

Biological Nematicide

DiTera[®] ES

Emulsifiable Suspension

ACTIVE INGREDIENT⁽¹⁾:

ABG-9008 Technical Powder containing dried fermentation solids and solubles of *Myrothecium verrucaria**, strain

AARC-0255 27.5% w/w

OTHER INGREDIENTS 72.5% w/w

TOTAL 100.0% w/w

Contains 2.34 lbs. active ingredient per gallon.

⁽¹⁾"Non-viable"/"killed" microbial composition.

*U.S. Patent No. 5,051,255

Potency: 18,200 RKU (Root-knot Units) per gram of product.

Potency units should not be used to adjust use rates.

EPA Reg. No. 73049-43

EPA Est. No. 33762-IA-001

List No. 12016

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**KEEP OUT OF REACH OF CHILDREN
CAUTION**

1.0

FIRST AID

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 treatment advice.
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 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 toll-free 1-800-892-0099 (24 hours) for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-6-VALENT (682-5368).

2.0 PRECAUTIONARY STATEMENTS

2.1 HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

2.2 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 E on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, or nitrile rubber, or neoprene rubber or viton
- Shoes plus socks

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.

Mixer/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitizations.

2.3 User Safety Recommendations

Users should:

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

2.4 Environmental Hazards

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 contaminate water by cleaning of equipment or disposal of equipment washwaters. Do not apply where run-off is likely to occur.

3.0 DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the Agency responsible for pesticide regulations.

4.0 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 the restricted-entry intervals. 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 4 hours.

Exception: If the product is soil injected or soil incorporated, the Worker Protection Standard under certain circumstances allows workers to enter the treated area if there will be no contact with anything that has been treated.

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

- Coveralls
- Chemical-resistant gloves, such as barrier laminate or nitrile rubber or neoprene rubber or viton
- Shoes plus socks

5.0 STORAGE AND DISPOSAL

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

Pesticide Storage: Keep containers tightly closed when not in use. Store in a cool, dry place. Avoid extreme temperatures. Thoroughly roll containers or recirculate contents before dispensing.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water when disposing of equipment washwaters.

Container Disposal: Triple rinse (or equivalent). Then 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.

6.0 GENERAL INFORMATION

DiTera ES controls the following plant nematodes parasitizing food, fiber and ornamental crops: *Meloidogyne* spp. (root-knot nematode), *Heterodera* and *Globodera* spp. (cyst nematode), *Pratylenchus* spp. (lesion nematode), *Tylenchulus semipenetrans* (citrus nematode), *Trichodorus* spp. (stubby-root nematode), *Paratylenchus* spp. (pin nematode), *Rotylenchulus* spp. (reniform nematode), *Xiphinema* spp. (dagger nematode), *Belonolaimus* spp. (sting nematode), *Cricone-moides* spp., *Cricone-mella* spp. and related genera (ring nematodes), *Tylenchorhynchus* spp. (stunt nematodes), *Hoplolaimus* spp. (lance nematodes), *Rotylenchus* spp., *Helicotylenchus* spp. (spiral nematodes), *Radopholus* spp. (burrowing nematodes), and other plant parasitic nematodes.

7.0 GENERAL INSTRUCTIONS

DiTera ES may be applied to the soil as a pre-plant, at planting or post-plant treatment on annual and perennial crops using ground equipment (refer to commodities listed in Table 1). Pre-plant applications should preferably be close to the actual planting times. Unless otherwise specified, *DiTera* ES must be incorporated into the soil for optimum results. Incorporation may be accomplished by irrigation or mechanical equipment.

The optimal application time should be determined based on the cultural practices and the nematode population dynamics. For perennial crops, apply *DiTera* ES just prior to a root flush to protect young roots. Multiple applications may be required for crops with multiple root flushes (for example, grapes, bananas, etc.).

DiTera ES may be applied using ground sprays, or using approved irrigation systems (refer to Chemigation Use Directions), with quantities of water sufficient to provide coverage of the root area of the plants. The amount of water needed per acre will depend on the plant species, biology of the nematode species to be controlled, stage of crop, weather, soil moisture conditions, level of nematode infestation, etc. Use a minimum dilution of 1 part *DiTera* ES and 2 parts water.

Do not apply directly to foliage.

Do not apply by mist sprayer or aerial spray equipment.

7.1 Mixing Recommendations

Important - Do not add *DiTera* ES to the mix tank before filling with 1/2 to 3/4 the desired quantity of water. Start the mechanical or hydraulic agitation to provide moderate circulation before adding *DiTera* ES. Add the desired amount of *DiTera* ES and the remaining volume of water to the mix tank and continue circulation. Include rinse water from the container. Do not mix more *DiTera* ES than can be used in a 24-hour period. Rinse and flush spray equipment thoroughly following each use. Use a strainer no finer than 50 mesh in conventional spray systems.

DO NOT add an agricultural surfactant to the *DiTera* ES tank mix.

7.2 Compatibility

The *DiTera* ES application directions refer to the use of the product alone. Data concerning the compatibility of *DiTera* ES with other agricultural products are not available. Valent does not assume responsibility for unexpected, adverse results due to the tank mixing or simultaneous applications of *DiTera* ES with other agricultural products including fertilizers.

8.0 CHEMIGATION

8.1 Mixing and Application Instructions

DiTera ES may be injected undiluted (neat) or diluted with water. The undiluted product and the thoroughly mixed suspension can be applied through irrigation systems described under Chemigation Use Directions, so as to treat the soil around the crop root-zone. It is recommended that the material be used immediately after mixing in order to avoid settling. *DiTera* ES must be applied as a dedicated irrigation between normal irrigations or at the end of a scheduled irrigation. To minimize excessive dilution or leaching of product from root zone, *DiTera* ES must be applied in the highest concentration over the shortest time span possible.

Do not apply this product through any type of irrigation system unless labeling on chemigation is followed.

Undiluted Applications

For undiluted injection for chemigation make sure tank and injection system are free of all residual water. Flush and clean nurse tanks, lines, screen canister, and pump with diesel fuel or a non-emulsifiable oil until they are water-free before and after application. Recirculate product in container. Charge the irrigation system. Inject *DiTera* ES into the irrigation system using a high-volume positive displacement pump. To avoid excessive leaching of product, flush irrigation lines for the minimum time period at the end of the application.

Diluted Applications

Pre-mix product in a mix tank. Fill tank 1/2-3/4 with the desired amount of water and start hydraulic or mechanical agitation. Add *DiTera* ES to water at a ratio of 1 part product and 1.5-2.0 parts water and mix thoroughly. Charge irrigation system. Inject mixture into system using a high-volume positive displacement pump while maintaining agitation in the mix tank. To avoid excessive leaching of product, flush irrigation lines for the minimum time period at the end of the application.

8.2 Chemigation Use Directions

Apply this product only through the following types of irrigation systems: sprinkler, including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, or hand move; flood (basin); furrow; border; or low pressure (including drip/trickle, minisprinklers, drip tape, strip tubing and jets).

Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact local state extension personnel, equipment manufacturers or other experts.

Do not connect irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label safety devices for public water systems are in place.

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.

Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

Systems utilizing sprinkler chemigation, a pressurized water and pesticide injection system, or drip/trickle chemigation, must meet the following requirements:

- The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

9.0 USE DIRECTIONS

Due to the nature of the active ingredient and the distribution of nematodes in agricultural soils, in-row or band application is generally suitable for adequate nematode control. The rates provided are for broad cast applications. If banding or side-dressing, corresponding rates need to be calculated based on the actual area of soil to be treated. (See Table 2 for rate conversions). Higher rates and/or multiple applications may be required in coarse (light) soils with less than 1% organic matter. Maximum benefits may not be realized in agricultural fields containing non-decomposed plant materials including infected roots from a previous crop or in fields with very high nematode infestations.

10.0 NOTICE TO USER

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE CONCERNING THE USE OF THIS PRODUCT OTHER THAN AS INDICATED ON THE LABEL. USER ASSUMES ALL RISKS OF USE, STORAGE OR HANDLING NOT IN STRICT ACCORDANCE WITH ACCOMPANYING DIRECTIONS.

Table 1.

CROP GROUPS/ REPRESENTATIVE COMMODITIES	NEMATODES	BROADCAST* RATE (gallons/acre/ application)
Citrus Fruits such as sweet orange, lemon, grapefruit	Burrowing	10-40
Leafy Vegetables And Cole Crops such as celery, head & leaf lettuce, spinach, broccoli, cabbage	Citrus	
Pome Fruits such as apple, pear	Cyst	
Stone Fruits such as peach, plum, prune	Dagger	
Tree Nuts such as almond, pecan, walnut	Lance	
Grape	Lesion	
Pineapple	Needle	
	Pin	
	Reniform	
	Ring	
	Root-knot	
	Spiral	
	Sting	
	Stubby-root	
	Stunt	

*Refer to accompanying table for band application rates.

Table 2. Conversion Table for Band Applications

Band Width (Inches)	Pints of DiTera per 1,000 Feet of Row at Equivalent Broadcast Rate of Indicated Gallons of Product per Acre		
	10 gal/A	20 gal/A	40 gal/A
12	1.8	3.7	7.4
18	2.7	5.5	11.0
24	3.7	7.4	14.8
30	4.6	9.2	18.4
36	5.5	11.0	22.0
48	7.4	14.8	29.6
60	9.2	18.4	36.7

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04-4038/R4

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