

33657-17

02/12/2007

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



OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

FEB 12 2007

Mr. Ronald Landis, Ph.D.
Landis International
P.O. Box 5126
Valdosta, GA 31603-5126

Authorized agent for Mitsui Chemicals

Dear Mr. Landis:

Subject: Label amendment; increase application rates (head and stem brassica, cucurbits, fruiting vegetables, grape, leafy vegetables, and potato)
Dinotefuran 20 SG
EPA File Symbol 33657-17
Your submission dated February 9, 2007 in response to Agency's letter dated 1/31/2007
Accepted with comments

The amendment referred to above is acceptable in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) section 3(c)(7)(B), subject to the comments listed below:

1. Registration does not eliminate the need for continual reassessment of pesticides. If the Agency determines that, at any time, additional data are required to maintain in effect an existing registration, the Agency will require submission of such data.
2. Make the following label change: Delete "rapidly" from last bulleted statement on page
3. No additional data were submitted to support this heightened translocation claim.

Submit two (2) copies of your final printed labeling before you release the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(a).

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A stamped copy of the label is enclosed for your records. If you have any questions, please do not hesitate to write or call me at (703) 308-8291.

Sincerely,

Rita Kumar

Rita Kumar
Senior Regulatory Specialist
Insecticide Rodenticide Branch
Registration Division (7505C)
e-mail: kumar.rita@epa.gov

Enclosure

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GROUP	4A	INSECTICIDE
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DINOTEFURAN 20SG

For control of sucking and chewing insects infesting cotton, leafy vegetables, fruiting vegetables, cucurbits, potatoes, grapes and head and stem brassica.

Active Ingredient:

Dinotefuran, N-methyl-N'-nitro-N'-[(tetrahydro-3-furanyl)methyl]guanidine	20.00%
Other Ingredients	80.00%
Total:	100.00%

KEEP OUT OF REACH OF CHILDREN
CAUTION
See side panels for additional precautionary statements

FIRST AID	
If On Skin Or Clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for further treatment advice.
If Swallowed	<ul style="list-style-type: none"> • Call poison control center or doctor for treatment advice. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Have person sip a glass of water if able to swallow. • Do not give anything by mouth to an unconscious person.
If In Eyes	<ul style="list-style-type: none"> • 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 further treatment advice.
If Inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call poison control center or doctor for treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact CHEMTREC (800) 424-9300 (24 hours) for emergency medical treatment information.	
<i>See side/back panels for additional precautionary statements</i>	

EPA Reg No. 33657-17

Net Contents:

EPA Establishment No. 67545-AZ-01

Manufactured By:
MITSUI CHEMICALS, INC.
 Shiodome City Center
 1-5-2 Higashi-Shimbashi
 Minato-ku, Tokyo 105-7117
 JAPAN

ACCEPTED
 with COMMENTS
 in EPA Letter Dated:

FEB 12 2007

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

33657-17

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride
- Shoes plus socks

USER SAFETY REQUIREMENTS

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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 toxic to shrimp. 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 water adjacent to treated areas. Do not dispose equipment washwaters or rinsate into a natural drain or water body.

This compound is toxic to honey bees. The persistence of residues and potential residual toxicity of Dinotefuran in nectar and pollen suggests the possibility of chronic toxic risk to honey bee larvae and the eventual instability of the hive.

This product is toxic to bees exposed to treatment for more than 38 hours following treatment. Do not apply this product to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period, unless the application is made in response to a public health emergency declared by appropriate state or federal authorities.

Dinotefuran and its degradate, MNG, have the properties and characteristics associated with chemicals detected in ground water. The high water solubility of Dinotefuran, and its degradate MNG, coupled with its very high mobility, and resistance to biodegradation indicates that this compound has a strong potential to leach to the subsurface under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination. Periodic monitoring of shallow groundwater in the use area is recommended.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill or store near heat or open flame.

SPRAY DRIFT ADVISORY

Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crop thereof rendered for sale, use or consumption.

DIRECTIONS FOR USE

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

READ ENTIRE LABEL, USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

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.

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, greenhouses and handlers of agricultural insecticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water is:

- Coveralls
- Waterproof gloves
- Shoes plus socks

GENERAL INFORMATION

Failure to follow directions and precautions on this label may result in crop injury, poor insect control, and/or illegal residues.

For best performance, always follow these directions:

- Dinotefuran 20SG should be applied when insect pest populations begin to build, but before populations reach economically damaging levels. Economic thresholds for pests controlled by Dinotefuran 20SG may be available from your local agricultural authorities.
- Dinotefuran 20SG is a selective insecticide which should have minimal impact on beneficial arthropods and its use is compatible with integrated pest management (IPM) programs. However, Dinotefuran 20SG is toxic to bees exposed to direct treatment or to residue on blooming crops and weeds. Do not apply Dinotefuran 20SG or allow it to drift onto blooming plants if bees are actively foraging in the treated area.
- Dinotefuran 20SG is rapidly taken up into foliage after application. However, thorough spray coverage is essential for optimal performance. Apply Dinotefuran 20SG in sufficient water to ensure good coverage.

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- Dinotefuran 20SG may aid in the suppression of some pests. Suppression can mean either inconsistent control (good to poor), or consistent control at a level below that generally considered acceptable for commercial control.
- If the maximum season limit of Dinotefuran 20SG as defined in the "CROP USE DIRECTIONS" section of this label has been applied and pest populations require additional treatments, use another registered pesticide that is not in the neonicotinoid class or nitroguanidine subclass of chemistry.

Rotational Crops:

For all crops other than cotton, leafy vegetables, fruiting vegetables, cucurbits, potatoes, head and stem brassica vegetables, and grapes, a 120-day plant-back interval should be observed.

MIXING INSTRUCTIONS:

Dinotefuran 20SG Alone: Add ½ of the required amount of water to the mix tank. With the agitator running, add the desired amount of Dinotefuran 20SG to the tank. Continue agitation while adding the remainder of the water. Begin application of the solution after Dinotefuran 20SG has completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

Dinotefuran 20SG + Tank Mixtures: Add ½ of the required amount of water to the mix tank. Start the agitator running before adding any tank mix partners. In general, tank mix partners should be added in this order: products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables), liquid flowables, liquids, emulsifiable concentrates, and surfactants/adjuvants. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all the mixture has been applied.

NOTE: When using Dinotefuran 20SG in tank mixtures, all products in water-soluble packaging should be added to the tank before any other tank mix partner, including Dinotefuran 20SG. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank.

If using Dinotefuran 20SG in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, precautions, and limitations which appear on the tank mix product label. No label dosage rate should be exceeded, and the most restrictive label precautions and limitations should be followed. This product should not be mixed with any product which prohibits such mixing. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are labeled.

Compatibility: NOTE - The crop safety of all potential tank mixes on all crops has not been tested. Before applying any tank mixture not specifically recommended on this label, the safety to the target crop should be confirmed.

Dinotefuran 20SG is compatible with most commonly used pesticides. However, since it is not possible to test all possible mixtures, the user should pre-test to assure the physical compatibility and lack of phytotoxic effect of any proposed mixtures with Dinotefuran 20SG. To determine the physical compatibility of Dinotefuran 20SG with other products, use a jar test, as described below:

Using a quart jar, add the proportionate amounts of the products to 1 quart of water. Add wettable powders and water-dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for additional required ingredients to the spray tank.

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RESISTANCE MANAGEMENT RECOMMENDATIONS

Dinotefuran 20SG contains a Group 4A insecticide. Insect biotypes with acquired resistance to Group 4A may eventually dominate the insect population if Group 4A insecticides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Dinotefuran 20SG or other Group 4A insecticides.

To delay insecticide resistance consider:

- NOT using a foliar application of Dinotefuran or any insecticide in the neonicotinoid class following an in-furrow or soil application of Dinotefuran 20SG.
- To optimize resistance management practices, no more than 3 applications of Dinotefuran 20SG per growing season are allowed.
- Avoiding the consecutive use of Dinotefuran 20SG or other Group 4A insecticides that have a similar target site of action, on the same insect species.
- Using tank-mixtures or premixes with insecticides from a different target site of action Group as long as the involved products are all registered for the same use and have different sites of action.
- Basing insecticide use on a comprehensive IPM program.
- Monitoring treated insect populations for loss of field efficacy.
- Contacting your local extension specialist, certified crop advisors, and/or manufacturers for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact Landis International, Inc., a representative of Mitsui Chemicals, Inc., at toll free number: 1-800-526-3471 or at their web site: www.landisintl.com

APPLICATION PROCEDURES AND SPRAY EQUIPMENT

Ground Application: Spray nozzles should be selected which will provide accurate and uniform spray deposition. Use spray nozzles which provide medium-sized droplets and reduce drift. To help insure accuracy, calibrate sprayer before each use. For information on spray equipment and calibration, consult nozzle manufacturers and/or State Extension Service specialists.

Apply Dinotefuran 20SG using sufficient water volume to provide thorough and uniform coverage. In situations where a dense canopy exists and/or pest pressure is high, use greater water volumes. The use of a spray adjuvant may improve spray coverage. Avoid making applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

Aerial Application: Apply Dinotefuran 20SG in water, using the minimum spray volume indicated in the "Remarks" section of each crop, but not less than 3 gals./A. Increase spray volume where practical to improve coverage. Avoid making application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

APPLICATION THROUGH IRRIGATION SYSTEMS (CHEMIGATION):

Dinotefuran 20SG alone or in combination with other products which are registered for application through sprinkler irrigation may be applied through irrigation systems where so noted in the soil application of each crop. Apply this product only through microirrigation (individual spaghetti tube), drip irrigation, overhead irrigation, or motorized calibrated irrigation equipment. Do not apply through any other type of irrigation system. Lack of effectiveness can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. 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.

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Using Water from Public Water Systems:

DO NOT APPLY DINOTEFURAN 20SG THROUGH ANY IRRIGATION SYSTEM PHYSICALLY 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 per year. Dinotefuran 20SG may be applied through irrigation systems which may be supplied by a public water system only if the water from the public water system is discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Any irrigation system using water supplied from a public water system must also meet the following requirements:

Operating Instructions for All Recommended Types of Irrigation Systems:

1. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
2. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. 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.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
6. 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.
7. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
8. Do not apply when wind speed favors drift beyond the area intended.

Calibration and Application Instructions:

Dinotefuran 20SG should be applied under the schedule specified in the specific crop use recommendations, not according to the irrigation schedule unless the events coincide. In general, set the equipment to apply the minimum amount of water per acre. Run the system at 86 - 90% of the manufacturer's maximum rated travel speed.

The following calibration and application techniques are provided for user reference, but do not constitute a warranty of fitness for application through sprinkler irrigation equipment. Users should check with state and local regulatory agencies for potential use restrictions before applying any agricultural chemical through sprinkler irrigation equipment.

Center Pivot Irrigation Equipment:

NOTES: 1) Use only drive systems that provide uniform water distribution. 2) Do not use end guns when chemigating Dinotefuran 20SG through center pivot systems because of non-uniform application. 3) Plug the first nozzle closest to the well head to protect the water source.

1. Determine the size of the area to be treated.
2. Determine the time required to apply 0.1 - 0.25 inches of water over the area to be treated when the system and injection equipment are operated at normal pressures as recommended by the equipment manufacturer. Run the system at 80-95% of the manufacturer's rated maximum travel speed.
3. Using water, determine the injection pump output when operated at normal line pressure.
4. Determine the amount of Dinotefuran 20SG, and any tank mix partners, required to treat the area covered by the irrigation system.
5. Add the required amount of Dinotefuran 20SG, and any tank mix partners, and sufficient water to meet the injection time requirements to the solution tanks. (See "Mixing Instructions" section of this label.)

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6. Make sure the system is fully charged with water before starting injection of the Dinotefuran 20SG solution. Time the injection to last at least as long as it takes to bring the system to full pressure.
7. Maintain constant agitation in the solution tank during the injection period.
8. Inject the specified amount of Dinotefuran 20SG per acre continuously for one complete revolution of the system.
9. Stop the injection equipment after treatment is complete. Continue to operate the system until the Dinotefuran 20SG solution has cleared all of the sprinkler heads.
10. Allow time for all lines to flush the pesticide through all nozzles before turning off irrigation water.

Solid Set, Hand Move, and Moving Wheel Irrigation Equipment:

1. Determine the acreage covered by the sprinklers.
2. Fill injector solution tank with plain water and calibrate the flow rate of the system to deliver the contents of the tank over a 20-40 minute time interval.
3. Determine the amount of Dinotefuran 20SG required to treat the area covered by the irrigation system.
4. Add the required amount of Dinotefuran 20SG, and any other tank mix partners, into the same quantity of water used to calibrate the injection period. (See "Mixing Instructions" section of this label.)
5. Operate the system at the same pressure and time interval established during the calibration.
6. Inject specified amount of Dinotefuran 20SG per acre for either a 20-40 minute period at the end of a regular irrigation set, or as a 20-40 minute injection as a separate application not associated with a regular irrigation to maximize retention of the insecticide by the foliage.
7. Stop injection equipment after treatment is completed. Continue to operate the system until the Dinotefuran 20SG solution has cleared the last sprinkler head. To ensure lines are flushed and free from remaining pesticides, a dye indicator may be injected into the lines to mark the end of the application period.

RECOMMENDATIONS TO AVOID SPRAY DRIFT

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making decisions. Where states have more stringent regulations, they should be observed. Follow these recommendations to avoid spray drift:

1. Make applications when wind velocity favors on-target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 10 mph. Avoid applications when wind gusts approach 10 mph.
2. Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.
3. Do not cultivate or plant crops within 25 feet of the aquatic area as to allow growth of a vegetative filter strip.
4. Do not make applications during temperature inversions. Inversions are characterized by stable air and increasing temperatures with increased 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.
5. Use the largest droplet size consistent with good pest control. Small droplets are more prone to spray drift and can be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.
6. Apply as close to target plants as practical to obtain a good spray pattern for adequate coverage. Applications more than 10 ft. above the crop canopy should be avoided.
7. For aerial applications, the spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should be used and must not exceed 75% of wing span or rotor diameter.

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Air Assisted (Air Blast) Tree and Vine Sprayers (Grapes and Potato Only): Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radially or laterally directed air stream.

In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy.
- Block off upward pointed nozzles when there is no overhanging canopy.
- Use only enough air volume to penetrate the canopy and provide good coverage.
- Do not allow spray to go beyond the edge of the cultivated area. Spray the outside row only from outside the planting.

Cotton

Crop	Pest	Product Rate / Acre Per Application	Remarks
Cotton	Cotton aphid, Sweetpotato whitefly, Silverleaf whitefly, Banded wing whitefly, Plant bug, Leafhoppers, Thrips	0.225 - 0.67 lb/A (0.045 - 0.134 lb ai/A)	<p>Foliar Application: Apply with air or ground equipment in adequate water for uniform coverage (3 to 10 gals./acre by air or 10 to 50 gals./acre by ground).</p> <p>Higher water volumes provide improved insect control.</p> <p>Begin applications when first pest activity is noticed or when insects reach threshold levels per University/Extension recommendations and repeat as needed to maintain control, but not more often than every 7 days. For best results, time application before a damaging population becomes established.</p> <p>Under severe pest pressure, use the higher recommended rates.</p>
<p>Dinotefuran 20SG may be mixed and/or alternated with commonly used insecticides to comply with local IPM and Resistance Management programs.</p> <p>Do not apply within 14 days of harvest</p> <p>Do not apply more than a total of 1.34 lbs. of DINOTEFURAN 20SG (0.268 lb. ai) per acre per season as foliar sprays.</p>			

Head & Stem Brassica

Crop	Pest	Product Rate/ Acre Per Application	Remarks
Broccoli, Brussels sprouts, Cabbage, Cauliflower, Cavalo broccolo, Chinese broccoli, Chinese cabbage, Chinese mustard cabbage, Kohlrabi	Green peach aphids, Cabbage aphids, Leafminers, Whiteflies	<p>FOLIAR: 0.225 - 0.895 lb/A (0.045 - 0.179 lb ai/A)</p> <p>OR</p> <p>SOIL: 1.13 - 1.34 lb/A (0.226 - 0.268 lb ai/A)</p> <p>1.13 - 1.65 lb/A 0.226 - 0.33 lb a.i./A</p>	<p>Foliar Application: Apply with air or ground equipment in adequate water for uniform coverage (3 to 10 gals./acre by air or 20 to 40 gals./acre by ground).</p> <p>Soil Application: See conversion chart for linear application plant application rates.</p> <p>Higher water volumes provide improved insect control.</p> <p>Begin applications when first pest activity is noticed or when insects reach threshold levels per University/Extension recommendations and repeat as needed to maintain control, but not more often than every 7 days. For best results, time application before a damaging population becomes established.</p> <p>Under severe pest pressure, use the higher recommended rates.</p> <p>Do not apply to vegetables grown for seed.</p>
<p>Soil Application</p> <p>Apply specified dosage in sufficient carrier volume to insure uniform application and incorporate into the soil using one of the following methods:</p> <ol style="list-style-type: none"> (1) In a narrow band centered on the plant row in the bedding operation just prior to planting. For best results band width should be 2" or less and placed 1 to 2" below the seed depth. (2) In-furrow spray at or below seed level or a narrow surface band above the seedline during planting. For surface-banded applications incorporate to a depth of 1-1/2" with sufficient irrigation within 24 hours to insure satisfactory insect control. (3) As a post-seeding drench, transplant drench or hill drench. Applications should be made with sufficient water to insure incorporation into the root zone. (4) As a sidedress after plants are established. Applications should be placed within 2 to 4" to the side of each row and incorporated 1 or more inches deep. Applications should be made to each row if there are two rows per bed. (5) In drip or trickle irrigation water. <p>The rate applied affects the length of control. Use the high rate where infestations occur later in crop development, or where pest pressure is continuous.</p> <p>Dinotefuran 20SG may be mixed and/or alternated with commonly used insecticides to comply with local IPM and Resistance Management programs.</p> <p>For foliar applications, do not apply within 1 day of harvest. For soil applications, do not apply within 21 days of harvest.</p> <p>Do not combine foliar applications with soil applications, or vice versa. Only use one application method.</p> <p>Do not apply more than a total of 1.34 lbs. of DINOTEFURAN 20SG (0.268 lb. ai) per acre per season as foliar sprays. Do not apply more than a total of 2.68 lbs. of DINOTEFURAN 20SG (0.536 lb. ai) per acre per season as soil applications.</p>			

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Cucurbits

Crop	Pest	Product Rate / Acre Per Application	Remarks
Balsam pear (bitter melon), Calabaza, Chayote (fruit), Chinese okra, Chinese waxgourd, Citron melon, Cucumber, Gherkin, Gourds, Edible melons including hybrids (including cantaloupe, casaba, Chinese preserving melon, crenshaw, honeydew melons, honey balls, mango melon, muskmelon, Persian melon, winter melon), Pumpkin, Squash (including summer, winter acorn, spaghetti), Watermelon including hybrids	Melon aphid, Green peach aphid, Thrips, Leafhoppers, Leafminers, Whiteflies	FOLIAR: 0.225 - 0.895 lb/A (0.045 - 0.179 lb ai/A) OR SOIL: 1.13 - 1.34 lb/A (0.226 - 0.268 lb ai/A) 1.13 - 1.65 lb/A 0.226 - 0.33 lb a.i./A	<p>Foliar Application: Apply with air or ground equipment in adequate water for uniform coverage (3 to 10 gals./acre by air or 20 to 40 gals./acre by ground).</p> <p>Soil Application: See conversion chart for linear application plant application rates.</p> <p>Higher water volumes provide improved insect control.</p> <p>Begin applications when first pest activity is noticed or when insects reach threshold levels per University/Extension recommendations and repeat as needed to maintain control, but not more often than every 7 days. For best results, time application before a damaging population becomes established.</p> <p>Under severe pest pressure, use the higher recommended rates.</p> <p>Do not apply to vegetables grown for seed.</p>

Soil Application

Apply specified dosage in sufficient carrier volume to insure uniform application and incorporate into the soil using one of the following methods:

- (1) In a narrow band centered on the plant row in the bedding operation just prior to planting. For best results band width should be 2" or less and placed 1 to 2" below the seed depth.
- (2) In-furrow spray at or below seed level or a narrow surface band above the seedline during planting. For surface-banded applications incorporate to a depth of 1-1/2" with sufficient irrigation within 24 hours to insure satisfactory insect control.
- (3) As a post-seeding drench, transplant drench or hill drench. Applications should be made with sufficient water to insure incorporation into the root zone.
- (4) As a sidedress after plants are established. Applications should be placed within 2 to 4" to the side of each row and incorporated 1 or more inches deep. Applications should be made to each row if there are two rows per bed.
- (5) In drip or trickle irrigation water.

The rate applied affects the length of control. Use the high rate where infestations occur later in crop development, or where pest pressure is continuous.

Dinotefuran 20SG may be mixed and/or alternated with commonly used insecticides to comply with local IPM and Resistance Management programs.

For foliar applications, do not apply within 1 day of harvest. For soil applications, do not apply within 21 days of harvest.

Do not combine foliar applications with soil applications, or vice versa. Only use one application method.

Do not apply more than a total of 1.34 lbs. of DINOTEFURAN 20SG (0.268 lb. ai) per acre per season as foliar sprays. Do not apply more than a total of 2.68 lbs. of DINOTEFURAN 20SG (0.536 lb. ai) per acre per season as soil applications.

Fruiting Vegetables

Crop	Pest	Product Rate/ Acre Per Application	Remarks
Eggplant, Ground Cherry, Pepinos, Pepper (including bell peppers, chili peppers, cooking peppers, pimentos and sweet peppers), Tomatillo, Tomato (Do not apply to varieties of tomatoes which are less than 2 inches in size, such as cherry and grape tomatoes)	Green peach aphid, Potato aphid, Colorado potato beetle, Flea beetles, Leafhoppers, Leafminers Thrips, Whiteflies	FOLIAR: 0.225 - 0.895 lb/A (0.045 - 0.179 lb ai/A) OR SOIL: 1.13 - 1.34 lb/A (0.226 - 0.268 lb ai/A) 1.13 - 1.65 lb/A 0.226 - 0.33 lb a.i./A	<p>Foliar Application: Apply with air or ground equipment in adequate water for uniform coverage (3 to 10 gals./acre by air or 20 to 40 gals./acre by ground).</p> <p>Soil Application: See conversion chart for linear application plant application rates.</p> <p>Higher water volumes provide improved insect control.</p> <p>Begin applications when first pest activity is noticed or when insects reach threshold levels per University/Extension recommendations and repeat as needed to maintain control, but not more often than every 7 days. For best results, time application before a damaging population becomes established.</p> <p>Under severe pest pressure, use the higher recommended rates.</p> <p>Do not apply to vegetables grown for seed.</p> <p>Do not apply to varieties of tomato which are less than 2 inches in size, such as cherry or grape tomatoes.</p>

Soil Application

Apply specified dosage in sufficient carrier volume to insure uniform application and incorporate into the soil using one of the following methods:

- (1) In a narrow band centered on the plant row in the bedding operation just prior to planting. For best results band width should be 2" or less and placed 1 to 2" below the seed depth.
- (2) In-furrow spray at or below seed level or a narrow surface band above the seedline during planting. For surface-banded applications incorporate to a depth of 1-1/2" with sufficient irrigation within 24 hours to insure satisfactory insect control.
- (3) As a post-seeding drench, transplant drench or hill drench. Applications should be made with sufficient water to insure incorporation into the root zone.
- (4) As a sidedress after plants are established. Applications should be placed within 2 to 4" to the side of each row and incorporated 1 or more inches deep. Applications should be made to each row if there are two rows per bed.
- (5) In drip or trickle irrigation water.

The rate applied affects the length of control. Use the high rate where infestations occur later in crop development, or where pest pressure is continuous.

Dinotefuran 20SG may be mixed and/or alternated with commonly used insecticides to comply with local IPM and Resistance Management programs.

For foliar applications, do not apply within 1 day of harvest. For soil applications, do not apply within 21 days of harvest.

Do not combine foliar applications with soil applications, or vice versa. Only use one application method.

Do not apply more than a total of 1.34 lbs. of DINOTEFURAN 20SG (0.268 lb. ai) per acre per season as foliar sprays. Do not apply more than a total of 2.68 lbs. of DINOTEFURAN 20SG (0.536 lb. ai) per acre per season as soil applications.

Grapes

Crop	Pest	Product Rate/ Acre Per Application	Remarks
Grapes	Grape mealybug, Leafhoppers, Thrips, Glassy-wing sharpshooter	<p>FOLIAR: 0.225 - 0.66 lb/A (0.045 - 0.132 lb ai/A)</p> <p>SOIL: 1.13 - 1.32 lb/A (0.226 - 0.264 lb ai/A)</p> <p>1.13 - 1.65 lb/A 0.226 - 0.33 lb a.i./A</p>	<p>Foliar Application: Apply with air or ground equipment in adequate water for uniform coverage (3 to 10 gals./acre by air or 10 to 50 gals./acre by ground).</p> <p>Higher water volumes provide improved insect control.</p> <p>Begin foliar applications when first pest activity is noticed or when insects reach threshold levels per University/Extension recommendations and repeat as needed to maintain control, but not more often than every 14 days. For best results, time application before a damaging population becomes established.</p> <p>Under severe pest pressure, use the higher recommended rates.</p>

Soil Application

Apply specified dosage in sufficient carrier volume to insure uniform application and incorporate into the soil using one of the following methods:

(1) In drip or trickle irrigation water.

The rate applied affects the length of control. Use the high rate where infestations occur later in crop development, or where pest pressure is continuous.

Dinotefuran 20SG may be mixed and/or alternated with commonly used insecticides to comply with local IPM and Resistance Management programs.

Make only one soil application.

For foliar applications, do not apply within 1 day of harvest. For soil applications, do not apply within 28 days of harvest.

Do not apply more than a total of 1.32 lbs. of DINOTEFURAN 20SG (0.264 lb. ai) per acre per season as foliar sprays. Do not apply more than a total of ~~1.32 lbs.~~ 1.65 lbs. of DINOTEFURAN 20SG (~~0.264 lb. ai~~) (0.33 lb ai) per acre per season as soil applications.

NOTE: Regardless of application method do not apply more than a total of 2.64 lbs of DINOTEFURAN 20SG (0.528 lb. ai) per acre per season.

Leafy Vegetables

Crop	Pest	Product Rate/ Acre Per Application	Remarks
Leafy Vegetables (includes: Amaranth, Arugula, Cardoon, Celery, Chinese Celery, Celtnce, Chervil, Edible-leaved & Garland Chrysanthemum, Corn Salad, Garden & Upland Cress, Dandelion, Dock, Endive, Florence Fennel, Head & Leaf Lettuce, Orach, Parsley, Garden & Winter Purslane, Radicchio, Rhubarb, Spinach, New Zealand & Vine Spinach, Swiss Chard)	Potato aphid, Green peach aphid, Sweetpotato whitefly, Silverleaf whitefly, Banded wing whitefly, Leafhopper, Leafminer	<p>FOLIAR: 0.225 - 0.67 lb/A (0.045 - 0.134 lb ai/A)</p> <p>OR</p> <p>SOIL: 1.13 - 1.34 lb/A (0.226 - 0.268 lb ai/A)</p> <p>1.13 - 1.65 lb/A 0.226 - 0.33 lb a.i./A</p>	<p>Foliar Application: Apply with air or ground equipment in adequate water for uniform coverage (3 to 10 gals./acre by air or 20 to 40 gals./acre by ground).</p> <p>Soil Application: See conversion chart for linear application plant application rates.</p> <p>Higher water volumes provide improved insect control.</p> <p>Begin applications when first pest activity is noticed or when insects reach threshold levels per University/Extension recommendations and repeat as needed to maintain control, but not more often than every 7 days. For best results, time application before a damaging population becomes established.</p> <p>Under severe pest pressure, use the higher recommended rates.</p> <p>Do not apply to vegetables grown for seed.</p>

Soil Application

Apply specified dosage in sufficient carrier volume to insure uniform application and incorporate into the soil using one of the following methods:

- (1) In a narrow band centered on the plant row in the bedding operation just prior to planting. For best results band width should be 2" or less and placed 1 to 2" below the seed depth.
- (2) In-furrow spray at or below seed level or a narrow surface band above the seedline during planting. For surface-banded applications incorporate to a depth of 1-1/2" with sufficient irrigation within 24 hours to insure satisfactory insect control.
- (3) As a post-seeding drench, transplant drench or hill drench. Applications should be made with sufficient water to insure incorporation into the root zone.
- (4) As a sidedress after plants are established. Applications should be placed within 2 to 4" to the side of each row and incorporated 1 or more inches deep. Applications should be made to each row if there are two rows per bed.
- (5) In drip or trickle irrigation water.

The rate applied affects the length of control. Use the high rate where infestations occur later in crop development, or where pest pressure is continuous.

Dinotefuran 20SG may be mixed and/or alternated with commonly used insecticides to comply with local IPM and Resistance Management programs.

For foliar applications, do not apply within 7 days of harvest. For soil applications, do not apply within 21 days of harvest.

Do not combine foliar applications with soil applications, or vice versa. Only use one application method.

Do not apply more than a total of 1.34 lbs. of DINOTEFURAN 20SG (0.268 lb. ai) per acre per season as foliar sprays. Do not apply more than a total of 2.68 lbs. of DINOTEFURAN 20SG (0.536 lb. ai) per acre per season as soil applications.

Potato

Crop	Pest	Product Rate/ Acre Per Application	Remarks
Potato	Green peach aphids, Potato aphids, Colorado potato beetle, Flea beetles, Potato leafhopper, Psyllids	FOLIAR: 0.25 - 0.33 lb/A (0.050 - 0.066 lb ai/A) 0.25 - 0.88 lb/A 0.05 - 0.176 lb ai/A OR SOIL: 1.40 - 1.65 lb/A (0.28 - 0.33 lb ai/A)	Foliar Application: Apply with air or ground equipment in adequate water for uniform coverage (3 to 10 gals./acre by air or 10 to 50 gals./acre by ground). Soil Application: See conversion chart for linear application plant application rates. Higher water volumes provide improved insect control. Begin foliar applications when first pest activity is noticed or when insects reach threshold levels per University/Extension recommendations and repeat as needed to maintain control, but not more often than every 14 days. For best results, time application before a damaging population becomes established. Under severe pest pressure, use the higher recommended rates.

Soil Application

Apply specified dosage in sufficient carrier volume to insure uniform application and incorporate into the soil using one of the following methods:

- (1) In a narrow band centered on the plant row in the bedding operation just prior to planting.
- (2) In-furrow spray at planting. Direct spray in the furrow on the seed pieces or potatoes.
- (3) As a sidedress to both sides of the row or as a spray at ground crack directly over the row during hilling. Cover immediately with soil.

The rate applied affects the length of control. Use the high rate where infestations occur later in crop development, or where pest pressure is continuous.

Dinotefuran 20SG may be mixed and/or alternated with commonly used insecticides to comply with local IPM and Resistance Management programs.

For foliar applications, do not apply within 7 days of harvest. For soil applications, apply once at pre-plant, pre-emergence, or at ground crack as directed above.

Do not combine foliar applications with soil applications, or vice versa. Only use one application method.

Do not apply more than a total of 0.99 lbs. of DINOTEFURAN 20SG (0.198 lb. ai) per acre per season as foliar sprays. Do not apply more than a total of 1.65 lbs. of DINOTEFURAN 20SG (0.33 lb. ai) per acre per season as soil applications.

NOTE: Regardless of application method do not apply more than a total of 2.64 lbs of DINOTEFURAN 20SG (0.528 lb. ai) per acre per season.

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Conversion Chart for Linear Application								
	Ounces Product / 1000 Row Feet							
Row width	20"	24"	28"	30"	32"	34"	36"	40"
Rate/A of Product (lb)								
1.13	0.69	0.83	0.96	1.03	1.10	1.17	1.24	1.38
1.20	0.73	0.88	1.02	1.10	1.17	1.24	1.32	1.46
1.27	0.77	0.93	1.08	1.16	1.24	1.32	1.39	1.55
1.32	0.81	0.97	1.12	1.21	1.29	1.37	1.45	1.62
1.34	0.82	0.98	1.14	1.23	1.31	1.39	1.47	1.64
1.65	1.00	1.21	1.40	1.50	1.61	1.71	1.81	2.01

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

Pesticide Storage: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in a cool dry place. Do not store diluted spray. For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-CLEANUP.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal:

Triple rinse (or equivalent). Do not reuse container. Offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

CONDITIONS OF SALE

MITSUI CHEMICALS, INC., warrants that this product in its unopened package conforms to the chemical description on the label and is reasonably fit for the purposes set forth on the label when used according to directions under normal use conditions to the crops specified. To the extent consistent with applicable law, there are no other warranties, expressed or implied, concerning the use of this product other than indicated on the label. To the extent consistent with applicable law, this warranty does not extend to the handling or use of this product contrary to label instructions or under abnormal conditions or conditions not reasonably foreseeable to seller, and buyer assumes all risk of any such use.