



BioPath®

Fertilizer's Perfect Complement

THE PRODUCT

BioPath® is a biological fertilizer complement from Mosaic formulated with proven strains of PGPR - Plant Growth Promoting Rhizobacteria - that increases nutrient availability, uptake and utilization and improves early season plant growth and vigor optimizing yield potential in corn.

BIOPATH AT WORK

BioPath contains select, highly effective strains of spore-forming *Bacillus* bacteria (PGPR) colonize in and around developing corn roots and promote positive plant growth responses.

Increased nutrient availability.

The select strains of *Bacillus* in BioPath produce organic acids and enzymes that improve the solubilization of fertilizer into plant-available forms.

Improved nutrient uptake and utilization.

BioPath helps harness soil nutrients so corn plants have the nutrition they need at peak uptake times throughout the season, particularly during the "Corn Sprint" - the mid-season, rapid growth period that generally runs from V6 to R3.

More robust roots.

The microbes in BioPath support vigorous root growth and development via the production of plant growth promoting compounds.

Increase ROFI and optimize yield potential.

Better nutrient efficiency combined with greater early season corn plant growth and vigor can increase the return on fertilizer investments and optimize yield potential.

NOT YOUR AVERAGE BIOLOGICAL

Not all biological products are created equal, and there can be confusion when evaluating product performance. Individual bacterial strains can elicit specific plant growth responses - or not. BioPath uses *Bacillus* strains that have been carefully screened and selected for their ability to form symbiotic relationships with corn roots to improve nutrient availability, uptake and season-long use.

Technical Information



BIOPATH OFFERS THREE DISTINCT ADVANTAGES OVER COMPETITIVE PRODUCTS

Ease of use.

BioPath is compatible with most liquid fertilizers and crop protectants, has no special storage conditions, and has a 24-month shelf-life. It also has a shelf-life of up to 18 months in fertilizer blends, ensuring it's ready to go when your customers are.

Consistent performance.

The strains of *Bacillus* bacteria in BioPath, their modes of action and use rates are well-understood. BioPath has consistently performed in research trials, with over an 80% win rate.

Economics.

BioPath's cost per acre is at or below the industry standard. Coupled with a yield advantage ROI of over 3 to 1 makes it an economical way to improve return on fertilizer investment.

FLEXIBLE APPLICATION

BioPath is a safe, simple and convenient complement to most liquid fertilizer programs. It is compatible with starters, UAN and most crop protectants.

Rate Recommendations

- Stand-alone application
- Starter or sidedress: 16 oz. per acre

AS INGREDIENT

FERTILIZER RATE	INCORPORATION RATE
UAN @ 40 GPA	0.3%
UAN @ 20 GPA	0.5%
UAN @ 10 GPA	1.0%
Starter @ 5 GPA	2.0%
Starter @ 3 GPA	3.5%

APPLY AT PLANT OR WITH SIDEDRESS NITROGEN

PRODUCT DETAILS

Mode of Action

Nutrient solubilization and cycling to improve plant macronutrient and micronutrient availability.

Fertilizer Compatibility

Effective with a wide range of raw nutrients, blends and organic solutions. Contact a Mosaic representative for a complete list of compatible fertilizers.

Active Ingredients

Bacillus subtilis (2 x 10⁸ cfu/ml)
Bacillus methylotrophicus (2 x 10⁸ cfu/ml)
Bacillus /icheniformis (1 x 10⁸ cfu/ml)

Shelf Life

24 months in concentrate
Up to 18 months in fertilizer

Packaging

2 x 2.5-gallon case
275-gallon tote

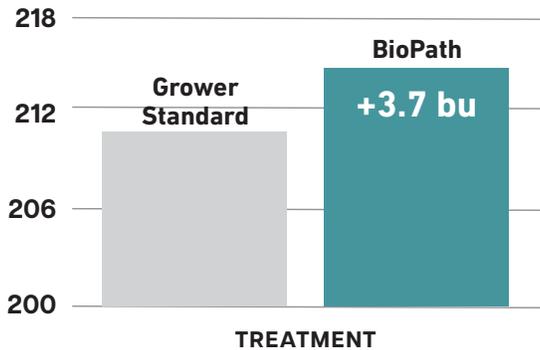
PROVEN PERFORMANCE

Sidedress application of BioPath at 16 oz. per acre increased corn yield by an average of 3.7 bu/ A with over an 80% positive response, providing over a 3 to 1 ROI.

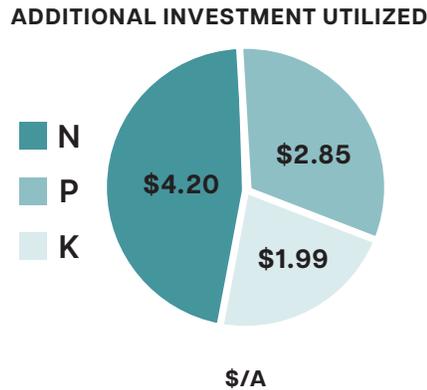
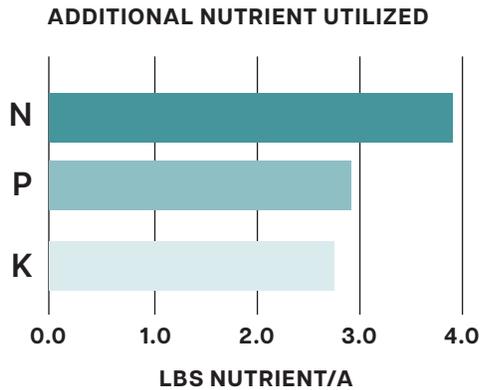
In-season evaluations in 2021 showed statistically significant increases in total uptake of phosphorus and micronutrients and a numerical increase in total uptake of nitrogen, potassium and secondary nutrients. **By increasing the amount of crop nutrient uptake from the fertilizer already applied, BioPath allows growers to capture almost \$9.00/ A of additional fertilizer investment.**



BioPath Optimizes Yield Potential



Increase Return on Nutrient Investments with BioPath



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Additional nutrient utilized calculated using typical corn fertilizer rates in the USA (180 N, 90 P, 160 K), multiplied by the treatment effect increases in total nutrient uptake of 2.2% for N, 3.2% for P and 1.7% for K. Nitrogen\$ utilized calculated using UAN32 \$444/ton, Phosphorus\$ utilized calculated using MAP \$800/ton, Potassium\$ utilized calculated using Potash \$647/ton. <https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/10/06/fertilizer-price-gains-losing-steam>.



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