

EARLY AND MID-SEASON COTTON VARIETY TRIALS

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ABSTRACT: The 2001 environmental growing season had normal temperature but highly variable rainfall with dry conditions (no rainfall) from July 13 through August 6. The dry condition from mid-July through early August reduced yield. The excessive rainfall in late August and early September enhanced bollrot. In the early maturity study, seedcotton yields ranged from 1846 to 2998 lb/ac. DP 491 had the highest seedcotton yield of 2998 lb/ac and was not different from FM 966, SG 215BG/RR, SG 501BR, and PG-40. The mid-season varieties seedcotton yields ranged from 1891 to 2751 lb/ac. E 6479 had the highest yield of 2751 lb/ac but was not different from DeltaPearl, ST X9905, DP 5415RR, NuCOTN 35B, DP 491, DP 5690, GC 377, and FM 966.

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MATERIALS AND METHODS: Two cotton variety studies (Early and Mid-Season) were conducted on a Leeper fine sandy loam soil during the 2001 growing season, at the Northeast Branch Experiment Station, Verona, MS. Both studies were conducted as randomized complete block designs with 4 replications. Plot size was 2-row (38-inch) by 40 ft long. Fertilizers (N, P, and K) were applied based on soil test recommendations for a cotton yield potential of 2 bale/ac. Potash (K₂O) fertilizer at 200 lb/ac was applied surface broadcast 10/30/00. Liquid fertilizer (32% nitrogen) at 80 lb N/ac was applied sidedress 2 inches deep and 6 inches from the row when cotton was at pinhead square stage of growth on 6/20/01.

Land preparations consisted of fall paratill-bed roller applied 11/22/00. All plots were doaled prior to planting 5/08/01. Glyphos (glyphosate) at 1.2 lb ai/ac was applied as a burndown 4/11/01. Temik 15G (aldicarb) and Ridomil 11G (mefenoxam) at 0.52 + 1.0 lb ai/ac were applied in-furrow at planting on 5/08/01. Seeding rates for all varieties, were adjusted to 4 live seed/ft row and were based on laboratory seed germination test of each variety.

Gramoxone Max (paraquat) + Dual (metolachlor) + Meturon (fluometuron) + Staple (pyrithiobac) + surfactant at 0.75 + 1.5 + 1.0 lb ai/ac + 0.5 oz ai/ac + 0.4 pt/ac were applied preemergence after cotton planting on 5/08/01. MSMA (monosodium methanearsonate) + Staple at 2.0 lb ai/ac + 1.5 oz ai/ac was applied post direct broadcast 6/12/01. Cotoran (fluometuron)+ MSMA at 0.8 + 2.0 lb ai/ac was applied post-direct broadcast 6/26/01. Select (clethodim) + crop oil at 0.125 lb ai/ac + 2 pt/ac was applied postemergence on 6/30/01. Cobra (lactofen) + crop oil at 0.2 lb ai/ac + 1 pt/ac was applied post-direct broadcast 7/09/01.

Insecticides were applied based on twice weekly scouting reports on the conventional varieties. Tarnish plant bug (*Lygus lineolaris*), bollworm (*Helicoverpa zea*), and budworm (*Heliothis virescens*) were major cotton pests in the 2001 growing season. Applications were applied when insect pests met or exceeded threshold levels using a twice weekly scouting program. The following insecticides were applied at 5 gpa with TXVS-4 nozzles at 4 mph rate of travel and 40 psi operating boom pressure. Bidrin (dicotophos) at 0.2 lb ai/ac was applied 5/30/01, repeated 6/11/01 and 6/28/01 at 0.5 lb ai/ac, and at 0.3 lb ai/ac on 7/09/01. Vydate (oxamyl) at 0.37 lb ai/ac was applied 6/25/01. Tracer (spinosad) at 0.06 lb ai/ac was applied 7/02/01 and repeated at 0.09 lb ai/ac on 7/19/01. Ammo (cypermethrin) at 0.1 lb ai/ac was applied 7/26/01 and 8/03/01. Karate-Z (lambda-cyhalothrin) at 0.03 lb ai/ac was applied 8/24/01.

Cotton was defoliated with an application of Finish (ethephon + cyclanilide) + Free Fall (thidiazuron) at 1.0 + 0.125 + 0.083 lb ai/ac was applied 9/20/01. Folex (phosphorotrithioate) + Gramoxone Max at 0.75 + 0.04 lb ai/ac was

applied 10/02/01. The 2-row plots were harvested 10/09/01 with a spindle picker modified for plot harvest. Seedcotton plot weights were recorded and seedcotton grab samples were obtained from each plot for ginning. These samples were ginned through a laboratory gin to determine percent lint turnout and for HVI fiber analysis. The treatment means in each study were separated using Fisher's protected LSD at 0.05% probability level.

RESULTS AND DISCUSSION: The 2001 growing season had normal temperatures and highly variable rainfall. No major rainfall occurred from July 13 through August 6 followed by excessive rainfall in mid August through early September. The lack of significant rainfall from July 13 through August 6, reduced yield. The major cotton pests were tarnish plant bug, bollworm, and budworm which required insecticide applications.

The early maturity trials yields ranged from 1846 to 2998 lb/ac of seedcotton (Table 1). DP 491 had the highest yield of 2998 lb/ac and was not different from FM 966, SG 215BG/RR, SG 501BR, and PG-40. The mid-season variety lint yield ranged from 1891 to 2751 lb/ac (Table 2). E 6479 had the highest yield of 2751 lb/ac but was not different from DeltaPearl, ST X9905, DP 5415RR, NuCOTN 35B, DP 491, DP 5690, GC 377, and FM 966.

PUBLICATIONS: Creech, J. B., T. P. Wallace, J. R. Johnson, and N. W. Buehring. 2001. 2000 Mississippi Cotton Variety Trials Yield Performance. 2001 Proceedings Beltwide Cotton Conference 1:429.

Table 1. Early maturity cotton variety trial on a Leeper fine sandy loam soil in 2001, Verona, MS.

Variety	Brand	Seedcotton yield lb/ac
DP 491	Deltapine	2998
FM 966	Aventis	2949
SG 215BG/RR	Sure-Grow	2940
SG 501BR	Sure-Grow	2846
PG-40	Germaines	2818
FM 958	Aventis	2702
Sure-Grow 125RR	Sure-Grow	2697
MIS COT 8839	Public	2599
DP 428B	Deltapine	2568
DP 451B/RR	Deltapine	2545
DP 425RR	Deltapine	2501
NuCOTN 33B	Deltapine	2478
SG 105	Sure-Grow	2476
ST X0001	Stoneville	2465
ST 4892BR	Stoneville	2463
E 6478	Aventis	2450
BXN 47	Stoneville	2430
1500RR	Garst/AgriPro	2405
DP 436RR	Deltapine	2388
MIS-COT 8806-3-2-35	Public	2366
MIS-COT 8806	Public	2343
DP 20B	Deltapine	2332
PM 1218BG/RR	Deltapine	2308
SG 747	Deltapine	2283
ST 4691B	Stoneville	2268
PSC 355	Phytogen	2240
DES 816	Public	2205
DES 607	Deltapine	2186
SG 521R	Sure-Grow	2167
ST X8M007	Stoneville	2164
AP 9257	Garst/AgriPro	2153
PM 1199RR	Paymaster	2104
PM 1560BG	Paymaster	2098
RGC 2001	Public	2059
ST 4793R	Stoneville	2024
DES 810	Public	1945
RGC 2002	Public	1876
MIS-COT 8806-3-2-21	Public	1846
Grand mean		2386
LSD (0.05)		259
% CV		11

¹Rating scale is from 1 (no plants emerging) to 10 (excellent stands with healthy plants).

Table 2. Mid maturity cotton variety trial on a Leeper fine sandy loam soil in 2001, Verona, MS.

Variety	Brand	Seedcotton yield lb/ac
E 6479	Aventis	2751
DeltaPearl	Deltapine	2745
ST X9905	Stoneville	2723
DP 5415RR	Deltapine	2650
NuCOTN 35B	Deltapine	2616
DP 491	Deltapine	2590
DP 5690	Deltapine	2536
GC 377	Germain's	2487
FM 966	Aventis	2476
DP 655B/RR	Deltapine	2422
ST 580	Stoneville	2407
DP 5415	Deltapine	2388
DP 458B/RR	Deltapine	2386
Sure-Grow 821	Sure-Grow	2384
DP 565	Deltapine	2373
PSC 355	Phytogen	2354
NuCotn 33B	Deltapine	2341
DP 448B	Deltapine	2201
GC 271		2132
4600RR	AgriPro	2083
SG 747	Sure-Grow	2081
PM 1560BG/RR	Paymaster	1891
Grand mean		2410
LSD (0.05)		303
% CV		13

¹Rating scale is from 1 (no plants emerging) to 10 (excellent stands with healthy plants).