

How BiOWiSH® Can Help You Improve Crop Yield

BiOWiSH Technologies provides industry-leading biotechnology solutions for the agriculture and environmental management industries. Natural and non-GMO, BiOWiSH® unlocks the power of nature, creating better life through biology.

BiOWiSH® Crop Technology is an advanced microbial solution that helps farmers sustainably increase crop production, without further depleting the soil or reducing the value of the crop. The unique formulation generates positive shifts in the existing microbial ecology of the soil, helping farmers get the most out of every crop season.

Modes of Action

- *Increases plant nutrients in the soil*
 - Converts ammonia into less volatile nitrogen species
 - Converts bound phosphorus to available phosphorus
 - Produces a number of enzymes that can break down complex organic molecules in soil
- *Adds beneficial microbes & stimulates native microbial activity*
 - Promotes growth of beneficial soil microbes
- *Promotes root development*
 - Hyphal networks
 - Root growth
- *Improves plant vigor*
 - Demonstrated endophytic activity
 - Improves drought tolerance

Formulations

BiOWiSH® Crop Technology comes in a solid-soluble formulation for on-farm application or as a liquid formulation used to coat your bulk fertilizer supplied at your local Helena location.



Made in the USA



Find the Helena location nearest you at helenaagri.com/locations/

Questions? Contact Helena at helenaagri.com/about-us/contact-us/

Made in the USA

BiOWiSH® Crop offers a level of performance and sustainability unmatched in value for farmers.

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BiOWiSH® Crop

Now available at Helena locations near you!

Advanced microbial solutions that help farmers sustainably increase crop production.

Benefits

- Improves crop yield
- Increases nutrient availability
- Enhances root development
- Improves plant vigor
- Stimulates native microbial activity in the soil
- Improves soil productivity

Consistent performance across a broad range of operating conditions and management practices.



BiOWiSH® Crop shifts the soil microbiome to favor the microorganisms that are beneficial to the crops.



Untreated



BiOWiSH®

Note the high number of beneficial, plant growth promoting species in the BiOWiSH® treated sample.

Effect of BiOWiSH® Crop on Soil Nutrient Utilization

As BiOWiSH® products increase yield, more nutrients (N, P) are removed by the crop. But, because BiOWiSH® increases soil nutrient availability, the soil is not depleted of these essential nutrients. There is an overall positive nutrient mass balance.

How does this work?

BiOWiSH® enhanced efficiency fertilizers have multiple modes of action which contribute to nutrient utilization. Our biology has demonstrated endophytic activity and stimulates the native beneficial soil biology. The cooperative effect between the improved root development and the more available nutrients from the applied fertilizer and soil result in consistent performance.

This means that farmers can add the same amount of fertilizer, or slightly less, and harvest more crops of similar nutrient levels – without depleting the soil for future crop rotations!

Collaborative Research Shows Value for Farmers

By using Helena Fertilizers powered by BiOWiSH® Crop Technology, farmers can get even more benefits out of their trusted fertility programs – and higher returns on investment. In fact, here are the results of some of our collaborative research efforts in which we detail farmer net income gains when comparing BiOWiSH® to the most common management practice:

Crop	Treatment	Yield (Ton/Acre)	Yield Increase (%)	% Net Income Gain
Rice	(Urea + MAP + MOP) + BiOWiSH®	6.03	29.96%	32
Rice	95% (Urea + MAP + MOP) + BiOWiSH®	6.33	36.42%	40
Silage Corn	(Urea + MAP + MOP) + BiOWiSH®	44.10	27.46%	32
Grain Corn	Control + Hydra-Hume® + BiOWiSH®	6.51*	9.8%	9
Tomato	(UAN 32 + Nucleus® 0-0-15) + BiOWiSH®	31.33	15.40%	20
Tomato	80% (UAN 32 + Nucleus® 0-0-15) + BiOWiSH®	28.85	6.26%	26
Tomato	[Nucleus® Ortho-Phos + Viva®], [An-20 + 10-34-0 + Nucleus® 0-0-21 + Hydra-Hume®] + BiOWiSH®	32.20	11.03%	9
Walnuts	(UN-32 + Nucleus® 0-0-21 + Hydra-Hume®) + BiOWiSH®	6.12	7.94%	8
Wheat	Urea + BiOWiSH®	3.14	7.17%	7
Wheat	85% Urea + BiOWiSH®	2.98	1.71%	3
Wheat	85% Urea + BiOWiSH®	3.12	6.48%	8
Wheat	85% Urea + Hydra-Hume® + BiOWiSH®	3.16	7.85%	5
Wheat	85% Amidas + BiOWiSH®	3.19	8.87%	9
Wheat	85% Amidas + Hydra-Hume® + BiOWiSH®	3.13	6.83%	2

* converted from bu/acre to ton/acre using 53lbs per bushel



Untreated



BiOWiSH®



Untreated



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