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Arkansas Cotton Variety Test 2021

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Arkansas Cotton Variety Test 2021



The 2021 tests at Rohwer were abandoned due to severe flooding June 8–9

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

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Photo Credit: Photo of a cotton field at Rohwer taken on 16 June following 19 inches of rain on 8–9 June. The test site was subsequently abandoned. The photo was taken by Linda Martin, Program Technician at the University of Arkansas System Division of Agriculture's Rohwer Research Station.

Arkansas Agricultural Experiment Station (AAES), University of Arkansas System Division of Agriculture, Fayetteville. Chuck Culver, Interim Vice President for Agriculture; Jean-François Meullenet, AAES Director and Senior Associate Vice-President for Agriculture–Research. WWW/CC2021.

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**Arkansas
Cotton
Variety Test
2021**

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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). The 2021 tests at Rohwer were abandoned due to excessive rain and flooding occurring on 8–9 June. Entries in the 2021 Arkansas Cotton Variety Test were evaluated in two groups—transgenic and conventional varieties. The 44 entries in the transgenic test included 3 B2XF, 30 B3XF, 10 W3FE, and 1 GLTP line, which were evaluated at all five locations. The conventional test included 16 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 2021 report includes results of large-plot variety tests in 7 counties that were coordinated by Bill Robertson.

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Arkansas Cotton Variety Test 2021

*F. Bourland, A. Beach, B. Milano,
C. Kennedy, L. Martin, and B. Robertson¹*

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 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 44 entries in the transgenic test included 2 B2XF, 30 B3XF, 10 W3FE, and 1 GLTP line, of which 28 were included in the 2020 Arkansas Cotton Variety Test (Table 1). The conventional test included 16 entries, 8 of which were in the 2020 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 tests at Rohwer were abandoned after severe flooding that occurred on 8–9 June. 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 Tables 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 3.5 seed/row ft). All varieties were planted in 2-row plots on 38-inch centers and ranged from 40 to 47 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 sampled from 6 random plants per plot (4 replications)

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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 (22-feet long on 38-inch wide rows). Four rows of a highly susceptible Frego-bract line were planted between the tests. The TPB tests and border rows were planted on May 20 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 early to mid-August) for the presence of anther damage. The 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 2019 Marianna location. Scratches were examined for water-soaking, and the percent of susceptible plants was determined.

Verticillium Wilt. Relative yields of varieties over the 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 physiological cutout and before harvest. 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 the first application of defoliant, the 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 seedcotton weight).

Fiber Properties. Fiber samples were taken from each boll sample and were evaluated using HVI classification. Parameters included micronaire, fiber length, length uni-

formity index (UI), strength, and elongation. In order to reflect market demand for fiber quality, a weighted quality score (Q-score) was calculated as described by Bourland et al. (2010). Parameters (and weightings) 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 the fuzzy seed index (weight of 100 seed).

Seed Per Acre. For each plot, an estimate of the number of seed per acre was determined by multiplying seed cotton yield (pounds/acre converted to grams/acre) times average seed percentage (the percentage of seed weight to seedcotton weight in a 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 the lint weight from the ginned sample by the number of seed per sample (estimated using average seed weight) then multiplying by 100.

Seed Score. Seed-score (S-score) attempts to normalize seed index and lint index into a single index with penalties for both high and low SI values and no penalty for high LI values (Bourland et al., 2022). S-score may vary from 0 to 100, with higher values indicating varieties having the optimum seed size and weight of lint per seed.

Fibers Per Seed. The number of fibers per seed was estimated by dividing lint index by an estimated weight of individual fibers. The 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. Seedcotton yield per plot (determined by mechanical cotton picker) was converted to seedcotton 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 the 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 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 2021 production season.

The greatest deviation in the 2021 weather data was the excessive rainfall event that occurred on 8–9 June at Rohwer (Table 3). Heat units were close to historical averages at each Arkansas location. Weather data for Judd Hill are reported due to the malfunction of weather recording instruments at Keiser. Temperatures exceeding 95° were rare—4 days at Judd Hill (99° on 7/31; 96° on 7/30, 8/12, and 8/24); 2 days at Marianna (101° on 7/31 and 97° on 8/1); and 1 day at Rohwer (8/24). The absence of extremely high temperature and the occurrence of relatively high rainfall provided excellent growing conditions throughout the season. Rainfall in 2021 was near the historical average rainfall at Keiser/Judd Hill but greatly exceeded historical averages at Marianna and Rohwer.

Performance data of entries in the 2021 Transgenic Cotton Variety Test at Manila, Keiser, Judd Hill, and Marianna are provided in Tables 4 through 13 with yield and yield-related variables in the even-numbered tables and fiber properties in the odd-numbered tables. Performance data across all four locations are presented in Tables 4 and 5. Morphological and host-plant resistance

measurements for the main transgenic test entries are in Table 14. Two- and three-year yield means for entries evaluated in previous years are in Table 15. Performance data for the 2021 Conventional Cotton Variety Test at Keiser, Judd Hill, and Marianna are provided in Tables 16 through 23, 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 24. Two- and three-year yield means for the conventional entries evaluated in previous years are in Table 25.

Other observations associated with each test site include:

Manila (Tables 6 and 7). The 2021 test at Manila was in the same field used since 2014 and in the same area of the field as in 2020. Plots were planted on May 18 and achieved excellent stands. Mechanical problems with the plot picker delayed the harvest of the plots until November 30. Average lint yields at Manila were higher than at any other test site in 2021.

Keiser (Tables 8, 9, 18, and 19). Excellent stands were obtained from the May 18 planting of the variety tests at Keiser. The transgenic variety test at Keiser produced the second-highest lint yields of all locations in 2021. Mechanical problems with the plot picker halted harvest on 5 November 5 after the 16th plot of replications 1–3 were harvested. The remaining plots of replications 1–3 and all of replication 4 were harvested on 16 November.

Judd Hill (Tables 10, 11, 20, and 21). Excellent stands were achieved from the 21 May planting at Judd Hill. Plants grew well and established excellent boll loads. The intensity of Verticillium wilt was moderate (similar to 2020) but intense in localized areas. Plots were harvested on 19–21 October.

Marianna (Tables 12, 13, 24, and 25). For the sixth consecutive year, we used a cereal rye cover crop in our tests at Marianna. The cover crop was planted on 23 October 2020 and terminated on 4 April 2021 using glyphosate (3 pt/acre). Pigweed pressure in the tests was greater than in 2020. Plots were planted on 7 May and generally achieved good stands. Some plots on the lower end of the field were adversely affected by heavy rains after planting.

Rohwer (no tables). The Rohwer location was planted on 14 May and achieved excellent stands. Plants were growing and developing very well until the area was flooded on 8–9 June when 19 in. of rainfall occurred within a 30-hour period. The plants were subsequently submerged in water. Since most plants died after the water receded, the plots were abandoned. To establish 2-year (2020–2021) and 3-year (2019–2021) means for Rohwer, lint yield means from the other four locations were used to represent the 2021 variety means at Rohwer.

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Table 1. Participants and entries in the 2021 Arkansas Cotton Variety Test.

Institution/Contact person	Returning entries	Experimental no.	First-year entries	Experimental no.
Transgenic entries				
NexGen - Americot, Inc./ Terry Campbell	NG 3195 B3XF	AMX19B001B3XF	NG 4190 B3XF	AMX20B037B3XF
	NG 5150 B3XF	AMX19B003B3XF	NG 3299 B3XF	
	NG 4936 B3XF	AMX 1801 B3XF	NG 5711 B3XF	
BASF/ Lucas Owen	ST 4550 GLTP	BX 1973GLTP	BX 2295B3XF	
	ST 4990 B3XF		BX 2296B3XF	
	ST 4993 B3XF	BX 2193B3XF	BX 2297B3XF	
	ST 5091 B3XF	BX 2191B3XF	BX 2298B3XF	
Nutrien Ag Solutions (Dyna-Gro)/ Nicholas Crouch	DG 3317 B3XF	CPS 18817 B3XF	DG3469 B3XF	
	DG 3456 B3XF		DG3555 B3XF	
	DG 3520 B3XF	CPS 18501-B	DG3644 B3XF	
	DG 3535 B3XF			
Bayer Crop Science/ David Albers	DP 1518 B2XF	14R925B2XF	20R733B3XF	
	DP 1646 B2XF	MON 15R551B2XF		
	DP 1725 B2XF	MON 15R535B2XF		
	DP 2012 B3XF	18R411 B3XF		
	DP 2020 B3XF			
	DP 2038 B3XF	18R438 B3XF		
	DP 2115 B3XF	19R113B3XF		
	DP 2127 B3XF			
PhytoGen Seed Co./ Chad Brewer	PHY 332 W3FE	PX3D32W3FE	PX1130A329-04W3FE	PX4B08W3FE
	PHY 350 W3FE	PX3A99W3FE	PX1140A383-04W3FE	
	PHY 360 W3FE	PX3C06W3FE	PX1140A385-04W3FE	
	PHY 390 W3FE	PX3B09W3FE	PHY 411 W3FE	
	PHY 400 W3FE	PX3B07W3FE		
	PHY 443 W3FE	PX3D43W3FE		
WinField United/Armor/ Robert Cossar	Armor 9608 B3XF	WinField United 17XC8	Armor 9831 B3XF	20XG9 B3XF
	Armor 9371 B3XF	20XA91 B3XF	Armor 9512 B3XF	Armor 21XR2 B3XF
Conventional entries				
Americot Inc.	AM UA48	Ark 0102-48		
Seed Source Genetics/ Edward Jungmann	SSG UA222	Ark 0222-12		
	SSG UA 107	Ark 0701-17		
	SSG UA248	Ark 0822-75		
University of Arkansas System Division of Agriculture/ Fred Bourland	UA212ne	Ark 0812-87ne	Ark 1112-49	
	Arkot 1005	Ark 1005-41	Ark 1112-59	
	Arkot 1015	Ark 1015-42	Ark 1114-21	
	Arkot 1019	Ark 1019-36	Ark 1115-36	
			Ark 1117-50	
			Ark 1117-60	
			Ark 1124-50	

Table 2. Cultural practices for locations of the 2021 Arkansas Cotton Variety Test.

Input	Location				
	Manila	Keiser	Judd Hill	Marianna	Rohwer ^a
Soil type	Routon-Dundee-Crevasse complex	Sharkey clay	Dundee silt loam	Callaway silt loam	Hebert silt
N, P, K (lb)	80-38-127	125-0-0	110-0-100	92-92-60	
Planting date	5/18	5/18	5/21	5/7	5/14
Irrigation method	furrow	furrow	furrow	furrow	n/a
Irrigation dates	7/7; 7/28; 8/4; 8/11; 8/17; 8/25; 8/31	7/27; 8/4; 8/11	5/25; 7/1; 7/9; 7/27; 8/10; 8/24	7/1; 7/9; 7/30; 8/7; 8/12; 9/9	n/a
Mepiquat chloride	62 oz	none	90 oz	22 oz	n/a
Defoliation date	9/28; 10/7	9/29; 10/7	9/28; 10/8	9/24; 19/5	n/a
Harvest date	11/30	11/5; 11/16	10/19	10/13	no harvest

^a Tests at Rohwer terminated after 19-in. rain on 8–9 June.

Table 3. Weather summary for the 2021 production season in north, central and south Arkansas.

Location	Month	DD60s in 2021	Historical avg. ^a	
			DD60s	Rainfall in 2021
				(in.)
Keiser/Judd Hill ^b (northeast)	May	270	314	6.6
	June	599	532	0.8
	July	641	644	3.6
	August	642	583	3.1
	September	431	363	3.2
	October	148	127	3.0
	Total	2732	2563	20.2
Marianna (central)	May	268	336	5.6
	June	530	538	6.8
	July	634	646	6.7
	August	642	601	1.7
	September	440	397	1.2
	October	248	154	6.9
	Total	2761	2672	29.0
Rohwer (southeast)	May	286	354	3.7
	June	516	551	20.8
	July	626	661	9.5
	August	645	618	3.0
	September	433	415	2.6
	October	263	167	2.8
	Total	2768	2766	42.3

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

^b Keiser weather station was not functional through part of summer. Data from Judd Hill are compared to Keiser historical averages.

Table 4. Yield and related properties—2021 Arkansas Transgenic Cotton Variety Test across four test sites.

Variety	Lint yield lb/ac	r	Lint frac. %	r	Ht. cm	r	Open bolls %	r	Seed index g	r	Lint index g	r	Seed- score	r	Seed/ ac mil.	r	Fibers/ seed no.	r	Fiber density no.	r
ST 5091B3XF	1586	1	43.9	30	106	7	46	10	9.2	21	7.3	29	73	22	9.828	4	17416	13	181	8
DP 2127 B3XF	1578	2	45.4	12	107	6	41	22	9.9	5	8.3	3	86	2	8.604	20	18285	2	181	6
DG 3535 B3XF	1531	3	44.7	21	100	25	36	29	9.8	6	8.0	5	83	4	8.683	17	17767	10	177	17
DP 1646 B2XF	1513	4	44.8	17	108	3	41	20	8.5	40	7.0	36	68	33	9.838	3	14922	39	163	35
NG 3195 B3XF	1503	5	44.1	28	99	27	52	3	9.1	25	7.3	28	74	21	9.351	7	17041	19	178	14
DP 1518 B2XF	1474	6	42.0	39	103	15	46	10	9.0	27	6.6	40	64	37	10.160	2	15731	31	165	31
ST 4550GLTP	1470	7	45.8	7	103	14	51	5	8.9	31	7.7	12	79	9	8.632	18	17117	17	181	9
DP 2012 B3XF	1467	8	42.9	36	94	38	52	4	8.6	37	6.5	44	62	40	10.180	1	15370	35	166	30
Armor 9371 B3XF	1459	9	45.6	10	108	2	50	6	9.0	29	7.6	16	76	15	8.626	19	17077	18	179	11
NG 3299 B3XF	1458	10	44.8	19	98	31	43	17	9.3	15	7.7	11	79	8	8.575	21	16469	24	170	27
BX 2295B3XF	1452	11	45.0	13	92	43	46	9	8.9	32	7.4	24	75	18	8.851	12	16470	23	174	20
PX1140A385-04W3FE	1447	12	47.2	2	101	24	28	41	9.2	20	8.4	2	88	1	7.869	34	17832	8	185	3
DG 3456 B3XF	1441	13	44.4	22	105	10	40	23	9.7	7	7.9	7	81	5	8.310	27	18195	3	182	5
ST 4993B3XF	1439	14	45.5	11	99	26	42	19	9.5	10	8.1	4	84	3	8.065	31	17768	9	180	10
BX 2298B3XF	1438	15	44.4	24	104	11	31	35	9.1	26	7.4	26	74	20	8.865	11	16898	21	177	18
PX1140A383-04W3FE	1430	16	44.0	29	102	20	35	32	9.3	14	7.5	23	75	17	8.754	13	16764	22	173	24
PHY 390 W3FE	1429	17	44.8	20	95	35	38	27	9.3	17	7.6	18	78	10	8.528	22	17318	15	179	12
DP 2038 B3XF	1426	18	48.0	1	107	5	38	24	8.2	43	7.8	9	69	31	8.397	24	17992	6	199	1
PHY 360 W3FE	1416	19	43.6	32	95	36	43	17	8.4	41	6.7	39	59	41	9.765	5	14530	42	160	38
PHY 443 W3FE	1409	20	45.0	15	103	16	38	26	10.4	3	8.6	1	81	5	7.433	41	18170	4	174	21
DG 3520 B3XF	1408	21	40.9	44	102	22	31	35	10.8	1	7.6	19	51	43	8.394	25	18048	5	169	28
ST 4990B3XF	1405	22	41.0	42	95	34	58	2	9.3	16	6.6	43	63	39	9.615	6	14755	41	152	43
PHY 400 W3FE	1405	23	45.0	14	94	40	43	14	9.3	18	7.7	14	77	14	8.280	28	17230	16	178	15
NG 4936 B3XF	1390	24	41.0	43	99	28	44	12	9.6	8	6.8	38	66	35	9.342	8	15155	36	153	42
PHY 411 W3FE	1388	25	46.0	5	97	32	47	8	8.3	42	7.2	31	66	35	8.726	14	16329	26	181	7
20R734B3XF	1372	26	44.8	18	102	19	41	20	8.8	34	7.2	32	71	28	8.708	16	15952	29	171	26
DP 2115 B3XF	1363	27	46.0	6	93	41	49	7	8.5	38	7.4	25	72	25	8.340	26	15965	28	174	22
DG 3555 B3XF	1343	28	41.6	41	94	38	38	27	10.7	2	7.7	13	56	42	7.919	33	18889	1	178	16
NG 5150 B3XF	1343	29	43.7	31	102	21	31	35	9.0	30	7.0	34	70	29	8.720	15	15102	37	159	39
DP 2020 B3XF	1339	30	41.7	40	95	36	43	13	9.1	24	6.6	41	64	38	9.192	10	15080	38	157	40
Armor 9512 B3XF	1335	31	44.9	16	101	23	28	41	7.9	44	6.6	42	50	44	9.243	9	14437	44	164	33
PHY 332 W3FE	1333	32	42.8	37	103	16	35	32	9.5	11	7.2	33	72	27	8.403	23	16084	27	164	34
PX1130A329-04W3FE	1325	33	46.6	3	93	42	28	43	8.7	35	7.8	10	77	12	7.754	36	15412	34	165	32
BX 2297B3XF	1300	34	44.4	25	98	30	31	38	9.2	19	7.5	22	75	18	7.855	35	15636	32	162	36
Armor 9608 B3XF	1293	35	45.6	9	105	8	38	25	8.5	39	7.5	21	69	31	7.935	32	17607	11	187	2
PHY 350 W3FE	1279	36	42.9	35	104	11	35	31	10.4	4	7.9	6	73	23	7.340	42	17906	7	172	25
DG 3644 B3XF	1274	37	43.1	34	105	8	34	34	9.1	23	7.0	35	70	30	8.236	29	14496	43	151	44
DP 1725 B2XF	1270	38	46.0	4	99	29	59	1	8.7	36	7.6	17	76	16	7.474	40	16944	20	182	4
BX 2296B3XF	1257	39	45.7	8	110	1	30	39	8.8	33	7.5	20	77	12	7.574	37	15635	33	167	29
Armor 9831 B3XF	1242	40	44.4	23	96	33	30	39	9.6	9	7.8	8	80	7	7.205	44	17341	14	175	19
NG 4190 B3XF	1226	41	44.3	26	104	13	36	29	9.5	12	7.7	15	78	10	7.337	43	17492	12	178	13
NG 5711 B3XF	1215	42	42.4	38	103	16	27	44	9.2	22	6.8	37	67	34	8.076	30	14883	40	154	41
DG 3469 B3XF	1206	43	43.1	33	92	44	43	14	9.5	13	7.3	27	72	24	7.519	39	15762	30	160	37
DG 3317 B3XF	1203	44	44.2	27	107	4	43	14	9.0	28	7.2	30	72	26	7.546	38	16429	25	173	23
Mean	1364		44.3		100		40		9.2		7.4		72		8.501		16523		172	
Var. LSD _{0.10}	102		0.6		5		6		0.4		0.4		7		0.635		1132		10	
Loc. LSD _{0.10}	28		0.2		1		2		0.1		0.1		ns		0.173		ns		ns	
C.V.%	12.6		1.7		8.4		21.3		4.8		5.8		11.3		12.8		8.3		7.2	
R ² x 100	78.6		93.6		75.4		77.4		85.2		83.1		77.9		78.9		75.7		73.3	
Prob (var x loc)	<0.0001		0.009		0.010		<0.001		0.022		0.081		<0.001		<0.0001		0.876		0.913	

Table 5. Fiber properties–2021 Arkansas Transgenic 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/ac						in.		%		g/tex		%	
ST 5091B3XF	1586	1	61	27	4.0	42	1.19	26	85.1	30	29.6	43	5.9	41
DP 2127 B3XF	1578	2	53	39	4.6	7	1.17	40	85.5	27	31.7	29	6.8	25
DG 3535 B3XF	1531	3	74	10	4.3	26	1.23	8	85.8	22	31.9	25	6.0	39
DP 1646 B2XF	1513	4	82	1	4.3	27	1.26	1	85.8	20	30.1	40	8.4	7
NG 3195 B3XF	1503	5	56	35	4.3	29	1.18	36	85.1	32	32.2	21	6.5	33
DP 1518 B2XF	1474	6	64	21	4.0	41	1.20	22	85.5	26	30.9	35	7.2	23
ST 4550GLTP	1470	7	63	23	4.4	19	1.19	30	85.6	25	35.1	5	8.2	8
DP 2012 B3XF	1467	8	70	15	4.2	36	1.21	15	85.9	16	32.0	24	6.1	37
Armor 9371 B3XF	1459	9	51	41	4.1	39	1.17	40	85.0	36	31.2	33	6.6	30
NG 3299 B3XF	1458	10	70	15	4.5	9	1.21	16	86.5	5	36.9	2	6.8	27
BX 2295B3XF	1452	11	73	11	4.3	24	1.23	7	85.6	23	31.4	32	7.7	14
PX1140A385-04W3FE	1447	12	59	31	4.6	5	1.18	36	86.7	1	38.1	1	9.6	2
DG 3456 B3XF	1441	13	62	24	4.2	37	1.20	25	85.1	30	29.8	42	6.6	31
ST 4993B3XF	1439	14	64	22	4.6	8	1.19	30	86.5	6	36.3	3	7.8	12
BX 2298B3XF	1438	15	47	42	4.5	11	1.15	42	84.8	38	30.8	37	7.2	22
PX1140A383-04W3FE	1430	16	76	3	4.3	21	1.23	5	86.4	8	34.9	6	7.1	24
PHY 390 W3FE	1429	17	67	19	4.2	33	1.21	18	85.8	20	33.8	14	6.5	33
DP 2038 B3XF	1426	18	45	43	4.5	13	1.15	43	83.7	44	31.4	31	6.8	26
PHY 360 W3FE	1416	19	55	36	4.4	18	1.19	33	84.4	41	30.4	38	6.1	36
PHY 443 W3FE	1409	20	62	25	4.5	10	1.18	34	86.1	11	35.8	4	7.6	15
DG 3520 B3XF	1408	21	76	4	3.7	44	1.25	2	86.7	2	34.3	12	8.9	3
ST 4990B3XF	1405	22	72	12	4.3	23	1.23	13	85.8	18	31.7	30	7.4	20
PHY 400 W3FE	1405	23	74	6	4.2	31	1.23	8	86.0	14	34.3	11	6.7	28
NG 4936 B3XF	1390	24	75	5	4.2	32	1.23	12	86.4	7	31.0	34	7.8	11
PHY 411 W3FE	1388	25	43	44	4.5	15	1.14	44	84.1	43	34.5	9	7.5	16
20R734B3XF	1372	26	60	29	4.5	11	1.20	23	85.0	33	29.6	44	5.7	43
DP 2115 B3XF	1363	27	58	32	4.6	5	1.19	28	85.0	35	32.5	20	8.0	9
DG 3555 B3XF	1343	28	70	13	3.7	43	1.24	3	86.3	9	34.0	13	8.7	4
NG 5150 B3XF	1343	29	70	13	4.3	27	1.22	14	86.0	13	31.9	26	6.5	32
DP 2020 B3XF	1339	30	74	7	4.1	40	1.23	8	86.1	12	32.2	22	5.8	42
Armor 9512 B3XF	1335	31	55	37	4.6	4	1.19	29	84.3	42	33.3	16	8.7	5
PHY 332 W3FE	1333	32	77	2	4.1	38	1.23	6	86.5	4	33.6	15	7.8	12
PX1130A329-04W3FE	1325	33	59	30	4.7	1	1.21	21	85.6	24	34.7	7	7.9	10
BX 2297B3XF	1300	34	61	28	4.5	16	1.20	24	85.1	28	30.2	39	7.4	18
Armor 9608 B3XF	1293	35	61	26	4.2	33	1.19	27	84.9	37	29.8	41	6.1	38
PHY 350 W3FE	1279	36	69	17	4.3	29	1.21	18	86.6	3	32.7	18	7.4	18
DG 3644 B3XF	1274	37	74	7	4.7	2	1.24	4	85.8	18	34.6	8	6.6	29
DP 1725 B2XF	1270	38	58	33	4.4	20	1.19	32	85.0	34	30.9	36	5.9	40
BX 2296B3XF	1257	39	65	20	4.7	2	1.21	20	85.9	15	31.8	28	7.4	17
Armor 9831 B3XF	1242	40	56	34	4.4	17	1.17	38	85.1	29	34.5	9	5.7	44
NG 4190 B3XF	1226	41	68	18	4.2	35	1.21	17	86.3	10	32.0	23	6.4	35
NG 5711 B3XF	1215	42	74	7	4.3	24	1.23	8	85.9	16	32.7	19	7.3	21
DG 3469 B3XF	1206	43	55	37	4.5	13	1.18	35	84.7	39	31.8	27	8.6	6
DG 3317 B3XF	1203	44	52	40	4.3	22	1.17	38	84.7	40	33.3	17	9.6	1
Mean	1364		61		4.3		1.20		85.6		32.6		7.2	
Var. LSD _{0.10}	102		8.54		0.2		0.02		0.9		1.0		0.4	
Loc. LSD _{0.10}	28		ns		0.1		0.01		0.3		0.3		0.1	
C.V.%	12.6		16.2		4.3		2.3		13.0		3.6		63.0	
R ² x 100	78.6		72.6		89.6		74.4		67.2		88.3		93.2	
Prob (var x loc)	<0.0001		0.203		<0.0001		0.393		0.332		0.282		0.062	

^a UI = Fiber length uniformity index.

Table 6. Yield and related properties—2021 Arkansas Transgenic Cotton Variety Test, with irrigation on a Routon-Dundee-Crevasse complex soil at Manila.

Variety	Lint yield lb/ac	r	Lint frac. %	r	Ht. cm	r	Open bolls %	r	Seed index g	r	Lint index g	r	Seed- score r	r	Seed/ ac mil.	r	Fibers/ seed no.	r	Fiber density no.	r
DP 2127 B3XF	2185	1	45.6	8	103	10	21	20	9.9	10	8.3	3	87	2	11.930	9	18909	5	187	6
ST4550GLTP	2086	2	46.0	5	96	24	38	2	9.1	32	7.9	13	81	11	11.970	8	17437	20	182	13
DG 3535 B3XF	2014	3	44.2	22	96	26	20	28	10.1	6	8.1	6	84	5	11.250	16	18886	6	184	10
ST5091B3XF	2011	4	43.9	25	104	7	24	16	9.4	25	7.4	25	74	23	12.340	4	18051	12	185	9
Armor 9371 B3XF	2003	5	45.6	9	100	18	26	11	9.5	17	8.1	7	84	7	11.220	17	19315	4	196	3
PX1140A385-04W3FE	1965	6	47.1	2	99	21	23	17	9.4	23	8.5	2	89	1	10.490	29	18407	7	189	4
DP 2115 B3XF	1965	7	45.8	7	92	34	19	31	8.8	37	7.5	24	75	21	11.910	10	15866	36	170	30
NG 3195 B3XF	1963	8	44.1	23	102	13	25	13	9.1	31	7.3	27	73	24	12.180	7	17012	25	177	18
DP 1725 B2XF	1935	9	45.8	6	100	18	30	4	9.2	30	8.0	11	82	10	11.040	19	17512	19	182	15
DG 3456 B3XF	1916	10	43.8	26	105	5	19	31	10.1	6	8.0	9	82	9	10.860	21	20241	2	198	1
BX 2295B3XF	1900	11	44.4	19	95	28	21	20	9.3	27	7.6	21	76	19	11.430	15	17384	21	180	16
NG 3299 B3XF	1879	12	45.2	10	94	30	18	35	9.9	12	8.3	4	87	2	10.280	30	17790	15	176	19
ST4990B3XF	1879	13	41.3	38	88	41	39	1	9.5	19	6.9	36	67	32	12.400	3	14393	44	147	44
PX1140A383-04W3FE	1875	14	43.8	27	103	9	19	31	9.9	11	7.7	17	78	14	11.050	18	16263	30	161	39
DP 2012 B3XF	1869	15	43.3	30	87	42	30	4	8.8	37	6.8	40	65	35	12.550	2	16069	32	172	27
20R734B3XF	1862	16	44.7	14	104	8	21	20	8.8	40	7.2	31	71	28	11.780	11	14899	42	160	40
PHY400 W3FE	1849	17	44.6	17	91	37	20	28	9.5	22	7.7	18	78	14	10.900	20	18064	9	184	11
DG 3520 B3XF	1843	18	41.3	39	96	25	29	6	10.9	2	7.8	14	55	41	10.680	24	19328	3	179	17
PHY411 W3FE	1835	19	46.0	4	95	27	33	3	8.8	36	7.7	16	79	13	10.760	22	17568	17	187	5
PHY443 W3FE	1828	20	44.8	13	91	36	28	8	10.6	4	8.6	1	84	5	9.594	38	18063	10	171	28
DP 1518 B2XF	1782	21	41.0	40	101	17	25	13	8.8	37	6.2	44	58	40	13.030	1	16304	28	174	23
ST4993B3XF	1781	22	44.4	18	97	23	23	17	10.1	8	8.2	5	85	4	9.842	34	17824	13	175	21
DP 1646 B2XF	1780	23	44.9	12	109	2	25	13	8.5	41	7.0	35	65	37	11.540	13	15526	38	170	29
PHY332 W3FE	1775	24	42.7	33	90	38	28	8	9.3	26	7.0	33	69	31	11.450	14	16168	31	166	35
PHY360 W3FE	1770	25	43.4	28	88	40	28	8	8.3	42	6.5	43	52	42	12.290	5	15034	41	166	34
PHY390 W3FE	1766	26	44.0	24	85	43	23	17	9.5	16	7.6	19	77	16	10.540	28	18401	8	187	7
BX 2297B3XF	1761	27	44.3	20	93	31	21	20	9.2	29	7.5	22	76	19	10.620	27	16702	27	173	25
Armor 9512 B3XF	1760	28	44.6	16	104	6	14	41	8.0	44	6.6	42	44	44	12.190	6	14405	43	163	37
DP 2020 B3XF	1755	29	40.7	43	93	32	21	20	9.8	13	6.8	38	66	34	11.720	12	16266	29	163	38
DP 2038 B3XF	1751	30	47.4	1	101	15	18	35	8.1	43	7.4	26	60	39	10.760	23	17536	18	197	2
Armor 9608 B3XF	1712	31	45.0	11	103	12	21	20	8.9	35	7.3	29	72	25	10.670	26	17138	22	182	14
Armor 9831 B3XF	1692	32	43.4	29	92	33	15	39	10.0	9	7.8	15	80	12	9.823	36	17719	16	174	22
BX 2298B3XF	1674	33	44.2	21	97	22	14	41	9.5	20	7.6	20	77	16	9.993	32	17046	24	174	24
PX1130A329-04W3FE	1663	34	46.7	3	84	44	26	11	9.0	34	8.1	8	83	8	9.372	41	16023	33	168	32
DG 3555 B3XF	1656	35	40.9	42	92	35	20	28	11.3	1	8.0	10	44	43	9.436	40	20518	1	186	8
PHY350 W3FE	1625	36	42.1	34	102	13	19	31	10.6	3	7.9	12	77	16	9.320	43	17814	14	169	31
NG 4936 B3XF	1591	37	39.5	44	94	29	14	41	10.2	5	6.8	39	65	35	10.670	25	15326	40	148	43
DG 3317 B3XF	1571	38	42.9	31	103	11	29	6	9.4	24	7.2	32	71	28	9.958	33	17137	23	176	20
DG 3644 B3XF	1564	39	42.0	35	106	3	21	20	9.6	15	7.2	30	72	27	9.837	35	15363	39	155	42
BX 2296B3XF	1549	40	44.7	15	101	16	18	35	9.1	33	7.5	23	75	21	9.368	42	16015	34	168	33
NG 5150 B3XF	1534	41	42.0	36	105	4	15	39	9.3	27	6.8	37	66	33	10.180	31	15883	35	164	36
NG 4190 B3XF	1512	42	41.8	37	109	1	16	38	9.6	14	7.0	34	69	30	9.775	37	18055	11	182	12
DG 3469 B3XF	1478	43	42.8	32	90	39	21	20	9.5	17	7.3	28	72	25	9.207	44	16963	26	172	26
NG 5711 B3XF	1402	44	41.0	41	100	18	10	44	9.5	21	6.6	41	63	38	9.580	39	15577	37	159	41
Mean	1786		43.8		94		22		9.4		7.5		72		10.859		17095		175	
LSD _{0.10}	159		1.1		8		8		0.6		0.4		11		0.969		1312		13	
C.V.%	7.6		1.5		6.9		32.5		3.5		3.6		9.4		7.6		4.6		4.4	
R ² x 100	69.0		94.1		58.9		58.4		90.0		90.4		83.4		68.8		87.6		82.6	

Table 7. Fiber properties–2021 Arkansas Transgenic Cotton Variety Test, with irrigation on a Routon-Dundee-Crevasse complex soil at Manila.

Variety	Lint yield lb/ac	Quality			Fiber properties								
		r	score	r	Micronaire	r	Length in.	r	UI ^a %	r	Strength g/tex	r	Elongation %
DP 2127 B3XF	2185	1	54	35	4.4	14	1.18	35	84.9	32	31.2	25	7.4
ST 4550GLTP	2086	2	49	41	4.6	4	1.17	41	84.7	35	33.6	11	8.9
DG 3535 B3XF	2014	3	68	20	4.2	28	1.23	15	84.9	32	31.7	21	7.0
ST 5091B3XF	2011	4	68	21	4.0	38	1.21	20	85.7	19	29.8	37	7.2
Armor 9371 B3XF	2003	5	54	34	4.2	27	1.17	38	85.5	23	31.1	27	7.0
PX1140A385-04W3FE	1965	6	60	28	4.5	8	1.19	32	86.8	5	36.8	1	10.2
DP 2115 B3XF	1965	7	63	26	4.6	4	1.19	28	85.9	16	30.8	30	9.0
NG 3195 B3XF	1963	8	52	37	4.4	18	1.17	38	84.6	37	31.1	26	7.7
DP 1725 B2XF	1935	9	58	32	4.5	8	1.19	28	84.5	39	29.8	38	6.7
DG 3456 B3XF	1916	10	65	24	3.9	40	1.21	21	85.1	30	29.0	44	7.4
BX 2295B3XF	1900	11	75	9	4.1	30	1.25	7	85.1	29	30.1	36	8.8
NG 3299 B3XF	1879	12	71	15	4.5	10	1.21	24	87.0	3	36.6	2	7.3
ST 4990B3XF	1879	13	78	5	4.5	12	1.25	7	86.3	13	31.5	24	8.7
PX1140A383-04W3FE	1875	14	88	1	4.3	23	1.27	2	87.0	3	34.6	8	8.1
DP 2012 B3XF	1869	15	52	36	4.3	24	1.17	36	84.3	41	32.0	17	6.5
20R734B3XF	1862	16	64	25	4.7	2	1.21	21	85.6	20	30.8	31	6.5
PHY 400 W3FE	1849	17	81	3	4.0	38	1.25	4	86.5	10	34.9	5	7.4
DG 3520 B3XF	1843	18	78	5	3.8	42	1.25	4	86.5	8	34.0	10	9.9
PHY 411 W3FE	1835	19	40	44	4.7	2	1.13	44	84.6	38	33.5	12	8.9
PHY 443 W3FE	1828	20	66	23	4.6	4	1.20	26	86.8	5	34.7	7	8.4
DP 1518 B2XF	1782	21	60	28	3.7	43	1.21	21	85.1	30	30.6	32	8.2
ST 4993B3XF	1781	22	71	15	4.4	14	1.21	24	87.0	2	35.9	3	8.9
DP 1646 B2XF	1780	23	75	8	4.3	24	1.25	7	85.4	25	29.5	42	9.9
PHY 332 W3FE	1775	24	75	9	4.1	30	1.23	12	86.5	8	32.8	14	8.6
PHY 360 W3FE	1770	25	52	37	4.4	14	1.17	36	84.1	43	29.6	41	6.4
PHY 390 W3FE	1766	26	66	22	4.0	35	1.22	17	84.7	36	33.0	13	7.2
BX 2297B3XF	1761	27	59	31	4.5	12	1.19	31	85.2	28	29.1	43	8.9
Armor 9512 B3XF	1760	28	71	15	4.4	18	1.23	10	84.8	34	31.7	22	10.1
DP 2020 B3XF	1755	29	73	11	4.0	37	1.23	15	86.5	10	31.7	20	6.9
DP 2038 B3XF	1751	30	46	43	4.4	18	1.15	42	84.0	44	31.1	27	7.6
Armor 9608 B3XF	1712	31	71	15	4.1	33	1.22	17	86.1	15	30.2	34	7.2
Armor 9831 B3XF	1692	32	60	30	4.4	18	1.19	32	85.7	18	31.8	19	7.0
BX 2298B3XF	1674	33	47	42	4.6	7	1.15	43	85.4	24	29.7	40	8.5
PX1130A329-04W3FE	1663	34	52	37	4.9	1	1.19	28	85.9	16	34.1	9	8.3
DG 3555 B3XF	1656	35	70	19	3.6	44	1.26	3	86.3	13	34.8	6	10.0
PHY 350 W3FE	1625	36	77	7	4.2	28	1.23	12	87.3	1	32.4	15	8.6
NG 4936 B3XF	1591	37	88	1	4.0	35	1.28	1	86.6	7	30.6	33	8.4
DG 3317 B3XF	1571	38	55	33	4.2	26	1.19	32	84.1	42	32.2	16	10.3
DG 3644 B3XF	1564	39	79	4	4.4	14	1.25	4	85.6	21	34.9	4	7.1
BX 2296B3XF	1549	40	72	13	4.5	10	1.22	17	86.4	12	31.9	18	8.1
NG 5150 B3XF	1534	41	72	13	4.1	30	1.23	12	85.6	21	30.9	29	7.1
NG 4190 B3XF	1512	42	61	27	3.8	41	1.20	26	85.4	25	29.8	39	6.8
DG 3469 B3XF	1478	43	51	40	4.4	18	1.17	38	84.5	40	30.2	35	9.6
NG 5711 B3XF	1402	44	72	12	4.1	33	1.23	10	85.4	25	31.7	22	7.6
Mean	1786		65		4.3		1.21		85.6		32.0		8.1
LSD _{0.10}	159		14		0.3		0.05		1.7		1.5		0.8
C.V.%	7.6		13.1		4.2		2.3		1.2		2.9		5.8
R ² x 100	69.0		79.2		84.3		76.2		62.5		91.1		92.0

^a UI = Fiber length uniformity index.

Table 8. Yield and related properties—2021 Arkansas Transgenic Cotton Variety Test, with irrigation on a Sharkey clay soil at Keiser.

Table 8: Yield and related properties - 2021 Arkansas Transgenic Cotton Variety Test, with irrigation on a Sharkey clay soil at Kershaw																				
Variety	Lint yield lb/ac	r	Lint frac. %	r	Ht. cm	r	Open bolls %	r	Seed index g	r	Lint index g	r	Seed- score	r	Seed/ ac mil.	r	Fibers/ seed no.	r	Fiber density no.	r
DP 1646 B2XF	1491	1	46.1	16	126	7	38	24	8.1	43	7.0	35	68	32	9.735	3	13342	41	150	38
DP 2012 B3XF	1456	2	43.1	40	114	31	58	2	8.5	33	6.5	42	63	39	10.130	1	14395	33	157	31
NG 5150 B3XF	1433	3	44.6	32	122	13	35	31	8.1	41	6.6	40	64	37	9.838	2	13222	42	148	41
DP 1518 B2XF	1428	4	43.9	37	117	23	49	8	8.9	17	7.0	34	69	30	9.295	4	15360	22	163	23
BX 2295B3XF	1421	5	46.2	13	106	43	45	12	8.7	22	7.7	15	78	14	8.415	13	15386	21	165	20
ST 5091B3XF	1413	6	44.3	33	125	8	43	14	9.3	11	7.5	21	76	17	8.545	11	17007	6	175	6
PHY 400 W3FE	1413	7	44.9	27	105	44	44	13	9.4	8	7.7	16	71	26	8.367	14	15761	16	161	25
Armor 9371 B3XF	1407	8	46.6	10	131	2	40	18	8.2	38	7.2	30	71	26	8.875	8	14965	26	167	16
BX 2298B3XF	1400	9	45.2	23	128	4	30	41	8.5	32	7.2	31	72	23	8.824	9	15267	23	166	17
NG 3195 B3XF	1396	10	44.6	30	113	32	58	2	8.4	34	6.9	37	67	34	9.230	5	14693	30	161	24
DG 3520 B3XF	1388	11	42.5	42	118	22	28	42	10.1	1	7.5	19	66	35	8.357	16	17119	5	168	15
ST 4993B3XF	1387	12	46.7	8	115	30	38	24	8.7	25	7.7	14	79	12	8.147	23	14856	27	160	26
PHY 390 W3FE	1382	13	44.9	26	115	29	34	33	8.9	16	7.4	26	74	20	8.524	12	15635	17	165	18
NG 3299 B3XF	1382	14	45.3	19	116	25	36	26	9.4	10	7.9	8	82	7	7.934	27	15416	20	158	29
BX 2297B3XF	1375	15	45.2	22	115	27	36	26	9.1	12	7.5	20	74	20	8.269	19	14537	32	152	37
PX1130A329-04W3FE	1374	16	47.1	4	117	24	24	44	8.1	42	7.5	23	62	41	8.359	15	13793	38	153	35
PX1140A383-04W3FE	1363	17	45.6	18	109	41	34	33	9.0	15	7.7	17	78	14	8.075	24	15176	24	160	27
DG 3535 B3XF	1351	18	44.8	28	118	20	35	31	9.6	5	8.0	7	83	5	7.709	28	16861	7	170	12
PX1140A385-04W3FE	1345	19	48.2	2	112	35	26	43	8.9	20	8.4	4	89	2	7.236	34	16217	13	172	9
DG 3555 B3XF	1341	20	42.9	41	113	34	36	26	9.8	3	7.4	24	71	25	8.191	21	17217	4	172	10
PHY 411 W3FE	1332	21	46.9	5	111	38	41	16	8.3	37	7.6	18	77	16	8.012	26	15610	18	172	8
PHY 360 W3FE	1329	22	44.6	29	110	40	50	7	8.5	31	7.0	33	70	29	8.546	10	14279	34	155	34
DP 2038 B3XF	1313	23	49.0	1	133	1	40	18	8.9	18	9.0	1	90	1	6.666	40	19641	1	207	1
PHY 332 W3FE	1313	24	44.0	36	122	13	31	38	9.0	14	7.2	28	72	23	8.236	20	14843	28	156	32
DP 2127 B3XF	1312	25	46.2	15	122	12	46	10	9.9	2	8.6	2	87	4	6.898	38	17468	3	173	7
PHY 443 W3FE	1298	26	46.2	12	121	15	41	16	9.8	4	8.5	3	88	3	6.914	36	17647	2	176	4
DG 3469 B3XF	1297	27	44.0	34	113	32	55	5	8.6	30	7.1	32	70	28	8.329	18	13798	37	150	39
ST 4990B3XF	1291	28	42.0	44	115	28	56	4	8.9	18	6.5	41	63	39	8.960	7	13534	40	143	42
DP 2020 B3XF	1282	29	43.6	38	116	26	48	9	8.2	39	6.4	43	61	42	9.105	6	14158	35	158	30
NG 4936 B3XF	1275	30	42.0	43	120	18	43	14	9.5	7	6.9	36	68	32	8.341	17	15594	19	159	28
ST 4550GLTP	1275	31	46.8	7	124	11	40	18	8.7	23	7.8	11	81	10	7.407	31	16847	8	181	2
Armor 9831 B3XF	1242	32	45.3	21	121	16	36	26	8.8	21	7.7	13	79	12	7.312	33	15839	15	169	13
DP 2115 B3XF	1242	33	46.5	11	110	39	46	10	8.2	40	7.4	25	75	19	7.626	29	14798	29	165	19
PHY 350 W3FE	1241	34	44.6	31	127	5	34	33	9.6	6	7.9	9	82	7	7.130	35	16157	14	163	22
NG 5711 B3XF	1186	35	44.0	35	126	6	34	33	8.4	35	6.7	39	64	37	8.042	25	13539	39	148	40
BX 2296B3XF	1186	36	46.8	6	128	3	31	38	8.6	29	7.8	12	80	11	6.912	37	15047	25	163	21
20R734B3XF	1176	37	46.0	17	111	37	55	5	8.3	36	7.3	27	73	22	7.364	32	13888	36	153	36
Armor 9608 B3XF	1160	38	46.6	9	118	20	40	18	8.6	27	7.9	10	47	43	6.769	39	16415	11	175	5
NG 4190 B3XF	1151	39	46.2	14	120	17	40	18	9.4	9	8.2	5	81	9	6.404	42	16554	9	169	14
Armor 9512 B3XF	1116	40	45.3	20	108	42	34	33	7.3	44	6.2	44	38	44	8.152	22	11760	44	140	43
DG 3644 B3XF	1116	41	43.3	39	125	8	31	38	8.7	23	6.7	38	65	36	7.560	30	12715	43	136	44
DP 1725 B2XF	1095	42	47.4	3	112	35	64	1	8.6	28	8.0	6	83	5	6.213	44	16479	10	179	3
DG 3456 B3XF	1080	43	45.0	25	125	10	36	26	9.0	13	7.5	22	76	17	6.538	41	16276	12	171	11
DG 3317 B3XF	1009	44	45.1	24	119	19	39	23	8.7	25	7.2	29	69	30	6.339	43	14542	31	156	33
Mean	1301		45.5		118		40		8.8		7.4		73		8.026		15248		162	
LSD _{0.10}	193		1.5		11		12		1.0		1.0		17		1.190		2585		19	
C.V.%	12.6		1.9		7.9		24.8		6.9		8.2		13.7		12.7		10.0		7.0	
R ² x 100	50.8		86.4		44.6		56.1		67.7		67.9		69.3		60.8		66.0		69.8	

Table 9. Fiber properties—2021 Arkansas Transgenic 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/ac						in.		%		g/tex		%	
DP 1646 B2XF	1491	1	71	14	4.2	32	1.22	5	83.6	41	30.2	37	8.0	8
DP 2012 B3XF	1456	2	77	6	4.1	33	1.21	9	85.7	9	32.0	22	5.9	40
NG 5150 B3XF	1433	3	60	30	4.0	39	1.17	31	84.5	32	31.0	33	6.5	32
DP 1518 B2XF	1428	4	68	16	4.2	30	1.19	21	85.4	13	31.1	32	6.9	25
BX 2295B3XF	1421	5	78	3	4.3	22	1.23	3	85.4	13	31.5	27	7.4	17
ST 5091B3XF	1413	6	62	27	4.0	41	1.17	29	84.9	27	28.9	42	5.4	43
PHY 400 W3FE	1413	7	78	5	4.1	33	1.23	3	85.2	19	32.4	18	6.3	34
Armor 9371 B3XF	1407	8	44	44	3.9	42	1.13	43	84.3	35	31.3	30	7.0	24
BX 2298B3XF	1400	9	60	30	4.4	19	1.17	33	85.1	22	29.8	39	7.2	22
NG 3195 B3XF	1396	10	57	35	4.3	22	1.15	38	85.8	8	32.1	21	6.3	35
DG 3520 B3XF	1388	11	74	9	3.6	44	1.24	2	86.2	2	33.9	9	8.2	7
ST 4993B3XF	1387	12	64	25	4.6	3	1.18	24	85.0	23	36.0	3	7.7	11
PHY 390 W3FE	1382	13	75	8	4.3	25	1.21	13	86.1	4	32.4	17	6.6	29
NG 3299 B3XF	1382	14	78	3	4.6	3	1.22	5	85.7	10	37.5	2	6.9	26
BX 2297B3XF	1375	15	58	32	4.5	15	1.18	24	84.1	37	29.3	41	7.4	17
PX1130A329-04W3FE	1374	16	65	24	4.0	39	1.19	16	83.8	39	33.7	11	7.7	11
PX1140A383-04W3FE	1363	17	67	20	4.5	7	1.19	21	85.2	18	35.3	4	7.1	23
DG 3535 B3XF	1351	18	72	12	4.4	17	1.21	11	84.6	30	30.9	34	6.2	37
PX1140A385-04W3FE	1345	19	67	20	4.5	7	1.17	31	86.9	1	39.2	1	9.5	1
DG 3555 B3XF	1341	20	62	28	3.6	43	1.19	16	85.8	6	32.0	24	8.4	5
PHY 411 W3FE	1332	21	56	36	4.5	7	1.15	37	84.7	29	34.2	7	7.4	17
PHY 360 W3FE	1329	22	64	26	4.5	13	1.19	23	84.2	36	29.7	40	6.2	36
DP 2038 B3XF	1313	23	50	39	4.5	13	1.13	44	84.6	31	31.4	28	6.8	28
PHY 332 W3FE	1313	24	77	6	4.1	33	1.22	5	85.3	15	33.8	10	7.5	15
DP 2127 B3XF	1312	25	50	40	4.6	3	1.14	41	85.1	20	31.5	26	6.8	27
PHY 443 W3FE	1298	26	58	34	4.6	6	1.16	34	84.5	32	35.0	6	7.3	21
DG 3469 B3XF	1297	27	49	41	4.4	17	1.15	38	83.3	43	31.4	28	8.9	3
ST 4990B3XF	1291	28	79	2	4.1	33	1.22	5	86.2	3	32.4	18	7.6	13
DP 2020 B3XF	1282	29	73	10	4.3	26	1.21	11	85.1	20	31.8	25	5.9	41
NG 4936 B3XF	1275	30	73	11	4.4	19	1.20	14	85.9	5	30.8	35	7.5	16
ST 4550GLTP	1275	31	66	22	4.5	15	1.18	24	85.3	15	35.3	5	8.3	6
Armor 9831 B3XF	1242	32	55	37	4.2	28	1.16	34	83.9	38	32.9	14	5.3	44
DP 2115 B3XF	1242	33	54	38	4.7	2	1.17	29	83.2	44	32.3	20	7.9	10
PHY 350 W3FE	1241	34	72	12	4.1	33	1.20	14	85.6	11	32.0	22	7.6	14
NG 5711 B3XF	1186	35	69	15	4.3	22	1.19	16	85.0	23	32.6	16	7.9	9
BX 2296B3XF	1186	36	68	19	4.7	1	1.21	9	84.5	34	31.3	30	7.4	17
20R734B3XF	1176	37	61	29	4.4	19	1.18	24	85.3	15	28.0	44	5.8	42
Armor 9608 B3XF	1160	38	48	42	4.1	38	1.14	40	83.4	42	28.4	43	6.0	38
NG 4190 B3XF	1151	39	68	16	4.2	28	1.19	16	85.0	25	32.6	15	6.5	30
Armor 9512 B3XF	1116	40	48	43	4.5	7	1.14	41	83.6	40	33.6	12	8.8	4
DG 3644 B3XF	1116	41	87	1	4.5	7	1.25	1	85.8	6	34.0	8	6.5	33
DP 1725 B2XF	1095	42	66	23	4.5	7	1.18	24	85.6	12	30.3	36	6.0	39
DG 3456 B3XF	1080	43	68	16	4.2	30	1.19	16	84.9	27	30.0	38	6.5	30
DG 3317 B3XF	1009	44	58	32	4.3	26	1.16	34	84.9	26	33.3	13	9.5	1
Mean	1301		61		4.3		1.19		84.9		32.2		7.1	
LSD _{0.10}	193		ns		0.3		0.05		ns		2.4		0.6	
C.V.%	12.6		18.5		4.1		2.5		3.8		4.4		4.9	
R ² x 100	50.8		58.5		82.2		67.8		58.9		83.7		94.3	

^a UI = Fiber length uniformity index.

Table 10. Yield and related properties–2021 Arkansas Transgenic Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.

at Judd Hm.																				
Variety	Lint yield lb/ac	r	Lint frac. %	r	Ht. cm	r	Open bolls %	r	Seed index g	r	Lint index g	r	Seed- score r	Seed/ ac mil.	r	Fibers/ seed no.	r	Fiber density no.	r	
DG 3535 B3XF	1408	1	43.9	12	85	38	49	23	9.8	10	7.7	5	86	2	8.261	17	17542	14	175	24
DP 1646 B2XF	1399	2	43.3	20	98	5	58	14	8.7	29	6.9	26	74	19	9.274	5	15827	30	170	28
DG 3456 B3XF	1379	3	42.3	27	88	27	60	12	10.0	5	7.4	10	82	8	8.462	15	17384	17	171	27
PHY360 W3FE	1379	4	42.3	28	97	8	43	32	7.8	42	5.8	44	48	41	10.820	1	13356	44	154	39
DP 2127 B3XF	1356	5	44.1	9	97	8	48	26	9.6	11	7.6	6	84	4	8.048	19	17571	12	178	19
DP 2038 B3XF	1356	6	46.5	1	93	19	53	19	8.0	41	7.0	19	70	26	8.756	12	17136	20	194	3
DP 1518 B2XF	1349	7	39.8	41	96	10	58	14	9.2	19	6.3	38	66	33	9.790	2	15513	34	161	36
20R734B3XF	1347	8	43.3	22	98	4	45	31	8.4	37	6.5	33	67	30	9.388	4	17490	15	192	4
DG 3644 B3XF	1334	9	42.2	29	98	5	39	34	9.3	15	6.8	27	74	20	8.866	9	14825	40	153	41
Armor 9512 B3XF	1329	10	44.1	8	94	18	26	43	7.7	43	6.3	37	51	40	9.601	3	15370	36	178	18
BX 2298B3XF	1295	11	42.1	30	92	23	40	33	9.3	14	6.9	25	75	17	8.527	14	18391	8	190	6
NG 5150 B3XF	1284	12	43.3	21	87	31	35	36	9.3	13	7.2	13	79	10	8.106	18	16008	29	165	34
ST 5091B3XF	1269	13	42.4	26	95	14	66	7	8.9	25	6.7	31	72	23	8.566	13	17170	19	182	15
NG 3195 B3XF	1264	14	42.0	31	88	29	71	6	9.1	21	6.9	24	75	17	8.319	16	17567	13	183	13
NG 3299 B3XF	1262	15	41.9	32	87	32	58	14	8.7	31	6.5	34	69	27	8.867	8	14281	43	153	40
PX1140A385-04W3FE	1255	16	46.4	2	91	25	35	36	8.7	33	7.6	7	84	4	7.518	26	18396	7	198	2
DG 3555 B3XF	1241	17	39.9	40	82	39	48	26	11.0	1	7.4	11	43	43	7.628	22	18701	3	173	26
ST4550GLTP	1236	18	44.0	10	88	29	76	4	8.9	24	7.1	14	78	11	7.854	21	18077	10	191	5
NG 4936 B3XF	1234	19	40.7	39	81	40	65	8	9.1	21	6.3	36	67	30	8.860	10	14380	41	150	43
PHY411 W3FE	1220	20	44.5	7	94	17	59	13	7.5	44	6.1	43	36	44	9.149	6	15466	35	183	14
PX1130A329-04W3FE	1216	21	45.5	3	87	34	28	41	8.7	34	7.4	12	81	9	7.490	28	15743	32	169	29
DP 2012 B3XF	1213	22	41.0	37	80	44	63	9	8.8	26	6.2	39	65	34	8.912	7	15746	31	168	32
PHY350 W3FE	1201	23	41.0	38	95	16	49	23	10.6	4	7.5	8	61	38	7.253	30	18692	4	177	22
ST4993B3XF	1195	24	43.7	15	93	20	61	10	9.9	8	7.9	2	89	1	6.869	34	19003	1	188	9
PX1140A383-04W3FE	1185	25	41.7	33	96	11	49	23	8.3	39	6.1	42	64	37	8.804	11	16807	23	185	10
PHY390 W3FE	1180	26	43.5	17	95	14	39	34	9.1	21	7.1	18	77	14	7.572	24	16863	22	176	23
BX 2295B3XF	1147	27	43.5	16	80	43	61	10	8.8	27	6.9	23	75	16	7.507	27	16614	25	177	21
DG 3520 B3XF	1138	28	38.5	44	95	13	28	41	10.9	2	7.0	22	45	42	7.431	29	18068	11	168	31
NG 5711 B3XF	1128	29	41.4	34	88	28	34	38	9.6	12	6.8	28	73	21	7.528	25	15104	39	153	42
BX 2296B3XF	1126	30	44.9	5	108	1	29	40	8.7	32	7.1	15	78	11	7.185	31	15589	33	168	33
DP 2020 B3XF	1091	31	39.8	43	81	42	54	18	9.2	17	6.2	40	65	34	8.017	20	14360	42	149	44
NG 4190 B3XF	1087	32	43.5	18	92	22	48	26	9.1	20	7.1	16	78	11	6.960	32	17412	16	181	16
PHY443 W3FE	1086	33	43.1	24	93	21	50	21	10.7	3	8.2	1	67	29	6.040	41	18497	6	174	25
DG 3469 B3XF	1056	34	41.1	36	81	40	46	29	9.9	6	7.0	20	71	24	6.828	36	16057	28	159	37
PHY400 W3FE	1049	35	44.6	6	87	33	56	17	9.2	17	7.5	9	83	7	6.339	37	18268	9	190	7
Armor 9608 B3XF	1036	36	43.8	13	100	3	50	21	8.5	35	7.8	3	84	4	6.160	40	18871	2	205	1
ST4990B3XF	1035	37	39.8	42	86	37	75	5	9.2	16	6.2	41	64	36	7.621	23	15145	38	157	38
Armor 9371 B3XF	1013	38	43.0	25	97	7	79	2	8.7	30	6.7	30	68	28	6.831	35	16699	24	178	20
DG 3317 B3XF	1007	39	43.4	19	102	2	53	19	8.5	36	6.6	32	71	25	6.952	33	17245	18	188	8
PHY332 W3FE	988	40	41.3	35	96	11	46	29	9.9	7	7.1	17	76	15	6.333	38	17118	21	169	30
BX 2297B3XF	922	41	43.2	23	90	26	31	39	8.8	28	6.7	29	73	22	6.208	39	15365	37	164	35
DP 2115 B3XF	922	42	45.2	4	86	35	78	3	8.4	38	7.0	21	66	32	5.998	42	16232	27	178	17
Armor 9831 B3XF	871	43	43.8	14	92	24	26	43	9.8	9	7.8	4	85	3	5.082	44	18579	5	185	11
DP 1725 B2XF	788	44	43.9	11	86	36	81	1	8.1	40	6.4	35	61	39	5.591	43	16368	26	185	12
Mean	1179		72.8		90		51		9.1		6.9		70		7.776		16702		175	
LSD _{0.10}	259		1.3		12		15		0.8		0.8		17		1.694		2593		24	
C.V.%	18.7		1.8		10.8		24.7		5.1		6.8		14.5		18.6		9.2		8.0	
R ² x 100	49.1		91.2		49.7		68.4		86.1		74.2		73.1		56.4		65.5		68.8	

Table 11. Fiber properties–2021 Arkansas Transgenic Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.

Variety	Lint	Quality			Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/ac						in.		%		g/tex		%	
DG 3535 B3XF	1408	1	85	2	4.0	20	1.26	4	87.4	2	33.2	19	5.6	39
DP 1646 B2XF	1399	2	87	1	4.1	19	1.28	1	86.9	10	29.7	43	8.5	4
DG 3456 B3XF	1379	3	66	22	3.9	30	1.21	20	85.3	32	30.6	41	6.4	29
PHY 360 W3FE	1379	4	54	35	4.0	27	1.19	33	85.0	33	30.6	38	5.9	36
DP 2127 B3XF	1356	5	57	33	4.4	5	1.17	38	86.1	23	31.4	33	6.5	27
DP 2038 B3XF	1356	6	47	39	4.2	9	1.17	40	83.2	43	31.2	35	6.9	18
DP 1518 B2XF	1349	7	64	26	3.8	36	1.22	17	85.4	26	31.4	32	7.0	16
20R734B3XF	1347	8	52	37	4.0	28	1.19	33	83.6	42	28.5	44	5.4	41
DG 3644 B3XF	1334	9	69	16	4.7	2	1.23	10	86.4	18	34.1	15	6.9	17
Armor 9512 B3XF	1329	10	53	36	4.4	5	1.19	30	84.4	37	35.0	10	7.9	6
BX 2298B3XF	1295	11	50	38	4.1	18	1.18	37	83.9	39	31.5	29	6.5	26
NG 5150 B3XF	1284	12	81	5	4.2	9	1.25	7	87.5	1	33.5	17	6.9	18
ST 5091B3XF	1269	13	61	30	3.7	41	1.21	20	85.3	30	30.0	42	5.6	39
NG 3195 B3XF	1264	14	47	39	3.9	30	1.19	33	83.7	41	31.5	30	6.2	32
NG 3299 B3XF	1262	15	75	7	4.0	20	1.23	10	87.0	9	37.4	2	6.1	33
PX1140A385-04W3FE	1255	16	65	24	4.2	12	1.19	33	87.2	7	37.6	1	9.3	1
DG 3555 B3XF	1241	17	74	8	3.5	43	1.27	3	86.6	14	35.1	9	8.5	5
ST 4550GLTP	1236	18	72	14	4.1	16	1.23	10	86.2	22	35.2	8	7.5	11
NG 4936 B3XF	1234	19	79	6	4.2	12	1.24	8	87.3	4	31.6	28	7.3	12
PHY 411 W3FE	1220	20	35	44	3.8	36	1.13	44	82.7	44	33.5	17	6.7	25
PX1130A329-04W3FE	1216	21	67	19	4.7	1	1.23	10	86.4	17	35.3	7	7.9	6
DP 2012 B3XF	1213	22	82	4	3.9	30	1.26	4	86.6	15	32.1	24	6.0	35
PHY 350 W3FE	1201	23	70	15	4.0	20	1.21	20	86.7	12	33.0	20	6.9	18
ST 4993B3XF	1195	24	67	19	4.2	12	1.20	28	86.7	13	36.4	4	7.1	14
PX1140A383-04W3FE	1185	25	69	16	3.8	36	1.22	17	86.4	18	34.6	12	6.5	27
PHY 390 W3FE	1180	26	72	13	3.7	39	1.23	10	87.3	4	35.8	6	6.3	30
BX 2295B3XF	1147	27	67	18	4.0	20	1.23	10	84.9	35	32.4	23	7.2	13
DG 3520 B3XF	1138	28	73	11	3.3	44	1.28	1	87.0	8	35.0	11	8.8	2
NG 5711 B3XF	1128	29	73	11	4.2	9	1.23	9	86.3	21	32.5	22	6.8	23
BX 2296B3XF	1126	30	62	29	4.5	3	1.19	30	86.5	16	31.2	36	6.9	18
DP 2020 B3XF	1091	31	83	3	3.8	33	1.26	4	87.2	6	32.0	25	5.0	44
NG 4190 B3XF	1087	32	73	9	4.0	20	1.22	17	87.4	2	32.0	26	6.3	30
PHY 443 W3FE	1086	33	58	32	4.3	7	1.17	40	86.4	18	36.7	3	7.6	9
DG 3469 B3XF	1056	34	66	22	4.1	16	1.21	20	85.4	28	31.8	27	7.6	8
PHY 400 W3FE	1049	35	65	24	4.3	7	1.21	26	85.9	24	34.5	13	6.8	22
Armor 9608 B3XF	1036	36	64	27	4.0	28	1.21	24	85.3	30	30.6	38	5.2	43
ST 4990B3XF	1035	37	63	28	4.0	20	1.21	26	85.4	28	31.4	31	6.0	34
Armor 9371 B3XF	1013	38	45	42	3.6	42	1.17	38	84.1	38	30.6	40	5.7	37
DG 3317 B3XF	1007	39	42	43	3.8	33	1.17	40	83.8	40	33.0	21	8.7	3
PHY 332 W3FE	988	40	73	9	3.8	33	1.23	10	86.9	11	34.3	14	7.1	14
BX 2297B3XF	922	41	59	31	4.0	20	1.19	30	85.4	26	31.3	34	6.8	23
DP 2115 B3XF	922	42	66	21	4.2	12	1.21	24	85.8	25	33.6	16	7.5	10
Armor 9831 B3XF	871	43	47	39	4.5	3	1.15	43	84.9	35	35.8	5	5.3	42
DP 1725 B2XF	788	44	56	34	3.7	39	1.19	29	85.0	34	31.0	37	5.6	38
Mean	1179		64		4.0		1.21		85.8		32.9		6.8	
LSD _{0.10}	259		17		0.4		0.05		1.6		1.8		0.9	
C.V.%	18.7		16.2		5.9		2.3		1.1		3.3		7.8	
R ² x 100	49.1		73.3		75.4		72.5		78.0		89.0		88.7	

^a UI = Fiber length uniformity index.

Table 12. Yield and related properties–2021 Arkansas Transgenic Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna.

Variety	Lint yield	r	Lint frac.	r	Ht.	r	Open bolls	r	Seed index	r	Lint index	r	Seed- score	r	Seed/ ac	r	Fibers/ seed	r	Fiber density	r
	lb/ac		%		cm		%		g		g				mil.		no.		no.	
ST 5091B3XF	1651	1	45.0	28	98	18	50	16	9.2	28	7.6	30	71	27	9.862	1	17435	18	181	13
NG 4936 B3XF	1459	2	42.0	42	100	12	54	10	9.5	21	7.0	42	63	40	9.494	2	15319	39	156	44
DP 2127 B3XF	1459	3	45.9	19	104	3	48	20	10.1	5	8.8	3	88	2	7.537	14	19191	2	187	6
PHY 443 W3FE	1422	4	45.8	20	105	2	33	42	10.6	4	9.0	1	86	3	7.184	24	18472	8	175	25
ST 4990B3XF	1416	5	41.1	44	93	29	64	1	9.6	16	6.8	43	60	41	9.477	3	15948	33	161	37
Armor 9371 B3XF	1413	6	47.0	7	105	1	54	10	9.5	20	8.5	6	83	6	7.581	13	17328	20	176	21
ST 4993B3XF	1393	7	47.2	4	92	33	46	21	9.6	17	8.5	4	84	4	7.401	20	19389	1	196	2
DG 3456 B3XF	1389	8	46.4	13	102	8	46	21	9.8	11	8.5	5	84	4	7.380	21	18878	6	189	5
PHY 390 W3FE	1388	9	46.7	9	86	40	55	6	9.5	19	8.4	9	83	7	7.478	17	18374	10	186	7
NG 3195 B3XF	1387	10	45.5	23	93	28	55	6	9.7	14	8.2	14	80	12	7.680	11	18892	5	190	3
BX 2298B3XF	1383	11	46.0	16	100	14	41	28	9.1	31	7.7	28	73	25	8.115	7	16886	23	177	20
DP 1646 B2XF	1381	12	44.9	29	99	17	44	24	8.6	40	7.1	40	65	38	8.804	5	14993	44	162	35
DG 3535 B3XF	1351	13	45.7	21	102	9	39	34	9.6	15	8.2	16	79	14	7.517	15	17777	14	179	16
BX 2295B3XF	1342	14	46.1	15	87	38	56	4	8.8	37	7.6	32	71	29	8.047	8	16496	27	176	23
DP 1518 B2XF	1338	15	43.2	39	98	20	51	12	9.3	25	7.1	39	65	37	8.519	6	15748	36	162	34
DP 2012 B3XF	1329	16	44.1	35	95	25	56	4	8.3	43	6.6	44	54	43	9.141	4	15271	42	169	30
DP 2115 B3XF	1324	17	46.5	12	86	40	55	6	8.7	39	7.7	29	72	26	7.830	10	16962	22	182	11
PHY 400 W3FE	1309	18	45.9	18	91	35	51	12	9.1	30	7.9	25	75	21	7.517	16	16827	24	176	22
NG 3299 B3XF	1309	19	46.7	8	94	27	59	3	9.3	27	8.2	12	80	11	7.218	23	18389	9	190	4
PX1140A383-04W3FE	1299	20	45.1	26	101	10	38	38	10.1	6	8.3	11	81	10	7.089	27	18811	7	185	9
ST 4550GLTP	1283	21	46.6	11	104	5	51	12	9.0	33	8.0	21	77	17	7.293	22	16108	31	169	29
DP 2038 B3XF	1283	22	49.1	1	100	12	44	24	8.0	44	7.9	26	58	42	7.406	19	17658	16	200	1
DG 3520 B3XF	1264	23	41.3	43	98	19	41	28	11.3	1	8.1	18	39	44	7.104	26	17677	15	160	38
Armor 9608 B3XF	1263	24	47.1	6	101	11	41	28	9.3	23	8.4	10	82	9	6.828	33	18006	12	185	8
DP 1725 B2XF	1262	25	47.1	5	97	21	63	2	9.0	34	8.1	17	78	16	7.050	28	17415	19	184	10
PHY 332 W3FE	1258	26	43.3	37	102	7	34	39	9.7	12	7.5	34	70	30	7.595	12	16207	30	162	33
DP 2020 B3XF	1226	27	42.7	40	92	34	50	16	9.3	23	7.0	41	63	39	7.928	9	15537	37	160	39
DG 3317 B3XF	1225	28	45.2	25	104	3	51	12	9.5	22	8.0	20	77	17	6.934	31	16791	25	171	27
PX1140A385-04W3FE	1224	29	47.2	3	100	15	29	44	9.9	7	8.9	2	90	1	6.226	40	18308	11	181	14
PHY 360 W3FE	1186	30	44.2	34	87	39	50	16	8.9	35	7.3	37	67	35	7.406	18	15450	38	163	32
BX 2296B3XF	1168	31	46.4	14	103	6	41	28	8.8	38	7.8	27	74	23	6.830	32	15891	35	170	28
PHY 411 W3FE	1166	32	46.7	10	89	37	55	6	8.5	42	7.6	31	71	27	6.985	30	16672	26	181	12
Armor 9831 B3XF	1162	33	45.1	27	81	44	41	28	9.7	13	8.0	22	77	17	6.603	36	17228	21	173	26
NG 4190 B3XF	1155	34	45.9	17	95	24	39	34	9.8	10	8.5	7	83	7	6.208	41	17948	13	179	17
NG 5711 B3XF	1144	35	43.2	38	96	23	30	43	9.3	25	7.3	38	67	35	7.155	25	15312	40	158	42
BX 2297B3XF	1143	36	44.8	30	95	25	34	39	9.9	8	8.2	15	79	14	6.327	38	15943	34	158	43
DG 3555 B3XF	1135	37	42.6	41	90	36	46	21	10.7	2	8.0	19	68	32	6.421	37	19121	3	180	15
Armor 9512 B3XF	1133	38	45.7	22	99	16	39	34	8.6	41	7.3	36	67	34	7.030	29	16214	29	176	24
NG 5150 B3XF	1120	39	44.8	31	93	29	40	33	9.1	29	7.5	33	70	30	6.759	34	15296	41	159	41
20R734B3XF	1104	40	45.2	24	97	22	43	27	9.5	18	8.0	23	76	20	6.300	39	17529	17	177	19
DG 3644 B3XF	1080	41	44.7	32	93	32	44	24	8.9	36	7.3	35	68	32	6.679	35	15082	43	160	40
PHY 350 W3FE	1050	42	43.8	36	93	31	39	34	10.7	3	8.4	8	74	23	5.659	44	18963	4	179	18
PX1130A329-04W3FE	1047	43	47.2	2	85	42	34	39	9.0	32	8.2	13	80	12	5.796	42	16088	32	169	31
DG 3469 B3XF	995	44	44.3	33	83	43	49	19	9.9	9	7.9	24	75	21	5.711	43	16227	28	161	36
Mean	1269		45.2		96		46		9.4		7.9		62		7.343		17047		174	
LSD _{0.10}	197		1.1		9		9		0.5		0.5		17		1.142		2452		ns	
C.V.%	13.3		1.5		7.8		17.3		3.3		3.7		16.4		13.3		8.6		8.5	
R ² x 100	50.4		93.1		51.5		61.8		90.1		88.7		76.9		59.8		71.1		65.4	

Table 13. Fiber properties–2021 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/ac						in.		%		g/tex		%	
ST 5091B3XF	1651	1	54	32	4.5	37	1.17	37	84.5	41	29.9	43	5.7	39
NG 4936 B3XF	1459	2	62	22	4.4	40	1.19	29	86.0	24	31.2	38	8.0	8
DP 2127 B3XF	1459	3	51	38	4.9	13	1.17	37	85.9	28	32.8	25	6.7	26
PHY 443 W3FE	1422	4	67	16	4.7	25	1.19	24	87.0	9	36.6	5	7.3	16
ST 4990B3XF	1416	5	70	11	4.6	30	1.23	7	85.6	32	31.5	36	7.3	16
Armor 9371 B3XF	1413	6	60	25	4.7	24	1.19	29	86.1	22	31.9	31	6.9	20
ST 4993B3XF	1393	7	54	30	5.1	4	1.18	33	87.2	4	37.1	3	7.4	14
DG 3456 B3XF	1389	8	52	36	4.7	25	1.17	40	85.2	35	29.6	44	6.3	28
PHY 390 W3FE	1388	9	54	32	4.7	22	1.17	37	85.3	34	34.2	15	6.0	34
NG 3195 B3XF	1387	10	67	15	4.5	34	1.21	17	86.3	21	34.1	16	6.0	35
BX 2298B3XF	1383	11	32	44	5.0	11	1.13	44	84.8	39	32.1	28	6.8	23
DP 1646 B2XF	1381	12	94	1	4.6	30	1.30	1	87.5	2	31.1	39	7.3	15
DG 3535 B3XF	1351	13	71	10	4.5	34	1.21	14	86.4	15	31.9	32	5.4	42
BX 2295B3XF	1342	14	72	8	4.7	22	1.22	12	87.2	4	31.6	35	7.4	13
DP 1518 B2XF	1338	15	65	20	4.4	39	1.19	24	86.4	15	30.7	41	6.6	27
DP 2012 B3XF	1329	16	68	13	4.4	40	1.20	21	87.0	7	31.9	32	6.1	33
DP 2115 B3XF	1324	17	52	36	5.0	11	1.19	29	85.1	36	33.3	22	7.9	9
PHY 400 W3FE	1309	18	75	7	4.6	30	1.23	7	86.4	15	35.6	9	6.3	28
NG 3299 B3XF	1309	19	55	28	5.0	6	1.19	32	86.6	12	36.2	7	7.0	18
PX1140A383-04W3FE	1299	20	82	4	4.7	25	1.25	2	87.1	6	35.2	11	6.9	20
ST 4550GLTP	1283	21	66	18	4.5	34	1.19	24	86.3	19	36.3	6	8.3	5
DP 2038 B3XF	1283	22	36	43	4.9	17	1.15	43	83.2	44	32.0	30	6.0	35
DG 3520 B3XF	1264	23	79	5	4.1	43	1.23	5	87.0	7	34.2	14	8.9	3
Armor 9608 B3XF	1263	24	62	22	4.7	25	1.21	17	85.0	38	30.2	42	5.9	37
DP 1725 B2XF	1262	25	51	38	4.9	17	1.18	33	85.1	36	32.4	27	5.6	40
PHY 332 W3FE	1258	26	84	2	4.5	38	1.25	2	87.7	1	33.5	20	7.9	9
DP 2020 B3XF	1226	27	68	14	4.4	40	1.21	14	85.5	33	33.2	23	5.5	41
DG 3317 B3XF	1225	28	54	32	4.9	13	1.18	33	86.1	22	34.7	12	9.9	1
PX1140A385-04W3FE	1224	29	44	41	5.2	3	1.17	40	86.0	24	38.9	1	9.4	2
PHY 360 W3FE	1186	30	52	35	4.9	13	1.19	24	84.3	43	31.8	34	6.1	31
BX 2296B3XF	1168	31	57	26	5.0	6	1.20	21	86.3	18	32.7	26	7.4	12
PHY 411 W3FE	1166	32	43	42	5.0	9	1.16	42	84.4	42	36.9	4	7.0	18
Armor 9831 B3XF	1162	33	63	21	4.8	20	1.20	21	85.9	26	37.5	2	5.2	43
NG 4190 B3XF	1155	34	72	9	4.7	25	1.21	14	87.4	3	33.8	18	6.2	30
NG 5711 B3XF	1144	35	83	3	4.6	33	1.25	2	87.0	9	34.0	17	6.9	20
BX 2297B3XF	1143	36	67	16	4.9	13	1.23	7	85.9	28	31.0	40	6.7	25
DG 3555 B3XF	1135	37	77	6	4.1	44	1.23	5	86.5	14	34.3	13	8.2	6
Armor 9512 B3XF	1133	38	50	40	5.2	2	1.21	17	84.7	40	33.2	23	8.2	6
NG 5150 B3XF	1120	39	69	12	4.8	20	1.22	12	86.5	13	32.1	28	5.8	38
20R734B3XF	1104	40	65	19	5.0	9	1.23	7	85.8	30	31.3	37	5.2	43
DG 3644 B3XF	1080	41	62	24	5.1	5	1.23	11	85.6	31	35.3	10	6.1	31
PHY 350 W3FE	1050	42	57	26	4.8	19	1.18	33	86.7	11	33.4	21	6.8	23
PX1130A329-04W3FE	1047	43	54	30	5.3	1	1.21	17	86.3	19	35.8	8	7.7	11
DG 3469 B3XF	995	44	55	28	5.0	6	1.19	24	85.9	26	33.8	18	8.4	4
Mean	1269		62		4.7		1.20		86.0		33.4		6.9	
LSD _{0.10}	197		17		0.2		0.05		1.8		2.0		0.8	
C.V.%	13.3		16.4		2.8		2.2		1.2		3.5		6.6	
R ² x 100	50.4		76.9		90.3		73.7		63.1		87.8		92.5	

^a UI = Fiber length uniformity index.

Table 14. Morphological and host-plant resistance traits in the 2021 Arkansas Transgenic Cotton Variety Test.

Variety	Brand	Leaf		Stem		Bract		Tarnished plant		Bacterial
		pubescence ^a	r	pubescence ^a	r	trichomes ^b	r	bug damage ^c	r	blight ^d
		rating		rating		no./cm		%		% sus.
Armor 9608 B3XF	Armor	5.4	37	3.4	6	39.0	35	73	30	53
Armor 9371 B3XF	Armor	3.3	25	5.0	17	39.9	38	83	41	48
Armor 9831 B3XF	Armor	3.1	22	5.6	25	33.1	16	62	6	0
Armor 9512 B3XF	Armor	2.3	15	4.1	10	42.0	41	72	26	0
DP 1518 B2XF	Deltapine	7.0	44	6.7	41	46.5	43	72	29	0
DP 1646 B2XF	Deltapine	1.8	10	4.6	14	37.9	31	77	34	10
DP 1725 B2XF	Deltapine	2.3	16	6.3	39	37.2	28	69	17	100
DP 2012 B3XF	Deltapine	2.4	17	5.9	33	34.8	22	87	44	3
DP 2020 B3XF	Deltapine	1.8	10	5.9	33	32.2	13	86	43	0
DP 2038 B3XF	Deltapine	1.1	2	5.8	29	23.3	1	77	35	0
DP 2115 B3XF	Deltapine	3.8	31	3.7	8	35.9	25	71	22	80
DP 2127 B3XF	Deltapine	3.4	27	5.9	33	39.8	37	71	23	90
20R734B3XF	Deltapine	2.7	19	5.3	20	33.2	17	68	14	93
DG 3317 B3XF	Dyna-Gro	3.1	23	6.3	40	34.2	20	80	38	100
DG 3456 B3XF	Dyna-Gro	1.7	8	4.5	12	31.0	10	64	11	97
DG 3520 B3XF	Dyna-Gro	4.0	32	5.8	29	39.9	39	81	40	0
DG 3535 B3XF	Dyna-Gro	1.4	7	5.5	24	28.6	6	72	24	90
DG 3469 B3XF	Dyna-Gro	1.9	12	5.1	19	37.7	30	72	27	0
DG 3644 B3XF	Dyna-Gro	5.3	35	6.1	38	38.3	33	71	21	90
DG 3555 B3XF	Dyna-Gro	5.6	38	6.7	41	41.5	40	78	36	0
NG 3195 B3XF	Nexgen	1.9	13	5.7	26	35.4	24	63	9	93
NG 4190 B3XF	Nexgen	4.3	34	5.0	17	42.6	42	60	4	86
NG 4936 B3XF	Nexgen	1.1	2	3.3	5	28.0	4	75	33	47
NG 5150 B3XF	Nexgen	3.3	26	3.9	9	37.3	29	69	16	93
NG 5711 B3XF	Nexgen	1.8	11	5.8	29	31.3	11	68	15	0
NG 3299 B3XF	Nexgen	1.2	4	1.7	2	25.4	2	80	39	0
PHY 332 W3FE	PhytoGen	3.0	21	5.9	33	30.3	9	71	18	0
PHY 350 W3FE	PhytoGen	3.8	30	5.8	29	33.6	18	65	12	0
PHY 360 W3FE	PhytoGen	3.5	28	4.6	14	35.1	23	54	1	0
PHY 390 W3FE	PhytoGen	3.3	24	5.3	20	31.9	12	63	8	0
PHY 400 W3FE	PhytoGen	2.9	20	4.5	12	32.6	14	60	3	0
PHY 443 W3FE	PhytoGen	2.7	18	5.7	26	27.7	3	71	20	0
PHY 411 W3FE	PhytoGen	6.3	41	5.3	20	37.1	27	71	19	0
PX1140A383-04W3FE	PhytoGen	6.1	40	6.7	41	39.3	36	64	10	0
PX1130A329-04W3FE	PhytoGen	5.3	35	4.8	16	38.2	32	56	2	0
PX1140A385-04W3FE	PhytoGen	6.8	43	6.7	41	32.7	15	72	28	0
ST4550GLTP	Stoneville	5.9	39	5.7	28	38.7	34	72	25	97
ST4990B3XF	Stoneville	1.0	1	3.0	4	28.3	5	85	42	63
ST4993B3XF	Stoneville	1.3	5	1.1	1	29.3	7	74	32	0
ST5091B3XF	Stoneville	3.6	29	4.1	10	34.2	19	73	31	94
BX 2295B3XF	Stoneville	6.8	42	6.0	37	51.1	44	63	7	57
BX 2296B3XF	Stoneville	1.3	5	3.5	7	34.3	21	61	5	87
BX 2297B3XF	Stoneville	4.1	33	5.4	23	35.9	26	78	37	97
BX 2298B3XF	Stoneville	2.2	14	2.8	3	30.2	8	67	13	20
Ark 0628fg RF (sus.)	AAES							95	45	
Ark 0628fg RF (sus.)	AAES							100	46	
Mean		3.3		5.0		35.1		72		38
LSD _{0.10}		0.9		1.3		4.1		9		16
C.V.%		23.6		21.8		9.9		15.5		30.5
R ² x 100		87.4		66.6		76.6		45.6		95.3

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

^b Marginal trichome density of bracts was determined on 6 bracts/plot (4 reps) at the 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 2019 Marianna location. Scratches were examined for water-soaking, and % of susceptible plants was determined.

Table 15. Two-year and three-year average lint yields (pounds/acre) for transgenic varieties at the five locations of the 2019–2021 Arkansas Cotton Variety Test.

Variety	Manila		Keiser		Judd Hill		Marianna		Rohwer		All locations	
	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated ^a	r	Irrigated	r
	lb/ac		lb/ac		lb/ac		lb/ac		lb/ac		lb/ac	
Two-year (2020–2021) means												
DP 2127 B3XF	2063	1	1375	15	1293	7	1409	5	1398	2	1507	1
NG 3195 B3XF	1812	8	1366	16	1418	2	1444	3	1441	1	1496	2
ST 5091 B3XF	1919	3	1388	10	1207	16	1594	1	1371	5	1496	3
DP 2115 B3XF	1867	4	1386	12	1179	18	1489	2	1351	8	1454	4
DG 3535 B3XF	1837	6	1348	19	1424	1	1335	11	1283	16	1445	5
Armor 9371 B3XF	1798	9	1474	2	1157	21	1362	8	1378	4	1433	6
DG3456 B3XF	1843	5	1273	25	1318	3	1401	6	1302	13	1427	7
ST 4550 GLTP	1940	2	1326	21	1279	8	1287	18	1290	15	1424	8
DP 1646 B2XF	1667	17	1487	1	1310	5	1334	12	1300	14	1419	9
DP 2012 B3XF	1759	10	1415	5	1272	9	1307	14	1276	17	1406	10
PX4B08W3FE	1750	11	1381	14	1311	4	1208	25	1370	6	1404	11
DP 1518 B2XF	1676	16	1398	8	1212	15	1332	13	1398	3	1403	12
ST 4993 B3XF	1660	19	1430	3	1120	24	1419	4	1313	11	1388	13
DP 2038 B3XF	1683	14	1385	13	1299	6	1289	17	1244	24	1380	14
NG 4936 B3XF	1619	23	1391	9	1227	13	1393	7	1254	21	1377	15
PHY390 W3FE	1608	24	1405	7	1238	11	1234	24	1321	10	1361	16
DP 1725 B2XF	1813	7	1273	26	1011	28	1336	10	1363	7	1359	17
ST 4990 B3XF	1712	12	1305	23	1173	19	1344	9	1256	20	1358	18
DP 2020 B3XF	1677	15	1350	18	1217	14	1282	19	1245	23	1354	19
DG 3520 B3XF	1660	18	1419	4	1186	17	1234	23	1246	22	1349	20
PHY360 W3FE	1638	21	1340	20	1245	10	1148	27	1328	9	1340	21
PHY400 W3FE	1701	13	1387	11	1024	27	1306	15	1262	19	1336	22
PHY443 W3FE	1644	20	1362	17	1141	23	1274	20	1188	26	1322	23
NG 5150 B3XF	1515	28	1415	6	1166	20	1270	21	1193	25	1312	24
Armor 9608 B3XF	1634	22	1275	24	1092	26	1291	16	1265	18	1311	25
PHY332 W3FE	1562	25	1319	22	1096	25	1265	22	1306	12	1309	26
PHY350 W3FE	1523	27	1268	27	1231	12	1128	28	1184	27	1266	27
DG 3317 B3XF	1551	26	1166	28	1153	22	1170	26	1125	28	1233	28
2-year mean	1719		1361		1214		1317		1294		1381	
Three-year (2019–2021) means												
ST 4550 GLTP	1905	1	1226	10	1241	2	1367	9	1323	14	1412	1
PHY400 W3FE	1688	4	1341	1	1115	12	1455	1	1454	3	1411	2
DP 2012 B3XF	1703	3	1289	5	1189	6	1397	8	1457	2	1407	3
DP 1646 B2XF	1593	8	1331	2	1201	5	1415	5	1423	5	1393	4
DP 1518 B2XF	1638	7	1270	8	1135	10	1419	4	1491	1	1391	5
DP 2038 B3XF	1672	5	1282	6	1231	3	1405	7	1344	13	1387	6
DP 1725 B2XF	1759	2	1211	11	1066	13	1420	3	1386	8	1368	7
DG 3520 B3XF	1556	13	1320	3	1252	1	1333	10	1374	9	1367	8
PHY360 W3FE	1661	6	1295	4	1182	8	1265	13	1395	6	1360	9
NG 4936 B3XF	1568	10	1274	7	1159	9	1405	6	1389	7	1359	10
PHY443 W3FE	1580	9	1207	12	1208	4	1302	11	1347	11	1329	11
Armor 9608 B3XF	1560	12	1169	14	1035	15	1450	2	1345	12	1312	12
PHY332 W3FE	1565	11	1237	9	1043	14	1256	14	1426	4	1306	13
PHY350 W3FE	1485	14	1182	13	1183	7	1244	15	1354	10	1290	14
DG 3317 B3XF	1374	15	1031	15	1119	11	1279	12	1197	15	1200	15
3-year mean	1620		1282		1159		1311		1321		1339	

^a Averages from the other four locations were used for the 2021 test at Rohwer.

Table 16. Yield and related properties–2021 Arkansas Conventional Cotton Variety Test across three test sites.

Variety	Lint yield lb/ac	r	Lint frac. %	r	Ht. cm	r	Open bolls %	r	Seed index g	r	Lint index g	r	Seed score r	r	Seed/ acre mil.	r	Fibers/ seed no.	r	Fiber density no.	r
Ark 1115-36	1490	1	45.3	1	103	2	55	6	9.4	15	7.9	1	75	6	9.010	3	15795	12	162	6
Ark 1112-59	1482	2	42.4	5	105	1	53	8	10.5	8	7.8	5	79	1	8.954	4	17770	1	170	1
Ark 1102-55	1397	3	41.6	8	101	6	50	13	10.1	10	7.3	11	73	10	8.917	5	16371	6	160	7
Ark 1114-21	1385	4	42.2	7	94	14	60	5	9.7	12	7.3	13	76	5	8.665	6	16876	3	170	2
Ark 1112-49	1375	5	43.6	2	100	9	61	3	9.0	16	7.0	15	57	15	9.323	1	16004	10	169	3
Arkot 1015	1374	6	42.2	6	101	7	51	12	10.6	7	7.8	4	78	2	8.071	9	16012	9	153	11
Arkot 1019	1315	7	41.5	9	103	3	53	11	9.6	14	6.9	16	66	13	9.083	2	15081	14	153	12
Ark 1124-50	1312	8	43.0	3	95	13	53	8	9.7	13	7.3	9	72	11	8.274	8	16116	8	163	5
Arkot 1005	1311	9	41.2	11	100	8	50	13	11.0	3	7.8	3	75	7	8.036	10	16515	5	153	10
Ark 1117-60	1289	10	40.8	13	99	10	55	6	11.3	2	7.8	2	77	4	7.472	14	15985	11	145	14
UA248	1259	11	39.9	15	102	4	53	8	10.7	6	7.2	14	71	12	8.336	7	15655	13	147	13
UA212ne	1239	12	42.7	4	101	5	45	16	9.9	11	7.5	7	75	8	7.911	12	16622	4	165	4
Ark 1117-50	1236	13	40.0	14	94	15	64	2	11.0	4	7.4	8	74	9	8.017	11	13612	16	126	15
UA48	1167	14	37.6	16	92	16	60	4	11.9	1	7.3	12	50	16	7.465	15	13889	15	122	16
UA222	1137	15	40.9	12	97	11	47	15	10.4	9	7.3	10	64	14	7.542	13	16250	7	156	9
UA107	1012	16	41.3	10	97	12	70	1	10.8	5	7.8	6	78	3	6.361	16	17032	2	160	8
Mean	1298		41.7		99		55		10.3		7.5		71		8.215		15963		154	
Var. LSD _{0.10}	87		0.7		6		7		0.5		0.3		11		1.656		726		7	
Loc. LSD _{0.10}	38		0.3		2		3		0.2		0.1		ns		ns		311		3	
C.V.%	9.9		1.7		8.5		20.5		5.0		4.4		15.8		10.0		4.6		4.5	
R ² x 100	70.0		95.7		72.6		73.5		85.9		88.1		65.0		68.7		87.0		92.3	
Prob (var x loc)	0.001		0.210		0.077		0.054		0.064		0.116		0.763		<0.0001		0.060		0.005	

Table 17. Fiber properties–2021 Arkansas Conventional Cotton Variety Test across three test sites.

Variety	Lint		Quality				Fiber properties							
	yield	r	score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r
	lb/ac						in.		%		g/tex		%	
Ark 1115-36	1490	1	69	4	4.5	4	1.27	4	86.9	6	32.9	13	7.7	3
Ark 1112-59	1482	2	55	14	4.2	13	1.22	16	86.2	10	37.2	3	7.2	8
Ark 1102-55	1397	3	59	11	4.2	11	1.23	12	86.7	7	32.3	16	7.1	9
Ark 1114-21	1385	4	62	10	4.0	16	1.25	8	86.3	9	32.6	15	6.7	11
Ark 1112-49	1375	5	62	9	4.1	15	1.25	9	86.5	8	34.8	6	6.7	12
Arkot 1015	1374	6	57	12	4.6	2	1.24	11	85.8	12	34.3	10	7.5	6
Arkot 1019	1315	7	72	3	4.2	11	1.28	3	85.5	15	34.7	7	7.4	7
Ark 1124-50	1312	8	69	5	4.2	14	1.26	6	87.3	4	33.7	12	6.1	14
Arkot 1005	1311	9	67	6	4.4	7	1.25	7	86.9	5	35.7	5	7.7	2
Ark 1117-60	1289	10	64	8	4.5	5	1.25	10	87.6	3	36.0	4	6.9	10
UA248	1259	11	66	7	4.3	10	1.26	5	85.6	14	34.6	8	7.7	4
UA212ne	1239	12	52	16	4.4	6	1.22	14	85.1	16	32.7	14	7.5	5
Ark 1117-50	1236	13	81	2	4.7	1	1.30	1	88.5	1	38.8	2	5.6	16
UA48	1167	14	82	1	4.6	3	1.30	1	88.4	2	40.0	1	5.8	15
UA222	1137	15	53	15	4.3	9	1.23	13	85.7	13	34.6	9	9.1	1
UA107	1012	16	55	13	4.3	8	1.22	15	86.1	11	34.1	11	6.5	13
Mean	1298		64		4.3		1.25		86.5		34.9		7.1	
Var. LSD _{0.10}	87		10		0.2		0.03		1.0		1.3		0.4	
Loc. LSD _{0.10}	38		ns		0.1		0.01		0.4		ns		0.2	
C.V.%	9.9		15.6		4.8		5.1		1.2		3.7		6.1	
R ² x 100	70.0		72.2		87.8		78.9		76.5		86.9		90.3	
Prob (var x loc)	0.001		0.232		0.078		0.467		0.093		0.645		0.577	

^a UI = Fiber length uniformity index.

Table 18. Yield and related properties–2021 Arkansas Conventional Cotton Variety Test, with irrigation on a Sharkey clay soil at Keiser.

Variety	Lint		Lint		Ht.		Open		Seed		Lint		Seed		Seed/		Fibers/		Fiber	
	yield	r	frac.	r	cm	r	bolts	r	index	r	index	r	score	r	acre	r	seed	r	density	r
	lb/ac		%				%		g		g				mil.		no.		no.	
Ark 1115-36	1759	1	45.7	1	121	1	56	9	8.8	16	7.5	8	67	12	10.620	1	17114	8	183	3
Ark 1112-59	1575	2	43.3	5	119	3	55	13	9.8	11	7.5	7	76	6	9.500	2	18600	2	185	1
Ark 1114-21	1505	3	44.5	4	108	13	76	2	9.3	12	7.7	5	78	4	8.864	6	17638	5	182	4
Ark 1102-55	1465	4	42.3	8	108	14	56	9	9.9	10	7.3	10	73	8	9.078	3	16838	10	167	9
Ark 1124-50	1436	5	45.2	2	105	16	64	4	8.8	14	7.2	13	64	14	9.014	4	17216	6	184	2
Arkot 1015	1434	6	42.7	6	120	2	49	16	10.4	6	7.9	2	81	2	8.249	9	17670	3	169	7
Ark 1117-50	1373	7	40.5	14	113	5	69	3	10.6	4	7.3	12	73	8	8.557	7	13759	16	130	15
Ark 1117-60	1371	8	41.9	12	116	4	60	6	10.9	3	7.9	1	81	1	7.864	12	16451	12	153	13
Arkot 1019	1364	9	42.6	7	110	10	56	9	9.1	13	6.9	16	65	13	8.930	5	14626	14	153	14
Arkot 1005	1354	10	42.1	11	111	7	56	9	10.6	5	7.8	4	79	3	7.913	11	17154	7	163	11
Ark 1112-49	1329	11	44.8	3	107	15	59	7	8.8	14	7.2	14	64	14	8.340	8	16471	11	176	6
UA48	1310	12	38.2	16	113	6	59	7	11.6	1	7.3	11	49	16	8.138	10	14183	15	126	16
UA222	1289	13	41.2	13	111	9	53	14	11.0	2	7.8	3	71	11	7.531	13	17651	4	163	10
UA248	1190	14	40.5	15	110	11	64	4	10.4	7	7.2	15	72	10	7.479	14	16409	13	158	12
UA212ne	1175	15	42.1	10	111	7	51	15	10.0	9	7.5	9	75	7	7.148	15	17049	9	167	8
UA107	1107	16	42.2	9	109	12	80	1	10.4	8	7.7	6	78	5	6.535	16	18671	1	180	5
Mean	1377		42.5		111		60		10.0		7.5		71		8.360		16719		165	
LSD _{0.10}	151		1.2		ns		11		0.6		0.3		9		0.930		126		11	
C.V.%	9.3		1.6		8.3		15.9		3.5		2.6		6.8		9.4		4.9		3.8	
R ² x 100	69.1		94.3		35.7		54.6		92.7		84.9		86.0		69.7		86.2		94.4	

Table 19. Fiber properties–2021 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/ac						in.		%		g/tex		%	
Ark 1115-36	1759	1	71	5	4.1	14	1.27	4	86.0	7	32.8	13	7.9	3
Ark 1112-59	1575	2	52	15	4.0	15	1.21	15	85.1	12	36.1	4	7.4	5
Ark 1114-21	1505	3	62	10	4.2	9	1.23	8	85.6	9	32.0	16	6.9	11
Ark 1102-55	1465	4	62	10	4.1	11	1.22	14	87.1	4	32.7	15	7.3	8
Ark 1124-50	1436	5	63	8	4.0	16	1.23	8	86.2	6	34.0	10	6.2	14
Arkot 1015	1434	6	66	6	4.2	6	1.27	4	84.2	16	33.8	11	7.4	5
Ark 1117-50	1373	7	82	2	4.7	1	1.30	2	87.8	3	39.2	2	5.5	16
Ark 1117-60	1371	8	72	4	4.4	2	1.25	6	88.0	2	36.2	3	7.0	10
Arkot 1019	1364	9	77	3	4.3	5	1.30	3	85.2	11	35.3	6	7.4	5
Arkot 1005	1354	10	58	13	4.4	4	1.23	12	85.0	13	35.3	5	8.0	2
Ark 1112-49	1329	11	65	7	4.1	11	1.23	8	86.8	5	34.9	8	6.8	12
UA48	1310	12	93	1	4.4	2	1.31	1	89.4	1	40.1	1	6.0	15
UA222	1289	13	63	9	4.2	9	1.23	8	86.0	7	34.7	9	9.7	1
UA248	1190	14	60	12	4.2	8	1.24	7	84.4	15	35.1	7	7.2	9
UA212ne	1175	15	58	14	4.2	6	1.23	12	85.2	10	32.8	14	7.8	4
UA107	1107	16	45	16	4.1	11	1.19	16	84.5	14	33.4	12	6.7	13
Mean	1377		65		4.2		1.25		86.0		34.9		7.2	
LSD _{0.10}	151		17		0.3		0.04		2.0		1.8		0.5	
C.V.%	9.3		14.9		4.3		2.0		1.3		3.0		4.0	
R ² x 100	69.1		74.1		74.6		78.2		76.3		90.1		95.8	

^a UI = Fiber length uniformity index.

Table 20. Yield and related properties—2021 Arkansas Conventional Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.

Variety	Lint yield lb/ac	r	Lint frac. %	r	Ht. cm	r	Open bolls %	r	Seed index g	r	Lint index g	r	Seed score r	r	Seed/ acre mil.	r	Fibers/ seed no.	r	Fiber density no.	r
Ark 1112-59	1498	1	41.0	3	99	3	41	6	10.7	6	7.5	3	83	2	9.076	3	17275	1	163	3
Ark 1115-36	1401	2	42.7	1	95	5	41	6	10.0	12	7.5	4	83	2	8.503	8	14681	13	145	10
Ark 1112-49	1383	3	41.7	2	94	7	59	2	8.6	16	6.2	14	41	16	10.070	1	15273	9	165	2
Arkot 1015	1371	4	40.0	6	86	11	33	10	11.2	3	7.6	2	85	1	8.227	10	14567	14	133	14
Ark 1114-21	1350	5	39.9	7	83	14	38	8	10.1	11	6.8	9	74	7	8.995	5	16114	4	157	5
Arkot 1019	1329	6	38.9	11	104	1	33	10	9.8	13	6.2	15	65	13	9.679	2	15642	6	157	6
Ark 1102-55	1325	7	39.1	9	98	4	34	9	10.5	9	6.9	7	75	6	8.733	6	16441	3	156	7
UA212ne	1303	8	41.0	4	95	6	26	16	9.7	14	6.8	10	74	7	8.688	7	16546	2	166	1
UA248	1297	9	37.9	15	101	2	28	14	10.6	7	6.5	13	70	12	9.002	4	14825	12	140	12
Ark 1117-50	1257	10	38.1	14	83	16	50	3	10.9	4	6.7	12	73	11	8.500	9	12340	16	115	16
Ark 1117-60	1255	11	39.8	8	84	13	45	4	11.7	2	7.8	1	74	9	7.352	14	15519	7	138	13
Arkot 1005	1243	12	39.1	10	90	9	28	14	10.9	5	7.0	6	77	5	8.007	12	15879	5	148	8
UA48	1217	13	35.9	16	83	15	43	5	12.2	1	6.9	8	50	14	8.027	11	13471	15	117	15
Ark 1124-50	1117	14	40.2	5	87	10	33	10	10.5	10	7.1	5	79	4	7.111	15	15231	10	145	9
UA222	985	15	38.9	12	92	8	30	13	9.3	15	6.0	16	44	15	7.523	13	15315	8	158	4
UA107	918	16	38.5	13	85	12	63	1	10.6	8	6.7	11	73	10	6.179	16	15123	11	144	11
Mean	1266		39.5		91		39		10.5		6.9		70		8.354		15265		147	
LSD _{0.10}	147		1.2		11		17		1.1		0.8		ns		0.982		1533		16	
C.V.%	9.8		1.7		10.4		36.7		5.9		6.4		24.0		9.9		5.7		6.3	
R ² x 100	70.8		91.8		57.1		60.0		80.6		73.5		59.7		70.3		78.7		85.3	

Table 21. Fiber properties—2021 Arkansas Conventional Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.

Variety	Lint yield lb/ac	r	Quality		Fiber properties										
			score	r	Micronaire	r	Length	r	UI ^a	r	Strength	r	Elongation	r	
							in.		%		g/tex		%		
Ark 1112-59	1498	1	59	11	4.0	7	1.25	13	87.2	9	38.1	3	7.7	5	
Ark 1115-36	1401	2	70	4	4.5	4	1.29	5	87.9	6	33.5	14	7.5	6	
Ark 1112-49	1383	3	60	9	3.7	15	1.28	6	87.4	7	35.6	6	6.7	11	
Arkot 1015	1371	4	60	10	4.7	1	1.27	9	87.1	10	34.5	8	8.1	3	
Ark 1114-21	1350	5	63	8	3.9	12	1.27	11	87.1	11	33.2	15	6.5	13	
Arkot 1019	1329	6	57	13	3.7	14	1.28	7	84.8	16	33.5	13	7.3	7	
Ark 1102-55	1325	7	59	12	3.9	12	1.26	12	86.7	12	32.4	16	7.2	9	
UA212ne	1303	8	45	16	4.0	9	1.23	16	85.1	15	33.6	12	7.3	8	
UA248	1297	9	70	6	4.0	9	1.30	3	86.0	13	34.2	9	8.2	2	
Ark 1117-50	1257	10	89	1	4.6	3	1.34	1	89.6	1	40.0	2	6.0	16	
Ark 1117-60	1255	11	56	14	4.6	2	1.25	13	87.2	8	35.9	5	6.8	10	
Arkot 1005	1243	12	70	4	4.0	9	1.28	7	88.2	4	36.7	4	7.9	4	
UA48	1217	13	79	2	4.4	5	1.31	2	88.9	2	42.2	1	6.2	15	
Ark 1124-50	1117	14	75	3	4.1	6	1.30	3	88.3	3	33.8	11	6.2	14	
UA222	985	15	47	15	3.7	15	1.24	15	85.8	14	34.1	10	9.1	1	
UA107	918	16	67	7	4.0	7	1.27	9	88.0	5	34.6	7	6.7	11	
Mean	1266		64		4.1		1.27		87.2		35.3		7.2		
LSD _{0.10}	147		18		0.5		0.04		2.1		2.7		1.1		
C.V.%	9.8		15.9		6.9		2.0		1.4		4.3		8.7		
R ² x 100	70.8		72.6		76.1		72.1		70.9		86.2		78.7		

^a UI = Fiber length uniformity index.

Table 22. Yield and related properties—2021 Arkansas Conventional Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna.

Variety	Lint yield lb/ac	r	Lint frac. %	r	Ht. cm	r	Open bolls %	r	Seed index g	r	Lint index g	r	Seed score	r	Seed/ acre mil.	r	Fibers/ seed no.	r	Fiber density no.	r
Ark 1112-49	1415	1	44.4	2	99	2	65	9	9.5	13	7.6	13	65	13	9.561	1	16269	5	166	1
Ark 1102-55	1400	2	43.2	6	97	6	60	13	9.9	10	7.7	12	71	9	8.941	2	15834	7	156	6
Ark 1124-50	1383	3	44.2	4	92	13	64	11	10.0	8	8.0	6	75	4	8.698	3	15688	10	154	8
Ark 1112-59	1372	4	42.9	7	98	3	64	11	10.9	6	8.3	3	80	2	8.284	6	17435	1	162	3
Arkot 1005	1335	5	42.5	10	100	1	66	8	11.6	2	8.6	1	68	11	8.188	7	16510	3	147	11
Arkot 1015	1318	6	44.0	5	95	10	71	3	10.0	9	7.9	10	70	10	7.739	11	15798	8	156	7
Ark 1115-36	1310	7	46.8	1	94	11	68	7	9.4	14	8.3	4	74	6	7.908	9	15660	11	160	4
Ark 1114-21	1300	8	•	•	92	12	65	9	•	•	•	•	•	•	8.136	8	•	•	•	•
UA248	1291	9	41.3	12	96	7	69	4	11.3	4	8.0	8	72	8	8.526	5	15732	9	143	12
Arkot 1019	1253	10	42.6	9	95	9	69	4	9.8	12	7.4	14	67	12	8.642	4	15010	12	150	9
Ark 1117-60	1243	11	•	•	97	5	60	13	•	•	•	•	•	•	7.200	13	•	•	•	•
UA212ne	1240	12	44.3	3	98	4	58	15	9.9	11	8.0	7	75	5	7.896	10	16387	4	163	2
UA222	1137	13	42.0	11	90	14	58	15	10.8	7	8.0	9	74	7	7.571	12	15939	6	149	10
Ark 1117-50	1078	14	41.2	13	86	15	74	2	11.4	3	8.2	5	77	3	6.995	14	14736	13	133	13
UA107	1011	15	42.6	8	96	7	69	4	11.2	5	8.5	2	81	1	6.368	15	17213	2	157	5
UA48	974	16	38.7	14	82	16	80	1	11.9	1	7.7	11	51	14	6.229	16	14014	14	123	14
Mean	1311		43.0		94		66		10.5		8.0		72		7.930		15905		152	
LSD _{0.10}	173		1.4		7		11		0.9		0.5		ns		1.679		779		9	
C.V.%	11.1		1.9		6.2		14.2		5.2		3.6		11.8		10.9		2.9		3.4	
R ² x 100	50.5		91.8		49.3		39.4		82.7		75.7		65.0		63.4		89.1		91.2	

• = Data not available due to error in collecting boll samples.

Table 23. Fiber properties—2021 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/ac						in.		%		g/tex		%	
Ark 1112-49	1415	1	62	8	4.5	14	1.23	8	85.4	13	33.9	10	6.5	10
Ark 1102-55	1400	2	58	9	4.7	11	1.21	10	86.4	7	31.9	14	6.9	8
Ark 1124-50	1383	3	69	5	4.7	9	1.24	7	87.5	3	33.2	11	5.7	12
Ark 1112-59	1372	4	55	10	4.7	11	1.19	13	86.5	6	37.6	2	6.7	9
Arkot 1005	1335	5	73	3	4.8	6	1.26	5	87.6	2	35.0	5	7.4	6
Arkot 1015	1318	6	46	14	4.9	3	1.19	13	86.1	10	34.6	7	7.0	7
Ark 1115-36	1310	7	68	6	4.9	4	1.26	4	86.9	5	32.6	12	7.7	2
Ark 1114-21	1300	8	•	•	•	•	•	•	•	•	•	•	•	•
UA248	1291	9	68	6	4.7	10	1.25	6	86.3	8	34.5	8	7.7	3
Arkot 1019	1253	10	80	1	4.5	13	1.28	1	86.2	9	35.1	4	7.4	5
Ark 1117-60	1243	11	•	•	•	•	•	•	•	•	•	•	•	•
UA212ne	1240	12	52	12	4.7	7	1.21	9	85.0	14	32.1	13	7.6	4
UA222	1137	13	51	13	4.8	5	1.21	10	85.5	12	34.8	6	8.7	1
Ark 1117-50	1078	14	71	4	5.0	1	1.26	3	88.1	1	37.4	3	5.4	13
UA107	1011	15	54	11	4.7	7	1.21	12	86.1	11	34.2	9	6.2	11
UA48	974	16	73	2	5.0	2	1.28	2	87.0	4	37.7	1	5.4	13
Mean	1311		63		4.7		1.23		86.3		34.5		7.0	
LSD _{0.10}	173		17		0.2		0.05		1.3		2.1		0.5	
C.V.%	11.1		16.0		2.7		2.3		0.9		3.5		4.3	
R ² x 100	50.5		68.8		76.9		71.7		72.4		83.2		95.4	

^a UI = Fiber length uniformity index.

Table 24. Morphological and host-plant resistance traits in the 2021 Arkansas Conventional Cotton Variety Test.

Variety	Leaf pubescence ^a		Stem pubescence ^a		Bract trichomes ^b		Tarnished plant bug damage ^c		Bacterial blight ^d
	rating	r	rating	r	no./cm	r	%	r	% sus.
Ark 1102-55	3.8	5	2.2	1	38.0	6	75	7	0
Ark 1112-49	3.8	6	6.3	13	44.3	13	77	10	0
Ark 1112-59	5.3	15	6.1	12	45.4	14	74	4	4
Ark 1114-21	4.6	11	5.8	10	54.6	16	75	6	0
Ark 1115-36	3.8	7	5.3	4	40.6	9	73	3	3
Ark 1117-50	4.0	9	5.6	8	37.0	4	83	14	0
Ark 1117-60	2.3	3	5.5	7	36.7	3	77	11	0
Ark 1124-50	4.3	10	5.3	4	43.6	12	79	12	0
Arkot 1005	5.1	13	6.3	14	40.2	8	89	16	3
Arkot 1015	5.3	14	5.4	6	43.5	11	70	2	0
Arkot 1019	4.8	12	6.0	11	46.1	15	76	8	0
UA 107	1.0	1	3.2	2	30.5	1	74	5	0
UA212ne	3.6	4	6.7	16	36.1	2	65	1	0
UA222	5.5	16	6.5	15	40.0	7	76	9	0
UA248	3.9	8	5.7	9	40.8	10	85	15	0
UA48	1.7	2	5.0	3	37.1	5	82	13	10
Ark 0628fg RF (sus.)							95	17	
Ark 0628fg RF (sus.)							98	18	
Mean	3.9		5.4		40.9		79		1
LSD _{0.10}	1.5		0.9		4.8		7		4
C.V.%	31.7		14.6		9.9		10.5		203.7
R ² x 100	64.0		76.7		73.8		56.3		63.0

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

^b Marginal trichome density of bracts was determined on 6 bracts/plot (4 reps) at the 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 greenhouse, and scratch inoculated with *Xanthomonas citris* pv. *Malvacearum*. The inoculum was obtained from naturally infected leaves collected at the 2019 Marianna location. Scratches were examined for water-soaking, and % of susceptible plants was determined.

Table 25. Two-year and 3-year average lint yields (pound/acre) for conventional varieties at the four locations of the 2019–2021 Arkansas Cotton Variety Test.

Variety	Keiser		Judd Hill		Marianna		Rohwer		All	
	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated ^a	r	locations	r
	lb/ac		lb/ac		lb/ac		lb/ac		lb/ac	
Two-year (2020–2021) means										
Ark 1015-42	1320	2	1418	1	1274	2	1062	3	1268	1
Ark 1019-36	1337	1	1403	2	1227	3	1093	1	1265	2
Ark 1005-41	1305	3	1353	4	1284	1	1077	2	1255	3
UA248	1176	6	1333	5	1209	4	1035	5	1188	4
UA212ne	1184	5	1376	3	1174	5	1015	6	1187	5
UA222	1202	4	1166	6	1153	6	1061	4	1145	6
UA48	1120	7	1160	7	876	8	892	8	1012	7
UA107	891	8	1044	8	1058	7	943	7	984	8
Mean	1235		1315		1171		1033		1188	
Three-year (2019–2021) means										
UA212ne	1166	1	1241	1	1293	1	1154	2	1214	1
UA248	1150	2	1227	2	1291	2	1151	3	1205	2
UA222	1147	3	1073	3	1262	3	1166	1	1162	3
UA48	1011	4	1070	4	1009	5	972	5	1016	4
UA107	884	5	1022	5	1134	4	1006	4	1011	5
Mean	1071		1126		1198		1090		1121	

^a Averages from the other three locations were used for the 2021 test at Rohwer.

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

Appendix TABLE A1: Lint, Yield and Fiber Properties - Ashley County Management Variety Test								
Cooperator(s):		Bruce Bond			Date Planted:		5/22/21	
Soil Type:		Hebert Silt Loam			Date of Harvest:		10/19/21	
Irrigation:		Furrow			Replications:		3	
Agent(s):		Kevin Norton						
	Lint	Loan	Fiber properties					
Variety	yield	rate	Income	r	Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb	\$/ac			in.	%	g/tex
DP 2127 B3XF	1460	53.53	784	1	4.9	1.16	85.3	31.4
PHY 411 W3FE	1562	48.58	759	2	5.1	1.14	83.9	31.5
NG 3195 B3XF	1469	50.30	739	3	4.6	1.20	85.1	33.7
ST 5091 B3XF	1384	51.97	720	4	4.2	1.22	82.9	31.7
PHY 400 W3FE	1389	51.08	710	5	4.3	1.25	85.0	34.8
DP 2038 B3XF	1425	48.80	695	6	5.0	1.12	82.4	30.1
DP 1646 B2XF	1353	50.42	682	4	4.2	1.29	84.3	31.6
DP 2020 B3XF	1316	51.08	672	8	4.3	1.26	85.0	33.2
ST 4993 B3XF	1323	50.32	666	9	4.6	1.19	85.5	35.8
DG 3644 B3XF	1304	51.00	665	10	4.3	1.26	83.9	35.9
NG 4936 B3XF	1301	51.08	664	11	4.0	1.26	85.0	33.0
DG 3465 B3XF	1242	49.30	612	12	4.2	1.21	83.9	30.8
Var. LSD _{0.05}								
Mean	1377	50.62	697		4.5	1.21	84.4	32.8
Var. LSD _{0.05}	75.6	2.7	63.4		0.3	0.03	1.2	1.5
C.V.%	3.2	3.1	5.4		4.3	1.6	0.9	2.6
Prob (var)	0.0001	0.049	0.0008		0.0251	0.0001	0.0003	0.0001

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

Cooperator(s): David Cagle					Date Planted: 5/10/21			
Soil Type: Fountain Silt Loam					Date of Harvest: 10/21/21			
Irrigation: Furrow					Replications: 1			
Agent(s): Allison Howell								
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb						
NG 3195 B3XF	1810	55.46	1004	1	4.3	1.19	83.1	32.1
DP 2038 B3XF	1573	56.35	886	2	4.6	1.13	81.2	31.2
Armor 9371 B2XF	1505	56.70	853	3	4.4	1.18	83.0	31.6
DG 3456 B3XF	1490	56.08	835	4	4.3	1.16	82.1	29.4
Armor 9608 B3Xf	1453	55.19	802	5	4.3	1.16	81.3	29.8
NG 4190 B3XF	1374	55.52	793	6	4.0	1.19	82.5	31.7
DG 3644 B3XF	1424	55.01	783	7	4.7	1.22	82.0	33.4
PX4B08 W3FE	1421	54.66	777	8	4.2	1.13	81.8	32.2
DP 2020 B3XF	1382	55.61	769	9	4.1	1.21	82.6	31.7
ST 4993 B3XF	1369	55.80	764	10	4.4	1.19	83.4	33.9
ST 5091 B3XF	1386	54.97	762	11	3.9	1.19	81.8	31.3
PHY 390 W3FE	1217	54.84	667	12	4.0	1.19	82.1	33.3
Mean	1450	55.52	808		4.3	1.18	82.2	31.8

^a UI = Fiber length uniformity index.

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

Cooperator(s): Brannon and Gary Qualls					Date Planted: 5/15/21			
Soil Type: Fountain Silt Loam					Date of Harvest: 10/11/21			
Irrigation: Furrow					Replications: 4			
Agent(s): Branon Thiesse and Chris Grimes								
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb			\$/ac	in.	%	g/tex
ST 5091 B3XF	1868	53.35	997	1	4.08	1.21	83.3	31.0
DG 3456 B3XF	1883	52.59	991	2	4.43	1.21	83.9	32.4
DP 1646 B2XF	1830	51.75	947	3	4.23	1.28	83.6	31.2
DP 2038 B3XF	1723	52.61	907	4	4.18	1.20	83.8	32.4
NG 3195 B3XF	1763	51.08	901	5	4.38	1.22	85.6	33.3
DP 2127 B3XF	1753	51.06	895	6	4.55	1.20	85.6	33.2
NG 4936 B3XF	1663	51.94	864	7	4.13	1.25	85.5	33.4
DP 2020 B3XF	1683	51.05	859	8	4.10	1.23	85.0	31.9
DG 3644 B3XF	1650	51.63	851	9	4.80	1.25	83.7	36.0
ST 4993 B3XF	1627	51.16	831	10	4.38	1.20	85.6	34.6
Mean	1744	51.82	904		4.3	1.23	84.6	32.9
Var. LSD _{0.05}	192.1	3.1	111.1		0.4	0.05	1.7	2.6
C.V.%	7.6	4.2	8.5		6.0	2.9	1.4	5.4
Prob (var)	0.0908	0.8267	0.0481		0.0097	0.0362	0.0269	0.1297

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

Cooperator(s): Steve Stevens and Wes Kirkpatrick					Date Planted: 5/7/21			
Soil Type: Sharkey and Desha					Date of Harvest: 10/7/21			
Irrigation: Furrow					Replications: 4			
Agent(s): John David Farabough								
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb	\$/ac			in.	%	g/tex
PHY 411 W3FE	1671	50.36	842	1	4.6	1.18	84.1	32.0
PHY 400 W3FE	1536	49.84	766	2	4.5	1.20	83.8	34.3
DP 2020 B3XF	1457	51.01	743	3	4.3	1.21	84.1	32.2
ST 4993 B3XF	1437	49.81	716	4	4.7	1.18	84.8	33.6
ST 5091 B3XF	1386	50.91	705	5	4.4	1.20	83.3	32.0
NG 3195 B3XF	1354	51.09	693	6	4.4	1.23	85.0	33.3
DP 1646 B2XF	1362	50.39	686	7	4.4	1.26	83.7	31.6
DG 3456 B3XF	1329	50.71	674	8	4.4	1.19	82.5	30.9
DP 2127 B3XF	1320	50.91	672	9	4.6	1.17	84.1	31.8
DG 3644 B3XF	1324	50.39	667	10	4.8	1.24	83.6	34.5
DP 2038 B3XF	1314	50.71	666	11	4.6	1.14	83.4	30.8
NG 4936 B3XF	1307	50.39	659	12	4.6	1.22	84.5	32.2
Mean	1400	50.54	707		4.5	1.20	83.9	32.4
Var. LSD _{0.05}	298.5	1.3	84.1		0.4	0.05	1.6	2.2
C.V.%	7.5	1.8	8.3		6.2	2.7	1.3	4.7
Prob (var)	0.4012	0.5501	0.0035		0.2644	0.0016	0.1539	0.0175

^a UI = Fiber length uniformity index.

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

Cooperator(s): Cornerstone Farms					Date Planted: 5/7/21			
Soil Type: Coughatta Silt Loam					Date of Harvest: 11/4/21			
Irrigation: Furrow					Replications: 4			
Agent(s): Kurt Batey								
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb						
PHY 411 W3FE	1459	49.53	723	1	4.2	1.21	83.6	30.0
ST 5091 B3XF	1377	51.05	703	2	4.5	1.20	84.1	35.1
NG 3195 B3XF	1390	50.50	702	3	4.5	1.25	85.2	33.5
DP 2038 B3XF	1407	49.89	701	4	4.7	1.17	84.9	33.7
DP 1646 B2XF	1356	51.04	692	5	4.3	1.22	84.3	33.1
ST 4993 B3XF	1335	50.71	677	6	4.2	1.18	82.0	30.8
PHY 400 W3FE	1331	49.15	654	7	4.9	1.14	84.0	34.0
DG 3456 B3XF	1324	48.88	648	8	5.0	1.24	83.6	34.9
NG 4936 B3XF	1274	50.46	644	9	4.9	1.18	85.0	35.6
DP 2127 B3XF	1291	49.26	636	10	4.8	1.20	84.6	33.1
DG 3644 B3XF	1234	50.25	620	11	4.5	1.25	82.2	32.6
DP 2020 B3XF	1199	50.05	600	12	4.7	1.13	82.6	30.9
Mean	1331	50.06	667		4.6	1.20	83.8	33.1
Var. LSD _{0.05}	79.5	2.0	47.7		0.3	0.03	1.4	1.7
C.V.%	4.2	2.8	5.0		4.5	2.0	1.1	3.5
Prob (var)	0.0001	0.4127	0.0001		0.0001	0.0001	0.0001	0.0001

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

Cooperator(s): Christopher Whitehead					Date Planted: 5/15/21			
Soil Type: Henry Silt Loam					Date of Harvest: 10/27/21			
Irrigation: Furrow					Replications: 4			
Agent(s): Stan Baker								
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb			\$/ac	in.	%	g/tex
DP 2127 B3XF	1637	52.36	854	1	4.3	1.18	84.5	32.3
NG 3195 B3XF	1689	50.43	851	2	4.5	1.25	85.0	31.9
ST 5091 B3XF	1638	51.63	846	3	4.3	1.20	84.4	30.5
DP 2038 B3XF	1616	48.68	787	4	4.9	1.20	84.8	32.6
ST 4993 B3XF	1533	50.13	767	5	4.2	1.21	82.8	30.6
NG 4936 B3XF	1545	49.33	763	6	5.0	1.21	85.3	34.2
DP 2020 B3XF	1541	49.41	760	7	4.8	1.14	83.1	30.9
DP 1646 B2XF	1458	49.81	726	8	4.1	1.24	83.8	32.4
DG 3456 B3XF	1460	48.08	703	9	4.7	1.25	84.0	34.4
DG 3644 B3XF	1290	50.30	649	10	4.4	1.27	83.6	31.9
Mean	1541	50.01	771		4.5	1.21	84.1	32.2
Var. LSD _{0.05}	204.4	2.9	101.2		0.3	0.04	0.9	2.0
C.V.%	9.1	4.0	9.1		5.2	2.2	0.7	4.2
Prob (var)	0.0199	0.1426	0.0038		0.0001	0.0001	0.1426	0.0001

^a UI = Fiber length uniformity index.

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

Cooperator(s): Rick Bransford					Date Planted: 5/16/21			
Soil Type: Caspiana Silt Loam					Date of Harvest: 10/5/21			
Irrigation: Furrow					Replications: 1			
Agent(s): Keith Perkins and Kyle Sanders								
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb			\$/ac	in.	%	g/tex
DP 2038 B3XF	1281	51.05	654	1	4.5	1.16	85.7	31.0
DP 2127 B3XF	1190	51.10	608	2	4.7	1.21	86.2	32.5
DG 3456 B3XF	1247	48.60	606	3	5.0	1.20	83.5	32.9
ST 5091 B3XF	1180	50.95	601	4	4.3	1.20	83.6	32.7
NG 3195 B3XF	1126	51.05	575	5	4.3	1.23	85.4	32.9
PHY 411 W3FE	1120	50.85	570	6	4.0	1.23	84.9	30.1
ST 4993 B3XF	1099	51.10	562	7	4.5	1.23	86.1	31.6
DG 3644 B3XF	1092	50.75	554	8	4.7	1.22	83.8	30.6
PHY 400 W3FE	1068	48.60	519	9	5.1	1.13	84.8	32.5
DP 1646 B2XF	1004	51.05	513	10	4.8	1.17	84.1	33.3
NG 4936 B3XF	971	51.05	496	11	4.7	1.18	85.0	32.3
DP 2020 B3XF	935	50.65	474	12	4.6	1.14	82.8	30.5
Mean	1110	50.57	561		4.6	1.19	84.7	31.9

^a UI = Fiber length uniformity index.**Appendix Table A8. Lint Yield and Fiber Properties–Mississippi County Transgenic Variety Test.**

Cooperator(s): David Wildy					Date Planted: 5/19/21			
Soil Type: Keo Silt Loam					Date of Harvest: 11/6/21			
Irrigation: Pivot					Replications: 4			
Agent(s): Ray Benson								
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb						
DP 2127 B3XF	1915	51.08	978	1	4.4	1.20	86.2	32.2
DP 2038 B3XF	1946	49.89	970	2	4.8	1.15	84.9	31.4
NG 3195 B3XF	1854	51.81	961	3	4.3	1.26	85.4	31.8
DP 1646 B2XF	1858	51.03	948	4	4.1	1.25	84.1	33.1
DG 3456 B3XF	1804	50.38	908	5	4.7	1.24	83.4	34.7
ST 5091 B3XF	1734	50.36	874	6	4.2	1.16	82.9	32.6
PHY 400 W3FE	1647	52.70	868	7	4.4	1.21	84.5	33.0
DG 3644 B3XF	1642	50.91	836	8	4.2	1.26	83.8	30.9
NG 4936 B3XF	1637	50.96	834	9	4.2	1.22	84.6	32.0
PHY 411 W3FE	1631	51.00	832	10	4.6	1.23	83.9	34.5
DP 2020 B3XF	1674	49.43	827	11	4.9	1.14	82.5	30.7
ST 4993 B3XF	1600	50.93	815	12	3.9	1.21	83.3	32.7
Mean	1745	50.87	888		4.4	1.21	84.1	32.5
Var. LSD _{0.05}	84.5	1.6	53.6		0.4	0.05	1.6	1.8
C.V.%	3.4	2.1	4.2		6.7	2.8	1.3	3.8
Prob (var)	0.0001	0.0238	0.0001		0.0007	0.0001	0.0017	0.0007

^a UI = Fiber length uniformity index.

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

Cooperator(s): Marty White and Jesse Flye					Date Planted: 5/20/21			
Soil Type: Dundee Silt Loam					Date of Harvest: 11/1/21			
Irrigation: Furrow					Replications: 4			
Agent(s): Craig Allen and Jeffery Works								
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb						
NG 3195 B3XF	1638	52.01	853	1	4.6	1.22	85.8	33.8
PHY 411 W3FE	1659	50.44	838	2	4.8	1.25	84.4	34.6
DP 2127 B3XF	1601	51.04	817	3	4.6	1.25	85.0	32.6
ST 4993 B3XF	1569	51.80	813	4	4.2	1.21	83.9	35.0
DP 2038 B3XF	1532	51.08	782	5	4.4	1.19	84.7	34.4
DP 1646 B2XF	1495	51.14	764	6	4.7	1.17	83.7	32.3
ST 5091 B3XF	1517	50.06	750	7	4.8	1.16	84.3	33.3
PHY 400 W3FE	1370	53.40	732	8	4.4	1.21	84.0	31.1
DP 2020 B3XF	1389	51.25	711	9	4.4	1.18	84.9	33.0
DG 3456 B3XF	1399	50.30	702	10	4.5	1.27	84.5	32.8
NG 4936 B3XF	1302	52.65	684	11	4.2	1.22	84.1	32.6
DG 3644 B3XF	1279	51.03	653	12	4.3	1.25	83.7	33.2
Mean	1479	51.35	758		4.5	1.21	84.4	33.2
Var. LSD _{0.05}	153.2	1.8	92.1		0.5	0.05	1.3	2.5
C.V.%	7.2	2.4	8.5		7.1	2.9	1.1	5.2
Prob (var)	0.0001	0.2240	0.0052		0.1044	0.0011	0.1105	0.1486

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

Cooperator(s): Joe Whittenton					Date Planted: 5/23/21			
Soil Type: Loring Silt Loam					Date of Harvest: 11/15/21			
Irrigation: Furrow					Replications: 4			
Variety	Lint	Loan	Income	r	Fiber properties			
	yield	rate			Micronaire	Length	UI ^a	Strength
	lb/ac	¢/lb	\$/ac			in.	%	g/tex
NG 3195 B3XF	1926	52.43	1007	1	4.8	1.22	86.0	35.2
DP 2127 B3XF	1806	51.04	922	2	4.5	1.26	85.2	31.8
PHY 411 W3FE	1715	51.09	876	3	4.8	1.24	86.0	32.5
PHY 400 W3FE	1716	50.41	865	4	4.8	1.20	85.1	32.2
NG 4936 B3XF	1665	50.89	847	5	4.2	1.23	83.6	31.3
DG 3644 B3XF	1640	50.99	836	6	4.3	1.26	84.5	32.0
ST 4993 B3XF	1651	50.36	833	7	4.4	1.23	84.7	33.3
DP 2038 B3XF	1628	51.03	831	8	4.8	1.23	84.6	32.8
ST 5091 B3XF	1642	50.50	830	9	4.8	1.17	85.5	35.2
DP 2020 B3XF	1636	49.28	807	10	5.0	1.17	85.0	32.1
DP 1646 B2XF	1494	50.88	760	11	4.6	1.17	83.5	32.0
DG 3456 B3XF	1464	50.81	744	12	4.4	1.29	83.7	30.9
Mean	1665	50.81	847		4.6	1.22	84.8	32.6
Var. LSD _{0.05}	121.2	1.2	69.1		0.2	0.04	1.0	1.6
C.V.%	5.1	1.6	5.9		3.5	2.2	0.8	3.5
Prob (var)	0.0001	0.0050	0.0001		0.0001	0.0001	0.0001	0.0001

^a UI = 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 Station, Manila
- NEREC** - Northeast Research and Extension Center, Keiser
- RRS** - Rohwer Research Station, Rohwer

