100 - 1097

1/15/2009



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

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

JAN 15 2009

Mr. Timothy E. Wilson Product Registration Syngenta Crop Protection, Inc. P.O. Box 18300 Greensboro, NC 27419

SUBJECT: Application for Pesticide Notification (PRN 98-10) Request General Label Change EPA Reg. No. 100-1097 Application Dated December 2, 2008

Dear Registrant:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 12/02/08 for the above product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action(s) requested fall within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" received but not reviewed and will be placed in our records.

<u>Please note</u> that the Agency has issued a Pesticide Registration Notice (PR) 2007-4: Labeling Revisions Required by the Final Rule "Pesticide Management and Disposal; Standards for Pesticide Containers and Containment Statements." All labeling must be updated by August 17, 2010.

If you have any questions, please call me directly at 703-305-6249 or Owen F. Beeder of my staff at 703-308-8899.

Sincerely,

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

€EPA	United Environmental Pr Washington	otection Agenc	- F		stration adment r	OPP Identifier Number NOTIFICATION
	Ар	plication for Pes	sticide - Sect	ion I		
1. Company/Product 100-1097		2.	······································		er ^{3.}	Proposed Classification
4. Company/Product (KARATE® INSECTIC	Name) IDE WITH ZEON TECHNOL	OGY Int	# erim PM Tear	m 13		None X Restricted
		my	Expedited Reproduct is similar A Reg. No.	r or identica	ccordance with al in compositio OTHEICAT	FIFRA Section 3(c)(3) (b)(i), in and labeling to:
Chec	k if this is a new address	Pro	oduct Name		JAN 1520	09
		Sectio	n - II .			
Amendment - E	n response to Agency letter date	d	Ag	nal printed la lency letter e Too" Appl her - Explai	ication.	se to
in this label copy. In was approved by th	DEPA letter dated Octobe addition, the spray drift re e Agency and has appeare age was inadvertently omit 097A-M(NOTIF).	equirements for t ed on previous ve	he State of Ne ersions of Mas	ew York h ster labels	ave been re and Final F	instated. This language Printed Labeling for this
		Section	1 – III			
Material This Proc Child-Resistant Packagi Yes* No *Certification must be submitted	If "Yes"	No. per If "Yes"		ging lo. per ontainer	2. Type of t	Container Metal Plastic Glass Paper Other (Specify)
3. Location of Net Co	Itents Information	I. Size(s) Retail Co	ontainer	5.	Location of	Label Directions
Label [Container				On La On La	bel beling accompanying product
6. Manner in Which L	abel is Affixed to Product	Lithograph Paper glued Stenciled		Other_		· · · · · · · · · · · · · · · · · · ·
	······································	Section	n – IV			
1. Contact Point (Cor Name	nplete items directly below for id	entification of individ	ual to be contacte	ed, if neces		s this application.) hone No. (Incluce Area Code)
Timothy E. Wilson		Regulat Fungici	tory Product Ma de/Insecticides ta Crop Protect	-	336-	632-3539
	tements I have made on this forr any knowingly false or misleadin le faw.					ι
2. Signature	may Elice	Syngenta Ci	Product Manage rop Protection,			i c
	/	5. Date		•		
4. Typed Name Timothy E. Wilson	· · · · · · · · · · · · · · · · · · ·	December 2	, 2008			с, с с с с

EPA Form 8570-1 (Rev. 8-94) Previous editions are obsolete.

Syngenta Crop Protection, Inc. P.O. Box 18300 Greensboro, NC 27419-8300 www.syngenta.com

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December 2, 2008

Document Processing Desk (NOTIF) Office of Pesticide Programs (7504P) U.S. Environmental Protection Agency Room S-4900, One Potomac Yard 2777 South Crystal Drive Arlington, VA 22202-4501

ATT: Ms. Linda Arrington

SUBJECT: KARATE® INSECTICIDE WITH ZEON TECHNOLOGY EPA REG. NO. 100-1097 NOTIFICATION IN RESPONSE TO EPA LETTER DATED OCTOBER 1, 2008

Dear Ms. Arrington,

Syngenta Crop Protection Inc., is submitting a Notification for Karate Insecticide with Zeon Technology (EPA Reg. No. 100-1097) in response to EPA letter dated October 1, 2008. All label changes required in the Agency letter have been included in this label copy. In addition, the spray drift requirements for the State of New York have been reinstated. This language was approved by the Agency and has appeared on previous versions of Master labels and Final Printed Labeling for this product. The language was inadvertently omitted from the prior label copy submitted to the Agency on July 24, 2008. The label code is SCP 1097A-M(NOTIF).

Two copies of the labeling (one with the changes highlighted) are attached. To complete this Notification, EPA form 8570-1 is enclosed.

If you have any questions please contact me at (336) 632-3530.

Sincerely Instly Ewdi

Timothy E. Wilson Regulatory Product Manager, Fungicide/Insecticides Syngenta Crop Protection, Inc.

Enclosures:

2 copies of labeling (1 with changes highlighted) EPA Form 8570-1

cc: Kimberly Nesci Interim PM Team 13

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® Insecticide with Zeon Technology™

	Group	3	Insecticide
Active Ingredient:			
Lambda-cyhalothrin ¹			
$[1\alpha(S^*), 3\alpha(Z)]$ -(±)-cyano-(3-phenoxyphenyl)methyl-3-(2-chlo	ro-3,3,3-	
trifluoro-1-propenyl)-2,2-dimethylcyclopropa	anecarboxylate		
Other Ingredients:			77.2%
Total:	······································		100.0%

Karate Insecticide with Zeon Technology contains 2.08 lbs. of active ingredient per gal. and is a capsule suspension.

¹Synthetic pyrethroid

Contains petroleum distillate.

NOTIFICATION

JAN 1 5 2009

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 and directions for use in booklet.

EPA Reg. No. 100-1097

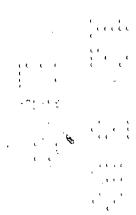
EPA Est. No.XXXX

Product of XXXX

Formulated in the USA

SCP 1097A-M (Notif)

Net Contents



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	FIRST AID
If swallowed	 Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
lf in eyes	 Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If on skin or clothing	 Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
lf inhaled	 Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
	NOTE TO PHYSICIAN
	um distillate – vomiting may cause aspiration pneumonia
Have the product doctor, or going f	
	HOT LINE NUMBER
	24-Hour Medical Emergency Assistance (Human or Animal) emical Emergency Assistance (Spill, Leak, Fire or Accident) Call
	1-800-888-8372

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

WARNING/AVISO

May be fatal if swallowed. Causes moderate eye irritation. Harmful if absorbed through skin. 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, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

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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.

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 G on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, Category G, 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.

For terrestrial uses: 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 washwater.

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.

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 must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA 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. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA 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 SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

DIRECTIONS FOR USE

RESTRICTED USE PESTICIDE

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

SHAKE WELL BEFORE USING.

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, Category G, such as barrier laminate or viton \geq 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.

GENERAL DIRECTIONS FOR USE

Initial and residual control are contingent upon thorough crop coverage. Apply with ground or aerial equipment using sufficient water to obtain full coverage of foliage. Apply in a minimum of 2 gals. per acre by air or 10 gals. per acre 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, Karate Insecticide with Zeon Technology may be applied before, during, or after planting. For soil-incorporated applications, use higher rates for improved control.

RESISTANCE MANAGEMENT

Karate Insecticide with Zeon Technology is a Group 3 Insecticide (contains the active ingredient lambda-cyhalothrin). 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

BUFFER ZONES

Vegetative Buffer strip

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

Only apply products containing Karate Insecticide with Zeon Technology onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers:

Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21 pp. www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf

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.

Buffer Zone for Ground Application (groundboom, overhead chemigation, or airblast)

Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes; natural ponds; estuaries; and commercial fish ponds).

Buffer Zone for ULV Aerial Application

Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes; natural ponds; estuaries; and commercial fish ponds).

Buffer Zone for Non-ULV Aerial Application

Do not apply within 150 feet of aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes; natural ponds; estuaries; and commercial fish ponds).

SPRAY DRIFT REQUIREMENTS

Wind Direction and Speed

Only apply this product if the wind direction favors on-target deposition.

Do not apply when the wind velocity exceeds 15 mph.

Temperature Inversion

Do not make aerial or ground applications into temperature inversions.

Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

Droplet Size

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

Additional Requirements for Ground Applications

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

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

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

Additional Requirements for Aerial Applications

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

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

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

When applications are made with a cross-wind, the swath will be displaced downward. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

TANK MIX APPLICATION

When tank mixing with any other agricultural products, **always add Karate Insecticide with Zeon Technology last**. Fill the tank with $\frac{1}{2} - \frac{2}{3}$ volume of the mixing diluent. Make sure all other products are fully dispersed in the mixing diluent before adding the recommended rate of Karate Insecticide with Zeon Technology 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 Karate Insecticide with Zeon Technology 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.

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

- Nonionic Surfactant (NIS) containing at least 75% surface agent, or
- Nonphytotoxic 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 Insecticide with Zeon Technology 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 Insecticide with Zeon Technology as diluents or adjuvants:

- Nonemulsifiable oils,
- Diesel Fuel
- Straight Mineral Oil

CHEMIGATION

Sprinkler Irrigation Application

Apply Karate Insecticide with Zeon Technology 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 Karate Insecticide with Zeon Technology 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 Insecticide with Zeon Technology 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 Insecticide with Zeon Technology 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 Insecticide with Zeon Technology 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 Applications

- A. 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.
- B. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- C. If you have any 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 back-flow.
- 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 are capable of being fitted with a system interlock.
- L. Any alternatives to the above required safety devices must conform to the list of EPA-approved alternative devices.
- M. Do not apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.
- N. Do not apply through chemigation systems connected to public water systems.

SPECIFIC USE DIRECTIONS

		Rate)
Crop FALFA AND ALFALFA	Target Pests GROWN FOR SEED	lb. a.i./A	fl. oz./A
	Alfalfa Caterpillar Army Cutworm Cutworm species Green Cloverworm Leafhopper species Looper species Threecornered Alfalfa Hopper Velvetbean Caterpillar Webworm species	0.015 – 0.025	0.96 – 1.60
	Alfalfa Seed Chalcid (Adult) Alfalfa Weevil Armyworm Bean Leaf Beetle (Adult) Blister Beetle species Blue Alfalfa Aphid Clover Leaf Weevil species Clover Root Borer (Adult) Clover Root Curculio species (Adult) Clover Stem Borer (Adult) Corn Earworm Cowpea Aphid Cowpea Curculio (Adult) Cowpea Weevil (Adult) Cucumber Beetle species (Adult) Egyptian Alfalfa Weevil Fall Armyworm ¹ Grape Colaspis (Adult) Greane Peach Aphid ³ Japanese Beetle (Adult) Green Peach Aphid ³ Japanese Beetle (Adult) Meadow Spittlebug Mexican Bean Beetle Pea Aphid Pea Weevil (Adult) Plant Bug species including Lygus species ³ Spotted Alfalfa Aphid Stink Bug species Sweet Clover Weevil (Adult) Thrips species ⁴ Western Yellowstriped Armyworm Whitefringed Beetle species (Adult) Yellowstriped Armyworm	0.02 - 0.03	1.28 – 1.92
	Beet Armyworm ^{1,3} Blotch Leafminer ³ Spider Mites ²	0.03	1.92

AGRICULTURAL USES

- 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. per acre by air or 10 gals. per acre by ground. When foliage is dense and/or pest populations are high
 5–10 gals. per acre by air or 20 gals. per acre 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 moming or during the evening hours. Be aware of bee hazard resulting from a cool evening and/or moming 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. (1.92 fl. oz. or 0.12 pts. of product) per acre per cutting.
- Do not apply more than 0.12 lb. a.i. (7.68 fl. oz. or 0.48 pts. of product) per acre per season.
- Do not apply within 1 day of harvest for forage or within 7 days of harvest for hav.
- ¹ Use higher rates for large larvae.

³ See Resistance statement under General Directions for Use.

⁴Does not include Western Flower Thrips.

² Suppression only.

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Сгор	Target Pests	Rate		
		lb. a.i./A	fl. oz./A	
CANOLA				
	Armyworm species Cabbage Seedpod Weevil Cutworm species Diamondback Moth Flea Beetle Grasshoppers Looper species Lygus Bug	0.015 – 0.03	0.96 – 1.92	
	Cabbage Aphid	0.03	1.92	

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 per acre.
- Do not apply within 7 days of harvest.
- Do not apply more than 0.09 lb. a.i. (5.76 fl. oz. or 0.36 pts. of product) per acre per year.

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		Rate		
Crop	Target Pest	lb. a.i./A	fl.oz./A	
CEREAL GRAINS				
Corn (at Plant): Field Corn Popcorn Seed Corn Sweet Corn	Corn Rootworm Larvae: Mexican Northern Southern Western Cutworm species Lesser Cornstalk Borer Red Imported Fire Ant ¹ Seedcorn Beetle Seedcorn Maggot White Grub species Wireworm species	0.005 lbs. a.i. per 1000 ft .of row ²	0.33 fl. oz. per 1000 ft. of row	

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 per acre.
- 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. (5.76 fl. oz. or 0.36 pts. of product) per acre per crop at plant.
- For field corn, popcorn, and seed corn **do not** apply more than 0.12 lb. a.i. (7.68 fl. oz. or 0.48 pts. of product) per acre per crop from at plant and foliar applications. For sweet corn **do not** apply more than 0.48 lb. a.i. (30.72 fl. oz. or 1.92 pts. of product) per acre per crop from at plant and foliar applications.

¹Suppression only.

² Lbs. a.i. ar	nd fl. oz./A of Ka	rate Insecticide W Va	/ith Zeon Techno rious Row Spacir		33 fl. oz./1000 ft.	of Row for
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	4.3	4.55	4.8	5.05	5.4	5.75

		Ra	te
Crop	Target Pests	lb. a.i./A	fl. oz./A
CEREAL GRAINS	H		
Com (Foliar) Field Com Popcom Seed Corn	Corn Earworm ¹ Cutworm species Green Cloverworm Meadow Spittlebug Western Bean Cutworm ¹	0.015 - 0.025	0.96 – 1.60
	Armyworm ² Bean Leaf Beetle Bird Cherry-Oat Aphid ³ Cereal Leaf Beetle Corn Leaf Aphid ³ Corn Rootworm Beetle (Adult): Mexican Northern Southern Western English Grain Aphid ³ European Corn Borer ¹ Fall Armyworm ² Flea Beetle species Grasshopper species Hop Vine Borer ¹ Japanese Beetle (Adult) Lesser Cornstalk Borer Sap Beetle (Adult) Seedcorn Beetle Southwestern Corn Borer ¹ Stalk Borer ¹ Stink Bug species Tobacco Budworm ^{1,4} Webworm species Yellowstriped Armyworm ²	0.02 - 0.03	1.28 – 1.92
	Beet Armyworm ⁴ Chinch Bug Greenbug ^{3,4} Mexican Rice Borer ¹ Rice Stalk Borer ¹ Southern Corn Leaf Beetle ³ Sugarcane Borer ¹	0.03	1.92

- 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 per acre.
- 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. Karate Insecticide

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with Zeon Technology may only suppress heavy infestations and/or subsequent migrations.

- For control of adult corn rootworm beetles (*Diabrotica* species) as part of an aerial applied corn rootworm control program use a minimum of 0.03 lb. a.i. (1.92 fl. oz. of product) per acre.
- 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. (7.68 fl. oz. or 0.48 pts. of product) per acre per crop from at plant and foliar applications.
- **Do not** apply more than 0.06 lb. a.i. (3.84 fl. oz. or 0.24 pts. of product) per acre after silk initiation. **Do not** apply more than 0.03 lb. a.i. (1.92 fl. oz. or 0.12 pts. of product) per acre after corn has reached the milk stage (yellow kernels with milky fluid).

¹For control before the larva bores into the plant stalk or ear.

²Use higher rates for large larvae.

³Suppression only.

⁴See **Resistance** statement under **General Directions for Use**.

		Ra	te
Сгор	Target Pests	lb. a.i./A	fl. oz./A
CEREAL GRAINS			
Sweet Corn (Foliar)	Aphid species ^{2.3} Armyworm ¹ Aster Leafhopper Beet Armyworm ^{1.3} Chinch Bug Common Cornstalk Borer Corn Earworm Corn Rootworm Beetle (Adult): Mexican Northern Southern Western Cutworm species European Corn Borer Fall Armyworm ¹ Flea Beetle species Grasshopper species Japanese Beetle (Adult) Sap Beetle (Adult) Sap Beetle (Adult) Southern Armyworm ¹ Southwestern Corn Borer Spider Mite species ² Stink Bug species Tarnished Plant Bug Webworm species Western Bean Cutworm ¹	0.02 - 0.03	1.28 – 1.92
	Corn Silkfly (Adult) ²	0.03	1.92

- 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 per acre.
- For control of adult corn rootworm beetles (Diabrotica species) as part of an aerial applied corn rootworm control . program use a minimum of 0.025 lb. a.i. (1.60 fl. oz. of product) per acre.
- Do not apply within 1 day of harvest.
- Do not allow livestock to graze in treated areas or harvest treated com 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. (30.72 fl. oz. or 1.92 pts. of product) per acre per crop from at plant and foliar applications.

¹Use higher rates for large larvae. ²Suppression only.

³See Resistance statement under General Directions for Use.

		Ra	ate
Сгор	Target Pests	lb. a.i./A	fl. oz./A
CEREAL GRAINS			
Rice Wild Rice	Bird Cherry-Oat Aphid Chinch Bug Fall Armyworm Grasshopper species Greenbug Leafhopper species Rice Stink Bug Rice Water Weevil (adult) Riceworm Sharpshooter species True Armyworm Yellow Sugarcane Aphid Yellowstriped Armyworm	0.025 - 0.04	1.6 - 2.56
	European Corn Borer ¹ Mexican Rice Borer ¹ Rice Seed Midge ¹ Rice Stalk Borer ¹ Sugarcane Borer ¹	0.03 - 0.04	1.92 – 2.56

- 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 Insecticide with Zeon Technology 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 total carrier volume) per acre, but ensure sufficient volume is used to provide adequate coverage. In addition, adding an emulsified crop oil (e.g., 1 pt. per acre) 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.
- California: In addition to above directions for control of rice water weevil in water seeded rice, Karate Insecticide
 with Zeon Technology 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.
- Greenbug is known to have many biotypes. Karate Insecticide with Zeon Technology may only provide suppression. If satisfactory control is not achieved with the first application of Karate Insecticide with Zeon Technology, a resistant biotype may be present. Use alternate chemistry for control.
- For control of stem borers, scout fields, when rice growth is near panicle differentiation, for early symptoms of damaging populations exhibited as discoloration (orange-tan) around the junction of the leaf sheath and leaf blade which is caused by feeding of young larvae within the sheath. Applications must be made before larvae

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bore into rice stems. Make the first application at panicle differentiation to 2 inch panicle for partial control. Make the second application at boot to heading for maximum control. All rice varieties are susceptible to stem borer

- damage, but Cocodrie and Priscilla are particularly susceptible.
 Mixers/loaders supporting aerial applications to wild rice at a rate of 0.04 lb. ai. per acre, and treating 1200 acres (or more) per day must wear dust-mist respirator.
 Do not release flood water within 7 days of an application.
 Do not apply more than 0.12 lb. a.i. (7.68 fl. oz. or 0.48 pt. of product) per acre per season.
 Do not apply more than 0.04 lb. a.i. (2.56 fl. oz. or 0.16 pt. of product) per acre 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. .
- •

¹For control before the larvae bores into the plant stalk.

		Ra	ate
Сгор	Target Pests	lb. a.i./A	fl. oz./A
CEREAL GRAINS			
Sorghum (Grain)	Cutworm species Sorghum Midge	0.015 - 0.02	0.96 - 1.28
	Armyworm Beet Armyworm ³ Corn Earworm European Corn Borer ² Fall Armyworm ¹ Flea Beetle species Grasshopper species Lesser Cornstalk Borer ² Southwestern Corn Borer ² Stink Bug species Webworm species Yellowstriped Armyworm ¹	0.02 - 0.03	1.28 – 1.92
	Chinch Bug Mexican Rice Borer ² Rice Stalk Borer ² Sugarcane Borer ²	0.03	1.92

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 aerial 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 per acre.
- 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. Karate Insecticide with Zeon Technology may only suppress heavy infestations and/or subsequent migrations.
- Do not apply more than 0.08 lb. a.i. (5.12 fl. oz. or 0.32 pt. of product) per acre per season.
- Do not apply more than 0.06 lb. a.i. (3.84 fl. oz. or 0.24 pt. of product) per acre per season after crop emergence.
- Do not apply more than 0.02 lb. a.i. (1.28 fl. oz. or 0.08 pt. of product) per acre per season once crop is in softdough stage.
- Do not apply within 30 days of harvest.

¹Use higher rates for large larvae.

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

³See Resistance statement under General Directions for Use.

Crop Target Pests CEREAL GRAINS		Rate		
		lb. a.i./A	fl. oz./A	
Barley Buckwheat Oats	Army Cutworm Cutworm species	0.015 – 0.025	0.96 - 1.60	
Rye Triticale Wheat Wheat Hay	Armyworm Bird Cherry-Oat Aphid ¹ Cereal Leaf Beetle English Grain Aphid ¹ Fall Armyworm Flea Beetle species Grasshopper species Hessian Fly ⁴ Orange Blossom Wheat Midge Russian Wheat Aphid ¹ Stink Bug species Yellowstriped Armyworm	0.02 – 0.03	1.28 – 1.92	
	Grass Sawfly	0.025 – 0.03	1.60 - 1.92	
	Chinch Bug Corn Leaf Aphid ² Greenbug ^{1,3} Mite species ²	0.03	1.92	

- 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 per acre.
- For chinch bug control, repeat applications at 3-5-day intervals if needed. Karate Insecticide with Zeon Technology may only suppress heavy infestations and/or migrations.
- Greenbug is known to have many biotypes. Karate Insecticide with Zeon Technology 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. (3.84 fl. oz. or 0.24 pts. of product) per acre per season.

¹Best control is obtained before insects begin to roll leaves. Once crop has started to boot, Karate Insecticide with Zeon Technology may provide suppression only. Higher rates and increased coverage will be necessary. ²Suppression only.

³See Resistance statement under General Directions for Use.

⁴Make applications when adults emerge.

	Target Pests	Rate	
Сгор		lb. a.i./A	fi. oz./A
COLE CROPS(HEAD AND STE	M BRASSICA)		
Broccoli Brussels Sprouts Cabbage Cavalo Broccolo Cauliflower Chinese Broccoli (gai Ion) Chinese Cabbage (napa)	Alfalfa Looper Cabbage Looper Cabbage Webworm Cutworm species Imported Cabbageworm Southern Cabbageworm	0.015 0.025	0.96 – 1.60
Chinese Mustard Cabbage (gai choy) Kohlrabi	Aphid species ^{2,3} Armyworm Beet Armyworm ^{1,3} Corn Earworm Diamondback Moth ³ Fall Armyworm ¹ Flea Beetle species Grasshopper species Japanese Beetle (Adult) Leafhopper species Japanese Beetle (Adult) Leafhopper species Meadow Spittlebug Plant Bug species including Lygus species ³ Spider Mite species ² Stink Bug species Thrips species ² Vegetable Weevil (Adult) Whitefly species ^{2,3} Yellowstriped Armyworm	0.02 - 0.03	1.28 – 1.92

- 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. (15.36 fl. oz. or 0.96 pts. of product) per acre per season.

¹For control of first and second instar only. ²Suppression only.

³See Resistance statement under General Directions for Use.

		Ra	Rate	
Crop COTTON	Target Pests	lb. a.i./A	fi. oz./A	
	Cutworm species Soybean Thrips Tobacco Thrips	0.015 – 0.02	0.96 – 1.28	
	Cabbage Looper Cotton Fleahopper Cotton Leafperforator Cotton Leafworm Lygus Bug species ³ Pink Bollworm Saltmarsh Caterpillar	0.02 - 0.03	1.28 – 1.92	
	Bandedwing Whitefly ^{2,3} Beet Armyworm ^{1,3} Boll Weevil Brown Stink Bug Cotton Aphid ^{2,3} Cotton Bollworm European Corn Borer Fall Armyworm Green Stink Bug Southern Green Stink Bug Southern Green Stink Bug Sweet Potato Whitefly ^{2,3} Tobacco Budworm ³ Twospotted Spider Mite ²	0.025 – 0.04	1.60 – 2.56	

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 aerial equipment using sufficient water to obtain full coverage of foliage.
- Applications may also be made with equipment adapted and calibrated for ULV sprays. Karate Insecticide with Zeon Technology may be mixed with once-refined vegetable oil and applied in a minimum of at least one qt. of finished spray per acre.
- Under light bollworm/budworm infestation levels, 0.02 lb. a.i (1.28 fl. oz. of product) per acre 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, Karate Insecticide with Zeon Technology 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 0.2 lb. a.i. (12.8 fl. oz. or 0.8 pt. of product) 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.

¹For control of the first and second instar only.

²Suppression only.

³See Resistance statement under General Directions for Use.

_		Rate		
Сгор	Target Pests	Ib. a.i./A	fl. oz./A	
CUCURBIT VEGETABLES	· · · · · · · · · · · · · · · · · · ·	•		
Chayote (fruit)	Armyworm species ¹	0.02-0.03	1.28-1.92	
Chinese Waxgourd (Chinese	Blister Beetle species			
 preserving melon) 	Cabbage Looper			
Citron Melon	Corn Earworm			
Cucumber	Cricket species	-		
Gherkin	Cucumber Beetle species (adults)			
Gourd (edible)	Cutworm species			
Lagenaria species –	Flea Beetle species			
includes: hyotan, cucuzza	Grasshopper species			
Luffa acutangula,	June Beetle species		•	
L. cylindrical - includes:	Leaffooted Bug			
hechima, Chinese okra	Leafhopper species			
Momordica species –	Lygus Bug species ¹	•		
includes: balsam apple,	Melonworm			
balsam pear, bitter melon,	Pickleworm			
Chinese cucumber	Plant Bug species			
Muskmelon (hybrids and/or	Rindworm species complex			
cultivars of Cucumis melo) -	Saltmarsh Caterpillar			
includes: true cantaloupe,	Squash Beetle			
cantaloupe, casaba,	Squash Bug species			
crenshaw melon, golden	Squash Vine Borer species		•	
pershaw melon, honeydew	Stink Bug species			
melon, honey balls, mango	Thrips species ^{1, 2}			
melon, Persian melon,	Tobacco Budworm ¹			
pineapple melon, Santa	Webworm species			
Claus melon, snake melon				
Pumpkin				
Squash, summer (Cucurbita	(
pepo var. <i>melopepo</i>)				
includes: crookneck squash,				
scallop squash, straightneck				
squash, vegetable marrow,				
zucchini				
Squash, winter (Cucurbita				
maxima; C. moschata) –				
includes butternut squash,				
calabaza, hubbard squash				
(C. mixta; C. pepo) -				
includes: acom squash, spaghetti squash				
watermelon – includes:				
hybrids and/or varieties of Citrulius lanatus			1	
Sin ullus lanalus				
	Aphid species ¹	0.03	1.92	
	Leafminer species ^{1, 3}			
	Whitefly species ^{1, 3}			
	Spider Mite species ³			
	· · · · · · · · · · · · · · · · · · ·		1	

- 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 all plant parts. When applying by air, apply in a minimum of 2 gal. total solution per acre. When applying by ground, a minimum of 10 gal. total solution per acre is recommended.
- Use higher application volumes and/or rates when foliage is dense, pest populations are high, larvae are large, weather conditions are adverse and/or as plant size increases. Use higher rates for longer residual.
- Insects that bore or tunnel into leaves, vines, stems or fruit must be controlled before penetration.
 Only exposed insects (larvae and/or adults) can be controlled with foliar applications of Karate Insecticide with Zeon Technology.
- **Do not** apply more than 0.18 lb. a.i. (11.5 fl. oz. or 0.72 pts. of product) per acre per season. **Do not** apply within 1 day of harvest.

¹See Resistance statement under General Directions for Use. ²Does not include Western Flower Thrips

³Suppression only.

		Rate	
Crop FRUITING VEGETABLE	Target Pests	lb. a.i./A	fl. oz./A
Eggplant Ground cherry Pepino Peppers (bell and	Cabbage Looper Cutworm species Hornworm species	0.015 – 0.025	0.96 – 1.60
nonbell) Tomatillo Tomato	Aphid species ^{2,3} Beet Armyworm ^{1,3} Blister Beetle species Colorado Potato Beetle ³ Cucumber Beetle species (Adult) European Corn Borer ⁴ Fall Armyworm ¹ Flea Beetle species Grasshopper species Japanese Beetle (Adult) Leafhopper species Leafminer species ² Meadow Spittlebug Pepper Weevil (Adult) ² Plant Bug species Southern Armyworm ¹ Spider Mite species ² Stalk Borer ⁴ Stink Bug species Thrips ⁵ Tobacco Budworm ³ Tomato Fruitworm Tomato Pinworm Tomato Pinworm Tomato Psyllid ^{2,3} Vegetable Weevil (Adult) Whitefly species ^{2,3} Yellowstriped Armyworm ¹	0.02 - 0.03	1.28 – 1.92

- 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 per acre.
- Do not apply within 5 days of harvest. •
- Do not apply more than 0.36 lb. a.i. (23.04 fl. oz. or 1.44 pts. of product) per acre per season. ٠

¹For control of first and second instar only.

²Suppression only. ³See Resistance statement under General Directions for Use.

⁴For control before the larva bores into the plant stalk or fruit.

⁵Does not include Western Flower Thrips.

		Rate	
Сгор	Target Pests	lb. a.i./A	fl. oz./A
GRASS FORAGE, FODDER AND HAY			• ~
	Army Cutworm	0.015-0.025	0.96-1.6
Pasture and Rangeland	Cutworm species		0.00 1.0
Grass, Grass Grown for	Essex Skipper		
Hay or Silage and Grass	Range Caterpillar		κ.
Grown for Seed	Striped Grass Looper		
	Beet Armyworm	0.02-0.03	1.28-1.92
	Billbug species ³		
	Bird Cherry-Oat Aphid ¹		
	Black Grass Bug		
	Black Turfgrass Beetle (adult)		
	Blue Stem Midge		
	Cereal Leaf Beetle		
	Chinch Bug		
	Crane Fly species		
	Cricket species		
	English Grain Aphid ¹		
	Fall Armyworm		
	Flea Beetle species		
	Grass Mealybug		
	Grass Sawfly (adult)	,	
	Grasshopper species		
	Green June Beetle (adult)		
	Greenbug ^{1, 2}		
	Japanese Beetle (adult)		
	Katydid species		
	Leafhopper species		
	Mite species ³		
	Russian Wheat Aphid ¹		
	Southern Armyworm		
	Spittlebug species		
	Stink Bug species		
	Sugarcane Aphid		
	Thrips species		
	Tick species		
	True Armyworm		
	Webworm species		
	Yellowstriped Armyworm		

Remarks:

- 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 and application methods to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gal. total solution per acre. When applying by ground, a minimum of 7 gal. total solution per acre is recommended.
- Use higher application volumes and rates when foliage is dense, pest populations are high, larvae are large and/or weather conditions are adverse. Use higher rates for longer residual.

- For chinch bug control, Karate Insecticide with Zeon Technology may only suppress heavy infestations and/or migrations. In this situation, a second application using an alternative chemistry may be needed.
- Greenbug is known to have many biotypes. Karate Insecticide with Zeon Technology may provide suppression only. In this situation, a second application using an alternative chemistry may be needed.
- Pasture and rangeland grass may be used for grazing or cut for forage 0 days after application. Do not cut grass to be dried and harvested for hay until 7 days after the last application. Grass grown for seed:
 - Straw, hay and mature seed (seed screenings) may be used as feed 7 days after the last application. Regrowth of grass grown for seed may be used for grazing, cut for forage or cut to be dried and harvested for hay.
- **Do not** apply more than 0.03 lb. a.i. (1.92 fl. oz. or 0.12 pts. of product) per acre per cutting for pastures, rangeland and grasses grown for seed. A minimum re-treatment interval (RTI) of 30 days is required for pastures and rangeland receiving 0.03 lb. ai. per acre which have not been cut between applications.
- Do not apply more than 0.09 lb. a.i. (5.76 fl. oz. or 0.36 pts. of product) per acre per season.

¹Best control is obtained before insects begin to roll leaves.

²See Resistance statement under General Directions for Use.

³Suppression only.

		Rate	
Сгор	Target Pests	lb. a.i./A	fl. oz./A
LEGUME VEGETABLES	(BEANS AND PEAS)		
Edible Podded (Only)	Cutworm species Green Cloverworm	0.015 - 0.025	0.96 – 1.60
Canavalia ensiformis -jackbean	Imported Cabbageworm Mexican Bean Beetle Saltmarsh Caterpillar		
Canavalia gladiata -sword bean	Velvetleaf Caterpillar	۰.	
Glycine max -soybean	Alfalfa Caterpillar Aphid species ⁴	0.02 ~ 0.03	1.28 – 1.92
(immature seed) Edible Podded,	Armyworm ² Bean Leaf Beetle Bean Leafskeletonizer		
Succulent Shelled or Dried Shelled	Blister Beetle species Corn Earworm		
Cajanus cajan – Pigeon pea	Corn Rootworm Beetle species (Adult) Cucumber Beetle species (Adult) Curculio and Weevil species ¹ (foliage and pod feeding adults and larvae)		
<i>Phaseolus</i> species – includes: field, kidney, lima, navy,	European Corn Borer Fall Armyworm ² Flea Beetle species (Adult)		
pinto, runner, snap, tepary and wax beans	Flea Hopper species Grasshopper species Japanese Beetle (Adult)		
Pisum species –	Leafhopper species		
includes: dwarf, edible-pod, English, field, garden, green,	Looper Species Meadow Spittlebug Painted Lady Butterfly (Larva)		
snow and sugar snap peas	Plant Bug species including Lygus species ⁴ Stalk Borer ¹		• · ·
<i>Vigna</i> species – includes: adzuki,	Stink Bug species Threecornered Alfalfa Hopper Thrips species ^{4,5}	•	
asparagus, moth, mung, rice, urd and yardlong beans,	Tobacco Budworm⁴ Webworm species Western Bean Cutworm		
black–eye pea, catjang, Chinese longbean, cowpea,	Western Yellowstriped Armyworm ² Yellowstriped Armyworm ²		
Crowder pea, and Southern pea			

		R	Rate	
Сгор	Target Pests	lb. a.i./A	fl. oz./A	
LEGUME VEGETABLES	(BEANS AND PEAS)			
(continued) Succulent Shelled or Dried Shelled Vicia faba. – broadbean	Beet Armyworm ^{3,4} Leafminer species ^{3,4} Lesser Cornstalk Borer ³ Soybean Looper ^{3,4} Spider Mite species ³ Whitefly species ^{3,4}	0.03	1.92	
(favabean) Dried Shelled (Only)				
Dried Oriened (Orig)				
Cicer arietimum – chickpea (garbonzo bean)				
Cyamopsis tetragonoloba – guar				
<i>Lablab pupureus</i> – Lablab bean (hyacinth bean)				
Lupinus species includes: grain, sweet, white and sweet white lupines				
Lens esculata – Lentils				

- 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 per acre.
- 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. (7.68 fl. oz. or 0.48 pts. of product) per acre per season.
- For succulent and dried shelled peas and beans, **do not** graze livestock in treated areas or harvest vines for forage or hay.

¹For control before the larva bores into the plant stalk or pods.

²Use higher rates for large larvae.

³For suppression only.

⁴See **Resistance** statement under **General Directions for Use**.

⁵ Does not include Western Flower Thrips.

Crop	Target Pests	Rate	
LEGUME VEG	ETABLES (SOYBEANS)	lb. a.i./A	fl. oz./A
Soybeans	Bean Leaf Beetle Cabbage Looper Corn Earworm Corn Rootworm Beetle (Adult): Mexican Northern Southern Western Cutworm species Green Cloverworm Mexican Bean Beetle Painted Lady (Thistle) Caterpillar Potato Leafhopper Saltmarsh Caterpillar Soybean Aphids ⁴ Threecornered Alfalfa Hopper Thrips species ⁵ Velvetbean Caterpillar Woolybear Caterpillar	0.015 - 0.025	0.96 - 1.60
	Armyworm ¹ Blister Beetle species European Corn Borer Fall Armyworm ¹ Grasshopper species Japanese Beetle (Adult) Plant Bug species Silverspotted Skipper Stink Bug species Tobacco Budworm ³ Webworm species Yellowstriped Armyworm ¹	0.025 - 0.03	1.60 – 1.92
	Beet Armyworm ^{2,3} Lesser Cornstalk Borer ² Soybean Looper ^{2,3} Spider Mite species ²	0.03	1.92

- 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 aerial equipment using sufficient water to obtain full coverage of foliage. When applying by air, apply in a minimum of 2 gals. of water per acre.
- For control of adult corn rootworm beetles (*Diabrotica* species) as part of an aerial-applied corn rootworm control
 program use a minimum of 0.02 lb. a.i. (1.28 fl. oz. of product) per acre.
- Do not apply within 30 days of harvest.
- Do not apply more than 0.06 lb. a.i. (3.84 fl. oz. or 0.24 pt. of product) per acre per season.
- ¹Use higher rates for large larvae.

²Suppression only.

- ³See **Resistance** statement under **General Directions for Use**.
- ⁴Use lower rates for early season applications and/or lighter populations.
- ⁵ Does not include Western Flower Thrips.

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		Ra	ite
Сгор	Target Pests	lb. a.i./A	fl. oz./A
ETTUCE (HEAD AND	LEAF)		-
· · · · · · · · · · · · · · · · · · ·	Alfalfa Looper Cabbage Looper Cutworm species Green Cloverworm Imported Cabbageworm Saltmarsh Caterpillar	0.015 – 0.025	0.96 – 1.60
	Aphid species ^{2,3} Armyworm Beet Armyworm ^{1,3} Corn Earworm Diamondback Moth ³ European Corn Borer Fall Armyworm ¹ Flea Beetle species Grasshopper species Japanese Beetle (Adult) Leafhopper species Meadow Spittlebug Plant Bug species including Lygus species ³ Southern Armyworm Spider Mite species ² Stink Bug species Tobacco Budworm ³ Vegetable Weevil (Adult) Whitefly species ^{2,3}	0.02 – 0.03	1.28 – 1.92

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 per acre.
- Do not apply within 1 day of harvest.
- Do not apply more than 0.3 lb. a.i. (19.2 fl. oz. or 1.2 pts. of product) per acre per season.

¹For control of first and second instar only.

²Suppression only.

Сгор		Rate	
	Target Pests	lb. a.i./A	fl. oz./A
ONION (BULB) AND G	ARLIC		
	Cutworm species Leafminer species (Adult) Onion Maggot (Adult) Seedcorn Maggot (Adult)	0.015 – 0.025	0.96 – 1.60
	Aphid species ² Armyworm species ¹ Flower Thrips ^{2,3} Onion Thrips ³ Plant Bug species Stink Bug species Tobacco Thrips ³ Western Flower Thrips ^{2,3}	0.02 - 0.03	1.28 – 1.92

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 per acre.
- 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. (15.36 fl. oz. or 0.96 pts. of product) per acre per season. •

¹For control of the first and second instar only. ²Suppression only.

		Ra	te
Сгор	Target Pests	lb. a.i./A	fl. oz./A
PEANUTS			
	Cutworm species	0.015 - 0.025	0.96 - 1.60
	Green Cloverworm		
	Potato Leafhopper		
	Rednecked Peanut Worm		
	Threecornered Alfalfa Hopper		,
	Velvetbean Caterpillar		
	Bean Leaf Beetle	0.02 - 0.03	1.28 - 1.92
	Corn Earworm		
	Fall Armyworm ¹		
	Grasshopper species		
	Southern Corn Rootworm (Adult)		
	Stink Bug species		
	Tobacco Thrips		
	Vegetable Weevil		
	Whitefringed Beetle (Adult)		
	Aphid species ²	0.03	1.92
	Beet Armyworm ^{2,3}		
	Lesser Cornstalk Borer ²		
	Soybean Looper ^{2,3}		-
	Spider Mite species ²	ļ	

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 aerial equipment using sufficient water to obtain full coverage of foliage. When applying by ٠ air, apply in a minimum of 2 gals. of water per acre.

Do not apply within 14 days of harvest. ٠

Do not apply more than 0.12 lb. a.i. (7.68 fl. oz. or 0.48 pt. of product) per acre per season. ٠

¹Use higher rates for large larvae. ²Suppression only. ³See **Resistance** statement under **General Directions for Use**

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Сгор		Rate	
	Target Pests	Ib. a.i./A	fl. oz./A
POME FRUITS			· · · · · · · · · · · · · · · · · · ·
Apple Crabapple Loquat Mayhaw Oriental Pear Pear Quince	Apple Aphid Apple Maggot (Adult) Cherry Fruit Fly species (Adult) Codling Moth Green Fruitworm Japanese Beetle Leafhopper species Leafroller species Lesser Appleworm Omnivorous Leafroller Orange Tortrix Oriental Fruit Moth Pear Psylla ¹ Pear Sawfly Periodical Cicada Plant Bug species Plum Curculio Rosy Apple Aphid San Jose Scale (fruit infestations only) Spirea Aphid ¹ Stink Bug species Tent Caterpillar species Tree Borer species Tufted Apple Budworm Webworm species	0.02 - 0.04	1.28 – 2.56

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. (12.8 fl. oz. or 0.80 pts. of product) per acre per year. **Do not** apply more than 0.16 lb. a.i. (10.24 fl. oz. or 0.64 pts. of product) per acre per year post bloom.

¹Suppression only

		Ra	te
Сгор	Target Pests	lb. a.i./A	fl. oz./A
STONE FRUITS			
Apricot Chickasaw Plum Damson Plum Japanese Plum Nectarine Peach Plum Plumcot Prune Sweet and Tart Cherry	American Plum Borer Apple Maggot (Adult) Black Cherry Aphid Cherry Fruit Fly species (Adult) Codling Moth Green Fruitworm Japanese Beetle June Beetle Leafhopper species Leafroller species Oriental Fruit Moth Peach Twig Borer Peachtree Borer species Pear Sawfly Periodical Cicada Plant Bug species Plum Curculio Rose Chafer Stink Bug species Tent Caterpillar species Thrips species	0.02 - 0.04	1.28 – 2.56

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. (12.8 fl. oz. or 0.80 pts. of product) per acre per year. **Do not** apply more than 0.16 lb. a.i. (10.24 fl. oz. or 0.64 pts. of product) per acre per year post bloom.

	· · ·	Rate	
Crop	Target Pests	lb. a.i./A	fl. oz./A
SUGARCANE			· · · · · · · · · · · · · · · · · · ·
	Mexican Rice Borer ¹ Pygmy Mole Cricket Rice Stalk Borer ¹ Sugarcane Aphid ³ Sugarcane Beetle (Adult) ² Sugarcane Borer ¹ West Indian Cranefly Yellow Sugarcane Aphid ³	0.025 – 0.04	1.60 – 2.56

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 gal. of water per acre.
- Do not apply within 21 days of harvest.
- Do not apply more than 0.16 lb. a.i. (10.24 fl. oz. or 0.64 pt. of product) per acre per season.

¹For control before the larva bores into the plant stalk.

²Suppression only of beetles active above ground.

		Ra	te
Сгор	Target Pests	lb. a.i./A	fl. oz./A
UNFLOWER	· · · · · · · · · · · · · · · · · · ·	·	
	Cutworm species Sunflower Beetle	0.015 - 0.025	0.96 – 1.60
	Banded Sunflower Moth Fall Armyworm ¹ Grasshopper species Head-Clipper Weevil (Adult) Japanese Beetle (Adult) Leafhopper species Meadow Spittlebug Painted Lady (Thistle) Caterpillar Seed Weevil (Adult) Spotted Cabbage Looper Stem Weevil (Adult) Stink Bug species Sunflower Maggot (Adult) Sunflower Moth Woollybear Caterpillar	0.02 - 0.03	1.28 – 1.92
	Beet Armyworm ^{2.3} Spider Mite species ²	0.03	1.92

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 per acre.
- Do not apply within 45 days of harvest.
- Do not apply more than 0.12 lb. a.i. (7.68 fl. oz. or 0.48 pts. of product) per acre per season. Do not apply more than 0.09 lb. a.i. (5.76 fl. oz. or 0.36 pts. of product) per acre per season after bloom initiation.
- **Do not** apply as an ultra-low volume (ULV) spray.

¹Use higher rates for large larvae.

²Suppression only.

		Rate	
Crop	Target Pests	lb. a.i./A	fl. oz./A
OBACCO			
	Armyworm species ¹ Blister Beetle species Cabbage Looper Corn Earworm Cucumber Beetle species (Adult) Cutworm species Grasshopper species Japanese Beetle (Adult) Katydid species Plant Bug species ³ Potato Tuberworm Salt Marsh Caterpillar Stinkbug species Tobacco Aphid species ^{2,3} Tobacco Budworm ³ Tobacco Flea Beetle (Adult) Tobacco Flea Beetle (Adult) Tobacco Thrips species ² Tomato Hornworm Tree Cricket species Vegetable Weevil (Adult) Webworm species	0.015 - 0.03	0.96 – 1.92

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 per acre.
- Do not apply within 40 days of harvest.
- Do not apply more than 0.09 lb. a.i. (5.76 fl. oz. or 0.36 pts. of product) per acre per year.

¹For control of first and second instars only. ²Suppression only.

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		Rate		
Crop TREE NUTS	Target Pests	lb. a.i./A	fl. oz./A	
Almond Beech Nut Brazil Nut Butternut Cashew Chestnut Chinquapin Filbert (Hazlenut) Hickory Nut Macadamia Nut (Bush Nut) Pistachio Walnut, Black Walnut, English (Persian)	Ants Chinch Bug Codling Moth Filbertworm Leaffooted Bug Leafroller species Navel Orangeworm Peach Twig Borer Plant Bug species Stink Bug species Walnut Aphid Walnut Husk Fly species (Adult)	0.02 - 0.04	1.28 – 2.56	
Pecan	Hickory Shuckworm Pecan Aphid species Pecan Casebearer species Pecan Phylloxera species Pecan Spittlebug Pecan Weevil Stink Bug species	0.02 - 0.04	1.28 – 2.56	

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. (10.24 fl. oz. or 0.64 pts. of product) per acre per year. **Do not** apply more than 0.12 lb. a.i. (7.68 fl. oz. or 0.48 pts. of product) per acre per year post bloom.

		Rate	
Сгор	Target Pests	lb. a.i./A	fl. oz./A
TUBEROUS AND CORM VEGETABLES (P Related)	otato, Sweet Potato, Yams and		
Arracacha Arrowroot Artichoke (Chinese and Jerusalem only) Canna (edible) Cassava (bitter and sweet) Chayote (root)	Cutworm species Leafhopper species Saltmarsh Caterpillar Sweet Potato Hornworm Woolybear Caterpillar species	0.015-0.025	0.96-1.60
Chufa Dasheen Ginger Leren Potato Sweet Potato Tanier Turmeric Yam (bean and true)	Aphid species ¹ Armyworm species ¹ Blister Beetle species Colorado Potato Beetle ¹ Corn Earworm Cricket species Cucumber Beetle species (adults) European Corn Borer Flea Beetle species (adults) Grasshopper species Looper species ¹ Lygus Bug species ¹ Plant Bug species ¹ Plant Bug species ¹ Potato Tuberworm Stink Bug species Sweet Potato Leaf Beetle (adults) Sweet Potato Leaf Beetle (adults) Sweet Potato Vine Borer Thrips species ^{1, 2} Tortoise Beetle species Webworm species Weevil species (adults)	0.02-0.03	1.28-1.92
	Leafminer species ^{1, 3} Spider Mite species ³ Whitefly species ^{1, 3}	0.03	1.92

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 and application methods to obtain full coverage of all above ground plant parts. When applying by air, apply in a minimum of 2 gal. total solution per acre. When applying by ground, a minimum of 10 gal. total solution per acre is recommended.
- Use higher application volumes and/or rates when foliage is dense, pest populations are high, larvae are large, weather conditions are adverse and/or as plant size increases. Use higher rates for longer residual.
- Insects that bore or tunnel into leaves, vines, stems, tubers or corms must be controlled before penetration. Only
 exposed insects (larvae and/or adults) can be controlled with foliar applications of Karate Insecticide with Zeon
 Technology.
- Do not apply more than 0.12 lb. a.i. (7.68 fl. oz. or 0.48 pts. of product) per acre per season. Do not apply within 7 days of harvest.

¹See Resistance statement under General Directions for Use.

²Does not include Western Flower Thrips.

³Suppression only.

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		Rat	e
Сгор	Target Pests	lb. a.i./A	fl. oz./A
CONIFER AND DECIDU	OUS TREES		
Plantations and Nurseries	Bagworm	0.02 - 0.04	1.28 – 2.56
	Balsam Twig Aphid		
	Balsam Wooly Aphid		
	Birch Leafminer		
	Black Pine Weevil		
	Elm Leaf Beetle		
	European Elm Bark Beetle	-	
	Gypsy Moth		
	Japanese Beetle		
	June Beetle species		
	Leaf Beetle species		
	Leafroller species		
	May Beetle species		
	Mealybug species ¹		
	Pales Weevil		
	Pine Chafer		
	Pine Colaspis Beetle		
	Pine Conelet Bug		
	Pine Leaf Chermid		·
	Pine Needle Scale		
	Pine Sawfly species		•
	Pine Tip Moth species	1	
	Pine Tortoise Scale		
	Pine Weevil species		
	Poplar Aphid species		
	Sawfly species		
	Spittlebug species		
	Spruce Budworm		
	Tent Caterpillar species		
	Tussock Moth species		
	Webworm species		

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 per acre.
- Do not apply more than 0.24 lb. a.i. (15.36 fl. oz. or 0.96 pts. of product) per acre per year.

¹Suppression only.

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Сгор	Target Pest	Rate	
		Ib. a.i./A	fl.oz./A
CONIFER AND DEC			
Seed Orchards	Coneworm species Seed Bug species Thrips species	See Remarks	See Remarks

Remarks

- For high volume sprayers, dilute 2.56 fl. oz. per 100 gals. of water and apply 5-10 gals. of finished spray per tree.
- For low volume sprayers, dilute 10 fl. oz. per 100 gals. of water and apply 100 gals. of finished spray per acre.
- For aerial applications, apply 7.5 fl. oz. per acre in a minimum of 10 gals. finish spray per acre.

• Do not apply more than 0.5 lb. a.i. (32 fl. oz. or 2 pts. of product) per acre per year.

		Rate	
Сгор	Target Pests	lb. a.i./A	fl. oz./A
Non–Cropland (Excluding Public Land)	See Crop Outlets on this Karate Insecticide with Zeon Technology label for target pests and rates.	See Crop Outlets	See Crop 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. (12.8 fl. oz. or 0.8 pt. of product) per acre per year.
- Do not graze livestock in treated areas.

Lb. a.i. Per Acre	FI. oz. Per Acre	Pints Per Acre	Treated Acres Per Gal.
0.015	0.96	0.06	133
0.02	1.28	0.08	100
0.025	1.60	0.10	80
0.03	1.92	0.12	67
0.035	2.24	0.14	57
0.04	2.56	0.16	50

Rate Conversion Chart

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

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

Bulk/Mini-Bulk and E-Z Handler® Container Disposal

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

REFILL ONLY WITH KARATE INSECTICIDE WITH ZEON TECHNOLOGY. The contents of RETURNABLE CONTAINERS cannot be completely removed by cleaning. Refilling with materials other than Karate Insecticide with Zeon Technology 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!

Karate® Insecticide with Zeon Technology™, the Syngenta logo and the CP FRAME are trademarks of a Syngenta Group Company

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For non-emergency (e.g. current product information) call Syngenta Crop Protection at 1-800-334-9481.

Manufactured for: Syngenta Crop Protection, Inc. P.O. Box 18300 Greensboro, North Carolina 27419-8300 <u>www.syngenta-us.com</u>

SCP 1097A–M (Notif)

KAR ZEO 1097A-M(Notif)-NY buffer- lg -11-26-08

(non-detachable container label – 1 gal.)

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® Insecticide with Zeon Technology™

· · · · · · · · · · · · · · · · · · ·	Group	3	Insecticide
Active Ingredient:			
Lambda-cyhalothrin ¹			
$[1\alpha(S^*), 3\alpha(Z)]$ -(±)-cyano-(3-phenoxyphen	yl)methyl-3-(2-chlor	ro-3,3,3 -	
trifluoro-1-propenyl)-2,2-dimethylcyclopro	panecarboxylate		
Other Ingredients:			77.2%
Total:			100.0%

Karate Insecticide with Zeon Technology contains 2.08 lbs. of active ingredient per gal. and is a capsule suspension.

¹Synthetic pyrethroid Contains petroleum distillates.

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 and directions for use in booklet.

EPA Reg. No. 100-1097 EPA Est. xxxxx

SCP 1097A-M(Notif) (1 gal.)

1 gallon Net Contents $\tilde{}$

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

WARNING/AVISO

May be fatal if swallowed. Causes moderate eye irritation. Harmful if absorbed through skin. 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, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

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.

	FIRST AID
If swallowed	 Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
If in eyes	 Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
lf on skin or clothing	 Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

lf inhaled	 Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
	NOTE TO PHYSICIAN
Contains petro	leum distillate – vomiting may cause aspiration pneumonia
	uct container or label with you when calling a poison control center or g for treatment.
	HOT LINE NUMBER
For 24-Hour Medical Emergency Assistance (Human or Animal)	
Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)	
	Call
	1-800-888-8372

Environmental Hazards

This pesticide is extremely toxic to fish and aquatic organisms and toxic to wildlife.

For terrestrial uses: 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.

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

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

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

Refer to Chemigation directions in booklet.

Karate® Insecticide with Zeon[™] Technology, and the Syngenta logo, are trademarks of a Syngenta Group Company

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Manufactured for: Syngenta Crop Protection, Inc. P.O. Box 18300 Greensboro, North Carolina 27419-8300 www.syngenta-us.com

SCP 1097A-M(Notif) (1 gal.)

KAR ZEO 1097A-M(Notif)-NY buffer- Ig - 11-26-08

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(non-detachable container label – 15 gal., 30 gal., bulk)

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® Insecticide with Zeon Technology™

Group 3 Insecticide

Karate Insecticide with Zeon Technology contains 2.08 lbs. of active ingredient per gal. and is a capsule suspension.

¹Synthetic pyrethroid Contains petroleum distillates.

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 and directions for use in booklet.

EPA Reg. No. 100-1097 EPA Est. xxxxx

Product of XXXXX Formulated in XXXXX Poduct ID. XXXXX

SCP 1097A-M (Notif) (15 gal., 30 gal., bulk)

____gallons Net Contents

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

WARNING/AVISO

May be fatal if swallowed. Causes moderate eye irritation. Harmful if absorbed through skin. 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, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

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.

	FIRST AID	
If swallowed	 Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. 	
If in eyes	 Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. 	
If on skin or clothing	 Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. 	
If inhaled	 Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice. 	
	NOTE TO PHYSICIAN	
	leum distillate – vomiting may cause aspiration pneumonia	
	act container or label with you when calling a poison control center or	
doctor, or going	g for treatment.	

HOT LINE NUMBER

For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call

1-800-888-8372

Environmental Hazards

This pesticide is extremely toxic to fish and aquatic organisms and toxic to wildlife.

For terrestrial uses: 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.

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 must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA 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. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. To the extent permitted by applicable law, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL. To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA 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 SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

DIRECTIONS FOR USE

RESTRICTED USE PESTICIDE

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

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

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.

Bulk/Mini-Bulk and E-Z Handler® Container Disposal

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

REFILL ONLY WITH KARATE INSECTICIDE WITH ZEON TECHNOLOGY. The contents of RETURNABLE CONTAINERS cannot be completely removed by cleaning. Refilling with materials other than Karate Insecticide with Zeon Technology 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!

Refer to Chemigation directions in booklet.

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SCP 1097A--M(Notif) (15 gal., 30 gal., bulk)

KAR ZEO 1097A-M(Notif)NY buffer- Ig - 11-26-08

Chron

1/25/02 – Replace all occurrences of Karate® Z Insecticide with Karate® Insecticide with Zeon Technology™

9/27/02 – Accepted. Revised First Aid per PR Notice 2001–1; revised container disposal statement; added DFU for sugarcane and non–cropland use; revised rice use directions; deleted grazing and feeding restrictions for peanut vines and hay, and sorghum fodder, silage and hay.

3/5/03 – Submitted FPL which included non-notification corrections of typographical errors.

8-5-03 – Accepted – Changed "Chinese Aphids" to "Soybean Aphids" in the Soybean DFU. Revised Rice DFU to include Mexican Rice Borer and Sugarcane Borer in Target pest column and added bullet to Remarks. Made minor non-notif typographical corrections and reformat of tables.

12-1-03 – Notif – Added pest, minor clarification and non-notif re-formatting and correction of typo.

11/17/04 – Accepted – added DFU for wheat, revised warranty statement, revised bullet regarding "borers" in Rice DFU. Corrected spelling to "Greenbug" per EPA letter.

10-31-05 – Approved – revised "remarks" section for rice directions for use.

4-25-06 – Approved with comments. - soybean PHI change to 30 day. Updated Master label to reflect amendment approval and revised warranty statement to EPA comments.

5/17/06– Approved with comments. Added all uses that were approved for Warrior with Zeon, added Resistance Management symbol and language, revised precautionary statements, added NY state specific language to "Spray Drift Precautions" section, added non-detachable container labeling to Master label, corrected typo in sugarcane remarks, reformatted. 5/30/06 updated Warranty statement to reflect EPA comments.

3/6/07 – Approved clarify tobacco heading with comments. 3-12-07-updated to EPA comments.

8-15-07 – Approved with comments – Added all crops from tolerance and IR-4 petitions. Revised to comply with EPA comments.

10-1-08 - Approved as Notif-Revised spray drift language per EPA letter dated 2-21-08 Made changes to comply with EPA approval letter.

12-2-08 – Notif to add back NY buffer restriction.

NOTIFICATION

JAN 1 5 2009