

## Trasco Phospho-Grow

Super Agro India has brought a new product for the farming community named Trasco Phospho-Grow. This is a product that has been developed indigenously in the Company's own manufacturing facility under the Bio-Pesticide division of Super Agro India.



### What is Phospho-grow?

Trasco Phospho-grow is a bio-fertiliser comprising of Phosphorus solubilising Bacteria used to release fixed phosphorus in soils for field crops.

### PHOSPHATE SOLUBULISING MICRO-ORGANISMS :

Phosphorus is second only to nitrogen in mineral nutrients most commonly limiting the growth of crops. Phosphorus is an essential element for plant development and growth making up

about 0.2 % of plant dry weight. Plants acquire P from soil solution as phosphate anions.

However,

phosphate anions are extremely reactive and may be immobilized through precipitation with cations such as  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Fe}^{3+}$  and  $\text{Al}^{3+}$ , depending on the particular properties of a soil. In these

forms, P is highly insoluble and unavailable to plants. As the result, the amount available to plants is usually a small proportion of this total.

About 90% of Indian soil is poor in the available phosphorus. This lacuna is fulfilled by adding soluble phosphate, which around 10-15% is utilized by crop plants. Phosphorus is found in soil, manure and plant in various organic and inorganic forms but are unavailable to the plants. Phosphate solubility is a serious problem in agricultural practice.

Phosphate solubilising micro-organisms excrete certain organic acids like citric, glutamic, lactic, oxalic, and fumaric acids etc. These organisms help in weathering of rocks by acidity and reduce the particle size to almost amorphous form.

### Mechanisms of phosphate solubilization

The principal mechanism for mineral phosphate solubilization is the production of organic acids, and acid phosphatases play a major role in the mineralization of organic phosphorus in soil. It is generally accepted that the major mechanism of mineral phosphate solubilization is the action of organic acids synthesized by soil microorganisms. Production of organic acids results in acidification of the microbial cell and its surroundings.

The production of organic acids by phosphate solubilizing bacteria has been well documented.

Gluconic acid seems to be the most frequent agent of mineral phosphate solubilization. Also, 2-ketogluconic acid is another organic acid identified in strains with phosphate solubilizing ability. There are many species of phosphate solubilising bacteria.

*Bacillus megaterium* var. *phosphaticum* and *Bacillus cereus*, *B. polymixa*, *Aerobacter*, *Agrobacterium*, *Erwinia* spp.

### Dose and method of Use:

- A. Seed treatment : Seeds can be treated in a mixture of 250ml. water & 200gms.of Bio-Fertilizer. The treated seeds should be dried in shade before sowing.
- B. Seedling dip : The roots / whole seedling be dipped in a mixture of 200 gms Bio-fertilizer and 1(one) lit of water for 1 (one) hr. before plantation.
- C. Seed treatment of Potato, Sugarcane and ginger in a mixture of 5 lit water and 200 gms Bio-fertilizer for seed treatment 100 rows of such seed by spraying on it.
- D. Soil Application : It can be made in a organic Nature with 100Kg. FYM and 1(one) kg. Bio-fertilizer as basal application per bigha.
- E. Top dressing of Bio-fertilizer / Bigha can be made with the decanted water from a mixture of 100 lt. water and 500gm. Bio-fertilizer.

**Manufactured by : Super Agro India Pvt Ltd**  
**Address : 168/2, Lenin Sarani, Kolkata-700 013**