

# 2017 Evaluation of Non-Irrigated Early-Maturing Cotton Varieties, Jay, Florida

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This report includes the summary of the 2017 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)**

|    | <b>Brand</b>         | <b>Variety</b>   |
|----|----------------------|------------------|
| 1  | Seed Source Genetics | VA 222           |
| 2  | Seed Source Genetics | HQ 210 CT        |
| 3  | Delta Pine           | DP 1725 B2XF     |
| 4  | Delta Pine           | DP 1518 B2XF     |
| 5  | Delta Pine           | DP 1522 B2XF     |
| 6  | Phytogen             | PHY 312 WRF      |
| 7  | Phytogen             | PHY 333 WRF      |
| 8  | Phytogen             | PHY 444 WRF      |
| 9  | Phytogen             | PHY 300 W3FE     |
| 10 | Phytogen             | PHY 330 W3FE     |
| 11 | Phytogen             | PHY 340 W3FE     |
| 12 | Americot             | NG 3522 B2XF     |
| 13 | Americot             | NG AMX 1715 B2XF |

## 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 H<sub>2</sub>O 1.8 pt/A was applied on 27 April for 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 2).

**Table 2. 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)        |                                      |                                      |

## Summary

Stand count for all varieties ranged from 3.3 to 4.3 plants/ft (47,800 to 61,700 plants/A) (Table 3). All varieties except VA 222, DP 1518, DP 1522, PHY 312 and NG AMX 1715 had plant populations higher than 54,000 plants/A.

Gin turnout ranged from 34.6 to 38.2% (Table 4). DP 1518, DP 1725, PHY 333, NG AMX 1715, PHY 444 and PHY 340 all had gin turnout of at least 38%. Cotton lint yield ranged from 669 to 1,193 lb/A. DP 1725, DP 1518, PHY 333, PHY 444, PHY 340 and NG AMX 1715 all yielded more than 1,000 lb lint/A while HQ 210 CT yielded less than 700 lb/A.

Fiber analysis data is listed in Table 5 along with value of lint based on lint yield and lint quality. The four highest lint value/A (which included premiums and discounts for fiber quality) were (highest to lowest) DP 1518, DP 1725, PHY 3333 and NG AMX 1715. These three varieties had lint value greater than \$550/A.

Two- and three-year lint yield averages are listed in Table 6. Seven varieties were evaluated over two years and five were evaluated over three years. DP 1518, PHY 312, PHY 333 and PHY 444 averaged more the 1,220 lb/A lint over three years.

**Table 3. Early-Maturing Cotton Variety Plant Population, Jay, FL 2017.**

|    | Variety          | Plants/ft <sup>1</sup><br>(27 June) | Plants/A <sup>1</sup><br>(27 June) |
|----|------------------|-------------------------------------|------------------------------------|
| 1  | VA 222           | 3.7                                 | 53845                              |
| 2  | HQ 210 CT        | 4.0                                 | 58685                              |
| 3  | DP 1725 B2XF     | 3.8                                 | 55660                              |
| 4  | DP 1518 B2XF     | 3.7                                 | 53240                              |
| 5  | DP 1522 B2XF     | 3.7                                 | 53240                              |
| 6  | PHY 312WRF       | 3.6                                 | 52030                              |
| 7  | PHY 333 WRF      | 4.3                                 | 62315                              |
| 8  | PHY 444 WRF      | 3.3                                 | 47795                              |
| 9  | PHY 300 W3FE     | 3.9                                 | 56265                              |
| 10 | PHY 330 W3FE     | 4.3                                 | 61710                              |
| 11 | PHY 340 W3FE     | 4.0                                 | 58685                              |
| 12 | NG 3522 B2XF     | 3.8                                 | 54450                              |
| 13 | NG AMX 1715 B2XF | 3.7                                 | 53240                              |
|    | <i>LSD</i>       | 0.9                                 | 12700                              |
|    | <i>CV</i>        | 16.1%                               | 16.1%                              |

<sup>1</sup>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 2017**

|            |                                    | Yield                           |                      |                      |       |
|------------|------------------------------------|---------------------------------|----------------------|----------------------|-------|
| Variety    | Seed Cotton <sup>w</sup><br>(lb/A) | Gin Turnout <sup>x</sup><br>(%) | Lint Yield<br>(lb/A) | Bales/A <sup>y</sup> |       |
| 1          | VA 222                             | 2468                            | 34.6                 | 853                  | 1.8   |
| 2          | HQ 210 CT                          | 1924                            | 34.7                 | 669                  | 1.4   |
| 3          | DP 1725 B2XF                       | 2948                            | 37.2                 | 1099                 | 2.3   |
| 4          | DP 1518 B2XF                       | 3194                            | 37.2                 | 1193                 | 2.5   |
| 5          | DP 1522 B2XF                       | 2577                            | 36.9                 | 952                  | 2.0   |
| 6          | PHY 312 WRF                        | 2759                            | 35.9                 | 989                  | 2.1   |
| 7          | PHY 333 WRF                        | 3056                            | 36.8                 | 1121                 | 2.3   |
| 8          | PHY 444 WRF                        | 2723                            | 36.9                 | 1005                 | 2.1   |
| 9          | PHY 300 W3FE                       | 2614                            | 37.4                 | 976                  | 2.0   |
| 10         | PHY 330 W3FE                       | 2541                            | 35.7                 | 905                  | 1.9   |
| 11         | PHY 340 W3FE                       | 2759                            | 36.4                 | 1003                 | 2.1   |
| 12         | NG 3522 B2XF                       | 2505                            | 38.2                 | 958                  | 2.0   |
| 13         | NG AMX 1715 B2XF                   | 2723                            | 36.9                 | 1004                 | 2.1   |
| <i>LSD</i> |                                    | 492                             | 2.1                  | 199                  | 0.4   |
| <i>CV</i>  |                                    | 13.1%                           | 4.0%                 | 14.3%                | 14.3% |

<sup>w</sup> Weight (lb/A) includes lint + seed.

<sup>x</sup> Gin Turnout = lint/seed cotton.

<sup>y</sup> Bales/A are weight of lint only at 480 lb/bale

Plots were harvested on 18 October.

**Table 5. Early-Maturing Cotton Variety Fiber Quality and Value, Jay, FL 2017.**

| Variety             | Mic <sup>u</sup> | Fiber length <sup>v</sup> (in.) | Fiber strength <sup>w</sup> (g/tex) | Uniform. <sup>x</sup> (%) | Lint Yield (lb/A) | Net loan price <sup>y</sup> (¢/lb) | Lint value <sup>y</sup> (\$/A) |
|---------------------|------------------|---------------------------------|-------------------------------------|---------------------------|-------------------|------------------------------------|--------------------------------|
| 1 VA 222            | 4.5              | 1.16                            | 31.6                                | 82.7                      | 853               | 54.60                              | 466                            |
| 2 HQ 210 CT         | 4.4              | 1.14                            | 31.3                                | 82.7                      | 669               | 54.40                              | 364                            |
| 3 DP 1725 B2XF      | 4.5              | 1.13                            | 31.6                                | 82.5                      | 1099              | 54.95                              | 604                            |
| 4 DP 1518 B2XF      | 4.3              | 1.15                            | 31.6                                | 82.9                      | 1193              | 55.15                              | 658                            |
| 5 DP 1522 B2XF      | 4.6              | 1.13                            | 31.0                                | 82.9                      | 952               | 54.95                              | 523                            |
| 6 PHY 312 WRF       | 4.5              | 1.12                            | 31.3                                | 82.8                      | 989               | 52.00                              | 514                            |
| 7 PHY 333 WRF       | 4.5              | 1.15                            | 31.9                                | 83.1                      | 1121              | 52.10                              | 584                            |
| 8 PHY 444 WRF       | 4.5              | 1.16                            | 31.1                                | 82.9                      | 1005              | 55.15                              | 554                            |
| 9 PHY 300 W3FE      | 4.6              | 1.15                            | 31.3                                | 82.8                      | 976               | 52.00                              | 508                            |
| 10 PHY 330 W3FE     | 4.8              | 1.11                            | 30.4                                | 82.2                      | 905               | 51.80                              | 469                            |
| 11 PHY 340 W3FE     | 4.3              | 1.16                            | 32.1                                | 82.9                      | 1003              | 55.15                              | 553                            |
| 12 NG 3522 B2XF     | 4.5              | 1.11                            | 30.4                                | 82.9                      | 958               | 56.10                              | 537                            |
| 13 NG AMX 1715 B2XF | 4.4              | 1.18                            | 31.9                                | 82.4                      | 1004              | 55.25                              | 555                            |
| <i>LSD</i>          | <i>0.39</i>      | <i>0.057</i>                    | <i>1.93</i>                         | <i>1.51</i>               | <i>199</i>        |                                    |                                |
| <i>CV</i>           | <i>6.1%</i>      | <i>3.5%</i>                     | <i>4.3%</i>                         | <i>1.3%</i>               | <i>14.3%</i>      |                                    |                                |

<sup>u</sup> 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.

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

<sup>w</sup> 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.

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

<sup>y</sup> 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      | 2017 (lb/A) | 2-year Average (lb/A) | 3-year Average (lb/A) |
|--------------|-------------|-----------------------|-----------------------|
| VA 222       | 853         | 763                   |                       |
| HQ 210 CT    | 669         | 693                   |                       |
| DP 1518 B2XF | 1193        | 1178                  | 1313                  |
| DP 1522 B2XF | 952         | 951                   | 1142                  |
| PHY 312 WRF  | 989         | 1026                  | 1241                  |
| PHY 333 WRF  | 1121        | 1072                  | 1279                  |
| PHY 444 WRF  | 1005        | 1032                  | 1227                  |