

EARLY AND MID-SEASON COTTON VARIETY TRIALS

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ABSTRACT: The 2002 environmental growing season had low temperature at planting followed by normal temperatures with good rainfall through July followed dry conditions (no rainfall) through August 24. However, yields were above average. In the early maturity study, seedcotton yields ranged from 2704 to 3781 lb/ac with no yield difference among varieties. The mid-season varieties seedcotton yields ranged from 3420 to 4114 lb/ac with no difference among varieties.

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KEYWORDS: Cotton, variety trial

MATERIALS AND METHODS: Two cotton variety studies (early and mid-season) were conducted on a Leeper silty clay loam soil during the 2002 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 250 lb/ac was applied surface broadcast 10/04/01. 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 6/13/02.

Land preparations consisted of disking twice on 10/04/01 followed by a do-all (row conditioner) on 10/11/01. The plots were bed-rolled 10/23/01, paratilled 10/30/01, and bed-rolled on 10/31/01. All plots were do-alled prior to planting 5/15/02. Temik 15G (aldicarb) and Ridomil 11G (mefenoxam) at 0.52 + 0.80 lb ai/ac were applied in-furrow at planting on 5/15/02. Seeding rates for all varieties, were adjusted to 4 live seed/ft row and were based on laboratory seed germination test of each variety.

Glyphos (glyphosate) + Clarity (banvel) at 1.0 + 0.125 lb ai/ac was applied as a burndown 3/08/02. Roundup Ultra Max (glyphosate) + Dual (metolachlor) + Meturon (fluometuron) + Bladex (cyanazine) at 1.0 + 1.5 + 1.0 + 0.5 lb ai/ac were applied preemergence after cotton planting on 5/17/02. Staple (pyrithobac) at 1.3 oz ai/ac was applied postemergence over top on 6/20/02. Bladex + MSMA (monosodium acid metharsonate) at 1.0 + 2.0 lb ai/ac was applied post-direct broadcast with a hooded sprayer 7/10/02. Pix (mepiquat) Plus (3.1 x 10 colony units of *Bacillus cereus* per fluid oz) at 0.0164 lb ai/ac was applied 7/08/02 and repeated at 0.0328 on 7/18/02 and 7/26/02.

Insecticides were applied based on twice weekly scouting reports on the conventional varieties. Tarnished plant bug (*Lygus lineolaris*), bollworm (*Helicoverpa zea*), and budworm (*Heliothis virescens*) were major cotton pests with light to moderate infestation in the 2002 growing season. Applications were applied when insect pests were at threshold or exceeded threshold levels with a twice-weekly scouting program. The following insecticides were applied at 5 gpa with TXVS-4 nozzles at 4 mph rate of travel and 48 psi operating boom pressure. Orthene (acephate) at 0.27 lb ai/ac was applied on 6/24/02. Bidrin (dicotophos) at 0.2 lb ai/ac was applied on 6/13/02, repeated at 0.38 lb ai/ac on 7/08/02. Tracer (spinosad) at 0.04 lb ai/ac was applied on 6/20/02 and repeated at 0.04 and 0.06 lb ai/ac on 6/25/02, and 7/11/02, respectively. Ammo (cypermethrin) at 0.09 lb ai/ac was applied 7/19/02, 7/22/02, 7/25/02, and 8/06/02. Karate-Z (lambda-cyhalothrin) at 0.03 lb ai/ac was applied 7/30/02. Tracer + Provado (imidacloprid) at 0.09 + 0.04 lb ai/ac was applied 8/10/02 for banded winged white fly (*Trialeurodes abutiloneus*) and cotton aphid (*aphis gossypii*) control.

Cotton was defoliated with an application of Cotton Quik (ethephon) + Dropp (thidiazuron) at 0.85 + 0.05 lb ai/ac on 9/09/02. Folex (phosphorotrithioate) + Gramoxone Max (paraquat) at 0.75 + 0.09 lb ai/ac was applied 9/19/02. The 2-row plots were harvested 9/24/02 (first pick) with a spindle picker modified for plot harvest. The second pick harvest date was 10/17/02. Seedcotton plot weights were recorded and seedcotton grab samples were obtained from each plot of the first pick for ginning purposes. These samples were ginned through a laboratory gin to determine percent lint turnout and for HVI fiber analysis. The gin turnout and HVI data were not available at the time of this report. The treatment means in each study were separated using Fisher's protected LSD at 0.05% significance level.

RESULTS AND DISCUSSION: The 2002 growing season had low temperatures at planting followed by normal temperatures and highly variable rainfall. Above normal rainfall in May and July was followed with no rainfall until August 25. However, yields were above average. The major cotton pests were tarnished plant bug, bollworm, and budworm which required insecticide applications. Late season banded winged whitefly and cotton aphid also required an insecticide application.

The early maturity trials seedcotton yields ranged from 2704 lb/ac for Texas 295 to 3781 lb/ac for Phytogen PSC 355 (Table 1). There was no yield difference among varieties. Harvest data indicated that the percent of seedcotton harvested with first pick ranged from 88% for AgriPro AP7115 to 97% for Paymaster PM1199RR and DES 810. The mid-season variety lint yield ranged from 3420 lb/ac for GC 271 to 4114 lb/ac for Deltapine DP 555BG/RR (Table 2). There were no yield differences among varieties. Harvest data indicated that the percent of seedcotton harvested with the first pick ranged from 84% for Deltapine DP 655B/RR to 95% for Phytogen PSC 355.

COOPERATORS: None

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Table 1. Early maturity cotton variety trial on a Leeper silty clay loam soil in 2002, Verona, MS.

Variety	Brand	% First pick	Seedcotton yield total lb/ac
PSC 355	Phytogen	95	3781
ST 4793	Stoneville	92	3611
DP 20B	Deltapine	94	3516
SG 215BG/RR	Sure-Grow	89	3583
MISCOT 8839	-----	93	3602
Sure-Grow 105	Sure-Grow	95	3461
FM 958	FiberMax	90	3400
DP 451BG/RR	Deltapine	91	3387
NX 2429	-----	96	3342
DP 555BG/RR	Deltapine	93	3334
FM 958BG	FiberMax	92	3321
Texas 28R	-----	95	3269
PM 1218BG/RR	Paymaster	94	3209
Sure-Grow 501BR	Sure-Grow	90	3274
DP 436RR	Deltapine	90	3198
MISCOT 8806	-----	96	3254
SG 747	Sure-Grow	92	3200
DES 810	-----	97	3185
DPL X99X35	Deltapine	93	3207
ST 457	Stoneville	94	3134
AP 7115	AgriPro	88	3114
OA-87	-----	89	3125
PM 1199RR	Paymaster	97	3039
ST 4892BR	Stoneville	92	2981
PH 98M-2983	-----	96	2943
DES 816	-----	94	2986
Sure-Grow 521R	Sure-Grow	89	2983
STV 474	Stoneville	95	2876
BXN 49B	Stoneville	93	2852
Texas 295	-----	93	2704
	Grand mean	93	3222
	LSD (0.05)	3	NS
	% CV	2	13

Table 2. Mid maturity cotton variety trial on a Leeper silty clay loam soil in 2002, Verona, MS.

Variety	Brand	% First pick	Seedcotton yield total lb/ac
DP 555BG/RR	Deltapine	91	4114
Delta Pearl	Deltapine	87	4041
ST 580	Stoneville	89	4017
PSC 355	Phytogen	95	4024
FM 966	FiberMax	87	4097
FM 989R	FiberMax	83	3957
OA-87	-----	87	3929
ST X9905	Stoneville	86	3929
DP 491	Deltapine	87	3897
FM 832B	FiberMax	90	3850
FM 989BR	FiberMax	83	3957
NuCOTN 35B	Deltapine	83	3802
DP 448B	Deltapine	83	3789
DP 458 B/RR	Deltapine	83	3779
ST X0003	Stoneville	86	3776
DP 5690RR	Deltapine	86	3770
OA-85	-----	89	3720
DP 5415RR	Deltapine	83	3663
DP 565	Deltapine	87	3656
SG 747	SureGrow	88	3617
FM 832	FiberMax	91	3579
DP 655B/RR	Deltapine	84	3566
Texas 30R	-----	88	3544
GC 271	-----	90	3420
	Grand mean	87	3806
	LSD (0.05)	5	NS
	% CV	4	10