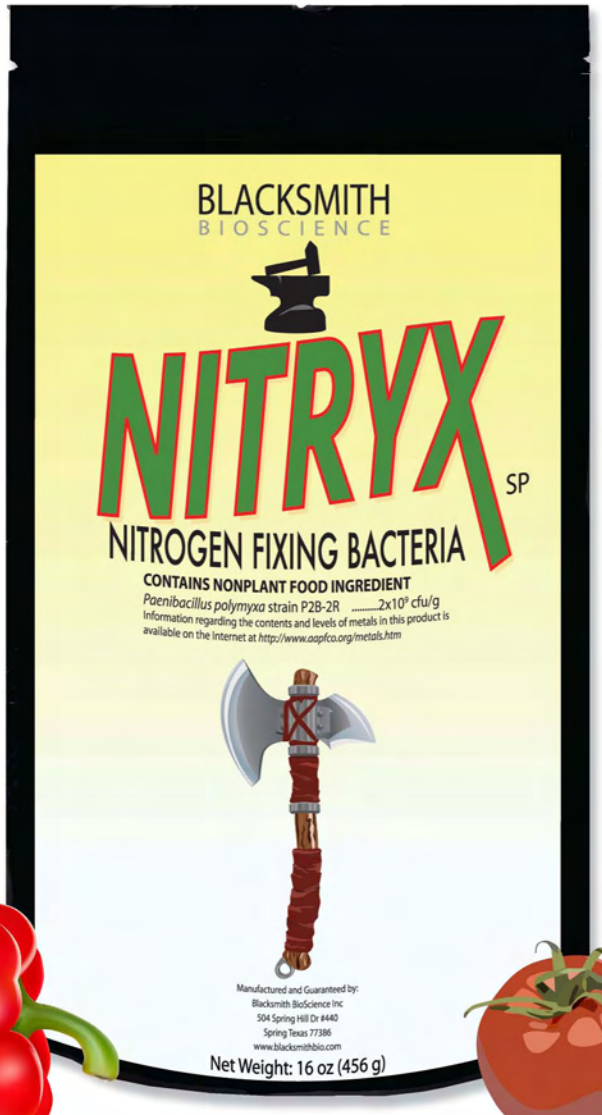
NITRYX® SP

NITROGEN FIXING BACTERIA



For Foliar, Soil & Seed Applications

NITRYX SP

NITROGEN FIXING BACTERIA

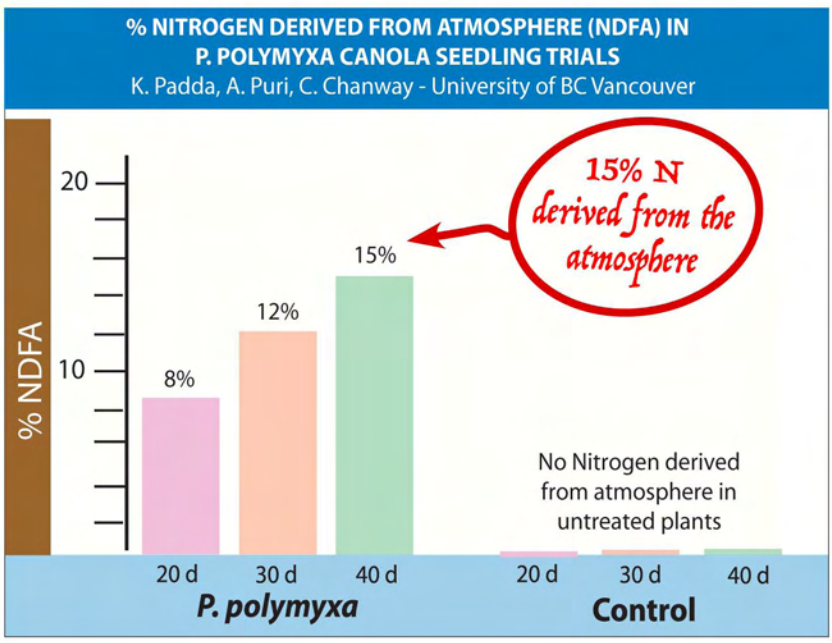
BioFertilizer for foliar spray, seed treatment or soil drench

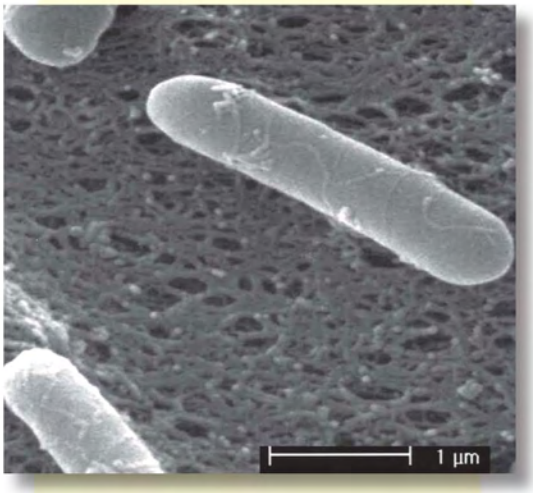
Nitryx is a high concentration of proprietary beneficial bacteria, *Paenibacillus polymyxa* strain P2B-2R, on a 100% water soluble powder. This powerful new product effectively fixates nitrogen from the atmosphere and transfer it to the plant, thereby making fertilizer use much more efficient.

How it Works

When introduced into the root zone or applied to foliage Nitryx colonizes and grows around the structure of the plant. While settling in the Nitryx microbe does two distinct things: 1) forms a synergetic relationship, feeding off of the plant's waste materials while secreting beneficial and plant strengthening by-products. 2) sequesters nitrogen from the atmosphere and is transfers it to the plant. This combination of probiotic colonization and nitrogen fixation creates a vigorous, more robust plant that produces higher yields and more easliy defends itself against stressfull environmental conditions.

Canola Nitrogen Fixation Trial



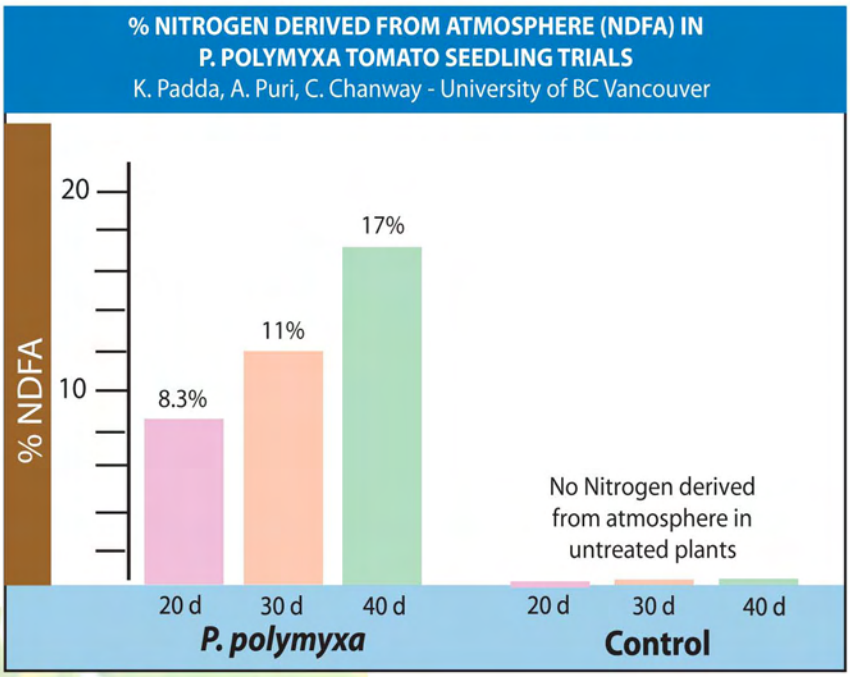


Nitryx, a closer look
Using an electron microscope, the above magnified photo shows the size, shape and mobility of P*aenibacillus polymyxa* P2B-2R

Labeled For Use On

- **Tomatoes, Peppers & Other Fruiting Vegetables**
- **Strawberry, Blueberry & Other Berries**
- **Cucurbit Vegetables**
- **Herbs, Spices & Mints**
- **Leafy Vegetables & Cole Crops**
- **Soy, Wheat, Cotton, Rice & Corn**
- **Fruit & Tree Nuts**
- **Turf & Ornamentals**
- **Grapes**
- **Tobacco & Medicinal Herbs**
- **Potatoes**
- **Citrus**

Tomato Nitrogen Fixation Trial



Directions For Use

Nitryx can be used as a drench, liquid feed, irrigation, spray or seed treatment. It is compatible with fungicides, insecticides, fertilizers and biological stimulants. Nitryx is 100% soluble and does not need constant agitation to keep it suspended in a solution. It will not clog machinery.

In Furrow : Use 0.5-12 oz. of Nitryx per acre applied directly on seed during planting.

Soil Drench: Use 3-12 oz. of Nitryx per acre. Apply in the greenhouse, during transplant or through precision irrigation.

Foliar Spray: Use 3-12 oz. of Nitryx in 50-100 gallons of water per acre. Apply to all areas of foliage and plant to wet just prior to run off. Reapply every 7-14 days depending on disease pressure.

Seed Treatment: Dust on, spray or slurry at a rate of 1-6 oz/cwt seed.

Left: Electron microscope photograph Colonization of *Paenibacillus polymyxa* and biofilm formation on roots of Arabidopsis thaliana. Adapted from Timmusk et al 2005.

Technical Information

Organism (Active Ingredient):
Paenibacillus polymyxa strain P2B-2R

General Description:
Faculative anerobic endospore forming Bacillus

Primary plant function
Nitrogen fixation, yield enhancement

Origin:
Isolated by Polish researcher

Metabolism
Organoheterotrophic: ferments glucose and variety of other carbohydrates

Nitrogen Reduction (to Nitrite)
Positive

Nitrogen Fixation
Positive

Catalase
Positive

Biofilm
Positive

Temperature Tolerance:
45° -110° F

PH Tolerance
P. polymyxa can survive a pH range 4.0-10.0. The organism is active between 5.0 and 9.1 pH.

Longevity
2 years at room temperature

Chemical Compatibility
P. polymyxa is compatible with all chemical fungicides and fertilizers.

UV Sensitivity
The bacterium is not UV sensitive.

By-Products:
Fusaricidin, polymixin, xlanase, acetylmethyl.

OMRI LISTED
For Organic Use

Nitryx SP

Features & Benefits

- Fixates atmospheric nitrogen into a form usable by plants
- Reduces nitrogen needed while increasing yield
- Enhances fertilizer applications
- Makes plants more resilent to adverse environmetal conditions
- For foliar spray, soil application or seed treatment
- No preharvest or re-entry intervals
- Not phytotoxic and no residue
- 100% water soluble - no clogging
- Multiple modes of action

For Use On:

Fruits & Fruiting Vegetables

Tree Fruit & Nuts

Turf & Ornamentals

Herbs & Spices

Cotton, Rice, Soy, Wheat, Corn

& More

OMRI LISTED

For Organic Use

BLACKSMITH BIOSCIENCE

Blacksmith BioScience
504 Spring Hill Dr #440
Spring, Texas 77386
www.blacksmithbio.com
832-647-9663

Distributed By: