - 0.10	5.12 - 6.4	
<b>RESTRICTIONS</b> Do not apply more than 0.5 pound lb. active ingredient (32 fl ounces product) per acre per season. Do not make applications less than 7 days apart. Do not apply within 7 days of harvest.			

## BUSHBERRIES

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

PEST	DOSAGE		REMARKS
	LB AI/A	FL OZ/A	
Blueberry maggot, Fruitworms, Plum curculio Leaf rollers Spanworm Leafhoppers Japanese beetle Aphids	0.033 - 0.10	2.1 - 6.4	Apply in a minimum of 2 gallons of finished spray per acre by air or in a minimum of 10 gallons per acre with ground equipment. Thorough coverage is essential to achieve control.
Twospotted Spider Mite Carmine Mite Pacific Spider Mite Lygus Spp.	0.08 - 0.10	5.12 - 6.4	
<b>RESTRICTIONS</b> Do not apply more than 0.5 pound active ingredient (32 fl ounces product) per acre per season. Do not make applications less than 7 days apart. Do not apply within 1 day of harvest.			

## SOD FARMS\*

In New York State, this product may NOT be applied to any grass or turf area within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

In New York State, do make a single repeat application of this product if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

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

For low water volume usage, less than 2 gallons/1000 square feet, addition of a non-ionic or silicone based surfactant (0.25% by volume) is recommended. Irrigation to treated area within a few hours following application can improve efficacy to sub-surface pests such as, but not limited to, mole crickets.

The application rates listed in the following table will provide excellent control of the respective pests under typical conditions. However, at the discretion of the applicator, Brigade 2EC may be applied at up to 0.32 fl. oz. per 1000 square feet to control each of the pests listed in this table. The higher application rates should be used when maximum residual control is desired or heavy pest populations occur.

PEST	Fluid oz/acre FL OZ/A	FL OZ /1000 sq. ft.	Lbs a.i./acre LB AI/A
Armyworms <sup>1</sup> Cutworms <sup>1</sup> Sod Webworm <sup>1</sup>	2.2- 3.5	0.05 - 0.08	0.03- 0.05
Annual Bluegrass Weevil (Hyperodes) (Adult) <sup>2</sup> Banks Grass Mite <sup>6</sup> Billbugs (Adult) <sup>3</sup> Black Turfgrass Ataenius (Adult) <sup>4</sup> Crickets Earwigs Fleas (Adult) Grasshoppers Mealybugs Mites <sup>5</sup>	3.5- 7.0	0.08 - 0.16	0.05- 0.11
Ants Chinch Bugs <sup>5</sup> Fleas (Larvae) <sup>7</sup> Imported Fire Ants <sup>8</sup> Japanese Beetle (Adult) Mole Cricket (Adult) <sup>9</sup> Mole Cricket (Nymph) <sup>10</sup> Ticks <sup>11</sup>	7.0- 14.0	0.16- 0.32	0.11- 0.21

### Comments

<sup>1</sup>**Armyworms, Cutworms and Sod Webworms:** To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the grass area is being maintained at a mowing height of greater than 1 inch, then higher application rates (up to 0.32 fluid oz. per 1000 square feet) may be required during periods of high pest pressure.

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

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

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

<sup>5</sup>**Chinch Bugs:** Chinch Bugs infest the base of grass plants and are often found in the thatch layer. Irrigation of the grass area before treatment will optimize the penetration of the insecticide to the area where the chinch bugs are located. Use higher volume applications if the thatch layer is excessive or if a relatively long mowing height is being maintained. Chinch Bugs can be one of the most difficult pests to control in grasses and the higher application rates (up to 0.32 fluid oz. per 1000 square feet) may be required to control populations that contain both nymphs and adults during the middle of the summer.

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

<sup>7</sup>**Flea larvae:** Flea larvae develop in the soil of shaded areas that are accessible to pets or other animals. Use a higher volume application when treating these areas to ensure penetration of the insecticide into the soil. Note: if the lawn area is being treated with this product at 0.10 fluid oz. per 1000 square feet for adult flea control, then the larval application rate may be achieved by increasing the application volume two- to four-fold.

<sup>8</sup>**Imported Fire Ants:** Control will be optimized by combining broadcast applica-

tions that will control foraging workers and newly mated fly-in queens with mound drenches that will control existing colonies. If the soil is not moist, then it is important to irrigate before application or use a high volume application. Broadcast treatments should apply 0.32 fluid oz. per 1,000 square feet. Mounds should be treated by diluting 0.05 fluid oz of Brigade 2EC per gallon of water and applying 1 to 2 gallons of finished spray per mound. The mounds should be treated with sufficient force to break their apex and allow the insecticide solution to flow into the ant tunnels. A four foot diameter circle around the mound should also be treated. For best results, apply in cool weather (65 - 80°F) or in early morning or late evening hours.

**9Mole Cricket adults:** Achieving acceptable control of adult mole crickets is difficult because preferred grass areas are subject to continuous invasion during the early spring by this extremely active stage. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized. Grass areas that receive pressure from adult mole crickets should be treated at peak egg hatch to ensure optimum control of subsequent nymph populations (see below).

**10Mole Cricket nymphs:** Grass areas that received intense adult mole cricket pressure in the spring should be treated immediately prior to peak egg hatch. Optimal control is achieved at this time because young nymphs are more susceptible to insecticides and they are located near the soil surface where the insecticide is most concentrated. Control of larger, more damaging, nymphs later in the year may require both higher application rates and more frequent applications to maintain acceptable control. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized.

**11Ticks (Including ticks that may transmit Lyme Disease and Rocky Mountain Spotted fever):** Do not make spot applications. Treat the entire area where exposure to ticks may occur. Use higher spray volumes when treating areas with dense ground cover or heavy leaf litter. Ticks may be reintroduced from surrounding areas on host animals. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed activity. Repeat application should be limited to no more than once per seven days.

**Deer ticks (Ixodes sp.)** have a complicated life cycle that ranges over a two year period and involves four life stages. Applications should be made in the late fall and/or early spring to control adult ticks that are usually located on brush or grass above the soil surface and in mid to late spring to control larvae and nymphs that reside in the soil and leaf litter.

**American dog ticks** may be a considerable nuisance in suburban settings, particularly where homes are built on land that was previously field or forest. These ticks commonly congregate along paths or roadways where humans are likely to be encountered. Applications should be made as necessary from mid-spring to early fall to control American dog tick larvae, nymphs and adults.

\* This use is not permitted in California unless allowed by an approved supplemental label.

## TREE NUTS

Almond, Beech nut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (hazelnut), Hickory nut, Macadamia nut (bush nut), Pecan, Pistachio

PEST	DOSAGE		REMARKS
	LB A/A	FL OZ/A	
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	0.05 - 0.2	3.2 - 12.8	Apply by ground or air equipment using sufficient water to obtain full coverage of foliage. Apply as a dilute (minimum of 200 gallons of finished spray per acre) or concentrate (minimum of 50 gallons of finished spray per acre) by ground or apply the specified amount in a minimum of 10 gallons of finished spray per acre by air.
European Red Mite Pecan Weevil Spider Mite species	0.08 - 0.2	5.1 - 12.8	
Fire ants Walnut Husk Fly	0.1 - 0.2	6.4 - 12.8	

### RESTRICTIONS

Do not apply more than 0.5 pound active ingredient (32 fl ounces product) per acre per season.  
Do not make applications less than 15 days apart.  
Do not apply within 21 days of harvest for pecans and 7 days for all other registered tree nut crops  
Do not graze livestock in treated orchards or cut treated cover crops for feed.

## GRASS FORAGE, FODDER, and HAY GROUP and GRASS GROWN FOR SEED, PASTURE and RANGELAND

including: bahiagrass, barnyardgrass, bentgrass, Bermudagrass, Kentucky bluegrass, big bluestem, smooth bromegrass, buffalograss, reed canarygrass, centipedegrass, crabgrass, cupgrass, dallisgrass, sand dropseed, Kentucky fescue, meadow foxtail, eastern gramagrass, side-oats grama, guinea grass, Indian grass, Johnsongrass, lovegrass, napiergrass, oatgrass, orchardgrass, pangolagrass, paspalum, redtop, Italian ryegrass, St. Augustine grass, sprangletop, squirreltailgrass, stargrass, switchgrass, timothy, crested wheatgrass, wildrye grass and zoysia grass. Also included are sudangrass and sorghum forages and their hybrids.

**NOTE: Use on grasses is limited to the States of Idaho, Oregon, and Washington.**

PESTS	DOSAGE		REMARKS
	LB A/A	FL OZ/A	
Alfalfa Caterpillar Alfalfa Looper Alfalfa Weevil Armyworm, fall Armyworm, southern Armyworm, true Armyworm, Yellowstriped Ant spp. Black Grass Bug Blue Alfalfa Aphid <sup>1</sup> Cereal Leaf Beetle Chinch Bug Cricket Cutworms Egyptian Alfalfa Weevil (larvae & adult) Flea Beetles Grass Mealybug Grasshoppers Green Cloverworm Green Peach Aphid <sup>1</sup> Hornworms Hunting Bill Bug Meadow Spittlebug Pea Aphid <sup>1</sup> Plant Bug spp. Potato Leafhopper Range caterpillar Spotted Alfalfa Aphid <sup>1</sup> Stink Bugs Threecornered Alfalfa Hopper Velvetbean Caterpillar Webworms	0.1	6.4	Apply as insects appear in sufficient volume of water to ensure thorough coverage of foliage. Use higher recommended dosage for increased pest pressure or for increased residual pest control. Do not exceed maximum allowable rate. Apply in a minimum of 2 gallons of finished spray per acre by aerial equipment or 10 gallons per acre by ground equipment. Higher volumes of finished spray may improve insect control under high temperatures, when foliage is dense and/or when insect pressure is high.

### RESTRICTIONS

Do not apply more than 0.2 pound active ingredient (12.8 fl ounces product) per acre per season.  
Do not make applications less than 14 days apart.  
Applications may be made up to 30 days prior to harvest for forage and hay.  
<sup>1</sup>Aphid control may be variable depending on species present and host-plant relationships.

## CONIFER SEED ORCHARDS

For Use in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, Tennessee, Texas and Virginia Only

PEST	DOSAGE		REMARKS
	LB A/A	FL OZ/A	
Cone Worms Seed Bugs Seed Worms	0.1 - 0.2	6.4 - 12.8	For ground application equipment, apply recommended dosage in 100 to 500 gallons of water per acre. For aerial applications, apply recommended dosage in minimum of 10 gallons of water per acre or 0.5 refined vegetable oil per acre. Thorough coverage is essential. Begin applications 7 days after peak pollen flight and continue on 30 day intervals up to a maximum of 0.6 pounds active per acre per season.

### RESTRICTIONS

Do not apply more than 0.6 pound active (38.4 fl ounces) per acre per season.  
Do not make more than six applications per season.  
Do not make applications less than 30 days apart

# CHRISTMAS TREES

For Use in Washington and Oregon Only

PEST	DOSAGE		REMARKS
	LB A/A	FL OZ/A	
Root Weevil Spruce Spider Mite	0.06 – 0.1	3.9 – 6.4	For ground application equipment, apply in a minimum of 20 gallons of water per acre. For aerial applications, apply in a minimum of 5 gallons of water per acre Brigade 2EC has demonstrated excellent plant safety. However, not all species and varieties have been tested. Prior to full scale application, treat a few plants for observation.
Do not apply more than 0.1 pound active ingredient (6.4 fl ounces product) per acre per application. Do not make more than 2 foliar applications of bifenthrin (all products) per season Do not make applications less than 21 days apart			

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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 must 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 because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

**Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and buyer assumes the risk of any such use.**

To the extent allowed by law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

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