



## NUTRIENT AVAILABILITY AND UPTAKE

Grower investment of fertilizer is a key element to a crop's yield potential. And getting the most out of that investment is vital to the bottom line.

Microbes can play an important role in making nutrients available to crops from applied fertilizer and by breaking down organic matter where essential nutrients are tied up. They can also improve root growth to access nutrients that would otherwise be out of reach.

The bioactives in BiOHP™ – *Bacillus tequilensis* and *Bacillus velezensis* – have the ability to release key nutrients from fertilizers and in the soil that would not be readily available to the plant. This helps crops develop a more robust root system and promote stronger top growth. Which, by the end of the season, helps improve yield potential.

## BENEFITS OF USING BIOHP

- Increased plant available Phosphorus and other key nutrients.
- Improved nutrient use efficiency – solubilization, uptake and utilization of nutrients.
- Enhanced plant growth and vigor.
- No special storage conditions – 24 month shelf life from date of manufacture.
- Ease of application – tank-mix compatible with crop protectants and nutrient solutions.
- Improved ROI from fertilizer inputs and optimized yield potential.

### BiOHP™ can increase nutrient availability & uptake

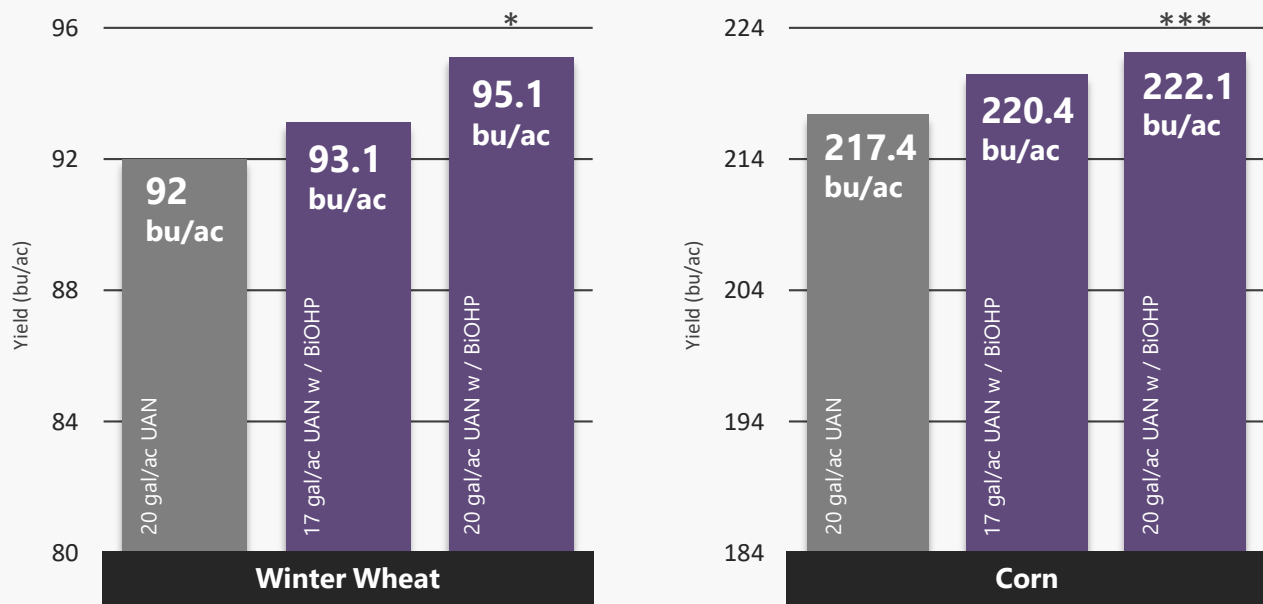
	mg/plant				
	N	P	Ca	Mg	S
Control	209.7	19.8	87	34.3	16.9
With BiOHP	245	20.5	99.9	40.8	19.5

	µg/plant				
	B	Cu	Fe	Zn	Mn
Control	189.8	36.3	733.3	477.3	62.9
With BiOHP	206.8	52.7	862	600.4	225.7

Results obtained from greenhouse pot study trial conducted by Pathway BioLogic. Total nutrient uptake per corn plant (shoot dry weight) at 4 weeks after planting was calculated and then averaged over 8 reps. All treatments received standard fertility: 11-37-0 (3.75 lbs N/acre and 12.61 lbs P2O5/acre); triple superphosphate (40 lbs P2O5/acre); potash (30 lbs K2O/acre); and UAN (90 lbs N/acre).

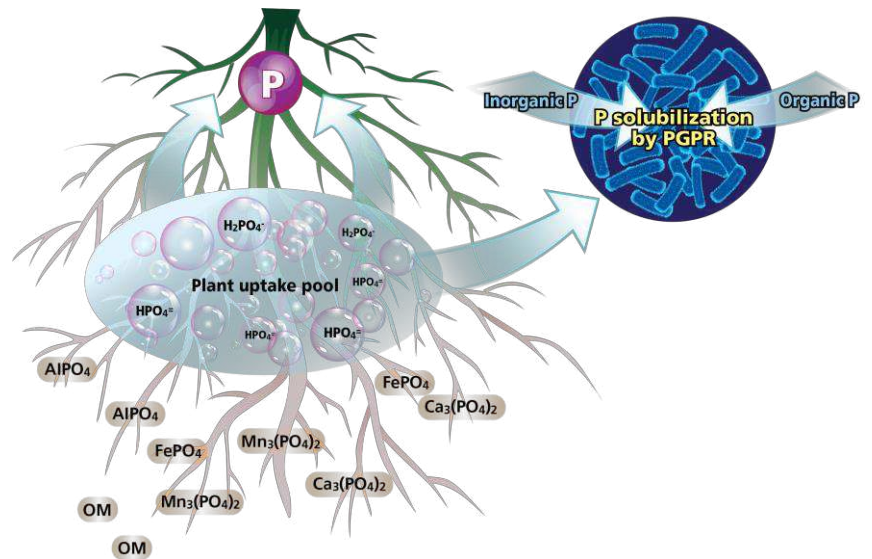
## Optimize fertilizer use and yield potential with BiOHP™



Results reflect average yields of 1 winter wheat and 8 corn independent third party research trials conducted in Midwest United States in 2017/18. BiOHP enhanced UAN @ 0.5% by volume – 118 oz per ton. BiOHP enhanced UAN at 17 gal/ac equivalent to 15% reduced rate. Data significantly different at \*p<0.10, \*\*\*p<0.01.

## HOW BiOHP TECHNOLOGY WORKS

1. The bioactives in BiOHP – *Bacillus tequilensis* and *Bacillus velezensis* – produce organic acids and enzymes that transform insoluble P to soluble forms that are plant accessible.
2. Increases in bioavailable phosphorus can provide expanded root volume, improving nutrient uptake.
3. This ultimately enables optimal plant growth and increased yield potential.



For more information about BiOHP™ and other Pathway microbial solutions visit our website at [www.PathwayBioLogic.com](http://www.PathwayBioLogic.com) or contact us direct:

Email: [info@pathwaybiologic.com](mailto:info@pathwaybiologic.com) | Phone: 813-719-7284

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