

Biorun, Experience Healthy Organic life

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Biorun

Biological Agriculture Product



Probiotect



Plant growth promoting bacteria (PGPBs)

Plant growth promoting bacteria (PGPBs) have long been considered as efficient biological agents for crop production, as they can promote plant growth and reduce disease occurrence by a variety of direct and indirect mechanisms. The direct mechanisms include the provision of bioavailable phosphorus from insoluble forms, atmospheric nitrogen fixation, iron sequestration by siderophores, and production of plant hormones such as auxins, cytokinins and gibberellins, while indirect mechanisms include antibiotic protection against pathogenic bacteria, reduction of iron available to phytopathogens, synthesis of fungal cell wall-lysing enzymes, and competition with detrimental microorganisms for sites on plant surfaces.

Probiotect

Probiotect is a biological fungicide formulated based on the gram-positive bacteria, *Bacillus subtilis*. This bacterium is well-known for its ability to suppress several important plant soil-borne pathogens, such as *Fusarium sp.*, *Rhizoctonia solani*, *Sclerotium rolfii*, and *Verticillium dahlia*, and *Phytophthora drechsleri* damping-off. Probiotect can be used as seed, seedling or root inoculation or along with irrigation water for all types of crops including fruit and ornamental trees, field and greenhouse crops and vegetables. At the same time, it can improve plant growth and yield by a variety of mechanisms.

Recommendations for field crops & trees

Method of application	Dose	Descriptions
Seed inoculation for field crops	1-2 liter for 100 kg seeds	Mix the recommended dose with 100 kg seeds at the time of sowing.
Seedling and sapling inoculation	3 liter per ha.	Add the recommended dose to 100 liter of water and inoculate the seedling or sapling roots of 1 ha. in the solution for 15 min.
Top-dressing for field crops and trees	3-5 liter per ha.	Mix the recommended dose with adequate volume of water and release uniformly in irrigation water for 1 ha.

Benefits

- Contributing towards reduction of the use of chemical fungicides in agriculture.
- Improving soil biodiversity and fertility in long-term scale.
- No detrimental effects on non-target organisms, soil, below-ground water and environment.
- Acting as both bio-fertilizer and bio-fungicide by a variety of mechanisms.

