

BiOWiSH® Crop Liquid

BiOWiSH® Field Study: Sugarcane in Brazil



Executive Summary

BiOWiSH Technologies conducted a field study in Itumbiara, Goiás, Brazil to test the efficacy of urea coated with BiOWiSH® Crop Liquid in sugarcane production. The study used the existing fertility program, including an application of urea fertilizer that was standard in this region as the Control. The Control program was then compared to the urea coated with BiOWiSH® Crop Liquid. The BiOWiSH® treatment resulted in an increase in TCH (stalk yield) as well as TAH (sugar production).

Background

About BiOWiSH Technologies

Headquartered in Cincinnati, Ohio, BiOWiSH Technologies, Inc. is a global provider of biotechnology solutions. As a leader in the agricultural market, we help farmers increase crop production sustainably, safely and cost effectively. Our revolutionary BiOWiSH® Crop Liquid can be coated onto dry fertilizer or mixed with liquid fertilizer to create an enhanced efficiency fertilizer that optimizes yield potential, expresses plant vigor and improves soil productivity across a broad range of operating conditions, climates and environments. By unifying nature and science, BiOWiSH reinvents the way food is grown. For more information, visit biowishtech.com.

Objectives

BiOWiSH Technologies established a farm trial in the state of Goiás, Brazil, which is the second largest sugarcane production area in Brazil, to test the response of urea coated with BiOWiSH® Crop Liquid.

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

Implementation Program

The trial was conducted as a side-by-side farm test using the grower's standard fertility program, which included a mid-season application of urea fertilizer of 145 kg/ha (129 lbs/acre) applied as a topdress application 30 days after the previous harvest to restart the ratoon growth. The CTC4 variety is common to the region, and the trial was performed during the seventh year of production. The comparison treatment was urea coated with BiOWiSH® Crop Liquid at the manufacturer's rate. The treated areas were 6.9 hectares (17.0 acres) for the Control and 13.8 hectares (34.1 acres) for the Control + BiOWiSH® Crop Liquid. Yield was collected by hand harvest using three locations per strip and two rows per location. Stalk weights and sugar content were evaluated from a 10 linear meter (32.8 feet) area for comparison between the treatments.

Treatment	Application Rate kg/ha [lbs/acre]	Application Phase
Urea (Control)	145 [129]	Topdress
Urea (Control) + BiOWiSH® Crop Liquid	145 [129]	Topdress

*BiOWiSH® Crop Liquid used at manufacturer's recommended rate.

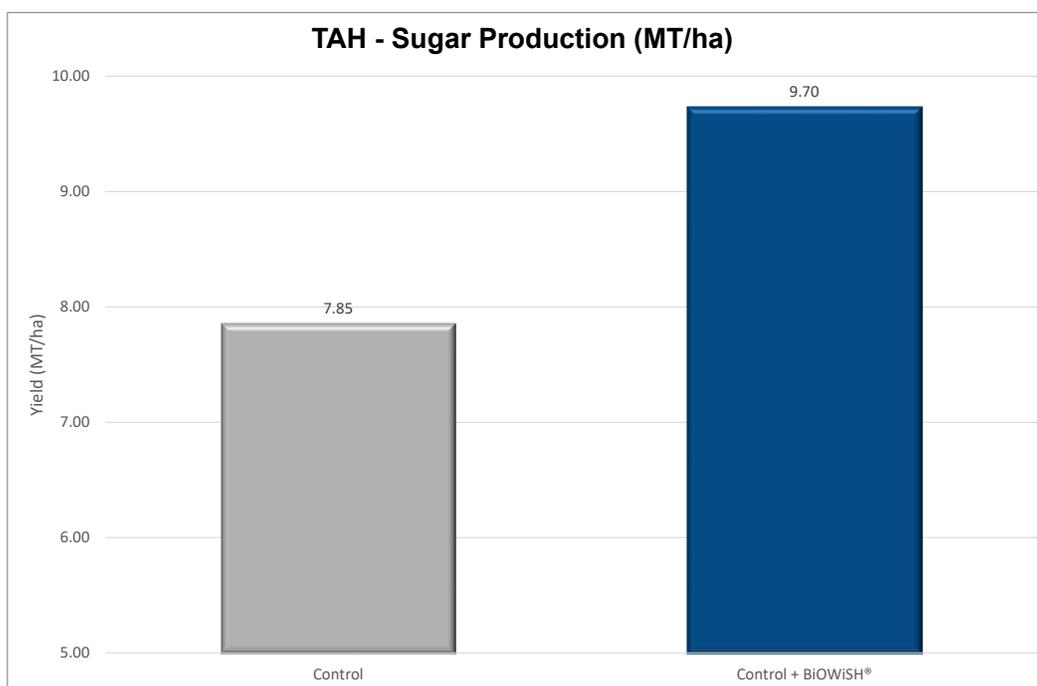
Results

Treatment	TCH - Stalk Yield MT/ha [tons/acre]	ATR - Total Recoverable Sugar kg of sugar/MT of stalk [lbs of sugar/tons of stalk]	TAH - Sugar Production MT/ha [tons/acre]
Urea (Control)	44.47 [19.83]	176.6 [353.3]	7.85 [3.50]
Urea (Control) + BiOWiSH® Crop Liquid	54.19 [24.17]	178.9 [357.9]	9.70 [4.33]

*1 acre = 0.405 hectares

**1 MT/ha = 0.446 US ton/acre

***Calculations for conversions between imperial and metric units are based on the original source data; slight rounding differences may occur within reported publication values.



Treatment	TAH - Sugar Production MT/ha [tons/acre]	Yield Increase TAH MT/ha [tons/acre]	Yield Increase %	Net Income USD/ha [USD/acre]	Profit Change USD/ha [USD/acre]
Urea (Control)	7.85 [3.50]	-	-	1514 [613]	-
Urea (Control) + BiOWiSH® Crop Liquid	9.70 [4.33]	1.85 [0.83]	23.6	1879 [761]	365 [148]

*Calculations for conversions between imperial and metric units are based on the original source data; slight rounding differences may occur within reported publication values.

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

***Profit change is the difference between net income of the respective program and the Control.

Conclusion

The addition of BiOWiSH® Crop Liquid coated onto the Control urea and applied at topdress increased sugar production (TAH) by 1.85 MT/ha (0.83 tons/acre) over the Control program. This is an increase of 23.6%. The sugar production increase translated to a \$365 USD/ha (\$148 USD/acre) profit change for the grower with no additional fertility or labor cost.



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