

2017 Evaluation of Non-Irrigated Mid- to Full-Season Maturing Cotton Varieties, Jay, Florida

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This report includes the summary of the 2017 mid- to full-season cotton replicated variety trial at West Florida Research and Education Center, Jay, Florida. It shows the performance of 42 mid- to full season maturing cotton varieties (Table 2). This data represents only one year, results should be considered over several locations and years before conclusions are valid. A multiple year summary is included at the end of this report.

2017 Growing Conditions and Experimental Design:

The study area soil type was a Red Bay sandy loam with 2% organic matter and pH 6.5 and a history of corn production during 2016. Cotton varieties were planted on 3 May under conventional tillage. Plots were four, 25-ft rows with 36-in. row spacing and replicated in four randomized complete blocks. Standard production practices for non-irrigated cotton production were followed throughout the season. Prowl H₂O 1.8 pt/A was applied on 27 April preemergence annual grass weed control. Cotoran 3 pt/A was applied 3 May for preemergence broadleaf weed control. Roundup at 26 oz/A plus Dual Magnum at 1.3 pt/A were applied 12 June and Roundup 1 qt/A was applied 12 July for postemergence weed control. Priaxor fungicide was applied at 3 oz/A 23 August. The plant growth regulator Potenza was applied at 1 pt/A on 10 July, 17 July, 27 July and 23 August. Cotton was harvested with a conventional spindle picker on 18 October and samples were sent to a commercial lab for fiber analysis.

Rainfall was 4 to 5 inches below average for July and September and was 3 to 13 inches above average for May, June, August and October. For the entire cotton growing season, rainfall was 13 inches above average. Weather data was obtained from Florida Automated Weather Network (FAWN) station located on Jay research farm and normal represents the mean for the past 54 years of records (Table 1).

Table 1. Weather Conditions During 2017 Cotton Trial.

Month	Total Rainfall (in)	Average minimum air temperature (°F)	Average maximum air temperature (°F)
May	7.34 (2.84 inches above average)	61.6	83.3
June	20.34 (12.94 inches above average)	70.3	84.4
July	2.50 (5.55 inches below average)	72.4	90.3
August	9.60 (3.08 inches above average)	72.4	88.9
September	0.77 (5.47 inches below average)	66.8	86.3
October	9.06 (5.27 inches above average)	59.3	79.4
Total	49.61 (13.11 above average)		

Table 2. Mid- to Full-Season Cotton Brand/Varieties Evaluated:

Entry	Brand	Variety
1	Croplan	3885 B2XF
2	Croplan	9608 B3XF
3	Stoneville	ST 6182GLT
4	Stoneville	ST 5115GLT
5	Stoneville	ST 5020GLT
6	Stoneville	ST 5517GLTP
7	Stoneville	ST 4949GLT
8	Stoneville	ST 4848GLT
9	Delta Pine	DP 1747NR B2XF
10	Delta Pine	DP 1646 B2XF
11	Delta Pine	DP 1639 B2XF
12	Delta Pine	DP 1538 B2XF
13	Delta Pine	DP 1553 B2XF
14	Delta Pine	DP 1555 B2XF
15	Delta Pine	MON 16R343 B3XF
16	Delta Pine	MON 16R351 B3XF
17	Delta Pine	MON 16R353 B3XF
18	Phytogen	PHY 312 WRF
19	Phytogen	PHY 333 WRF
20	Phytogen	PHY 444 WRF
21	Phytogen	PHY 300 W3FE
22	Phytogen	PHY 330 W3FE
23	Phytogen	PHY 340 W3FE
24	Phytogen	PHY 450 W3FE
25	Phytogen	PHY 490 W3FE
26	Phytogen	PX2A28W3FE
27	Phytogen	PX3A82W3FE
28	Phytogen	PX3A96W3FE
29	Phytogen	PX3A99W3FE
30	Phytogen	PX4A52W3FE
31	Phytogen	PX4A54W3FE
32	Phytogen	PX4A57W3FE
33	Phytogen	PX4A62W3FE
34	Phytogen	PX5A57W3FE
35	Phytogen	PX5B73W3FE
36	Phytogen	PX5B76W3FE
37	Americot	NG 5007 B2XF
38	Americot	NG 4601 B2XF
39	Americot	NG AMX 1710 B2XF
40	Dyna-Gro	DG3605 B2XF
41	Dyna-Gro	DG3757 B2XF
42	Dyna-Gro	DG3445 B2XF

Summary

Stand count for all varieties ranged from 2.5 to 5.0 plants/ft (36,300 to 73,200 plants/A) (Table 3). All varieties except Croplan 9608 B3XF, ST 5020, MON 16R343, Mon 16R353 and DG 3445 had plant populations higher than 40,000 plants/A.

Gin turnout ranged from 34.6 to 39.8% with most varieties having GTO above 35% (Table 3). Lint yields ranged from 857 to 1325 lb lint/A (Table 3). The six mid- to full-season varieties that yielded more than 1200 lb lint/A (highest to lowest) were DP 1646, Croplan 9608, Mon 16R343, DG 3445, DG 3605 and MON 16R351. The five highest lint value/A (which included premiums and discounts for fiber quality) were (highest to lowest) DP 1646, Croplan 9608, DG 3605, DG 3445 and MON 16R343 (Table 4).

Two- and three-year lint yield averages are listed in Table 6. Fourteen varieties were evaluated over two years and eleven were evaluated over three years. DP 1646, DP 1639, DP 1538, DP 1555, PHY 333, Croplan 3885 and NG 5007 averaged more than 1200 lb/A lint over three years.

Table 3. Mid- to Full-Season Cotton Variety Plant Population.

	Variety	Plants/ft ¹ (8 June)	Plants/A ¹ (8 June)
1	3885 B2XF	3.4	49005
2	9608 B3XF	2.8	39930
3	ST 6182GLT	3.5	50215
4	ST 5115GLT	4.0	58685
5	ST 5020GLT	2.7	39325
6	ST 5517GLTP	4.1	59290
7	ST 4949GLT	4.5	65945
8	ST 4848GLT	3.1	45375
9	DP 1747NR B2XF	3.5	50820
10	DP 1646 B2XF	3.0	42955
11	DP 1639 B2XF	3.0	42955
12	DP 1538 B2XF	3.3	47190
13	DP 1553 B2XF	3.0	44165
14	DP 1555 B2XF	3.8	55055
15	MON 16R343 B3XF	2.5	35695
16	MON 16R351 B3XF	3.4	49610
17	MON 16R353 B3XF	2.5	36300
18	PHY 312 WRF	3.4	49610
18	PHY 333 WRF	4.1	59290
20	PHY 444 WRF	3.0	43560
21	PHY 300 W3FE	3.4	49610
22	PHY 330 W3FE	3.0	43560
23	PHY 340 W3FE	3.3	48400
24	PHY 450 W3FE	3.0	43560
25	PHY 490 W3FE	3.5	51425
26	PX2A28W3FE	3.9	56870
27	PX3A82W3FE	3.8	55660
28	PX3A96W3FE	3.6	52635
29	PX3A99W3FE	4.3	62315
30	PX4A52W3FE	3.9	56265
31	PX4A54W3FE	3.5	51425
32	PX4A57W3FE	4.1	59290
33	PX4A62W3FE	4.6	66550
34	PX5A57W3FE	3.0	42955
35	PX5B73W3FE	3.9	56870
36	PX5B76W3FE	5.0	73205
37	NG 5007 B2XF	3.7	53240
38	NG 4601 B2XF	3.8	55660
39	NG AMX 1710 B2XF	3.4	49610
40	DG3605 B2XF	3.0	44165
41	DG3757 B2XF	3.2	45980
42	DG3445 B2XF	2.3	33880
	<i>LSD</i>	1.0	14355
	<i>CV</i>	20.3%	20.3%

¹Determined from counts of two, 25-ft rows per plot. Planted 4 seed/row ft = 58,000 seed/A.

Table 4. Mid- to Full-Season Cotton Variety Gin Turnout and Yield.

Variety	Yield				
	Seed Cotton ^w (lb/A)	Gin Turnout ^x (%)	Lint (lb/A)	Bales/A ^z	
1	3885 B2XF	2897	35.2	1019	2.1
2	9608 B3XF	3296	39.8	1311	2.7
3	ST 6182GLT	2948	39.0	1152	2.4
4	ST 5115GLT	3107	36.5	1134	2.4
5	ST 5020GLT	2831	36.0	1017	2.1
6	ST 5517GLTP	2686	34.6	927	1.9
7	ST 4949GLT	2904	38.3	1111	2.3
8	ST 4848GLT	2686	37.4	1003	2.1
9	DP 1747NR B2XF	2614	38.1	996	2.1
10	DP 1646 B2XF	3449	38.5	1325	2.8
11	DP 1639 B2XF	2926	36.8	1079	2.2
12	DP 1538 B2XF	3013	36.8	1107	2.3
13	DP 1553 B2XF	2505	36.6	916	1.9
14	DP 1555 B2XF	2889	37.4	1078	2.2
15	MON 16R343 B3XF	3412	37.1	1268	2.6
16	MON 16R351 B3XF	3267	37.9	1234	2.6
17	MON 16R353 B3XF	2795	37.9	1061	2.2
18	PHY 312 WRF	2831	36.9	1043	2.2
19	PHY 333 WRF	2766	36.9	1021	2.1
20	PHY 444 WRF	3049	37.4	1139	2.4
21	PHY 300 W3FE	2853	37.8	1077	2.2
22	PHY 330 W3FE	2839	38.0	1078	2.2
23	PHY 340 W3FE	2795	37.8	1055	2.2
24	PHY 450 W3FE	2977	34.7	1033	2.2
25	PHY 490 W3FE	2577	36.7	945	2.0
26	PX2A28W3FE	2396	35.6	857	1.8
27	PX3A82W3FE	2541	35.9	910	1.9
28	PX3A96W3FE	2657	35.4	950	2.0
29	PX3A99W3FE	2889	34.6	999	2.1
30	PX4A52W3FE	2628	37.2	980	2.0
31	PX4A54W3FE	2940	36.3	1067	2.2
32	PX4A57W3FE	3056	38.6	1179	2.5
33	PX4A62W3FE	2650	37.9	1005	2.1
34	PX5A57W3FE	2505	35.6	891	1.9
35	PX5B73W3FE	3013	35.8	1079	2.2
36	PX5B76W3FE	2904	35.9	1041	2.2
37	NG 5007 B2XF	3049	37.1	1130	2.4
38	NG 4601 B2XF	2831	38.0	1074	2.2
39	NG AMX 1710 B2XF	2831	36.1	1019	2.1
40	DG3605 B2XF	3376	37.2	1255	2.6
41	DG3757 B2XF	2977	36.9	1098	2.3
42	DG3445 B2XF	3449	36.6	1260	2.6
	<i>LSD</i>	<i>481</i>	<i>1.6</i>	<i>185</i>	<i>0.4</i>
	<i>CV</i>	<i>11.9%</i>	<i>3.0%</i>	<i>12.4%</i>	<i>12.4%</i>

^w Weight (lb/A) includes lint + seed. Plots harvested 10-18-17.

^x Gin Turnout = lint/seed cotton.

^y Bales/A are weight of lint only at 480 lb/bale

Table 5. Mid- to Full-Season Cotton Variety Fiber Quality and Value.

	Variety	Mic ^u	Fiber length ^v (in.)	Fiber strength ^w (g/tex)	Uniform ^x (%)	Lint (lb/A)	Net loan price ^y (¢/lb)	Lint value ^y (\$/A)
1	3885 B2XF	4.5	1.11	29.2	82.2	1019	54.55	556
2	9608 B3XF	4.4	1.12	30.3	81.5	1311	54.70	717
3	ST 6182GLT	4.4	1.12	29.1	82.1	1152	55.90	644
4	ST 5115GLT	4.3	1.13	30.6	82.4	1134	56.10	636
5	ST 5020GLT	4.7	1.15	32.1	82.6	1017	55.15	561
6	ST 5517GLTP	4.4	1.17	32.2	81.7	927	56.55	524
7	ST 4949GLT	4.5	1.11	30.7	82.8	1111	54.75	608
8	ST 4848GLT	4.7	1.13	31.2	83.1	1003	54.50	547
9	DP 1747NR B2XF	4.7	1.11	30.9	82.2	996	56.10	559
10	DP 1646 B2XF	4.5	1.20	30.2	82.8	1325	55.05	729
11	DP 1639 B2XF	4.6	1.13	31.0	83.2	1079	55.05	594
12	DP 1538 B2XF	4.7	1.07	27.9	81.6	1107	52.85	585
13	DP 1553 B2XF	4.4	1.15	29.6	82.8	916	56.20	515
14	DP 1555 B2XF	4.4	1.15	32.8	82.5	1078	56.60	610
15	MON 16R343 B3XF	4.3	1.19	32.5	82.8	1268	55.25	701
16	MON 16R351 B3XF	4.4	1.13	32.8	82.3	1234	56.30	695
17	MON 16R353 B3XF	4.5	1.15	31.7	83.8	1061	55.25	586
18	PHY 312 WRF	4.6	1.17	30.9	82.5	1043	54.95	573
19	PHY 333 WRF	4.4	1.14	31.2	83.4	1021	55.05	562
20	PHY 444 WRF	4.0	1.23	33.1	83.6	1139	55.55	633
21	PHY 300 W3FE	4.5	1.11	30.7	81.9	1077	54.70	589
22	PHY 330 W3FE	4.4	1.13	31.2	82.3	1078	56.30	607
23	PHY 340 W3FE	4.6	1.11	30.9	82.3	1055	54.75	578
24	PHY 450 W3FE	4.9	1.08	33.2	83.0	1033	54.15	559
25	PHY 490 W3FE	4.6	1.11	32.9	82.5	945	54.95	519
26	PX2A28W3FE	4.3	1.13	32.1	81.6	857	54.90	470
27	PX3A82W3FE	4.4	1.11	32.5	83.9	910	55.05	501
28	PX3A96W3FE	4.4	1.11	30.0	82.2	950	54.75	520
29	PX3A99W3FE	4.2	1.13	30.4	83.6	999	52.00	519
30	PX4A52W3FE	4.3	1.14	30.1	83.6	980	54.30	532
31	PX4A54W3FE	4.5	1.13	33.0	83.5	1067	53.50	571
32	PX4A57W3FE	4.2	1.10	31.3	82.8	1179	53.60	632
33	PX4A62W3FE	4.1	1.18	35.6	82.8	1005	55.45	557
34	PX5A57W3FE	4.0	1.13	32.0	82.5	891	56.40	503
35	PX5B73W3FE	4.3	1.13	30.7	82.4	1079	54.75	591
36	PX5B76W3FE	4.3	1.12	32.0	82.6	1041	56.30	586
37	NG 5007 B2XF	4.4	1.13	28.5	81.6	1130	54.40	615
38	NG 4601 B2XF	4.7	1.12	32.5	82.3	1074	56.30	605
39	NG AMX 1710 B2XF	4.6	1.12	33.4	82.2	1019	55.05	561
40	DG3605 B2XF	4.3	1.21	30.8	83.0	1255	56.60	710
41	DG3757 B2XF	4.5	1.13	28.8	82.8	1098	55.80	613
42	DG3445 B2XF	4.7	1.22	35.7	85.1	1260	55.65	701
	<i>LSD</i>	<i>0.28</i>	<i>0.03</i>	<i>1.37</i>	<i>0.98</i>	<i>185</i>		
	<i>CV</i>	<i>4.5%</i>	<i>1.9%</i>	<i>3.1%</i>	<i>0.9%</i>	<i>12.4</i>		

^u Mic (micronaire)= a measure of fiber fineness or maturity. An airflow instrument measures the air permeability of a given mass of cotton lint compressed to a fixed volume. Low "mike" values indicate finer or less mature fibers.

^v Fiber length= average fiber length of the longer one-half of the fibers sampled, in hundredths of an inch.

^w Fiber strength = force required to break a bundle of fibers one tex unit in size. A tex is the weight in grams of 1,000 meters of fiber. HVI clamp jaw spacing is 1/8 inch.

^x Uniformity = length uniformity is the ratio between the mean length and the upper-half mean length of the fibers, expressed as a percentage.

^y Entries are listed according to lint value in \$/Acre based on \$0.52/lb +/- premium/discounts. Samples ginned at University of Tennessee and classed at the USDA Classing Office in Memphis, TN.

Table 6. Mid- to Full-Season Two and Three Year Lint/A Yield Averages

		2017	2-year Average	3-year Average
1	DP 1646 B2XF	1325	1244	1408
2	DP 1639 B2XF	1079	1022	1224
3	DP 1538 B2XF	1107	1040	1230
4	DP 1553 B2XF	916	871	1131
5	DP 1555 B2XF	1078	972	1200
6	ST 5115GLT	1134	1030	1149
7	ST 6182GLT	1152	972	1162
8	ST 4848GLT	1003	978	
9	ST 4949GLT	1111	1018	
10	PHY333WRF	1021	1003	1227
11	PHY444WRF	1139	1057	1195
12	Croplan 3885 B2XF	1019	962	1208
13	NG5007 B2XF	1130	1079	1214
14	DG 3757 B2XF	1098	982	

Shaded entries has 3-year average of 1200 lb/A or more.