

BIOKUPRUM™
Chaetomium cupreum
BioFungicide

Introducing BIODUPRUM™

BIODUPRUM™ is a biological fungicide based on a selected strain of naturally-occurring antagonistic fungus *Chaetomium cupreum* (CABI 353812) that protects crops from fungal diseases like early blight, late blight, leaf spot, stem rot, tuber rot and botrytis caused by various fungal species like *Phytophthora spp.*, *Rhizoctonia spp.*, *Fusarium spp.*, *Erwinia spp.*, *Xanthomonas spp.* and many more.

BIODUPRUM™ contains spores and mycelial fragments of *Chaetomium cupreum*. It is formulated as Wettable Powder

A Historical Brief

Brewer in 1984 and Strasser in 2000 have described about the antifungal activity exhibited by *Chaetomium cupreum* against *Phytophthora infestans* and some other phytopathogenic fungi. The fungus producing alkaloids have been described by Dang et al in 2009.

Mode of Action

Substrate Competition for space and Nutrients: *Chaetomium cupreum* competes with the pathogens by colonizing a large area of the root zone and competes for the plant substrates and nutrients thereby causing the pathogens to starve - Domino effect.

Mycoparasitism: *Chaetomium cupreum* penetrates the pathogen and infects it. Nutrition is derived from the target pathogenic fungus protoplasm and BIODUPRUM™ spores multiply inside target pathogenic fungus body and eventually kill the pathogen.

Enzyme production: *Chaetomium cupreum* produces certain enzymes which dissolve the host cell wall and penetrate and inactivate the host defense mechanism.

It produces alkaloids and oosporein which are metabolites of the fungus that have antifungal activity against pathogens.

Secondary metabolites secreted by the fungus such as azaphilones and bicyclic anthraquinone like chaetomanone are known to exhibit anti fungal properties.

Method of Application

Foliar Application: Mix 5 g. of BIOKUPRUM™ in 1 L of water and spray. Spray volume depends on the crop canopy.

Seed / Tuber Treatment: Mix 5 Kg of BIOKUPRUM™ in sufficient quantity of water to make slurry to coat the seeds / tubers. The seeds / tubers can be treated either in a seed treater mechanically or by dipping the seeds manually in solution / slurry for 30 -45 minutes before sowing.

Target Diseases

Early blight, late blight, leaf spot, stem rot, tuber rot and botrytis.

Crops

BIOKUPRUM™ 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.

Compatibility

BIOKUPRUM™ is compatible with BioPesticides and not with Chemical Fungicides.

Shelf Life

BIOKUPRUM™ is stable for a period of 12 months from the date of manufacturing.

Mass Composition

CONSTITUENT	W/W %	FUNCTION
<i>Chaetomium cupreum</i> (Spores and Mycelia)	01.00%	Active
Moisture	08.00% max	Inactive
Carrier Powder – Kaolin/Dextrose/Aqua	q.s.	Inactive

BIOLOGICAL COMPOSITION

CONSTITUENT	CFU/g.	FORMULATION
<i>Chaetomium cupreum</i>	2*10 ⁶	Powder

OTHER FORMULATIONS AVAILABLE

<i>Chaetomium cupreum</i> CFU/g	1*10 ⁹	Soluble Powder
<i>Chaetomium cupreum</i> CFU/ml	1*10 ⁹	Liquid
<i>Chaetomium cupreum</i>		Lyophilized

Free from Salmonella, Shigella , E.Coli

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 BOKUPRUM™ 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, was the affected area with plenty of water and soap.

Citations

There are many citations in public domain on effectiveness of *Chaetomium cupreum* as a BioFungicide

Commitment to Nature

- BOKUPRUM™ 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 environment.
- BOKUPRUM™ does not lead to residue problems and doesn't cause resistance or resurgence problems.

Benefits from BOKUPRUM™

- BOKUPRUM™ effectively controls some of the most economically important diseases like early blight, late blight, tuber rot in economic crops and plantations.

- Pathogenic fungi load reduction leads to improved plant health and thereby increased crop productivity.
- BOKUPRUM™ is earthworm friendly , pet friendly , eco friendly and infant friendly

