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Arkansas Cotton Variety Test 2019

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Arkansas Cotton Variety Test 2019 plot at the Lon Mann Cotton Research Station, Marianna

**F. Bourland • A. Beach • E. Brown
C. Kennedy • L. Martin • and B. Robertson**

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Photo Credit: Cotton plot from the 2019 variety test at the University of Arkansas System Division of Agriculture's Lon Mann Cotton Research Station in Marianna. Photo was taken by Claude Kennedy, Station Director, Lon Mann Cotton Research Station.

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Cotton
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Summary

The primary goal of the Arkansas Cotton Variety Test is to provide unbiased data regarding the agronomic performance of cotton varieties and advanced breeding lines in the major cotton-growing areas of Arkansas. This information helps seed companies establish marketing strategies and assists producers in choosing varieties to plant. These annual evaluations will then facilitate the inclusion of new, improved genetic material in Arkansas cotton production. Adaptation of varieties is determined by evaluating the lines at five University of Arkansas System Division of Agriculture research sites (Manila, Keiser, Judd Hill, Marianna, and Rohwer). Entries in the 2019 Arkansas Cotton Variety Test were evaluated in two groups—transgenic and conventional varieties. The 50 entries in the transgenic test included 9 B2XF, 25 B3XF, 13 W3FE, and 3 GLTP lines which were evaluated at all five locations. The conventional test included 15 entries which were evaluated at all locations except Manila. Reported data include lint yield, lint percentage, plant height, percent open bolls, yield component variables, fiber properties, leaf pubescence, stem pubescence, and bract trichome density. All entries in the experiments were evaluated for response to tarnished plant bug and bacterial blight in separate tests at Keiser. This 2019 report includes results of large-plot variety tests in 10 counties that were coordinated by Bill Robertson.

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Arkansas Cotton Variety Test 2019

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Introduction

The purpose of the University of Arkansas System Division of Agriculture's Cotton Variety Testing Program is to provide unbiased comparisons of cotton varieties and advanced breeding lines over a range of environments. Data from these tests help to identify the potential adaptability of varieties to particular cotton-growing regions of the state. Bourland et al. (2000) documented several unintentional biases that are inherent to the Arkansas cotton variety testing program. These include management associated with varieties expressing herbicide and insect resistance. The biases tend to cancel each other so that no great advantage is given to any particular variety. Since evaluation of genetic differences among entries is the ultimate goal of the evaluations, all varieties are treated identically within the primary locations (Manila, Keiser, Judd Hill, Marianna, and Rohwer) of the variety test. No specialized production inputs were employed with respect to the various genetically enhanced varieties. All entries in the tests at Manila possessed the RF or G genes and were uniformly treated with Round-up. Since the plots were over-sprayed with Round-up, the conventional varieties were not evaluated at Manila.

Materials and Methods

The 50 entries in the transgenic test included 9 B2XF, 25 B3XF, 13 W3FE, and 3 GLTP lines, of which 23 were included in the 2018 Arkansas Cotton Variety Test (Table 1). The conventional test included 15 entries, 8 of which were in the 2018 test. All entries were replicated 4 times at each test site.

Test sites included the Northeast Research and Extension Center at Keiser; the Judd Hill Cooperative Research Station at Judd Hill (near Trumann); the Lon Mann Cotton Research Station at Marianna; the Manila Airport Cotton Research Farm at Manila; and the Rohwer Research Station at Rohwer. The transgenic test was evaluated at each site, and the conventional test was evaluated at all sites

except Manila. The conventional tests were in the same fields as the transgenic test, but were in different areas of the fields. Cultural practices and weather data (heat units and rainfall) associated with the test sites are listed in Table 2 and Table 3, respectively.

Originators of seed supplied double-treated (two fungicides) seed for all entries. Prior to planting, all seed were treated with imidacloprid (Gaucho®) at a rate of 6 oz/100 lb seed by the originator or the testing personnel. Plots were planted with a constant number of seed (about 4 seed/row ft). All varieties were planted in 2-row plots on 38-inch centers and ranged from 40 to 50 feet in length. Experiments were arranged in a randomized complete block. Although exact inputs varied across locations, cultural inputs at each location were generally based on University of Arkansas System Division of Agriculture Cooperative Extension Service recommendations for cotton production, including COTMAN rules for insecticide termination. All plots were machine-harvested with 2-row or 4-row cotton pickers modified with load cells for harvesting small plots.

Data Collected at Single Location

Leaf Pubescence. Leaf pubescence was visually rated on a scale of 1 (smooth leaf) to 9 (pilose, very hairy) in the irrigated experiments at Keiser using the system described by Bourland et al. (2003). A full-sized main-stem leaf located about 5-6 nodes from plant apex was rated for 6 plants per plot for all 4 replications during August.

Stem Pubescence. Stem pubescence was visually rated on a scale of 1 (smooth stem) to 9 (very hairy) in the irrigated experiments at Keiser using a system similar to that used for leaves. After harvest, the upper 5-6 inches of the plant apex was rated for 6 plants per plot for all 4 replications.

Bract Trichomes. As all plants approached physiological cutout, a bract from a 1st position white flower was

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sampled from 6 random plants per plot (4 replications) in the Keiser experiments. Each bract was examined for marginal trichome density (no. of trichomes/cm) as described by Bourland and Hornbeck (2007). Means for the 6 bracts were evaluated as plot means.

Tarnished Plant Bug (TPB). Entries in the two variety tests were evaluated for response to TPB in a separate field at Keiser. The TPB test included 8 replications of 1-row plots (20-feet long on 38-inch wide rows). Four rows of a highly susceptible Frego-bract line were planted between the tests on May 18. The TPB tests were planted on June 3 and received no insecticide treatment for TPB infestations. Early flowering in the susceptible Frego-bract strips encouraged TPB populations to increase, then to migrate from the strips as the test plots began to flower. Response to TPB was determined by examining white flowers (6 flowers/plot/day for 6 days in late August) for presence of anther damage. Accumulative percentage of damaged flowers (“dirty flowers”) was determined for each plot.

Bacterial Blight. Entries in the two variety tests were planted in flats (3 replications, 13 seed/plot) in the greenhouse, and scratch inoculated with *Xanthomonas citri* pv. *malvacearum*. The inoculum was obtained from naturally infected leaves collected at the 2018 Keiser location. Scratches were examined for water-soaking, and percent of susceptible plants was determined.

Verticillium Wilt. Relative yields of varieties over years at Judd Hill should be indicative of tolerance to Verticillium wilt.

Data Collected at All Locations

Plant Height. Plant height measurements (in cm) were collected after harvest was completed. Average plant heights for varieties were determined by measuring from the soil surface to the terminal of one average-sized plant in each of the two rows. Plot means (average of the two measurements) were evaluated.

% Open Bolls. Near the time of first application of defoliant, percentage of open bolls was estimated from the front and back of each plot, then averaged for each plot.

Boll Samples and Lint Percentage. Prior to mechanical harvest, hand-harvested samples were obtained from 2 replications at each location. Within each row of 2-row plots, a site having average or above average plant density was chosen and 20 bolls (5 bottom, 10 mid-canopy and 5 top bolls) were harvested and bulked to form a 40-boll sample. The 40-boll samples were ginned (lab gin without the use of lint cleaners) to determine lint fraction (the percentage of lint weight to seed cotton weight).

Fiber Properties. Fiber samples were taken from each boll sample and were evaluated using HVI classification. Parameters included micronaire, fiber length, length uniformity index (UI), strength, and elongation. To reflect market demand for fiber quality, a weighted quality score (Q-score) was calculated as described by Bourland et al. (2010). Parameters (and weighting) included in Q-score were fiber length (50%), micronaire (25%), length uniformity index (15%), and strength (10%).

Seed Index. Two sets of 25 fuzzy seed from the ginned seed of each 40-boll sample were counted and weighed. If the two weights varied more than 0.2 g, a second set of samples was taken. Two consistent weights of 25 seed were used to calculate fuzzy seed index (weight of 100 seed).

Seed Per Acre. For each plot, an estimate of number of seed per acre was determined by multiplying seed cotton yield (lb/acre converted to g/acre) times average seed percentage (the percentage of seed weight to seed cotton weight in ginned sample, averaged by entry and location over reps), then divided by average seed weight (average seed index by entry over reps divided by 100).

Lint Index. Lint index (weight of lint on 100 seed) was determined from 40-boll sample data by dividing lint weight from ginned sample by the number of seed per sample (estimated using average seed weight) then multiplying by 100.

Fibers Per Seed. Fibers per seed were estimated by dividing lint index by an estimated weight of individual fibers. Weight of an individual fiber was estimated by: fiber length \times length uniformity \times (micronaire/1,000,000).

Fiber Density. Fiber density, reported as the number of fibers per mm², was estimated by dividing fibers per seed by seed surface area. Seed surface area (SSA) was estimated by the regression equation suggested by Groves and Bourland (2010): $SSA = 35.74 + 6.59 SI$, where SI is equal to seed index associated with the sample.

Lint Yield. Seed cotton yield per plot (determined by mechanical cotton picker) was converted to seed cotton yield per acre then multiplied by average lint percentage (determined by variety and location) to estimate lint per acre.

Yield Comparisons

Uncontrolled variation is inherent to collection of variety performance data (particularly yield data). In addition to their genetic ability, variation among varieties may be due to slight differences in soil, pest or climatic conditions within a field, various interactions with specific management practices, or experimental error. Statistics allow users to

define the degree of uncontrolled variation and to interpret data. The statistical tool used to compare means in these tests was Fisher's Protected Least Significant Difference (LSD). An LSD was calculated when the F-test value from analysis of variance was significant. Yields of varieties are considered significantly different if the difference between mean yields of two varieties is greater than the LSD value. Differences that are smaller than the LSD may have occurred by chance or may be associated with uncontrolled variation, and are therefore considered not significant.

Additional estimates of variation are provided by measures of R-squared and coefficient of variation (CV). R-squared (times 100) indicates the percentage of variation that is explained by defined sources of variation (e.g., replication and variety effects within a location). Confidence in data increases as R-squared increases. Generally, the meaningfulness of difference among means is questionable when data have R-squared values of less than 50%. Also, confidence in data becomes greater as CV declines.

Results

Entries and participants in the test are listed in Table 1. Cultural inputs and production information for variety trials at Manila, Keiser, Judd Hill, Marianna, and Rohwer are reported in Table 2. Table 3 includes weather information for north, central, and south Arkansas locations during the 2019 production season.

Both heat units and rainfall in 2019 exceeded historical averages at each Arkansas location (Table 3). The warm temperatures in May provided excellent conditions for emergence and early growth of seedlings, but wet conditions delayed plantings. Despite the high heat unit accumulations for the season, temperatures exceeding 95 °F were relatively rare—11 days at Keiser, 7 days at Marianna and 9 days at Rohwer. Most of the days exceeding 95 °F occurred in September and October (10 days at Keiser, 5 at Marianna, and 6 at Rohwer). The absence of extremely high temperature and the occurrence of relatively high rainfall provided excellent growing conditions through the season. The unusually warm September promoted plant development in late-planted sites and in later maturity lines.

Rainfall in 2019 exceeded historical average rainfall at each location (Table 3). Harvest of these tests were completed before much of the October rainfall occurred, but wet conditions hindered fall tillage operations.

Performance data of entries in the 2019 Transgenic Cotton Variety Test at Manila, Keiser, Judd Hill, Marianna

and Rohwer are provided in Tables 4 through 15 with yield and yield-related variables in the even-numbered tables and fiber properties in the odd-numbered tables. Performance data across all 5 locations are presented in Tables 4 and 5. Morphological and host-plant resistance measurements for the transgenic test entries are in Table 16. Two- and three-year yield means for entries evaluated in previous years are in Table 17. Performance data for the 2019 Conventional Cotton Variety Test at Keiser, Judd Hill, Marianna and Rohwer are provided in Tables 18 through 27 with yield and yield-related variables in the even-numbered tables and fiber properties in the odd-numbered tables. Morphological and host-plant resistance measurements for the conventional entries are in Table 28. Two- and three-year yield means for the conventional entries evaluated in previous years are in Table 29.

Other observations associated with each test site include:

Manila (Tables 6 and 7). The tests at Manila were in the same field used since 2014, and in the same area of the field used since 2015. Plots were planted on May 30, and achieved good stands and high yields. The warm September and October temperatures were particularly beneficial to this site.

Keiser (Tables 8, 9, 20, and 21). The 2019 variety tests were moved back to a field (N6) on the north end of the station where variety tests had been conducted for several previous years. Nitrogen was low in this field because much of the field was planted to corn in 2018 and because some nitrogen was lost to heavy rainfall in May.

Judd Hill (Tables 10, 11, 22 and 23). Wet field conditions caused planting of the Judd Hill plots to be delayed until May 28. Excellent stands were achieved, and plants grew well and established excellent boll loads. Intensity of Verticillium wilt was moderate (similar to 2018), and much lower than experienced in 2017.

Marianna (Tables 12, 13, 24 and 25). For the fourth consecutive year, a cereal rye cover crop was used in the tests at Marianna. The cover crop was planted on Nov. 19, 2018, and terminated on April 22, 2019, using glyphosate (3 pt/acre). Pigweed pressure was very light in the tests. Average lint yields at Marianna were higher than at other test sites in 2019.

Rohwer (Tables 14, 15, 26 and 27). The Rohwer location was planted on May 7, and excellent stands were achieved. The plants grew well and produced good yields.

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Table 1. Participants and Entries in the 2019 Arkansas Cotton Variety Test.

Institution/Contact person	Returning entries	Experimental no.	First-year entries	Experimental no.
NexGen - Americot, Inc. / Brad Littlefield	NG 3729 B2XF NG 3994 B3XF NG 4936 B3XH NG 5711 B3XF	AMX 1817 B3XF AMX 1801 B3XF	AMX 1816 B3XF AMX 1818 B3XF AMX 1828 B3XF AMX 19A005 B3XF AMX 19A006 B3XF NG 3522 B2XF NG 3930 B3XF	
BASF/ Kyle Fontenot	ST 4550 GLTP ST 5471GLTP	BX 1973GLTP	FM 2398 GLTP ST 5600 B2XF	
Nutrien Ag Solutions (Dyna-Gro)/ Frank Groves	DG 3317 B3XF DG 3520 B3XF DG 3385 B2XF	CPS 18817 B3XF CPS 18501-B	CPS 18503-B B3XF CPS 18507-C B3XF DG 3402 B3XF DG 3427 B3XF DG 3615 B3XF Halo 959 B3XF	
Bayer Crop Science/ David Albers	DP 1518 B2XF DP 1614 B2XF DP 1646 B2XF DP 1725 B2XF DP 1823NR B2XF	14R925B2XF MON 15R515B2XF MON 15R551B2XF MON 15R535B2XF MON 16R225NRB2XF	DP 2012 B3XF DP 2038 B3XF DP 1835 B3XF DP 1845 B3XF DP 1916 B3XF	18R411 B3XF 18R438 B3XF
PhytoGen Seed Co./ Chad Brewer	PHY 340 W3FE PHY 350 W3FE PHY 480 W3FE PHY 580 W3FE PHY 400 W3FE PHY 360 W3FE PHY 500 W3FE	PX3A99W3FE PX4A52W3FE PX5C09W3FE PX3B07W3FE PX3C06W3FE PX5D28BW3FE	PX3D32W3FE PX3D43W3FE PX5C05W3FE PX5C45W3FE PX5E28W3FE PX5E34W3FE	
WinField United/CROPLAN/ Robert Cossar	CP 9608 B3XF CP 9178 B3XF	WinField United 17XC8	CROPLAN 9210 B3XF	WinField United 19XES
Conventional entries				
Americot Inc.	AM UA48	Ark 0102-48		
Seed Source Genetics/ Edward Jungmann	SSG UA222 SSG UA107 SSG UA114	Ark 0222-12 Ark 0701-17 Ark 0614-49		
University of Arkansas/ Fred Bourland	UA212ne Ark 0822-48 Ark 0822-75	Ark 0812-87ne	Ark 0902-49 Ark 0908-52 Ark 0908-56 Ark 0908-60 Ark 0912-18 Ark 0912-41 Ark 0921-31ne	
Conventional check	DP 393			

Table 2. Cultural Practices for Locations of the 2019 Arkansas Cotton Variety Test.

Input	Location				
	Manila	Keiser	Judd Hill	Marianna	Rohwer
Soil type	Routon-Dundee- Crevasse complex	Sharkey clay	Dundee silt loam	Callaway silt loam	Hebert silt loam
N, P, K (lb)	80-20-80 15 S	100-0-0	100-0-0	92-46-60	175-0-90
Planting date	5/30	5/17	5/28	5/9	5/7
Irrigation method	furrow	furrow	furrow	furrow	furrow
Irrigation dates	7/4, 7/25, 8/3, 8/14, 8/21	7/26, 8/5, 8/14	7/25, 8/7, 8/14	5/14, 6/16, 6/30, 7/12, 7/20, 7/25, 8/11	6/13, 7/5, 7/16, 7/26
Mepiquat chloride	96.85	none	56 oz	22 oz	32 oz
Defoliation date	10/14, 10/20	9/29, 10/8	9/13, 9/28	9/1, 9/13	9/4, 9/11, 9/27
Harvest date	11/4	10/5	10/19	9/30	10/2

Table 3. Weather Summary for the 2019 Production Season in North, Central, and South Arkansas.

	Month	Historical avg. ^a		Historical avg. ^a	
		DD60s in 2019	DD60s	Rainfall (in.) in 2019	rainfall
Keiser (northeast)	May	434	314	5.0	5.2
	June	545	532	3.2	3.9
	July	646	644	9.5	3.7
	August	644	583	0.9	2.9
	September	607	363	2.3	3.7
	October	161	127	10.9	3.3
	Total	3035	2563	31.9	22.6
Marianna (central)	May	391	336	5.0	5.1
	June	525	538	7.4	3.9
	July	621	646	9.1	3.9
	August	638	601	4.3	2.8
	September	614	397	0.5	3.2
	October	163	154	10.0	3.5
	Total	2950	2672	36.2	22.4
Rohwer (southeast)	May	420	354	6.8	4.9
	June	514	551	6.0	3.6
	July	608	661	5.8	3.7
	August	657	618	1.4	2.6
	September	650	415	4.0	3.0
	October	167	167	9.0	3.4
	Total	3015	2766	33.0	21.3

^a DD60 (growing degree days based on 60 °F) and rainfall from historical weather data from 1960 through 2007.

Table 4. Yield and Related Properties—2019 Arkansas Transgenic Cotton Variety Test Across Five Test Sites.

Variety	Lint		Lint		Open			Seed		Lint		Seed/		Fibers/		Fiber		
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/acre		%		cm		%		g		g		mil.		no.		no.	
PHY 400 W3FE	1560	1	45.0	13	91	44	57	25	9.1	30	7.6	20	9.231	3	18450	9	193	4
DP 2012 B3XF	1410	2	42.4	35	98	24	62	16	9.0	35	6.8	45	9.273	2	16376	37	173	32
DG 3520 B3XF	1403	3	40.9	47	98	24	53	37	11.4	1	8.1	7	7.929	21	20374	1	185	12
DP 2038 B3XF	1401	4	47.4	1	104	4	56	29	8.2	50	7.6	23	8.295	10	17275	26	194	3
PHY 360 W3FE	1399	5	44.5	17	98	26	66	6	8.2	49	6.7	46	9.378	1	15578	43	174	29
ST 4550 GLTP	1389	6	45.9	5	104	5	65	7	8.9	37	7.8	11	8.049	15	17776	17	189	8
DP 1725 B2XF	1388	7	46.0	4	94	37	63	10	9.0	36	7.9	10	8.001	18	17573	21	186	10
DG 3385 B2XF	1380	8	43.4	27	88	49	68	3	9.8	15	7.7	18	8.103	13	17325	25	173	31
NG 3729 B2XF	1366	9	42.1	38	103	6	70	2	9.6	20	7.2	35	8.593	7	15463	45	157	47
DP 1518 B2XF	1366	10	41.7	42	98	22	61	19	9.1	32	6.7	47	9.127	4	16736	33	175	27
CROPLAN 9210 B3XF	1365	11	44.4	18	93	40	60	20	8.8	43	7.2	34	8.568	8	15263	46	164	42
CPS 18507-C	1361	12	43.4	28	94	39	67	5	9.3	24	7.3	32	8.406	9	16863	31	174	30
PX5C05W3FE	1351	13	46.5	2	99	17	45	48	9.2	27	8.2	6	7.427	32	18899	5	196	1
PX3D43W3FE	1343	14	44.3	20	102	9	56	27	10.3	9	8.4	4	7.248	39	19088	4	185	11
DP 1646 B2XF	1340	15	44.0	23	100	13	59	22	8.5	47	6.9	44	8.791	5	15065	47	164	41
PHY 350 W3FE	1337	16	42.6	32	97	33	63	13	10.1	10	7.7	17	7.869	23	18007	14	177	24
PHY 340 W3FE	1331	17	45.0	11	97	32	57	26	9.1	31	7.7	16	7.765	26	17329	24	181	17
NG 4936 B3XH	1324	18	40.7	48	89	48	68	3	9.9	12	6.9	41	8.629	6	14928	48	148	50
CP 9608 B3XF	1314	19	45.3	6	98	28	53	35	8.7	44	7.4	25	7.968	19	17797	16	192	5
ST 5471GLTP	1300	20	41.8	40	95	36	53	35	11.0	4	8.0	8	7.271	37	18889	6	175	26
PX3D32W3FE	1298	21	42.5	33	97	29	59	21	9.6	19	7.3	29	8.014	17	17543	23	179	21
AMX 19A005 B3XF	1296	22	44.0	22	92	41	70	1	9.2	29	7.4	27	7.889	22	17151	28	179	22
DG 3402 B3XF	1289	23	42.5	34	99	20	55	31	10.4	8	7.9	9	7.301	36	18335	11	176	25
PHY 580 W3FE	1283	24	45.1	9	98	23	52	39	9.2	28	7.8	13	7.455	30	18406	10	191	6
PHY 480 W3FE	1278	25	43.6	25	97	30	50	42	9.8	13	7.8	12	7.413	33	18669	7	187	9
DP 1614 B2XF	1275	26	45.0	12	89	47	63	10	8.4	48	7.1	37	8.164	12	14219	50	157	48
AMX 19A006 B3XF	1262	27	41.0	46	90	45	58	23	10.9	7	7.8	14	7.314	35	18027	13	169	39
PX5C45W3FE	1255	28	46.2	3	101	11	47	46	9.7	16	8.5	1	6.716	46	19468	3	196	2
DP 1916 B3XF	1249	29	44.3	19	92	42	62	16	9.3	23	7.6	22	7.371	34	17598	20	181	18
PHY 500 W3FE	1242	30	45.3	7	95	35	56	27	8.9	39	7.5	24	7.453	31	17977	15	191	7
DG 3427 B3XF	1241	31	44.8	15	110	1	49	44	8.7	45	7.2	33	7.785	25	16626	34	180	19
NG 3930 B3XF	1238	32	41.9	39	91	43	63	12	9.2	26	6.9	43	8.075	14	16580	35	173	33
ST 5600 B2XF	1235	33	43.9	24	100	15	47	45	9.7	17	7.7	15	7.264	38	15757	41	159	45
CP 9178 B3XF	1227	34	44.2	21	99	18	64	8	8.8	41	7.2	36	7.616	27	16744	32	179	20
NG 3522 B2XF	1220	35	42.1	37	89	46	62	16	9.8	14	7.3	31	7.526	28	18236	12	182	14
AMX 1828 B3XF	1219	36	41.8	41	96	34	55	32	9.6	21	7.0	38	7.822	24	14839	49	151	49
DP 1835 B3XF	1210	37	44.9	14	100	12	51	40	8.8	42	7.4	28	7.463	29	16306	38	174	28
Halo 959	1197	38	40.3	49	103	7	50	41	11.0	3	7.6	21	7.014	41	17573	22	163	44
PX5E34W3FE	1194	39	41.5	44	110	2	52	38	9.0	34	6.6	50	8.205	11	16065	39	169	37
DP 1845 B3XF	1190	40	43.0	30	97	31	55	30	8.6	46	6.7	48	8.020	16	15890	40	172	35
PX5E28W3FE	1173	41	42.2	36	107	3	49	43	8.9	40	6.6	49	7.965	20	17074	29	182	16
CPS 18503-B	1150	42	43.1	29	99	20	44	49	10.9	6	8.5	3	6.162	48	18508	8	172	34
DG 3317 B3XF	1135	43	45.1	8	100	14	54	33	9.1	33	7.7	19	6.694	47	16881	30	178	23
DP 1823NR B2XF	1118	44	43.5	26	100	15	54	33	9.3	25	7.3	30	6.884	42	17743	18	183	13
NG 3994 B3XF	1106	45	44.6	16	94	38	64	8	8.9	38	7.4	26	6.776	45	15525	44	165	40
FM 2398 GLTP	1103	46	45.0	10	87	50	58	23	10.1	11	8.5	2	5.827	50	17241	27	169	36
AMX 1818 B3XF	1103	47	41.4	45	103	8	62	14	9.7	18	6.9	40	7.184	40	15738	42	159	46
DG 3615 B3XF	1086	48	42.7	31	102	10	43	50	10.9	5	8.3	5	5.921	49	19631	2	182	15
NG 5711 B3XF	1058	49	41.7	43	98	27	47	46	9.5	22	7.0	39	6.876	43	16508	36	169	38
AMX 1816 B3XF	1032	50	37.9	50	99	19	62	15	11.0	2	6.9	42	6.833	44	17662	19	163	43
Mean	1268		43.4		98		57		9.5		7.5		7.698		17191		176	
Var. LSD _{0.10}	91		0.6		4		5		0.4		0.3		1.566		834		8	
Loc. LSD _{0.10}	29		0.2		1		1		ns		0.1		0.179		263		2.4	
C.V.%	13.9		1.7		7.8		16.1		5.4		5.5		14.1		606.0		5.8	
R ² x 100	74.9		95.1		77.3		88.4		89.4		90.4		71.9		84.7		88.9	
Prob (var x loc)	<0.0001		<0.0001		0.005		<0.0001		0.029		0.028		<0.0001		0.186		0.001	

Table 5. Fiber Properties–2019 Arkansas Transgenic Cotton Variety Test Across Five Test Sites.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/acre						in.		%		g/tex		%	
PHY 400 W3FE	1560	1	63	19	4.0	41	1.21	21	85.3	33	32.4	14	4.2	33
DP 2012 B3XF	1410	2	65	18	4.1	39	1.22	18	85.3	31	30.4	36	3.5	46
DG 3520 B3XF	1403	3	77	4	3.6	50	1.27	2	86.6	2	31.8	24	5.8	6
DP 2038 B3XF	1401	4	52	45	4.4	11	1.18	46	84.8	42	31.2	29	4.2	35
PHY 360 W3FE	1399	5	48	48	4.4	12	1.18	47	83.8	50	28.5	49	3.8	42
ST 4550 GLTP	1389	6	61	25	4.3	24	1.20	29	86.2	6	33.0	7	5.7	9
DP 1725 B2XF	1388	7	57	36	4.5	10	1.20	33	84.8	42	30.1	38	3.7	43
DG 3385 B2XF	1380	8	51	47	4.5	8	1.18	44	85.0	40	29.5	44	6.3	4
NG 3729 B2XF	1366	9	63	19	4.5	9	1.21	23	86.0	9	30.1	39	5.4	15
DP 1518 B2XF	1366	10	54	42	4.0	44	1.19	35	85.0	39	29.1	47	4.2	36
CROPLAN 9210 B3XF	1365	11	63	19	4.6	6	1.22	15	85.6	22	31.5	28	5.5	12
CPS 18507-C	1361	12	55	39	4.3	19	1.19	41	85.1	37	30.8	33	5.5	11
PX5C05W3FE	1351	13	57	34	4.3	20	1.18	43	85.7	18	34.5	2	5.5	13
PX3D43W3FE	1343	14	60	27	4.3	18	1.19	34	85.9	13	34.5	3	4.9	23
DP 1646 B2XF	1340	15	80	1	4.2	28	1.26	4	85.7	20	29.6	42	5.3	16
PHY 350 W3FE	1337	16	62	23	4.2	31	1.21	25	85.6	24	31.6	27	4.6	27
PHY 340 W3FE	1331	17	62	22	4.4	15	1.20	28	85.6	21	31.1	31	4.1	37
NG 4936 B3XH	1324	18	76	5	4.3	16	1.24	7	86.4	3	29.7	41	5.1	19
CP 9608 B3XF	1314	19	54	40	4.2	31	1.19	36	84.6	45	29.0	48	3.4	47
ST 5471GLTP	1300	20	57	33	4.2	29	1.20	31	84.5	48	32.2	20	4.7	26
PX3D32W3FE	1298	21	75	6	3.9	46	1.25	5	86.4	5	32.9	8	4.8	25
AMX 19A005 B3XF	1296	22	53	43	4.3	22	1.18	42	84.7	44	29.1	46	4.2	32
DG 3402 B3XF	1289	23	73	8	4.1	37	1.24	8	86.1	8	32.0	21	6.1	5
PHY 580 W3FE	1283	24	58	31	4.2	33	1.19	38	85.5	29	31.1	30	4.1	39
PHY 480 W3FE	1278	25	57	34	4.1	34	1.18	45	86.4	4	32.4	18	6.4	2
DP 1614 B2XF	1275	26	68	10	4.7	3	1.22	12	86.7	1	30.8	34	6.3	3
AMX 19A006 B3XF	1262	27	78	2	4.0	41	1.26	3	85.5	27	34.9	1	4.2	34
PX5C45W3FE	1255	28	51	46	4.4	12	1.17	48	85.7	19	33.1	6	5.2	17
DP 1916 B3XF	1249	29	59	30	4.3	24	1.20	27	85.6	23	32.0	22	3.9	41
PHY 500 W3FE	1242	30	61	26	4.1	35	1.19	37	85.8	17	34.1	4	3.6	45
DG 3427 B3XF	1241	31	55	38	4.3	21	1.20	29	84.6	46	30.6	35	3.3	48
NG 3930 B3XF	1238	32	59	29	4.1	40	1.21	24	85.5	30	29.4	45	4.4	30
ST 5600 B2XF	1235	33	60	28	4.7	2	1.21	20	86.1	7	32.7	12	5.8	7
CP 9178 B3XF	1227	34	54	41	4.3	26	1.19	39	85.5	26	32.8	9	4.0	40
NG 3522 B2XF	1220	35	38	50	4.2	30	1.14	50	84.5	49	27.5	50	4.4	29
AMX 1828 B3XF	1219	36	66	15	4.5	7	1.22	14	85.9	12	31.6	25	4.1	38
DP 1835 B3XF	1210	37	67	14	4.3	17	1.23	11	85.1	38	30.2	37	3.3	49
Halo 959	1197	38	73	7	4.1	36	1.25	6	85.8	15	32.4	14	4.9	21
PX5E34W3FE	1194	39	66	17	4.0	45	1.21	22	85.8	14	33.5	5	4.9	22
DP 1845 B3XF	1190	40	78	3	3.9	47	1.27	1	85.2	35	31.9	23	5.6	10
PX5E28W3FE	1173	41	55	37	3.9	48	1.20	31	84.6	47	32.4	14	5.1	20
CPS 18503-B	1150	42	67	11	4.4	14	1.22	13	85.5	28	32.2	19	5.2	18
DG 3317 B3XF	1135	43	43	49	4.6	5	1.16	49	85.3	32	32.4	17	6.7	1
DP 1823NR B2XF	1118	44	66	16	4.0	43	1.22	15	85.8	15	32.8	10	5.8	8
NG 3994 B3XF	1106	45	58	32	4.7	4	1.20	26	85.3	33	29.6	43	4.5	28
FM 2398 GLTP	1103	46	62	24	4.7	1	1.22	17	85.9	10	30.9	32	3.7	44
AMX 1818 B3XF	1103	47	67	13	4.2	27	1.22	19	85.9	11	32.8	11	5.4	14
DG 3615 B3XF	1086	48	53	44	4.3	23	1.19	40	84.9	41	32.7	13	4.8	24
NG 5711 B3XF	1058	49	67	11	4.1	38	1.23	10	85.2	36	31.6	26	4.3	31
AMX 1816 B3XF	1032	50	68	9	3.7	49	1.24	9	85.6	25	29.9	40	3.2	50
Mean	1268		61		4.2		1.21		85.5		31.5		4.7	
Var. LSD _{0.10}	91		7.4		0.1		0.02		0.8		0.8		0.3	
Loc. LSD _{0.10}	29		ns		0.0		0.01		0.0		0.3		0.1	
C.V.%	13.9		17.1		4.7		2.3		1.2		3.6		8.1	
R ² x 100	74.9				94.1		83.3		73.5		87.1		94.0	
Prob (var x loc)	<0.0001		<0.0001		<0.0001		0.040		0.056		0.015		0.019	

^a UI = Fiber length uniformity index.

Table 6. Yield and Related Properties–2019 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Roton-Dundee-Crevasse Complex Soil at Manila.

Variety	Lint		Lint		Ht.	Open		Seed		Lint		Seed/		Fibers/		Fiber		
	yield	r	frac.	r		r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/acre		%		cm	%		g		g		mil.		no.		no.		
ST 4550 GLTP	1837	1	46.1	3	123	2	86	28	9.5	39	8.3	18	10.070	3	16671	23	170	8
PHY 360 W3FE	1707	2	42.9	29	110	17	95	6	9.4	41	7.2	45	10.780	1	14736	43	151	33
PHY 400 W3FE	1662	3	44.3	17	97	45	81	42	10.5	18	8.5	14	8.904	17	18234	5	174	2
PHY 340 W3FE	1656	4	44.1	22	107	30	88	24	10.6	16	8.6	11	8.790	19	17098	16	162	19
CP 9178 B3XF	1653	5	44.6	14	109	22	91	9	9.7	30	8.0	24	9.428	8	16439	25	165	13
DP 1725 B2XF	1651	6	45.8	5	107	27	90	14	9.6	34	8.3	16	9.000	16	17236	13	174	3
DP 2038 B3XF	1650	7	47.3	1	119	3	91	9	9.0	48	8.2	20	9.115	14	16182	27	170	7
DP 1916 B3XF	1607	8	44.1	19	99	43	96	3	9.7	28	7.8	33	9.385	9	15399	35	154	28
DP 2012 B3XF	1591	9	42.4	33	108	24	85	34	9.6	35	7.2	43	9.990	4	14935	39	151	36
CROPLAN 9210 B3XF	1581	10	44.8	13	106	31	83	40	9.1	44	7.6	37	9.471	7	14187	48	148	41
PX3D32W3FE	1571	11	41.4	44	112	10	88	24	11.0	13	7.9	27	9.015	15	16328	26	151	34
DP 1518 B2XF	1562	12	42.2	35	111	14	89	18	9.7	31	7.2	44	9.818	5	15445	34	155	26
NG 3930 B3XF	1536	13	42.1	38	102	39	91	9	10.2	25	7.5	39	9.243	11	15714	32	153	31
NG 3729 B2XF	1535	14	41.9	39	110	19	91	9	10.2	22	7.6	38	9.208	13	14381	47	139	50
PHY 580 W3FE	1516	15	44.9	12	103	35	86	28	10.4	20	8.6	7	7.979	25	17908	7	172	6
CPS 18507-C	1496	16	44.2	18	98	44	91	9	9.6	36	7.8	32	8.722	20	16074	28	162	18
PX5E34W3FE	1494	17	40.5	48	131	1	85	34	9.5	38	6.6	49	10.310	2	15896	29	161	23
ST 5471GLTP	1494	18	41.3	45	107	27	89	18	12.0	3	8.6	9	7.881	27	17264	12	150	38
DG 3402 B3XF	1475	19	42.2	37	105	33	85	34	11.6	9	8.6	8	7.773	29	17325	11	155	27
NG 4936 B3XH	1467	20	39.8	49	91	50	90	14	10.2	23	6.9	48	9.628	6	14546	46	142	48
PX3D43W3FE	1452	21	43.2	26	115	6	90	14	11.7	7	9.2	3	7.185	36	18264	4	162	20
AMX 19A006 B3XF	1447	22	40.9	46	102	38	96	3	11.5	10	8.0	23	8.188	22	16795	21	151	35
DP 1646 B2XF	1445	23	43.3	25	111	14	93	8	9.2	43	7.1	46	9.225	12	13855	50	144	46
CP 9608 B3XF	1412	24	45.0	10	102	37	83	40	9.1	45	7.7	36	8.341	21	15463	33	162	21
PHY 350 W3FE	1410	25	41.6	42	101	41	94	7	11.8	6	8.6	10	7.471	31	17375	10	153	32
DP 1614 B2XF	1407	26	45.7	6	97	46	86	28	9.1	46	7.8	28	8.147	23	14069	49	147	43
DG 3520 B3XF	1349	27	40.8	47	112	10	90	14	13.0	1	9.3	2	6.610	41	20416	1	168	11
PHY 500 W3FE	1349	28	44.1	21	112	13	89	18	9.6	37	7.7	35	7.907	26	17031	17	173	5
DP 1845 B3XF	1343	29	43.0	27	110	17	86	28	9.0	50	6.9	47	8.798	18	14767	42	156	25
AMX 19A005 B3XF	1340	30	44.1	20	101	42	99	1	9.9	26	8.0	25	7.649	30	16831	19	167	12
DP 1835 B3XF	1339	31	45.0	11	108	23	86	28	9.1	46	7.5	40	8.075	24	14646	45	153	29
PX5E28W3FE	1327	32	41.4	43	119	4	89	18	9.0	49	6.5	50	9.293	10	16473	24	173	4
PHY 480 W3FE	1303	33	42.5	32	109	21	85	34	11.0	12	8.3	19	7.159	37	17480	8	161	22
DG 3385 B2XF	1286	34	43.0	28	97	46	88	24	10.5	17	8.0	22	7.238	35	15098	36	144	45
AMX 1816 B3XF	1281	35	38.4	50	107	25	88	24	12.4	2	7.8	30	7.448	32	17436	9	149	39
DP 1823NR B2XF	1277	36	44.3	16	114	7	75	48	9.7	33	7.8	31	7.428	34	16833	18	170	9
AMX 1818 B3XF	1260	37	42.2	34	113	9	85	34	9.9	27	7.3	42	7.832	28	14931	41	148	40
NG 3994 B3XF	1244	38	44.4	15	105	34	96	3	9.7	32	7.9	26	7.123	38	14937	38	150	37
NG 3522 B2XF	1235	39	42.2	36	96	48	89	18	11.2	11	8.4	15	6.701	39	18599	3	169	10
AMX 1828 B3XF	1224	40	42.8	30	101	40	89	18	9.7	29	7.5	41	7.441	33	14662	44	147	44
PX5C05W3FE	1218	41	45.0	9	107	25	86	28	10.2	24	8.5	13	6.485	42	16778	22	163	16
PX5C45W3FE	1184	42	46.2	2	109	20	85	34	10.3	21	9.0	5	5.959	45	18176	6	176	1
ST 5600 B2XF	1164	43	43.6	24	107	27	76	47	10.6	15	8.3	17	6.353	43	14932	40	141	49
DG 3427 B3XF	1141	44	45.3	8	116	5	78	45	9.2	42	7.8	34	6.670	40	15747	31	163	15
Halo 959	1120	45	41.6	41	113	8	73	49	11.9	5	8.5	12	5.960	44	16806	20	147	42
DG 3317 B3XF	1021	46	45.5	7	103	36	81	42	9.5	40	8.1	21	5.691	46	15796	30	161	24
FM 2398 GLTP	1007	47	46.1	4	91	49	98	2	10.5	19	9.1	4	5.005	48	17198	14	164	14
CPS 18503-B	966	48	42.7	31	105	32	73	49	11.6	8	8.8	6	4.991	49	17194	15	153	30
NG 5711 B3XF	964	49	41.6	40	112	10	78	45	10.7	14	7.8	29	5.583	47	15078	37	142	47
DG 3615 B3XF	925	50	43.7	23	111	14	79	44	12.0	4	9.5	1	4.405	50	18685	2	162	17
Mean	1384		43.3		107		87		10.3		8.0		7.937		16287		158	
LSD _{0.10}	204		1.1		11		9		0.7		0.5		1.183		1164		10.9	
C.V.%	12.6		1.5		8.6		8.5		4.1		3.8		12.7		4.3		4.1	
R ² x 100	67.0		94.4		50.1		52.7		92.3		90.9		74.9		89.4		83.4	

Table 7. Fiber Properties–2019 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Roton-Dundee-Crevasse Complex Soil at Manila.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/acre						in.		%		g/tex		%	
ST 4550 GLTP	1837	1	59	35	4.7	16	1.23	38	87.4	7	32.9	25	6.1	15
PHY 360 W3FE	1707	2	62	28	4.6	23	1.24	23	85.5	43	31.2	45	4.7	38
PHY 400 W3FE	1662	3	60	32	4.4	39	1.23	38	86.3	26	33.3	19	4.7	39
PHY 340 W3FE	1656	4	73	11	4.6	27	1.26	18	87.7	3	32.8	27	4.9	34
CP 9178 B3XF	1653	5	60	32	4.6	23	1.23	38	86.0	34	35.8	3	4.8	35
DP 1725 B2XF	1651	6	63	25	4.6	27	1.24	23	85.7	41	32.2	34	4.3	44
DP 2038 B3XF	1650	7	57	39	4.8	11	1.24	23	85.4	44	34.3	12	4.8	35
DP 1916 B3XF	1607	8	67	18	4.7	16	1.23	26	87.9	2	34.6	11	4.7	39
DP 2012 B3XF	1591	9	70	14	4.5	36	1.27	11	85.6	42	32.5	31	4.0	48
CROPLAN 9210 B3XF	1581	10	67	18	4.9	8	1.26	14	87.5	6	31.6	41	6.8	7
PX3D32W3FE	1571	11	73	11	4.5	38	1.27	12	86.5	21	35.8	3	5.3	28
DP 1518 B2XF	1562	12	62	28	4.4	39	1.23	26	86.1	32	31.1	46	4.7	37
NG 3930 B3XF	1536	13	70	15	4.4	39	1.25	20	87.3	10	32.0	38	5.1	32
NG 3729 B2XF	1535	14	67	18	4.8	11	1.26	18	87.4	8	31.5	42	6.5	10
PHY 580 W3FE	1516	15	64	23	4.5	29	1.23	26	86.7	18	33.0	24	4.7	39
CPS 18507-C	1496	16	36	48	4.9	8	1.18	47	84.7	49	31.4	43	6.5	11
PX5E34W3FE	1494	17	63	24	3.9	48	1.23	26	86.1	33	35.8	3	5.2	29
ST 5471GLTP	1494	18	63	25	4.7	16	1.25	21	86.1	30	33.2	22	5.8	22
DG 3402 B3XF	1475	19	78	7	4.5	36	1.28	7	87.3	9	33.2	23	6.8	6
NG 4936 B3XH	1467	20	67	17	4.4	39	1.25	21	86.9	13	31.6	40	5.9	20
PX3D43W3FE	1452	21	56	40	4.8	14	1.23	38	86.4	23	34.8	7	5.6	25
AMX 19A006 B3XF	1447	22	81	5	4.3	43	1.29	6	86.5	21	36.7	1	4.7	39
DP 1646 B2XF	1445	23	87	3	4.5	29	1.33	2	86.1	30	30.5	48	6.5	12
CP 9608 B3XF	1412	24	64	22	4.6	23	1.23	26	87.6	4	31.9	39	3.9	49
PHY 350 W3FE	1410	25	60	31	4.7	16	1.23	26	85.9	37	34.2	15	5.2	30
DP 1614 B2XF	1407	26	63	25	5.1	4	1.26	14	87.6	4	32.5	31	6.9	5
DG 3520 B3XF	1349	27	91	1	3.8	50	1.36	1	88.3	1	33.3	19	6.6	8
PHY 500 W3FE	1349	28	65	21	4.3	44	1.23	26	86.6	20	36.6	2	4.3	44
DP 1845 B3XF	1343	29	80	6	4.2	45	1.30	4	86.0	35	32.6	28	6.6	8
AMX 19A005 B3XF	1340	30	46	44	4.7	16	1.20	45	84.8	48	31.0	47	5.0	33
DP 1835 B3XF	1339	31	74	10	4.7	16	1.28	7	86.4	23	32.1	37	3.8	50
PX5E28W3FE	1327	32	45	45	3.9	49	1.21	43	84.6	50	34.7	10	5.7	23
PHY 480 W3FE	1303	33	57	37	4.5	29	1.21	43	86.9	14	32.8	26	7.1	3
DG 3385 B2XF	1286	34	48	42	5.1	4	1.23	36	85.8	39	29.5	50	7.3	2
AMX 1816 B3XF	1281	35	68	16	4.2	47	1.27	12	85.3	45	31.4	44	4.1	46
DP 1823NR B2XF	1277	36	75	9	4.2	45	1.28	7	86.3	28	33.7	16	7.1	4
AMX 1818 B3XF	1260	37	71	13	4.5	29	1.26	14	86.3	26	35.4	6	6.1	16
NG 3994 B3XF	1244	38	34	49	5.2	1	1.20	45	85.1	46	32.1	36	5.6	24
NG 3522 B2XF	1235	39	42	46	4.5	29	1.16	50	86.2	29	29.6	49	5.4	26
AMX 1828 B3XF	1224	40	52	41	4.9	8	1.23	26	85.0	47	32.2	34	5.4	26
PX5C05W3FE	1218	41	61	30	4.8	14	1.23	26	86.7	17	34.7	8	6.3	13
PX5C45W3FE	1184	42	38	47	4.9	7	1.18	47	85.8	40	34.7	9	5.9	20
ST 5600 B2XF	1164	43	58	36	5.1	3	1.26	14	86.7	16	34.2	14	6.3	13
DG 3427 B3XF	1141	44	60	32	4.7	16	1.23	26	85.9	37	32.4	33	4.0	47
Halo 959	1120	45	82	4	4.5	29	1.30	5	87.2	12	33.6	17	5.9	18
DG 3317 B3XF	1021	46	28	50	5.2	2	1.17	49	86.0	35	33.5	18	7.6	1
FM 2398 GLTP	1007	47	48	43	5.1	4	1.22	42	86.4	23	32.6	29	4.5	43
CPS 18503-B	966	48	77	8	4.6	23	1.28	7	86.9	14	33.3	21	5.9	18
NG 5711 B3XF	964	49	89	2	4.5	29	1.33	2	87.3	11	32.5	30	5.2	30
DG 3615 B3XF	925	50	57	37	4.8	13	1.23	36	86.6	19	34.3	13	6.0	17
Mean	1384		62		4.6		1.25		86.4		33.0		5.5	
LSD _{0.10}	204		17		0.2		0.04		1.7		1.3		0.6	
C.V.%	12.6		16.1		3.1		2.1		1.2		2.3		6.6	
R ² x 100	67.0		79.3		90.2		81.3		59.0		90.7		93.8	

^a UI = Fiber length uniformity index.

Table 8. Yield and Related Properties–2019 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Sharkey Clay Soil at Keiser.

Variety	Lint yield		Lint frac.		Ht.	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density		
	lb/acre	r	%	r		cm	%	r	g	r	g	mil.	r	no.	r	no.		
PHY 400 W3FE	1250	1	44.6	9	74	44	45	12	8.5	38	7.1	27	8.018	2	17884	33	195	26
PHY 360 W3FE	1205	2	44.3	13	74	43	45	12	7.9	49	6.5	43	8.398	1	15791	47	180	40
DG 3520 B3XF	1124	3	40.7	45	83	21	38	26	10.6	5	7.5	7	6.787	13	22990	2	218	6
PHY 580 W3FE	1117	4	44.1	15	84	19	30	41	9.1	22	7.4	14	6.887	10	18727	26	196	22
CPS 18507-C	1098	5	42.4	30	87	6	48	9	9.2	21	6.9	32	7.219	3	18161	30	189	34
DP 1725 B2XF	1089	6	45.9	2	74	44	53	4	8.9	27	7.9	2	6.220	26	20096	14	212	11
PX5C45W3FE	1080	7	44.6	8	87	8	26	44	9.1	23	7.5	10	6.548	18	23065	1	241	1
DP 2038 B3XF	1078	8	47.5	1	92	2	35	29	7.5	50	7.1	26	6.900	8	18844	25	221	3
PX3D32W3FE	1075	9	42.2	32	86	11	39	23	9.3	16	7.1	24	6.872	11	18935	24	195	24
DP 1614 B2XF	1069	10	44.5	10	69	50	53	4	8.2	47	7.0	28	6.894	9	15164	50	168	48
DG 3385 B2XF	1063	11	42.5	28	78	35	50	6	9.6	11	7.3	17	6.599	17	20714	9	210	13
NG 4936 B3XH	1041	12	41.2	40	77	38	54	2	9.4	14	6.7	38	7.049	6	15768	48	161	50
DP 2012 B3XF	1036	13	43.1	25	81	30	44	15	8.5	39	6.6	40	7.078	5	19434	20	212	12
PX5C05W3FE	1034	14	45.4	4	85	13	26	44	9.0	25	7.5	8	6.239	25	21599	4	227	2
ST 4550 GLTP	1027	15	45.7	3	78	35	54	2	8.3	44	7.2	22	6.497	19	18988	23	209	15
DP 1646 B2XF	1019	16	43.5	22	87	6	33	37	8.0	48	6.5	44	7.178	4	15505	49	175	45
DP 1518 B2XF	1015	17	41.1	42	79	33	39	23	9.0	26	6.5	41	7.037	7	18036	31	190	30
PHY 350 W3FE	1012	18	42.0	33	81	30	40	19	10.2	8	7.5	9	6.129	31	20002	16	195	25
PHY 480 W3FE	1008	19	43.3	23	82	23	24	46	9.4	13	7.3	18	6.262	23	19812	17	203	20
NG 3729 B2XF	1008	20	41.3	39	82	26	59	1	9.3	17	6.9	34	6.654	16	16573	43	171	46
Halo 959	1006	21	39.6	49	89	4	35	29	11.0	2	7.4	15	6.208	27	19381	22	179	41
DP 1845 B3XF	1001	22	43.5	21	77	38	38	26	8.5	41	6.8	35	6.714	15	17252	42	189	35
PHY 500 W3FE	997	23	45.2	5	83	20	34	34	8.9	31	7.5	6	6.018	37	20029	15	212	10
ST 5600 B2XF	996	24	43.7	19	84	18	35	29	9.3	15	7.5	11	6.057	34	15999	45	165	49
AMX 19A006 B3XF	982	25	41.1	41	73	47	38	26	10.2	7	7.4	12	6.000	39	21095	5	206	19
CROPLAN 9210 B3XF	975	26	44.1	16	80	32	40	19	8.6	36	7.0	31	6.356	22	17464	39	188	36
DP 1916 B3XF	972	27	44.2	14	82	24	41	16	9.0	24	7.3	16	6.008	38	20276	12	213	9
NG 3522 B2XF	961	28	41.7	35	75	41	45	12	9.2	19	6.7	37	6.467	20	17895	32	186	37
PHY 340 W3FE	960	29	44.4	11	77	40	35	29	8.7	34	7.2	21	6.047	35	17837	35	192	29
CP 9608 B3XF	959	30	44.6	7	79	34	33	37	8.6	37	7.2	20	6.034	36	20360	11	220	4
DG 3427 B3XF	953	31	43.8	18	93	1	31	40	8.3	43	6.8	36	6.395	21	19743	18	218	5
DP 1835 B3XF	949	32	43.6	20	82	24	33	37	8.9	28	7.1	25	6.062	33	17555	38	186	38
DG 3402 B3XF	942	33	41.4	38	81	27	35	29	9.8	10	7.1	23	5.996	40	20710	10	206	18
AMX 19A005 B3XF	939	34	42.9	27	81	28	49	8	8.9	29	6.9	33	6.183	28	18210	29	193	28
CPS 18503-B	938	35	42.3	31	87	8	23	47	10.7	3	8.0	1	5.334	42	20826	8	196	23
NG 5711 B3XF	935	36	41.6	36	81	29	19	49	8.8	32	6.3	46	6.750	14	19705	19	209	14
NG 3930 B3XF	935	37	40.9	43	75	42	46	10	8.7	33	6.2	48	6.857	12	18432	28	198	21
PX3D43W3FE	896	38	43.8	17	84	17	30	41	9.9	9	7.9	3	5.134	44	20997	6	208	16
CP 9178 B3XF	871	39	43.0	26	85	14	40	19	8.3	45	6.4	45	6.135	30	17558	37	195	27
AMX 1828 B3XF	858	40	40.8	44	77	37	39	23	8.7	35	6.2	47	6.253	24	15880	46	170	47
ST 5471GLTP	843	41	41.5	37	71	48	34	34	10.6	4	7.7	4	4.937	45	20102	13	190	32
AMX 1818 B3XF	841	42	40.4	47	85	15	40	19	9.5	12	6.5	42	5.844	41	17325	41	176	44
PX5E28W3FE	792	43	40.6	46	84	16	23	47	8.3	46	5.9	49	6.114	32	18715	27	208	17
PX5E34W3FE	791	44	40.1	48	90	3	34	34	8.5	40	5.8	50	6.156	29	17349	40	189	33
FM 2398 GLTP	785	45	43.1	24	71	48	30	41	9.2	20	7.2	19	4.937	46	17705	36	184	39
AMX 1816 B3XF	783	46	37.0	50	86	12	50	6	11.0	1	6.7	39	5.314	43	19385	21	179	43
DG 3615 B3XF	768	47	41.8	34	87	5	16	50	10.4	6	7.6	5	4.620	50	22784	3	217	7
DG 3317 B3XF	762	48	44.3	12	82	22	46	10	8.9	30	7.4	13	4.661	49	17844	34	190	31
DP 1823NR B2XF	761	49	42.4	29	86	10	41	16	9.3	18	7.0	29	4.907	47	20865	7	215	8
NG 3994 B3XF	754	50	44.7	6	74	46	41	16	8.4	42	7.0	30	4.876	48	16304	44	179	42
Mean	967		42.8		81		38		9.1		7.0		6.257		18833			
LSD _{0.10}	172		1.1		8		12		0.9		0.7		1.108		2500			
C.V.%	15.2		1.5		8.7		26.0		6.2		5.6		15.1		7.9			
R ² x 100	58.9		94.9		52.5		56.9		86.6		87.2		60.3		80.9			

Table 9. Fiber Properties–2018 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Sharkey Clay Soil at Keiser.

Variety	Lint		Quality		Fiber properties									
	yield lb/acre	r	score	r	Micronaire		Length		UI ^a		Strength		Elongation	
					r	r	r	r	r	r	r	r		
PHY 400 W3FE	1250	1	72	8	3.9	21	1.19	14	86.6	1	32.9	7	4.0	39
PHY 360 W3FE	1205	2	53	38	4.3	3	1.15	44	83.5	43	28.5	48	4.3	33
DG 3520 B3XF	1124	3	65	19	3.1	50	1.23	5	85.5	8	31.1	23	5.8	7
PHY 580 W3FE	1117	4	65	19	4.0	14	1.17	30	85.1	15	30.1	32	4.1	38
CPS 18507-C	1098	5	62	24	3.9	19	1.18	21	83.7	38	31.1	24	5.2	16
DP 1725 B2XF	1089	6	60	30	4.1	8	1.16	36	84.5	25	29.2	45	4.0	40
PX5C45W3FE	1080	7	42	48	3.5	40	1.14	48	83.6	41	31.5	19	4.9	18
DP 2038 B3XF	1078	8	43	47	4.1	8	1.11	50	83.7	38	29.9	37	4.4	28
PX3D32W3FE	1075	9	75	7	3.6	33	1.23	5	85.7	7	32.4	9	4.7	21
DP 1614 B2XF	1069	10	72	8	4.6	2	1.19	14	85.7	6	30.4	29	6.9	1
DG 3385 B2XF	1063	11	51	43	3.7	27	1.15	47	83.7	38	30.0	35	6.6	2
NG 4936 B3XH	1041	12	82	2	4.1	8	1.22	7	86.3	2	30.3	30	5.4	11
DP 2012 B3XF	1036	13	49	44	3.6	38	1.15	39	83.3	45	30.5	28	3.9	42
PX5C05W3FE	1034	14	52	40	3.6	33	1.15	44	84.3	31	33.8	2	4.6	24
ST 4550 GLTP	1027	15	67	15	3.8	23	1.18	21	85.2	12	32.9	6	5.3	14
DP 1646 B2XF	1019	16	90	1	3.9	21	1.26	1	85.8	5	29.8	40	5.3	13
DP 1518 B2XF	1015	17	61	27	3.7	32	1.18	21	84.4	29	30.0	35	4.2	37
PHY 350 W3FE	1012	18	68	12	3.7	27	1.19	14	85.2	12	31.6	17	4.3	34
PHY 480 W3FE	1008	19	62	24	3.7	27	1.17	30	85.2	12	31.9	12	6.4	3
NG 3729 B2XF	1008	20	61	27	4.2	5	1.15	39	85.4	10	29.9	37	5.4	11
Halo 959	1006	21	80	4	3.6	33	1.24	3	85.0	17	33.2	3	5.1	17
DP 1845 B3XF	1001	22	80	3	3.7	27	1.26	2	84.4	29	31.2	21	5.9	6
PHY 500 W3FE	997	23	66	18	3.8	23	1.17	26	85.5	9	33.0	4	3.5	46
ST 5600 B2XF	996	24	51	42	4.7	1	1.17	26	84.5	25	30.6	27	5.6	9
AMX 19A006 B3XF	982	25	71	10	3.4	41	1.23	4	84.2	34	35.5	1	4.4	28
CROPLAN 9210 B3XF	975	26	71	10	4.0	13	1.21	10	84.0	35	31.7	13	5.6	8
DP 1916 B3XF	972	27	64	21	3.6	37	1.19	14	84.7	20	31.7	14	4.0	40
NG 3522 B2XF	961	28	41	49	4.1	8	1.13	49	82.7	49	27.3	50	4.4	28
PHY 340 W3FE	960	29	58	31	4.2	6	1.16	36	84.0	36	29.8	40	4.2	36
CP 9608 B3XF	959	30	57	33	3.6	33	1.18	21	83.5	42	28.5	47	3.4	50
DG 3427 B3XF	953	31	46	46	3.6	38	1.15	39	82.9	48	28.8	46	3.5	46
DP 1835 B3XF	949	32	68	14	4.0	12	1.20	11	84.3	32	28.2	49	3.6	44
DG 3402 B3XF	942	33	61	27	3.4	42	1.20	11	84.4	27	31.7	14	6.0	5
AMX 19A005 B3XF	939	34	57	33	3.9	15	1.16	35	83.4	44	29.3	44	4.5	25
CPS 18503-B	938	35	76	6	3.7	27	1.22	7	84.9	19	31.9	11	4.9	18
NG 5711 B3XF	935	36	46	45	3.3	48	1.17	30	83.0	47	30.1	33	4.5	27
NG 3930 B3XF	935	37	52	39	3.4	42	1.17	30	84.3	32	29.5	43	4.6	23
PX3D43W3FE	896	38	58	32	3.9	19	1.15	44	85.1	15	32.9	5	4.5	25
CP 9178 B3XF	871	39	56	35	3.8	23	1.15	39	84.6	24	32.8	8	3.9	42
AMX 1828 B3XF	858	40	68	12	3.9	15	1.19	18	84.9	18	31.6	17	3.5	45
ST 5471GLTP	843	41	63	23	3.9	15	1.18	21	83.7	37	32.0	10	4.4	32
AMX 1818 B3XF	841	42	66	17	3.8	23	1.19	18	84.7	22	31.7	16	5.3	14
PX5E28W3FE	792	43	40	50	3.3	48	1.15	39	82.4	50	30.3	30	4.7	20
PX5E34W3FE	791	44	53	37	3.4	42	1.19	18	83.2	46	31.2	21	4.7	21
FM 2398 GLTP	785	45	79	5	3.9	15	1.21	9	86.1	4	29.9	39	3.5	46
AMX 1816 B3XF	783	46	62	24	3.4	42	1.20	11	84.7	20	29.7	42	3.5	46
DG 3615 B3XF	768	47	52	40	3.4	42	1.17	34	84.4	27	30.9	26	4.3	35
DG 3317 B3XF	762	48	64	22	4.2	6	1.16	38	86.3	2	31.1	24	6.4	4
DP 1823NR B2XF	761	49	55	36	3.4	42	1.17	26	84.7	23	31.5	19	5.4	10
NG 3994 B3XF	754	50	67	15	4.3	4	1.17	26	85.3	11	30.0	34	4.4	28
Mean	967		61		3.8		1.18		84.5		30.9		4.7	
LSD _{0.10}	172		18		0.3		0.05		ns		1.9		0.6	
C.V.%	15.2		17.4		4.4		2.3		1.5		3.7		8.0	
R ² x 100	58.9		70.7		88.9		72.8		57.3		79.0		91.9	

^aUI = Fiber length uniformity index.

Table 10. Yield and Related Properties—2019 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Dundee Silt Loam Soil at Judd Hill.

Variety	Lint yield		Lint frac.		Ht.	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density		
	lb/acre	r	%	r		cm	%	r	g	r	g	mil.	r	no.	r	no.	r	
DG 3520 B3XF	1384	1	39.7	41	101	23	25	44	10.1	5	6.7	16	9.321	1	18920	11	187	25
PX3D43W3FE	1343	2	42.9	17	105	10	43	19	9.4	13	7.3	4	8.321	4	19426	9	200	14
PHY 400 W3FE	1298	3	43.6	11	95	37	36	27	8.4	37	6.6	20	8.945	2	19904	2	219	1
DG 3385 B2XF	1224	4	41.0	30	91	43	58	2	9.4	14	6.7	18	8.337	3	16595	39	171	41
PX5C45W3FE	1191	5	45.4	4	105	9	25	44	9.1	19	7.8	2	6.976	33	17916	21	187	26
DP 1725 B2XF	1177	6	44.4	5	100	28	39	23	8.5	34	7.0	8	7.656	14	17373	28	190	21
ST 4550 GLTP	1166	7	44.3	6	103	16	50	11	8.6	29	7.0	7	7.552	18	19480	7	212	4
PHY 340 W3FE	1156	8	44.1	7	99	29	38	24	8.3	39	7.0	9	7.532	19	18367	16	202	12
PX5C05W3FE	1133	9	45.7	2	103	14	18	50	8.8	24	7.6	3	6.737	38	19427	8	207	6
ST 5600 B2XF	1123	10	42.4	19	103	15	19	49	8.5	31	6.4	26	7.956	9	16336	42	178	36
CPS 18507-C	1098	11	41.8	24	93	41	54	5	9.0	21	6.5	23	7.660	13	17674	24	186	29
DP 2038 B3XF	1095	12	46.0	1	102	18	30	39	7.8	49	6.9	11	7.197	26	17987	20	207	7
PHY 350 W3FE	1089	13	41.6	27	100	25	48	14	8.7	28	6.2	36	8.005	7	17620	26	190	20
NG 3729 B2XF	1086	14	39.5	43	110	4	56	3	9.1	18	6.1	41	8.093	5	15453	46	161	48
DG 3427 B3XF	1080	15	43.0	15	114	2	33	34	8.1	44	6.3	31	7.824	10	16611	38	187	27
NG 3994 B3XF	1076	16	42.4	20	94	39	49	12	8.3	40	6.2	33	7.820	11	15333	48	169	42
DP 1614 B2XF	1057	17	42.4	18	92	42	41	20	7.9	47	6.0	42	8.015	6	14453	49	164	45
PHY 360 W3FE	1056	18	43.2	14	102	21	54	5	8.0	46	6.2	37	7.767	12	16632	36	188	23
DG 3317 B3XF	1053	19	44.0	8	104	13	29	42	7.8	48	6.3	30	7.599	15	17180	30	197	15
AMX 1828 B3XF	1051	20	39.6	42	100	26	29	42	9.5	12	6.3	28	7.520	20	14349	50	146	50
PHY 480 W3FE	1050	21	41.7	25	99	29	36	27	9.1	20	6.6	19	7.179	27	20406	1	213	3
PHY 500 W3FE	1049	22	45.5	3	90	47	38	24	8.1	43	6.9	10	6.855	36	19176	10	215	2
PX5E28W3FE	1049	23	41.7	26	120	1	30	39	8.9	22	6.5	24	7.324	23	17130	31	181	31
CPS 18503-B	1048	24	41.1	28	104	12	20	47	10.1	4	7.3	5	6.527	41	17636	25	172	39
DG 3402 B3XF	1038	25	39.9	39	102	19	36	27	9.9	8	6.8	13	6.936	34	18285	18	181	32
CROPLAN 9210 B3XF	1037	26	42.4	21	95	36	53	9	8.3	42	6.2	35	7.578	16	16619	37	184	30
AMX 19A005 B3XF	1036	27	43.6	10	89	49	60	1	8.4	38	6.7	17	7.034	31	17598	27	194	17
DP 2012 B3XF	1025	28	39.2	44	101	24	54	5	8.7	26	5.8	47	7.966	8	16733	35	179	34
PX5E34W3FE	1024	29	40.8	31	112	3	35	31	8.9	23	6.3	32	7.423	22	15383	47	163	46
NG 4936 B3XH	1024	30	38.8	47	91	44	54	5	10.1	7	6.6	21	7.103	29	15619	44	153	49
ST 5471GLTP	1015	31	40.4	33	102	20	30	39	9.9	10	6.8	14	6.799	37	19752	4	196	16
DP 1835 B3XF	1015	32	44.0	9	107	6	20	47	7.7	50	6.1	39	7.512	21	16591	40	193	19
PHY 580 W3FE	999	33	43.4	12	106	7	33	34	8.3	41	6.5	25	7.032	32	18904	12	209	5
NG 3522 B2XF	997	34	39.2	45	90	46	40	22	9.3	15	6.2	34	7.276	24	19708	5	204	10
DP 1646 B2XF	985	35	41.9	23	95	35	46	15	8.7	27	6.4	27	7.039	30	15593	45	168	43
DP 1518 B2XF	981	36	38.6	48	104	11	49	12	9.2	17	5.9	45	7.553	17	16522	41	172	40
DG 3615 B3XF	973	37	39.9	38	106	8	21	46	10.7	1	7.2	6	6.165	45	19689	6	186	28
FM 2398 GLTP	959	38	43.3	13	89	48	33	34	10.3	3	8.0	1	5.428	50	16894	32	163	47
DP 1823NR B2XF	956	39	42.0	22	94	39	36	27	8.5	32	6.3	29	6.876	35	17240	29	188	24
AMX 19A006 B3XF	948	40	38.9	46	95	38	33	34	10.5	2	6.8	15	6.360	44	18050	19	172	38
PX3D32W3FE	938	41	40.3	34	97	33	46	15	8.5	33	6.0	43	7.173	28	18805	14	205	9
CP 9608 B3XF	922	42	43.0	16	101	22	35	31	8.5	35	6.5	22	6.411	43	18584	15	203	11
AMX 1818 B3XF	910	43	39.7	40	108	5	51	10	9.2	16	6.2	38	6.709	39	15941	43	167	44
DP 1845 B3XF	882	44	40.2	35	97	34	38	24	8.1	45	5.5	50	7.244	25	16792	34	189	22
NG 3930 B3XF	866	45	39.9	37	87	50	46	15	8.6	30	5.9	44	6.647	40	17687	23	193	18
DP 1916 B3XF	830	46	41.0	29	91	45	41	20	9.6	11	6.9	12	5.465	49	19777	3	200	13
NG 5711 B3XF	823	47	40.1	36	98	32	33	34	8.8	25	6.1	40	6.118	46	16834	33	179	35
AMX 1816 B3XF	822	48	35.8	50	100	27	46	15	10.1	6	5.7	49	6.494	42	18334	17	180	33
CP 9178 B3XF	736	49	40.5	32	99	31	56	3	8.5	35	5.9	46	5.678	48	18866	13	206	8
Halo 959	734	50	35.9	49	103	16	35	31	9.9	9	5.8	48	5.766	47	17709	22	175	37
Mean	1032		41.6		100		39		8.9		6.5		7.210		17598		187	
LSD _{0.10}	202		1.4		8		13		0.8		0.7		1.450		2037		24	
C.V.%	16.4		2.0		6.7		28.7		5.6		6.5		17.2		6.9		7.5	
R ² x 100	56.8		93.6		59.6		58.4		84.8		78.7		52.3		76.1		77.9	

Table 11. Fiber Properties–2019 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Dundee Silt Loam Soil at Judd Hill.

Variety	Lint		Quality		Fiber properties									
	yield lb/acre	r	score	r	Micronaire		Length		UI ^a		Strength		Elongation	
					r	r	r	r	r	r	r	r		
DG 3520 B3XF	1384	1	72	9	3.3	41	1.28	1	85.7	19	31.1	30	5.6	9
PX3D43W3FE	1343	2	59	24	3.7	23	1.19	36	86.1	10	34.6	3	5.2	14
PHY 400 W3FE	1298	3	51	40	3.3	41	1.21	20	84.0	45	32.5	14	3.9	38
DG 3385 B2XF	1224	4	62	18	3.9	8	1.20	32	86.0	12	30.1	36	5.8	5
PX5C45W3FE	1191	5	69	12	4.2	2	1.20	32	87.1	2	34.4	5	5.3	12
DP 1725 B2XF	1177	6	61	22	4.0	5	1.21	29	85.5	22	30.8	33	3.3	45
ST 4550 GLTP	1166	7	62	18	3.5	34	1.21	20	86.2	7	33.3	8	5.9	3
PHY 340 W3FE	1156	8	57	32	3.8	15	1.19	38	85.2	26	30.6	34	3.8	41
PX5C05W3FE	1133	9	65	16	3.8	12	1.21	29	85.8	16	35.5	1	5.6	9
ST 5600 B2XF	1123	10	67	14	3.8	15	1.22	18	86.2	8	33.2	9	5.7	6
CPS 18507-C	1098	11	57	30	3.6	26	1.19	38	86.0	13	31.6	23	5.4	11
DP 2038 B3XF	1095	12	47	42	4.0	5	1.16	47	84.8	35	32.5	13	4.0	33
PHY 350 W3FE	1089	13	57	30	3.4	37	1.21	25	85.5	22	30.3	35	4.5	22
NG 3729 B2XF	1086	14	74	6	3.7	20	1.25	11	85.8	15	29.7	38	5.2	13
DG 3427 B3XF	1080	15	59	24	3.7	20	1.21	20	84.0	45	30.0	37	2.8	50
NG 3994 B3XF	1076	16	64	17	4.0	5	1.21	20	84.9	31	28.7	43	4.2	31
DP 1614 B2XF	1057	17	77	4	3.9	10	1.24	13	86.7	3	31.0	32	5.9	3
PHY 360 W3FE	1056	18	58	28	3.7	24	1.21	29	84.4	41	28.8	42	3.3	45
DG 3317 B3XF	1053	19	40	47	3.8	12	1.16	48	83.3	50	33.4	7	6.2	1
AMX 1828 B3XF	1051	20	88	1	4.0	3	1.27	2	87.3	1	31.5	24	4.4	24
PHY 480 W3FE	1050	21	44	44	3.3	41	1.17	44	86.0	14	32.0	18	5.7	7
PHY 500 W3FE	1049	22	47	42	3.7	20	1.17	46	84.3	43	33.8	6	3.8	41
PX5E28W3FE	1049	23	69	12	3.6	26	1.23	14	86.1	10	32.2	17	5.1	15
CPS 18503-B	1048	24	66	15	4.0	3	1.21	20	85.1	27	31.5	24	4.9	17
DG 3402 B3XF	1038	25	71	10	3.5	34	1.25	11	86.4	4	31.4	26	5.7	7
CROPLAN 9210 B3XF	1037	26	55	34	3.8	15	1.19	38	83.9	47	31.6	22	4.4	25
AMX 19A005 B3XF	1036	27	52	39	3.8	15	1.19	41	85.3	25	27.9	47	4.2	29
DP 2012 B3XF	1025	28	59	24	3.4	40	1.23	15	85.1	28	29.3	40	3.0	48
PX5E34W3FE	1024	29	78	3	3.8	12	1.25	7	85.7	19	34.5	4	4.8	19
NG 4936 B3XH	1024	30	75	5	3.9	9	1.26	6	85.8	16	28.3	44	4.4	25
ST 5471GLTP	1015	31	44	46	3.5	30	1.17	43	83.4	49	31.8	19	4.2	29
DP 1835 B3XF	1015	32	58	28	3.6	29	1.20	32	85.6	21	31.3	28	3.1	47
PHY 580 W3FE	999	33	40	47	3.5	30	1.16	48	84.3	44	29.0	41	3.9	36
NG 3522 B2XF	997	34	37	49	3.2	45	1.17	44	84.6	39	27.9	47	4.1	32
DP 1646 B2XF	985	35	74	6	3.9	11	1.25	7	84.9	32	28.3	45	4.8	20
DP 1518 B2XF	981	36	53	37	3.5	34	1.20	32	86.2	8	27.3	49	4.0	33
DG 3615 B3XF	973	37	54	36	3.6	26	1.19	36	84.6	39	32.6	12	4.5	22
FM 2398 GLTP	959	38	80	2	4.4	1	1.25	7	86.4	4	31.7	21	3.6	43
DP 1823NR B2XF	956	39	71	10	3.4	38	1.25	7	86.3	6	33.2	10	6.1	2
AMX 19A006 B3XF	948	40	74	6	3.5	30	1.27	4	84.7	36	35.1	2	4.3	28
PX3D32W3FE	938	41	53	37	3.1	47	1.22	18	85.0	29	31.1	31	4.6	21
CP 9608 B3XF	922	42	37	49	3.7	25	1.16	48	83.4	48	27.1	50	3.4	44
AMX 1818 B3XF	910	43	61	21	3.8	15	1.21	25	85.8	16	31.8	19	4.9	18
DP 1845 B3XF	882	44	62	18	3.1	47	1.26	5	84.4	42	31.1	29	5.0	16
NG 3930 B3XF	866	45	48	41	3.3	41	1.21	25	84.6	37	28.1	46	3.9	36
DP 1916 B3XF	830	46	55	33	3.4	38	1.21	25	84.8	33	31.4	27	3.9	38
NG 5711 B3XF	823	47	61	22	3.5	30	1.23	15	84.6	37	32.6	11	3.9	35
AMX 1816 B3XF	822	48	59	27	2.9	50	1.27	2	85.0	30	29.4	39	3.0	48
CP 9178 B3XF	736	49	44	44	3.1	49	1.19	41	85.4	24	32.3	16	3.9	38
Halo 959	734	50	55	34	3.2	46	1.23	15	84.8	33	32.5	14	4.4	25
Mean	1032		59		3.6		1.21		85.2		31.2		4.5	
LSD _{0.10}	202		20		0.5		0.04		1.7		2.4		0.8	
C.V.%	16.4		19.8		7.9		2.1		1.2		4.5		10.1	
R ² x 100	56.8		75.5		72.7		79.9		70.3		83.8		89.3	

^aUI = Fiber length uniformity index.

Table 12. Yield and Related Properties—2019 Arkansas Transgenic Cotton Variety Test, With irrigation on a Calloway Silt Loam Soil at Marianna.

Variety	Lint yield		Lint frac.		Ht.	Open bolls			Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density	
	lb/acre	r	%	r		cm	%	r	g	r	g	mil.	r	no.	r	no.	r	
CP 9608 B3XF	1769	1	46.5	17	108	7	64	25	8.4	44	7.6	31	10.560	2	17549	15	192	2
PHY 400 W3FE	1752	2	47.0	8	96	42	66	19	9.2	23	8.3	14	9.573	7	18722	5	195	1
AMX 19A005 B3XF	1725	3	45.5	27	99	35	74	2	9.1	29	7.7	29	10.150	3	16916	24	177	18
Halo 959	1689	4	43.4	41	108	6	59	39	10.4	7	8.2	18	9.350	12	16952	23	163	42
DP 2038 B3XF	1638	5	48.8	2	103	25	66	19	8.1	48	7.9	25	9.399	11	16526	27	186	7
AMX 1828 B3XF	1630	6	43.3	43	106	12	63	33	9.5	18	7.4	37	10.020	4	15195	46	154	48
DG 3385 B2XF	1613	7	45.7	25	87	50	75	1	9.6	16	8.2	17	8.866	21	18164	10	184	13
DP 1518 B2XF	1594	8	42.8	46	100	33	66	19	8.7	39	6.8	49	10.630	1	17279	17	186	8
PX5C05W3FE	1590	9	48.3	3	100	31	51	49	9.1	27	8.8	6	8.215	27	18046	11	188	6
DP 1725 B2XF	1590	10	48.8	1	97	40	73	5	8.2	47	8.0	24	9.002	17	17107	21	190	3
DP 2012 B3XF	1579	11	43.8	38	104	23	64	25	8.9	37	7.3	39	9.823	6	15614	41	166	37
DP 1646 B2XF	1578	12	45.7	24	109	5	64	25	8.4	45	7.2	44	9.911	5	15819	38	174	24
DG 3427 B3XF	1563	13	47.0	10	117	1	54	47	8.3	46	7.4	36	9.542	8	14973	47	166	36
CPS 18507-C	1558	14	44.4	34	97	38	74	2	9.2	22	7.5	34	9.413	9	16243	33	168	33
FM 2398 GLTP	1555	15	47.4	5	96	44	70	10	10.1	11	9.3	3	7.592	40	17963	12	176	20
CPS 18503-B	1551	16	46.3	19	99	36	60	37	10.3	8	9.0	5	7.837	35	18444	8	178	16
CROPLAN 9210 B3XF	1541	17	45.8	23	93	48	66	19	8.7	41	7.5	35	9.349	13	14172	49	153	49
NG 3522 B2XF	1533	18	44.8	30	96	43	73	5	9.6	17	7.9	27	8.849	22	17573	14	178	17
DG 3520 B3XF	1530	19	42.0	47	98	37	59	39	11.6	1	8.6	7	8.104	28	19645	3	175	21
ST 4550 GLTP	1526	20	47.3	6	110	4	69	13	8.5	43	7.9	26	8.778	23	17312	16	188	5
CP 9178 B3XF	1515	21	46.9	11	104	24	69	13	8.6	42	7.7	30	8.981	19	15311	45	166	38
NG 3729 B2XF	1504	22	44.7	31	112	2	73	5	9.2	24	7.6	32	8.975	20	15820	37	165	40
PHY 360 W3FE	1501	23	46.6	16	107	9	70	10	8.0	49	7.2	41	9.401	10	16289	31	184	11
DG 3317 B3XF	1499	24	47.0	9	111	3	61	34	9.0	33	8.2	19	8.312	26	17206	19	181	15
PHY 350 W3FE	1477	25	43.6	39	105	18	69	13	10.5	6	8.4	10	7.994	30	18515	6	177	19
PHY 580 W3FE	1461	26	47.1	7	101	30	59	39	9.1	26	8.4	11	7.930	33	17663	13	184	12
PHY 480 W3FE	1461	27	45.5	26	100	32	55	45	9.8	13	8.4	12	7.920	34	18497	7	185	10
DG 3615 B3XF	1459	28	45.0	29	105	20	54	47	11.2	2	9.4	2	7.046	47	20173	1	185	9
ST 5471GLTP	1455	29	42.8	45	100	34	61	34	10.9	3	8.3	13	7.939	32	18307	9	170	29
DP 1614 B2XF	1432	30	46.8	13	97	39	74	2	8.0	50	7.2	42	8.981	18	14066	50	159	45
NG 4936 B3XH	1430	31	41.8	49	96	45	73	5	9.7	15	7.2	45	9.051	15	14857	48	149	50
NG 3930 B3XF	1426	32	43.5	40	102	28	69	13	8.9	36	7.1	48	9.156	14	15568	43	165	39
PHY 340 W3FE	1419	33	46.1	21	107	8	68	17	9.1	25	8.1	22	7.972	31	16648	26	173	25
ST 5600 B2XF	1401	34	45.8	22	106	13	59	39	9.8	14	8.5	8	7.521	42	16271	32	163	43
DG 3402 B3XF	1390	35	43.9	37	107	9	64	25	10.1	10	8.2	20	7.722	37	17253	18	169	31
NG 3994 B3XF	1388	36	46.5	18	104	22	70	10	9.1	31	8.3	16	7.633	39	16048	35	168	34
AMX 1818 B3XF	1367	37	43.3	42	105	21	73	5	9.1	28	7.1	47	8.725	24	15652	40	164	41
PX3D43W3FE	1358	38	46.9	12	106	14	61	34	10.2	9	9.2	4	6.717	48	18959	4	184	14
DP 1823NR B2XF	1341	39	44.6	33	106	16	65	23	9.1	30	7.5	33	8.097	29	16515	28	173	26
DP 1916 B3XF	1339	40	46.6	15	97	40	68	17	8.9	35	8.0	23	7.558	41	16214	34	172	28
DP 1845 B3XF	1333	41	44.6	32	106	17	60	37	8.7	40	7.2	46	8.445	25	15705	39	169	32
AMX 19A006 B3XF	1320	42	42.0	48	92	49	64	25	10.9	4	8.2	21	7.344	44	17001	22	158	47
DP 1835 B3XF	1296	43	46.7	14	105	19	65	23	9.2	21	8.3	15	7.119	46	16873	25	175	22
PHY 500 W3FE	1283	44	46.2	20	95	46	64	25	8.8	38	7.8	28	7.453	43	16297	30	174	23
AMX 1816 B3XF	1247	45	39.5	50	102	26	64	25	9.4	19	6.3	50	9.033	16	15584	42	158	46
PX3D32W3FE	1239	46	45.1	28	95	47	64	25	9.9	12	8.4	9	6.696	49	17162	20	170	30
PX5E28W3FE	1238	47	44.2	35	106	14	56	44	8.9	34	7.2	43	7.767	36	16324	29	173	27
NG 5711 B3XF	1233	48	43.0	44	102	27	58	43	9.3	20	7.3	38	7.656	38	15490	44	160	44
PX5E34W3FE	1174	49	44.0	36	107	11	55	45	9.0	32	7.3	40	7.321	45	15886	36	167	35
PX5C45W3FE	1159	50	47.5	4	101	29	50	50	10.6	5	9.8	1	5.346	50	20075	2	189	4
Mean	1465		45.2		102		64		9.3		7.9		8.455		16849		173	
LSD _{0.10}	24		1.6		8		7		0.9		0.8		1.295		1714		14	
C.V.%	13.1		2.1		6.9		9.9		5.6		5.9		13.1		6.0		4.9	
R ² x 100	45.4		89.6		48.4		58.2		83.7		81.8		57.0		79.2		77.7	

Table 13. Fiber Properties—2019 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Calloway Silt Loam Soil at Marianna.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/acre						in.		%		g/tex		%	
CP 9608 B3XF	1769	1	59	31	4.4	44	1.17	33	83.8	43	28.2	48	3.6	48
PHY 400 W3FE	1752	2	66	21	4.5	41	1.19	15	83.6	47	31.5	18	4.7	29
AMX 19A005 B3XF	1725	3	68	17	4.5	37	1.19	23	85.7	15	29.5	38	4.2	35
Halo 959	1689	4	62	26	4.8	19	1.19	18	84.7	33	30.4	31	5.4	19
DP 2038 B3XF	1638	5	60	27	4.8	20	1.19	23	84.2	39	30.1	34	4.5	31
AMX 1828 B3XF	1630	6	67	19	4.8	22	1.19	15	85.8	12	30.9	26	4.0	39
DG 3385 B2XF	1613	7	39	46	4.9	13	1.11	49	83.6	47	28.5	43	6.5	5
DP 1518 B2XF	1594	8	46	45	4.0	49	1.17	34	84.2	40	28.4	47	4.9	28
PX5C05W3FE	1590	9	55	38	4.9	13	1.15	41	86.1	8	33.8	2	5.8	9
DP 1725 B2XF	1590	10	49	43	4.9	16	1.17	37	83.0	49	29.3	40	4.0	39
DP 2012 B3XF	1579	11	73	8	4.6	34	1.20	13	85.7	15	30.3	33	3.7	46
DP 1646 B2XF	1578	12	77	7	4.4	44	1.21	7	85.5	19	29.4	39	5.4	20
DG 3427 B3XF	1563	13	70	13	4.8	20	1.21	10	85.7	13	31.8	11	4.0	42
CPS 18507-C	1558	14	66	21	4.6	31	1.18	27	85.2	22	30.6	29	5.6	13
FM 2398 GLTP	1555	15	53	41	5.2	1	1.18	27	85.2	22	30.6	29	4.2	36
CPS 18503-B	1551	16	47	44	5.0	6	1.15	44	84.8	31	31.3	24	5.6	12
CROPLAN 9210 B3XF	1541	17	68	15	5.1	4	1.21	10	86.5	5	31.5	20	5.5	14
NG 3522 B2XF	1533	18	37	47	4.8	22	1.13	45	83.8	43	26.5	50	4.4	32
DG 3520 B3XF	1530	19	84	3	4.1	48	1.23	5	86.8	2	31.8	12	5.7	10
ST 4550 GLTP	1526	20	57	33	4.7	26	1.15	41	84.9	28	32.6	4	6.1	8
CP 9178 B3XF	1515	21	56	34	5.0	6	1.18	27	84.9	26	31.8	13	4.1	37
NG 3729 B2XF	1504	22	51	42	4.9	13	1.16	39	84.5	35	29.7	37	5.5	14
PHY 360 W3FE	1501	23	23	50	5.0	6	1.09	50	81.7	50	27.1	49	3.9	43
DG 3317 B3XF	1499	24	36	49	5.1	4	1.12	47	84.2	41	31.1	25	7.4	1
PHY 350 W3FE	1477	25	55	35	4.7	26	1.15	41	84.4	38	30.4	32	5.3	24
PHY 580 W3FE	1461	26	60	27	4.8	22	1.17	34	85.3	21	31.6	17	3.9	43
PHY 480 W3FE	1461	27	55	35	4.7	26	1.13	45	86.6	4	31.4	22	7.0	2
DG 3615 B3XF	1459	28	37	47	5.0	6	1.12	48	83.7	46	31.5	18	5.5	18
ST 5471GLTP	1455	29	68	15	4.5	37	1.19	18	84.9	26	31.5	21	5.1	25
DP 1614 B2XF	1432	30	55	35	5.1	2	1.18	27	85.6	17	29.2	41	6.9	3
NG 4936 B3XH	1430	31	78	5	4.6	31	1.21	7	86.4	7	28.5	43	5.5	14
NG 3930 B3XF	1426	32	64	25	4.6	34	1.18	27	84.8	32	28.4	46	4.4	33
PHY 340 W3FE	1419	33	60	27	4.9	16	1.19	23	84.5	37	30.1	34	4.1	37
ST 5600 B2XF	1401	34	59	31	5.1	2	1.19	18	85.7	13	31.9	9	6.6	4
DG 3402 B3XF	1390	35	85	2	4.5	43	1.24	2	85.9	10	31.7	15	6.5	5
NG 3994 B3XF	1388	36	65	24	5.0	6	1.21	10	85.1	25	28.5	43	4.9	26
AMX 1818 B3XF	1367	37	71	11	4.5	41	1.19	15	85.5	18	32.0	8	6.3	7
PX3D43W3FE	1358	38	59	30	4.9	16	1.17	34	85.4	20	35.0	1	4.7	29
DP 1823NR B2XF	1341	39	68	17	4.5	37	1.18	27	85.9	10	32.2	6	5.5	14
DP 1916 B3XF	1339	40	54	40	5.0	6	1.19	23	83.8	45	30.9	27	3.7	47
DP 1845 B3XF	1333	41	82	4	4.4	47	1.24	2	84.8	29	31.8	13	5.6	11
AMX 19A006 B3XF	1320	42	70	14	4.7	26	1.22	6	84.8	29	31.4	23	4.0	39
DP 1835 B3XF	1296	43	77	6	4.7	25	1.24	2	84.1	42	30.0	36	3.5	49
PHY 500 W3FE	1283	44	71	11	4.7	26	1.19	18	86.8	2	32.6	3	3.9	45
AMX 1816 B3XF	1247	45	72	10	4.0	50	1.20	13	85.2	24	29.0	42	3.4	50
PX3D32W3FE	1239	46	91	1	4.5	37	1.25	1	87.0	1	32.5	5	5.3	23
PX5E28W3FE	1238	47	67	20	4.4	44	1.19	18	84.7	34	32.0	7	5.3	21
NG 5711 B3XF	1233	48	72	9	4.6	31	1.21	7	84.5	35	30.7	28	4.3	34
PX5E34W3FE	1174	49	66	21	4.6	34	1.17	37	86.5	5	31.9	10	4.9	26
PX5C45W3FE	1159	50	55	38	5.0	12	1.16	39	86.0	9	31.7	15	5.3	21
Mean	1465		61		4.7		1.18		85.0		30.7		5.0	
LSD _{0.10}	24		19		0.3		0.05		1.9		2.0		0.7	
C.V.%	13.1		18.5		4.0		2.7		1.4		3.8		8.7	
R ² x 100	45.4		75.5		82.0		71.4		65.4		79.8		91.6	

^aUI = Fiber length uniformity index.

Table 14. Yield and related properties—2019 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Hebert Silt Loam at Rohwer.

Variety	Lint yield		Lint frac.		Ht.	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density	
	lb/acre	r	%	r		cm	%	r	g	r	g	r	mil.	r	no.	r	no.
PHY 400 W3FE	1839	1	45.3	14				9.2	33	7.8	29	10.710	2	17504	10	182	5
DP 2012 B3XF	1818	2	43.5	34				9.1	38	7.2	45	11.510	1	15167	40	158	35
PX5C05W3FE	1780	3	47.9	1				9.1	41	8.5	7	9.461	13	18646	4	195	1
DG 3385 B2XF	1716	4	44.6	23				10.0	15	8.2	14	9.473	12	16057	31	158	36
NG 3729 B2XF	1699	5	42.9	39				10.0	18	7.7	33	10.040	9	15089	41	149	45
PHY 350 W3FE	1695	6	44.4	26				9.4	28	7.9	24	9.748	11	16521	22	169	19
ST 5471GLTP	1693	7	42.9	40				11.4	5	8.7	4	8.800	21	19019	2	171	16
CROPLAN 9210 B3XF	1691	8	45.0	21				9.1	37	7.6	36	10.080	8	13875	48	145	47
DP 1518 B2XF	1678	9	43.9	31				9.0	42	7.2	44	10.600	3	16396	26	172	12
DP 1646 B2XF	1671	10	45.4	12				8.5	49	7.2	46	10.600	4	14554	45	159	32
PX3D32W3FE	1668	11	43.7	32				9.2	34	7.3	40	10.310	7	16487	23	172	14
PX3D43W3FE	1665	12	44.5	25				10.3	12	8.5	8	8.886	18	17795	8	172	13
PX5C45W3FE	1662	13	47.1	4				9.5	27	8.6	5	8.751	23	18106	6	184	3
NG 4936 B3XH	1658	14	41.6	46				10.0	17	7.3	42	10.310	6	13849	49	137	49
DG 3520 B3XF	1630	15	41.2	48				11.7	4	8.4	11	8.824	20	19897	1	176	9
AMX 19A006 B3XF	1613	16	42.1	43				11.4	6	8.4	10	8.678	24	17193	14	155	39
DG 3402 B3XF	1602	17	45.3	13				10.6	8	9.0	2	8.075	37	18101	7	171	15
PHY 480 W3FE	1569	18	45.1	20				9.8	19	8.3	13	8.542	26	17149	15	171	17
CPS 18507-C	1554	19	44.1	28				9.6	25	7.8	28	9.019	16	16162	30	163	27
DP 2038 B3XF	1544	20	47.5	2				8.5	48	7.9	23	8.866	19	16837	18	184	4
PHY 500 W3FE	1531	21	45.4	11				9.1	38	7.7	32	9.030	15	17354	12	181	7
PHY 360 W3FE	1528	22	45.3	15				7.8	50	6.6	50	10.540	5	14439	46	166	21
CP 9608 B3XF	1505	23	47.4	3				8.9	45	8.0	18	8.490	28	17031	16	181	6
DP 1916 B3XF	1496	24	45.7	9				9.4	29	8.1	16	8.439	31	16322	28	167	20
ST 5600 B2XF	1491	25	44.1	29				10.0	14	8.0	19	8.432	33	15247	39	150	44
PX5E34W3FE	1490	26	42.0	45				9.3	32	6.9	49	9.812	10	15809	35	163	25
DG 3427 B3XF	1470	27	45.0	22				9.4	30	7.9	25	8.494	27	16057	32	164	24
PHY 340 W3FE	1466	28	46.5	5				8.8	46	7.8	27	8.484	29	16692	21	178	8
PX5E28W3FE	1461	29	43.1	38				9.2	35	7.1	47	9.326	14	16726	20	174	10
DP 1835 B3XF	1451	30	45.2	18				9.2	35	7.7	31	8.545	25	15863	34	165	22
AMX 19A005 B3XF	1443	31	44.0	30				9.8	23	7.8	30	8.433	32	16198	29	162	30
Halo 959	1434	32	40.9	49				11.8	2	8.4	12	7.786	40	17019	17	150	43
DP 1725 B2XF	1432	33	45.2	17				9.5	26	8.0	21	8.124	36	16054	33	163	26
NG 3930 B3XF	1425	34	43.2	36				9.8	20	7.6	35	8.471	30	15501	37	154	41
DP 1614 B2XF	1409	35	45.6	10				8.6	47	7.3	43	8.784	22	13344	50	145	46
DP 1845 B3XF	1391	36	43.5	33				9.0	43	7.1	48	8.902	17	14934	43	157	38
ST 4550 GLTP	1389	37	46.2	6				9.7	24	8.6	6	7.349	43	16428	25	165	23
NG 3522 B2XF	1375	38	42.6	41				9.8	21	7.5	39	8.337	34	17404	11	174	11
CP 9178 B3XF	1360	39	45.9	7				9.1	40	7.9	26	7.860	39	15544	36	162	29
DG 3317 B3XF	1342	40	44.6	24				10.2	13	8.4	9	7.209	44	16379	27	159	33
NG 5711 B3XF	1333	41	42.1	44				9.8	22	7.3	41	8.275	35	15433	38	154	40
AMX 1828 B3XF	1333	42	42.3	42				10.3	11	7.7	34	7.879	38	14108	47	136	50
PHY 580 W3FE	1321	43	45.7	8				9.3	31	8.0	17	7.445	41	18829	3	194	2
DG 3615 B3XF	1307	44	43.1	37				10.4	10	8.1	15	7.370	42	16821	19	160	31
DP 1823NR B2XF	1254	45	44.3	27				10.0	16	8.0	20	7.111	45	17264	13	170	18
CPS 18503-B	1245	46	43.3	35				11.8	3	9.2	1	6.119	49	18441	5	163	28
FM 2398 GLTP	1210	47	45.3	16				10.5	9	8.9	3	6.173	48	16443	24	158	37
AMX 1818 B3XF	1137	48	41.2	47				10.7	7	7.6	37	6.811	46	14841	44	140	48
NG 3994 B3XF	1068	49	45.1	19				8.9	44	7.5	38	6.427	47	15003	42	158	34
AMX 1816 B3XF	1025	50	38.6	50				12.2	1	7.9	22	5.877	50	17573	9	151	42
Mean	1491		44.2					9.7		7.9		8.632		16390		164	
LSD _{0.10}	222		1.1					0.9		0.7		1.292		1804		14	
C.V.%	12.7		1.4					5.6		5.5		12.8		6.6		5.1	
R ² x 100	57.0		94.5					86.0		78.1		64.2		77.8		83.5	

Table 15. Fiber properties—2019 Arkansas Transgenic Cotton Variety Test, With Irrigation on a Hebert Silt Loam at Rohwer.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/acre						in.		%		g/tex		%	
PHY 400 W3FE	1839	1	68	17	4.2	44	1.23	13	85.9	36	31.9	26	3.9	28
DP 2012 B3XF	1818	2	72	9	4.4	38	1.24	11	86.8	15	29.4	41	3.0	43
PX5C05W3FE	1780	3	53	41	4.6	28	1.18	49	85.9	36	35.0	3	5.1	9
DG 3385 B2XF	1716	4	56	33	4.9	6	1.21	27	86.1	31	29.7	37	5.3	5
NG 3729 B2XF	1699	5	63	24	4.8	12	1.23	23	86.8	16	29.7	37	4.6	18
PHY 350 W3FE	1695	6	72	10	4.5	33	1.23	13	87.1	11	31.6	28	3.7	34
ST 5471GLTP	1693	7	50	44	4.6	29	1.19	38	84.7	47	32.5	18	3.9	28
CROPLAN 9210 B3XF	1691	8	56	33	5.2	1	1.23	13	86.3	26	31.4	30	5.3	5
DP 1518 B2XF	1678	9	47	46	4.4	38	1.18	47	84.5	49	28.6	46	3.2	41
DP 1646 B2XF	1671	10	75	8	4.6	29	1.26	7	86.1	30	30.1	32	4.8	13
PX3D32W3FE	1668	11	84	4	4.0	49	1.27	5	87.8	2	33.0	14	4.3	23
PX3D43W3FE	1665	12	70	13	4.5	32	1.23	16	86.4	24	35.3	2	4.4	22
PX5C45W3FE	1662	13	54	40	4.7	20	1.19	43	86.2	27	33.2	13	4.6	18
NG 4936 B3XH	1658	14	80	6	4.8	14	1.28	3	86.7	18	29.9	34	4.4	21
DG 3520 B3XF	1630	15	76	7	3.9	50	1.26	7	86.7	20	31.9	25	5.5	3
AMX 19A006 B3XF	1613	16	95	1	4.3	42	1.31	1	87.5	5	35.8	1	3.7	33
DG 3402 B3XF	1602	17	68	15	4.7	20	1.24	11	86.4	25	32.3	21	5.4	4
PHY 480 W3FE	1569	18	66	19	4.6	24	1.21	31	87.4	9	33.8	8	5.8	2
CPS 18507-C	1554	19	55	36	4.7	18	1.19	38	86.2	27	29.5	39	5.1	10
DP 2038 B3XF	1544	20	55	39	4.6	24	1.19	46	86.1	31	29.3	42	3.3	39
PHY 500 W3FE	1531	21	56	33	4.4	41	1.19	43	85.8	38	34.7	4	2.8	46
PHY 360 W3FE	1528	22	45	48	4.6	29	1.19	38	84.0	50	27.2	49	3.0	44
CP 9608 B3XF	1505	23	55	36	4.6	24	1.21	31	84.9	45	29.1	44	2.8	45
DP 1916 B3XF	1496	24	56	32	4.8	14	1.19	38	87.0	13	31.6	28	3.4	37
ST 5600 B2XF	1491	25	64	21	4.9	6	1.23	16	87.4	7	33.9	7	4.9	11
PX5E34W3FE	1490	26	68	15	4.1	46	1.21	27	87.6	4	34.3	6	4.8	14
DG 3427 B3XF	1470	27	42	49	4.9	6	1.18	47	84.7	46	30.1	33	2.3	49
PHY 340 W3FE	1466	28	66	19	4.5	33	1.21	27	87.0	12	32.4	19	3.7	32
PX5E28W3FE	1461	29	57	30	4.2	45	1.20	36	85.3	42	32.8	17	4.7	17
DP 1835 B3XF	1451	30	57	29	4.7	19	1.21	31	85.5	40	29.4	40	2.5	48
AMX 19A005 B3XF	1443	31	45	47	4.8	14	1.19	38	84.6	48	28.1	48	3.4	36
Halo 959	1434	32	85	3	4.4	38	1.28	3	87.3	10	32.3	20	4.0	26
DP 1725 B2XF	1432	33	52	43	4.9	10	1.21	35	85.4	41	29.2	43	3.2	40
NG 3930 B3XF	1425	34	64	21	4.7	20	1.23	23	86.5	22	29.0	45	4.0	25
DP 1614 B2XF	1409	35	71	11	5.0	5	1.26	7	87.9	1	30.9	31	5.2	7
DP 1845 B3XF	1391	36	86	2	4.3	43	1.30	2	86.5	22	33.0	15	4.9	11
ST 4550 GLTP	1389	37	62	26	4.9	6	1.22	25	87.5	5	33.3	10	5.2	8
NG 3522 B2XF	1375	38	33	50	4.5	36	1.14	50	85.3	44	26.5	50	3.8	30
CP 9178 B3XF	1360	39	55	36	4.9	10	1.20	36	86.9	14	31.6	27	3.5	35
DG 3317 B3XF	1342	40	48	45	5.0	4	1.19	43	86.8	17	32.9	16	6.1	1
NG 5711 B3XF	1333	41	69	14	4.5	33	1.23	16	86.6	21	32.1	22	4.0	27
AMX 1828 B3XF	1333	42	57	30	5.1	3	1.23	16	86.7	18	32.0	24	3.1	42
PHY 580 W3FE	1321	43	62	26	4.1	46	1.21	31	86.2	27	32.0	23	3.8	30
DG 3615 B3XF	1307	44	64	21	4.6	24	1.23	16	85.3	42	34.4	5	4.1	24
DP 1823NR B2XF	1254	45	63	25	4.5	36	1.21	27	85.9	34	33.5	9	4.8	14
CPS 18503-B	1245	46	71	11	4.7	20	1.26	7	85.9	34	33.2	12	4.5	20
FM 2398 GLTP	1210	47	52	42	5.2	1	1.23	16	85.7	39	29.8	36	2.6	47
AMX 1818 B3XF	1137	48	68	17	4.8	14	1.23	16	87.4	7	33.2	11	4.8	14
NG 3994 B3XF	1068	49	59	28	4.8	12	1.22	25	86.0	33	28.6	47	3.3	38
AMX 1816 B3XF	1025	50	82	5	4.1	48	1.27	6	87.8	2	29.9	34	2.0	50
Mean	1491		62		4.6		1.22		86.3		31.5		4.1	
LSD _{0.10}	222		14		0.3		0.04		1.4		1.8		0.5	
C.V.%	12.7		13.5		4.0		2.0		1.0		3.3		7.0	
R ² x 100	57.0		82.0		84.3		78.9		72.7		89.9		95.8	

^aUI = Fiber length uniformity index.

Table 16. Morphological and Host-Plant Resistance Traits in the 2019 Arkansas Transgenic Cotton Variety Test.

Variety	Leaf		Stem		Bract		Tarnished plant		Bacterial
	pubescence ^a	r	pubescence ^a	r	trichomes ^b	r	bug damage ^c	r	blight ^d % sus.
AMX 1816 B3XF	2.5	14	6.3	34	32.5	32	65	37	88
AMX 1818 B3XF	3.7	28	6.0	25	33.9	38	72	46	6
AMX 1828 B3XF	5.3	43	6.5	35	32.3	31	60	21	49
AMX 19A005 B3XF	1.2	1	5.3	13	27.6	19	65	35	100
AMX 19A006 B3XF	5.1	41	6.9	45	39.9	50	62	26	33
NG 3522 B2XF	1.8	7	4.7	8	23.5	3	62	27	67
NG 3729 B2XF	6.3	50	6.1	26	33.7	36	71	45	61
NG 3930 B3XF	3.1	20	6.7	40	33.3	35	64	31	0
NG 3994 B3XF	6.2	49	7.0	48	39.6	49	61	23	93
NG 4936 B3XH	1.2	2	3.2	2	24.2	4	65	34	61
NG 5711 B3XF	2.2	10	5.9	22	25.4	7	64	32	0
FM 2398 GLTP	2.3	13	4.9	9	26.3	14	63	30	0
ST 4550 GLTP	5.0	40	5.9	22	30.7	27	62	28	90
ST 5471GLTP	3.8	32	6.5	35	30.6	26	60	22	7
ST 5600 B2XF	3.9	34	7.0	48	34.1	40	59	17	100
DP 2012 B3XF	1.6	6	6.5	35	26.5	15	69	43	0
DP 2038 B3XF	1.3	3	5.3	14	20.1	1	57	13	0
DP 1518 B2XF	5.6	46	6.9	45	36.9	45	59	20	4
DP 1614 B2XF	5.7	47	6.8	41	36.9	46	57	14	100
DP 1646 B2XF	1.8	9	5.5	15	31.7	29	55	7	13
DP 1725 B2XF	2.3	11	5.7	17	27.9	22	59	19	100
DP 1823NR B2XF	6.1	48	6.8	41	33.0	33	59	18	100
DP 1835 B3XF	3.7	30	4.7	7	32.2	30	56	10	93
DP 1845 B3XF	4.6	38	6.3	32	33.8	37	65	36	0
DP 1916 B3XF	1.4	5	2.9	1	27.8	21	68	41	97
CPS 18503-B	3.7	29	6.8	41	35.2	44	70	44	0
CPS 18507-C	2.3	12	5.7	17	26.7	16	63	29	100
DG 3317 B3XF	2.8	16	6.2	31	29.5	23	72	47	100
DG 3385 B2XF	3.0	19	6.2	27	30.3	24	55	6	96
DG 3402 B3XF	2.8	18	6.5	35	38.0	47	46	1	10
DG 3427 B3XF	3.4	25	3.8	4	34.0	39	67	39	100
DG 3520 B3XF	5.5	45	6.9	45	33.3	34	67	40	0
DG 3615 B3XF	4.2	37	6.3	32	38.1	48	78	49	27
Halo 959	3.8	33	6.2	27	34.1	40	78	50	14
PHY 340 W3FE	5.3	44	6.8	41	34.4	42	58	16	18
PHY 350 W3FE	2.7	15	5.8	19	27.8	20	55	8	0
PHY 480 W3FE	3.2	22	6.5	35	25.3	6	50	3	0
PHY 580 W3FE	5.1	42	7.0	48	31.2	28	64	33	10
PHY 400 W3FE	3.9	35	5.0	11	27.6	18	52	4	0
PHY 360 W3FE	3.3	23	5.6	16	26.0	10	49	2	0
PX3D32W3FE	3.1	21	6.2	27	26.0	11	56	9	0
PX3D43W3FE	2.8	17	5.8	19	26.3	13	61	25	3
PX5C05W3FE	4.1	36	6.2	27	25.9	9	56	11	3
PX5C45W3FE	3.8	31	5.8	19	27.1	17	56	12	11
PHY 500 W3FE	3.4	26	5.9	22	24.4	5	66	38	7

Table 16. *Continued.*

Variety	Leaf pubescence ^a		Stem pubescence ^a		Bract trichomes ^b		Tarnished plant bug damage ^c		Bacterial blight ^d
	r	r	r	r	r	r	r	% sus.	
PX5E28W3FE	3.3	24	4.6	6	26.3	12	57	15	28
PX5E34W3FE	3.4	27	4.9	9	25.5	8	61	24	29
CP 9178 B3XF	1.3	4	3.5	3	30.4	25	69	42	100
CP 9608 B3XF	4.8	39	5.0	11	34.7	43	52	5	97
CROPLAN 9210 B3XF	1.8	8	4.0	5	23.4	2	72	48	20
Ark 0628fg RF (sus.)							80	51	
Ark 0628fg RF (sus.)							96	52	
Mean	3.5		5.8		30.3		63		41
LSD _{0.10}	1.2		0.8		4.2		10		24
C.V.%	29.6		11.1		11.9		18.8		43.3
R ² x 100	72.4		77.7		70.1		44.0		89.6

^a Leaf and stem pubescence rated at Keiser irrigated test (6 plants per plots, 4 replications) using a scale of 1 (smooth leaf) to 9 (pilose, very hairy).

^b Marginal trichome density of bracts determined on 6 bracts/plot (4 replications) at Keiser irrigated test.

^c Response to tarnished plant bug was determined by examining white flowers (6 flowers/plot/day for 6 days) for presence of anther damage. Plots were 1-row, replicated 8 times.

^d Varieties/breeding lines were planted in flats (3 replications, 10 seed/plot) in a greenhouse, and scratch inoculated with *Xanthomonas citris* pv. *malvacearum*. The inoculum was obtained from naturally infected leaves collected at the 2018 Keiser location. Scratches were examined for water-soaking, and percent of susceptible plants was determined.

Table 17. Two-year and Three-Year Average Lint Yields (pounds/acre) for Transgenic Varieties at the Five Locations of the 2017–2019 Arkansas Cotton Variety Test.

Variety	Manila		Keiser		Judd Hill		Marianna		Rohwer		All locations	
	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r	Ib/acre	r
	Ib/acre		Ib/acre		Ib/acre		Ib/acre		Ib/acre		Ib/acre	
Two-year (2018–2019) means												
PHY 400 W3FE	1637	4	1266	1	1243	3	1766	4	1812	1	1545	1
DP 1725 B2XF	1764	2	1085	12	1287	2	1786	3	1564	17	1497	2
DG 3520 B3XF	1413	14	1220	3	1309	1	1618	11	1750	2	1462	3
DP 1646 B2XF	1550	8	1125	10	1098	16	1796	2	1731	3	1460	4
ST 4550 GLTP	1802	1	1079	13	1112	13	1650	8	1591	13	1447	5
PHY 360 W3FE	1654	3	1223	2	1084	18	1619	10	1581	15	1432	6
DP 1518 B2XF	1469	11	1199	5	1121	12	1685	6	1669	5	1428	7
DG 3385 B2XF	1442	13	1202	4	1222	4	1680	7	1588	14	1427	8
ST 5471GLTP	1600	6	1167	6	1060	20	1553	15	1701	4	1416	9
NG 3729 B2XF	1579	7	1015	19	1172	6	1553	16	1658	7	1395	10
CP 9608 B3XF	1452	12	1047	17	1066	19	1798	1	1614	10	1395	11
NG 4936 B3XF	1479	10	1062	16	1160	7	1522	19	1660	6	1377	12
PHY 340 W3FE	1507	9	1130	9	1140	10	1523	18	1551	20	1370	13
DP 1614 B2XF	1410	15	1066	15	1147	9	1617	12	1526	21	1353	14
PHY 350 W3FE	1399	17	1016	18	1159	8	1578	14	1601	11	1350	15
PHY 500 W3FE	1392	18	1155	7	1091	17	1391	24	1652	8	1336	16
CP 9178 B3XF	1626	5	1002	20	861	23	1633	9	1553	19	1335	17
PHY 580 W3FE	1385	19	1133	8	1056	21	1458	20	1553	18	1317	18
DG 3317 B3XF	1333	21	770	25	1111	14	1691	5	1627	9	1306	19
NG 3994 B3XF	1405	16	886	23	1179	5	1601	13	1394	22	1293	20
PHY 480 W3FE	1251	24	1108	11	1103	15	1405	22	1572	16	1287	21
DP 1823NR B2XF	1338	20	998	21	1137	11	1540	17	1350	23	1272	22
NG 5711 B3XF	1086	25	1074	14	910	22	1374	25	1599	12	1208	23
AMX 1818 B3XF	1267	23	890	22	837	24	1436	21	1295	24	1145	24
AMX 1816 B3XF	1322	22	880	24	836	25	1402	23	1122	25	1112	25
Mean	1462		1072		1100		1587		1572		1359	
Three-year (2017–2019) means												
DP 1646 B2XF	1677	2	1204	1	1234	5	1444	2	1625	1	1437	1
DP 1725 B2XF	1792	1	1013	8	1294	2	1505	1	1443	8	1409	2
DG 3385 B2XF	1559	4	1190	2	1248	4	1391	4	1462	6	1370	3
DP 1518 B2XF	1521	7	1163	3	1162	9	1348	5	1494	4	1338	4
PHY 350 W3FE	1549	6	1049	6	1324	1	1262	7	1497	3	1336	5
CP 9608 B3XF	1556	5	1037	7	1151	10	1400	3	1483	5	1325	6
PHY 340 W3FE	1561	3	1120	5	1214	7	1205	9	1462	7	1312	7
DP 1614 B2XF	1503	9	1002	9	1220	6	1322	6	1418	9	1293	8
PHY 480 W3FE	1412	10	1138	4	1179	8	1106	10	1558	2	1279	9
DP 1823NR B2XF	1511	8	984	10	1292	3	1232	8	1304	10	1265	10
Mean	1564		1090		1232		1322		1475		1336	

Table 18. Yield and Related Properties—2019 Arkansas Conventional Cotton Variety Test Across Four Test Sites.

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolls	r	index	r	index	r	acre	r	seed	r	density	r
	lb/acre		%		cm		%		g		g		mil.		no.		no.	
Ark 0912-18	1417	1	42.0	6	94	6	61	10	10.3	8	7.6	5	8.306	4	17114	5	164	5
Ark 0912-41	1373	2	41.8	7	90	11	63	8	10.5	6	7.7	2	8.033	6	17075	6	162	8
Ark 0908-52	1362	3	43.6	1	96	3	57	13	9.5	14	7.6	7	8.129	5	17179	4	173	3
Ark 0908-56	1356	4	43.4	2	101	2	67	2	9.7	12	7.6	6	7.984	7	16339	8	163	7
Ark 0908-60	1354	5	42.2	5	95	5	57	13	9.7	13	7.3	10	8.323	3	15595	11	157	9
Ark 0902-49	1324	6	42.6	4	96	4	61	10	9.1	15	6.9	13	8.623	2	15261	13	155	10
Ark 0921-31ne	1316	7	39.6	14	102	1	64	7	9.8	11	6.6	15	8.944	1	16708	7	164	6
Ark 0822-48	1300	8	40.8	10	89	13	65	6	11.2	2	7.9	1	7.497	11	15578	12	147	13
UA212ne	1273	9	43.2	3	92	9	58	12	9.8	10	7.7	4	7.489	12	18441	1	184	1
DP 393	1271	10	40.6	11	91	10	66	3	10.6	4	7.4	9	7.821	8	16010	9	154	12
Ark 0822-75	1243	11	40.3	12	94	7	61	9	10.6	5	7.3	12	7.759	10	16003	10	155	11
SSG UA222	1202	12	40.9	9	90	12	52	15	10.5	7	7.5	8	7.227	13	17557	3	169	4
SSG UA 114	1186	13	39.7	13	92	8	65	5	10.2	9	6.9	14	7.788	9	14622	14	144	14
SSG UA 107	1067	14	41.2	8	87	14	70	1	10.8	3	7.7	3	6.276	15	18372	2	173	2
AM UA48	1025	15	37.7	15	82	15	66	4	11.7	1	7.3	11	6.341	14	13414	15	124	15
Mean	1271		41.3		93		62		10.3		7.4		7.769		16351		159	
Var. LSD _{0.10}	94		0.6		4		5		0.4		0.3		0.573		1000		8	
Loc. LSD _{0.10}	51		0.3		3		3		0.2		0.1		0.270		207		4	
C.V.%	13.4		1.7		6.3		11.8		4.4		4.8		13.4		7.3		5.8	
R ² x 100	77.0		94.3		85.4		71.0		90.1		91.5		64.6		81.5		90.3	
Prob (var x loc)	0.311		0.027		0.505		<0.0001		0.009		0.018		0.105		0.380		0.824	

Table 19. Fiber Properties—2019 Arkansas Conventional Cotton Variety Test Across four Test Sites.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/acre						in.		%		g/tex		%	
Ark 0912-18	1417	1	65	8	4.3	8	1.23	9	86.5	3	34.7	2	6.1	2
Ark 0912-41	1373	2	68	6	4.3	9	1.24	7	86.5	4	34.5	3	5.5	3
Ark 0908-52	1362	3	69	5	4.3	10	1.26	4	84.9	11	30.1	14	4.2	12
Ark 0908-56	1356	4	66	7	4.4	4	1.25	6	85.0	9	32.6	7	4.4	10
Ark 0908-60	1354	5	64	9	4.4	5	1.24	8	85.5	7	31.7	13	4.5	9
Ark 0902-49	1324	6	78	2	4.3	7	1.26	3	87.0	1	33.1	6	2.9	15
Ark 0921-31ne	1316	7	51	14	4.1	14	1.20	14	84.8	14	33.3	5	6.9	1
Ark 0822-48	1300	8	72	3	4.5	3	1.27	2	85.6	6	31.8	11	5.5	4
UA212ne	1273	9	52	13	4.1	12	1.20	13	84.8	15	29.8	15	4.8	8
DP 393	1271	10	44	15	4.6	1	1.18	15	84.9	13	32.2	10	4.2	11
Ark 0822-75	1243	11	71	4	4.2	11	1.26	4	85.3	8	32.3	9	4.8	7
SSG UA222	1202	12	59	11	4.1	13	1.23	10	84.9	12	32.5	8	5.5	5
SSG UA 114	1186	13	63	10	4.4	6	1.22	11	86.4	5	33.9	4	5.0	6
SSG UA 107	1067	14	56	12	4.1	14	1.21	12	85.0	10	31.8	12	3.7	13
AM UA48	1025	15	82	1	4.5	2	1.30	1	86.9	2	36.0	1	3.1	14
Mean	1271		64		4.3		1.24		85.6		32.7		4.8	
Var. LSD _{0.10}	94		8		0.2		0.02		0.7		1.1		0.3	
Loc. LSD _{0.10}	51		ns		0.1		NS		0.4		0.6		0.2	
C.V.%	13.4		15.6		4.6		2.1		1.0		4.0		7.7	
R ² x 100	77.0		76.7		94.4		80.5		81.2		81.6		95.1	
Prob (var x loc)	0.311		0.347		0.124		0.774		0.004		0.946		0.196	

^a UI = Fiber length uniformity index.

Table 20. Yield and Related Properties–2019 Arkansas Conventional Cotton Variety Test, With Irrigation on a Sharkey Clay Soil at Keiser.

Variety	Lint		Lint		Ht.	Open		Seed		Lint		Seed/		Fibers/		Fiber		
	yield	r	frac.	r		r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/acre		%		cm	%		g		g		mil.		no.		no.		
Ark 0912-18	1280	1	41.2	6	82	6	47	14	10.3	3	7.4	2	7.851	6	18627	3	180	5
Ark 0908-60	1224	2	42.4	5	84	4	58	7	9.0	12	6.7	7	8.268	2	16178	12	170	12
Ark 0908-56	1211	3	43.7	1	86	3	65	1	8.8	13	7.0	4	7.883	5	16264	11	174	9
Ark 0902-49	1207	4	43.2	3	86	2	58	7	8.4	14	6.6	10	8.275	1	15106	14	166	13
DP 393	1169	5	40.8	9	77	10	65	1	9.9	4	6.9	5	7.726	8	17249	8	171	10
Ark 0921-31ne	1130	6	39.4	14	88	1	61	4	9.4	8	6.4	15	8.025	3	17257	7	176	8
Ark 0912-41	1130	7	40.6	10	80	7	52	11	9.6	6	6.8	6	7.534	10	17549	5	177	7
UA212ne	1130	8	42.6	4	77	12	48	13	9.5	7	7.2	3	7.126	11	20329	1	206	1
Ark 0908-52	1121	9	43.3	2	83	5	51	12	8.0	15	6.4	12	7.902	4	16764	10	189	2
Ark 0822-48	1109	10	39.8	13	77	10	61	4	9.7	5	6.6	11	7.621	9	17059	9	171	11
Ark 0822-75	1099	11	40.3	11	79	8	63	3	9.3	10	6.4	14	7.809	7	17417	6	179	6
SSG UA222	1037	12	40.9	7	76	13	41	15	9.3	9	6.7	8	7.009	12	17750	4	182	4
SSG UA 114	963	13	40.2	12	79	9	61	4	9.3	11	6.4	13	6.801	13	15807	13	163	14
SSG UA 107	870	14	40.8	8	73	14	58	7	10.6	2	7.4	1	5.335	15	19404	2	184	3
AM UA48	793	15	37.1	15	68	15	54	10	11.1	1	6.7	9	5.391	14	14396	15	133	15
Mean	1098		41.1		80		56		9.5		6.8		7.370		7.37		17144	
LSD _{0.10}	149		0.9		5		9		0.8		0.5		0.983		0.983		2159	
C.V.%	12.8		1.2		5.8		15.3		4.6		4.5		12.6		12.6		7.2	
R ² x 100	54.4		96.3		62.8		50.3		87.0		73.5		56.3		56.3		76.4	

Table 21. Fiber Properties–2019 Arkansas Conventional Cotton Variety Test, With Irrigation on a Sharkey Clay Soil at Keiser.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/acre						in.		%		g/tex		%	
Ark 0912-18	1280	1	64	10	3.9	7	1.21	11	85.9	4	33.6	4	6.5	2
Ark 0908-60	1224	2	65	9	4.0	4	1.23	10	84.9	11	31.1	13	4.6	11
Ark 0908-56	1211	3	71	3	4.1	1	1.24	6	85.4	6	32.8	6	5.0	7
Ark 0902-49	1207	4	77	2	4.1	1	1.25	5	86.9	1	32.6	7	3.5	14
DP 393	1169	5	55	13	4.0	5	1.19	14	85.1	9	32.1	10	4.8	9
Ark 0921-31ne	1130	6	53	15	3.7	8	1.19	14	85.2	8	32.3	8	7.6	1
Ark 0912-41	1130	7	67	6	3.7	8	1.23	8	85.3	7	35.9	2	6.0	4
UA212ne	1130	8	53	14	3.5	15	1.21	11	84.5	12	29.5	14	4.9	8
Ark 0908-52	1121	9	67	6	3.7	10	1.25	4	84.2	13	29.1	15	4.6	12
Ark 0822-48	1109	10	70	5	3.7	12	1.26	2	84.2	13	31.8	11	6.0	4
Ark 0822-75	1099	11	59	12	3.6	13	1.24	6	82.3	15	31.5	12	4.7	10
SSG UA222	1037	12	71	3	3.5	14	1.26	2	85.9	4	33.3	5	6.1	3
SSG UA 114	963	13	66	8	3.9	6	1.21	13	86.6	3	34.2	3	5.6	6
SSG UA 107	870	14	64	10	3.7	10	1.23	8	85.0	10	32.1	9	3.9	13
AM UA48	793	15	95	1	4.1	1	1.32	1	86.8	2	36.0	1	3.2	15
Mean	1098		66		3.8		1.23		85.2		32.5		5.1	
LSD _{0.10}	149		ns		0.2		ns		1.5		2.3		0.7	
C.V.%	12.8		18..8		3.5		3.0		1.0		4.0		7.7	
R ² x 100	54.4		63.5		83.4		64.9		80.2		82.1		94.8	

^a UI = Fiber length uniformity index.

Table 22. Yield and Related Properties–2019 Arkansas Conventional Cotton Variety Test, With Irrigation on a Dundee Silt Loam Soil at Judd Hill.

Variety	Lint yield		Lint frac.		Ht.	Open bolls		Seed index		Lint index		Seed/acre	Fibers/seed		Fiber density			
	lb/acre	r	%	r		cm	%	r	g	r	g		r	mil.	r	no.	r	no.
Ark 0908-52	1174	1	42.8	1	99	5	53	12	9.2	12	7.0	4	7.605	4	17908	5	186	2
Ark 0912-41	1131	2	41.5	3	93	11	66	6	10.5	5	7.5	2	6.893	6	18408	3	175	5
Ark 0822-48	1115	3	40.0	7	93	12	64	7	11.5	1	7.8	1	6.529	10	17500	7	157	11
Ark 0902-49	1063	4	40.8	5	102	2	54	10	8.7	15	6.0	14	8.003	2	14332	15	154	13
Ark 0912-18	1062	5	39.7	8	94	10	70	3	9.8	9	6.6	8	7.302	5	17347	8	173	7
DP 393	1044	6	39.7	10	97	6	59	9	10.6	4	7.0	5	6.799	7	16446	11	156	12
Ark 0921-31ne	1042	7	37.6	14	105	1	60	8	9.2	13	5.6	15	8.455	1	16814	10	175	6
SSG UA 114	1040	8	37.6	13	95	8	68	5	10.2	8	6.2	12	7.627	3	15185	13	148	14
Ark 0822-75	1015	9	38.6	12	97	7	51	14	11.3	2	7.1	3	6.489	11	17774	6	162	10
SSG UA 107	978	10	39.7	9	91	13	79	1	10.4	6	6.9	7	6.460	12	18917	2	181	4
UA212ne	971	11	42.0	2	94	9	53	12	9.0	14	6.6	10	6.692	8	18009	4	190	1
Ark 0908-56	924	12	41.1	4	102	3	70	3	9.7	10	6.9	6	6.063	15	16878	9	169	8
AM UA48	892	13	35.6	15	86	15	71	2	11.0	3	6.2	13	6.570	9	14784	14	137	15
SSG UA222	886	14	38.8	11	90	14	54	10	10.3	7	6.6	9	6.104	13	18998	1	184	3
Ark 0908-60	862	15	40.3	6	100	4	44	15	9.3	11	6.4	11	6.090	14	16116	12	166	9
Mean	1013		39.7		96		61		10.0		6.7		6.912		17028		168	
LSD _{0.10}	179		1.4		7		9		0.9		0.7		1.235		1714		19	
C.V.%	14.8		2.0		6.2		13.0		5.3		6.1		15.0		5.7		6.6	
R ² x 100	54.7		91.7		70.2		74.9		84.3		79.2		56.4		83.7		81.5	

Table 23. Fiber Properties–2019 Arkansas Conventional Cotton Variety Test, With Irrigation on a Dundee Silt Loam Soil at Judd Hill.

Variety	Lint yield		Quality score		Fiber properties									
	lb/acre	r	r	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
							in.		%		g/tex		%	
Ark 0908-52	1174	1	68	8	3.8	10	1.24	4	84.4	11	31.5	14	4.0	11
Ark 0912-41	1131	2	64	10	3.9	4	1.21	10	86.7	2	34.8	3	5.3	4
Ark 0822-48	1115	3	76	3	4.2	2	1.25	3	85.6	7	32.3	13	5.3	3
Ark 0902-49	1063	4	82	1	3.9	6	1.27	2	86.1	3	34.3	5	2.7	15
Ark 0912-18	1062	5	70	4	3.6	13	1.23	7	87.4	1	36.4	2	5.8	2
DP 393	1044	6	50	12	4.3	1	1.17	14	84.3	12	34.2	6	3.9	12
Ark 0921-31ne	1042	7	45	14	3.3	15	1.20	11	84.1	14	34.2	7	6.0	1
SSG UA 114	1040	8	67	9	3.9	4	1.23	9	85.9	4	33.7	8	4.6	8
Ark 0822-75	1015	9	69	7	3.8	7	1.23	7	85.8	5	33.7	9	4.7	6
SSG UA 107	978	10	52	11	3.6	12	1.19	12	84.9	9	32.5	12	3.6	13
UA212ne	971	11	47	13	3.7	11	1.17	14	84.5	10	30.5	15	4.7	6
Ark 0908-56	924	12	69	6	4.0	3	1.24	4	84.2	13	33.2	10	4.1	10
AM UA48	892	13	78	2	3.8	7	1.29	1	85.7	6	36.8	1	3.3	14
SSG UA222	886	14	45	14	3.5	14	1.19	13	83.7	15	32.8	11	5.1	5
Ark 0908-60	862	15	70	5	3.8	7	1.23	6	85.0	8	34.3	4	4.2	9
Mean	1013		63		3.8		1.22		85.2		33.7		4.5	
LSD _{0.10}	179		21		ns		0.05		1.8		2.9		0.4	
C.V.%	14.8		18.7		7.6		2.3		1.2		5.0		5.6	
R ² x 100	54.7		73.7		63.5		78.2		69.7		63.8		96.8	

^a UI = Fiber length uniformity index.

Table 24. Yield and Related Properties–2019 Arkansas Conventional Cotton Variety Test, With Irrigation on a Calloway Silt Loam Soil at Marianna.

Variety	Lint		Lint		Ht.	Open		Seed		Lint		Seed/		Fibers/		Fiber		
	yield	r	frac.	r		r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/acre		%		cm	%		g		g		mil.		no.		no.		
Ark 0912-18	1734	1	44.1	4	107	4	67	10	10.7	8	8.6	4	9.153	4	16187	7	153	6
Ark 0908-56	1704	2	45.1	2	116	1	66	12	9.8	13	8.2	7	9.407	2	16025	8	159	4
Ark 0908-60	1646	3	43.7	6	102	10	66	12	10.0	12	8.0	11	9.365	3	15375	11	151	8
Ark 0908-52	1596	4	45.3	1	108	3	66	12	10.2	10	8.8	2	8.276	8	16966	3	164	2
Ark 0822-48	1570	5	41.8	12	97	14	70	7	12.2	2	8.8	1	8.111	13	13396	14	124	14
Ark 0912-41	1559	6	42.6	7	99	13	71	5	11.7	3	8.7	3	8.118	12	16370	6	146	11
UA212ne	1532	7	44.8	3	106	5	72	4	10.0	11	8.3	5	8.398	7	17121	2	168	1
Ark 0902-49	1511	8	44.1	5	102	9	69	8	9.4	15	7.6	13	9.030	5	14609	12	150	9
SSG UA222	1480	9	41.8	11	103	8	62	15	11.3	4	8.3	6	8.137	11	16722	5	152	7
Ark 0921-31ne	1478	10	41.5	13	112	2	71	5	9.7	14	7.1	15	9.495	1	16780	4	157	5
DP 393	1476	11	41.0	14	100	11	74	2	10.7	7	7.5	14	8.870	6	15837	9	149	10
Ark 0822-75	1457	12	42.1	8	106	6	67	10	10.9	6	8.1	9	8.166	10	15450	10	144	12
SSG UA 114	1376	13	41.9	10	104	7	68	9	10.4	9	7.6	12	8.238	9	14168	13	136	13
SSG UA 107	1286	14	42.0	9	99	12	76	1	10.9	5	8.0	10	7.266	14	17558	1	163	3
AM UA48	1277	15	39.6	15	93	15	74	2	12.3	1	8.2	8	7.045	15	12814	15	118	15
Mean	1512		42.8		104		69		10.7		8.1		8.472		15692		149	
LSD _{0.10}	194		1.8		7		5		0.8		0.7		1.092		2323		14	
C.V.%	12.2		2.3		6.4		7.4		4.3		4.7		12.2		8.4		5.2	
R ² x 100	58.2		84.8		50.4		50.3		87.7		77.6		57.5		69.8		87.2	

Table 25. Fiber Properties–2019 Arkansas Conventional Cotton Variety Test, With Irrigation on a Calloway Silt Loam Soil at Marianna.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/acre						in.		%		g/tex		%	
Ark 0912-18	1734	1	54	13	5.1	4	1.23	9	85.6	9	34.8	2	6.9	2
Ark 0908-56	1704	2	69	6	4.8	9	1.27	5	85.6	10	32.6	7	4.9	10
Ark 0908-60	1646	3	63	7	4.9	5	1.25	8	86.0	7	31.0	13	5.3	9
Ark 0908-52	1596	4	62	8	4.9	5	1.25	7	85.3	12	29.7	14	4.8	11
Ark 0822-48	1570	5	79	2	5.2	1	1.31	1	87.6	2	31.8	8	5.5	7
Ark 0912-41	1559	6	70	5	4.9	5	1.26	6	87.6	3	33.6	4	5.8	5
UA212ne	1532	7	58	10	4.7	12	1.21	11	85.8	8	29.2	15	6.0	3
Ark 0902-49	1511	8	84	1	4.6	13	1.28	3	88.4	1	33.3	5	3.1	15
SSG UA222	1480	9	56	11	4.8	9	1.23	10	84.9	14	31.3	12	5.8	4
Ark 0921-31ne	1478	10	53	14	4.6	14	1.21	14	84.9	14	32.9	6	7.4	1
DP 393	1476	11	40	15	4.8	8	1.17	15	85.0	13	31.6	9	4.7	12
Ark 0822-75	1457	12	75	4	4.8	9	1.27	4	87.0	6	31.4	10	5.4	8
SSG UA 114	1376	13	55	12	5.1	3	1.21	11	87.3	5	34.3	3	5.5	6
SSG UA 107	1286	14	58	9	4.4	15	1.21	11	85.6	10	31.4	10	4.3	13
AM UA48	1277	15	78	3	5.1	2	1.30	2	87.5	4	35.6	1	3.5	14
Mean	1512		63		4.8		1.24		86.3		32.3		5.2	
LSD _{0.10}	194		14		0.3		0.03		1.3		2.1		0.7	
C.V.%	12.2		12.8		3.6		1.4		0.9		3.6		7.7	
R ² x 100	58.2		82.8		75.5		89.8		83.3		83.0		94.0	

^a UI = Fiber length uniformity index.

Table 26. Yield and Related Properties–2019 Arkansas Conventional Cotton Variety Test, With Irrigation on a Hebert Silt Loam at Rohwer.

Variety	Lint yield		Lint frac.		Ht. r	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density	
	lb/acre	r	%	r		%	r	g	r	g	r	mil.	r	no.	r	no.	r
Ark 0912-41	1687	1	42.6	5			10.4	14	7.9	11	9.694	2	15972	9	152	4	
Ark 0908-60	1643	2	42.4	7			10.5	12	8.0	9	9.322	3	14713	10	140	10	
Ark 0921-31ne	1619	3	40.1	13			10.8	7	7.4	12	9.894	1	15983	8	146	9	
Ark 0908-52	1561	4	42.8	3			10.5	11	8.1	7	8.756	6	17077	3	151	7	
Ark 0912-18	1548	5	42.8	4			10.5	13	8.0	10	8.820	5	16297	6	151	5	
Ark 0908-56	1533	6	43.6	1			10.7	10	8.4	3	8.253	9	16188	7	151	6	
Ark 0902-49	1498	7	42.4	8			9.8	15	7.4	14	9.168	4	16995	4	150	8	
UA212ne	1432	8	43.4	2			10.8	7	8.5	1	7.602	11	18306	1	172	1	
Ark 0822-48	1385	9	41.6	10			11.4	2	8.3	5	7.543	12	14355	12	138	12	
Ark 0822-75	1383	10	40.4	12			10.7	9	7.4	13	8.459	8	13369	13	135	13	
SSG UA222	1378	11	42.3	9			11.2	5	8.4	4	7.485	13	16760	5	156	3	
SSG UA 114	1376	12	39.2	14			10.9	6	7.2	15	8.618	7	13330	14	128	14	
DP 393	1369	13	41.0	11			11.4	3	8.1	6	7.649	10	14507	11	138	11	
AM UA48	1134	14	38.5	15			12.5	1	8.0	8	6.419	14	11662	15	110	15	
SSG UA 107	1131	15	42.4	6			11.2	4	8.5	2	6.032	15	17610	2	165	2	
Mean	1448		41.7				10.9		8.0		8.248		15542		146		
LSD _{0.10}	245		0.8				0.7		0.6		1.405		2180		13		
C.V.%	14.3		1.0				3.6		4.1		14.3		8.0		5.1		
R ² x 100	49.4		96.2				82.7		77.7		57.0		81.5		89.3		

Table 27. Fiber Properties–2018 Arkansas Conventional Cotton Variety Test, With Irrigation on a Hebert Silt Loam at Rohwer.

Variety	Lint yield		Quality		Fiber properties									
	lb/acre	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
							in.		%		g/tex		%	
Ark 0912-41	1687	1	73	4	4.6	11	1.27	4	86.4	4	33.6	4	5.1	4
Ark 0908-60	1643	2	58	10	5.1	3	1.25	10	86.4	5	30.5	13	4.1	8
Ark 0921-31ne	1619	3	56	11	4.7	9	1.22	12	85.1	11	33.8	3	6.8	1
Ark 0908-52	1561	4	77	2	4.8	7	1.30	2	85.9	7	30.2	14	3.4	12
Ark 0912-18	1548	5	72	5	4.7	9	1.26	7	87.2	2	34.1	2	5.2	3
Ark 0908-56	1533	6	54	12	5.0	4	1.25	10	84.7	13	31.8	9	3.8	10
Ark 0902-49	1498	7	71	6	4.8	7	1.27	5	86.6	3	32.3	8	2.5	15
UA212ne	1432	8	52	13	4.6	13	1.21	13	84.2	15	30.1	15	3.8	9
Ark 0822-48	1385	9	63	9	4.9	5	1.27	5	85.0	12	31.3	10	5.3	2
Ark 0822-75	1383	10	81	1	4.5	15	1.30	2	86.3	6	32.6	7	4.7	6
SSG UA222	1378	11	65	7	4.6	13	1.25	8	85.2	9	32.8	6	4.9	5
SSG UA 114	1376	12	64	8	4.8	6	1.25	8	85.9	7	33.6	4	4.4	7
DP 393	1369	13	34	15	5.2	1	1.18	15	85.2	10	31.1	11	3.6	11
AM UA48	1134	14	77	2	5.2	1	1.30	1	87.9	1	35.5	1	2.6	14
SSG UA 107	1131	15	50	14	4.6	12	1.21	14	84.4	14	31.0	12	3.3	13
Mean	1448		63		4.8		1.25		85.7		32.3		4.2	
LSD _{0.10}	245		11		0.3		0.03		1.2		1.6		0.7	
C.V.%	14.3		10.1		3.1		1.3		0.8		2.8		9.6	
R ² x 100	49.4		89.0		82.9		89.5		83.6		86.4		94.3	

^a UI = Fiber length uniformity index.

Table 28. Morphological and Host-Plant Resistance Traits in the 2019 Arkansas Conventional Cotton Variety Test.

Variety	Leaf		Stem		Bract		Tarnished plant		Bacterial
	pubescence ^a	r	pubescence ^a	r	trichomes ^b	r	bug damage ^c	r	blight ^d
									% sus.
SSG UA222	5.7	12	6.1	8	37.8	13	62	2	0
SSG UA 107	1.5	1	2.9	1	32.9	7	84	15	3
SSG UA 114	5.8	13	6.7	13	34.1	10	74	11	0
UA212ne	5.2	10	6.7	12	32.2	6	62	3	7
AM UA48	2.1	4	5.9	5	31.4	4	76	13	3
Ark 0822-48	1.9	3	6.1	6	27.2	2	67	5	0
Ark 0822-75	3.9	7	6.1	7	23.7	1	68	8	3
Ark 0902-49	4.0	8	6.4	9	33.3	8	60	1	0
Ark 0908-52	1.8	2	5.3	4	37.8	13	75	12	3
Ark 0908-56	6.3	15	4.7	3	42.4	19	63	4	0
Ark 0908-60	2.9	5	4.5	2	31.0	3	69	9	0
Ark 0912-18	6.1	14	6.8	14	42.1	18	67	6	0
Ark 0912-41	5.5	11	7.0	15	43.0	20	67	7	0
Ark 0921-31ne	4.6	9	6.5	10	38.0	15	79	14	0
DP 393	3.7	6	6.7	11	33.3	8	72	10	73
Ark 0628fg RF (sus.)							92	17	
							90	16	
Mean	4.1		5.9		34.7		72		6
LSD _{0.10}	1.5		0.7		7.0		12		5
C.V. %	33.9		11.7		17.0		19.7		56.2
R ² x 100	66.9		77.3		56.4		39.3		97.7

^a Leaf and stem pubescence rated at Keiser irrigated test (6 plants per plots, 4 replications) using a scale of 1 (smooth leaf) to 9 (pilose, very hairy).

^b Marginal trichome density of bracts determined on 6 bracts/plot (4 replications) at Keiser irrigated test.

^c Response to tarnished plant bug was determined by examining white flowers (6 flowers/plot/day for 6 days) for presence of anther damage. Plots were 1-row, replicated 8 times.

^d Varieties/breeding lines were planted in flats (3 replications, 10 seed/plot) in a greenhouse, and scratch inoculated with *Xanthomonas citris* pv. *malvacearum*. The inoculum was obtained from naturally infected leaves collected at the 2018 Keiser location. Scratches were examined for water-soaking, and percent of susceptible plants was determined.

Table 29. Two-Year and 3-Year Average Lint Yields (pound/acre) for conventional varieties at the four locations of the 2017–2019 Arkansas Cotton Variety Test.

Variety	Keiser		Judd Hill		Marianna		Rohwer		All locations	
	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r
	lb/acre		lb/acre		lb/acre		lb/acre		lb/acre	
Ark 0822-48	1012	4	1169	1	1420	5	1414	2	1253	1
UA212ne	1019	3	1020	2	1496	2	1461	1	1249	2
DP 393	1102	1	968	4	1509	1	1305	4	1221	3
SGS UA114	1005	5	951	5	1432	4	1345	3	1183	4
Ark 0822-75	1033	2	1011	3	1359	6	1299	5	1175	5
SGS UA222	977	6	924	6	1434	3	1293	6	1157	6
AM UA48	901	7	896	7	1300	8	1171	7	1067	7
SGS UA107	899	8	833	8	1312	7	1109	8	1038	8
Mean	993		971		1408		1299		1168	
UA212ne	967	1	1076	3	1261	1	1376	1	1348	1
Ark 0822-48	955	2	1274	1	1215	2	1318	2	1287	2
SGS UA222	949	3	998	5	1158	5	1223	4	1199	3
SGS UA114	896	5	1020	4	1201	3	1234	3	1198	4
Ark 0822-75	947	4	1117	2	1174	4	1220	5	1194	5
AM UA48	868	6	985	6	1073	7	1110	6	1090	6
SGS UA107	860	7	894	7	1096	6	1073	7	1061	7
Mean	920		1052		1168		1222		1197	

Appendix Table A1. Lint Yield and Fiber Properties–Ashley County Transgenic Variety Test.

Cooperator: Bruce Bond		Date Planted: 5/30/2019								
Soil Type: Hebert Silt Loam		Date of Harvest: 11/15/2019								
Irrigation: Furrow		Replications: 4								
Agent: Kevin Norton										
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UI^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
PHY 400 W3FE	1288	1	4.55	7	38.50	4	82.4	6	33.9	1
ST 4550 GLTP	1272	2	4.88	4	37.80	6	83.5	1	33.5	3
DP 1646 B2XF	1262	3	4.43	10	39.00	1	81.8	9	31.7	8
PHY 350 W3FE	1201	4	4.53	9	38.50	5	83.0	3	33.0	4
NG 4936 B3XF	1134	5	4.55	8	39.00	2	82.9	4	31.0	9
ST 5600 B2XF	1127	6	5.18	1	39.00	3	83.5	2	33.9	2
DP 1518 B2XF	1095	7	4.15	11	37.50	8	82.9	5	30.6	10
DG 3317 B3XF	1038	8	4.95	3	37.30	10	82.1	8	31.8	7
DP 1916 B3XF	1038	9	4.78	6	36.80	11	80.1	10	32.5	6
NG 3994 B3XF	992	10	4.98	2	37.50	9	79.1	11	30.6	11
DG 3427 B3XF	975	11	4.85	5	37.80	7	82.2	7	32.8	5
Mean	1129		4.7		38.06		82.1		32.3	
Var. LSD _{0.05}	103		0.2		1.70		3.0		1.7	
C.V.%	6.3		3.3		3.1		2.6		3.6	
Prob (var)	0.0001		0.0001		0.1067		0.1117		0.0007	

^aUI = Fiber length uniformity index.**Appendix Table A2. Lint Yield and Fiber Properties–Clay County Transgenic Variety Test.**

Cooperator: David Cagle		Date Planted: 5/17/2019								
Soil Type: Fountain Silt Loam		Date of Harvest: 10/9/2019								
Irrigation: Furrow		Replications: 1								
Agent: Allison Howell										
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UI^a	r	Strength	r
	lb/acre				Staple		g/tex			
DG 3385 B2XF	1508	1	4.9	1	37.00	4	84.5	2	29.9	10
CG 9608 B3XF	1451	2	4.5	7	37.00	8	82.2	9	29.9	11
NG 4936 B3XF	1418	3	4.5	8	39.00	1	84.6	1	31.9	3
DP 1646 B2XF	1393	4	4.5	9	38.90	2	83.0	6	31.3	5
PHY 400 W3FE	1366	5	4.3	11	37.00	10	83.2	4	33.3	1
NG 3994 B3XF	1330	6	4.8	2	37.00	5	82.8	8	31.0	8
ST 4550 GLTP	1310	7	4.6	6	37.00	7	83.1	5	32.4	2
PHY 350 W3FE	1305	8	4.7	3	37.10	3	83.8	3	31.9	4
ST 5471 GLTP	1298	9	4.5	10	37.00	9	81.7	10	31.2	7
DP 1725 B2XF	1286	10	4.7	4	36.00	11	81.7	11	30.2	9
DG 3317 B3XF	1200	11	4.7	5	37.00	6	83.0	7	31.2	6
Mean	1351		4.6		37.27		83.1		31.3	

^aUI = Fiber length uniformity index.

Appendix Table A3. Lint Yield and Fiber Properties–Craighead County Transgenic Variety Test.

Cooperator:	Brannon Qualls				Date Planted:	5/14/2019				
Soil Type:	Fountain Silt Loam				Date of Harvest:	10/5/2019				
Irrigation:	Furrow				Replications:	1				
Agent(s):	Branon Thiesse, Chris Grimes									
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UI ^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
DP 1725 B2XF	1982	1	4.90	3	38.00	4	83.5	9	30.0	10
ST 4550 GLTP	1953	2	4.70	10	38.00	7	84.3	5	32.4	8
PHY 400 W3FE	1848	3	4.20	12	38.00	8	84.0	7	37.3	1
DP 1916 B3XF	1817	4	4.90	4	38.00	5	83.2	11	35.2	3
DP 1646 B2XF	1758	5	4.80	7	41.00	1	85.9	1	29.0	12
DG 3427 B3XF	1749	6	5.10	1	37.00	9	85.3	2	32.7	7
NG 4936 B3XF	1737	7	4.60	11	40.00	2	84.8	3	32.9	6
PHY 350 W3FE	1673	9	4.90	5	39.00	3	84.6	4	34.3	4
DP 1518 B2XF	1673	8	4.80	8	38.00	6	84.2	6	29.9	11
DG 3317 B3XF	1628	10	4.90	6	37.00	11	81.8	12	35.6	2
ST 5600 B2XF	1564	11	4.80	9	37.00	12	83.3	10	34.3	5
NG 3994 B3XF	1543	12	5.10	2	37.00	10	83.7	8	31.4	9
Mean	1744		4.8		38.17		84.1		32.9	

^a UI = Fiber length uniformity index.**Appendix Table A4. Lint Yield and Fiber Properties–Desha County Transgenic Variety Test.**

Cooperator(s):	Steve Stevens, Wes Kirkpatrick				Date Planted:	5/1/2019				
Soil Type:	Sharkey & Desha Clays				Date of Harvest:	10/3/2019				
Irrigation:	Furrow				Replications:	1				
Agent:	John David Farabough									
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UI ^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
NG 3994 B3XF	1943	1	5.0	1	39.00	2	84.9	1	29.4	8
NG 4936 B3XF	1897	2	4.6	6	39.00	3	83.8	6	29.2	9
ST 4550 GLTP	1891	3	4.4	9	38.00	4	83.1	9	32.7	4
DP 1916 B3XF	1852	4	4.7	4	37.00	7	82.6	10	33.4	3
PHY 400 W3FE	1848	5	4.1	11	39.00	5	83.4	8	33.6	2
DP 1646 B2XF	1807	6	4.5	7	40.00	1	84.3	5	28.9	10
DG 3427 B3XF	1800	7	4.7	5	37.00	8	80.9	11	30.4	7
DG 3317 B3XF	1782	8	4.8	3	37.00	9	84.9	2	31.2	6
ST 5600 B2XF	1672	9	5.0	2	38.00	5	83.6	7	32.4	5
PHY 350 W3FE	1625	10	4.3	10	38.00	6	84.5	4	34.5	1
DP 1518 B2XF	1565	11	4.5	8	37.00	10	82.9	3	28.3	11
Mean	1789		4.6		38.09		83.5		31.3	

^a UI = Fiber length uniformity index.

Appendix Table A5. Lint Yield and Fiber Properties–Lee County Transgenic Variety Test.

Cooperator: Trent Felton		Date Planted: 5/29/2019								
Soil Type: Loring Silt Loam		Date of Harvest: 11/15/2019								
Irrigation: Furrow		Replications: 4								
Agent: Stan Baker										
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UI^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
DP 1518 B2XF	1748	1	4.2	11	38.50	6	84.0	3	31.1	9
ST 4550 GLTP	1723	2	4.8	3	37.30	11	82.7	10	31.9	6
DP 1646 B2XF	1614	3	4.3	10	40.50	1	83.4	5	30.7	11
NG 4936 B3XF	1613	4	4.6	4	38.80	3	83.1	7	30.9	10
PHY 400 W3FE	1578	5	4.6	5	38.50	7	83.6	4	33.0	3
PHY 350 W3FE	1556	6	4.6	6	38.50	8	83.2	6	32.8	4
DP 1916 B3XF	1530	7	4.6	7	40.00	2	84.4	1	33.9	1
ST 5600 B2XF	1528	8	4.6	8	38.80	4	83.1	8	33.4	2
NG 3994 B3XF	1522	9	4.9	1	38.80	5	83.0	9	31.4	8
DG 3317 B3XF	1503	10	4.9	2	37.80	10	84.2	2	31.7	7
DG 3427 B3XF	1415	11	4.5	9	38.00	9	82.6	11	32.6	5
Mean	1575		4.6		38.68		83.4		32.1	
Var. LSD _{0.05}	128		0.2		1.23		2.0		1.6	
C.V.%	5.6		3.7		2.2		1.6		3.5	
Prob (var)	0.0004		0.0001		0.0004		0.6244		0.0036	

^aUI = Fiber length uniformity index.**Appendix Table A6. Lint Yield and Fiber Properties–Lonoke County Transgenic Variety Test.**

Cooperator: Rick Bransford		Date Planted: 5/27/2019								
Soil Type: Caspiana Silt Loam		Date of Harvest: 11/4/2019								
Irrigation: Furrow		Replications: 1								
Agent(s): Keith Perkins, Maxwell Coffin										
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UI^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
NG 4936 B3XF	1906	1	3.8	11	41.00	1	85.2	3	29.0	10
ST 4550 GLTP	1733	2	4.5	4	39.00	4	85.7	1	30.6	7
DP 1916 B3XF	1691	3	4.1	10	41.00	2	85.1	4	31.7	5
DP 1646 B2XF	1676	4	4.4	5	40.00	3	82.6	11	28.8	11
PHY 400 W3FE	1666	5	4.4	6	38.00	8	83.5	10	35.1	1
PHY 350 W3FE	1480	6	4.4	7	38.00	9	84.4	6	32.2	2
DP 1518 B2XF	1452	7	4.4	8	39.00	5	83.8	8	30.6	8
ST 5600 B2XF	1447	8	4.7	3	39.00	6	85.3	2	31.9	4
NG 3994 B3XF	1426	9	4.9	2	38.00	10	84.7	5	31.2	6
DG 3427 B3XF	1408	10	4.3	9	39.00	7	84.0	7	32.1	3
DG 3317 B3XF	1376	11	5.1	1	37.00	11	83.7	9	30.3	9
Mean	1569		4.5		39.00		84.4		31.1	

^aUI = Fiber length uniformity index.

Appendix Table A7. Lint Yield and Fiber Properties–Mississippi County Transgenic Variety Test.

Cooperator: David Wildy		Date Planted: 5/29/2019								
Soil Type: Routon-Dundee Crevasse Complex		Date of Harvest: 11/19/2019								
Irrigation: Pivot		Replications: 4								
Agent(s): Ray Benson, Shawn Lancaster										
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UJ ^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
ST 4550 GLTP	1848	1	4.5	3	39.80	5	85.5	1	32.5	3
DG 3317 B3XF	1672	2	4.5	4	38.30	10	84.4	7	30.9	7
PHY 400 W3FE	1651	3	4.6	2	40.30	4	84.7	6	32.6	2
DP 1916 B3XF	1602	4	4.2	8	39.80	6	85.5	2	33.7	1
NG 4936 B3XF	1594	5	4.1	9	40.80	2	84.9	5	31.0	6
DP 1646 B2XF	1591	6	4.2	6	41.00	1	84.2	9	30.1	9
NG 3994 B3XF	1556	7	4.6	1	40.50	3	85.0	3	30.8	8
DP 1518 B2XF	1470	8	3.9	10	38.50	9	84.3	8	29.8	10
PHY 350 W3FE	1457	9	4.2	7	39.50	8	85.0	4	31.2	5
ST 5600 B2XF	1334	10	4.4	5	39.50	7	84.1	10	32.0	4
Mean	1578		4.3		39.80		84.8		31.5	

^aUJ = Fiber length uniformity index.**Appendix Table A8. Lint Yield and Fiber Properties–Phillips/Monroe County Transgenic Variety Test.**

Cooperator: Reed Storey		Date Planted: 5/17/2019								
Soil Type: Henry Silt Loam		Date of Harvest: 11/18/2019								
Irrigation: Furrow		Replications: 1								
Agent(s): Robert Goodson, Andrew Sayger										
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UJ ^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
PHY 400 W3FE	1211	1	4.7	12	38.50	5	83.4	7	34.1	5
DP 1646 B2XF	1202	2	4.9	10	40.30	1	83.4	5	32.1	12
DP 1518 B2XF	1167	3	4.9	11	37.80	10	83.7	3	33.2	10
ST 4550 GLTP	1145	4	5.2	3	38.00	7	84.0	1	34.6	1
DG 3427 B3XF	1142	5	5.1	4	37.50	11	81.9	12	32.3	11
PHY 350 W3FE	1095	6	4.9	9	38.80	4	83.6	4	34.2	3
DP 1916 B3XF	1089	7	5.0	7	37.80	9	82.6	10	33.3	8
ST 5600 B2XF	1052	8	5.6	1	38.30	6	83.3	8	34.2	4
NG 4936 B3XF	905	9	5.0	8	40.00	2	83.4	6	33.9	6
NG 3994 B3XF	854	10	5.0	5	39.00	3	82.9	9	33.4	7
PHY 430 W3FE	846	11	5.0	6	37.30	12	82.6	11	34.4	2
DG 3317 B3XF	812	12	5.3	2	37.80	8	83.9	2	33.2	9
Mean	1043		5.0		38.43		83.2		33.6	

^aUJ = Fiber length uniformity index.

Appendix Table A9. Lint Yield and Fiber Properties–Poinsett County Transgenic Variety Test.

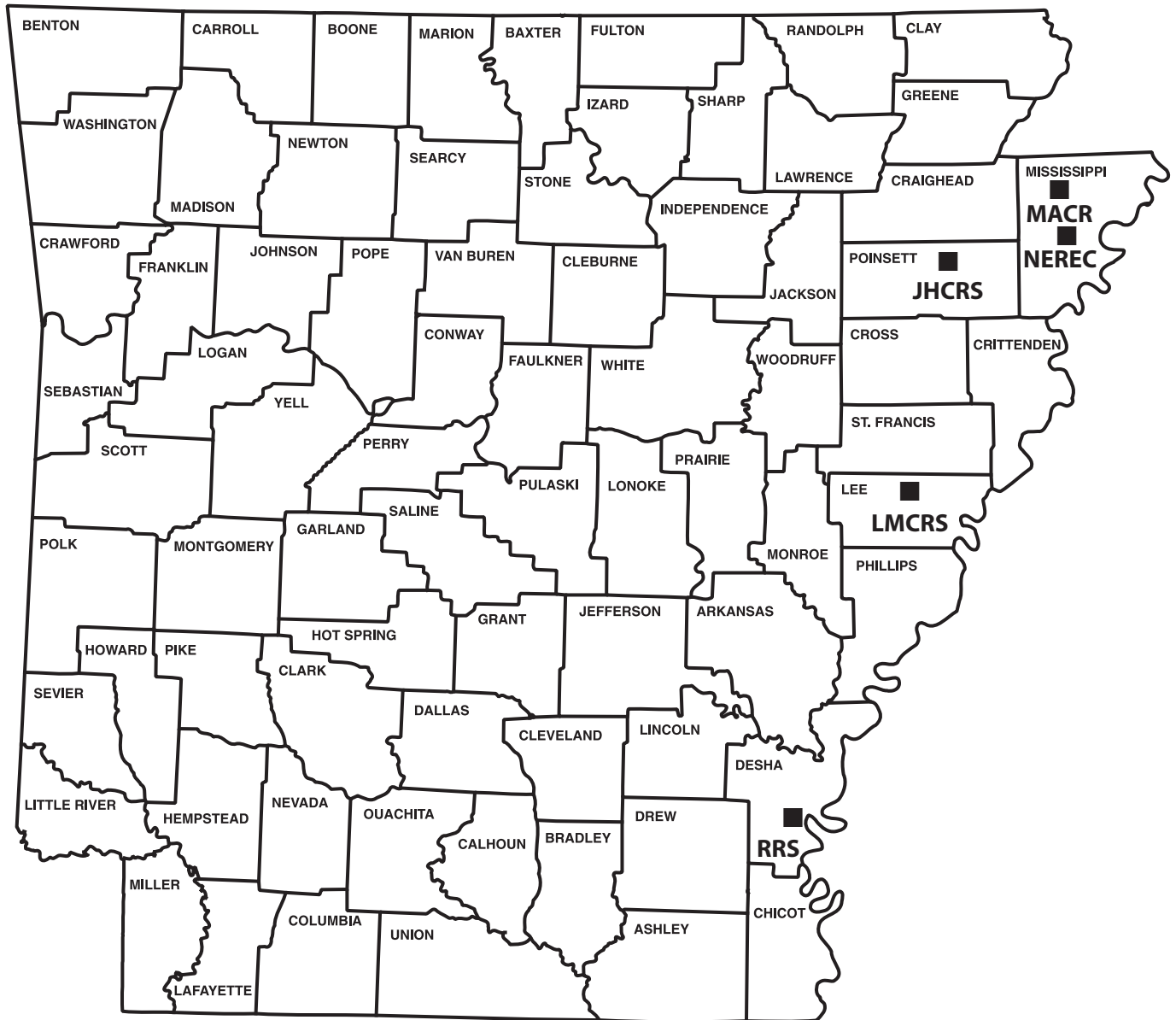
Cooperator: Marty White		Date Planted: 5/17/2019								
Soil Type: Mhoon Silt Loam		Date of Harvest: 11/20/2019								
Irrigation: Furrow		Replications: 4								
Agent(s): Craig Allen, Jeffery Works										
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UI ^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
ST 4550 GLTP	1668	1	4.6	5	37.80	7	83.7	4	33.2	3
DP 1646 B2XF	1628	2	4.6	6	40.00	1	82.8	10	29.6	12
PHY 400 W3FE	1599	3	4.1	12	39.00	3	83.1	6	33.5	1
DP 1518 B2XF	1557	4	4.5	7	37.80	8	83.0	7	29.6	11
PHY 350 W3FE	1524	5	4.4	9	38.80	4	83.8	3	32.3	4
NG 4936 B3XF	1499	6	4.4	10	39.80	2	85.0	1	31.1	6
CG 9608 B3XF	1485	7	4.5	8	37.80	9	82.6	11	31.3	5
DG 3427 B3XF	1467	8	4.8	4	37.50	10	80.8	12	29.7	10
DP 1916 B3XF	1465	9	4.4	11	37.30	12	82.9	8	33.4	2
DG 3317 B3XF	1445	10	4.8	3	37.30	11	83.3	5	30.5	8
ST 5600 B2XF	1439	11	5.0	1	38.30	5	84.0	2	31.1	7
NG 3994 B3XF	1426	12	4.8	2	38.30	6	82.9	9	29.8	9
Mean	1517		4.6		38.31		83.2		31.3	
Var. LSD _{0.05}	115		0.3		0.94		1.3		1.7	
C.V.%	5.3		4.4		1.7		1.1		3.8	
Prob (var)	0.0010		0.0001		0.0001		0.0002		0.0001	

^aUI = Fiber length uniformity index.**Appendix Table A10. Lint Yield and Fiber Properties–St. Francis County Transgenic Variety Test.**

Cooperator: Joe Whittenton		Date Planted: 5/26/2019								
Soil Type: Loring silt loam		Date of Harvest: 11/4/2019								
Irrigation: Furrow		Replications: 4								
Variety	Lint		Fiber properties							
	yield	r	Micronaire	r	Length	r	UI ^a	r	Strength	r
	lb/acre				Staple		%		g/tex	
NG 4936 B3XF	1648	1	4.2	7	40.30	2	85.2	1	30.7	11
PHY 400 W3FE	1625	2	4.2	8	39.50	3	84.6	2	32.1	6
ST 4550 GLTP	1579	3	4.4	5	38.80	6	84.5	3	33.4	1
DG 3317 B3XF	1551	4	4.7	1	37.80	11	84.1	6	31.1	8
DP 1646 B2XF	1516	5	4.4	6	40.80	1	83.9	9	31.0	9
NG 3994 B3XF	1469	6	4.7	2	39.00	4	84.4	5	31.5	7
DP 1916 B3XF	1409	7	4.5	4	38.50	10	84.1	7	33.2	2
DP 1518 B2XF	1364	8	4.0	11	38.80	7	83.8	10	31.0	10
DG 3427 B3XF	1341	9	4.2	9	38.80	8	83.0	11	32.5	4
PHY 350 W3FE	1308	10	4.2	10	39.00	5	84.5	4	32.4	5
ST 5600 B2XF	1298	11	4.7	3	38.80	9	84.0	8	32.7	3
Mean	1464		4.4		39.10		84.2		32.0	
Var. LSD _{0.05}	140		0.3		0.84		1.1		2.1	
C.V.%	6.6		4.9		1.5		0.9		4.5	
Prob (var)	0.0001		0.0002		0.0001		0.0546		0.1246	

^aUI = Fiber length uniformity index.

COTTON VARIETY TEST LOCATIONS



- JHCRS** - Judd Hill Cooperative Research Station, near Trumann
- LMCRS** - Lon Mann Cotton Research Station, Marianna
- MACR** - Manila Airport Cotton Research Farm, Manila
- NEREC** - Northeast Research and Extension Center, Keiser
- RRS** - Rohwer Research Station, Rohwer

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