

CONVENTIONAL SOYBEAN VARIETY EVALUATION

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ABSTRACT: Nine conventional soybean varieties were established to determine yield differences in a conventional tillage environment. Yields ranged from 28.7 to 43.4 bu/ac with a mean yield for the trial of 37.6 bu/ac. The highest yielding varieties were Deltapine 5520-S and Deltapine 5110-S, which yielded at least 42.5 bu/ac. Deltapine 5989, DeltaKing 4680, and Deltapine 97134-35 yields were less than 33 bu/ac.

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KEYWORDS: soybean variety, conventional tillage

MATERIALS AND METHODS: Nine conventional soybean varieties were planted in a Henry silt loam (coarse-silty, mixed, thermic Typic Fragiaqualfs) to determine yield potential in a conventional tillage situation. The experimental design was a randomized complete block with 4 replications and plot size was 10 x 35 ft. Fertilizer and lime were applied in the spring according to soil test recommendations. The trial area was disked, subsoiled, disked, and harrowed 2 days prior to planting. A preemergence application of 0.122 lb ai/ac Scepter 70 DG (imazaquin) was applied at planting. Soybean varieties were planted in 30-in rows on May 16. A seed treatment of Apron (12.5% metalaxyl) was applied at a rate of 4 oz/100 lb of seed. HiStick2, a soybean rhizobium inoculant, was applied at a rate of 14 oz/125 lb of seed. Select 2 EC (clethodim) was applied on July 1 at a rate of 0.094 lb ai/ac. The two center rows of each plot were harvested on September 25. Following harvest, the 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: Rainfall during the growing season was 11.2, 2.7, 3.4, 2.1, and 1.44 inches for May, June, July, August, and until harvest in September, respectively. Inadequate rainfall throughout August may have adversely impacted yield. Yield ranged from 28.7 to 43.4 bu/ac with a mean yield for the trial of 37.6 bu/ac. Deltapine X-5520-S, Deltapine 5110-S, Deltapine 4748-S, Pioneer 9594, and Armor 56-C4 yielded more than Deltapine X97134-35, Delta King 4680, and Deltapine 5989. Deltapine X-5520-S, Deltapine 5110-S, and Deltapine 4748-S yielded at least 42 bu/ac (Table 1). These varieties developed by Delta and Pineland are genetically enhanced for sulfonylurea tolerance. Deltapine X-5520-S experimental variety is a tall plant marketed as strong in poorly drained clay soils. Deltapine 5110-S is an indeterminate early group V designed for an early soybean production system. Deltapine 4748-S is an indeterminate group IV variety that is marketed for yields superior to Deltapine 3478. Yields were 41.5, 39.5, and 36.9 bu/ac with Pioneer 9594, Armor 56-C4, and Pioneer 95B33.

Yields were less than 33 bu/ac with Deltapine X-97134-35, Delta King 4680, and Deltapine 5989.

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Table 1. Conventional soybean varieties at the Pontotoc Ridge-Flatwoods Experiment Station in 2002.

Variety	Brand	Yield
DPX 5520-S	Deltapine	43.4
DP5110-S	Deltapine	42.9
DP 4748S	Deltapine	42.1
P 9594	Pioneer	41.5
Armor 56-C4	Armor	39.5
P 95B33	Pioneer	36.9
DPX 97134-35	Deltapine	32.9
DK 4680	Delta King	31.8
DP 5989	Deltapine	28.7
LSD (0.05)		5.7