Get More From Your Fertilizer Investment

BRANDT® EnzUp® Revolutionary New Enzyme Technology

BRANDT® EnzUp®

BRANDT EnzUp is a groundbreaking new enzyme technology that enhances water and nutrient availability, uptake and use. It improves soil and plant health, increases root mass and improves drought and stress tolerance

Revolutionary Enzyme Protection Process Keeps Enzymes Active in Soil Longer and Improves Efficacy

BRANDT ENZUP enzymes undergo a patented protection process that prevents the enzymes from degrading in the soil too quickly after application. This allows them to remain active longer and substantially increases enzyme efficacy. This is an entirely new technology and scientific breakthrough for agriculture.

The Importance Of Enzymes and How They Function In Crops

- Enzymes are non-living proteins made by plants, microbes or other organisms in the soil proteins.
- Enzymes act as catalysts that perform very specific functions and create chemical reactions in the soil. Typically, enzymes either cleave something apart or pull something together. Enzymes impact:
  - *Organic matter breakdown*
  - *Nitrogen fixation and conversion*
  - *Nutrient availability and uptake*
  - *Pesticide degradation*

Key Benefits of BRANDT EnzUp

- *Improved plant health, improved nutrient and water uptake*
- *Improved stress tolerance*
- *Improved quality and yield*
- *Enhanced plant response to applied fertilizers - increased bushels*

UP TO **14%** *YIELD INCREASE*[1]

[1]*Source: BRANDT Field Trials 2016-2018*

The Difference Between Enzyme and Microbial Products

Microbial products contain live microbes. To survive in the soil, microbes require nutrients, optimal pH, salt and organic matter – which causes them to have a high death rate, especially during harvest and tilling. It takes months to build up microbe levels in the soil.

In contrast, enzymes are non-living organisms, which makes them more stable in the soil. When they are applied to the soil, they are immediately active and perform consistently across all soil types.

Stable chemistry	*Immediately active in the soil*	*100-1200X more enzymes*	*Consistent performance across all soil types*

BRANDT EnzUp Enzymes

Microbes

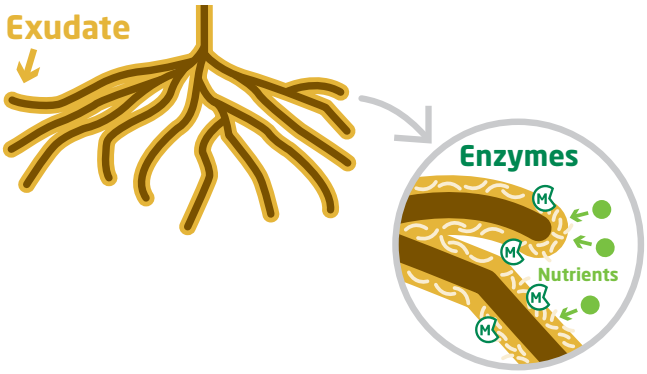
Live organism	*Takes time to build up microbe numbers in the soil*	*Have a high death rate*	*Require optimal pH and soil conditions to survive*

BRANDT® EnzUp™ Zn

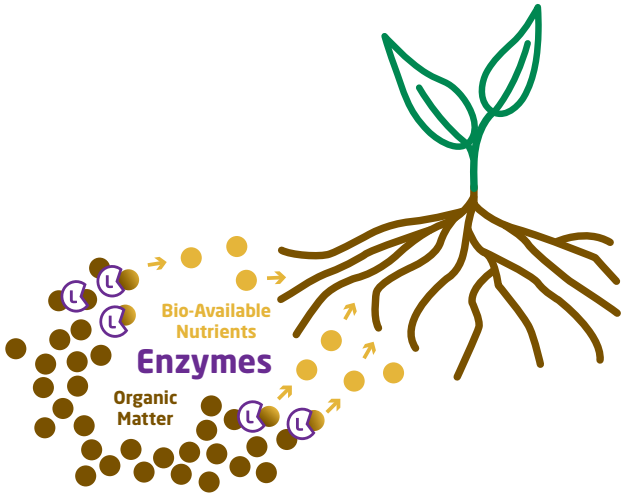
Concentrated Liquid Enzyme Solution

Contains a High Concentration of Mannanase and Lipase Enzymes That Boost Nutrient Availability and Uptake

Mannanase enzyme - its primary function is to break down starches in the exudate that surrounds the outermost layer of the root tips. This chemical reaction creates a draw of water and nutrients to the root zone and releases sugars to the plant. This in turn boosts root growth and increases microbial activity.



Lipase enzyme – its primary function is to break down organic matter and release bio-available nutrients into the soil.



Zinc and Enzyme Interaction

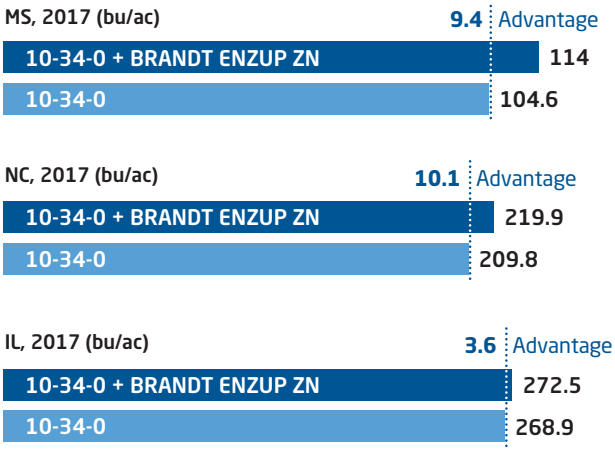
Zn

All enzymes need a co-factor for activation. For Lipase and Mannanase enzymes, zinc is that co-factor. The zinc ignites enzyme activity, which allows the enzymes to perform their chemical reactions faster and more effectively. The boost in enzyme activity increases total water and nutrient uptake.

Key Benefits

- Increased water and nutrient uptake
- Enhanced plant response to fertilizer applications
- Gets plants off to a strong start
- Larger, healthier root systems
- Improved stress and drought tolerance
- Increased yield

Corn Field Trials



Application Rates and Timing

Starter Application: Apply BRANDT ENZUP ZN at a rate of 1 quart per acre in-furrow or 2x2 banded, either alone or tank mixed with NPK fertilizers. Follow University or local agronomist recommendations for maximum salt content in-furrow for 2x2 for various crops and hybrids.

Fertigation: Apply BRANDT ENZUP ZN at a rate of 1 qt/ac.

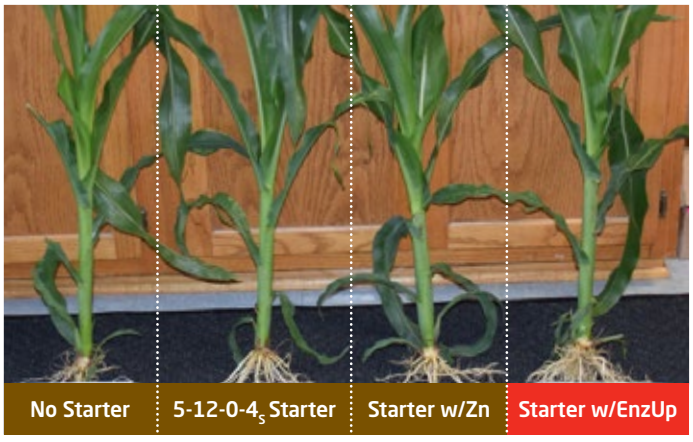
Guaranteed Analysis

Zinc (Zn) 4.0%
5.0% Chelated zinc

Derived from zinc EDTA.

ALSO CONTAINS NON-PLANT FOOD INGREDIENTS:

Lipase . . . . . 1,188 units/mL
Mannanase . . . . . 101,453 units/mL

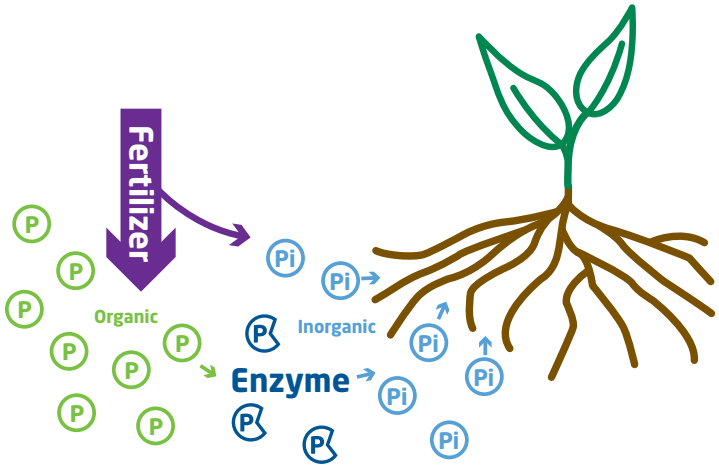


BRANDT® EnzUp™ P DS

Dry Soluble Enzyme and Phosphate Package

Contains a High Concentration of Phosphatase Enzymes Which Convert Inorganic Phosphorus into Plant Available Phosphorus

Phosphatase enzyme – its primary function is to convert tied up organic phosphate into soluble, bio-available phosphate that is immediate available for plant use. This reaction significantly increases nutrient availability and uptake.



Phosphate and Enzyme Interaction

P_2O_5

All enzymes need a co-factor for activation. For many enzymes, phosphate is that co-factor. The phosphate ignites enzyme activity, which allows the enzymes to perform their chemical reactions faster and more effectively. The boost in enzyme activity increases nutrient uptake.

Key Benefits

- Enhances and speeds up the plant's phosphate uptake and use
- Enhanced plant response to fertilizer applications
- Gets plants off to a strong start
- Larger, healthier root systems
- Improved stress and drought tolerance
- Increased yield

Field Trials

Tomato

NC, 2017 (lbs/ac)

2534.5 Advantage

BRANDT ENZUP P DS 58684.6

Untreated Check 56150.1

FL, 2017 (lbs/ac)

3637.4 Advantage

BRANDT ENZUP P DS 33824.9

Untreated Check 30187.5

Pepper

NC, 2017 (lbs/ac)

5775.5 Advantage

BRANDT ENZUP P DS 45273.7

Untreated Check 39498.2

Cucumber

GA, 2017 (lbs/ac)

4648.8 Advantage

BRANDT ENZUP P DS 57835.8

Untreated Check 53187.0

Cantaloupe

NC, 2017 (lbs/ac)

927.1 Advantage

BRANDT ENZUP P DS 26309.9

Untreated Check 25382.8

Application Rates and Timing

Dissolve 5 to 30 lbs of BRANDT ENZUP P DS in sufficient water to treat one acre. Do not exceed 1 lb of BRANDT ENZUP P DS per gallon of water. High concentrations of BRANDT P DS may require warm water to ensure complete dissolution.

Best results are achieved with placement in the actively growing root zone.

Guaranteed Analysis

Total Nitrogen (N)	12.0%
12.0% Ammoniacal nitrogen	
Available Phosphate (P_2O_5)	58.0%

Derived from monoammonium phosphate.

ALSO CONTAINS NON-PLANT FOOD INGREDIENTS:

Phosphatase .....640 µUnits/g

Check | BRANDT EnzUp P DS

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