

BiOWiSH® Crop Technology

BiOWiSH® Crop Additive Increases Bok Choy Yield In Multiple Growing Seasons



Bok Choy

Executive Summary

The Vietnam National Field Fertilizer Testing Department conducted a study to test the effect of BiOWiSH® Crop Liquid Green Choice coated urea on bok choy production in Vietnam. The trial used today's farming standard (urea fertilizer) as the control. It was then compared to two treatments: the control coated with BiOWiSH® Crop Liquid Green Choice and a reduced control, coated with BiOWiSH® Crop Liquid Green Choice. In both cases, the BiOWiSH® treatments resulted in increased yield, leading to higher profits.

Background

Vietnam is a highly agrarian country with rich alluvial deltas and mountainous areas, each with distinct soil types. BiOWiSH Technologies has conducted a series of trials on numerous crops in Vietnam to illustrate the effectiveness of BiOWiSH® coated urea and NPK fertilizers. The research in Vietnam is supported by additional research that has been conducted in other countries which also resulted in increased yields and profitability for farmers.

BiOWiSH® Crop Liquid Green Choice helps increase nutrient uptake in plants, improve plant vigor, stimulate microbial activity in the soil, and promote root development. BiOWiSH® Crop Liquid has been shown to enhance the effects of applied fertilizers by increasing yield and soil health.

Objectives

BiOWiSH Technologies engaged the National Field Fertilizer Testing Department in Vietnam to measure yield of bok choy when fertilized with BiOWiSH® Crop Liquid Green Choice coated urea (46.3-0-0). The study was conducted in the Lam Dong Province of Central Vietnam.

BiOWiSH® Crop Liquid Green Choice



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

Available Sizes

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

Implementation

This study was conducted in Ferralsol soil in a typical field. It compared the farmer's normal fertilizer management program using standard urea (Control), standard urea coated with BiOWiSH®, and a reduced rate of standard urea coated with BiOWiSH®. Pest and disease management techniques were independent. Costs and yields were evaluated to determine how the addition of BiOWiSH® to the fertilizing program increased the farmer's yield and revenue. The study had a randomized plot layout with four replicates. The rates of fertilizers applied for each treatment are detailed in the tables below.

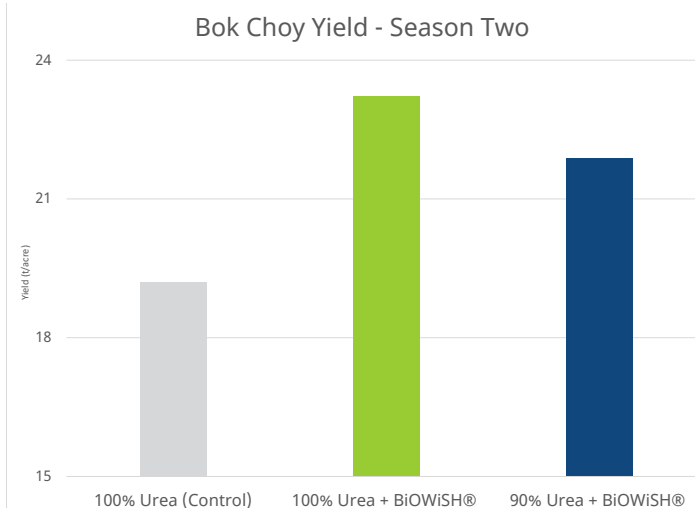
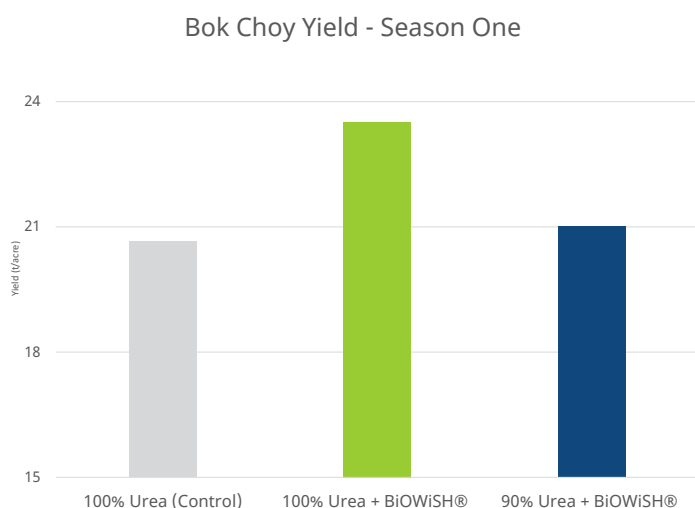
Treatment	First Application (3-5 days after transplanting) lb/acre [kg/ha]		Second Application (7 days after transplanting) lb/acre [kg/ha]	Third Application (15 days after transplanting) lb/acre [kg/ha]		
	Urea/ Urea+ BiOWiSH®	Super Phosphate		Urea/ Urea+ BiOWiSH®	Super Phosphate	KCl+MgO & S+B ₂ O ₃
100% Urea (Control)	103.85 [116.40]	173.89 [194.90]	73.67 [82.57]	103.85 [116.40]	165.20 [185.16]	73.67 [82.57]
100% Urea + BiOWiSH®	103.85 [116.40]	173.89 [194.90]	73.67 [82.57]	103.85 [116.40]	165.20 [185.16]	73.67 [82.57]
90% Urea + BiOWiSH®	93.46 [104.76]	173.89 [194.90]	73.67 [82.57]	93.46 [104.76]	165.20 [185.16]	73.67 [82.57]

Treatment	Total Fertilizer for the Whole Season lb/acre [kg/ha]			Total NPK for the Whole Season lb/acre [kg/ha]		
	Urea/ Urea+ BiOWiSH®	Super Phosphate	KCl+MgO & S+B ₂ O ₃	N	P	K
100% Urea (Control)	207.71 [232.81]	339.08 [380.06]	147.33 [165.14]	95.54 [107.09]	54.25 [60.81]	88.40 [99.08]
100% Urea + BiOWiSH®	207.21 [232.81]	339.08 [380.06]	147.33 [165.14]	95.54 [107.09]	54.25 [60.81]	88.40 [99.08]
90% Urea + BiOWiSH®	186.94 [209.53]	339.08 [380.06]	147.33 [165.14]	85.99 [96.38]	54.25 [60.81]	88.40 [99.08]

The total fertilizer program was applied according to the farmer's own management program. Each fertilizer application was replicated over both seasons.

Results

The BiOWiSH® treatment increased bok choy yield in Lam Dong Province for both growing seasons.



Season One Treatments	Yield t/acre [t/ha]	Yield Increase t/acre [t/ha]	Yield Increase %	Crop Value USD/acre	Total Cost USD/acre	Net Income USD/acre	Net Income Gain %
100% Urea (Control)	20.65 [46.3]	-	-	\$4,955.71	\$28.49	\$4,927.23	-
100% Urea + BiOWiSH®	23.51 [52.7]	2.85 [6.4]	13.8	\$5,633.87	\$38.58	\$5,595.29	13.55
90% Urea + BiOWiSH®	21.01 [47.1]	0.36 [0.8]	1.74	\$5,035.94	\$35.30	\$5,000.64	1.49

Season Two Treatments	Yield t/acre [t/ha]	Yield Increase t/acre [t/ha]	Yield Increase %	Crop Value USD/acre	Total Cost USD/acre	Net Income USD/acre	Net Income Gain %
100% Urea (Control)	19.20 [43.04]	-	-	\$4,604.01	\$28.49	\$4,575.52	-
100% Urea + BiOWiSH®	23.23 [52.08]	4.03 [9.04]	21.0	\$5,571.09	\$38.58	\$5,532.51	20.92
90% Urea + BiOWiSH®	21.89 [49.08]	2.69 [6.04]	14.0	\$5,250.19	\$35.30	\$5,214.89	13.97

Conclusion

This bok choy research study demonstrates that the application of urea coated with BiOWiSH® Crop Liquid Green Choice increases farmers' yield and net income gain by up to 21% when compared to the standard fertilizer programs used in different growing seasons and environmental conditions.

The yield increases are higher when BiOWiSH® Crop Liquid Green Choice coated urea is applied in the same soil over consecutive seasons. This indicates that improved soil health improves yields of second season crops (an additional 5% compared to the previous year).



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