

Agri Life NITROFIX™ - AS
Azospirillum lipoferum
BioFertilizer
(Regd in Fertilizer Control Order, Govt of India)
APPROVED FOR USE IN ORGANIC AGRICULTURE

Introducing Agri Life NITROFIX™ - AS

Agri Life NITROFIX™ – AS is a biological fertilizer based on a selected strain of naturally-occurring heterotrophic beneficial bacteria - *Azospirillum lipoferum* (NCIM 2908). Owing to their unique metabolism they can actively fix atmospheric nitrogen in soil through a symbiotic relation with the graminaceous plants. It is used as an effective soil application product.

Overdependence and abuse of nitrogenous fertilizers based on fossil fuel / chemical has resulted in depletion of beneficial soil microbial organisms. Cost of chemical nitrogenous fertilizers is increasing progressively and making it unaffordable to farmers. Biological nitrogen Fixation (BNF) is proven concept for over a century and is a cost effective proposition.

Agri Life NITROFIX™ – AS contains vegetative cells of *Azospirillum lipoferum*. It is formulated as Wettable Powder with CFU count of 5×10^7 / g. Agri Life NITROFIX™ – AS is registered under the Fertilizer Control Order- Govt of India. Agri Life NITROFIX™ – AS is approved for use in Organic Agriculture.

A Historical Brief

Azospirillum lipoferum, was first isolated by Beijerinck in 1925..It was originally named *Spirillum lipoferum*. It was rediscovered in 1975 by Bulow and Dobreiner along with other bacteriums for their close association with the roots of cereals and other grasses.

Mode of Action

Nitrogen cannot be absorbed by the plants owing to the strong triple bonds between the nitrogen atoms making it inert and therefore non assimilable by plants.

Bio Active compound synthesis: *Azospirillum lipoferum* produces growth promoting substances such as Indole acetic acid (IAA), and gibberellins that promote root proliferation and increase the rootlet density and root branching which resulting in increased uptake of mineral and water

Method of Application

Seed Treatment: Mix 10 g. of Agri Life NITROFIX™ – AS with 10 g. of crude sugar in sufficient water to make a slurry and coat 1 Kg of seeds, dry in shade and sow / broadcast / dibble in the field.

Note: Do not store treated / coated seeds more than 24 hrs

Seedling treatment: Mix 100 g. Agri Life NITROFIX™ – AS with sufficient quantity of water and organic manure to form a slurry. The seedlings are dipped in this slurry for 30 minutes prior to planting so that the bacteria get attached to the roots.

Soil application: Mix 3-5 Kg/ acre of Agri Life NITROFIX™ – AS with compost and apply to an acre of soil.

Drip Irrigation: Mix 3 Kg / 3 L of Agri Life NITROFIX™ – AS in drip stream.

Target Nutrition

Nitrogen supplementation

Crops

Agri Life NITROFIX™ – AS is suitable for application on Cereals and Millets

It can also be used for Fibre Crops , Sugar Crops , Forage Crops , Plantation crops ,Vegetables, Fruits, Spices , Flowers , Medicinal crops , Aromatic Crops , Orchards and Ornamentals.

Compatibility

Agri Life NITROFIX™ – AS is compatible with BioPesticides and other Bio Fertilizers.

Shelf Life

Agri Life NITROFIX™ – AS is stable for a period of 1 year from the date of manufacturing.

Mass Composition

CONSTITUENT	WW %	FUNCTION
<i>Azospirillum lipoferum</i>	02.00%	Active
Carrier Powder – Talc/ Dextrose/Lignite	q.s.	Inactive

BIOLOGICAL COMPOSITION

CONSTITUENT	CFU/g.	FORMULATION
<i>Azospirillum lipoferum</i>	5*10 ⁷	Powder

OTHER FORMULATIONS AVAILABLE

<i>Azospirillum lipoferum</i>	CFU/ml	1*10 ⁸	Liquid
<i>Azospirillum lipoferum</i>	CFU/g/ml	1*10 ⁹	Powder/ Liquid
<i>Azospirillum lipoferum</i>		1*10 ¹⁰	Powder
<i>Azospirillum lipoferum</i>			Lyophilized

Free from *Salmonella*, *Shigella*, *E.Coli*

Cautions for handling and use of product

1. Mixing equipment is to be thoroughly rinsed with water and detergent before using the same equipment for formulating other fertilizers/ pesticides.
2. Surplus product may be disposed in crop lands.
3. Do not eat / drink / smoke during application.
4. Direct incidence of of Agri Life NITROFIX™ – AS may cause irritation and therefore it is recommended that the operator should use protective gear viz gloves, apron, mask, eye gear and hood.

Antidotes

In the case of ingestion: Symptomatic treatment

In the case of contact with Eyes: Flush with water liberally for 20 minutes.

Citations

There are many citations in public domain for over a century on effectiveness of *Azospirillum lipoferum* as a BioFertilizer

Commitment to Nature

- Agri Life NITROFIX™ – AS is approved for use in organic agriculture.
- Agri Life NITROFIX™ – AS is safe to use along with bio fertilizer inoculums like P Sol B® (Phospho bacteria) ; K Sol B® (Potash mobilizing bacteria); Zn Sol B® (Zinc mobilizing bacteria) :S Sol B® (Sulphur solubilizing bacteria) : Si Sol B™ (Silica solubilizing bacteria) : Fe Sol B® (Iron /

Ferrous solubilizing bacteria) : Mn Sol B[™] (Manganese solubilizing microbe) and Agri Life Agrivam[®] (Vesicular-arbuscular mycorrhiza)

- Agri Life NITROFIX[™] – AS is safe to use along with botanical and microbial bio pesticides.
- Agri Life NITROFIX[™] – AS can be used as an effective component in INM programmes, thereby leading to a reduction in use of chemical fertilizers and creating a safer environment.
- Agri Life NITROFIX[™] – AS does not lead to residue problems and doesn't cause resistance or resurgence problems.

Benefits from Agri Life NITROFIX[™] – AS

- Agri Life NITROFIX[™] – AS effectively fixes Nitrogen through a symbiotic relationship with graminaceous crops
- Natural Nitrogen fixation improves both plant and soil health and also aids in soil remediation.
- Agri Life NITROFIX[™] – AS is earthworm friendly , pet friendly , eco friendly and infant friendly