HUMOFERT

Nutritional Products for Qualitative Crops

- Specification Sheet -

PhosBactin

PhosBactin is a liquid microbial soil inoculant containing phosphate solubilizing bacteria that are capable of solubilizing and mobilizing mineral soil phosphorus. In specific **PhosBactin** contains the bacterial strain *Bacillus megaterium* vP.

The bacteria of *Bacillus megaterium* vP strain are in the form of endospores in the product. When the spores of *Bacillus megaterium* vP are applied in the soil, they germinate and the arising bacteria start to proliferate using the organic compounds of the soil. In the same time the bacteria of *Bacillus megaterium* vP strain hydrolyze the insoluble phosphorus of the soil converting it into soluble form that is directly assimilated by the plants. In this way they mobilize the insoluble phosphorus and increase the phosphorous uptake by the plants.

Furthermore, **PhosBactin** contains as a substrate an ideal complex of organic nutrients which include natural plant growth factors (cytokins, auxins, and gibberellins), vitamins (including ascorbic acid-C and Riboflavin-B2), amino acids, sugars, humic acids and micronutrients. Because of its synthesis, the substrate of **PhosBactin** contributes to the establishment of the bacteria in the soil and also stimulates the microbial activity.

PROPERTIES AND USES:

- Solubilizes the insoluble and immobile soil mineral phosphorus.
- Solubilizes the immobile phosphorus of the phosphate fertilizers and coverts it into available to the plants forms (large portion of soluble inorganic phosphate which is applied to the soil as chemical fertilizer is immobilized rapidly and becomes unavailable to the plants).
- Eliminates the use of phosphate fertilizers since it reduces the required amount of phosphate fertilizers for covering the plants needs for phosphorus.
- Contributes to the development of very cost-effective crops since it reduces the applications of phosphate fertilizers.
- **PhosBactin** is environmental friendly because not only it reduces the environmental pollution but also it does not unsettle the ecological balance (its phosphate solubilizing bacteria are compatible with all the rhizosphere's beneficial microorganisms).
- Improves the nutrient uptake by the plants.
- Contributes to the better aeration of the soil and the deeper penetration of the root system while at the same time promotes the growth of the root system through the metabolites of the beneficial bacteria.
- Reduces soil erosion and improves the soil structure.
- Improves the soil fertility and maintains the natural habitat of the soil, since the microorganism function is in long duration.

- Adds organic matter in the soil which ensures the establishment of the phosphate solubilizing bacteria in the soil and also stimulates the beneficial microbial activity.
- Increases the cation exchange capacity of the root.
- Promotes an early and efficient seed germination.
- Promotes the plant growth and fortifies the plant resistance due to the substances that are secreted by the phosphate solubilizing bacteria.
- Increases crop yield and contributes to the development of healthy plants with great resistance to environmental and biotic stress factors.
- Increases the farmers' profit.

APPLICATION:

PhosBactin is applied by dipping the seeds, tubers, seedlings and cuttings, by mixing with manure, with soil application and foliarly. Generally it should be applied prior to transplanting, sowing or after planting,

Application Rate: Generally it is applied at the following application rate.
Dipping of Seeds - Tubers: 5-10 ml in a sufficient amount of water capable of soaking 1 kg of seeds.
Dipping of Seedlings: Spray 50-100 ml on 10-20 l of water.
Dipping of Cuttings: Spray 100-250 ml on 60-70 l of water for 1 ha.
Mixing with manure: 1-2 l in 200-300 kg of manure.
Soil application: 2.5-5 l/ha.
Foliar application: 1.25-2.5 l/ha diluted in 1,000 l of water/ha.

STANDARD ANALYSIS	(w/w)	(w/v)
Organic Nitrogen (N)	0.34 %	0.36 %
Total Nitrogen (N)	0.99 %	1.05 %
Phosphorus (P_2O_5)	0.10 %	0.11 %
Potassium (K_2O)	1.85 %	1.96 %
Calcium (CaO)	0.15 %	0.16 %
Magnesium (MgO)	0.06 %	0.06 %
Sulfur (S)	0.01 %	0.01 %

PHYSICAL PROPERTIES:

Appearance:	Fine brown-black fluid
Density:	1.06 g/ml
Solubility:	100% water soluble
pH:	5.6