

NO-TILLAGE COTTON VARIETY DEMONSTRATION

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ABSTRACT: Five cotton varieties were evaluated for yield potential in a no-tillage system. Environmental conditions were favorable for cotton production. All varieties were enhanced with Bt gene and glyphosate tolerant technology. The average yield was 785 lbs lint/ac. Yield was 855, 805, 799, 759, and 706 lbs lint/ac for SureGrow 501BR, Deltapine 451BR, Stoneville 4892BR, Paymaster 1218BR, and SureGrow 215BR, respectively.

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KEYWORDS: cotton, no-tillage

MATERIALS AND METHODS: Five cotton varieties were planted on an Atwood silt loam (fine-silty, mixed, thermic Typic Paleududalfs) to demonstrate yield potential in a no-tillage environment. A preplant burndown application of 1 lb ai/ac Roundup Ultra Max (glyphosate) was applied two weeks before planting. Fertilizer was applied prior to planting according to soil test recommendations. Each cotton variety was planted on May 16 in 4-ac blocks on 40-in rows. At planting, 0.6 lb ai/ac Temik 15G (aldicarb) was applied in a t-band. At 19 days after planting (DAP), 1 lb/ac glyphosate was applied postemergence (POST). At 40 DAP, a pinhead square application of nitrogen fertilizer (32% UAN solution) at 90 lb N/ac was applied as a sidedress 6-in from row and 2-in deep). At 47 DAP, 0.75 lb/ac glyphosate plus 1.5 lb ai/ac Cotoran (fluometuron) was applied with a hooded sprayer. Three 75-foot strips from each 4-ac block were harvested with a one-row plot picker equipped with an electronic scale at 137 DAP. Samples were collected from each variety for fiber property analyses (staple, fiber length, fiber strength, and micronaire). Yield was recorded as pounds of lint per acre.

RESULTS AND DISCUSSION: Rainfall during the growing season was 11.2, 2.7, 3.4, 2.1, and 10.1 inches for May, June, July, August, and September, respectively. Adequate rainfall and normal temperatures provided favorable conditions for cotton production. Excessive rainfall in late September may have adversely impacted fiber quality. All varieties were enhanced with Bt and glyphosate tolerant technology. Average yield for the varieties was 785 lbs lint/ac. The highest yield was 855 lb lint/ac with SureGrow 501BR. SureGrow 501BR is an early to mid maturity variety that is widely adapted to many soil types and cultural practices, including an ultra narrow row system. Deltapine 451BR yielded 805 lbs lint/ac. Deltapine 451BR is an early to mid maturity variety that is widely adapted to many soil types and is well suited for conventional, minimal-tillage, and skip-row production systems. Stoneville 4892BR yielded 799 lbs lint/ac. Stoneville 4892BR is an early to mid maturity variety that is adapted to a wide variety of growing environments. Paymaster 1218BR yielded 759 lbs lint/ac. Paymaster 1218BR is an early maturity variety that is best suited for well-drained sandy loam soils and may

be planted in conventional, minimal-tillage, or skip-row production systems. SureGrow SG215 BR yielded 706 lbs lint/ac. SG215 BR is an early maturity variety that is widely adapted to many soil types and is well suited for conventional, minimal-tillage, and skip-row production systems.

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Table 1. Cotton yield and fiber properties for five varieties grown in a no-tillage environment at the Pontotoc Ridge-Flatwoods Experiment Station in 2002.

Variety	Lint Yield lb/ac	Staple (32nds)	Fiber Length (inches)	Fiber Strength (g/tex)	Micronaire
SureGrow SG 501BR	855	33.2	1.03	28.1	4.5
Deltapine DP 451BR	805	34.0	1.05	26.8	4.9
Stoneville ST 4892BR	799	34.0	1.04	29.4	5.4
Paymaster PM 1218BR	759	33.6	1.04	28.2	4.6
SureGrow SG 215BR	706	33.8	1.02	28.8	4.9