

2024 Evaluation of Cotton Varieties at the Jay Research Facility

Guilherme Morata, Hardeep Singh, Murilo Morata, Jennifer Bearden, James Brown

This report summarizes the 2024 cotton large plot demonstration trial at West Florida Research and Education Center, Jay, Florida. It shows the yields of 17 varieties in the nonreplicated demonstration trial. This data represents only one year, and results should be considered over several locations and years before conclusions are valid.

2024 Growing Conditions and Demonstration Design

On 30 May 2024, cotton varieties were planted under conventional tillage with 2 seed/ft with hill drop. The demonstration plots were planted over an area of Red Bay sandy loam and Orangeburg sandy loam soils that was planted in peanuts in the summer of 2023. Prior to planting, any vegetation present was killed by conventional tillage. Prowl H2O (32 oz/ac) and Liberty (32 oz/ac) was applied on 30 May 2024. On 14 June, the plots were irrigated (0.75 in). Glyphosate (32 oz/ac) was applied on 20 June 2024. On 22 July, Pix (16 oz/A) and Miravis (3 oz/ac) were applied. On August 1, RoundUp Power Max (32 oz/ac) and Pix (32 oz/ac) were applied. The crop was defoliated on October 10th with Folex (16 oz/ac) + Boll Buster (32 oz/ac) and Take Down (3 oz/ac). The plots were harvested on November 22nd. The nonreplicated plots were 4 rows spaced 36 in. apart (12 ft wide) by 350 ft long. Yield data was collected from 4 rows of each demonstration plot. The plots were fertilized in 2 split applications. On 12 June, the plot received 100 lbs of Nitrogen, 40 lbs of Phosphorus, 90 lbs of Potassium, 26 lbs of Sulfur, and 0.70 lbs of Boron. On 11 July, a sidedress of 167 lbs of Nitrogen was applied.

Rainfall in Jay, FL for September was above average, and June, July and August were below average. The total rainfall for the growing period was 25.71 in, which was below the average.

Table 1. Weather conditions during the 2024 cotton demonstration.

Month	Total Rainfall (Average)	Minimum air temperature (°F)	Maximum air temperature (°F)
May 30-31	0.63	66.36	91
June	5.98 in (7.35 in)	64.2	96.57
July	7.17 in (7.71 in)	71.6	96.85
August	4.35 in (7.18 in)	66.67	98.24
September	6.9 in (6.11 in)	63.57	97.61
October	0.68 in (4.09 in)	38.54	89.89
Total	25.71 in (32.44 in)		

2024 Demonstration Summary

Cotton yields in the demonstration plots ranged from 858 lbs/ac to 1331 lbs/ac seed cotton with DP2333B3FX and NG5430 B3XF being the top yielding varieties. The gin turnout ranged from 42.7 to 48.78% (Table 2). Table 3 shows the lint quality for these varieties.

Table 2. 2024 cotton demonstration plot yields at the Jay Research Facility.

Company	Variety	Seed Cotton ^w (lb/A)	Gin Turnout ^x (%)	Lint Yield (lb/A)	Bales/A ^y
Deltapine	DP 2333 B3XF	2,904	44	1,332	2.77
NexGen	NG 5430 B3XF	2,904	46	1,278	2.66
PhytoGen	PHY 415 W3FE	2,697	45	1,213	2.53
PhytoGen	PHY 475 W3FE	2,800	43	1,208	2.52
Stoneville	ST 6000 AXTP	2,593	44	1,208	2.52
PhytoGen	PHY 443 W3FE	2,593	44	1,189	2.48
Deltapine	DP 2127 B3XF	2,593	46	1,178	2.45
Deltapine	DP 2328 B3TXF	2,593	48	1,165	2.43
PhytoGen	PHY 400 W3FE	2,593	44	1,164	2.42
Deltapine	DP 2038 B3XF	2,385	47	1,164	2.42
Deltapine	DG 3615 B3XF	2,593	48	1,154	2.41
Deltapine	DP 2317 B3TXF	2,489	46	1,147	2.39
NexGen	NG 3457 B3XF	2,489	46	1,129	2.35
Deltapine	DP 2141 NRB3XF	2,489	46	1,117	2.33
Deltapine	DP 2349 NRB3XF	2,385	46	1,112	2.32
Dynagro	DG H959 B3XF	2,489	48	1,063	2.21
PhytoGen	PHY 411 W3FE	1,867	47	859	1.79

^wWeight (lb/A) includes lint plus seed

^xGin Turnout = lint/seed cotton

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

Table 3. 2024 cotton variety fiber quality at the Jay Research Facility.

Company	Variety	Mic ^u	Fiber Length ^v	Uniform ^w	Fiber Strength ^x
Deltapine	DP 2333 B3XF	4.83	1.15	83	29.8
NexGen	NG 5430 B3XF	4.51	1.21	83.9	32.4
PhytoGen	PHY 415 W3FE	4.83	1.19	82.8	34.3
PhytoGen	PHY 475 W3FE	4.78	1.15	83.4	32.1
Stoneville	ST 6000 AXTP	4.25	1.21	84.8	33.1
PhytoGen	PHY 443 W3FE	4.61	1.15	84.2	33.9
Deltapine	DP 2127 B3XF	4.97	1.11	84.7	31.1
Deltapine	DP 2328 B3TXF	4.28	1.17	82.5	29.6
PhytoGen	PHY 400 W3FE	4.42	1.17	82.5	32.5
Deltapine	DP 2038 B3XF	4.68	1.14	81.6	30.7
Deltapine	DG 3615 B3XF	4.63	1.16	84.4	32.6
Deltapine	DP 2317 B3TXF	4.42	1.19	83.5	31.8
NexGen	NG 3457 B3XF	4.64	1.20	83.5	31.9
Deltapine	DP 2141 NRB3XF	4.88	1.16	82.4	32.2
Deltapine	DP 2349 NRB3XF	4.5	1.16	83.7	31.1
Dynagro	DG H959 B3XF	4.63	1.18	83.2	32.1
PhytoGen	PHY 411 W3FE	4.77	1.10	83.3	32.3

^uMic (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.

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

^wFiber 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.

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