

1381-211

09/23/2008

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

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

SEP 23 2008

Dr. Alice Walker  
Agent for Winfield Solutions, LLC  
3094 Country Club Road  
Senatobia, MS 38668

Subject: Label Notifications for Pesticide Registration Notice 2007-4

Dear Dr. Walker,

The Agency is in receipt of your Applications for Pesticide Notification under Pesticide Registration Notices (PRN) 98-10 and 2007-4 dated June 3, 2008 and your resubmissions dated June 13, 2008 for the following products:

|   |   |
|---|---|
| <b>Arctic<sup>®</sup> 3.2 EC Insecticide</b>  | <b>EPA Registration Number 1381-187</b> |
| <b>Battery<sup>™</sup> 2.5 EC Insecticide</b> | <b>EPA Registration Number 1381-188</b> |
| <b>Compact<sup>™</sup></b>                    | <b>EPA Registration Number 1381-189</b> |
| <b>Charger Max<sup>™</sup> ATZ-Lite</b>       | <b>EPA Registration Number 1381-208</b> |
| <b>Grizzly<sup>™</sup> Z Insecticide</b>      | <b>EPA Registration Number 1381-211</b> |
| <b>Daze<sup>®</sup> 4SC</b>                   | <b>EPA Registration Number 1381-212</b> |
| <b>Dormant Oil 435</b>                        | <b>EPA Registration Number 9779-251</b> |
| <b>Asulam 3.3 Herbicide</b>                   | <b>EPA Registration Number 9779-342</b> |
| <b>Boll'd</b>                                 | <b>EPA Registration Number 9779-349</b> |

The Registration Division (RD) has conducted its review of these requests for their applicability under PRNs 98-10 and 2007-4 and finds that the label changes requested fall within the scope of PRNs 98-10 and 2007-4. The labels submitted with the application have been stamped "Notification" and will be placed in our records.

Please be reminded that 40 CFR Part 156.140(a)(4) requires that a batch code, lot number, or other code identifying the batch of the pesticide distributed and sold be placed on nonrefillable containers. The code may appear either on the label (and can be added by non-notification/PR Notice 98-10) or durably marked on the container itself.

If you have any questions, please call me directly at 703-305-6249 or Steve Schaible of my staff at 703-308-9362.

Sincerely,



Linda Arrington  
Notifications & Minor Formulations Team Leader  
Registration Division (7505P)  
Office of Pesticide Programs

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

Registration  
 Amendment  
 Other

OPP Identifier Number

**Application for Pesticide - Section I**

|   |   |  |
|---|---|--|
| 1. Company/Product Number<br>1381-211   | 2. EPA Product Manager<br>George LaRocca  | 3. Proposed Classification<br><input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted |
| 4. Company/Product (Name)<br>Grizzly Z  | PM#<br>13   |  |
| 5. Name and Address of Applicant (Include ZIP Code)<br>Winfield Solutions, LLC, c/o Alice Walker Consulting<br>3094 Country Club Road<br>Senatobia, MS 38668<br><input type="checkbox"/> Check if this is a new address | 6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:<br><b>NOTIFICATION</b><br>EPA Reg. No. _____<br>Product Name _____<br><b>SEP 23 2008</b> |  |

**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.)

Notification of new container disposal language per PR Notice 07-4. We have also moved the Chemfree no. below Storage and Disposal. This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

**Section - III**

|   |  |   |                   |   |   |
|---|--|---|-------------------|---|---|
| 1. Material This Product Will Be Packaged In:   |  |   |                   | 2. Type of Container  |   |
| Child-Resistant Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No                     | Unit Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No | Water Soluble Packaging<br><input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No |                   | <input checked="" type="checkbox"/> Metal                                       | <input checked="" type="checkbox"/> Plastic |
|   |  |   |                   | <input type="checkbox"/> Glass  | <input type="checkbox"/> Paper              |
| * Certification must be submitted   |  | If "Yes" Unit Packaging wgt.  | No. per container | If "Yes" Package wgt  | No. per container                           |
| 3. Location of Net Contents Information<br><input checked="" type="checkbox"/> Label <input type="checkbox"/> Container |  | 4. Size(s) Retail Container<br>2-1/2 and 15 gals.   |                   | 5. Location of Label Directions<br><input checked="" type="checkbox"/> On label |   |
| 6. Manner in Which Label is Affixed to Product<br><input checked="" type="checkbox"/> Lithograph Paper glued 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<br>Alice Walker, Ph.D.   | Title<br>Agent    | Telephone No. (Include Area Code)<br>662-562-5995 |
| <b>Certification</b><br>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<br>(Stamped)         |
| 2. Signature<br><i>Alice Walker</i>   | 3. Title<br>Agent |   |
| 4. Typed Name<br>Alice Walker, Ph.D.  | 5. Date<br>5-5-08 |   |

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**RESTRICTED USE PESTICIDE**  
**Due to Toxicity 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.

**AgriSOLUTIONS™**  
**Grizzly™ Z Insecticide**

|   |        |
|---|--------|
| Active Ingredient:  |        |
| Lambda-cyhalothrin  |        |
| [1α(S*),3α(Z)]-(±)-cyano-(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate..... |        |
|   | 11.4%  |
| Other Ingredients:.....   |        |
|   | 88.6%  |
| Total:.....   |        |
|   | 100.0% |

Grizzly™ Z Insecticide contains 1 lb. of active ingredient per gal. and is a capsule suspension.

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

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 additional precautionary statements, complete storage and disposal, and directions for use in booklet.

| <b>FIRST AID</b>  |   |
|---|---|
| <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 the 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>   |
| <b>If on skin or clothing</b>   | <ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>   |
| <b>If inhaled</b>   | <ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>                                     |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment.  |   |
| <b>NOTE TO PHYSICIAN</b>  |   |
| Contains petroleum distillate – vomiting may cause aspiration pneumonia. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For 24-Hour Medical Emergency Assistance (Human or Animal) call 1-877-424-7452. |   |

EPA Reg. No. 1381-211  
 Distributed By  
 Winfield Solutions, LLC  
 P.O. Box 64589  
 St. Paul, MN 55164-05089

EPA Est. 070989-MO-001  
 Net Contents: 2.5 gallons  
 Lot No. \_\_\_\_\_  
 0/0505/8

**PRECAUTIONARY STATEMENTS**  
**Hazards to Humans and Domestic Animals**  
**WARNING/AVISO**

May be fatal if swallowed. Harmful if absorbed through skin. Causes moderate eye irritation. May cause allergic skin reactions. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Skin exposure may also result in a sensation described as a tingling, itching, burning, or prickly feeling. Onset may occur immediately to 4 hrs. after exposure and may last 2-30 hrs., without damage. Wash exposed areas once with soap and water. Relief from the skin sensation may be obtained by applying an oil-based cream.

Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals.

**Personal Protective Equipment (PPE)**

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

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, or Viton  $\geq$  14 mils
- Shoes plus socks
- Protective eyewear

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

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations**

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Environmental Hazards**

This pesticide is extremely toxic to fish and aquatic organisms and toxic to wildlife. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water.

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 if bees are visiting the treatment area.

**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.

This labeling must be in the possession of the user at the time of application.

**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 24 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, butyl rubber, nitrile rubber, or Viton ≥ 14 mils
- Shoes plus socks

**FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR INSECT CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.**

**STORAGE AND DISPOSAL**

**Prohibitions**

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

**Pesticide Storage**

Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with sand, earth, or synthetic absorbent. Remove to chemical waste area. **DO NOT ALLOW PRODUCT TO FREEZE.**

**Pesticide Disposal**

Pesticide wastes are acutely hazardous. 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 at the nearest EPA Regional Office for guidance.

**Container Disposal:** Use label language appropriate for container size and type.

**Nonrefillable containers.** Do not reuse or refill this container. Clean container promptly after emptying.

**Nonrefillable container equal to or less than 5 gallons.** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Nonrefillable container greater than 5 gallons.** Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ 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 it back and forth several times. Turn the container over onto its other end and tip it 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.

Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Refillable container.** Refill this container with this pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure or accident, call  
CHEMTREC 1-800-424-9300.**

### GENERAL DIRECTIONS FOR USE

Initial and residual control are contingent upon thorough crop coverage. Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. Apply in a minimum of 2 gals./A by air or 10 gals./A by ground unless otherwise specified in this label. When foliage is dense or pest pressure is high (heavier insect or egg pressure, larger larval stages), use of higher application volumes and/or higher use rates may improve initial and residual control.

For cutworm control, Grizzly™ Z Insecticide may be applied before, during, or after planting. For soil incorporated applications, use higher rates for improved control.

### 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.

### SPRAY DRIFT PRECAUTIONS

**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 within 25 ft., or by air within 150 ft. of lakes, reservoirs, rivers, permanent streams, marshes, pot holes, or natural ponds, estuaries, and commercial fish farm ponds. Increase the buffer zone to 450 ft. when ultra-low volume (ULV) application is made.
- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
- For aerial applications, the spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip 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 ft. above the crop canopy should be avoided.
- Make aerial or ground applications when the wind velocity favors on-target product deposition (approximately 3–10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph.
- Risk of exposure to aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.
- Do not cultivate within 10 ft. 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. 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.

In the State of New York, a 25 ft. vegetated, non-cropped buffer strip untraversed by drainage tiles must be maintained between a treated field and a coastal salt marsh or stream that drains into a coastal salt marsh, for both aerial or ground application. For aerial applications, the 25 ft. vegetated non-cropped buffer strip for runoff protection would be part of the larger 150 ft. buffer strip (or 450 ft. buffer strip for ULV application) required for spray drift.

#### TANK MIX APPLICATION

When tank mixing with any other agricultural products, **always add Grizzly™ Z Insecticide last**. Fill the tank with one half to two thirds volume of the mixing diluent. Make sure all other products are fully dispersed in the mixing diluent before adding the recommended rate of Grizzly™ Z Insecticide to the tank. Add the remainder of the mixing diluent volume. It is recommended that mixing and spray equipment have continuous agitation for best results. Follow the precautions and limitations of the most restricted product in the tank mixture.

While Grizzly Z Insecticide has good flexibility for tank mixing with other agricultural products, a jar test for physical compatibility is recommended for untried mixtures using proper ratios and mixing sequences of all ingredients to be included in the mixture.

Grizzly Z Insecticide is an aqueous based formulation. It is recommended that no type of non-emulsifiable oils be used in combination with Grizzly Z Insecticide. If adjuvants are used, use only:

- Nonionic Surfactant (NIS) containing at least 75% surface agent, or
- Non-phytotoxic Crop Oil Concentrate (COC), including once refined Vegetable Oil Concentrate (VOC),
- Methylated Sunflower Oils (MSO) containing a minimum of 17% emulsifier.

Adjuvants other than NIS or COC may be used providing the product meets the following criteria:

1. Contains only EPA exempt ingredients.
2. Is non-phytotoxic to the target crop.
3. Is compatible in mixture. (May be established through a jar test.)
4. Is supported locally for use with Grizzly Z Insecticide on the target crop through proven field trials and through university and extension recommendations.

In addition, the following may be used as diluents:

Crop Oil Concentrate; Methylated Sunflower Oils; Urea-Ammonium Nitrate

It is recommended that the following not be used in combination Grizzly Z Insecticide as diluents or adjuvants:



Non-emulsifiable oils; Diesel Fuel; Straight Mineral Oil

### CHEMIGATION Sprinkler Irrigation Application

Apply Grizzly Z Insecticide at rates and timing described elsewhere in this label. As local recommendations differ, consult your local State Extension Service or other local experts for recommendations on adjuvant or diluent types, (see TANK MIX APPLICATION) rates and mixing instructions. These recommendations should be proven, through university and extension field trials, to be effective with Grizzly Z Insecticide applied by chemigation.

Check the irrigation system to insure uniform application of water to all areas. Thorough coverage of foliage is required for good control. Good agitation in the pesticide supply tank should be maintained prior to and during the entire application period.

Apply by injecting the recommended rate of Grizzly Z Insecticide into the irrigation system using a metering device that will introduce a constant flow and by distributing the product to the target area in 0.1–0.2 acre-inch of water. In general, use the least amount of water required for proper distribution and coverage. It is recommended that the product be injected into the main irrigation line ahead of a right angle turn in the line to insure adequate dispersion or mixing in the irrigation water. Once the application is completed, flush the entire irrigation and injection system with clean water before stopping the system.

In addition to the above recommendations, if application is being made during a normal irrigation set of a stationary sprinkler, the recommended rate of Grizzly Z Insecticide for the area covered should be injected into the system only during the end of the irrigation set for sufficient time to provide adequate coverage and product distribution.

It is not recommended that Grizzly Z Insecticide be applied through an irrigation system connected to a public water system. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

#### Use Precautions: Sprinkler Irrigation Application

- A. 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 system(s). Do not apply this product through any other type of irrigation system.
- B. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
- C. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- D. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- E. 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.
- F. 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.
- G. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- H. 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.

- I. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- J. 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.
- K. 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.
- L. Do not apply when wind speed favors drift beyond the area intended for treatment.
- M. Do not apply through chemigation systems connected to public water systems.

**SPECIFIC USE DIRECTIONS**

**AGRICULTURAL USES**

| Crop                                      | Target Pestsr   | Rate        |           |
|---|---|-------------|-----------|
|   |   | lb. a.i./A  | fl. oz./A |
| <b>ALFALFA AND ALFALFA GROWN FOR SEED</b> |   |             |           |
|   | Alfalfa Caterpillar<br>Cutworm species<br>Army Cutworm<br>Green Cloverworm<br>Looper species<br>Velvetbean Caterpillar<br>Webworm species<br>Leafhopper species<br>Threecornered Alfalfa Hopper   | 0.015-0.025 | 1.92-3.20 |
|   | Armyworm<br>Corn Earworm<br>Fall Armyworm <sup>1</sup><br>Western Yellow-striped Armyworm<br>Yellow-striped Armyworm<br>Alfalfa Weevil<br>Bean Leaf Beetle (Adult)<br>Blister Beetle species  | 0.02-0.03   | 2.56-3.84 |
|   | Clover Leaf Weevil species<br>Clover Root Borer (Adult)<br>Clover Root Curculio species (Adult)<br>Clover Stem Borer (Adult)<br>Cowpea Curculio (Adult)<br>Cowpea Weevil (Adult)<br>Cucumber Beetle species (Adult)<br>Egyptian Alfalfa Weevil<br>Grape Colaspis (Adult)<br>Green June Beetle (Adult)<br>Japanese Beetle (Adult)<br>Mexican Bean Beetle<br>Pea Weevil (Adult) |             |           |

|  |      |      |
|--|------|------|
| Sweet Clover Weevil (Adult)<br>Whitefringed Beetle species (Adult)<br>Meadow Spittlebug<br>Plant Bug species including Lygus species <sup>3</sup><br>Stink Bug species<br>Alfalfa Seed Chalcid (Adult)<br>Blue Alfalfa Aphid<br>Cowpea Aphid<br>Green Peach Aphid <sup>3</sup><br>Pea Aphid<br>Spotted Alfalfa Aphid<br>Thrips species <sup>4</sup><br>Grasshopper species |      |      |
| Beet Armyworm <sup>1,3</sup><br>Blotch Leafminer <sup>3</sup><br>Spider Mites <sup>2</sup>   | 0.03 | 3.84 |

**Remarks**

- Apply only to fields planted to pure stands of alfalfa.
- Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. Apply in a minimum of 2 gals./A by air or 10 gals./A by ground. When foliage is dense and/or pest populations are high 5–10 gals./A by air or 20 gals./A by ground and higher use rates are recommended. Use higher rates for increased residual control.
- Avoid application when bees are actively foraging by applying during the early morning or during the evening hours. Be aware of bee hazard resulting from a cool evening and/or morning dew. It may be advisable to remove bee shelters during and for 2–3 days following application. Avoid direct application to bee shelters.
- Do not apply more than 0.03 lb. a.i. (0.24 pts.)/A per cutting.
- Do not apply more than 0.12 lb. a.i. (0.96 pts.)/A per season.
- Do not apply within 1 day of harvest for forage or within 7 days of harvest for hay.

<sup>1</sup> Use higher rates for large larvae.

<sup>2</sup> Suppression only.

<sup>3</sup> See resistance statement under **General Directions for Use**.

<sup>4</sup> Does not include Western Flower Thrips.

| Crop          | Target Pests  | Rate       |           |
|---------------|---|------------|-----------|
|               |   | lb. a.i./A | fl. oz./A |
| <b>CANOLA</b> |   |            |           |
|               | Cutworm species<br>Looper species<br>Armyworm species<br>Diamondback Moth<br>Flea Beetle<br>Cabbage Seedpod Weevil<br>Lygus Bug<br>Grasshoppers | 0.015–0.03 | 1.92–3.84 |
|               | Cabbage Aphid   | 0.03       | 3.84      |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply a minimum of 2 gals. of water/A.
- Do not apply within 7 days of harvest.
- Do not apply more than 0.09 lb. a.i. (0.72 pts.)/A per year.

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| Crop   | Target Pest   | Rate   |   |
|--|---|--|---|
|  |   | lb. a.i./A   | fl.oz./A  |
| <b>CEREAL GRAINS</b>   |   |  |   |
| Corn (At Plant):<br>Field Corn<br>Popcorn<br>Seed Corn<br>Sweet Corn | Wireworm species<br>Cutworm species<br>Seedcorn Maggot<br>White Grub species<br>Corn Rootworm Larvae<br>Western<br>Northern<br>Southern<br>Mexican<br>Seedcorn Beetle<br>Lesser Cornstalk Borer<br>Red Imported Fire Ant <sup>1</sup> | 0.005 lbs. a.i. per<br>1000 feet of row <sup>2</sup> | 0.66 fl. oz. per<br>1000 feet of row <sup>2</sup> |

**Remarks**

- **Banded Applications** – Apply at planting as a 5–7 inch T–band sprayed across the open seed furrow between the furrow openers and the press wheels or as a band application behind the press wheel.
- **In–Furrow Applications** – Apply into the seed furrow through spray nozzles or microtubes, behind the planter furrow openers and in front of the press wheel.
- Apply a minimum of 3 gals. finished spray/A.
- Do not harvest or graze livestock or cut treated crops for feed within 21 days of at plant application.
- Do not apply more than 0.09 lb. a.i. (0.72 pts.)/A per crop at plant.
- For field corn, popcorn, and seed corn do not apply more than 0.12 lb. a.i./A per crop from at plant and foliar applications. For sweet corn do not apply more than 0.48 lb. a.i./A per crop from at plant and foliar applications.

<sup>1</sup>Suppression only.

| <sup>2</sup> Lbs. a.i. and fl. oz./A of Grizzly™ Z INSECTICIDE Applied at 0.66 fl. oz./1000 ft. of Row for Various Row Spacings |        |        |        |        |        |        |
|---|--------|--------|--------|--------|--------|--------|
| Row Spacing   | 40"    | 38"    | 36"    | 34"    | 32"    | 30"    |
| Linear Ft./A  | 13,068 | 13,756 | 14,520 | 15,374 | 16,335 | 17,424 |
| Lbs. a.i./A   | 0.067  | 0.07   | 0.075  | 0.079  | 0.084  | 0.09   |
| Fl. oz./A   | 8.6    | 9.1    | 9.6    | 10.1   | 10.8   | 11.5   |

| Crop  | Target Pests   | Rate        |           |
|---|--|-------------|-----------|
|   |  | lb. a.i./A  | fl. oz./A |
| <b>CEREAL GRAINS</b>                                |  |             |           |
| Corn (Foliar)<br>Field Corn<br>Popcorn<br>Seed Corn | Cutworm species<br>Western Bean Cutworm <sup>1</sup><br>Corn Earworm <sup>1</sup><br>Green Cloverworm<br>Meadow Spittlebug   | 0.015–0.025 | 1.92–3.20 |
|   | Tobacco Budworm <sup>1,4</sup><br>European Corn Borer <sup>1</sup><br>Southwestern Corn Borer <sup>1</sup><br>Stalk Borer <sup>1</sup><br>Hop Vine Borer <sup>1</sup><br>Lesser Cornstalk Borer<br>Armyworm <sup>2</sup><br>Fall Armyworm <sup>2</sup><br>Yellow-striped Armyworm <sup>2</sup><br>Webworm species<br>Flea Beetle species<br>Western Corn Rootworm Beetle (Adult)<br>Northern Corn Rootworm Beetle (Adult)<br>Southern Corn Rootworm Beetle (Adult)<br>Mexican Corn Rootworm Beetle (Adult)<br>Bean Leaf Beetle<br>Cereal Leaf Beetle<br>Japanese Beetle (Adult)<br>Sap Beetle (Adult)<br>Seedcorn Beetle<br>Stink Bug species<br>Grasshopper species | 0.02–0.03   | 2.56–3.84 |
|   | Corn Leaf Aphid <sup>3</sup><br>Bird Cherry-Oat Aphid <sup>3</sup><br>English Grain Aphid <sup>3</sup>   |             |           |
|   | Mexican rice Borer <sup>1</sup><br>Rice Stalk Borer <sup>1</sup><br>Sugarcane Borer <sup>1</sup><br>Beet Armyworm <sup>4</sup><br>Southern Corn Leaf Beetle <sup>3</sup><br>Chinch Bug<br>Green Bug <sup>3,4</sup>   | 0.03        | 3.84      |

**Remarks**

- Apply as required by scouting, or locally prescribed corn growth stages, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds or other locally recommended methods.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of target location. When applying by air, apply in a minimum of 2 gals. of water/A.
- For chinch bug control, begin applications when bugs migrate from small grains or grass weeds to small corn. Direct spray to the base of corn plants. Repeat applications at 3-5-day intervals if needed. GRIZZLY™ Z Insecticide may only suppress heavy infestations and/or subsequent migrations.

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- For control of adult corn rootworm beetles (*Diabrotica* species) as part of an aerial applied corn rootworm control program use a minimum of 3.84 fl. oz./A (0.03 lb. a.i./A).
- Do not apply within 21 days of harvest.
- Do not allow livestock to graze in treated areas or harvest treated corn forage as feed for meat or dairy animals within 1 day after last treatment. Do not feed treated corn fodder or silage to meat or dairy animals within 21 days after last treatment.
- Do not apply more than 0.12 lb. a.i. (0.96 pts.)/A per crop from at plant and foliar applications.
- Do not apply more than 0.06 lb. a.i. (0.48 pts.) after silk initiation. Do not apply more than 0.03 lb. a.i. (0.24 pts.) after corn has reached the milk stage (yellow kernels with milky fluid).

<sup>1</sup>For control before the larva bores into the plant stalk or ear.

<sup>2</sup>Use higher rates for large larvae.

<sup>3</sup>Suppression only.

<sup>4</sup>See resistance statement under **General Directions for Use.**

| Crop                 | Target Pests  | Rate       |           |
|----------------------|---|------------|-----------|
|                      |   | lb. a.i./A | fl. oz./A |
| <b>CEREAL GRAINS</b> |   |            |           |
| Sweet Corn (Foliar)  | Corn Earworm<br>Armyworm <sup>1</sup><br>Fall Armyworm <sup>1</sup><br>Southern Armyworm <sup>1</sup><br>Beet Armyworm <sup>1,3</sup><br>Yellow-Striped Armyworm <sup>1</sup><br>Cutworm species<br>Western Bean Cutworm<br>Webworm species<br>European Corn Borer<br>Southwestern Corn Borer<br>Common Cornstalk Borer<br>Western Corn Rootworm Beetle (Adult)<br>Northern Corn Rootworm Beetle (Adult)<br>Southern Corn Rootworm Beetle (Adult) | 0.02–0.03  | 2.56–3.84 |
|                      | Mexican Corn Rootworm Beetle (Adult)<br>Japanese Beetle (Adult)<br>Sap Beetle (Adult)<br>Flea Beetle species<br>Tarnished Plant Bug<br>Stink Bug species<br>Chinch Bug<br>Aster Leafhopper<br>Grasshopper species<br>Aphid species <sup>2,3</sup><br>Spider Mite species <sup>2</sup>   |            |           |
|                      | Corn Silkfly (Adult) <sup>2</sup>   | 0.03       | 3.84      |

**Remarks**

- Apply as required by scouting, or locally prescribed corn growth stages, usually at intervals of 4 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds or other locally recommended methods and should be targeted for control before insects enter the stalk or ear.

- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of foliage and ears (if present). When applying by air, apply in a minimum of 2 gals. of water/A.
- For control of adult corn rootworm beetles (*Diabrotica* species) as part of an aerial applied corn rootworm control program use a minimum of 3.2 fl. oz./A (0.025 lb. a.i./A).
- Do not apply within 1 day of harvest.
- Do not allow livestock to graze in treated areas or harvest treated corn forage as feed for meat or dairy animals within 1 day after last treatment. Do not feed treated corn fodder or silage to meat or dairy animals within 21 days after last treatment.
- Do not apply more than 0.48 lb. a.i. (3.84 pts.)/A per crop from at plant and foliar applications.

<sup>1</sup>Use higher rates for large larvae.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use.**

| Crop                 | Target Pests   | Rate       |           |
|----------------------|--|------------|-----------|
|                      |  | lb. a.i./A | fl. oz./A |
| <b>CEREAL GRAINS</b> |  |            |           |
| Rice                 | True Armyworm<br>Fall Armyworm<br>Yellow-striped Armyworm<br>Rice Water Weevil (Adult)<br>Rice Stink Bug<br>Chinch Bug<br>Grasshopper species<br>Leafhopper species<br>Sharpshooter species<br>Bird Cherry-Oat Aphid<br>Yellow Sugarcane Aphid<br>Green Bug<br>Mexican Rice Borer <sup>1</sup><br>Rice Stalk Borer <sup>1</sup><br>Sugarcane Borer <sup>1</sup><br>European Corn Borer <sup>1</sup><br>Rice Seed Midge | 0.025-0.04 | 3.20-5.12 |

**Remarks**

- Apply as required by scouting. Timing and frequency of application should be based upon insect populations reaching locally determined economic thresholds. Determine the need for repeat applications, usually at intervals of 5-7 days, by scouting.
- Grizzly Z Insecticide can be safely used when propanil products are being used for weed control.
- Apply by air or by ground equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals of water (or a total carrier volume)/A but ensure sufficient volume is used to provide adequate coverage. In addition, adding an emulsifiable crop oil (e.g., 1 pt./A) when lower aerial application volumes are used is recommended to help improve coverage, reduce evaporation, and improve efficacy.
- For control of rice water weevil in dry seeded rice, make a foliar application as indicated by scouting for the presence of adults and/or feeding scars, usually within a time-frame of 0-5 days after permanent flood establishment. Do not exceed 10 days from starting permanent flood until insecticide application unless scouting indicates weevils have not been previously present. Adults may also be treated at later stages of rice development to reduce overwintering populations.
- For control of rice water weevil in water seeded rice, make the first foliar application after pinpoint flood as indicated by scouting for the presence of adults and/or feeding scars usually when rice has emerged 0.5 inch above the waterline. Under conditions of prolonged migration into the field, start field scouting for rice water weevil adults and/or feeding scars 3-5 days after the initial treatment and, if needed, apply a second application within 7-10 days of the first application. Adults may also be treated at later stages of rice development to reduce overwintering populations.

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- California: In addition to above directions for control of rice water weevil in water seeded rice Grizzly Z Insecticide may be applied at the 1-3 leaf growth stage, with the majority at the 2 leaf growth stage. Adults are vulnerable on levees and in the water. Larvae are vulnerable while feeding on the leaf prior to entering the soil. Monitor for adults, based upon field history and density of population. Monitor field edges and levee areas for adults. Treat in the following manner: a) spray the inside perimeter of the field, or b) spray the entire field.
- Green bug is known to have many biotypes. Grizzly Z Insecticide may only provide suppression. If satisfactory control is not achieved with the first application of Grizzly Z Insecticide, a resistant biotype may be present. Use alternate chemistry for control.
- Do not release flood water within 7 days of an application.
- Do not apply more than 0.12 lb. a.i. (0.96 pts.)/A per season.
- Do not apply more than 0.04 lb. a.i. (0.32 pts.)/A within 21 to 27 days of harvest.
- Do not apply within 21 days of harvest.
- Do not use treated rice fields for the aquaculture of edible fish and crustacea.
- Do not apply as an ultra-low volume (ULV) spray.

<sup>1</sup> For control before the larvae bores into the plant stalk.

| Crop                 | Target Pests  | Rate       |           |
|----------------------|---|------------|-----------|
|                      |   | lb. a.i./A | fl. oz./A |
| <b>CEREAL GRAINS</b> |   |            |           |
| Sorghum (Grain)      | Cutworm species<br>Sorghum Midge  | 0.015-0.02 | 1.92-2.56 |
|                      | Armyworm<br>Beet Armyworm <sup>3</sup><br>Fall Armyworm <sup>1</sup><br>Yellow-striped Armyworm <sup>1</sup><br>Corn Earworm<br>Webworm species<br>European Corn Borer <sup>2</sup><br>Southwestern Corn Borer <sup>2</sup><br>Lesser Cornstalk Borer <sup>2</sup><br>Flea Beetle species<br>Stink Bug species<br>Grasshopper species | 0.02-0.03  | 2.56-3.84 |
|                      | Mexican Rice Borer <sup>2</sup>   | 0.03       | 3.84      |
|                      | Rice Stalk Borer <sup>2</sup><br>Sugarcane Borer <sup>2</sup><br>Chinch Bug   |            |           |

#### Remarks

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of target location. When applying by air, apply in a minimum of 2 gals. of water/A.
- For sorghum midge control, begin applications when 25% of the sorghum heads have emerged and are in tip bloom. Repeat applications at 5-day intervals if needed.
- For chinch bug control, begin applications when bugs migrate from small grains or grass weeds to small sorghum. Direct spray to the base of sorghum plants. Repeat applications at 3-5-day intervals if needed. Grizzly Z Insecticide may only suppress heavy infestations and/or subsequent migrations.
- Do not apply more than 0.08 lb. a.i. (0.64 pts.)/A per season.
- Do not apply more than 0.06 lb. a.i. (0.48 pts.)/A per season after crop emergence.
- Do not apply more than 0.02 lb. a.i. (0.16 pts.)/A per season once crop is in soft dough stage.
- Do not apply within 30 days of harvest.

<sup>1</sup>Use higher rates for large larvae.

<sup>2</sup>For control before the larva bores into the plant stalk.



<sup>3</sup>See resistance statement under **General Directions for Use.**

| Crop                 | Target Pests                       | Rate        |           |
|----------------------|------------------------------------|-------------|-----------|
|                      |                                    | lb. a.i./A  | fl. oz./A |
| <b>CEREAL GRAINS</b> |                                    |             |           |
| Wheat                | Cutworm species                    | 0.015–0.025 | 1.92–3.20 |
| Wheat Hay            | Army Cutworm                       |             |           |
| Triticale            | Armyworm                           | 0.02–0.03   | 2.56–3.84 |
|                      | Fall Armyworm                      |             |           |
|                      | Yellow-striped Armyworm            |             |           |
|                      | Flea Beetle species                |             |           |
|                      | Cereal Leaf Beetle                 |             |           |
|                      | Stink Bug species                  |             |           |
|                      | English Grain Aphid <sup>1</sup>   |             |           |
|                      | Russian Wheat Aphid <sup>1</sup>   |             |           |
|                      | Bird Cherry-Oat Aphid <sup>1</sup> |             |           |
|                      | Grasshopper species                |             |           |
|                      | Hessian Fly <sup>4</sup>           |             |           |
|                      | Orange Blossom Wheat Midge         |             |           |
|                      | Grass Sawfly                       | 0.025–0.03  | 3.20–3.84 |
|                      | Chinch Bug                         | 0.03        | 3.84      |
|                      | Greenbug <sup>1,3</sup>            |             |           |
|                      | Corn Leaf Aphid <sup>2</sup>       |             |           |
|                      | Mite species <sup>2</sup>          |             |           |

#### Remarks

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- For chinch bug control, repeat applications at 3-5-day intervals if needed. Grizzly Z Insecticide may only suppress heavy infestations and/or migrations.
- Greenbug is known to have many biotypes. Grizzly Z Insecticide may provide suppression only. In this situation, a second application using an alternative chemistry may be needed.
- **Do not** apply within 30 days of harvest.
- **Do not** allow livestock to graze in treated areas or harvest treated wheat forage as feed for meat or dairy animals within 7 days after treatment. **Do not** feed treated straw to meat or dairy animals within 30 days after the last treatment.
- Do not apply more than 0.06 lb. a.i. (0.48 pts.)/A per season.

<sup>1</sup>Best control is obtained before insects begin to roll leaves. Once wheat has started to boot, Grizzly Z Insecticide may provide suppression only. Higher rates and increased coverage will be necessary.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use.**

<sup>4</sup>Make applications when adults emerge.

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| Crop   | Target Pests   | Rate        |           |
|--|--|-------------|-----------|
|  |  | lb. a.i./A  | fl. oz./A |
| <b>COLE CROPS(Head and Stem Brassica)</b>  |  |             |           |
| Broccoli<br>Brussels Sprouts<br>Cabbage<br>Cavalo Broccoli<br>Cauliflower<br>Chinese Broccoli (gai lon)<br>Chinese Cabbage (napa)<br>Chinese Mustard<br>Cabbage (gai choy)<br>Kohlrabi | Alfalfa Looper<br>Cabbage Looper<br>Imported Cabbageworm<br>Southern Cabbageworm<br>Cutworm species<br>Cabbage Webworm   | 0.015-0.025 | 1.92-3.20 |
|  | Diamondback Moth <sup>3</sup><br>Armyworm<br>Beet Armyworm <sup>1,3</sup><br>Fall Armyworm <sup>1</sup><br>Yellow-striped Armyworm<br>Corn Earworm<br>Flea Beetle species<br>Japanese Beetle (Adult)<br>Vegetable Weevil (Adult)<br>Grasshopper species<br>Leafhopper species<br>Plant Bug species<br>including Lygus species <sup>3</sup><br>Stink Bug species<br>Meadow Spittlebug<br>Aphid species <sup>2,3</sup><br>Whitefly species <sup>2,3</sup><br>Thrips species <sup>2</sup><br>Spider Mite species <sup>2</sup> | 0.02-0.03   | 2.56-3.84 |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- Do not apply within 1 day of harvest.
- Do not apply more than 0.24 lb. a.i. (1.92 pts./A) per season.

<sup>1</sup>For control of first and second instar only.<sup>2</sup>Suppression only.<sup>3</sup>See resistance statement under **General Directions for Use.**

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| Crop   | Target Pests  | Rate       |           |
|--------|---|------------|-----------|
|        |   | lb. a.i./A | fl. oz./A |
| COTTON | Cutworm species<br>Tobacco Thrips<br>Soybean Thrips   | 0.015–0.02 | 1.92–2.56 |
|        | Lygus Bug species <sup>3</sup><br>Pink Bollworm<br>Cabbage Looper<br>Cotton Leafperforator<br>Saltmarsh Caterpillar<br>Cotton Leafworm<br>Cotton Fleahopper   | 0.02–0.03  | 2.56–3.84 |
|        | Cotton Bollworm<br>Tobacco Budworm <sup>3</sup><br>Boll Weevil<br>Fall Armyworm<br>Beet Armyworm <sup>1,3</sup><br>European Corn Borer<br>Brown Stink Bug<br>Green Stink Bug<br>Southern Green Stink Bug<br>Twospotted Spider Mite <sup>2</sup><br>Cotton Aphid <sup>2,3</sup><br>Bandedwing Whitefly <sup>2,3</sup><br>Sweetpotato Whitefly <sup>2,3</sup> | 0.025–0.04 | 3.20–5.12 |

**Remarks**

- Apply as required by scouting, usually at intervals of 5-7 days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
  - Apply with ground or air equipment using sufficient water to obtain full coverage of foliage.
  - Applications may also be made with equipment adapted and calibrated for ULV sprays. Grizzly Z Insecticide may be mixed with once-refined vegetable oil and applied in a minimum of at least one qt. of finished spray/A.
  - Under light bollworm/budworm infestation levels, 0.02 lb. a.i./A may be applied in conjunction with intense field monitoring.
  - For boll weevil control spray on a 3-5 day schedule.
  - When applied according to label directions for control of cotton bollworm and tobacco budworm, Grizzly Z Insecticide also provides ovicidal control of unhatched Heliothine species eggs.
  - Do not apply within 21 days of harvest.
  - Do not graze livestock in treated areas.
  - Do not apply more than 1.6 pts. (0.2 lb. a.i./A) per season.
  - Do not make more than a total of 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season. Synthetic pyrethroid products include Ammo® Insecticide, Asana® XL Insecticide, Baythroid® Emulsifiable Pyrethroid Insecticide, Capture® Insecticide/Miticide, Danitol® 2.4 EC Spray Insecticide/Miticide, Decis® Insecticide, Fury™ Insecticide, Karate® Insecticide, Karate® Insecticide with Zeon™ Technology, Mustang® Insecticide, Scout X-TRA® Insecticide, Grizzly Z Insecticide, Warrior® Insecticide and Warrior Insecticide with Zeon™ Technology.
- <sup>1</sup>For control of first and second instar only.  
<sup>2</sup>Suppression only.  
<sup>3</sup>See resistance statement under **General Directions for Use.**

| Crop   | Target Pests  | Rate        |           |
|--|---|-------------|-----------|
|  |   | lb. a.i./A  | fl. oz./A |
| <b>FRUITING VEGETABLES</b>   |   |             |           |
| Tomato<br>Tomatillo<br>Peppers (bell and nonbell)<br>Eggplant<br>Ground cherry<br>Pepino | Cabbage Looper<br>Cutworm species<br>Hornworm species   | 0.015–0.025 | 1.92–3.20 |
|  | Tomato Fruitworm<br>Tobacco Budworm <sup>3</sup><br>Tomato Pinworm<br>Beet Armyworm <sup>1,3</sup><br>Southern Armyworm <sup>1</sup><br>Yellow-striped Armyworm <sup>1</sup><br>Fall Armyworm <sup>1</sup><br>European Corn Borer <sup>4</sup><br>Leafminer species <sup>2</sup><br>Colorado Potato Beetle <sup>3</sup><br>Flea Beetle species<br>Grasshopper species<br>Leafhopper species<br>Aphid species <sup>2,3</sup><br>Whitefly species <sup>2,3</sup><br>Meadow Spittlebug<br>Stink Bug species<br>Plant Bug species<br>Stalk Borer <sup>4</sup><br>Blister Beetle species<br>Japanese Beetle (Adult)<br>Pepper Weevil (Adult) <sup>2</sup><br>Vegetable Weevil (Adult)<br>Tomato Psyllid <sup>2,3</sup><br>Spider Mite species <sup>2</sup><br>Thrips <sup>5</sup><br>Cucumber Beetle species (Adult) | 0.02–0.03   | 2.56–3.84 |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- Do not apply within 5 days of harvest.
- Do not apply more than 0.36 lb. a.i. (2.88 pts.)/A per season.

<sup>1</sup>For control of first and second instar only.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use**.

<sup>4</sup>For control before the larva bores into the plant stalk or fruit.

<sup>5</sup>Does not include Western Flower Thrips.

| Crop   | Target Pests   | Rate        |           |
|--|--|-------------|-----------|
|  |  | lb. a.i./A  | fl. oz./A |
| <b>LEGUME VEGETABLES (Beans and Peas)</b>  |  |             |           |
| Edible Podded (Only)   | Cutworm species<br>Green Cloverworm<br>Imported Cabbageworm  | 0.015-0.025 | 1.92-3.20 |
| <i>Canavalia gladiata</i><br>- sword bean  | Saltmarsh Caterpillar<br>Velvetleaf Caterpillar<br>Mexican Bean Beetle   |             |           |
| <i>Canavalia ensiformis</i><br>- jackbean  |  |             |           |
| <i>Glycine max</i><br>- Soybean<br>(immature seed)   | Corn Earworm<br>Painted Lady Butterfly (Larva)<br>European Corn Borer<br>Looper Species<br>Western Bean Cutworm<br>Tobacco Budworm <sup>4</sup><br>Armyworm <sup>2</sup><br>Fall Armyworm <sup>2</sup><br>Yellow-Striped Armyworm <sup>2</sup><br>Western Yellow-Striped Armyworm <sup>2</sup>   | 0.02-0.03   | 2.56-3.84 |
| Edible Podded,<br>Succulent Shelled or<br>Dried Shelled  | Bean Leafskeletonizer<br>Webworm species<br>Leaf-tier species<br>Alfalfa Caterpillar<br>Stalk Borer <sup>1</sup><br>Cucumber Beetle species (Adult)<br>Corn Rootworm Beetle species (Adult)<br>Flea Beetle species (Adult)<br>Curculio and Weevil species <sup>1</sup> (foliage and pod feeding adults and larvae)<br>Blister Beetle species<br>Bean Leaf Beetle |             |           |
| <i>Phaseolus</i><br>species -<br>includes: field,<br>kidney, lima, navy,<br>pinto, runner,<br>snap, tepary and<br>wax beans  |  |             |           |
| <i>Vigna</i> species -<br>includes: adzuki,<br>asparagus, moth,<br>mung, rice, urd<br>and yardlong<br>beans, black-eye<br>pea, catjang,<br>Chinese<br>longbean,<br>cowpea, Crowder<br>pea, and Southern<br>pea | Japanese Beetle (Adult)<br>Leafhopper species<br>Flea Hopper species<br>Three-Cornered Alfalfa Hopper<br>Meadow Spittlebug<br>Stink Bug species<br>Plant Bug species Including Lygus species <sup>4</sup>  |             |           |
| <i>Pisum</i> species -<br>includes: dwarf,<br>edible-pod,<br>English, field,<br>garden, green,<br>snow and sugar<br>snap peas  | Grasshopper species<br>Thrips species <sup>4,5</sup><br>Aphid species <sup>4</sup>   |             |           |
| <i>Cajanus cajan</i> -<br>Pigeon pea   |  |             |           |

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| Crop   | Target Pests                        | Rate       |           |
|--|-------------------------------------|------------|-----------|
|  |                                     | lb. a.i./A | fl. oz./A |
| <b>LEGUME VEGETABLES (Beans and Peas)</b>                                      |                                     |            |           |
| (continued)  | Beet Armyworm <sup>3,4</sup>        | 0.03       | 3.84      |
| Succulent Shelled or Dried Shelled   | Soybean Looper <sup>3,4</sup>       |            |           |
|  | Lesser Cornstalk Borer <sup>3</sup> |            |           |
|  | Leafminer species <sup>3,4</sup>    |            |           |
| <i>Vicia faba.</i> – broadbean (favabean)                                      | Whitefly species <sup>3,4</sup>     |            |           |
|  | Spider Mite species <sup>3</sup>    |            |           |
| Dried Shelled (Only)   |                                     |            |           |
| <i>Lupinus</i> species – includes: grain, sweet, white and sweet white lupines |                                     |            |           |
| <i>Cicer arietinum</i> – chickpea (garbanzo bean)                              |                                     |            |           |
| <i>Cyamopsis tetragonoloba</i> – guar  |                                     |            |           |
| <i>Lablab purpureus</i> – Lablab bean (hyacinth bean)                          |                                     |            |           |
| <i>Lens esculata</i> – Lentils   |                                     |            |           |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- For edible podded and succulent shelled legume vegetables, do not apply within 7 days of harvest.
- For dried shelled legume vegetables, do not apply within 21 days of harvest.
- Do not apply more than 0.12 lb .a.i. (0.96 pts.)/A per season.
- For succulent and dried shelled peas and beans, do not graze livestock in treated areas or harvest vines for forage or hay.

<sup>1</sup>For control before the larva bores into the plant stalk or pods.

<sup>2</sup>Use higher rates for large larvae.

<sup>3</sup>For suppression only.

<sup>4</sup>See resistance statement under **General Directions for Use.**

<sup>5</sup> Does not include Western Flower Thrips.

| Crop                                 | Target Pests                          | Rate        |           |
|--------------------------------------|---------------------------------------|-------------|-----------|
|                                      |                                       | lb. a.i./A  | fl. oz./A |
| <b>LEGUME VEGETABLES (SOYBEANS)</b>  |                                       |             |           |
| Soybean                              | Corn Earworm                          | 0.015–0.025 | 1.92–3.20 |
|                                      | Velvetbean Caterpillar                |             |           |
|                                      | Green Cloverworm                      |             |           |
|                                      | Cabbage Looper                        |             |           |
|                                      | Painted Lady (Thistle) Caterpillar    |             |           |
|                                      | Saltmarsh Caterpillar                 |             |           |
|                                      | Woollybear Caterpillar                |             |           |
|                                      | Cutworm species                       |             |           |
|                                      | Bean Leaf Beetle                      |             |           |
|                                      | Mexican Bean Beetle                   |             |           |
|                                      | Western Corn Rootworm Beetle (Adult)  |             |           |
|                                      | Northern Corn Rootworm Beetle (Adult) |             |           |
|                                      | Southern Corn Rootworm Beetle (Adult) |             |           |
|                                      | Mexican Corn Rootworm Beetle (Adult)  |             |           |
|                                      | Three-Cornered Alfalfa Hopper         |             |           |
|                                      | Potato Leafhopper                     |             |           |
| Thrips species <sup>5</sup>          |                                       |             |           |
| Soybean Aphid <sup>4</sup>           |                                       |             |           |
| Armyworm <sup>1</sup>                | 0.025–0.03                            | 3.20–3.84   |           |
| Fall Armyworm <sup>1</sup>           |                                       |             |           |
| Yellow-striped Armyworm <sup>1</sup> |                                       |             |           |
| Tobacco Budworm <sup>3</sup>         |                                       |             |           |
| Webworm species                      |                                       |             |           |
| European Corn Borer                  |                                       |             |           |
| Silverspotted Skipper                |                                       |             |           |
| Japanese Beetle (Adult)              |                                       |             |           |
| Blister Beetle species               |                                       |             |           |
| Stink Bug species                    |                                       |             |           |
| Plant Bug species                    | 0.03                                  | 3.84        |           |
| Grasshopper species                  |                                       |             |           |
| Beet Armyworm <sup>2,3</sup>         |                                       |             |           |
| Soybean Looper <sup>2,3</sup>        |                                       |             |           |
| Lesser Cornstalk Borer <sup>2</sup>  |                                       |             |           |
| Spider Mite species <sup>2</sup>     |                                       |             |           |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Do not graze or harvest treated soybean forage, straw or hay for livestock feed.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- For control of adult corn rootworm beetles (*Diabrotica* species) as part of an aerial applied corn rootworm control program use a minimum of 2.56 fl. oz./A (0.02 lb. a.i./A).
- Do not apply within 30 days of harvest. Do not apply more than 0.06 lb. a.i. (0.48 pts./A) per season.

<sup>1</sup>Use higher rates for large larvae.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use**.

<sup>4</sup>Use lower rates for early season applications and/or lighter populations.

<sup>5</sup>Does not include Western Flower Thrips.

| Crop                    | Target Pests  | Rate        |           |
|-------------------------|---|-------------|-----------|
|                         |   | lb. a.i./A  | fl. oz./A |
| LETTUCE (HEAD AND LEAF) | Alfalfa Looper<br>Cabbage Looper<br>Imported Cabbageworm<br>Cutworm species<br>Saltmarsh Caterpillar<br>Green Cloverworm  | 0.015-0.025 | 1.92-3.20 |
|                         | Diamondback Moth <sup>3</sup><br>Armyworm<br>Beet Armyworm <sup>1,3</sup><br>Fall Armyworm <sup>1</sup><br>Southern Armyworm<br>Corn Earworm<br>Tobacco Budworm <sup>3</sup><br>European Corn Borer<br>Flea Beetle species<br>Japanese Beetle (Adult)<br>Vegetable Weevil (Adult)<br>Grasshopper species<br>Leafhopper species<br>Plant Bug species including Lygus species <sup>3</sup><br>Stink Bug species<br>Meadow Spittlebug<br>Aphid species <sup>2,3</sup><br>Whitefly species <sup>2,3</sup><br>Spider Mite species <sup>2</sup> | 0.02-0.03   | 2.56-3.84 |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- Do not apply within 1 day of harvest.
- Do not apply more than 0.3 lb. a.i. (2.4 pts./A) per season.

<sup>1</sup>For control of first and second instar only.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use**.



| Crop                           | Target Pests  | Rate        |           |
|--------------------------------|---|-------------|-----------|
|                                |   | lb. a.i./A  | fl. oz./A |
| <b>ONION (BULB) AND GARLIC</b> |   |             |           |
|                                | Cutworm species<br>Seedcorn Maggot (Adult)<br>Onion Maggot (Adult)<br>Leafminer species (Adult)   | 0.015–0.025 | 1.92–3.20 |
|                                | Armyworm species <sup>1</sup><br>Onion Thrips <sup>3</sup><br>Tobacco Thrips <sup>3</sup><br>Western Flower Thrips <sup>2,3</sup><br>Flower Thrips <sup>2,3</sup><br>Aphid species <sup>2</sup><br>Plant Bug species<br>Stink Bug species | 0.02–0.03   | 2.56–3.84 |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Use the higher label rates as thrips population increases and avoid rescue situations.
- Apply with ground or air equipment using sufficient water and application methods to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- For thrips control by aerial application, the addition of 1% COC v/v, 1/4% NIS v/v or a silicone adjuvant (follow manufacturers use directions) may enhance the deposition of the spray and increase plant coverage.
- Do not apply within 14 days of harvest. Do not apply more than 0.24 lb. a.i. (1.92 pts./A) per season.

<sup>1</sup>For control of the first and second instar only.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use.**

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| Crop   | Target Pests  | Rate        |           |
|--------|---|-------------|-----------|
|        |   | lb. a.i./A  | fl. oz./A |
| PEANUT |   |             |           |
|        | Cutworm species<br>Green Cloverworm<br>Velvetbean Caterpillar<br>Red-necked Peanut Worm<br>Potato Leafhopper<br>Three Cornered Alfalfa Hopper   | 0.015-0.025 | 1.92-3.20 |
|        | Corn Earworm<br>Fall Armyworm <sup>1</sup><br>Bean Leaf Beetle<br>Southern Corn Rootworm (Adult)<br>Vegetable Weevil<br>Whitefringed Beetle (Adult)<br>Stink Bug species<br>Tobacco Thrips<br>Grasshopper species | 0.02-0.03   | 2.56-3.84 |
|        | Beet Armyworm <sup>2,3</sup><br>Soybean Looper <sup>2,3</sup><br>Lesser Cornstalk Borer <sup>2</sup><br>Spider Mite species <sup>2</sup><br>Aphid species <sup>2</sup>  | 0.03        | 3.84      |

**Remarks**

- Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- Do not apply within 14 days of harvest.
- Do not apply more than 0.12 lb. a.i. (0.96 pts./A) per season.

<sup>1</sup>Use higher rates for large larvae.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use.**

| Crop               | Target Pests                             | Rate       |           |
|--------------------|--|------------|-----------|
|                    |  | lb. a.i./A | fl. oz./A |
| <b>POME FRUITS</b> |  |            |           |
| Apple              | Leafroller species                       | 0.02-0.04  | 2.56-5.12 |
| Crabapple          | Omnivorous Leafroller                    |            |           |
| Loquat             | Codling Moth                             |            |           |
| Mayhaw             | Orange Tortrix                           |            |           |
| Oriental Pear      | Tufted Apple Budworm                     |            |           |
| Pear               | Oriental Fruit Moth                      |            |           |
| Quince             | Lesser Appleworm                         |            |           |
|                    | Green Fruitworm                          |            |           |
|                    | Tent Caterpillar species                 |            |           |
|                    | Webworm species                          |            |           |
|                    | Tentiform Leaf Miner species             |            |           |
|                    | Apple Maggot (Adult)                     |            |           |
|                    | Cherry Fruit Fly species (Adult)         |            |           |
|                    | Pear Sawfly                              |            |           |
|                    | Stink Bug species                        |            |           |
|                    | Leafhopper species                       |            |           |
|                    | Plum Curculio                            |            |           |
|                    | Japanese Beetle                          |            |           |
|                    | Tree Borer species                       |            |           |
|                    | Plant Bug species                        |            |           |
|                    | Periodical Cicada                        |            |           |
|                    | Apple Aphid                              |            |           |
|                    | Rosy Apple Aphid                         |            |           |
|                    | Spirea Aphid <sup>1</sup>                |            |           |
|                    | Pear Psylla <sup>1</sup>                 |            |           |
|                    | San Jose Scale (fruit infestations only) |            |           |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds and IPM recommendations.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage or target area. When applying by air, apply in a minimum of 5 gals. of water/per acre, but use higher volumes as appropriate for thorough coverage.
- Do not apply within 21 days of harvest.
- Do not apply more than 0.2 lb. a.i. (1.6 pts.)/A per year. Do not apply more than 0.16 lb. a.i. (1.28 pts.)/A per year post bloom.

<sup>1</sup>Suppression only

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| Crop                  | Target Pests                     | Rate       |           |
|-----------------------|----------------------------------|------------|-----------|
|                       |                                  | lb. a.i./A | fl. oz./A |
| <b>STONE FRUITS</b>   |                                  |            |           |
| Apricot               | Leafroller species               | 0.02-0.04  | 2.56-5.12 |
| Sweet and Tart Cherry | Peach Twig Borer                 |            |           |
| Nectarine             | Oriental Fruit Moth              |            |           |
| Peach                 | Peachtree Borer species          |            |           |
| Plum                  | Green Fruitworm                  |            |           |
| Chickasaw Plum        | Tent Caterpillar species         |            |           |
| Damson Plum           | Codling Moth                     |            |           |
| Japanese Plum         | American Plum Borer              |            |           |
| Plumcot               | Apple Maggot (Adult)             |            |           |
| Prune                 | Cherry Fruit Fly species (Adult) |            |           |
|                       | Pear Sawfly                      |            |           |
|                       | Plum Curculio                    |            |           |
|                       | Rose Chafer                      |            |           |
|                       | Japanese Beetle                  |            |           |
|                       | June Beetle                      |            |           |
|                       | Plant Bug species                |            |           |
|                       | Stink Bug species                |            |           |
|                       | Leafhopper species               |            |           |
|                       | Thrips species                   |            |           |
|                       | Periodical Cicada                |            |           |
|                       | Black Cherry Aphid               |            |           |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold and IPM recommendations.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage or target area. When applying by air, apply a minimum of 5 gals. of water/per acre, but use higher volumes as appropriate for thorough coverage.
- Do not apply within 14 days of harvest.
- Do not apply more than 0.2 lb. a.i. (1.6 pts.)/A per year. Do not apply more than 0.16 lb. a.i. (1.28 pts.)/A per year post bloom.

| Crop             | Target Pest                           | Rate       |           |
|------------------|---------------------------------------|------------|-----------|
|                  |                                       | lb. a.i./A | fl. oz./A |
| <b>SUGARCANE</b> |                                       |            |           |
|                  | Mexican Rice Borer <sup>1</sup>       | 0.025-0.04 | 3.20-5.12 |
|                  | Sugarcane Borer <sup>1</sup>          |            |           |
|                  | Rice Stalk Borer <sup>1</sup>         |            |           |
|                  | Sugarcane Beetle (Adult) <sup>2</sup> |            |           |
|                  | Sugarcane Aphid <sup>3</sup>          |            |           |
|                  | Yellow Sugarcane Aphid <sup>3</sup>   |            |           |
|                  | West Indian Crane fly                 |            |           |
|                  | Pygmy Mole Cricket                    |            |           |

**Remarks**

- Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage or target area. When applying by air, apply a minimum of 2 gals. of water/A.
- Do not apply within 21 days of harvest.
- Do not apply more than 0.16 lb. a.i. (1.28 pts.)/A per season.

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<sup>1</sup>For control before the larva bores into the plant stalk.

<sup>2</sup>Suppression only of beetles active above ground.

<sup>3</sup>See resistance statement under **General Directions for Use.**

| Crop      | Target Pests   | Rate        |           |
|-----------|--|-------------|-----------|
|           |  | lb. a.i./A  | fl. oz./A |
| SUNFLOWER |  |             |           |
|           | Sunflower Beetle<br>Cutworm species  | 0.015–0.025 | 1.92–3.20 |
|           | Sunflower Moth<br>Banded Sunflower Moth<br>Fall Armyworm <sup>1</sup><br>Woollybear Caterpillar<br>Spotted Cabbage Looper<br>Painted Lady (Thistle) Caterpillar<br>Seed Weevil (Adult)<br>Stem Weevil (Adult)<br>Head-Clipper Weevil (Adult)<br>Japanese Beetle (Adult)<br>Sunflower Maggot (Adult)<br>Leafhopper species<br>Meadow Spittlebug<br>Stink Bug species<br>Grasshopper species | 0.02–0.03   | 2.56–3.84 |
|           | Beet Armyworm <sup>2,3</sup><br>Spider Mite species <sup>2</sup>   | 0.03        | 3.84      |

#### Remarks

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
- Apply with ground or air equipment using sufficient water to obtain full coverage of sunflower heads and/or foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- Do not apply within 45 days of harvest.
- Do not apply more than 0.12 lb. a.i. (0.96 pts./A) per season. Do not apply more than 0.09 lb. a.i. (0.72 pts./A) per season after bloom initiation.
- Do not apply as an ultra-low volume (ULV) spray.

<sup>1</sup>Use higher rates for large larvae.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use.**

| Crop    | Target Pests   | Rate       |           |
|---------|--|------------|-----------|
|         |  | lb. a.i./A | fl. oz./A |
| TOBACCO | Tobacco Hornworm<br>Tomato Hornworm<br>Cabbage Looper<br>Corn Earworm<br>Cutworm species<br><br>Tobacco Budworm <sup>2</sup><br>Salt Marsh Caterpillar<br>Armyworm species <sup>1</sup><br>Webworm species<br>Potato Tuberworm<br>Tobacco Flea Beetle (Adult)<br>Cucumber Beetle species (Adult)<br>Blister Beetle species<br>Vegetable Weevil (Adult)<br>Japanese Beetle (Adult)<br>Grasshopper species<br>Tree Cricket species<br>Katydid species<br>Plant Bug species <sup>3</sup><br>Stinkbug species<br>Tobacco Thrips species <sup>2</sup><br>Tobacco Aphid species <sup>2,3</sup> | 0.015–0.03 | 1.92–3.84 |

**Remarks**

- Apply as required by scouting, usually at intervals of 7 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage. When applying by air, apply in a minimum of 2 gals. of water/A.
- Do not apply within 40 days of harvest.
- Do not apply more than 0.09 lb. a.i. (0.72 pts./A) per year.

<sup>1</sup>For control of first and second instars only.

<sup>2</sup>Suppression only.

<sup>3</sup>See resistance statement under **General Directions for Use.**

| Crop                      | Target Pests                    | Rate       |           |
|---------------------------|---------------------------------|------------|-----------|
|                           |                                 | lb. a.i./A | fl. oz./A |
| <b>TREE NUTS</b>          |                                 |            |           |
| Almond                    | Leafroller species              | 0.02-0.04  | 2.56-5.12 |
| Beech Nut                 | Navel Orangeworm                |            |           |
| Brazil Nut                | Codling Moth                    |            |           |
| Butternut                 | Filbertworm                     |            |           |
| Cashew                    | Peach Twig Borer                |            |           |
| Chestnut                  | Walnut Husk Fly species (Adult) |            |           |
| Chinquapin                | Ants                            |            |           |
| Filbert (Hazlenut)        | Plant Bug species               |            |           |
| Hickory Nut               | Stink Bug species               |            |           |
| Macadamia Nut (Bush Nut)  | Chinch Bug                      |            |           |
| Walnut, Black             | Leaffooted Bug                  |            |           |
| Walnut, English (Persian) | Walnut Aphid                    |            |           |
| Pecan                     | Hickory Shuckworm               | 0.02-0.04  | 2.56-5.12 |
|                           | Pecan Casebearer species        |            |           |
|                           | Pecan Weevil                    |            |           |
|                           | Pecan Aphid species             |            |           |
|                           | Pecan Spittlebug                |            |           |
|                           | Stink Bug species               |            |           |
|                           | Pecan Phylloxera species        |            |           |

**Remarks**

- Apply as required by scouting, usually at intervals of 5 or more days. Timing and frequency of applications should be based upon insect populations reaching locally determined economic threshold.
- Apply with ground or air equipment using sufficient water to obtain full coverage of the foliage or target area. When applying by air, apply in a minimum of 5 gals. of water/per acre, but use higher rates as appropriate for thorough coverage.
- Do not apply within 14 days of harvest.
- ~~Do not apply more than 0.16 lb. a.i. (1.28 pts.)/A per year. Do not apply more than 0.12 lb. a.i. (0.96 pts.)/A per year post bloom.~~

| NON-AGRICULTURAL USES              |                          |            |           |
|------------------------------------|--------------------------|------------|-----------|
| Crop                               | Target Pests             | Rate       |           |
|                                    |                          | lb. a.i./A | fl. oz./A |
| <b>CONIFER AND DECIDUOUS TREES</b> |                          |            |           |
| Plantations and Nurseries          | Pine Tip Moth species    | 0.02-0.04  | 2.56-5.12 |
|                                    | Spruce Budworm           |            |           |
|                                    | Bagworm                  |            |           |
|                                    | Tent Caterpillar species |            |           |
|                                    | Leafroller species       |            |           |
|                                    | Gypsy Moth               |            |           |
|                                    | Webworm species          |            |           |
|                                    | Tussock Moth species     |            |           |
|                                    | Birch Leafminer          |            |           |
|                                    | Pine Sawfly species      |            |           |
|                                    | Sawfly species           |            |           |
|                                    | Pine Chafer              |            |           |
|                                    | Japanese Beetle          |            |           |
|                                    | May Beetle species       |            |           |
|                                    | June Beetle species      |            |           |
|                                    | Pine Colaspis Beetle     |            |           |
|                                    | European Elm Bark Beetle |            |           |
|                                    | Leaf Beetle species      |            |           |
|                                    | Elm Leaf Beetle          |            |           |
|                                    | Pales Weevil             |            |           |
|                                    | Pine Weevil species      |            |           |
|                                    | Black Pine Weevil        |            |           |
|                                    | Pine Conelet Bug         |            |           |
| Spittlebug species                 |                          |            |           |
| Pine Leaf Chermid                  |                          |            |           |
| Balsam Woolly Aphid                |                          |            |           |
| Balsam Twig Aphid                  |                          |            |           |
| Poplar Aphid species               |                          |            |           |
| Pine Tortoise Scale                |                          |            |           |
| Pine Needle Scale                  |                          |            |           |
| Mealybug species <sup>1</sup>      |                          |            |           |

**Remarks**

- To control exposed foliage, flower, cone, seed and bark feeding insects, apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.
  - Apply with ground equipment using sufficient water to obtain full coverage of target site. When applying by air, apply a minimum of 2 gals. of water/A.
  - Do not apply more than 0.24 lb. a.i. (1.92 pts./A) per year.
- <sup>1</sup>Suppression only.



| Crop                               | Target Pest  | Rate        |             |
|------------------------------------|--|-------------|-------------|
|                                    |  | lb. a.i./A  | fl.oz./A    |
| <b>CONIFER AND DECIDUOUS TREES</b> |  |             |             |
| Seed Orchards                      | Coneworm species<br>Seed Bug species<br>Thrips species | See Remarks | See Remarks |

**Remarks**

- For high volume sprayers, dilute 5.12 fl. oz. per 100 gals. of water and apply 5-10 gals. of finished spray per tree.
- For low volume sprayers, dilute 20 fl. oz. per 100 gals. of water and apply 100 gals. of finished spray/A.
- For aerial applications, apply 15 fl. oz./A in a minimum of 10 gals. finish spray/A.
- Do not apply more than 0.5 lb. a.i. (4 pts./A) per year.

| Crop  | Target Pest  | Rates            |                     |
|---|--|------------------|---------------------|
|   |  | lb. a.i./A       | fl. oz./A           |
| <b>NON-CROPLAND (EXCLUDING PUBLIC LAND)</b> |  |                  |                     |
|   | See Crop Outlets on this GRIZZLY™<br>Z INSECTICIDE label for target pest<br>and rates. | See Crop Outlets | See Crop<br>Outlets |

**Remarks**

- Spray non-cropland adjacent to agricultural areas to control migratory insects, which may threaten crops.
- Follow General Use Directions, rates and spray recommendations found elsewhere in this label for the adjacent crop outlet and target pests.
- Use highest labeled rates for dense/large foliage, high insect populations and larger larval stages.
- Repeat as necessary to maintain control.
- Do not exceed 0.2 lb. a.i. (1.6 pts./A) per year.
- Do not graze livestock in treated areas.

**Rate Conversion Chart**

| lb. a.i./A | fl. oz./A | pts./A | Treated Acres/gal. |
|------------|-----------|--------|--------------------|
| 0.015      | 1.92      | 0.12   | 66                 |
| 0.02       | 2.56      | 0.16   | 50                 |
| 0.025      | 3.20      | 0.20   | 40                 |
| 0.03       | 3.84      | 0.24   | 33                 |
| 0.04       | 5.12      | 0.32   | 25                 |

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