



U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Biopesticides and Pollution Prevention Division (7511P)  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

**NOTICE OF PESTICIDE REGISTRATION**

Registration  
 Reregistration

(under FIFRA, as amended)

EPA Reg. Number:

70127-8

Date of Issuance:

2/2/09

Term of Issuance:

Conditional

Name of Pesticide Product:

Taenure Granular Bioinsecticide

**Name and Address of Registrant (include ZIP Code):**

Mr. Tom Schreier  
Regulatory Affairs Manager  
Novozymes Biologicals, Inc.  
5400 Corporate Circle  
Salem, VA 24153

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

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

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

The registration amendment application, referred to above, is acceptable under Section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, provided that you do the following:

1. Submit/cite all data required for registration of your product under FIFRA Section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Submit three (3) copies of the revised final printed labeling before you release the product for shipment. Refer to attached Type Size Requirements for final printed labeling.
2. Provide confirmatory data to demonstrate that potential unintentional ingredients, including fungal and

Signature of Approving Official:

W M M

(See second page for signature)

Date:

2/2/09

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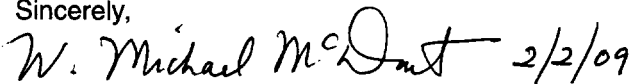
microbiological contaminants, of the technical active ingredient, *Metarrhizium anisopliae* strain F52, will not harm human health and the environment. These data must meet the microbial pesticide data requirements of 40 CFR §158.2100 (OPPTS guidelines 885.1200 and 885.1300). They are required to proceed to FIFRA Section 3(c)(5) registration of the source material TAE-001 Technical (EPA Reg. No. 70127-7) and must be provided within one year of the registration date of this product. This registration notice supersedes all previous registration notices issued for this pesticide product. Except for the condition of registration described in this registration notice, all other conditions previously imposed for this EP and for the technical for the currently registered sites have been satisfied.

This registration will automatically expire on midnight January 30, 2010, if you do not comply with these conditions. Any requests for time extensions to provide the data must be submitted in writing prior to the expiration date. If approved, extension requests will result in other appropriate expiration dates as determined by the Agency. When you submit the data required, the registration will continue until the data are evaluated and found to be acceptable to the Agency and in accordance with new projections regarding appropriate expiration dates.

If at any time, EPA determines that additional data are required to maintain an existing conditional registration, the Agency will require such data under Section 3(c)(2)(B) of FIFRA. If you do not comply with these conditions, this registration is subject to cancellation under FIFRA section 6(e). Your release of this product for shipment constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records. If you need further assistance on this matter, please email Shanaz Bacchus at [bacchus.shanaz@epa.gov](mailto:bacchus.shanaz@epa.gov) or call her on 703-308-8097.

Sincerely,

 2/2/09

W. Michael McDavit, Associate Director  
Biopesticides and Pollution Prevention Division.

Enclosure  
Cc: 70127-8

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[Front Panel]

**TAENURE GRANULAR BIOINSECTICIDE**  
**[ABN: Met52™ GRANULAR BIOINSECTICIDE]**  
**[Brandmark: Roots®]**

	% w/w
<b>ACTIVE INGREDIENT</b> – <i>Metarhizium anisopliae</i> Strain F52* .....	2.0%
<b>OTHER INGREDIENTS</b> .....	<u>98.0%</u>
<b>Total</b>	<b>100.0%</b>

\* Contains 9.0 x 10<sup>8</sup> Colony Forming Units (CFU)/gram.

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

**ACCEPTED**

2/2/09

Under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 70127-8

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

Causes moderate eye irritation. Harmful if inhaled, absorbed through skin, or swallowed. Avoid contact with skin, eyes, or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

<b>FIRST AID</b>	
<b>IF IN EYES:</b>	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.
<b>IF INHALED:</b>	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 a poison control center or doctor for further treatment advice.
<b>IF ON SKIN OR CLOTHING:</b>	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>IF SWALLOWED:</b>	Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
<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. For emergency information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents) call the National Pesticide Information Center at 1-800-858-7378 6:30 a.m. – 4:30 p.m. Pacific Time (PT), seven days a week. During other times call the poison control center at 1-800-222-1222.	

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[Reviewer Notes: The "not for sale" date is to serve as the batch code.]

Not for Sale or Use after (insert date) \_\_\_\_\_  
Net Contents: [3 Lbs.][5 Lbs.][25 Lbs.][bag]

Novozymes Biologicals Inc.  
5400 Corporate Circle  
Salem, VA 24153, USA  
1-800-342-6173

EPA Establishment Number: 070127-VA-09  
EPA Registration Number: 70127-8  
Made in USA

**PERSONAL PROTECTIVE EQUIPMENT**

Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Mixer/loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes and socks
- Protective eyewear
- Dust-mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any N-95, R-95, P-95 or HE filter. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

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.

<p><b>USER SAFETY RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Users should remove clothing immediately if pesticide gets inside, then wash thoroughly and put on clean clothing.</li> <li><input type="checkbox"/> Remove personal protection equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.</li> </ul>
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**ENVIRONMENTAL HAZARDS**

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. This product is approved for residential (urban and suburban) outdoor terrestrial non-food uses. Do not use near endangered insect habitat. Do not contaminate water when disposing of equipment washwater or rinsate.

**PHYSICAL OR CHEMICAL HAZARDS**

For spill, leak, fire, exposure, or accident call CHEMTREC at 1-800-424-9300, day or night.

**DIRECTIONS FOR USE  
READ THE LABEL BEFORE USING**

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

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

For uses that are soil incorporated mechanically, there is a 0 hour Restricted Entry Interval (REI) - the Worker Protection Standard allows workers to enter the treated area if there will be no contact with anything that has been treated. For all other uses, do not enter or allow worker entry into treated areas during the REI of four hours.

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

- Coveralls
- Waterproof gloves
- Shoes plus socks
- Protective eyewear
- Dust-mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any N-95, R-95, P-95 or HE filter.

**NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep unprotected persons out of treated areas until sprays have dried.

**GENERAL**

Taenure Granular Bioinsecticide is composed of spores of the insect pathogenic fungus *Metarhizium anisopliae* Strain F52 on a grain matrix. Once the product is incorporated into the growing medium, insects that come into contact with the fungus will become infected. The spores of *Metarhizium anisopliae* attach to the surface of the insect, germinate and begin to grow. It will penetrate the exoskeleton of the insect and grow very rapidly inside the insect, causing the insect to die. It usually takes 3 to 5 days, once the insect is exposed for death to occur. As insects are infected, other insects that come into contact with them may also become infected. Depending on cultural practices, it is not uncommon for control to last up to nine months.

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**APPLICATION INSTRUCTIONS**

Apply Taenure Granular Bioinsecticide prior to or during planting by thoroughly mixing the product into the growing medium, ensuring even distribution. Agitate the product during application to shake some fungal growth free from grains and into the surrounding growing medium. Apply at a rate of 1.5 to 3.0 lbs. of product per cubic yard of growing medium (or 25 to 50 grams per cubic foot of growing medium). Use higher label rates when larval pressure is expected to be high.

This product is not for use on agricultural crops which bear fruit or can be used as a food or feed commodity.

Do not mix fungicides in growth medium containing Taenure Granular Bioinsecticide. Keep the plants above 60°F and maintain good drainage. Taenure Granular Bioinsecticide is grown on cereal grains that will decompose in the growing media. Pests likely to be attracted by grains, such as rodents, must be controlled prior to use of this product.

**INSECTS CONTROLLED**

**Root Weevils:**

- Black Vine Weevil (all growth stages)
- Citrus Root Weevil (all growth stages of pest)\*
- Strawberry Root Weevil (all insect growth stages)

**Grubs:**

- Japanese Beetle larvae
- June Beetle larvae
- Oriental Beetle larvae

**Flies and Gnats:**

- Crane Fly larvae
- Mushroom Fly larvae
- Shore Fly larvae

**Thrips:**

- Onion Thrips pupae
- Western Flower Thrips pupae

For control of citrus root weevil on non-bearing citrus nursery stock ONLY.

**SITES FOR USE**

This product is approved for greenhouse and residential (urban and suburban) outdoor terrestrial non-food uses. Do not use near endangered insect habitat.

**ORNAMENTALS**

Do not use treated plants for food or animal feed.

Abutilon	Baby's Breath	Calluna	Croton
Achillea	Bachelors Button	Campanula	Crown of Thorns
Actinopteris	Bedding Plants	Candy-Tuft	Cultivated Greens
African Violet	Beefsteak Plant	Carnation	Cut Florist Greens
Ageratum	Begonia	Celosia	Cut Flowers
Aglaonema	Bird of Paradise	Centaurea	Cuttings
Ajuga	Bleeding Heart	Cerastium	Cyclamen
Allamanda	Bougainvillea	Chinese Evergreen	Daffodils
Allium (ornamental)	Bromeliad	Chrysanthemum	Dahlia
Alocasia	Buddleia	Cineraria	Daisy
Alyssum	Bulbs	Cissus	Daylily
Amaryllis	Buttercup	Clematis	Delphinium
Anemone	Butterfly Bush	Cockscomb	Dianthus
Annuals, Ornamental	Cactus	Coleus	Dieffenbachia
Anthurium	Caladium	Columbine	Dizygotheca
Aphelandra	Calathea	Coral Bells	Dracena
Aralia	Calceolaria	Coreopsis	Dusty Miller
Artemisia	Calendula	Cosmos	Easter Lily
Aster	Calla Lily	Crocus	Echeveria
Azalea	Calliandra	Crossandra	Episcia

Erica  
 Euonymus  
 Euphorbia  
 Exacum  
 False Dragonhead  
 Fatsia  
 Ferns  
 Ficus  
 Fittonia  
 Foliage Plants  
 Foxglove  
 Freesia  
 Fuchsia  
 Gaillardia  
 Gardenia  
 Gaultherium  
 Gazania  
 Geranium  
 Gerbera  
 Geum  
 Gladiolus  
 Gloxinia  
 Grape (non-bearing)  
 Grass, Ornamental  
 Ground Covers  
 Gynura  
 Gypsophila  
 Hedera  
 Hibiscus (ornamental)  
 Hollyhock  
 Honeysuckle  
 Hosta (Plantain Lily)  
 Hoya (Wax Plant)

Hyacinth  
 Hydrangea  
 Ice Plant  
 Impatiens  
 Iris  
 Ivy, Algerian  
 Ivy, English  
 Jasmine (ornamental)  
 Jessamine  
 Kalanchoe  
 Lantana  
 Liatris  
 Lily  
 Lily of the Nile  
 Liriope  
 Lobelia  
 Loosestrile  
 Lupine  
 Manville  
 Maple, Flowering  
 Marigold  
 Monarda  
 Mondo Grass  
 Morea, Yellow  
 Myrtle  
 Narcissus  
 Nasturtium  
 Nigella  
 Nursery Crops (non-bearing)  
 Ophiopogon  
 Orchid  
 Ornithogalum

Osmanthus  
 Oxalis  
 Pachysandra  
 Pansy  
 Pelargonium  
 Peony  
 Peperomia  
 Perwinkle  
 Petunia  
 Philodendron  
 Phlox  
 Photinia  
 Pilea  
 Pinks  
 Pittosporum  
 Podocarpus  
 Poinsettia  
 Poppy  
 Portulaca  
 Potentilla  
 Pothos  
 Potted Flowering Plants  
 Prayer Plant  
 Primrose  
 Pyracantha  
 Ranunculus  
 Rhododendron  
 Rose  
 Rubber Plant  
 Rudbeckia  
 Saintpaulia  
 Salvia  
 Sansevieria

Saxifraga  
 Schefflera  
 Scilla  
 Sedum  
 Seed Beds  
 Seedling Plants  
 Sempervivum  
 Senecio  
 Shrubs  
 Sinningia  
 Snapdragon  
 Spathiphyllum  
 Stachys  
 Statice  
 Stock  
 Stokesia  
 Strawflower  
 Sweet Pea  
 Sweet William  
 Syngonium  
 Tulip  
 Verbena  
 Veronica  
 Vinca  
 Violet  
 Virginia Creeper  
 Wall Flower  
 Wandering Jew  
 Wisteria  
 Yarrow  
 Yucca  
 Zinnia

**SHRUBS**

Do not use treated plants for food or animal feed.

Abelia  
 Andromeda  
 Arborvitae  
 Aucuba  
 Azalea  
 Bamboo  
 Barberry  
 Beauty Bush  
 Bedding Plants  
 Blueberry, Ornamental  
 Bog Rosemary  
 Bottlebrush  
 Boxwood  
 Bridal Wreath  
 Broom  
 Buckthorn  
 Camellia  
 Caranaga Carob  
 Carex  
 Ceanothus  
 Cleyera

Cordyline  
 Crape Myrtle  
 Cotoneaster  
 Cuttings  
 Daphne  
 Deutzia  
 Elderberry  
 Escallonia  
 Eugenia  
 Euonymus  
 Fig (non-bearing)  
 Firethorn  
 Forsythia  
 Fuchsia  
 Guava (non-bearing)  
 Hawthorn  
 Heath  
 Heather  
 Hibiscus (ornamental)  
 Hickory  
 Holly

Hydrangea  
 Indian Hawthorn  
 Juniper  
 Laurel  
 Leucothoe  
 Ligustrum  
 Lilac  
 Lippia  
 Manzanita  
 Mock Orange  
 Nandina  
 Nursery Crops (non-bearing)  
 Oleander  
 Oregon Grape (non-bearing)  
 Osmanthus  
 Pachistima  
 Pachysandra  
 Photinia  
 Pittosporum

Podocarpus  
 Poinciana  
 Privet  
 Pyracantha  
 Quince, (non-bearing)  
 Ornamental)  
 Rhamnus  
 Rhododendron  
 Rockrose  
 Rose  
 Santolina  
 Snowberry  
 Spicebrush  
 Spirae  
 Viburnum  
 Wax Myrtle  
 Weigla  
 Yew

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**SHADE AND FOREST TREE SEEDLINGS**

This product is approved for residential (urban and suburban) outdoor uses on seedlings. Do not use near endangered insect habitat.

Acacia	Conifers	Holly	PawPaw ( <i>non-bearing ornamental</i> )
Alder	Cottonwood	Hornbeam	Pine
Ash	Crabapple	Horse Chestnut	Poplar
Aspen	Cuttings	Ironwood	Privet
Basswood	Cypress	Juneberry	Quince ( <i>non-bearing ornamental</i> )
Bedding Plants	Dogwood	Juniper	Redbud
Beech	Douglas Fir	Larch	Redwood
Birch	Elder	Linden	Sassafras
Bougainvillea	Elm	Locust	Sourwood
Buckeye	Fir	Magnolia	Spruce
Butternut	Forest Seedlings	Maple	Sumac
Catalpa	Forest Trees	Mimosa	Sycamore
Cedar	Gingko	Mulberry	Tamarack
Chamaecyparis	Gum	Myrtle	Tulip Tree
Cherry, Wild ( <i>non-bearing</i> )	Hackberry	Nursery Crops	Willow
Chestnut ( <i>non-bearing ornamental</i> )	Hawthorn	Oak	Yellowwood
	Hemlock	Palm	
	Hickory		

*Applicators other than homeowners:*

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE**  
Store Taenure Granular Bioinsecticide in its original container in a cool, dry locked place out of reach of children and out of direct sunlight. Do not use or store near heat or open flame.

**PESTICIDE DISPOSAL**  
To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

**CONTAINER HANDLING**  
Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment then offer for recycling if available, or dispose of empty bag in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances.



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Homeowners:

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE**

Store Taenure Granular Bioinsecticide in its original container in a cool, dry locked place out of reach of children and out of direct sunlight. Do not use or store near heat or open flame.

**PESTICIDE DISPOSAL AND CONTAINER HANDLING**

Nonrefillable container. Do not reuse or refill container.

**If empty:**

Place container in trash or offer for recycling, if available.

**If partly filled:**

Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

**WARRANTY**

The Directions for Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully.

Novozymes Biologicals warrants that at the time of the first sale of this product it conforms to the chemical description on the label and when used according to the label directions under normal growing conditions is reasonably fit for the purposes referred to above. To the extent consistent with applicable law, buyers/users of this product assume full risk for any use contrary to the specified directions. If this product does not perform as warranted above, customer's sole remedy for breach of warranty, to the extent consistent with applicable law, shall be replacement of the product or refund of the purchase price paid, at the option of Novozymes Biologicals.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, EXCEPT AS PROVIDED ELSEWHERE IN WRITING CONTAINING AN EXPRESS REFERENCE TO THIS WARRANTY AND LIMITATION OF DAMAGES, SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OR GUARANTY, INCLUDING ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY, AND NO AGENT OF SELLER IS AUTHORIZED TO DO SO.