



**DiTera ES  
BIOLOGICAL NEMATICIDE  
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.**

There is no direct relationship between intended activity (potency) and the Percent Active Ingredient by Weight.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

EPA Reg. No. 73049-43

EPA Est. No. 33762-IA-1

Registrant:  
Valent BioSciences Corporation  
870 Technology Way  
Libertyville, IL 60048

Net Contents:

<b>FIRST AID</b>	
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.
<b>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-892-0099 (24 hours) for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-6-VALENT.	

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

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

**Personal Protective Equipment**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category 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.

<p><b>User Safety Recommendations</b></p> <p>Users should:</p> <ul style="list-style-type: none"> <li>-Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.</li> </ul>
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**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.

**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.

#### 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 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

## 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.

## GENERAL INFORMATION

DiTera ES suppresses 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), *Criconemoides* spp., *Criconemella* spp. and related genera (ring nematodes), *Tylenchorhynchus* spp. (stunt nematodes), *Hoplolaimus* spp. (lance nematodes), *Rotylenchus* spp., *Helicotylenchus* spp. (spiral), *Radopholus* spp. (burrowing nematodes), and other plant parasitic nematodes.

## 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 (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.

### **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.

### **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.

### **CHEMIGATION**

#### **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 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.

**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.

## **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 broadcast 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.

## **NOTICE TO USER**

Seller makes no warranty, express or implied, of the 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.

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<b>TABLE 1.</b>		
<b>CROP GROUPS/REPRESENTATIVE COMMODITIES</b>	<b>NEMATODES</b>	<b>BROADCAST*RATE (gallons/acre/application)</b>
<u>BERRIES</u> such as blackberry, raspberry, blueberry	Burrowing Citrus Cyst Dagger Lance Lesion Needle Pin Reniform Ring Root-knot Spiral Sting Stubby-root Stunt	10-40
<u>CITRUS FRUITS</u> such as sweet orange, lemon, grapefruit		
<u>CUCURBIT VEGETABLES</u> such as cucumber, melon, squash		
<u>FLOWERING, BEDDING PLANTS, ORNAMENTALS</u> , such as fern and hosta		
<u>FRUITING VEGETABLES</u> such as eggplant pepper, tomato		
<u>HERBS AND SPICES</u> such as basil, black pepper, chive, celery seed, dill seed		
<u>LEAFY VEGETABLES AND COLE CROPS</u> such as celery, head & leaf lettuce, spinach, broccoli, cabbage		
<u>LEGUME VEGETABLES</u> such as bean, pea, soybean		
<u>POME FRUITS</u> such as apple, pear		
<u>ROOT AND TUBER VEGETABLES</u> such as carrot, potato, radish, sugar beet, ginseng		
<u>STONE FRUITS</u> such as peach, plum, prune		
<u>TREE NUTS</u> such as almond, pecan, walnut		
<u>MISCELLANEOUS CROPS</u> : asparagus, avocado, banana, cacao bean, coconut, coffee, cotton, cranberry, date, fig, globe artichoke, grape, hops, kiwi fruit, mango, mushroom, okra, papaya, pawpaw, peanut, persimmon, pineapple, plantain, strawberry, sugarcane, tobacco, turf, water chestnut		

\*Refer to accompanying table for band application rates.



## DiTera ES

TABLE 2. CONVERSION TABLE FOR BAND APPLICATIONS

Band Width Inches	Pints of DiTera per 1000 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