

BiOWiSH® Crop Liquid

BiOWiSH® Additive Increases Yield in Garlic

Executive Summary

An industry leading agricultural company in China conducted a study to test the effectiveness of BiOWiSH® Crop Liquid coated 15% organic-40% inorganic compound fertilizer 15-40 (NPK 16-8-16) on garlic production. In this experiment the control treatment was based on the traditional fertilization practice used in the region. The BiOWiSH® treatment used the same fertilizer application rate as the control, coated with BiOWiSH® Crop Liquid. The BiOWiSH® treatment resulted in increased yield leading to higher profit.

Background

About Trial Location

China is a large agricultural country with two of the biggest rivers in the world and several tributaries, not to mention a vast number of distinct soil types. Agriculture in China plays a strategic role in the development of the national economy. BiOWiSH Technologies conducted a series of trials on many different crops in China to illustrate the effectiveness of BiOWiSH® Crop Liquid coated onto DAP, Urea, and NPK fertilizers.

About BiOWiSH® Crop Liquid

BiOWiSH® Crop Liquid is a microbial additive that can be coated onto dry fertilizer or mixed with liquid fertilizers to create an enhanced efficiency fertilizer with industry-leading shelf life, and consistent results across a broad range of operating conditions and environments, all at a low cost to farmers. BiOWiSH® Crop Liquid enhances native microbial activity in the soil and root development, increasing nutrient availability and improving plant vigor. BiOWiSH® Crop Liquid is proven to enhance the effects of applied fertilizers by optimizing yield potential and soil productivity.

Objectives

This study was conducted to test the efficacy of BiOWiSH® Crop Liquid coated organic-inorganic fertilizer as a management practice for garlic crop production. The field trial was conducted in Tongxu, Henan Province, China.

Implementation Program

This study was conducted in a typical field with a loamy soil type and compared the farmer's normal fertilizer management program using organic-inorganic compound fertilizer 15-40 (NPK 16-8-16) (Control) against the 15-40 (NPK 16-8-16) coated with BiOWiSH® Crop Liquid. The trial design was a large block side by side with 18m² (59 square feet) harvested in triplicate for each treatment. The fertilizer application is as below:

Treatment	Application rate lbs/ac [kg/ha]
Control 15-40 (NPK 16-8-16)	1606
	[1800]
100% Control + BiOWiSH®	1606
	[1800]

BiOWiSH® Crop Liquid



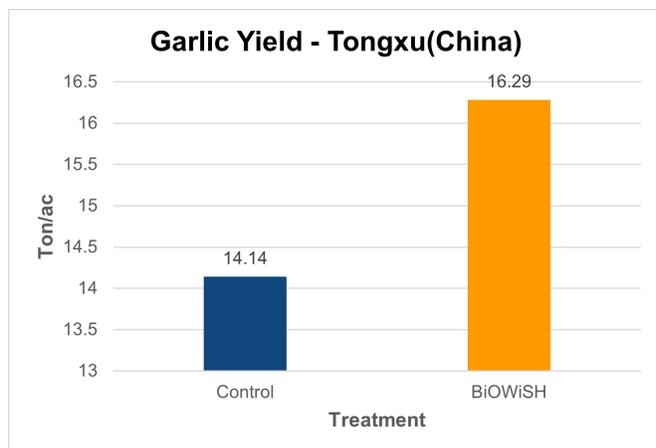
- Optimizes yield potential
- Increases nutrient availability
- Enhances root development
- Improves plant vigor
- Enhances native microbial activity in the soil
- Improves soil productivity

Available Sizes

- 50 gal/190 L
- 264 gal/1000 L

Results

The BiOWiSH® treatment increased garlic yield in Tongxu.



*Note: 1 MT/ha = 0.45 Ton/ac

Treatment	Yield Ton/ac [MT/ha]	Yield Increase Ton/ac [MT/ha]	Yield Increase %	Crop Value USD/ac [USD/ha]	Net Income Gain* %	Profit Change** USD/ac [USD/ha]
Control	14.14	-	-	\$3,299	-	-
15-40 (NPK 16-8-16)	[31.70]	-	-	[\$8,151]	-	-
100% Control + BiOWiSH®	16.29	2.15	15.21	\$3,800	16.27	\$486
	[36.52]	[4.82]	-	[\$9,391]	-	[\$1,201]

*Net income is the crop value minus the fertility program cost and does not account for non-fertility expenses.

**Profit change is the difference between the respective program and the control. (The control was the most common grower practice in the region)

Conclusion

The garlic study demonstrated that the application of organic-inorganic 15-40 (NPK 16-8-16) fertilizer coated with BiOWiSH® Crop Liquid increased both the crop yield and net income gain when compared to the control program. The control program is a common garlic production management practice in the region. The yield increased by 15.21% compared to the control, and the net income gain was 16.27% in this trial.



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