2016 Evaluation of Non-Irrigated Early-Maturing Cotton Varieties, Jay, Florida

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This report includes the summary of the 2016 early-maturing cotton replicated variety trial at West Florida Research and Education Center, Jay, Florida. It shows the performance of 13 early-maturing cotton varieties. 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.

Table 1. Early-Maturing Entries Evaluated: (Brand/Variety)

	Brand	Variety
1	Delta Pine	DP 1518 B2XF
2	Delta Pine	DP 1522 B2XF
3	Monsanto	MON 16R229 B2XF
4	Phytogen	PHY312WRF
5	Phytogen	PHY333WRF
6	Phytogen	PHY444WRF
7	Phytogen	PHY487WRF
8	Phytogen	PHY495WRF
9	Phytogen	PHY499WRF
10	Dyna-Gro	DG 3526B2XF
11	Americot	NG3406B2XF
12	Seed Source Genetics	VA 222
13	Seed Source Genetics	HQ 210 CT

2016 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 2015. Cotton varieties were planted on 6 May under strip 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 H_2O 1.8 pt/A + Roundup 22 oz/A + Cotoran 3 pt/A were applied on 7 May for burndown and preemergence weed control. Roundup at 22 oz/A was applied 3 June and 22 June for postemergence weed control. Sherpa insecticide was applied at 4 oz/A 3 June and Wrangler insecticide at 2 oz/A on 14 July. Priaxor fungicide was applied at 4 oz/A 14 July. The plant growth regulator Stance was applied at 2 oz/A on 14 July

and Mepiquat at 1 pt/A on 28 July. Cotton was harvested with a conventional spindle picker on 19 October and samples were sent to a commercial lab for fiber analysis.

Rainfall was below average for all months except September. Rainfall during the cotton growing season totaled 26.48 in., which was 10.02 in. below average. Weather data was obtained from Florida Automated Weather Network (FAWN) station located on Jay research farm and average represents the mean for the past 55 years of records (Table 2).

Table 2. Weather Conditions During 2016 Cotton Trial.

Month	Total Rainfall (in)	Average minimum air temperature (°F)	Average maximum air temperature (°F)
May	2.93 (1.57 below average)	62.1	83.5
June	5.47 (1.93 below average)	68.2	90.1
July	7.56 (0.49 above average)	73.1	91.0
August	3.83 (2.69 below average)	73.2	90.0
September	6.69 (0.45 above average)	69.9	88.9
October	0.00 (3.79 below average)	57.5	84.0

Summary

Stand count for all varieties ranged from 2.5 to 3.5 plants/ft (35,000 to 51,100 plants/A) (Table 3). All varieties except MON 16R229 B2XF, DG 3526B2XF, VA 222 and HQ 210 CT had plant populations higher than 45,000 plants/A.

Gin turnout ranged from 34.0 to 39.5% (Table 4). PHY333, PHY444, and DG 3526 all had gin turnout of at least 38%. Cotton lint yield ranged from 673 to 1,164 lb/A. DP 1518, MON 16R229, PHY312, PHY333, PHY444 and DG 3526 all yielded more than 1,000 lb lint/A while VA 222 and HQ 210 CT yielded less than 720 lb/A.

Fiber analysis data is listed in Table 5 along with value of lint based on lint yield and lint quality. The three highest lint value/A (which included premiums and discounts for fiber quality) were (highest to lowest) DP1518, PHY444 and PHY312. These three varieties had lint value greater than $550/A.

Two- and three-year lint yield averages are listed in Table 6. Nine varieties were evaluated over two years and 4 were evaluated over three years. PHY333, PHY444, PHY495 and PHY499 averaged more the 1,400 lb/A lint over three years.

Table 3. Early-Maturing Cotton Variety Plant Population, Jay, FL 2016.

	Variety	Plants/ft[1] (2 June)	Plants/A[1] (2 June)
1	DP 1518 B2XF	3.2	46609
2	DP 1522 B2XF	3.4	49005
3	MON 16R229 B2XF	2.8	41019
4	PHY312WRF	3.3	48061
5	PHY333WRF	3.4	49223
6	PHY444WRF	3.2	45883
7	PHY487WRF	3.5	51183
8	PHY495WRF	3.4	49658
9	PHY499WRF	3.5	51038
10	DG 3526B2XF	3.0	44141
11	NG3406B2XF	3.4	49876
12	VA 222	2.5	36227
13	HQ 210 CT	2.8	40729
	LSD	*0.3*	*4317*
	CV	*6.5%*	*6.5%*

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

Table 4. Early-Maturing Cotton Variety Gin Turnout and Yield, Jay, FL 2016

	Variety	Yield			
		Seed Cotton[w] (lb/A)	Gin Turnout[x] (%)	Lint Yield (lb/A)	Bales/A[y]
1	DP 1518 B2XF	3173	36.7	1164	2.4
2	DP 1522 B2XF	2570	36.9	950	2.0
3	MON 16R229 B2XF	2759	36.8	1016	2.1
4	PHY312WRF	2831	37.5	1063	2.2
5	PHY333WRF	2686	38.0	1023	2.1
6	PHY444WRF	2759	38.4	1059	2.2
7	PHY487WRF	2338	34.6	810	1.7
8	PHY495WRF	2439	35.4	862	1.8
9	PHY499WRF	2526	39.5	997	2.1
10	DG 3526B2XF	2628	38.6	1013	2.1
11	NG3406B2XF	2497	36.2	907	1.9
12	VA 222	1975	34.0	673	1.4
13	HQ 210 CT	2033	35.1	716	1.5
	LSD	*426*	*2.4*	*177*	*0.4*
	CV	*11.7%*	*4.6%*	*13.2%*	*13.2%*

[w] Weight (lb/A) includes lint + seed.
[x] Gin Turnout = lint/seed cotton.
[y] Bales/A are weight of lint only at 480 lb/bale
Plots were harvested on 19 October.

Table 5. Early-Maturing Cotton Variety Fiber Quality and Value, Jay, FL 2016.

	Variety	Mic[u]	Fiber length[v] (in.)	Fiber strength[w] (g/tex)	Uniform.[x] (%)	Lint Yield (lb/A)	Net loan price[y] (¢/lb)	Lint value[y] ($/A)
1	DP 1518 B2XF	4.4	1.13	29.1	81.5	1164	51.85	604
2	DP 1522 B2XF	4.9	1.13	29.0	82.8	950	56.05	532
3	MON 16R229 B2XF	4.9	1.07	29.5	80.8	1016	52.50	533
4	PHY312WRF	4.7	1.12	30.3	81.9	1063	53.05	564
5	PHY333WRF	4.5	1.13	29.8	81.3	1023	52.10	533
6	PHY444WRF	4.0	1.23	31.8	82.8	1059	56.85	602
7	PHY487WRF	4.8	1.11	30.0	82.2	810	54.40	441
8	PHY495WRF	4.6	1.09	31.6	82.4	862	51.65	445
9	PHY499WRF	4.8	1.12	32.2	82.3	997	51.75	516
10	DG 3526B2XF	4.6	1.10	28.5	81.9	1013	53.70	544
11	NG3406B2XF	4.3	1.12	29.1	81.9	907	54.15	491
12	VA 222	4.4	1.15	31.2	81.7	673	54.60	367
13	HQ 210 CT	4.6	1.06	29.2	80.2	716	52.50	376
	LSD	*0.2*	*0.03*	*1.2*	*2.2*	*177*		
	CV	*3.2%*	*1.9%*	*2.8%*	*1.9%*	*13.2%*		

[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] Entry lint value in listed as $/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. Early-Maturing Two and Three Year Lint/A Yield Averages

Variety	2016 (lb/A)	2-year Average (lb/A)	3-year Average (lb/A)
DP 1518 B2XF	1164	1374	
DP 1522 B2XF	950	1237	
PHY312WRF	1063	1368	
PHY333WRF	1023	1359	1532
PHY444WRF	1059	1339	1497
PHY487WRF	810	1208	
PHY495WRF	862	1236	1410
PHY499WRF	997	1339	1491
NG3406B2XF	907	1113	