Huma® Breakout® Increases Cotton Yields 20%, With an ROI of 702%

Field Trial

Conducted by: Agricenter International, Memphis, Tenn.
Huma® Product: Breakout®

Objective

This field trial assessed the effects of 3 foliar applications of Huma® **Breakout®** at different growth stages during the growing season on the yield of cotton (*Gossypium hirsutum*, variety PHY312) when compared with the grower's standard crop nutrition program.

Materials & Methods

This trial was set up in a complete randomized-block design of 10′ x 30′ plots replicated 4 times, conducted during the growing season of June through October in an area near Memphis, Tenn. A Huma® **Breakout®** treatment program and a control were compared: both groups received a treatment of grower's standard fertilizer plus an application of Pix (mepiquat chloride plant growth regulator) at 8 oz/ac at growth stage "first pinhead squares" (PHS) and 16 oz/ac at growth stages "PHS + 2 weeks" and "PHS + 4 weeks." In addition, the Huma® treatment group also received a foliar-applied treatment of **Breakout®** of 1 qt/ac at those three growth stages. Data were analyzed using ARM (Agricultural Resource Management) software.

Table 1. Treatments, Products, and Growth Stages

Treatments	Date: 06/26 Growth Stage: PHS Products/ac	Date: 07/10 Growth Stage: PHS + 2 weeks Products/ac	Date: 07/24 Growth Stage: PHS + 4 weeks Products/ac
Control	Grower's Standard	Grower's Standard	Grower's Standard
Huma®	1 qt Breakout®	1 qt Breakout®	1 qt Breakout®

Results

Treatment costs and average yields of cotton lint and cotton seed are detailed in Table 2.

Table 2. Treatments, Total Product Cost, and Average Cotton Seed and Lint Yield per Acre

Treatments	Total Product Cost/ac	Average Yield/ac Seed (lb)	Average Yield/ac Lint (lb)
Control	—	2,584.35	1,007.9
Huma®	$18.00/ac	3,099.03	1,208.6

Fig. 1 shows that the cotton lint yield for Huma® **Breakout®** treatment was statistically significantly greater (a) than the yield for the control (b). Fig. 2 shows that the seed yield for **Breakout®** was statistically significantly greater (a) than for the control (b).

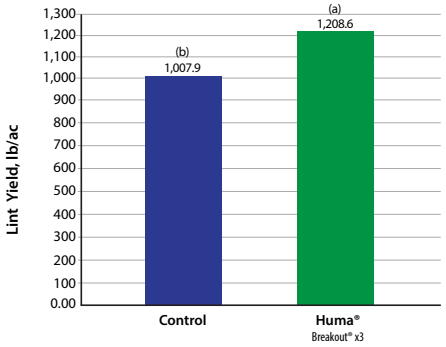

Figure 1. Total Cotton Lint Yield per Acre (pounds), Control vs. Huma® Breakout® x 3 Applications. *Treatments with different letters at the tops of their bar graphs were significantly different (P = 0.05).*

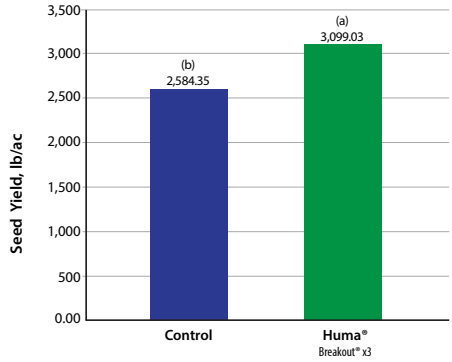

Figure 2. Total Cotton Seed Yield per Acre (pounds), Control vs. Huma® Breakout® x 3 Applications. *Treatments with different letters at the tops of their bar graphs were significantly different (P = 0.05).*

Conclusions

Based on the data collected in this trial, the Huma® **Breakout®** treatment (1 qt/acre at 3 growth stages) resulted in the highest cotton lint yield at 1,208.6 pounds per acre and the highest cotton seed yield at 3,099.03, both representing **a yield increase of 20%** over the control. At an application cost of $18.00/acre and a lint increase of 200.7 lb/ac over the control, with a market price of $0.72/lb this results in a net return-to-the-farm increase of **$144.50 per acre**—a return on investment (**ROI**) of **702.78%**.

The application of 1 qt/ac of Huma® **Breakout®** at 3 cotton plant growth stages was a cost-effective treatment for increasing cotton lint and seed yields.

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