

# Huma Gro® Program Increases Sweet Potato Yields 39% with a 10:1 ROI

Field Trial

Conducted by: Dr. K. Bruce Kirksey, AgriCenter International, Memphis, Tennessee

Huma Gro® Products: Jackpot®, Calcium, Super Potassium®, Zap®

## Objective

This field trial was conducted in order to compare sweet potato crop yields and return on investment (ROI) obtained when a Huma Gro® soil product (Zap®, for feeding soil biology and improving soil fertility) and 2 applications of 3 Huma Gro® foliar nutrients (Jackpot®, Calcium, and Super Potassium®) were applied in various combinations.

## Materials & Methods

This trial on sweet potatoes (*Ipomoea batatas*, Var. Beauregard) was conducted in Memphis, Tenn., in a randomized complete block study with 4 replications. The sweet potatoes were machine transplanted into conventional-till silt loam soil 12.6' x 30' plots. The sweet potatoes were planted on June 25.

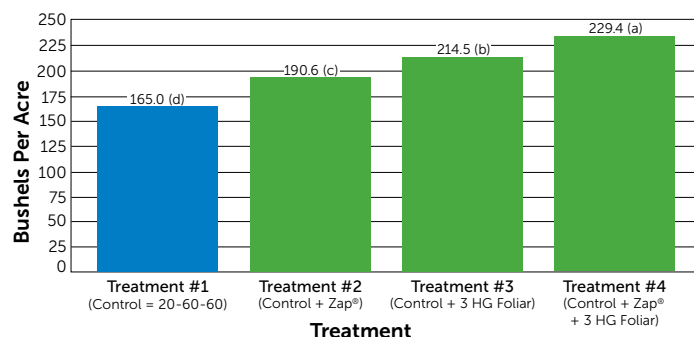
Four treatment programs were compared: (Treatment 1) the grower's standard preplant program of 20-60-60; (Treatment 2) the grower's standard plus Huma Gro® Zap® applied in-furrow; (Treatment 3) the grower's standard plus 3 Huma Gro® foliar-applied products—Jackpot®, Calcium, and Super Potassium®—applied at 30 days and again at 15 days prior to harvest; and (Treatment 4) the grower's standard plus Huma Gro® Zap® plus 3 Huma Gro® foliar-applied products applied at 30 days and again at 15 days prior to harvest.

**Table 1.** Control and 3 Huma Gro® Treatment Programs

Treatment (Tx)	Product	Application Amount	Application Timing
1 (Control)	20-60-60		At Planting
2	Tx 1 (20-60-60) Zap®	0.5 gal/ac	At Planting In Furrow
3	Tx 1 (20-60-60) Jackpot® Calcium Super Potassium®	64 fl oz/ac 32 fl oz/ac 16 fl oz/ac	At Planting 30 Days Prior Harvest 30 Days Prior Harvest
	Jackpot® Calcium Super Potassium®	64 fl oz/ac 32 fl oz/ac 16 fl oz/ac	15 Days Prior Harvest 15 Days Prior Harvest 15 Days Prior Harvest
4	Tx 1 (20-60-60) Zap® Jackpot® Calcium Super Potassium®	0.5 gal/ac 64 fl oz/ac 32 fl oz/ac 16 fl oz/ac	At Planting In Furrow 30 Days Prior Harvest 30 Days Prior Harvest
	Jackpot® Calcium Super Potassium®	64 fl oz/ac 32 fl oz/ac 16 fl oz/ac	15 Days Prior Harvest 15 Days Prior Harvest 15 Days Prior Harvest

## Results

Treatment 4 resulted in the highest yield (229.4 bu/ac) compared



**Figure 1.** Yield Results in Bushels per acre

with the Control (165 bu/ac), with Treatment 3 next highest at 214.5 bu/ac and Treatment 2 at 190.6 bu/ac. Each treatment yield showed a statistically significant difference from the other.

Based on a sweet potato market price of \$15/bu, Table 2 shows percentage of yield increase and net income gain, along with the return on investment (ROI) ratio, for the 3 treatments over the control. Treatment 4 showed the highest percentage of yield increase over the control (39%). An ROI ratio of 12:1 occurred for Treatment 2 and Treatment 3, with an ROI ratio of 10:1 for Treatment 4.

**Table 2.** Yield, Percent Yield Increase, Percent Net Income Gain, and ROI Ratio of Huma Gro® Treatments Over Control

Treatment	Yield (bu/ac)	% Yield Over Control	% Net Income Gain	ROI Ratio
1 (Control)	165	—	—	—
2	190.6	16%	14%	12:1
3	214.5	30%	28%	12:1
4	229.4	39%	35%	10:1

## Conclusions

Micro Carbon Technology® in Huma Gro® soil and foliar products contributed to significant sweet potato yield and revenue increases in all three of the Huma Gro® treatments evaluated in this study. Though adding Huma Gro® Products increased initial costs, the greater yields and net profits generated by the treatments resulted in a return on investment that paid for the cost and application of the Huma Gro® products many times over (\$10–\$12 dollars returned for every \$1 spent).