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10182-414

3/25/98

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



U S ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H750b-C)
401 "M" St. S.W.
Washington, D.C. 20460

EPA Reg
Number

10182-414

Date of Issuance

MAR 25 1998

NOTICE OF PESTICIDE

☒ Registration
☐ Reregistration

(under FIFRA as amended)

Term of Issuance Conditional

Name of Pesticide Product

Karate® Z Insecticide

Name and Address of Registrant (include ZIP Code)

Zeneca Ag Products
1800 Concord Pike
P O Box 15458
Wilmington, DE 19850-5458

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment the Administrator on his motion may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec 3(c)(7)(A) which is contingent upon the terms and conditions stipulated in our letter of May 19, 1997 regarding the preliminary acceptance of the conditional registration of the above mentioned product.

Therefore in accordance with FIFRA Section 3(c)(7)(B)(C) the conditional registration of the subject product is granted for a period not to exceed November 15, 2000.

You understand that this registration will expire on November 15, 2000. You understand also that it is EPA's intent to, by November 15, 2000 or sooner, complete its review of all relevant data and other information, and to make FIFRA 3(c)(5) or other appropriate regulatory decisions for cotton and other crop use of synthetic pyrethroids based on EPA's review of such data/information and the statutory and regulatory criteria for such decisions.

Make the following label change prior to release for shipment of product:

1 Under General Directions for Use add general instructions for use of ground and air equipment such as those specified on the label of 10182-434.

Signature of Approving Official

Date:

SYMBOL

SURNAME

DATE

CONCURRENCES

George T. LaRocca Product Manager

Insecticide Branch, Registration Division (7505C)

EPA Form 8570-6

EPA Form 1320-1A (1/90)

Printed on Recycled Paper

OFFICIAL FILE COPY
U.S. GPO: 1994-522-503/82065

Page Two
EPA Reg. No. 10182-414

The confidential statement of formulation (CSF) submitted with your letter of August 12, 1997 for the alternate formulation as acceptable. A copy has been inserted in the subject file.

Submit two copies of your final printed labeling before you release the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

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

Enclosure

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SHAKE WELL BEFORE USING

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

KARATE® Z
Insecticide

COMPLETE DIRECTIONS FOR USE

ACCEPTED
with COMMENTS
in EPA Letter Dated

MAR 25 1998

EPA Reg No 10182
EPA Est No 10182-

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg No.

10182-414

Made in U.S.A.
ZENECA Ag Products
ZENECA Inc
Wilmington, DE 19850-5458

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ZENECA or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold ZENECA and Seller harmless for any claims relating to such factors.

ZENECA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or ZENECA, and Buyer and User assume the risk of any such use. ZENECA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall ZENECA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ZENECA 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 ZENECA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

ZENECA and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of ZENECA.

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)

ACTIVE INGREDIENT:

Lambda-cyhalothrin

[1 α (S*),3 α (Z)]-(\pm)-cyano-(3-phenoxyphenyl)methyl-
3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-
dimethylcyclopropanecarboxylate

22.8%

INERT INGREDIENTS:

77.2%

Total

100.0%

KARATE Z contains 2.08 pounds of active ingredient per gallon and is a capsule suspension
Contains petroleum distillates

STATEMENT OF PRACTICAL TREATMENT

IF ON SKIN: Wash with plenty of soap and water. Get medical attention if irritation persists.

IF SWALLOWED: Do not induce vomiting. Call a physician immediately.

~~IF INHALED: Remove victim to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. Get medical attention.~~

IF IN EYES: Hold eyelids open and flush with steady, gentle stream of water. Remove any contact lenses and repeat flushing procedure for several minutes. Get medical attention if irritation persists.

NOTE TO PHYSICIAN: Induced vomiting as first aid for this substance may result in increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent. Vomiting should be induced only under professional supervision.

FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE, CALL 1-800-F-A-S-T-M-E-D
(327-8633).

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

~~MAY BE FATAL IF SWALLOWED HARMFUL IF INHALED AVOID BREATHING SPRAY MIST
REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE CAUSES EYE INJURY
HARMFUL IF ABSORBED THROUGH SKIN MAY CAUSE ALLERGIC SKIN REACTIONS Avoid
contact with skin, eyes, or clothing Wash thoroughly with soap and water after handling~~

~~May be fatal is swallowed. Harmful if absorbed through skin. Causes moderate eye irritation.
Avoid contact with eyes, skin or clothing. Prolonged or frequently repeated skin contact may
cause allergic reaction in some individuals. 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 hours after exposure and may last 2 to 30 hours, without damage. Wash exposed areas once with soap and water. Relief from the skin sensation may be obtained by applying an oil-based cream.

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 G 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 or viton ≥ 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 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 if bees are visiting the treatment area.

PHYSICAL AND CHEMICAL HAZARDS

Combustible liquid. Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

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

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 over long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate or viton \geq 14 mils
- Chemical-resistant footwear Shoes plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

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STORAGE AND DISPOSAL

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

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

Metal Containers: Triple rinse (or equivalent); then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by State and local authorities.

Plastic Containers: Triple rinse (or equivalent); 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 BOOMERANG CONTAINERS

CONTAINER DISPOSAL: Return container to ZENECA Inc. for reuse with seal intact and in salable condition.

FOR BULK/MINI-BULK AND E-Z HANDLER® CONTAINERS

CONTAINER DISPOSAL

Plastic Containers: Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

CONTAINER PRECAUTIONS

Before refilling, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices.

REFILL ONLY WITH KARATE® Z INSECTICIDE. The contents of this container cannot be completely removed by cleaning. Refilling with materials other than KARATE Z Insecticide will result in contamination and may weaken container.

After filling and before transporting, check for leaks.

Do not refill or transport damaged or leaking container.

CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!

GENERAL DIRECTIONS FOR USE

Resistance Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state agricultural authorities 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 feet, or by air within 150 feet of lakes, reservoirs, rivers, permanent streams, marshes, pot holes, or natural ponds, estuaries and commercial fish farm ponds. Increase the buffer zone to 450 feet when ultralow 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 feet above the crop canopy should be avoided.
- Make aerial or ground applications when the wind velocity favors on-target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph.
- Risk of exposure to aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.
- Do not cultivate within 10 feet of the aquatic area so as to allow growth of a vegetative filter strip.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift to aquatic areas. Avoid spraying during conditions of low humidity and/or high temperature.
- Do not make aerial or ground applications during temperature inversions. 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.

TANKMIX APPLICATION

When tank mixing with any other agricultural products, always add KARATE 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 KARATE 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.

It is recommended that no types of non-emulsifiable oils be used in combination with KARATE Z Insecticide.

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

KARATE Z Insecticide is an aqueous based formulation. It is recommended that no type of non-emulsifiable oils be used in combination with KARATE 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), or 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 nonphytotoxic to the target crop.
3. Is compatible in mixture. (May be established through a jar test.)
4. Is supported locally for use with Karate 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 with Karate Z Insecticide as diluents or adjuvants:

Non-emulsifiable oils,
Diesel Fuel
Straight Mineral Oil

CHEMIGATION

SPRINKLER IRRIGATION APPLICATION

Apply KARATE 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 TANKMIX APPLICATION) rates and mixing instructions. These recommendations should be proven, through university and extension field trials, to be effective with KARATE 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 KARATE 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 KARATE 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 KARATE 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.

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USE PRECAUTIONS - SPRINKLER IRRIGATION APPLICATIONS

- 1 Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.
- 2 Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- 3 If you have any questions about calibration, you should contact State Extension Service Specialists, equipment manufacturers or other experts.
- 4 Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribes safety devices for public-water systems are in place.
- 5 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.
- 6 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 back-flow.
- 7 The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 8 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.
- 9 The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 10 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.
- 11 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 are capable of being fitted with a system interlock.
- 12 Any alternatives to the above required safety devices must conform to the list of EPA approved alternative devices.
- 13 Do not apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.
- 14 Do not apply through chemigation systems connected to public water systems.

Apply KARATE Z insecticide as shown in the following charts

SPRAY RECOMMENDATIONS

Crop	Target Pests	Rate		Remarks
		lb ai/A	fl oz/A	
Cotton	Cutworm Spp. Tobacco Thrips Soybean Thrips	0.015-0.02	0.96-1.28	<ul style="list-style-type: none">• Apply as required by scouting, usually at intervals of 5 to 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. KARATE Z may be mixed with once-refined vegetable oil and applied in a minimum of at least one quart of finished spray per acre.• Under light bollworm/budworm infestation levels, 0.02 lb ai/A may be applied in conjunction with intense field monitoring.• For boll weevil control spray on a 3 to 5 day schedule.• When applied according to label directions for control of cotton bollworm and tobacco budworm, KARATE Z Insecticide also provides ovicidal control of unhatched <i>Heliothis</i> spp. eggs.• Do not apply within 21 days of harvest.• Do not graze livestock in treated areas.• Do not apply more than 0.2 lb ai (0.8 pints) per acre 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 AMBUSH® Insecticide, 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, Mustang® Insecticide, Pounce® Insecticide and Scout X-TRA™ Insecticide.
	Lygus Bug Spp. ³ Pink Bollworm Cabbage Looper Cotton Leafperforator Saltmarsh Caterpillar Cotton Leafworm Cotton Fleahopper	0.02-0.03	1.28-1.92	
	Cotton Bollworm Tobacco Budworm ³ Boll Weevil Fall Armyworm Beet Armyworm ^{1,3} European Corn Borer Brown Stink Bug Green Stink Bug Southern Green Stink Bug Twospotted Spider Mite ² Cotton Aphid ^{2,3} Bandedwing Whitefly ^{2,3} Sweetpotato Whitefly ^{2,3}	0.025-0.04	1.6-2.56	
				¹ For control of the first and second instar only. ² Suppression only. ³ See resistance statement under General Directions for Use.

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SPRAY RECOMMENDATIONS				
Crop	Target Pests	Rate		Remarks
		lb ai/A	fl oz/A	
Peanuts	Cutworm Spp. Green Cloverworm Velvetbean Caterpillar Red-necked Peanut Worm Potato Leafhopper	0.015-0.025	0.96-1.6	<ul style="list-style-type: none"> • 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 gallons of water per acre. • Do not apply within 14 days of harvest. • Do not apply more than 0.12 lb ai (0.48 pints) per acre per season. • Do not graze livestock in treated areas. Do not use treated vines or hay for animal feed. <p>¹For control of the first and second instar only. ²Suppression only. ³See resistance statement under General Directions for Use.</p>
	Corn Earworm Fall Armyworm ¹ Bean Leaf Beetle Southern Corn Rootworm (Adult) Vegetable Weevil Whitefringed Beetle (Adult) Stink Bug Spp. Tobacco Thrips Grasshopper Spp.	0.02-0.03	1.28-1.92	
	Beet Armyworm ^{1,3} Soybean Looper ^{2,3} Lesser Cornstalk Borer ² Spider Mite Spp. ² Aphid Spp. ²	0.03	1.92	

SPRAY RECOMMENDATIONS

Crop	Target Pests	Rate		Remarks
		lb ai/A	fl oz/A	
Rice	<p>True Armyworm Fall Armyworm Yellow-striped Armyworm Rice Water Weevil (adult) Rice Stink Bug Chinch Bug Grasshopper Spp. Leafhopper Spp. Oat Birdcherry Aphid Green Bug</p>	0.025-0.04	1.6-2.68	<ul style="list-style-type: none"> 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. KARATE 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 5 gallons of water per acre. 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. Green bug is known to have many biotypes. KARATE Z insecticide may only provide suppression. If satisfactory control is not achieved with the first application of KARATE 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 ai (0.48 pints) per acre per season. Do not apply more than 0.08 lb ai (0.32 pints) per acre within 28 days of harvest or more than 0.04 lb ai (0.16 pints) per acre within 21 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.

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SPRAY RECOMMENDATIONS				
Crop	Target Pests	Rate		Remarks
		lb ai/A	fl oz/A	
Sorghum (Grain)	Cutworm Spp. Sorghum Midge	0.015-0.020	0.96-1.28	<ul style="list-style-type: none"> 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.
	Armyworm Beet Armyworm ^{1,3} Fall Armyworm ¹ Corn Earworm Webworm Spp. European Corn Borer ² Southwestern Corn Borer ² Lesser Cornstalk Borer ² Flea Beetle Spp. Stink Bug Spp. Grasshopper Spp.	0.02-0.03	1.28-1.92	
	Chinch Bug	0.03	1.92	<ul style="list-style-type: none"> 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- to 5-day intervals if needed. KARATE Z may only suppress heavy infestations and/or subsequent migrations. Do not apply within 30 days of harvest. Do not apply more than 0.08 lb ai (0.32 pints) per acre per season. Do not apply more than 0.06 lb ai (0.24 pints) per acre per season after crop emergence. Do not apply more than 0.02 lb ai (0.08 pints) per acre per season once crop is in soft dough stage. Do not graze livestock in treated areas or harvest for fodder, silage or hay.

¹For control of the first and second instars only.

²For control before the larva bores into the plant stalk.

³See resistance statement under General Directions for Use.

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SPRAY RECOMMENDATIONS				
Crop	Target Pests	Rate		Remarks
		lb a/A	fl oz/A	
Soybeans	Corn Earworm Velvetbean Caterpillar Green Cloverworm Cabbage Looper Painted Lady (Thistle) Caterpillar Saltmarsh Caterpillar Woollybear Caterpillar Cutworm Spp. 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 Spp.	0.015-0.025	0.96-1.6	<ul style="list-style-type: none"> • 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 gallons of water per acre. • For control of adult corn rootworm beetles (<i>Diabrotica</i> species) as part of an aerial applied corn rootworm control program use a minimum of 1.28 fl oz/A (0.02 lb a/A). • Do not apply within 45 days of harvest. Do not apply more than 0.06 lb ai (0.24 pints) per acre per season. <p>¹For control of the first and second instar only. ²Suppression only. ³See resistance statement under General Directions for Use.</p>
	Armyworm ¹ Fall Armyworm ¹ Yellow-striped Armyworm ¹ Tobacco Budworm ³ Webworm Spp. European Corn Borer Silverspotted Skipper Japanese Beetle (Adult) Blister Beetle Spp. Stink Bug Spp. Plant Bug Spp. Grasshopper Spp.	0.025-0.03	1.6-1.92	
	Beet Armyworm ^{1,3} Soybean Looper ^{2,3} Lesser Cornstalk Borer ² Spider Mite Spp. ²	0.03	1.92	

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RATE CONVERSION CHART

LB AI PER ACRE	FL OZ PER ACRE	PINTS PER ACRE	TREATED ACRES PER GALLON
0.015	0.96	0.06	133
0.02	1.28	0.08	100
0.025	1.6	0.1	80
0.03	1.92	0.12	67
0.035	2.24	0.14	57
0.04	2.56	0.16	50

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