HUMOFERT

Nutritional Products for Qualitative Crops

- Specification Sheet -

AZOSPIR

AzoSpir is a liquid microbial soil inoculant containing beneficial nitrogen-fixing bacteria. **AzoSpir** contains nitrogen-fixing bacteria of the genus *Azospirillum sp.* and *Azotobacter sp..*

Azospirillum sps. are symbiotic nitrogen-fixing bacteria that are found naturally on the plants root hairs (mainly in cereals), bind atmospheric nitrogen and release it in the form of ammonium ions, supplying plants with nitrogen.

Azotobacter sps. are free-living soil nitrogen-fixing bacteria that bind atmospheric nitrogen and release it in the form of ammonium ions into the soil.

In addition, both *Azospirillum sp.* and *Azotobacter sp.* produce and secrete substances (like indole-3-acetic acid: IAA, siderophores, GA) which promote the growth of a healthy root system and plant.

Furthermore, the nitrogen-fixing bacteria of **AzoSpir** are in a liquid nutrient substrate which contains humic acids, amino acids, sugars and natural plant growth factors (cytokinins, auxins, gibberellins), vitamins and micronutrients. The substrate of **AzoSpir** is a rich in nutrients source of food for the nitrogen-fixing bacteria.

PROPERTIES AND USES:

- Increases gradually soil's nitrogen content which is readily available to plants.
- Restricts the use of chemical nitrogen fertilizers by replacing them at a significant extent.
- Contributes to the reduction of the environmental pollution caused by the excessive use of chemical nitrogen fertilizers.
- Obtains an equable growth of the crops since nitrogen fixing bacteria offer nitrogen throughout the growing season.
- Contributes significantly in maximizing crop production.
- Contributes to the better soil aeration.
- Enhances the root system branching and the root elongation and penetration, which in turn will serve the uptake of soil water and minerals by the plants.
- Promotes the plant growth and fortifies the plant resistance due to the phytohormones and other substances that are secreted by the nitrogen-fixing bacteria.
- Improves the physicochemical properties of the soil.
- Adds organic matter in the soil which stimulates the beneficial soil microbial activity.
- Increases the cation exchange capacity of root.
- Increases highly the seed germination.

- Enriches soil with beneficial microorganisms that contribute to the enhancement of the root growth and plant health.
- Increases crop yield.
- Contributes to the development of a cost-effective crop resulting in the increase of the farmers' profit.

APPLICATION:

AzoSpir 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: 50-100 ml on 10-20 l of water.
Dipping of Cuttings: 125-250 ml on 60-75 l of water.
Mixing with manure: 1-2 l on 200-300 kg of manure.
Soil application: 1.25-7.5 l/ha.
Foliar application: 1.25 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 %	0.02 %

PHYSICAL PROPERTIES:

Appearance:	Fine brown-black fluid
Density:	1.06 g/cm^3
Solubility:	100% water soluble
pH:	5.6