

PMRA Approved
2015-1275
2015-11-16

TRIANUM P Biological Fungicide
Water Dispersible Granule

For the suppression of post-emergence damping off (*Rhizoctonia solani*, *Pythium ultimum*), fusarium root rot and crown rot (*Fusarium oxysporum*) and cavity spot (*Pythium violae*) on listed greenhouse and field crops and greenhouse ornamentals, and for the reduction in symptoms of dollar spot (*Sclerotinia homoeocarpa*) and microdochium patch (*Microdochium nivale*) on turf

COMMERCIAL
READ THE LABEL BEFORE USING

GUARANTEE: *Trichoderma harzianum* Rifai strain T22 contains a minimum of 1×10^9 colony forming units per gram of dry weight

POTENTIAL SENSITIZER
LIVE ORGANISM

REG. No. 31502 *PEST CONTROL PRODUCTS ACT*

NET CONTENTS: 0.25 – 20 kg

Manufactured by:
Koppert Canada Limited
40 Ironside Cres., Unit # 3
Scarborough, Ontario
M1X 1G4
1-800-567-4195

Lot No.:
Date of Manufacture: Use within 6 months of date of manufacture.

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GENERAL INFORMATION: TRIANUM P Biological Fungicide (*Trichoderma harzianum*) is a biofungicide for the suppression of post-emergence damping off and root rot (*Rhizoctonia solani*, *Pythium ultimum*), fusarium root rot and crown rot (*Fusarium oxysporum*) and cavity spot (*Pythium violae*) on greenhouse lettuce, tomatoes and cucumbers, greenhouse ornamentals, and in field lettuce and carrots and ginseng. The active ingredient is a beneficial microbe *Trichoderma harzianum* strain T-22. When applied to transplants, greenhouse planting mix or soil, TRIANUM P Biological Fungicide actively grows onto plant roots as they develop and protect roots against *Pythium ultimum*, *Pythium violae*, *Fusarium oxysporum* and *Rhizoctonia solani*. TRIANUM P Biological Fungicide also reduces the symptoms of dollar spot (*Sclerotinia homoeocarpa*) and microdochium patch (*Microdochium nivale*) in turf. It can be applied by drench application to the growing medium or by spray at sowing. TRIANUM P Biological Fungicide can be used alone or in conjunction with certain chemical fungicides.

TRIANUM P Biological Fungicide protects plants against infection by soil-borne pathogens via the root system. TRIANUM P Biological Fungicide performs well under various environmental conditions. It grows under a wide temperature range (10°-34°C), at a pH between 4-8, in many types of growing media, and on the roots of a wide range of plants.

For control of seed rot and damping off of internally infected cuttings, use chemical fungicides or other appropriate measures in addition to TRIANUM P Biological Fungicide.

Note: TRIANUM P Biological Fungicide contains live spores of a beneficial microbe. TRIANUM P Biological Fungicide becomes active when soil temperatures are above 10°C. Disease suppression is not effective while soils remain cold and is more effective in neutral or acidic soils than in alkaline soils.

Disease suppression: The beneficial fungus *Trichoderma harzianum* T-22 out competes plant pathogenic fungi for space and nutrients, colonizing the plant roots ahead of the pathogens. It acts as a mycoparasite by producing enzymes which break down the hyphae of the plant pathogenic fungi.

DIRECTIONS FOR USE

For use on:

Greenhouse Lettuce, Tomatoes, Cucumbers and ornamentals
Outdoor: Turf, Lettuce, Carrots and Ginseng

- As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.
- DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.
- DO NOT allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters.

PREPARATION OF SUSPENSION

- Suspend 1 volume of TRIANUM P Biological Fungicide in 5 volumes of water.
- Mix thoroughly.
- Add suspension to required amount of water to obtain final drench volume (see below).
- Agitate continuously to maintain an even distribution of TRIANUM P Biological Fungicide spores, as they can precipitate out.
- Apply the suspension on the day of preparation.

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APPLICATION AND DOSE

TRIANUM P Biological Fungicide should be used preventatively. For the best results, always use TRIANUM P Biological Fungicide from propagation onwards, before occurrence of disease.

Use sufficient suspension to guarantee good penetration of the growing medium, but to maximize spore attachment to the plant roots, avoid run-off and excessive drainage for the first two days following application.

TRIANUM P Biological Fungicide is not a systemic product, and is therefore not taken up by the roots.

Specific Directions for Ornamentals: The large number of existing ornamental species and their varieties and cultivars coupled with the constant introduction of new varieties makes it impossible to field test TRIANUM P Biological Fungicide in every locale where it is sold or in all the combinations of location and plant varieties. To ensure that TRIANUM P Biological Fungicide is compatible with the ornamental plant variety or cultivar under your specific conditions, test on a limited scale and observe for phytotoxicity or other unintended side effects for two weeks before making large scale applications.

SOWING OF GREENHOUSE LETTUCE, TOMATOES, CUCUMBERS AND ORNAMENTALS

Crops	For Suppression of:	Pathogen	Application Timing	Rate
Lettuce	Post-emergence damping off	<i>Rhizoctonia solani</i>	Immediately after sowing seeds or sticking cuttings	1.5 g/m ² of cultivated area, suspended in 2.5-5 L of water
Tomatoes	Fusarium root rot and crown rot	<i>Fusarium oxysporum</i>		
Cucumbers	Post-emergence damping off	<i>Pythium ultimum</i>		
Ornamentals	Post-emergence damping off	<i>Pythium ultimum</i>		
	Fusarium root rot and crown rot	<i>Fusarium oxysporum</i>		

TRANSPLANTING OR REPOTTING OF GREENHOUSE LETTUCE, TOMATOES, CUCUMBERS AND ORNAMENTALS

Crops	For Suppression of:	Pathogen	Application Timing	Rate
Lettuce	Post-emergence damping off	<i>Rhizoctonia solani</i>	Directly after planting	<p>High Crop Density:</p> <p>Apply 3 g/m² of cultivated area. Use a water volume equivalent to 10% of the substrate volume or 2-5 L/m². Use a half-rate dose (1.5 g/m²) if plants have been treated with TRIANUM P previously. Repeat the half-rate booster dose every 10 weeks or after potting-on.</p> <p>Low Crop Density or in Rows:</p> <p>Apply 30 g/1000 plants. Use a water volume equivalent to 10% of the substrate volume or 100 litres/1000 plants. Use a half-rate dose (15 g/1000 plants) if plants have been treated with TRIANUM P previously. Repeat the half-rate booster dose every 10 weeks or after potting-on.</p>
Tomatoes	Fusarium root rot and crown rot	<i>Fusarium oxysporum</i>		
Cucumbers	Post-emergence damping off	<i>Pythium ultimum</i>		
Ornamentals	Post-emergence damping off	<i>Pythium ultimum</i>		
	Fusarium root rot and crown rot	<i>Fusarium oxysporum</i>		

FIELD CROPS

Crops	For Suppression of:	Pathogen	Application Timing	Rate
Lettuce	Post-emergence damping off	<i>Rhizoctonia solani</i>	Immediately after sowing seeds or transplanting	<p>After Sowing: 1.5 g/m² of cultivated area in 1.33 L of water.</p> <p>After transplanting: 6 g in 1 L of water and apply 500 L/ha of suspension.</p>
Carrots	Cavity spot	<i>Pythium violae</i>	Immediately after sowing seeds or transplanting	<p>In furrows: 1.5 kg/ha in 50-200 L of water</p> <p>In beds: 2.5 kg/ha in 50-200 L of water</p>

SPECIALTY CROPS

Crops	Diseases	Pathogen	Application Timing and Rate
Turf	For the reduction in symptoms due to: dollar spot	<i>Sclerotinia homoeocarpa</i>	Early Spring: Apply twice at a one month interval, at a dose of 30g/100m ² .
	For the reduction in symptoms due to: microdochium patch	<i>Microdochium nivale</i>	Summer and Autumn: Continue applications at dose of 15g/100m ² on a monthly interval. Final application: 4 weeks before autumn
Ginseng	For suppression of: root rot	<i>Pythium</i> spp., <i>Rhizoctonia</i> spp. or <i>Fusarium</i> spp.	At sowing in furrows: 1.5 kg/ha in 1000 L of water. At sowing in beds: 2.5 kg/ha in 1000 L of water.

COMPATIBILITY

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact Koppert Canada Limited at 1-800-567-4195 for information before mixing any pesticide or fertilizer that is not specifically recommended on this label. The user assumes the risk of losses that result from the use of tank mixes that do not appear on this label or that are not specifically recommended by Koppert Canada Limited.

PRECAUTIONS:

May cause sensitization. Avoid contact with skin, eyes and clothing. Avoid breathing dust or spray mist.

KEEP OUT OF REACH OF CHILDREN. Wear waterproof gloves, a long-sleeved shirt, long pants, a dust-mist filtering respirator/mask (NIOSH approval number prefix TC-21C) or NIOSH approved respirators (with any N-95, P-95, R-95 or HE filter for biological products), and shoes plus socks when handling, mixing/loading or applying the product and during all clean-up and repair activities. For soil applications in enclosed areas including greenhouses, keep all unprotected workers out of the treated areas until dusts have settled. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before re-use.

FIRST AID

IF SWALLOWED: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person. **IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice. **IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice. **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 centre or doctor for treatment advice. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

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TOXICOLOGICAL INFORMATION: Treat symptomatically.

STORAGE:

Store in a secure dry place at temperatures between 8°C and 10°C. Do not freeze. To prevent contamination store this product away from food or feed. Keep product in original container during storage and keep container lid tightly closed when not in use. This product should be used within 6 months of the date of manufacture.

DISPOSAL/ DECONTAMINATION:

1. Thoroughly empty the contents of the container into the application device or medium.
2. Make the empty container unsuitable for further use.
3. Dispose of the container in accordance with provincial requirements.
4. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

NOTICE TO USER:

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use this product.

Koppert Canada Limited guarantees that TRIANUM P Biological Fungicide is fit for the purpose and conforms to the specifications contained on this label. Koppert Canada Limited makes no warranty, express or implied including the warranties of commercially acceptable quality and/or fitness for any particular purpose concerning this material, other than those which are contained on this label, and will not be liable for whichever direct or indirect damage which is a consequence of injudicious use of the product or non-compliance with the prescriptions as contained in this label.