



**Government of India**  
**Ministry of Agriculture & Farmers Welfare**  
**Department of Agriculture & Farmers Welfare**  
**Directorate of Plant Protection, Quarantine & Storage**  
**Central Insecticide Board & Registration Committee N.H.-IV,**  
**Faridabad-121001 (Haryana)**

**MAJOR USES OF BIO-PESTICIDES**  
**(Registered under the Insecticides Act, 1968)**

**(UPTO - 31/05/2022)**

**(Based on certificate issued)**

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**BIO-PESTICIDES**

1. Major uses of Bio-fungicides (Page No. – 02 to 25)

1. Major uses of Bio-Fungicides					
Name of Crop	Common name of the Disease	Dose/ha		Dilution in water (liter/ha)	Waiting period (Days)
		a.i. (g)	Formulation (g/ml)/%		
Ampelomyces quisqualis 2.0% WP					
Okra (Bhindi)	Powdery mildew (Erysiphe cichoracearum)	-	2.5 kg	500	-
Neem oil based EC containing, Azadirachtin 0.030% (300 ppm)					
Bhindi	Powdery mildew	-	2-2.50	500	03
Pseudomonas fluorescens 1.75% WP (T Stanes Pf-1 Strain Accession No. MTCC 5671)					
Wheat	Loose smut	-	05 g/kg seed (Seed treatment)	Mix the required quantity of seeds with the required quantity of Pseudomonas fluorescens 1.75% WP formulation and ensure uniform coating. Shade dry and sow the seeds.	<b>Dilution in water (lit/ha)</b>  As per requirement for uniform coating of seeds  500 lit per ha
		-	2.5 kg per ha (05 g/litre water) (Foliar spray)	Spray Pseudomonas fluorescens 1.75% WP uniformly on the crop.	500 lit per ha

Tomato	Early blight		05 g/kg seed (Seed treatment)	Mix required quantity of the seeds with the required quantity of <i>Pseudomonas fluorescens</i> 1.75% WP. Ensure uniform coating, shade dry and sow the seeds.	<b>Dilution in water (lit/ha)</b>  As per requirement for uniform coating of seeds
			3 kg per ha (06 g/litre water) (Foliar spray)	Spray <i>Pseudomonas fluorescens</i> 1.75% WP uniformly on the crop.	500 lit per ha
<b><i>Bacillus subtilis</i> 1.50% L.F (T Stanes Bs-1 Strain MTCC 25072)</b>					
Banana	Sigatoka ( <i>Mycosphaerella musicola</i> )	-	5 Liter/ha (Foliar spray)	750 Liter/ha	-
<b><i>Pseudomonas fluorescens</i> 2.0% AS (Strain No. IPL/PS-01, Accession No. MTCC 5727)</b>					
Paddy	Bacterial leaf blight ( <i>Xanthomonas oryzae</i> pv. <i>oryzae</i> )	-	10 ml/litre of water	<b>Seedling Root Dip Treatment:</b> Mix 10 ml of <i>Pseudomonas fluorescens</i> 2.0% AS in one litre of water and dip the paddy seedling root for 30 minutes before transplanting followed by	Nil

				foliar application after 40-45 days of transplantation.	
		-	1.87-2.50 litre/ha	<b>Foliar Spray:</b> Suspend 1.87 to 2.50 litre of <i>Pseudomonas fluorescens</i> 2.0% AS in 500 litre of water and spray uniformly after 40-45 days of transplantation over one hectare land 2-3 spray are required depending upon the disease incidence at interval of 10-12 days using a hand operated Knapsack sprayer or power sprayer fitted with a hollow cone nozzle.	Nil
<b><i>Bacillus subtilis</i> 2.0% AS (Strain No. IPL/BS-09, Accession No. MTCC 5728)</b>					
Paddy	Bacterial leaf blight	-	10 ml/litre of	<b>Seedling Root</b>	Nil

	(Xanthomonas oryzae pv. oryzae)		water	<b>Dip Treatment:</b> mix 10ml of <i>Bacillus subtilis</i> 2.0% AS in one litre of water and dip the paddy seedling root for 30 minutes before transplanting followed by foliar application.	
		-	1.87-2.50 litre/ha	<b>Foliar Spray:</b> Suspend 1.87 to 2.50 litre of <i>Bacillus subtilis</i> 2.0% AS in 500 litre of water and spray uniformly after 40-45 days of transplantation over one hectare land 2-3 spray are required depending upon the disease incidence at interval of 10-12 days using a hand operated Knapsack sprayer or power sprayer fitted with a hollow cone nozzle.	Ni
<b>Bacillus subtilis 1.15% AS ( MTCC Accession no. 5786)</b>					
Grapes	Powdery mildew ( <i>Erysiphe necator</i> )	-	2 ml/litre water	<i>Bacillus subtilis</i> 1.15% AS is applied as foliar	-

				<p>spray and soil spray @ 2 ml/litre of water. The product has to be used with activator provided. Shake the bottle well. Mix the contents of <i>Bacillus subtilis</i> 1.15% AS activator bottles with <i>Bacillus subtilis</i> 1.15% AS in a clean vessel. For 1 Ltr packing add 10 g activator (2 bottles of 5 g each). Mix thoroughly and spray. The product can be applied at 15 days interval. Thorough coverage is essential for optimum result.</p>	
<b><i>Pseudomonas fluorescens</i> 0.5% WP (TNAU Strain Accession No. ITCC BE 0005)</b>					
Groundnut	Late leaf spot	-	10 g/kg seed	<b>Seed Treatment:</b> Mix the required quantity of seeds with the required quantity of <i>Pseudomonas fluorescens</i> 0.5% WP formulation and	-

				ensure uniform coating. Shade dry and sow the seeds.	
		-	1 kg/ha	<b>Soil Treatment:</b> 01 kg of <i>Pseudomonas fluorescens</i> 0.5% WP spread uniformly over 1 hectare of land (foliar spray @ 2%).	-
Rice	Leaf and neck blast ( <i>Pyricularia oryzae</i> )	-	10 gm/kg seed	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required quantity of <i>Pseudomonas fluorescens</i> 0.5% WP.	Nil
		-	1 kg/ha	<b>Soil Treatment:</b> Broadcast 1 kg <i>Pseudomonas fluorescens</i> 0.5% WP by mixing with 2.5 kg organic manure in one ha area.	-
		-	1 kg/ha	<b>Foliar spray:</b> Spray 0.5% WP @ 1 kg/ha	-
Chili seedlings	Damping off ( <i>Pythium aphanidermatum</i> )	-	10 g/kg seed	<b>Seed Treatment:</b> Mix required	Nil

				quantity of the seeds with the required quantity of <i>Pseudomonas fluorescens</i> 0.5% WP and ensure uniform coating, shade dry and sow	
Tomato	Wilt ( <i>Fusarium oxysporum</i> F.sp.)	-	10 gm/kg of seeds	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required quantity of <i>Pseudomonas fluorescens</i> 0.5% WP and ensure uniform coating, shade dry and sow	Nil
			2.5 kg/ha	<b>Soil Treatment:</b> 2.5 kg of <i>Pseudomonas fluorescens</i> 0.5% WP Spread uniformly over a hectare of land	Nil
Cotton	Bacterial Leaf blight	-	10 g/kg seed	Seed treatment- Mix required quantity of the seeds with the required quantity of <i>Pseudomonas fluorescens</i> WP and ensure uniform coating with 0.2%	Nil



				Foliar spray, shade dry and sow	
<b><i>Pseudomonas fluorescens</i> 1.5% WP (BIL-331 Accession No. MTCC5866)</b>					
Paddy	Bacterial Leaf blight ( <i>Xanthomonas oryzae</i> ),Blast ( <i>Pyricularia oryzae</i> ),Leaf spot ( <i>Helminthosporium oryzae</i> )	-	5 gm/kg of seed	<b>Seed Treatment:</b> Make a thin paste of required quantity of <i>Pseudomonas fluorescence</i> 1.5% WP with min. volume of water and coat the seed uniformly, shades dry the seeds just before showing.	Nil
		-	2.5 kg /ha	<b>Soil Treatment:</b> Mix 2.5 kg of <i>Pseudomonas fluorescens</i> 1.5% WP with 50 kg FYM or and broadcast uniformly over hectare of land 30 days after planting.	Nil
<b><i>Pseudomonas fluorescens</i> 1.0% WP (IPL/PS-01 Accession No. MTCC5727)</b>					
Tomato	Wilt ( <i>Fusarium oxysporum</i> ), Damping Off ( <i>Pythium aphanidermatum</i> ), Root rot ( <i>Rhizoctonia</i> spp.)	-	5 gm/kg of seed	<b>Seed Treatment:</b> Make a thin paste of required quantity of <i>Pseudomonas fluorescens</i>	Nil

				1.0% WP with the minimum volume of water & coat the seed uniformly, shade dry the seed just before sowing.	
		-	2.5 kg/ha	<b>Soil Treatment:</b> Mix 2.5kg of <i>Pseudomonas fluorescens</i> 1.0% WP with 62.5 kg FYN and broadcast uniformly over a hectare of land.	Nil
		-	10gm/litres of water	<b>Seedling Root Dip Treatment:</b> Mix 10 gm of <i>Pseudomonas fluorescens</i> 1.0% WP in one litre of water and dip the tomato seedling root rot for minutes.	Nil

***Pseudomonas fluorescens* 1.0% WP (Strain No. IIHR-PF-2 Accession No. ITCCB0034)**

Tomato	Wilt ( <i>Fusarium oxysporum</i> )	Treat the seed with <i>Pseudomonas fluorescens</i> 1.0% WP @ 20 gm/kg of seeds & treat the nursery beds with the <i>Pseudomonas fluorescens</i> 1.0% WP @ 50gm/sq.m and apply <i>Pseudomonas fluorescens</i> 1.0% WP @ 5 kg/ha enriched FYM* @ 5 tons/ha to the soil before transplanting.
Brinjal	Wilt ( <i>Fusarium solani</i> )	Treat the seed with <i>Pseudomonas fluorescens</i> 1.0% WP @ 20 gm/kg of seeds & treat the nursery beds with the <i>Pseudomonas fluorescens</i> 1.0% WP @ 50 gm/sq.m and

		apply <i>Pseudomonas fluorescens</i> 1.0% WP @ 5 kg/ha enriched FYM* @ 5 tons/ha to the soil before transplanting.			
Carrot	Root rot ( <i>Athelia rolfsii</i> )	Treat the seed with <i>Pseudomonas fluorescens</i> 1.0% WP @ 20gm/kg of seeds and apply <i>Pseudomonas fluorescens</i> 1.0% WP @ 5 kg/ha enriched FYM* @ 5tons/ha to the soil before sowing.			
Okra	Wilt ( <i>Fusarium oxysporum</i> )	Treat the seed with <i>Pseudomonas fluorescens</i> 1.0% WP @ 20 gm/kg of seeds and apply <i>Pseudomonas fluorescens</i> 1.0% WP @ 5 kg/ha enriched FYM* @ 5 tons/ha to the soil before sowing.			
<b><i>Pseudomonas fluorescens</i> 1.5% LF (MTCC no. 5671, Strain designation Pf-1)</b>					
Paddy	Leaf/neck blast	4.5 ml per kg seed	<b>Seed Treatment:</b> Mix the required quantity of seeds with the required of <i>Pseudomonas fluorescens</i> 1.5% Liquid formulation ensure uniform coating, shade dry and sow.		
		6.0 litre per ha	<b>Foliar spray:</b> Spray <i>Pseudomonas fluorescens</i> 1.5% Liquid formulation uniformly on the crop.		
<b><i>Pseudomonas fluorescens</i> 1.5% AS (ICAR-CRDE, KVK Strain Accession No. MTCC - 2539)</b>					
Groundnut	Late leaf spot	-	10 ml/kg seed	<b>Seed Treatment:</b> Mix the required quantity of seeds with the required of <i>Pseudomonas fluorescens</i> 1.5% AS and ensure uniform coating. Shade dry and sow the seeds.	Nil
		-	01 litre/ha	<b>Soil Treatment:</b> 1 Litre of <i>Pseudomonas</i>	Nil

				<i>fluorescens</i> 1.5% AS spread uniformly over 1 hectare of land (foliar spray @ 0.2%)	
<b><i>Trichoderma harzianum</i> 0.50% WS</b>					
Cardamom	Capsule rot ( <i>Phytophthora meadii</i> )	-	100 gm/plant	<b>Soil Treatment:</b> Apply 100 gm product/ plant along with Neem cake (0.5 kg/plant) and 5 kg FYM/plant	-
<b><i>Trichoderma harzianum</i> 1.0% WP (Strain No. IIHR-TH-2 Accessions No. ITCC 6888)</b>					
Tomato	Wilt (Fusarium Oxysporum)	Treat the seed with <i>Trichoderma harzianum</i> 1.0% WP @ 20 gm/kg of seeds & treat the nursery beds with the <i>Trichoderma harzianum</i> 1.0% WP @ 50 gm/sq.m and apply <i>Trichoderma harzianum</i> 1.0% WP @ 5 kg/ha enriched FYM*@5tons/ha to the soil before transplanting.			
Brinjal	Wilt ( <i>Fusarium solani</i> )	Treat the seed with <i>Trichoderma harzianum</i> 1.0% WP @ 20 gm/kg of seeds & treat the nursery beds with the <i>Trichoderma harzianum</i> 1.0% WP @ 50gm/sq.m and apply <i>Trichoderma harzianum</i> 1.0% WP @ 5kg/ha enriched FYM*@5tons/ha to the soil before transplanting.			
Carrot	Root rot ( <i>Sclerotium rolfsii</i> )	Treat the seed with <i>Trichoderma harzianum</i> 1.0% WP @ 20gm/kg of seeds and apply <i>Trichoderma harzianum</i> 1.0% WP @ 5kg/ha enriched FYM*@ 5tons/ha to the soil before sowing.			
Okra	Wilt ( <i>Fusarium oxysporum</i> )	Treat the seed with <i>Trichoderma harzianum</i> 1.0% WP @ 20gm/kg of seeds and apply <i>Trichoderma harzianum</i> 1.0% WP @ 5kg/ha enriched FYM*@ 5tons/ha to the soil before sowing.			
<b><i>Trichoderma harzianum</i> 1.0% WP (Strain no. Th3 Accession no. 5593)</b>					

Chickpea	Root rot ( <i>Rhizoctonia solani</i> )	6 gm/kg of seeds (seed treatment) and soil drenching with <i>Trichoderma harzianum</i> after 50 days of sowing.			
<b><i>Trichoderma harzianum</i> 2.0% WP (NBRI-1055)</b>					
Maize	Root rot ( <i>Fusarium moniliforme</i> ), Fusarium wilt	-	20 gm/kg seed	<b>Seed Treatment:</b> Make a thin paste of required quantity of <i>Trichoderma harzianum</i> 2.0% WP with minimum volume of water and coat the seeds uniformly, shade dry the seeds just before sowing.	-
<b><i>Trichoderma reesei</i> 3.0% WP (CSR-T-3 Strain Accession No. NAIMCC-SF-0030)</b>					
Banana	Panama wilt	Dosage per hectare			Waiting period from last spray to harvest (in days)
		a.i.(g)	Formulation (ml)	Dilution in Water	
		18 kg/ha.	250 ml/plant	600 Liters	7 days
<b><i>Trichoderma viride</i> 1.0% WP</b>					
Pigeon pea	Wilt, Root rot	-	8 gm /kg seed	Seed Treatment	Nil
		-	5.0 kg/ha	Soil Treatment	Nil
Pulses (Cowpea, Mung bean, Urdbean)	Root rot	-	4 g/kg of seed	Seed Treatment	Nil

Chilli	Damping off	-	4 g/kg of seed	Seed Treatment	Nil
<b><i>Trichoderma viride</i> 0.5% WP</b>					
Tomato	Wilt ( <i>Fusarium oxysporum</i> )	-	10 g/kg seed	<b>Seed Treatment-</b> Mix the required quantity of seeds with the required quantity of <i>Trichoderma viride</i> 0.50% WP and ensure uniform coating, Shade dry and sow.	-
<b><i>Trichoderma viride</i> 1.15% WP (T Stanes Tv-1 Strain Accession No. MTCC 5170)</b>					
Groundnut	Seedling wilt	-	4 gram/kg seeds	<b>Seed Treatment:</b> Mix required quantity of seeds with the required quantity of <i>Trichoderma viride</i> 1.15% WP and ensure uniform coating, shade dry and sow.  <b>Soil Application:</b> Mix 2.5 kg <i>Trichoderma viride</i> 1.15% with 100 kg of properly decomposed farmyard manure and spread	-



				decomposed farmyard manure and spread uniformly over a hectare of land at the time of crop transplanting and at the time of flowering.	
<b>Trichoderma viride 1.0% WP (TNAU Strain Accession No. ITCC 6914)</b>					
Cowpea	Root Rot	-	5 gm/kg seed	<b>Seed Treatment:</b> Make a fresh slurry of required quantity of <i>Trichoderma viride</i> 1.0% WP with minimum volume of water and coat the seeds uniformly, shade dry the seeds just before sowing.	Nil
		-	2.5 kg/ha	<b>Soil Treatment:</b> Mix 2.5 kg of <i>Trichoderma viride</i> 1.0% WP with 62.5 kg FYM and broadcast uniformly over a hectare of land and irrigate the field immediately	Nil
Chili seedlings	Damping off ( <i>Pythium</i>	-	4 g/kg seed	<b>Seed</b>	Nil



	<i>aphanidermatum</i> )			<b>Treatment:</b> Mix required quantity of the seeds with the required quantity of <i>Trichoderma viride</i> 1.0% WP and ensure uniform coating shade dry and sow	
Urd bean	Root rot ( <i>Macrophomina phaseolina</i> )	-	4 g/kg seed	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required quantity of <i>Trichoderma viride</i> 1.0% WP and ensure uniform coating shade dry and sow	Nil
Pigeon pea	Root rot ( <i>Macrophomina phaseolina</i> )	-	4 g/kg seed	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required quantity of <i>Trichoderma viride</i> 1.0% WP and ensure uniform coating shade dry and sow	Nil
<b><i>Trichoderma viride</i> 1.0% WP (Strain T-14 in house isolate of M/s Indore Biotech Inputs &amp; Research (P) Ltd., Indore)</b>					
Chickpea	Wilt ( <i>Fusarium oxysporum</i> )	-	5 gm/kg seed	<b>Seed Treatment:</b>	-

				Make slurry of required quantity of <i>Trichoderma viride</i> 1.0% WP with minimum volume of water & coat the seeds uniformly, shade dry the seeds just before sowing	
	Root Rot ( <i>Rhizoctonia solani</i> & <i>Sclerotium rolfsii</i> )	-	5.0 kg/ha	<b>Soil Treatment:</b> Mix 5.0 kg of <i>Trichoderma viride</i> 1.0% WP in 100 kg FYM and broadcast over a hectare land mix well with soil and irrigate the field immediately.	-
Paddy	Sheath blight ( <i>Rhizoctonia solani</i> )	-	5-10 gm/litre of water	<b>Foliar spray:</b> Mix 2.5 kg of <i>Trichoderma viride</i> 1.0% WP in 500 litres of water. Spray three times at 15 days interval uniformly over one hectare land 30 days after planting	-
<b><i>Trichoderma viride</i> 1.5% LF (Strain No. TV-1, Accession No. MTCC 5170)</b>					
Tomato	Root wilt ( <i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i> )	-	5 ml/kg seed + 5 ml/lit water	Seed treatment + Seedling dip	<b>Dilution in water-</b>

			+ 3000 ml/ha	treatment + Soil treatment	500 liter/ha
<b>Trichoderma viride 1.5% WP (Strain No. IIHR-TV-5, Accession No. ITCC 6889)</b>					
Tomato	Wilt ( <i>Fusarium oxysporum</i> )	Treat the seed with <i>Trichoderma viride</i> 1.5% WP @ 20 gm/kg of seeds & treat the nursery beds with the <i>Trichoderma viride</i> 1.5% WP @ 50 gm/sq.m and apply <i>Trichoderma viride</i> 1.5% WP @ 5 kg/ha enriched FYM* @ 5 tons/ha to the soil before transplanting.			
Brinjal	Wilt ( <i>Fusarium solani</i> )	Treat the seed with <i>Trichoderma viride</i> 1.5% WP @ 20 gm/kg of seeds & treat the nursery beds with the <i>Trichoderma viride</i> 1.5% WP @ 50 gm/sq.m and apply <i>Trichoderma viride</i> 1.5% WP @ 5 kg/ha enriched FYM* @ 5 tons/ha to the soil before transplanting.			
Carrot	Root rot ( <i>Sclerotium rolfsii</i> )	Treat the seed with <i>Trichoderma viride</i> 1.5% WP @ 20 gm/kg of seeds and apply <i>Trichoderma viride</i> 1.5% WP @ 5 kg/ha enriched FYM* @ 5 tons/ha to the soil before sowing.			
Okra	Wilt ( <i>Fusarium oxysporum</i> )	Treat the seed with <i>Trichoderma viride</i> 1.5% WP @ 20 gm/kg of seeds and apply <i>Trichoderma viride</i> 1.5% WP @ 5 kg/ha enriched FYM* @ 5 tons/ha to the soil before sowing.			
<b>Trichoderma viride 1.0% WP(IPL/VT/101)</b>					
Cauliflower	Stalk rot ( <i>Sclerotinia sclerotiorum</i> )	-	4 gm/kg seed	<b>Seed Treatment:</b> Make a thin paste of required quantity of <i>Trichoderma viride</i> 1.0% WP with minimum volume of water and coat the seeds uniformly, shade dry the seeds just	-

				before sowing	
		-	2.50 kg/ha	<b>Soil Treatment:</b> Mix 2.5 kg of <i>Trichoderma viride</i> 1.0% WP with 62.5 kg FYM and broadcast uniformly over a hectare of land and irrigate the field immediately	-
Brinjal	Root Rot/ Wilt/ Damping off ( <i>Rhizoctonia bataticola</i> , <i>Sclerotium rolfsii</i> , <i>Fusarium oxysporum</i> , <i>Rhizoctonia solani</i> )	-	5 gm/kg seeds	<b>Seed Treatment:</b> Make a thin paste of required quantity of <i>Trichoderma viride</i> 1.0% WP with minimum volume of water and coat the seeds uniformly, shade dry the seeds just before sowing	
		-	250 gm/50 litre of water/400 sq. m	<b>Nursery Treatment:</b> Mix 250 gm of <i>Trichoderma viride</i> 1.0% WP in 50 litres of water and drench the soil in 400 sq.m area	-
		-	10 gm/litre of water	<b>Seedling Root dip Treatment:</b> Mix 10 gm of	-

				Trichoderma viride 1.0% WP in one litre of water and dip the Brinjal seedling root for 15 minutes	
		-	2.5 kg/ha	<b>Soil Treatment:</b> Mix 2.5 kg of Trichoderma viride 1.0% WP with 62.5 kg FYM and broadcast uniformly over a hectare of land and irrigate the field immediately	
Cabbage	Root rot/Collar rot ( <i>Rhizoctonia solani</i> )	-	10 gm/litre water	<b>Seedling Root dip Treatment:</b> Mix 10 gm of Trichoderma viride 1.0% WP in one litre of water and dip the Cabbage seedling root for 30 minutes	-
		-	2.5 kg/ha	<b>Soil Treatment:</b> Mix 2.5 kg of Trichoderma viride 1.0% WP with 62.5 kg FYM and broadcast uniformly over a hectare of land and irrigate the field immediately	-

Trichoderma viride 1.0% WP					
Tomato	Seedling wilt ( <i>Fusarium oxysporum</i> ), Damping off ( <i>Pythium aphanidermatum</i> , <i>Rhizoctonia solani</i> )	-	9 g/kg seed	<b>Seed Treatment:</b> Mix 9 kg of the product per kg seed.	-
		-	2.5 kg/ha	<b>Root zone application:</b> Mix thoroughly 2.5 kg of the product in 150 kg of compost or farmyard manure and apply this mixture in the field after sowing/transplanting of crops	-
Bengal gram	Seedling wilt ( <i>Fusarium oxysporum</i> ), Damping off ( <i>Pythium aphanidermatum</i> , <i>Rhizoctonia solani</i> )	-	9 g/kg seed	<b>Seed Treatment:</b> Mix 9 kg of the product per kg seed.	-
		-	2.5 kg/ha	<b>Root zone application:</b> Mix thoroughly 2.5 kg of the product in 150 kg of compost or farmyard manure and apply this mixture in the field after sowing/transplanting crops	-
Trichoderma viride 1.0% WP					

Sunflower	Seed rot ( <i>Sclerotium rolfsii</i> ), Root rot ( <i>Sclerotium rolfsii</i> )	-	6 g/kg seed	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required quantity of product in rice gruel, ensure uniform coating, shade dry and sow	-
		-	1.25-2.5 kg/ha	<b>Soil Treatment:</b> Mix with 30-60 kg of compost/ farmyard manure and spread uniformly over 1 hectare of land.	-
<b><i>Trichoderma viride</i> 1.0% WP (TNAU Strain Accession No. ITCC 6914)</b>					
Pigeon pea	Root rot ( <i>Macrophomina phaseolina</i> )	-	4 gm/kg seed	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required quantity of <i>Trichoderma viride</i> 1.0% WP and ensure uniform coating, shade dry and sow	-
Urd bean	Root rot ( <i>Macrophomina phaseolina</i> )	-	4 gm/kg seed	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required	-

				quantity of <i>Trichoderma viride</i> 1.0% WP and ensure uniform coating, shade dry for 24 hours and sow	
<b><i>Trichoderma viride</i> 5.0% SC (Strain Accession No. ITCC 7111)</b>					
Chilli (Nursery )	Damping off ( <i>Pythium aphanidermatum</i> )	-	2 ml/kg seed	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required quantity of <i>Trichoderma viride</i> 5.0% SC. Ensure uniform coating, shade dry and sow	Nil
<b><i>Trichoderma harzianum</i> 2.0% AS (Strain No. IPL/VT/102, Accession No. ITCC 6893)</b>					
Paddy	Bakane (Foot rot) ( <i>Fusarium moniliforme</i> )	-	30 ml/litre of water	<b>Seedling Root Dip Treatment:</b> Mix 30 ml of <i>Trichoderma harzianum</i> 2.0% AS in one litre of water and dip the paddy seedling root for 30 minutes before transplanting followed by Soil treatment.	Nil
		-	2.5 litre/ha	<b>Soil Treatment:</b> Mix 2.5 litre of <i>Trichoderma</i>	Nil



				<i>harzianum</i> 2.0% AS with 100 kg of properly decomposed FYM and broadcast uniformly over a hectare of land prior to transplanting.	
<b><i>Trichoderma viride</i> 1.0% AS (Strain TV-AAV-RJP, Accession no. MCC 1013)</b>					
Urd Bean (Black gram)	Root rot	-	4-6 ml/kg. Seed	<b>Seed Treatment:</b> Mix required quantity of the seeds with the required quantity of <i>Trichoderma viride</i> 1.0% AS and ensure uniform coating, shade dry and sow	-
<b><i>Trichoderma viride</i> 5.0% Liquid Formulation (Accession no. NAIMCC-F-03034)</b>					
Rice	Brown spot ( <i>Cochliobolus miyabeanus</i> )	-	500 liter/ha	Foliar spray	-
Pea	Powdery mildew ( <i>Microsphaera alni</i> )	-	500 liter/ha	Foliar spray	-

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