

# N-Fix

Nitrogen fixing liquid biofertiliser



- N-fix contains mainly the bacterium Azotobacter chroococcum at  $2 \times 10^9$  cells/ml, which is capable of fixing atmospheric nitrogen for the plant.
- It excretes ammonia in the rhizosphere in the presence of root exudates, which helps nutrient uptake by plants, thereby improving yield up to 25%.
- Azotobacter sps has the ability to synthesize auxins, cytokinins, vitamins, growth promoting substances and certain secretions that help it to enhance its dominance in the vicinity of its growth. Eg. Indole acetic acid, gibberellins and Vit B.
- The nitrogen fixing ability will continue after the existing sources of nitrogen have been utilized.
- Cell proteins are mineralized in soil after death of the Azotobacter cells, contributing towards the nitrogen availability of the crop plants.
- Presence of organic matter, cellulolytic microorganisms and small amounts of humans can further increase the efficiency of N-Fix
- N-Fix has shown to increase fresh weight, dry weight, protein yields of certain plants over the control by 25%, 27%, 40% respectively.
- N-Fix is a nitrogen fixing soil enhancer containing the bacterium Azospirillum lipoferum.
- It has an associative symbiotic with graminaceous plants thereby making available the atmospheric nitrogen (30-50% of N requirement) to the various crops.
- Besides nitrogen, these cells also fortify the soil with growth promoting substances such as thiamin, Riboflavin, Indole, Acetic acid, gibberellins, and Nicotine acid.
- It imparts resistance against plant pathogens such as Alternaria, Fusarium and Helminthosporium.
- Increases mineral and water uptake, root development and vegetative growth.
- Tolerant to high salts and thrives even in alkaline soils.
- Inoculation with N-Fix has shown to increase in certain crops the fresh and dry weights and protein content by 19%, 19%, 39% respectively.

### Advantages :

- > It is cheap and easy to handle
- > It doesn't change major parts of the farming and cropping system
- > They recycle the soil in form of nutrition available to plants, whereas synthetic fertilizers deplete the soil Productivity.

#### Dosage :

**For soil application** : 1 Liter of N-Fix to be mixed in 1 ton of FYM & applied in 1 hectare

**For seed treatment** : 5-7 ml per kg of seeds

**For Seed dipping** : Make solution in water at 5-7 ml per liter of water and dip the seeds before transplanting

## Certificate of Analysis

# N-FIX

### **Nitrogen Fixing Liquid Biofertilizer**

Batch No. : 3029  
Date of analysis : 01/08/2014  
Mfg. Date : 01/08/2014  
Expiry Date : 01/08/2015

<b>Sr. No.</b>	<b>Characteristic</b>	<b>Requirement</b>	<b>Results Obtained</b>
1	Color	Color less	Complies
2	pH	6.9	Complies
3	Physical nature	Liquid	Complies
4	Count	1 x 10 <sup>8</sup> Cell/ml	Complies

**Remark:** The above product complies as per specification.

**For Nico Orgo Manures**

**For Nico Orgo Manures**

**Quality Control Dept.**

**Partner**

Microbiologist

# Material Safety Data Sheet

## NICO ORGO MANURES

### \*\*\*\*\* 1. Chemical Products and Company Identification \*\*\*\*\*

Product Name : N FIX

Produce Code : Azospirillum lipoferum  $1 \times 10^8$  cell/ml

Azotobacter chroococcum  $1 \times 10^8$  cell/ml

Chemical Formula : Mixture

Other Designations : Liquid Formulation Containing Agriculturally  
beneficial microorganisms.

Company :

**NICO ORGO MANURES**

Opp. Railway Station,

Dakor – 388 225.

(Gujarat – India)

Phone : +91-2699-244403, 244611

Fax : +91-2699-244903

### \*\*\*\*\* 2. Composition / Information on Ingredients \*\*\*\*\*

No Hazardous Ingredients.

Contains naturally-occurring, non-pathogenic, microorganisms in liquid formulation. This includes Azospirillum lipoferum popularly used in agriculture for fixation of environment of nitrogen control. See Product label for method of application, dosage and recommendations. Not for food, feed or drug use.

### \*\*\*\*\* 3. Hazards Identification \*\*\*\*\*

Emergency Overview : No known health hazards

Primary Entry Routes : Oral (swallowing), Inhalation

Acute Effects (Signs and Symptoms of Overexposure) :

Eyes : Liquid may cause mechanical irritation of eyes

Skin : No known hazard

Inhalation : Inhalation of large amounts may cause discomfort

Ingestion : No known hazard

Chronic Effects : No known hazard

Medical Conditions Aggravated by Exposure : None known

Target Organs : None

Carcinogenicity : None

HMIS : Health – 0, Flammability – 0, Reactivity – 0

\*\*\*\*\* **4. First Aid Measures** \*\*\*\*\*

Eyes : Flush with water for at least 15 minutes. Get medical attention if irritation persists.

Skin : Wash with soap and water

Inhalation : Remove person to fresh air. Get medical attention if discomfort Persists

Ingestion : No treatment necessary

\*\*\*\*\* **5. Fire Fighting Measures** \*\*\*\*\*

Flash Point : None

Autoignition Temperature : Not Applicable

Explosive Limits : LEL: Not Applicable

UEL: Not Applicable

Extinguishing Media : Use media suitable for surrounding fire

Unusual Fire or Explosive Hazards : Not Known

Fire Fighting Instructions : No special requirement

\*\*\*\*\* **6. Accidental Release Measures** \*\*\*\*\*

Large Spill / Leak Procedure : Contain spill and recover for use or disposal

Small Spills : Flush area with water

\*\*\*\*\* **7. Storage and handling** \*\*\*\*\*

Storage Requirements : Store in original container in clean, cool and dry place. Use before expiration date printed on package

Handling Precautions : No special handling requirements. Follow normal hygienic and housekeeping standards for agricultural products

\*\*\*\*\* **8. Exposure Control / Personal Protection** \*\*\*\*\*

Ventilation : Special ventilation is not required

Protective Clothing / Equipment : No special requirement

Respirator : Not required

Contaminated Equipment : Clean with soap and water  
Comments : Practice general personal hygiene  
after using this product. Wash hands  
with soap and water before eating,  
drinking or smoking.

\*\*\*\*\* 9. Physical and Chemical Properties \*\*\*\*\*

Physical State : Liquid  
Colour : White  
Odour : Mild  
Water Solubility : Soluble  
% Volatile volume : Not determined  
Specific Gravity : -  
Vapour Pressure : Not determined  
Vapour Density : Not determined  
pH : 6.5 – 7.5  
Melting Point : Not Determined  
Boiling Point : N.A.  
Freezing Point : N.A.

\*\*\*\*\* 10. Stability and Reactivity \*\*\*\*\*

Stability : Stable  
Conditions to avoid : None  
Hazardous Polymerization : Will not occur  
Chemical Incompatibilities : Avoid contact with any chemical  
Hazardous products of decomposition : None

\*\*\*\*\* 11. Toxicological Information \*\*\*\*\*

Eye Effects / Eye Irritation : Non-irritating  
Acute Oral Effects : None  
Acute Inhalation Effects : None  
Acute Dermal Effects : None  
Skin Irritation : Non-irritating  
Skin Sensitization : Not a skin sensitizer

\*\*\*\*\* 12. Ecological Information \*\*\*\*\*

The product contains non-pathogenic bacterial strains that occur naturally in soil and is biodegradable.

\*\*\*\*\* 13. Disposal Consideration \*\*\*\*\*

Disposal: Small amounts of the product which cannot be used according to the label instructions may be disposed off in a landfill

RCRA Waste Status: This product is not regulated as a hazardous waste. State and local regulation may affect the disposal of this product. Consult your state, local or provincial environmental agency for disposal of waste other than by use according to instructions.

\*\*\*\*\* 14. Transport Information \*\*\*\*\*

Transportation Data : This product is not regulated as a hazardous material for all modes of transportation

Hazard Class : Not Applicable

ID No. : Not Applicable

\*\*\*\*\* 15. Regulatory Information \*\*\*\*\*



TSCA : All components of this product are listed on TSCA Inventory

SARA Section 313 : Contains no reportable components

OSHA Hazard Classification : Non Hazardous

Proposition 65 : Contains no components subject to Warning requirement

WHMIS / Controlled Products Regulations : This products has been classified in accordance with the hazard criteria of the CPR and this MSDS contains all of the information required by the CPR

\*\*\*\*\* **16. Other Information** \*\*\*\*\*

NFPA Ratings

Health : 0

Flammability : 0

Reactivity : 0

Specific Hazard : Not Applicable

Information presented on this Material Safety Data Sheet is believed to be accurate at the time of publication. No warranty, expressed or implied, is made with regard to this information. This information may not be adequate for every application, and the user must determine the suitability of this information due to the manner / conditions of use, storage or local regulations.

\*\*\*\*\*