

# TECHNICAL DATA SHEET

## FERTICELL BACT. TRICHODERMA VIRIDE

Protection line

Product usable in Organic Agriculture according to Regulation (EU) No. 2018/848 and 2021/1165.  
Product that complies with NOP (National Organic Program - USDA)

### Description- specifications

**Trichoderma viride** is a biological fungicide based on a selected strain of naturally-occurring beneficial soil fungus *Trichoderma viride* (TNAU Strain) that protects crops from several diseases caused by seed borne and soil borne fungal pathogens like *Rhizoctonia* spp , *Pythium* spp , *Fusarium* spp and *Alternaria* spp. It is used as an effective seed dressing and soil treatment product to combat seed and soil borne fungal diseases. *Trichoderma viride* contains spores and mycelial fragments of *Trichoderma viride*. It is formulated as Wettable Powder with CFU count of  $2 \times 10^6$  /g.

**Trichoderma viride** is approved for use in Organic agriculture— *Trichoderma viride* (eventually renamed *Trichoderma reesei*).

Mode of Action Substrate Competition for space and Nutrients:

**Trichoderma viride** colonizes maximum space and absorbs maximum nutrients available at the target site and thereby controls the pathogens by starving them for food and competing for space-Domino effect

Mycoparasitism: **Trichoderma viride** is like a prophylactic biological fungicide that attacks disease-causing pathogens before they reach the root system. It grows fast and coils around the pathogen and penetrates through it. It derives nutrition from the target pathogenic fungus protoplasm and *Trichoderma viride* spores multiply inside target pathogenic fungus body and eventually kill it.

Enzyme production: **Trichoderma viride** secretes Cellulase and Chitinase enzymes which react with cell wall of the disease causative pathogenic fungi or bacteria and dissolve the same.

**Trichoderma viride** also secretes toxic substances such as Glyotoxin, Viridin and Trichodermin which aid in destroying the fungal pathogens. It also inactivates the pathogen's enzymes by secreting certain plant growth stimulating substances. A long lasting effect against pathogens is thus observed owing to the secondary metabolite secretion which exhibit antibiosis effect on the pathogen.

### Uses



Foliar  
Fertigation

### GUARANTEED ANALYSIS:

#### Composition

Spores and mycelial fragments of *Trichoderma viride*.  
It is formulated as Wettable Powder with CFU count of  $2 \times 10^6$ /g.

### PHYSICAL PROPERTIES

State Powder  
Colour White

### GENERAL USAGE AND DOSAGE RECOMMENDATIONS

#### Method of Application:

- **Seed treatment:** Mix 10 g of *Trichoderma viride* with 10 g of crude sugar in sufficient water to make slurry to treat 1 Kg seed. Coat the seed with this slurry so as to have a uniform coating all over the seeds. Dry the seeds in shade for 30 minutes and sow the treated seeds within 24 hours.
- **Soil application:** Mix 5- 10 Kg *Trichoderma viride* along with 1 Kg of crude sugar in sufficient quantity of organic fertilizer / de oiled cake and incubate at 30 % moisture level for 3 – 4 days and apply to root zone.  
Soil drenching, Nursery application, Root dipping: Mix 10 g of *Trichoderma viride* per L of water and use to drench soil / nursery / dip roots.
- **Drip Irrigation:** Mix 3- 5 Kg *Trichoderma viride* in 50 L of water and mix well. Allow to sediment and decant supernatant and feed it through drip irrigation.  
Note: **Trichoderma viride** should not be used in mushroom farming as it causes disease in mushrooms.

#### Application without sugar:

- **Seed Treatment:** 10 gm of formulation mix in 50ml. of water and applied on 1kg of seed uniformly, shade dry the seeds for 20 to 30 minutes before sowing.
- **Nursery Bed Treatment:** Mix 50 gm of formulation mix in 10 ltr. of water and drench nursery bed 1 Sq. meter are at time of seeding.
- **Seedling Treatment:** Dissolve 100 gm of formulation in 10 ltr. water and dip the roots of seedlings for 30-45 min before transplanting.
- **Soil Application:** Mix 2.5 kg with 50 Kg FYM and broadcast in one-hectare field before sowing.
- **Foliar Application:** Mix 5 gm with 1 ltr water.

Target Diseases *Trichoderma viride* is approved for seed / soil treatment of root rot of pulses ( cowpea , mung bean , and urad bean ) , damping off of chilli seedling, wilting of cowpea , root rot diseases of sesamum , root rot diseases of pigeon pea *Trichoderma viride* can also be used for fungal diseases ( Seed / Soil borne ) caused by *Pythium* spp, *Phthophthera* spp , *Alternaria* spp and the like that cause diseases such as Root rots, Wilts, Brown rot, Damping off, Charcoal rot and other seed borne and soil borne fungal diseases in crops.

Crops *Trichoderma viride* is suitable for application on Cereals , Millets , Pulses, Oilseeds, Fibre Crops , Sugar Crops , Forage Crops , Plantation crops ,Vegetables, Fruits, Spices , Flowers , Medicinal crops , Aromatic Crops , Orchards and Ornamentals, Paddy, Maize, Rice, Pulses, Vegetable crops, Cotton, Ginger, Turmeric, Cardamom, Tea, Coffee and Fruits crop etc.

Shelf Life: *Trichoderma viride* is stable for a period of 12 months from the date of manufacturing.

### Product suitable for:

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### Available containers



20 Kg.



Product suitable for use in Organic Agriculture in accordance with Regulations (EU) n°2018/848 and 2021/1165, the NOP Regulation.

Control Ecocert F-32600

### ❖ Protection

#### Cautions for handling and use of product

1. Avoid inhalation and skin contact while diluting as there could be spillage / splashes of the product.
2. Mixing and spraying equipment is to be thoroughly rinsed with water and detergent before using the same equipment for spraying other pesticides.
3. Surplus spray solution should not be disposed in crop lands / stagnant water / flowing water where there is a possibility of causing pollution to natural resources.
4. Do not eat / drink / smoke during application.

5. Direct incidence of **Trichoderma viride** may cause irritation and therefore it is recommended that the operator should use protective gear viz gloves, apron, mask, eye gear and hood.

#### Symptoms and Antidotes Symptoms:

Occasional symptoms include head ache and nausea Antidote: In the case of ingestion: symptomatic treatment is advised. In the case of contact with Eyes: Flush with water liberally for 20 minutes. In case of Skin contact, wash the affected area with plenty of water and soap. Citations There are many citations in public domain on effectiveness of **Trichoderma viride** as a BioFungicide Commitment to Nature.

**Trichoderma viride** is approved for use in organic agriculture.

**Trichoderma viride** is safe to use along with bio fertilizer inoculums like Nitrogen Fixing bacteria ; Phospho bacteria ; Potash mobilizing bacteria; Zinc mobilizing bacteria : Sulphur solubilizing bacteria : Silica solubilizing bacteria : Iron / Ferrous solubilizing bacteria : Manganese solubilizing microbe and Vesicular-arbuscular mycorrhiza •

**Trichoderma viride** can be used as an effective component in IPM programmes, thereby leading to a reduction in use of chemical pesticides/ fungicides and creating a safer soil environment. • **Trichoderma viride** does not lead to residue problems and doesn't cause resistance or resurgence problems

#### Benefits from **Trichoderma viride**

- **Trichoderma viride** effectively controls most of the economically important fungal diseases like Root rots, Wilts, Damping off and other seed borne and soil borne fungal diseases in crops. • Pathogenic fungi load reduction leads to improved plant health and thereby increased crop productivity.
- **Trichoderma viride** is earthworm friendly , pet friendly , eco friendly and infant friendly
- Eco-friendly bio-fungicide, does not cause any harm to the environment and non-targeted beneficial pest.
- Provides protection against a number of soil-borne / seed borne pathogens to crop in nursery beds and as well in field by action of myco-parasitism and antibiosis.
- Decomposes raw organic farm wastes, solubilizes soil phosphorus, reclaims adverse soils, promotes plant growth and protects soil eco-system.
- Increases the plant's growth & vigour as well as built resistance in plants to drought and diseases.

- Compatible with organic manures and bio-fertilizers.

ATTENTION  
CAUTION WHEN HANDLING  
MANDATORY USE OF:



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