

GROUP III NO-TILLAGE SOYBEAN VARIETY EVALUATION

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ABSTRACT: Four glyphosate tolerant group III soybean varieties were planted to determine grain yield differences in a no-tillage environment. Yield was highest with Deltapine 3861, Deltapine 3950 (experimental), and Asgrow 3702, which yielded 62.0, 60.6, and 57.4 bu/ac, respectively. This was greater than Asgrow 3905, which yielded 46.2 bu/ac. Lodging for all varieties was less than 3 percent. No preharvest shatter was observed.

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KEYWORDS: glyphosate tolerant, group III soybean, no-tillage

MATERIALS AND METHODS: A maturity group III glyphosate tolerant soybean variety trial was established on a Falkner silt loam (fine-silty, siliceous, thermic Typic Hapludults) in 2004 to determine yield potential at the Pontotoc Ridge-Flatwoods Experiment Station. The experimental design was a randomized complete block with 4 replications. Plot size was 10 x 30 ft. Fertilizer and lime were applied in the spring according to Mississippi State Soil Testing Laboratory recommendations. A preplant burndown application of 1.0 lb ai/ac glyphosate was applied 2 weeks prior to planting. Soybean varieties were planted no-tillage in four 30-in rows on April 21 with a seeding rate of 129,000 seed/ac. Additional treatments of glyphosate were applied during the growing season to maintain a weed-free growing environment. A seed treatment of ApronMAXX RTA (12.5% metalaxyl) was applied at a rate of 5.0 fl oz/100 lb of seed. Cell-Tech Soybean, a soybean rhizobium inoculant was also applied at a rate of 2.1 fl oz/50 lb of seed. Plant lodging was recorded prior to harvest on a scale of 0 to 100, with 0 being all plants erect and 100 being all plants down. Shatter loss was visually observed and recorded on a scale of 0 to 100, with 0 being no yield loss due to preharvest shatter and 100 being complete yield loss due to preharvest shatter. The two center rows of each plot were harvested at 119 days after planting on August 18. Grain was cleaned with a 3-sieve seed cleaner, weighed, and seed moisture was determined with a GAC II seed moisture analyzer. Yields were adjusted to 13% seed moisture. Analysis of variance was conducted and means were separated using Fishers protected LSD ($\alpha=0.05$).

RESULTS AND DISCUSSION: Four glyphosate tolerant group III soybean varieties were planted to determine grain yield differences in a no-tillage environment. Environmental growing conditions were good for soybean production in 2004. Rainfall during the growing season was 0.98, 9.77, 9.03, 4.61, and 0.76 inches following planting in April, May, June, July, and until harvest in August, respectively. Mean yield was 56.5 bu/ac. Yield was highest with form Deltapine 3861, Deltapine 3950 (experimental), and Asgrow 3702, which yielded 62.0, 60.6, and

57.4 bu/ac, respectively (Table 1). This was greater than Asgrow 3905, which yielded 46.2 bu/ac. Lodging for all varieties was less than 3 percent. No preharvest shatter was observed.

COOPERATORS: David Roberts, Delta and Pine Land Company and Anthony Mills, Monsanto.

Table 1. Yield from glyphosate tolerant group III no-tillage soybean variety evaluation at the Pontotoc Ridge-Flatwoods Experiment Station in 2003.

Variety	Brand	Yield	Plant Height	Lodging
		-----Bu/ac-----	-----Inches-----	-----Percent-----
DP 3861	Deltapine	62.0	29.5	1
DPX 3950	Deltapine	60.6	30.8	2
AG 3702	Asgrow	57.4	28.5	0
AG 3905	Asgrow	46.2	31.8	2
LSD ($\alpha=0.05$)		10.1	NS	NS