Huma Pro® Mix, pH-Stable Liquid Humic Acid Product, Increases Corn Yield

Research Report

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Huma® Product: Huma Pro® Mix

Background

Scientific research shows that humic and fulvic acids are biostimulants—enhancing nutrient availability and uptake, improving plant root growth and mass, and impacting both crop yield and quality. Humic acid products are not all the same. They are marketed in solid and liquid forms. Some liquid humic acids (LHA) may precipitate and clog application equipment when added to high-acidic agrochemicals in tank-mixes. **Huma Pro® Mix** is a liquid product that is stable in a wide range of pH between 2.0 (high acidic) to 12 (high alkaline).

Objectives

The focus of this study was to observe if **Huma Pro® Mix** as a source of humic acid with a wide pH range can improve corn yield under a field condition. The other objective was to compare the yield effect of **Huma Pro® Mix** with another market-available liquid humic acid product. We will refer to the other liquid humic acid product as Second LHA. This Second LHA cannot be used when the pH of a tank-mixed solution drops below 5.5.

Materials & Methods

Experimental corn plots were established at the Agricenter International research facility in Memphis, Tenn. The experiment was a randomized complete block design with six replications. The corn was planted on June 29 in a field that did not have any humic products applied prior to this study. The crop was harvested on October 19.

Table 1. Corn Grower Standard Fertilizer Program

Preplant		In-Furrow		Side-Dress	
lb/acre	Source	gal/ acre	Source	lb/acre	Source
130	18-46-0	2.5	10-34-0	276	46-0-0
100	0-0-60				

Table 2 Huma Pro® Mix and Second LHA Application Details

Source	Amount/ acre	Method	Timing	Days from Planting
GS + Huma Pro® Mix	4 qt	In-furrow	At planting	0
	4 qt	Spray	V3	28
GS + Second LHA	4 qt	In-furrow	At planting	0
	4 qt	Spray	V3	28

The grower standard (GS) fertilizer program, including the source and application timings, are outlined in Table. 1. **Huma Pro® Mix** and the Second LHA were applied at planting and again four weeks later during the growing season (Table 2). At planting, separately, each **Huma Pro® Mix** and Second LHA were combined with 10-34-0 fertilizer and applied as in-furrow. **Huma Pro® Mix** and Second LHA were sprayed on the plant leaves and the soil surface for later application.

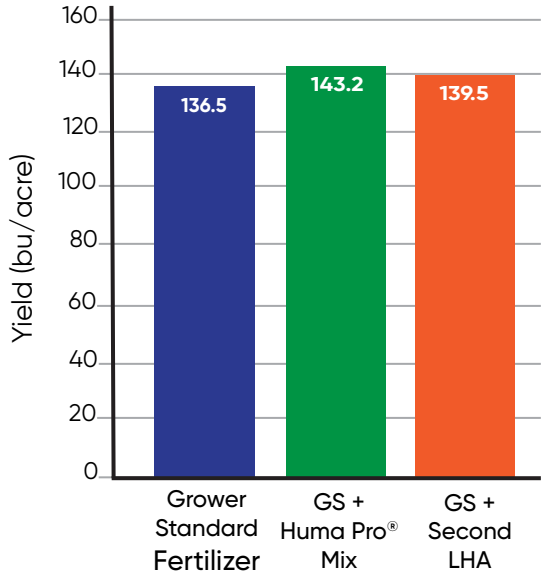

Figure 1. Corn Yield Response to Humic Treatment

Results

Even though the differences among treatments were not statistically significant, the addition of both humic products increased corn yield over the GS (Figure 1). **Huma Pro® Mix** + GS caused the corn yield to increase by 6.7 bu/acre over the GS, 4.9% higher. The Second LHA + GS increased the yield over GS by 3 bu/acre, 2.2% higher. The yield of the **Huma Pro® Mix** plus GS was 2.7% higher than the Second LHA plus GS treatment.

The Second LHA had a negative ROI of -40%. **Huma Pro® Mix** plus GS resulted in a 30% return on investment (ROI).

Conclusions

This research study confirmed prior results that adding humic substances to crop production programs can increase yield. Based on the results here, it is critical to choose a liquid humic acid product that can produce a large enough yield bump that justifies its use by giving a positive net return.

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