

Agri Life NITROFIX™ - AD
Acetobacter diazotrophicus
BioFertilizer

APPROVED FOR USE IN ORGANIC AGRICULTURE

Introducing Agri Life NITROFIX™ - AD

Agri Life NITROFIX™ – AD is a biological fertilizer based on a selected strain of naturally-occurring beneficial Nitrogen-fixing symbiotic aerobic bacteria -*Acetobacter diazotrophicus* (MTCC 1226). Owing to their unique metabolism they can actively fix atmospheric nitrogen aerobically. It is found in symbiotic relationship with plants (such as sugar cane and coffee) as an endophyte and gets associated with plants by colonizing their internal tissues. *Acetobacter diazotrophicus* is capable of surviving in high sugar concentrations. It is specifically used for sugar cane crops.

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™ – AD contains vegetative cells of *Acetobacter diazotrophicus*. It is formulated as Wettable Powder with CFU count of 5×10^7 / g. Agri Life NITROFIX™ – AD is approved for use in Organic Agriculture.

A Historical Brief

Acetobacter diazotrophicus, was discovered by Cavalcante and Döbereiner in 1988 in Brazil. It is also known as *Gluconacetobacter diazotrophicus*. This was an interesting discovery as this Nitrogen fixing bacteria was capable of colonizing the internal tissues of the plants. This bacteria is also known as black urea as it compensates for nitrogen requirement like Urea

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.

Agri Life Nitrofix™ - AD is capable of fixing Nitrogen in the roots, stems and leaves of Sugarcane plant. Bio Active compound synthesis: *Acetobacter diazotrophicus* 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 which promotes cane growth and sugar recovery from the cane.

Method of Application

Sett Treatment: Mix 2.5 Kg of Agri Life NITROFIX™ – AS with 200 L of water and soak the setts for 30 minutes in this solution and then plant in the main field.

Note: Do not store treated setts for more than an hour.

Soil application: Mix 5 Kg/ acre of Agri Life NITROFIX™ – AS with 100 Kg of compost/ FYM and apply to an acre of soil within 3 months of planting of sugarcane.

Drip Irrigation: Mix 1 Kg / 1 L of Agri Life NITROFIX™ – AS in sufficient quantity of water to dissolve it. Filter the solution and use this solution in drip stream for 1 Acre of land.

Target Nutrition

Nitrogen supplementation for Sugarcane

Crops

Agri Life NITROFIX™ – AD is suitable for application on Sugar cane , Sugar Beet and Sweet Potato

Compatibility

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

Shelf Life

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

Mass Composition

CONSTITUENT	W/W %	FUNCTION
<i>Acetobacter diazotrophicus</i>	02.00%	Active
ICarrier Powder – Talc/Dextrose/Lignite	q.s	Inactive

BIOLOGICAL COMPOSITION

CONSTITUENT	CFU/g.	FORMULATION
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Acetobacter diazotrophicus

5*10⁷

Powder

OTHER FORMULATIONS ASAILABLE

<i>Acetobacter diazotrophicus</i>	CFU/ml	1*10 ⁸	Liquid
<i>Acetobacter diazotrophicus</i>	CFU/g/ml	1*10 ⁹	Powder/ Liquid
<i>Acetobacter diazotrophicus</i>		1*10 ¹⁰	Powder
<i>Acetobacter diazotrophicus</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 Agri Life NITROFIX™ – AD 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 *Acetobacter diazotrophicus* as a BioFertilizer

Commitment to Nature

- Agri Life NITROFIX™ – AD is approved for use in organic agriculture.
- Agri Life NITROFIX™ – AD 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™ – AD is safe to use along with botanical and microbial bio pesticides.
- Agri Life NITROFIX™ – AD 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[™] – AD does not lead to residue problems and doesn't cause resistance or resurgence problems.

Benefits from Agri Life NITROFIX[™] – AD

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