

COTTON VARIETY TEST RESULTS FOR LOUISIANA, 2003

W.D. Caldwell, J.A. Hayes, and E.P. Millhollon

LSU AgCenter

Red River Research Station

Bossier City, LA

A.M. Stewart

LSU AgCenter

Dean Lee Research Station

Alexandria, LA

D.J. Boquet

LSU AgCenter

Macon Ridge Research Station

Winnsboro, LA

E. Clawson

LSU AgCenter

Northeast Research Station

St. Joseph, LA

J.I. Dickson

LSU AgCenter

Agronomy Department

Baton Rouge, LA

Abstract

The selection of a variety or varieties for maximum economic return is the first and most critical decision a cotton producer makes each season. To ensure that Louisiana cotton growers remain competitive in the U.S. and global textile markets, cotton varieties are tested and evaluated annually at test locations that represent the soil and climatic conditions of the state. These locations are Dean Lee Research Station, Alexandria; Red River Research Station, Bossier City; Northeast Research Station, St. Joseph; and Northeast Research Station (Macon Ridge), Winnsboro. In 2003, a total of 58 varieties from private seed companies were evaluated for lint yield, agronomic and fiber traits. Varieties submitted for testing were divided into two groups based on maturity classification (early or medium) determined by the company submitting the variety. Deltapine DP 451 BG/RR, Stoneville 4892 BR, Deltapine DP 555 BG/RR, and Stoneville ST 5599 BR were used as check varieties in both maturity groups. The medium maturing varieties produced higher lint yields than the early maturing varieties.

Materials and Methods

Experimental procedures were similar for all tests. Plots were arranged in a randomized complete block design with four replications. Plots were four rows wide on 40-inch beds and 40 or 45 feet in length depending on location. All transgenic varieties were evaluated in test with non-transgenic varieties and received the same recommended cultural practices as the non-transgenic varieties. Yield was determined after defoliation by harvesting the center two rows with a two-row mechanical harvester. A 50-boll sample was hand-picked from 3 of the 4 replications to determine boll size, lint percentage and fiber quality.

Results

The results for the Early and Medium Maturity Tests are presented in Tables 1 and 2. Deltapine DP 493, Stoneville ST 5599BR, Deltapine DP 555 BG/RR, and Stoneville ST5242 BR produced the highest lint yield across all locations in the medium maturing tests. In the early maturing tests, the medium maturing check varieties Stoneville ST 5599BR and Deltapine DP 555 BG/RR produced the highest lint yields followed by OAX 303 and OAX 300 BR. Farmers should not base their variety selections based only on one-year data. Two and three-year variety data can be found at the LSU AgCenter website, http://www.lsuagcenter.com/subject_lists/crops.asp#Cotton.

Table 1. Lint yield (lbs/acre) across LSU AgCenter Research Stations for early maturing cotton varieties, 2003.

Variety	Alexandria	Bossier	St. Joseph		Winnsboro		Average
			Loam	Clay	Non-Irr.	Irrigated	
Stoneville ST 5599 BR*	1459 (7)	1624 (4)	1343 (12)	1248 (2)	776 (6)	1852 (1)	1383
Deltapine DP555 BG/RR*	1507 (5)	1853 (1)	1502 (2)	1087 (17)	651 (19)	1559 (9)	1360
OAX 303	1349 (14)	1616 (6)	1416 (6)	1299 (1)	745 (9)	1729 (2)	1359
OAX 300 BR	1362 (13)	1654 (3)	1367 (9)	1231 (3)	752 (8)	1641 (5)	1335
FiberMax FM 960 BR	1622 (1)	1597 (9)	1319 (16)	1131 (14)	644 (22)	1534 (15)	1308
PayMaster PM 1218 BG/RR	1564 (2)	1485 (22)	1314 (17)	1165 (10)	668 (16)	1650 (4)	1308
FiberMax FM 966	1551 (4)	1526 (15)	1228 (25)	1183 (9)	673 (15)	1639 (7)	1300
Stoneville ST 4892 BR	1458 (8)	1621 (5)	1344 (11)	1044 (25)	633 (25)	1640 (6)	1290
Deltapine DP 444 BG/RR	1379 (11)	1589 (11)	1419 (5)	1186 (7)	805 (2)	1349 (26)	1288
FiberMax FM 958 B	1402 (10)	1503 (19)	1341 (13)	1229 (4)	647 (21)	1556 (10)	1280
DPLX 00W12	1198 (26)	1419 (28)	1462 (4)	1213 (5)	778 (5)	1598 (8)	1278
DPLX 01W99R-074	1247 (21)	1506 (18)	1623 (1)	1107 (16)	660 (18)	1516 (17)	1277
FiberMax FM 958	1323 (16)	1466 (22)	1302 (18)	1201 (6)	630 (26)	1694 (3)	1269
FiberMax FM 958 LL	1411 (9)	1443 (25)	1278 (21)	1186 (8)	752 (7)	1545 (14)	1269
Deltapine DP 432 RR	1304 (17)	1669 (2)	1375 (8)	1069 (18)	629 (27)	1519 (16)	1261
Stoneville ST 4563 B2	1332 (15)	1556 (14)	1404 (7)	1110 (15)	518 (30)	1550 (13)	1245
SureGrow SG 215 BG/RR	1296 (19)	1594 (10)	1225 (26)	1139 (13)	698 (12)	1493 (18)	1241
SureGrow 105	1153 (30)	1430 (27)	1464 (3)	1059 (19)	722 (10)	1552 (12)	1230
BCG 28 R	1241 (22)	1499 (20)	1282 (20)	1054 (20)	694 (13)	1484 (19)	1209
Deltapine DP 449 BG/RR	1304 (17)	1575 (12)	1323 (15)	974 (31)	640 (23)	1434 (21)	1208
Stoneville ST 4793 R	1206 (25)	1567 (13)	1349 (10)	1050 (22)	648 (20)	1425 (22)	1208
OAX 304 BR	1286 (20)	1486 (21)	1333 (14)	1161 (11)	666 (17)	1272 (32)	1201
Stoneville STX 3990 BR	1124 (31)	1610 (8)	1116 (31)	1146 (12)	838 (1)	1364 (25)	1200
Deltapine DP 451 B/RR	1367 (12)	1613 (7)	1243 (24)	881 (32)	781 (4)	1300 (29)	1197
Deltapine DP 424 BGII/RR	1188 (28)	1507 (16)	1249 (23)	1048 (24)	693 (14)	1454 (20)	1190
FiberMax FM 819 RR	1555 (3)	1383 (29)	1287 (19)	1010 (28)	526 (29)	1327 (27)	1181
Stoneville STX 4646 B2R	1174 (29)	1507 (17)	1197 (29)	1050 (23)	498 (31)	1556 (11)	1164
OAX 302 BR	1212 (24)	1432 (26)	1115 (32)	1054 (21)	783 (3)	1271 (31)	1145
FiberMax FM 819	1476 (6)	1448 (24)	1136 (30)	1024 (26)	455 (32)	1325 (28)	1144
BCG 295	1215 (23)	1343 (30)	1219 (27)	984 (29)	636 (24)	1419 (23)	1136
Deltapine DP 436 RR	1192 (27)	1336 (31)	1205 (28)	1021 (27)	704 (11)	1272 (30)	1122
PhytoGen PHY 410 RR**		1330 (32)	1269 (22)	974 (30)	608 (28)	1376 (24)	1175
Average	1337	1525	1314	1104	673	1497	1242
LSD (.05)=	170	182	126	120	160	189	
CV (%)=	9.2	8.5	6.9	7.7	16.9	9	

Numbers in parentheses represent the ranking of that variety at that location.

* Medium maturing varieties included for comparison purposes.

**PhytoGen PHY 410 had a low germination and poor stand in this test.

Table 2. Lint Yield (lbs/acre) across LSU AgCenter Research Stations for medium maturing cotton varieties, 2003.

Variety			St. Joseph		Winnsboro		Average
	Alexandria	Bossier	Loam	Clay	Non-Irr.	Irrigated	
Deltapine DP 493	1611 (3)	1810 (2)	1476 (2)	1345 (2)	693 (8)	1987 (1)	1487
Stoneville ST 5599 BR	1442 (7)	1881 (1)	1305 (5)	1404 (1)	788 (2)	1824 (3)	1440
Deltapine EP 555 BG/RR	1655 (1)	1720 (5)	1542 (1)	1224 (5)	640 (15)	1829 (2)	1435
Stoneville ST 5242 BR	1494 (5)	1790 (3)	1423 (3)	1301 (3)	742 (5)	1748 (4)	1416
Deltapine DeltaPEARL	1613 (2)	1415 (12)	1353 (4)	1135 (9)	686 (9)	1682 (7)	1314
Stoneville ST 4892 BR*	1320 (11)	1624 (6)	1291 (7)	1046 (16)	795 (1)	1741 (5)	1303
FiberMax FM 832 LL	1500 (4)	1385 (16)	1245 (10)	1247 (4)	697 (7)	1623 (9)	1283
FiberMax FM 800 BR	1492 (6)	1745 (4)	1099 (22)	1183 (7)	628 (17)	1486 (22)	1272
Deltapine DP 491	1213 (17)	1583 (7)	1211 (12)	1208 (6)	617 (19)	1701 (6)	1255
FiberMax FM 991 BR	1392 (8)	1539 (9)	1137 (18)	1063 (15)	738 (6)	1617 (10)	1248
Deltapine DP 494 RR	1383 (9)	1538 (10)	1229 (11)	1122 (11)	595 (21)	1576 (15)	1241
Deltapine DP 468 BGII/RR	1350 (10)	1362 (17)	1163 (15)	1080 (13)	747 (3)	1585 (13)	1215
BCG 24 R	1118 (21)	1580 (8)	1275 (8)	1029 (17)	618 (18)	1590 (12)	1202
FiberMax FM 991 RR	1171 (19)	1392 (15)	1249 (9)	1128 (10)	657 (12)	1508 (19)	1184
FiberMax FM 989 RR	1239 (13)	1265 (22)	1155 (17)	1168 (8)	656 (13)	1593 (11)	1179
Stoneville ST 5303 R	1229 (15)	1307 (20)	1205 (13)	1067 (14)	742 (4)	1498 (20)	1175
Deltapine 451 B/RR*	1277 (12)	1471 (11)	1173 (14)	933 (22)	645 (14)	1538 (16)	1173
OAX 301 R	1138 (20)	1324 (19)	1159 (16)	1086 (12)	667 (10)	1639 (8)	1169
Stoneville ST 5222 B2	1186 (20)	1332 (18)	1297 (6)	987 (20)	609 (20)	1579 (14)	1165
FiberMax FM 989 BR	1220 (16)	1402 (13)	1113 (20)	1005 (19)	633 (16)	1523 (17)	1149
FiberMax FM 832	1281 (12)	1395 (14)	1129 (19)	1026 (18)	548 (22)	1497 (21)	1146
PhytoGen PHY 510 RR**	1105 (22)	1293 (21)	1108 (21)	973 (21)	658 (11)	1521 (18)	1110
Average	1,338	1,507	1,243	1,125	673	1,631	1,253
LSD (.05)=	269	254	186	128	106	175	
CV (%)=	13.3	12	11	8	11	8	

Numbers in parentheses represent the ranking of that variety at that location.

* Early maturing varieties included for comparison purposes.

** PhytoGen PHY 510 RR had a low germination and poor stand in this test.