

Trasco Nitro-Grow

Super Agro India has brought a new product for the farming community named Trasco Nitro-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 nitro-grow?

Trasco Nitro grow is a bio-fertilizer comprising of Azotobacter Bacteria used to fix atmospheric Nitrogen for field crops which are not leguminous in nature.

Azotobacter spp: These are free living bacteria which grow well on a nitrogen free medium. These bacteria utilize atmospheric nitrogen gas for their cell protein synthesis. This cell protein is then mineralised in soil after the death of Azotobacter cells thereby contributing towards the nitrogen availability of the crop plants.

Characteristics of Azotobacter: Azotobacter is Gram negative bacteria, polymorphic i.e. they are of different sizes and shapes. Their size ranges from 2-10x1-2.5 μ m, young cells possess peritrichous flagella and are used as locomotive organs. Old population of bacteria includes encapsulated forms and have enhanced resistance to heat, desiccation and adverse conditions. The cyst germinates under favorable conditions to give vegetative cells. They also produce polysaccharides. Azotobacter spp., are sensitive to acidic pH, high salts, and temperature above 35°C. There are four important species of Azotobacter viz. A. Chroococcum, A. agilis, A. paspali and A. vinelandii of which A. chroococcum is most commonly found in our soils.

Nitrogen fixation by Azotobacter: The species of Azotobacter are known to fix on an average 10 mg. of N/g of sugar in pure culture on a nitrogen free medium. A maximum of 30 mg. N fixed per gram of sugar was reported by Lopatina. However, Azotobacter is a poor competitor for nutrients in soil. Most efficient strains of Azotobacter would need to oxidise about 1000 kg of organic matter for fixing 30 kg of N/ha. Besides, soil is inhabited by a large variety of other microbes, all of which compete for the active carbon.

Azotobacter in soil: In Indian soils, the population of Azotobacter is not more than 10 thousand to 1 lakh/g of soil. The population of Azotobacter is mostly influenced by other micro-organisms present in soil. There are some micro-organisms which stimulate the Azotobacter population in soil thereby increasing the nitrogen fixation by Azotobacter. On the other hand there are some micro-organisms which adversely affect the Azotobacter population and hence nitrogen fixation process is hampered. For example cephalosporium is most commonly found organisms in soil which restricts the growth of Azotobacter.

Azotobacter also produces some substances which check the plant pathogens such as Alternaria, Fusarium and Helminthosporium. Hence Azotobacter also acts as a biological control agent.

Functions of Azotobacter: Azotobacter naturally fixes atmospheric nitrogen in the rhizosphere.

There are different strains of Azotobacter each has varied chemical, biological and other characters. However, some strains have higher nitrogen fixing ability than others.. Azotobacter uses carbon for its metabolism from simple or compound substances of carbonaceous in nature. Besides carbon, Azotobacter also requires calcium for nitrogen fixation. Similarly, a medium used for growth of Azotobacter is required to have presence of organic nitrogen, micro-nutrients and salt in order to enhance the nitrogen fixing ability of Azotobacter.

Besides, nitrogen fixation, Azotobacter also produces, Thiamin, Riboflavin, Nicotine, iodole acetic acid and gibberellins. When Azotobacter is applied to seeds, seed germination is improved to a considerable extent, so also it controls plant diseases due to above substances produced by Azotobacter.

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 seeding 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

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