

## MID AND FULL SEASON COTTON VARIETY TRIAL AT HOLLY SPRINGS PLANTED ON NO-TILL SEEDBED

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**ABSTRACT:** The 2004 growing season had adequate moisture early and mid season with a drought at the end of the season. DD 60'S were below 2000 for Holly Springs during the growing season. Yield ranged from a high of 1301 lb lint/ac for DP 543BGII/RR to a low of 1043 lb lint/ac for FM 991B2R. Average yield of the test was 1181 lb lint/ac. Three varieties, (DP 543BGII/RR, DP 493, and ST 5242BR) had yields significantly higher than 1181 lb lint/ac. Three varieties, (DP 543BGII/RR, DP 493, and DP 555BG/RR) had gin turnout significantly higher than the test mean of 41.48. SG 747 had significant higher micronaire reading than the test mean of 4.54.

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**KEYWORDS:** Cotton, Variety Trial,

**MATERIALS AND METHODS:** Twenty-four mid to full season cotton varieties were evaluated for lint yield, lint percent, seed index, boll size, staple length, strength, elongation, and micronaire in 2004. Test site was located on a Grenada silt loam soil. Cultural practices were for a no-till seedbed. Experimental design was a randomized complete block with 6 replications. Plot size was two 38-inch rows, 50 ft long.

Plot area was sprayed with Roundup (glyphosate) at 1.0 lb ai/ac in late March 2004. Fertilizer (N, P, and K) was broadcast over the plot area according to soil test recommendations in late April. Cottonseeds were planted using a plot planter adapted for no-till planting. Plots were planted the last week of April at the rate of 4 live seed per ft/ row based on laboratory seed germination test for each variety. Terrachlor Super X 18.8G (pentachloronitrobenzene) 1.5 lb ai/ac plus Temik 15G (aldicarb) 0.75 lb ai/ac were applied in furrow at planting. Plots were broadcast sprayed with Gramoxone (paraquat) 0.75 lb ai/ac + Cotoran (fluometuron) 0.5 lb ai/ac + Staple (pyrithiobac) 0.06 oz ai/ac after planting. Cotoran 1.0 lb ai/ac + Staple 1.2 oz ai/ac were directed sprayed on the plots the first week of June. A layby treatment of MSMA at 1.0 lb ai/ac + Caparol 4L (prometryn) at 1.0 lb ai/ac was sprayed as a directed spray in late June. Cotton was defoliated in mid-September using Superboll (ethephon) 1.5 lb. ai/ac + Def 6 (tribufos) 1.5 lb. ai/ac. Harvest was completed the last week of October. Collected data were analyzed using analysis of variance procedures. Mean separation was accomplished by least significant difference (LSD) at the 10% significance level.

**RESULTS AND DISCUSSION:** The growing season for 2004 at Holly Springs was marginal. Temperatures were moderate, rarely exceeding 90 degrees, and moisture was adequate during the early and mid season with a drought near the end of the growing season. DD 60'S were less than 2000 for the entire growing season.

Yield range from a high of 1301 lb lint/ac for DP 543BGII/RR to a low of 1043 lb lint/ac for FM 991 B2R. Test mean was 1181 lb lint/ac. Three varieties, (DP 543BGII/RR, DP 493, and ST 5242BR) had yields significantly higher than 1181 lb lint/ac. Three varieties (DP 543BGII/RR, DP 493, and DP 555BG/RR) had gin turnout significantly higher than the test mean of 41.48. SG 747 had significant higher micronaire reading than the test mean of 4.54. Data for test are shown in Table 1.

Table 1. Yield, lint percent, boll size, length, strength, and micronaire of mid and full season cotton varieties at Holly Springs planted no-till on a Grenada Silt Loam soil.

<b>Variety</b>	<b>Lint Yield</b>	<b>Lint Percent</b>	<b>Boll Size</b>	<b>Length</b>	<b>Strength</b>	<b>Micronaire</b>
	lbs.ac	%	gms	inch	g/tex	mic
DP 543BGII/RR	1301	45.75	4.49	1.08	29.87	4.63
DP 493	1283	45.68	5.21	1.07	29.27	4.77
ST 5242BR	1255	43.43	6.04	1.04	26.77	4.57
DP 491	1229	42.60	5.29	1.13	31.57	4.57
ST 5030R	1225	42.01	5.58	1.00	33.83	4.80
DP 445BG/RR	1219	41.56	5.29	1.11	31.13	4.40
DP 488BG/RR	1215	43.25	5.58	1.10	31.00	4.73
ST 5599BR	1190	41.13	6.62	1.06	30.93	4.80
FM 800RR	1187	41.58	5.92	1.08	34.50	4.53
PSC 355	1186	40.80	5.08	1.07	31.67	5.17
DP 449BG/RR	1185	40.71	4.59	1.06	31.90	4.27
SG 747	1185	41.66	5.41	1.06	27.10	5.00
DP 555BG/RR	1184	45.12	4.55	1.08	28.80	4.53
ST 6636BR	1182	39.24	5.03	1.12	31.07	4.60
DP 494RR	1178	41.95	4.81	1.11	30.93	4.47
DP 5415RR	1178	40.48	4.93	1.07	31.03	4.83
DP 455BG/RR	1177	41.77	4.54	1.08	30.97	4.20
DPLX02T57R	1150	41.02	5.39	1.05	31.17	4.43
FM 800B2R	1132	40.32	5.86	1.12	33.07	4.20
FM 832LL	1120	40.45	5.31	1.12	31.83	4.30
ST 5454B2R	1116	38.66	5.39	1.05	29.23	4.70
FM 800BR	1112	39.81	5.24	1.14	30.80	3.73
ST 6848R	1110	38.01	5.30	1.08	34.77	4.47
FM 991B2R	1043	38.49	5.39	1.13	31.30	4.23
<b>Mean</b>	<b>1181</b>	<b>41.48</b>	<b>5.29</b>	<b>1.08</b>	<b>31.02</b>	<b>4.54</b>
<b>LSD (.10)</b>	<b>64</b>	<b>3.31</b>	<b>0.67</b>	<b>0.03</b>	<b>1.97</b>	<b>0.38</b>
<b>CV (%)</b>	<b>5.64</b>	<b>5.82</b>	<b>9.26</b>	<b>2.23</b>	<b>4.64</b>	<b>6.13</b>
<b>R-Square</b>	<b>0.55</b>	<b>0.53</b>	<b>0.62</b>	<b>0.75</b>	<b>0.74</b>	<b>0.69</b>