

Green tonic

FORTIFIANTS NATURELS

Azospirillum brasilense **Silica based, water dispersible carrier formulation**

Carrier based preparations contain dormant forms of *Azospirillum* cells. *Azospirillum brasilense* has abilities to reduce nitrate and denitrify. When applied to the soil the dormant forms of *Azospirillum* get activated, such activated cells produce fresh batch of active cells just like any other bacteria through division/fission and multiply in numbers using the carbon source available in the root exudates and soil.

Azospirillum attaches itself to the roots of many plants and mostly uses the root exudates as the source of carbon to multiply; hence it is described as associative type of Nitrogen fixing microorganism. On many instances, *Azospirillum* also enters the root system and becomes endophytic. When sprayed on the leaves also, the bacterium enters the shoot system and becomes endophytic.

Features

Azospirillum is a carrier based formulation containing the strain of *Azospirillum*. The product contains 1×10^{12} cells per ml of the product. These bacteria are in their dormant forms and are mixed in carrier based formulation.

Benefits

- Supply of "N" to the plants to the extent of 55 to 60 kg / ha.
- Saves 30% of costly chemical inputs.
- Avoids soil erosion thereby helping conservation and improvement of soil structure and fertility.
- Being environment friendly does not disturb ecological balance.
Enriches soil micro-flora.
- Protect roots from fungal infestation because of its property to secrete antifungal metabolites.

RECOMMENDATION ON THE MODE OF APPLICATION AND USAGE

Fertigation Tank	250 gms of microbial consortia in 60lts of water and apply through fertigation tank for one acre.
Soil application	Mix 250-500 gms with 10 kg of FYM and apply basally as soil application.
Seedling root dipping	Dissolve 250 gms in 100 lts of water and dip the seedlings.
Foliar application	Mix 250 gms in 100 lts of water Mix 250-500 gms <i>Azospirillum</i> of and treat one kg of seeds

PRODUCT SPECIFICATION

Base	Silica based water dispersible carrier
Viable cell count	CFU minimum 10^{12} cell/g for carrier material.
PH	6.5 – 7.5
Particle size in case for carrier based material	All material shall pass through 0.15-0.212 mm IS Sieve

MATERIAL SAFETY DATA SHEET

Section	Category	Details
Section - 1	Processed & Packed by	Ecots Bio Products [P] Ltd 90A, Sethumadi Rd, Vettaikaranpudur, Coimbatore, India 642129
Section - 2	Mfg License No	PR-173/RS-CBE/2008-2011
Section - 3	Composition	<i>Azospirillum</i> and Dispersible powder
Section - 4	First aid measures	Eyes : Mildly irritating to eyes. Skin : Mildly irritating to skin. Frequent and prolonged contact may cause dermatitis. No effect should occur, If promptly washed off. Inhalation: If present as high concentration of air borne dust prolonged contact may cause irritation to nose and throat, May cause coughing and shortness of breath. Ingestion : May cause diarrhea, Nausea, Vomiting and cramps, weakness and circulatory problems.
Section - 5	Measures & fighting against fire	Fire extinguishing media :CO ₂ , Dry chemicals
Section - 6	Measures in case of leak or unforeseen release	<ol style="list-style-type: none"> 1. Remove persons not wearing protective clothing from spill area. 2. Contain and ventilate spill area 3. Avoid contamination of stream and sewers 4. Absorb on to clay, absorbent material.
Section - 7	Storage and handling	Handling : Avoid dropping the container from the top. Storage : Store in a well ventilated place. Keep can closed when not in use. Away from food, direct sunlight . Away from high temperature
Section - 8	Exposure control and personal protection	Not applicable
Section - 9	Physical and chemical properties	Nature : White Powdery Odour : Characteristic odour Solubility in Water: Dispersible in water Boiling Point : Not applicable Melting point : Not applicable
Section - 10	Stability and reactivity	Not applicable
Section - 11	Toxicological information	Non Toxic and Non - Virulent
Section - 12	Ecological information	Empty containers : Not Applicable Waste Disposal Method : Not Applicable
Section - 13	Elimination considerations	Not Applicable

Section -14	Transport information	Shipping Name : <i>Azospirillum</i> Shipping containers Marking : <i>Azospirillum</i> Shipping Containers Lables : <i>Azospirillum</i> Flammability : Not Flammable
Section -15	Regulations information	Designation : Eco- friendly Origin : Non Hazardous Material
Section -16	Protection information	<ul style="list-style-type: none"> • Chemical safety goggles. • Use protective clothing, gloves and mask. • Mechanical exhaust required. • Safety shower and Eye bath. • Avoid contact with eyes. • Wash thoroughly after handling. • Keep Tightly closed. Store in a cool dry place.
Section -17	Emergency and first aid procedure	<ul style="list-style-type: none"> • In case of Contact, immediately flush eyes or skin with copious amount of water for atleast 15 min while removing contaminated clothing and shoes. • If Inhaled, Move to fresh air, If not breathing give artificial respiration. If breathing is difficult give oxygen. • If swallowed, Wash mouth with water, provided person is conscious.
Section -18	Handling and storage conditions	Normal House Keeping Procedures
Section -19	Spill or leak procedures special	Not Applicable
Section -20	USE	Agriculture purpose



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