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Arkansas Cotton Variety Test 2014

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ARKANSAS COTTON VARIETY TEST 2014



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Cover photo by Christie Zolman, courtesy of Town Crier—Fred Bourland, director of the Northeast Research Station and Extension Center at Keiser, describes cotton variety testing research being conducted at a new research location at Manila.

Arkansas Agricultural Experiment Station, University of Arkansas System Division of Agriculture, Fayetteville. Mark J. Cochran, Vice President for Agriculture; Clarence E. Watson, AAES Director and Associate Vice-President for Agriculture–Research. SG140/InddCS6.

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**ARKANSAS
COTTON
VARIETY TEST
2014**

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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 four University of Arkansas research sites (near Keiser, Judd Hill, Marianna, and Rohwer). All entries in the 2014 Arkansas Cotton Variety Test were evaluated in one group. The 34 entries included 21 entries (8 B2RF, 8 WRF, 2 GLB2, and 3 conventional) returning from the 2013 test and 13 entries (2 B2RF, 3 WRF, 1 GLB2, 2 GLT, and 5 conventional) first-year entries. In addition, the 26 transgenic entries were evaluated in a replicated test adjacent to the Manila Airport. 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 experiments were evaluated for response to tarnished plant bug and bacterial blight in a separate test at Keiser. Except for wet conditions that delayed planting in the north Arkansas sites, climatic conditions were relatively mild and good at all test locations in 2014. This 2014 report includes results of large-plot variety tests in seven counties that were coordinated by Bill Robertson.

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Arkansas Cotton Variety Test 2014

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Introduction

The purpose of the University of Arkansas Cotton Variety Testing Program is to provide unbiased comparisons of cotton varieties and advanced breeding lines over a range of environments. Data from these tests help to identify the potential adaptability of varieties to particular cotton growing regions of the state. Bourland et al. (2000) documented several unintentional biases, which 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 (Keiser, Judd Hill, Marianna, and Rohwer) of the variety test. No specialized production inputs were implemented with respect to genetically enhanced varieties. Round-up Ready Flex® (RF or G), Liberty Link® (L) varieties, BollGard® (B2), Widestrike® (W) and conventional varieties were all treated equally with respect to weed and insect control. All entries in the tests at Manila possessed RF or G genes combined with B2 or W genes, and were uniformly treated with Round-up. The L varieties in these tests were not treated with Liberty herbicide.

Materials and Methods

The 34 entries included 21 entries (8 B2RF, 8 WRF, 2 GLB2, and 3 conventional) returning from the 2013 test and 13 entries (2 B2RF, 3 WRF, 1 GLB2, 2 GLT, and 5 conventional) first-year entries (Table 1). The test sites at Keiser, Judd Hill, Marianna and Rohwer included the same 34 entries. The test at Manila included only the 26 transgenic entries which were tolerant to Round-up herbicide.

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. Cultural practices and weather data (heat units and rainfall) associated with the test sites are listed in Table 2 and Table 3, respectively.

Double treated (two fungicides) seed for all entries were obtained from originators. Prior to planting, all seed were treated with imidacloprid (Gaucho®) at a rate of 6 oz/100 lb seed. Plots were planted with a constant number of seed (about 4 seed/row ft). All varieties were planted in two-row plots on 38-inch centers and ranged from 40 to 50 feet in length. Experiments were arranged in a randomized complete block and replicated five times (six times at Manila). Although exact inputs varied across locations, cultural inputs at each location were generally based on University of Arkansas 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 leaf, about 5-6 nodes from plant apex, was rated for 6 plants per plot for all 5 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 5 replications.

Bract variables: After cutout, a bract from a full-sized, mid-canopy, 1st position boll was randomly sampled from

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six plants per plot (5 replications) in the Keiser experiments. Each bract was examined for marginal trichome density (no. of trichomes/cm) as described by Bourland and Hornbeck (2007). Means for the six bracts were evaluated as plot means.

Tarnished plant bug: Entries in the variety test were evaluated for response to TPB in a separate field at Keiser. The TPB test included 8 replications of 1-row plots (20-foot long on 38-inch wide rows). The TPB test was planted on May 23 and received no insecticide treatment for TPB infestations. Response to TPB was to be determined by examining white flowers (6 flowers/plot/day for 6 days in late August) for presence of anther damage. Accumulate percentage of damaged flowers (“dirty flowers”) was determined for each plot.

Bacterial Blight: Four replications of the entries in the TPB test at Keiser were inoculated with races 1, 2, 12, and 18 of *Xanthomonas axonopodis* pv. *malvacearum* (Smith) Dye, the causal agent of bacterial blight, using field inoculation procedures described by Bird and Blank (1951) on July 7. Subsequently, number of susceptible plants per plot were counted. If more than five susceptible plants were found throughout plot, the plots was designated as blight susceptible, and given a score of “9”.

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

Data Collected at All Locations:

Plant height: Plant height measurements (in cm) were collected after harvest. 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: After first application of defoliant, percentage of open bolls was estimated from the front and back of each plot, then averaged for each plot. Due to delay in establishing alleys, open bolls were not determined for plots at Judd Hill in 2014.

Boll samples and lint percentage: Prior to mechanical harvest, hand-harvested samples of 50 open bolls were obtained from two replications at each location. Within each row of two-row plots, a site having average or above average plant density was chosen and 25 bolls (10 bottom, 10 mid-canopy and 5 top bolls) were harvested and bulked to form a 50-boll sample. The 50-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 uniformity index (Unif. ind.), strength and elongation. To reflect market demand for fiber quality, a weighted quality score (Q-score) was calculated as described by Bourland et al. (2010). Parameters (and weighting) included in Q-score were fiber length (50%), micronaire (25%), length uniformity index (15%), and strength (10%).

Seed index: Two sets of 25 fuzzy seed from the ginned seed of each 50-boll sample were counted and weighed. If the two weights varied more than 0.2 g, a third sample was taken. Two consistent weights of 25 seed were used to calculate fuzzy seed index (weight of 100 seed).

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

Lint index: Lint index (weight of lint on 100 seed) was determined from 50-boll sample data by dividing lint weight from ginned sample by the number of seed per sample (estimated using average seed weight) then multiplying by 100.

Fibers per seed: Fibers per seed were estimated by dividing lint index by an estimated weight of individual fibers. Weight of an individual fiber was estimated by: (fiber length × length uniformity × (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 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 ANOVA 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 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 2014 production season.

Rainfall in April and early May delayed planting at all locations in 2014 (Tables 2 and 3). Excessive rainfall continued in north Arkansas through June. With adequate moisture and warm temperatures, good stands were obtained at each location. Rainfall accumulated in May and June at Keiser, Marianna and Rohwer were 57%, 78%, and 35% higher than the historical averages at those locations, respectively. Heat unit accumulation was near normal at each location.

Performance data of entries in the 2014 Arkansas Cotton Variety Test at Keiser, Judd Hill, Marianna and Rohwer 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. Performance data at Manila are provided in Tables 14 and 15. Two- and three-year yield means for entries evaluated in previous years are in Tables 16 and

17, respectively. Morphological and host-plant resistance measurements for the entries are in Table 18.

Other observations associated with each test site include:

Keiser (Tables 6 and 7). With recurring rains in April and May on this clay soil, the test was not planted until May 20. Excellent stands and subsequent early growth were obtained. However, strong winds damaged the young seedlings soon after emergence and delayed subsequent growth. No mepiquat chloride was applied.

Judd Hill (Tables 8 and 9). The test site at Judd Hill experienced some of the same weather conditions as Keiser, which delayed planting until May 22. Incidence of Verticillium wilt was more severe than normal at this site due to relatively cool, wet conditions in early August. Nevertheless, good yields were achieved. Mepiquat chloride (total of 52 oz/a) was used to control plant height.

Marianna (Tables 10 and 11). Planting was accomplished in early May, and relatively good conditions prevailed through most of the season. Good plant stands were achieved, and plants grew at a rapid, unrestricted pace. Subsequently, early maturation and high yields (averaged over 3 bales per acre) were attained. Incidence of Verticillium wilt was higher than normal, but less than at Judd Hill. Mepiquat chloride (total of 44 oz/a) was used to control plant height.

Rohwer (Tables 12 and 13). Weather conditions at Rohwer were similar to Marianna—planting was accomplished in early May and relative normal conditions prevailed through most of the season. Like Marianna, subsequent plant growth and development were excellent, and lint yields averaged over 3 bales per acre. Incidence of Verticillium wilt was higher than normal at this location. Mepiquat chloride (total of 48 oz/a) was used to control plant height.

Manila (Tables 14 and 15). Due to its sandy soil texture, the test at Manila was planted on May 7—almost two weeks prior to planting the Keiser and Judd Hill sites. However, wet conditions after planting hindered establishment of stands. Since this was the first year of testing at this site, we were not acquainted with soil and cultural variation in the field. Unfortunately, the chosen test site was located in an area with much variation in soil texture, which added to unexplained variation in the data. Plant growth and development were restricted in several randomly located sand lens. Even with six replications, a relatively low percentage of the variation in yield could be attributed to entries and replications.

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Table 1. Participants and entries in the 2014 Arkansas Cotton Variety Test.

Institution/Contact person	Returning entries	Experimental no.	1st year entries
Americot Inc./ Ken Lege'	NG 1511 B2RF AM UA48	Ark 0102-48	
Bayer Crop Science/ Steve Lee	FM 1944GLB2 ST 4946GLB2	BX 1244GLB2 BX 1346GLB2	ST 4747GLB2 ST 5032GLT ST 5289GLT
Crop Production Services/ Stacie Bruff	Dyna-Gro 2285 B2RF Dyna-Gro 2570 B2RF	CT12214 DG CT07550	Dyna-Gro 2355 B2RF Dyna-Gro CT 14515
Insternational Seed Technology/ Rafaela Carvajal			BRS - 269 BRS - 286 BRS - 293 BRS - 335
Monsanto/ David Albers	DP 0912 B2RF DP 1311 B2RF DP 1321 B2RF Mon 12R224B2R2	11R124 B2R2 11R112 B2R2	
PhytoGen Seed Co./ Chris Main	PHY 333 WRF PHY 339 WRF PHY 427 WRF PHY 499 WRF PX3003-04WRF PX3003-10WRF PX3122b51WRF PX4444-13WRF	PX312240WRF PX433906WRF PX443327	PHY 495 WRF PX5540-10WRF PX3003-14WRF
Seed Source Genetics/ Edward Jungmann	SSG UA222 HQ210CT	Ark 0222-12	SSG UA103
Winfield Solutions, LLC/ Robert Cossar	Croplan 3787 B2RF		

Table 2. Cultural practices for locations of the 2014 Arkansas Cotton Variety Test.

Input	Location				
	Manila	Keiser	Judd Hill	Marianna	Rohwer
Soil type	Routon-Dundee- Crevasse Complex	Sharkey clay	Dundee silt loam	Callaway silt loam	Hebert silt loam
N, P, K (lbs)	100-0-0	130-0-0	100-23-40	100-0-90	100-0-109
Planting date	5/7	5/20	5/22	5/6	5/5
Irrig. method	furrow	furrow	furrow	furrow	furrow
Irrigation dates	6/28, 7/9, 7/13, 7/31, 8/8	7/29, 8/6, 8/23	6/24, 7/10, 7/16, 7/29, 8/5, 8/15, 8/26	7/14, 7/26, 8/7, 8/16, 8/22, 8/28	6/30, 7/9, 7/11, 7/25, 7/31, 8/8
Defoliation date	9/29, 10/13	9/26, 10/17	9/30, 10/16	9/22, 9/29	9/20, 9/26
Harvest date	10/21	10/31	11/3	10/9	10/9

Table 3. Weather summary for the 2014 production season in north, central and south Arkansas.

	Month	DD60s in 2014	Historical avg. ¹	
			DD60s	Rainfall (in.) in 2014
Keiser (northeast)	May	350	314	5.8
	June	583	532	8.5
	July	537	644	2.9
	August	663	583	2.1
	September	390	363	0.5
	October	130	127	3.0
	Total	2653	2563	22.8
Marianna (central)	May	331	336	6.3
	June	551	538	9.7
	July	513	646	2.6
	August	616	601	4.7
	September	429	397	1.3
	October	188	154	4.5
	Total	2628	2672	29.1
Rohwer (southeast)	May	288	354	6.1
	June	529	551	5.5
	July	499	661	2.9
	August	585	618	6.1
	September	570	415	1.6
	October	200	167	7.7
	Total	2670	2766	29.9

¹ DD60 (growing degree days based on 60 °F) and rainfall from historical weather data from 1960 through 2007.

Table 4. Yield and related properties–2014 Arkansas Cotton Variety Test across four test sites.

Variety	Lint		Lint		Ht.	Open		Seed		Lint		Seed/	Fibers/		Fiber			
	yield	r	frac.	r		r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm	%		g		g		mil.		no.		no.		
PX3122-b51WRF	1545	1	43.5	8	97	21	63	14	10.9	9	8.6	2	8.147	12	18865	4	176	10
ST 4747GLB2	1486	2	42.0	16	93	28	75	1	10.5	16	7.8	15	8.706	5	18038	9	172	11
DP 0912 B2RF	1465	3	41.7	21	102	14	65	7	10.1	20	7.4	20	8.928	1	16547	25	162	26
PHY 333 WRF	1465	4	43.6	6	102	12	64	11	10.5	17	8.2	6	8.068	14	18608	6	178	7
NG 1511 B2RF	1445	5	44.4	1	99	18	61	17	10.3	19	8.4	4	7.783	16	18369	7	178	8
ST 4946GLB2	1444	6	42.0	15	94	26	65	8	11.5	2	8.5	3	7.655	19	18889	3	169	14
DP 1321 B2RF	1434	7	42.9	11	105	10	69	3	10.4	18	8.0	9	8.120	13	17156	18	165	22
Mon 12R224B2R2	1379	8	41.9	17	102	13	62	16	10.0	23	7.4	21	8.470	6	17167	17	169	15
DP 1311 B2RF	1351	9	43.9	5	94	25	66	6	8.6	33	6.9	28	8.892	3	16914	21	183	3
ST 5032GLT	1331	10	42.0	13	91	33	62	15	11.2	4	8.3	5	7.282	23	19544	2	178	5
Dyna-Gro 2285 B2RF	1328	11	41.8	18	95	24	68	4	10.6	15	7.8	14	7.732	17	17875	11	170	13
PX5540-10WRF	1323	12	44.1	3	97	23	55	24	8.4	34	6.8	30	8.835	4	17129	19	188	2
PHY 495 W3RF	1322	13	43.5	7	102	15	47	31	9.5	28	7.5	18	8.012	15	17758	12	180	4
PX3003-14WRF	1311	14	41.4	24	106	8	57	22	9.2	31	6.7	32	8.916	2	16119	28	167	20
Dyna-Gro 2570 B2RF	1309	15	41.8	19	97	22	63	12	10.8	13	7.9	12	7.507	20	17877	10	168	17
PHY 339WRF	1308	16	42.0	14	106	9	59	18	9.7	26	7.3	24	8.163	11	16859	23	169	16
PX4444-13WRF	1304	17	44.1	2	100	17	47	30	10.8	12	8.6	1	6.867	26	21223	1	199	1
SSG UA222	1291	18	41.8	20	93	27	58	19	10.9	8	8.0	11	7.347	22	17396	14	162	25
ST 5289GLT	1275	19	41.5	23	92	30	57	20	9.7	27	7.0	27	8.182	10	16437	26	165	21
PHY 499 WRF	1272	20	44.0	4	98	20	57	20	10.0	24	8.1	8	7.217	24	17368	15	171	12
PHY 427 WRF	1247	21	41.5	22	104	11	63	12	9.4	30	6.8	29	8.247	9	15906	30	163	24
Dyna-Gro 2355 B2RF	1240	22	39.9	28	93	29	64	9	11.1	5	7.5	17	7.441	21	18292	8	168	18
FM 1944GLB2	1237	23	39.5	31	92	32	69	2	10.9	10	7.3	22	7.675	18	16322	27	152	31
PX3003-04WRF	1227	24	39.8	29	107	5	53	27	10.0	22	6.8	31	8.281	7	16007	29	157	29
PX3003-10WRF	1216	25	42.0	12	110	2	54	26	8.9	32	6.6	33	8.255	8	15721	31	167	19
Croplan 3787 B2RF	1181	26	43.2	10	109	3	56	23	9.5	29	7.4	19	7.155	25	17238	16	176	9
Dyna-Gro CT14515	1178	27	43.4	9	108	4	46	32	10.6	14	8.2	7	6.487	28	18721	5	178	6
AM UA48	1047	28	39.0	33	90	34	64	9	12.3	1	8.0	10	5.954	30	15053	32	129	34
SSG UA103	1035	29	40.6	25	106	6	67	5	11.3	3	7.9	13	5.942	31	17744	13	161	27
BRS - 335	1030	30	40.5	26	106	7	54	25	10.1	21	7.0	26	6.680	27	16777	24	164	23
BRS - 286	932	31	39.7	30	101	16	53	28	10.8	11	7.3	23	5.838	32	16888	22	158	28
SSG HQ210CT	923	32	39.2	32	92	31	48	29	9.9	25	6.6	34	6.379	29	14879	34	147	32
BRS - 293	905	33	40.3	27	98	19	38	34	11.1	7	7.6	16	5.496	33	16922	20	156	30
BRS - 269	666	34	38.4	34	114	1	40	33	11.1	6	7.1	25	4.255	34	15051	33	138	33
Mean	1249		41.8		100		59		10.3		7.6		7.497		17284		167	
Var. LSD 0.10	75		0.9		6		5		0.4		0.4		0.454		742		6	
Loc. LSD 0.10	29		0.3		2		2		0.1		0.1		0.175		254		2	
C.V.%	11.5		2.6		11.1		15.5		4.6		4.6		11.6		5.1		4.6	
R-sq x 100	83.7		91.5		54.0		73.2		88.1		86.9		80.0		85.8		89.6	
Prob (var x loc)	<.0001		0.136		<.0001		<.0001		0.008		0.214		<.0001		0.161		<.001	

Table 5. Fiber properties–2014 Arkansas Cotton Variety Test across four test sites.

Variety	Lint		Quality		Fiber properties									
	yield lb/a	r	score	r	Micronaire	r	Length in.	r	Unif. index ¹ %	r	Strength g/tex	r	Elongation %	r
PX3122-b51WRF	1545	1	68	10	4.5	10	1.18	13	86.3	3	32.6	23	7.3	23
ST 4747GLB2	1486	2	71	8	4.2	25	1.21	6	84.3	31	28.7	34	6.6	28
DP 0912 B2RF	1465	3	38	34	4.8	1	1.11	34	84.4	30	31.3	31	7.5	18
PHY 333 WRF	1465	4	73	5	4.3	21	1.20	7	85.3	11	31.4	30	7.2	24
NG 1511 B2RF	1445	5	49	31	4.8	3	1.14	29	84.4	29	33.3	18	8.5	5
ST 4946GLB2	1444	6	55	26	4.6	9	1.15	26	84.9	18	33.6	11	7.8	10
DP 1321 B2RF	1434	7	56	25	4.7	4	1.16	24	85.6	6	32.7	22	9.0	1
Mon 12R224B2R2	1379	8	64	14	4.3	24	1.17	15	85.0	15	31.6	29	7.4	22
DP 1311 B2RF	1351	9	53	28	4.2	27	1.14	31	84.6	26	31.8	26	8.2	6
ST 5032GLT	1331	10	67	11	4.2	29	1.18	11	84.9	21	32.6	24	7.9	9
Dyna-Gro 2285 B2RF	1328	11	60	16	4.4	12	1.16	21	84.7	25	31.0	32	8.6	3
PX5540-10WRF	1323	12	60	17	4.0	33	1.17	16	84.9	18	33.4	16	7.2	25
PHY 495 W3RF	1322	13	56	23	4.3	21	1.14	30	85.4	8	36.3	2	8.1	7
PX3003-14WRF	1311	14	48	32	4.3	23	1.14	33	84.5	27	33.4	15	7.4	20
Dyna-Gro 2570 B2RF	1309	15	60	18	4.5	11	1.17	18	85.4	9	34.0	6	7.7	15
PHY 339WRF	1308	16	72	6	4.2	31	1.20	9	85.3	12	32.9	21	7.6	16
PX4444-13WRF	1304	17	88	2	3.8	34	1.26	2	86.6	2	32.6	25	7.5	19
SSG UA222	1291	18	79	4	4.4	14	1.22	4	85.6	7	33.9	10	8.9	2
ST 5289GLT	1275	19	54	27	4.4	13	1.17	18	83.9	34	30.8	33	6.6	29
PHY 499 WRF	1272	20	56	24	4.7	5	1.15	27	85.6	5	34.8	4	8.0	8
PHY 427 WRF	1247	21	59	20	4.4	19	1.17	17	84.9	17	34.0	9	7.7	12
Dyna-Gro 2355 B2RF	1240	22	57	22	4.2	25	1.16	22	84.9	20	34.0	8	7.8	11
FM 1944GLB2	1237	23	71	9	4.4	20	1.22	5	84.9	21	31.7	27	5.8	32
PX3003-04WRF	1227	24	66	12	4.2	31	1.18	12	85.1	14	33.2	19	6.4	30
PX3003-10WRF	1216	25	52	30	4.4	15	1.14	32	84.9	16	33.5	14	7.7	14
Croplan 3787 B2RF	1181	26	59	21	4.4	18	1.17	18	84.8	23	31.7	28	8.6	4
Dyna-Gro CT14515	1178	27	66	12	4.4	15	1.19	10	84.5	28	33.3	17	7.7	13
AM UA48	1047	28	88	1	4.8	2	1.27	1	87.5	1	36.4	1	5.4	34
SSG UA103	1035	29	81	3	4.2	29	1.23	3	86.3	4	33.6	12	7.4	21
BRS - 335	1030	30	62	15	4.2	27	1.17	14	84.8	24	33.1	20	6.6	27
BRS - 286	932	31	59	19	4.4	15	1.15	25	85.1	13	34.6	5	6.4	31
SSG HQ210CT	923	32	44	33	4.6	6	1.15	28	84.0	33	34.0	6	6.7	26
BRS - 293	905	33	53	28	4.6	7	1.16	22	84.1	32	35.1	3	7.6	17
BRS - 269	666	34	71	7	4.6	8	1.20	7	85.4	10	33.5	13	5.7	33
Mean	1249		62		4.4		1.18		85.1		33.1		7.4	
Var. LSD 0.10	75		7		0.2		0.02		0.8		0.9		0.5	
Loc. LSD 0.10	29		ns		0.1		0.01		ns		0.3		0.2	
C.V.%	11.5		14.3		5.9		1.9		1.1		3.4		8.6	
R-sq x 100	83.7		81.8		86.4		87.2		67.7		84.1		83.1	
Prob (var x loc)	<.0001		0.044		0.086		0.036		0.349		0.082		0.716	

¹ Unif. Ind. = uniformity index.

Table 6. Yield and related properties--2014 Arkansas Cotton Variety Test, with irrigation on a Tunica silty clay soil at Keiser.

Variety	Lint yield		Lint frac.		Ht. cm	Open bolls			Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density	
	lb/a	r	%	r		r	%	r	g	r	g	r	mil.	r	no.	r	no.	r
PX3122-b51WRF	1622	1	42.2	10	94	26	72	3	11.0	12	8.3	5	8.909	8	18067	4	167	9
PHY 333 WRF	1497	2	42.7	6	97	19	59	19	10.3	17	7.8	10	8.685	10	17377	8	168	7
DP 0912 B2RF	1477	3	41.8	13	99	16	65	7	10.1	23	7.4	16	9.055	6	16273	20	159	17
DP 1321 B2RF	1476	4	42.6	8	97	20	75	2	10.3	20	7.8	9	8.543	13	16291	18	158	19
ST 4747GLB2	1466	5	41.5	16	92	30	70	4	10.2	22	7.4	17	9.046	7	16484	17	160	16
ST 5032GLT	1407	6	41.9	12	90	32	63	11	11.1	9	8.1	7	7.891	18	19799	2	182	1
PX4444-13WRF	1406	7	43.2	3	95	25	44	31	11.2	7	8.7	1	7.298	26	19985	1	182	2
NG 1511 B2RF	1403	8	43.7	1	101	13	54	23	10.3	21	8.1	6	7.824	19	17312	9	168	8
FM 1944GLB2	1401	9	40.7	23	92	29	70	4	10.8	13	7.5	14	8.426	15	16247	21	152	23
ST 4946GLB2	1391	10	41.0	20	93	28	62	12	11.9	2	8.5	2	7.416	25	18539	3	162	14
PHY 499 WRF	1377	11	42.0	11	105	6	58	21	9.4	30	7.1	21	8.875	9	16084	23	165	11
PHY 495 W3RF	1377	12	42.7	7	103	9	46	30	9.6	29	7.2	18	8.674	11	16958	11	171	6
DP 1311 B2RF	1370	13	42.6	9	93	27	64	10	8.6	33	6.6	32	9.463	3	15978	24	173	5
PX5540-10WRF	1365	14	43.6	2	99	15	54	23	8.3	34	6.5	33	9.468	2	16091	22	178	3
PX3003-04WRF	1361	15	39.2	28	98	18	60	17	10.4	16	6.8	25	9.097	5	15380	26	147	30
SSG UA222	1358	16	41.5	15	96	22	61	14	11.0	10	8.0	8	7.739	21	16548	14	153	22
PX3003-14WRF	1353	17	40.1	25	101	11	61	14	9.3	31	6.2	34	9.835	1	15102	28	156	21
PX3003-10WRF	1353	18	41.3	18	104	8	62	12	9.2	32	6.7	30	9.231	4	15135	27	157	20
PHY 339WRF	1337	19	40.8	22	87	33	57	22	9.9	24	7.0	23	8.651	12	16577	13	164	12
ST 5289GLT	1317	20	41.8	14	96	22	61	14	9.8	26	7.2	20	8.335	16	15063	29	150	27
Dyna-Gro 2570 B2RF	1283	21	41.0	21	98	17	65	7	10.7	15	7.6	13	7.711	22	16796	12	158	18
Dyna-Gro 2355 B2RF	1279	22	38.0	31	96	21	60	17	11.4	5	7.0	22	8.222	17	16509	15	149	28
Croplan 3787 B2RF	1270	23	43.0	5	104	7	48	29	9.7	28	7.5	15	7.665	23	17464	7	175	4
Mon 12R224B2R2	1270	24	39.5	27	103	10	52	26	10.3	18	6.8	26	8.493	14	15683	25	151	24
Dyna-Gro CT14515	1239	25	43.1	4	108	5	40	32	11.2	8	8.5	3	6.602	30	17786	5	163	13
Dyna-Gro 2285 B2RF	1227	26	41.4	17	79	34	65	7	10.7	14	7.8	11	7.157	27	17619	6	166	10
PHY 427 WRF	1178	27	40.6	24	100	14	59	19	9.8	27	6.9	24	7.785	20	14786	31	148	29
AM UA48	1122	28	37.7	32	91	31	66	6	12.6	1	7.8	12	6.551	31	14603	32	123	34
BRS - 335	1107	29	39.6	26	115	2	53	25	9.9	25	6.6	31	7.612	24	16281	19	161	15
BRS - 286	1073	30	38.7	30	110	4	51	27	11.3	6	7.2	19	6.768	29	16508	16	150	26
SSG UA103	1064	31	41.1	19	101	11	76	1	11.9	3	8.5	4	5.693	33	17238	10	151	25
SSG HQ210CT	1036	32	38.9	29	95	24	51	27	10.3	19	6.7	29	7.052	28	13448	34	130	32
BRS - 293	845	33	37.5	33	113	3	36	34	11.0	11	6.7	28	5.750	32	14973	30	138	31
BRS - 269	745	34	36.8	34	121	1	37	33	11.4	4	6.8	27	4.995	34	14257	33	128	33
Mean	1290		41.0		99		58		10.4		7.4		7.956		16448		158	
LSD 0.10	111		1.5		9		10		0.6		0.6		0.692		1105		11.1	
C.V.%	8.2		2.2		9.0		16.4		3.4		5.0		8.3		4.0		4.2	
R-sq x 100	80.0		89.2		56.1		58.8		93.2		87.2		80.5		90.6		90.2	

Table 7. Fiber properties—2014 Arkansas Cotton Variety Test, with irrigation on a Tunica silty clay soil at Keiser.

Variety	Lint		Quality		Fiber properties									
	yield lb/a	r	score	r	Micronaire	r	Length in.	r	Unif. ind. ¹ %	r	Strength g/tex	r	Elongation %	r
PX3122-b51WRF	1622	1	61	21	4.6	13	1.17	21	86.1	5	32.5	26	7.4	17
PHY 333 WRF	1497	2	79	4	4.3	24	1.23	4	85.7	8	32.3	28	7.3	20
DP 0912 B2RF	1477	3	36	34	4.9	2	1.12	34	84.2	30	31.5	31	7.4	17
DP 1321 B2RF	1476	4	54	30	4.9	2	1.17	21	84.9	21	33.8	16	8.7	2
ST 4747GLB2	1466	5	72	7	4.4	22	1.22	7	84.1	31	29.6	34	6.3	29
ST 5032GLT	1407	6	55	27	4.2	29	1.16	27	84.1	33	33.1	23	8.2	8
PX4444-13WRF	1406	7	92	1	4.0	34	1.26	2	87.3	2	33.6	21	7.3	19
NG 1511 B2RF	1403	8	56	26	4.8	6	1.17	21	84.7	24	34.6	11	8.3	6
FM 1944GLB2	1401	9	67	13	4.6	9	1.20	8	84.2	29	32.2	29	5.9	32
ST 4946GLB2	1391	10	60	23	4.6	9	1.17	21	85.4	12	33.6	21	7.3	20
PHY 499 WRF	1377	11	61	21	4.4	20	1.17	25	85.4	12	35.0	6	7.8	9
PHY 495 W3RF	1377	12	63	18	4.3	26	1.16	29	86.7	3	37.8	1	7.8	9
DP 1311 B2RF	1370	13	53	31	4.3	26	1.16	29	84.0	34	32.0	30	8.6	4
PX5540-10WRF	1365	14	64	15	4.1	32	1.18	19	85.2	18	33.7	18	7.5	12
PX3003-04WRF	1361	15	69	9	4.4	22	1.19	12	85.5	11	34.8	7	6.3	28
SSG UA222	1358	16	76	6	4.6	9	1.23	4	85.4	14	33.7	19	9.6	1
PX3003-14WRF	1353	17	51	33	4.3	24	1.14	33	85.0	20	34.2	14	7.0	24
PX3003-10WRF	1353	18	58	24	4.5	15	1.16	27	85.3	16	34.8	8	7.2	22
PHY 339WRF	1337	19	71	8	4.2	31	1.20	8	85.4	14	34.2	13	7.4	16
ST 5289GLT	1317	20	55	28	4.8	4	1.17	25	85.2	17	32.6	25	6.3	30
Dyna-Gro 2570 B2RF	1283	21	66	14	4.5	15	1.18	19	85.7	8	33.8	15	8.3	6
Dyna-Gro 2355 B2RF	1279	22	68	11	4.2	29	1.19	12	85.5	10	33.6	20	7.5	13
Croplan 3787 B2RF	1270	23	53	31	4.5	15	1.15	32	84.4	27	31.2	33	8.7	2
Mon 12R224B2R2	1270	24	69	9	4.3	26	1.19	12	85.8	7	32.4	27	7.1	23
Dyna-Gro CT14515	1239	25	62	20	4.8	6	1.20	10	84.4	26	33.8	16	7.5	13
Dyna-Gro 2285 B2RF	1227	26	64	16	4.4	20	1.20	10	84.1	31	31.3	32	8.4	5
PHY 427 WRF	1178	27	68	11	4.6	13	1.19	12	86.0	6	35.2	5	7.4	15
AM UA48	1122	28	92	1	4.8	5	1.27	1	87.8	1	37.1	2	5.6	34
BRS - 335	1107	29	64	16	4.1	32	1.19	18	84.6	25	32.9	24	7.0	25
BRS - 286	1073	30	57	25	4.5	15	1.16	29	84.9	21	36.1	4	6.3	30
SSG UA103	1064	31	80	3	4.7	8	1.23	4	86.4	4	34.7	10	6.8	26
SSG HQ210CT	1036	32	55	28	5.0	1	1.19	12	84.3	28	34.7	9	6.8	26
BRS - 293	845	33	63	18	4.5	15	1.19	12	84.8	23	37.0	3	7.6	11
BRS - 269	745	34	77	5	4.6	12	1.23	3	85.0	19	34.3	12	5.7	33
Mean	1290		64		4.5		1.19		85.2		33.7		7.3	
LSD 0.10	111		12		0.4		0.03		1.7		1.8		1.1	
C.V.%	8.2		10.7		5.8		1.6		1.2		3.1		9.3	
R-sq x 100	80.0		84.6		66.1		85.5		62.9		85.3		78.7	

¹ Unif. Ind. = uniformity index.

Table 8. Yield and related properties–2014 Arkansas Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.

Variety	Lint yield		Lint frac.		Ht.	Open bolls		Seed index		Lint index		Seed/acre ¹		Fibers/seed		Fiber density	
	lb/a	r	%	r		%	r	g	r	g	r	mil.	r	no.	r	no.	
PX3122-b51WRF	1394	1	41.3	7	100	20	.	11.4	7	8.2	1	7.755	5	18654	8	169	17
ST 4747GLB2	1293	2	39.7	10	90	28	.	10.3	19	7.0	14	8.377	1	18319	11	176	9
PHY 333 WRF	1228	3	41.6	6	97	23	.	11.1	10	8.0	3	6.979	14	18748	6	172	11
DP 0912 B2RF	1223	4	39.6	12	108	9	.	10.2	22	6.9	17	8.104	2	16086	31	156	32
SSG UA222	1203	5	39.3	16	101	19	.	11.6	4	7.7	7	7.116	12	18139	15	162	28
NG 1511 B2RF	1191	6	43.0	1	97	22	.	10.3	20	8.0	4	6.790	17	19582	2	189	5
PX4444-13WRF	1124	7	41.8	4	102	17	.	10.7	15	7.7	6	6.604	20	22100	1	209	2
ST 4946GLB2	1118	8	38.8	24	96	24	.	11.6	5	7.5	9	6.783	18	18695	7	167	22
DP 1321 B2RF	1116	9	40.8	9	110	7	.	10.5	18	7.5	10	6.804	16	16988	24	162	29
Dyna-Gro 2285 B2RF	1106	10	39.3	17	103	14	.	10.7	14	7.0	15	7.157	11	17574	21	166	25
DP 1311 B2RF	1083	11	42.3	3	89	32	.	8.3	33	6.2	25	7.947	4	17399	22	192	4
PHY 495 W3RF	1082	12	41.3	8	106	13	.	9.5	26	6.8	19	7.248	10	18929	5	192	3
Mon 12R224B2R2	1074	13	39.7	11	101	18	.	9.7	25	6.5	22	7.509	7	16729	27	168	19
Dyna-Gro 2570 B2RF	1054	14	39.1	20	99	21	.	10.5	17	6.8	18	7.012	13	18500	10	176	10
PX5540-10WRF	1045	15	41.8	5	102	16	.	8.0	34	5.9	31	8.079	3	18648	9	211	1
PHY 339WRF	1033	16	39.0	21	113	4	.	9.2	29	6.1	28	7.709	6	16259	29	168	18
ST 5032GLT	1017	17	39.1	19	88	33	.	11.6	3	7.6	8	6.055	26	19356	3	172	12
AM UA48	991	18	37.9	29	82	34	.	12.5	1	7.8	5	5.775	29	15048	34	127	34
BRS - 335	962	19	39.0	22	112	5	.	10.3	21	6.6	21	6.585	21	17275	23	167	20
Dyna-Gro 2355 B2RF	955	20	37.1	31	90	29	.	12.1	2	7.2	12	6.004	27	19107	4	166	24
PX3003-14WRF	949	21	38.3	25	107	10	.	9.3	28	5.8	33	7.398	8	16657	28	172	13
Dyna-Gro CT14515	947	22	39.5	13	107	11	.	10.7	13	7.1	13	6.068	25	18177	13	171	14
PHY 427 WRF	946	23	38.9	23	110	7	.	9.1	30	5.9	30	7.273	9	17595	20	183	7
PHY 499 WRF	931	24	42.4	2	90	29	.	10.8	12	8.0	2	5.263	33	18188	12	170	16
PX3003-04WRF	917	25	37.9	28	103	15	.	9.8	23	6.1	29	6.898	15	16787	26	167	21
FM 1944GLB2	910	26	36.0	33	93	26	.	10.8	11	6.2	26	6.691	19	17598	19	165	26
SSG UA103	858	27	38.0	27	110	6	.	11.3	8	6.9	16	5.610	31	18076	17	164	27
BRS - 293	847	28	39.4	15	95	25	.	11.1	9	7.3	11	5.289	32	18133	16	166	23
ST 5289GLT	842	29	38.1	26	90	29	.	9.7	24	6.1	27	6.272	23	18175	14	183	8
Croplan 3787 B2RF	807	30	39.4	14	115	3	.	9.4	27	6.3	24	5.849	28	17858	18	183	6
BRS - 286	805	31	37.3	30	106	12	.	10.7	15	6.4	23	5.677	30	16967	25	160	31
PX3003-10WRF	801	32	39.3	18	118	2	.	8.9	32	5.9	32	6.182	24	16168	30	171	15
SSG HQ210CT	734	33	35.2	34	91	27	.	9.1	31	5.1	34	6.516	22	15402	32	160	30
BRS - 269	553	34	36.9	32	129	1	.	11.4	6	6.8	20	3.712	34	15367	33	139	33
Mean	1004		39.4		101		.	10.3		6.8		6.679		17744		171	
LSD 0.10	138		2.2		14		.	0.9		1.0		0.938		1711		13	
C.V.%	13.2		3.4		13.4		.	5.0		8.3		13.4		5.7		4.5	
R-sq x 100	74.6		79.7		43.0		.	89.4		79.0		69.3		79.2		89.7	

Table 9. Fiber properties—2014 Arkansas Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.

Variety	Lint		Quality		Fiber properties									
	yield lb/a	r	score	r	Micronaire	r	Length in.	r	Unif. ind. ¹ %	r	Strength g/tex	r	Elongation %	r
PX3122-b51WRF	1394	1	74	7	4.2	6	1.21	12	86.8	2	32.3	21	8.2	13
ST 4747GLB2	1293	2	62	13	3.8	15	1.21	10	83.3	33	28.7	34	7.6	25
PHY 333 WRF	1228	3	81	3	4.0	10	1.24	6	86.0	6	31.8	29	7.9	21
DP 0912 B2RF	1223	4	53	24	4.3	4	1.16	28	85.7	11	32.0	27	7.8	23
SSG UA222	1203	5	83	2	4.0	11	1.25	4	85.7	8	34.5	5	9.5	1
NG 1511 B2RF	1191	6	47	31	4.3	5	1.14	34	84.2	28	32.6	17	8.8	4
PX4444-13WRF	1124	7	77	5	3.2	34	1.28	2	86.8	3	31.5	32	8.5	8
ST 4946GLB2	1118	8	53	23	4.1	8	1.15	33	85.2	15	33.8	10	8.2	14
DP 1321 B2RF	1116	9	54	21	4.4	2	1.17	25	85.7	8	32.3	21	9.3	2
Dyna-Gro 2285 B2RF	1106	10	63	12	4.0	11	1.19	18	85.3	14	32.1	25	8.6	5
DP 1311 B2RF	1083	11	47	31	3.7	23	1.16	31	84.6	23	32.4	20	8.4	11
PHY 495 W3RF	1082	12	51	27	3.7	23	1.16	31	85.0	19	36.0	1	7.9	21
Mon 12R224B2R2	1074	13	58	17	3.9	13	1.17	21	85.2	16	32.3	21	7.7	24
Dyna-Gro 2570 B2RF	1054	14	56	20	3.7	20	1.18	20	85.0	21	33.1	13	7.1	29
PX5540-10WRF	1045	15	40	34	3.2	33	1.16	28	85.0	19	33.5	12	8.5	6
PHY 339WRF	1033	16	62	13	3.7	20	1.21	12	83.8	31	32.2	24	8.5	8
ST 5032GLT	1017	17	70	8	3.8	15	1.21	10	85.7	8	32.8	15	8.1	16
AM UA48	991	18	86	1	4.5	1	1.31	1	88.5	1	35.9	2	5.6	34
BRS - 335	962	19	69	10	3.7	20	1.22	7	85.1	17	34.1	7	7.4	27
Dyna-Gro 2355 B2RF	955	20	60	16	3.8	17	1.19	16	85.1	17	34.9	3	8.4	11
PX3003-14WRF	949	21	52	25	3.5	28	1.18	19	84.7	22	32.1	25	8.1	16
Dyna-Gro CT14515	947	22	70	8	3.8	17	1.22	8	85.6	12	32.7	16	8.1	16
PHY 427 WRF	946	23	47	31	3.4	29	1.17	21	84.6	24	33.1	13	7.9	20
PHY 499 WRF	931	24	61	15	4.4	2	1.17	25	86.4	5	34.8	4	8.2	14
PX3003-04WRF	917	25	57	18	3.6	25	1.19	16	84.3	26	31.5	31	7.4	27
FM 1944GLB2	910	26	69	10	3.3	31	1.25	5	85.6	12	32.5	18	6.0	33
SSG UA103	858	27	80	4	3.6	26	1.26	3	85.9	7	32.0	27	8.5	6
BRS - 293	847	28	54	22	4.1	8	1.17	25	84.0	29	33.9	8	8.5	8
ST 5289GLT	842	29	52	26	3.4	29	1.20	14	82.9	34	30.1	33	7.5	26
Croplan 3787 B2RF	807	30	50	29	3.6	26	1.17	21	84.5	25	31.7	30	9.0	3
BRS - 286	805	31	56	19	3.9	14	1.17	21	84.3	26	33.8	9	6.9	31
PX3003-10WRF	801	32	48	30	3.8	17	1.16	28	83.8	31	32.5	18	8.1	16
SSG HQ210CT	734	33	51	27	3.3	31	1.20	14	84.0	29	33.7	11	7.0	30
BRS - 269	553	34	76	6	4.2	6	1.22	8	86.6	4	34.4	6	6.1	32
Mean	1004		60		3.8		1.20		85.1		32.9		7.9	
LSD 0.10	138		15		0.5		0.03		1.7		1.5		1.2	
C.V.%	13.2		14.4		8.4		1.6		1.2		2.7		8.7	
R-sq x 100	74.6		79.8		71.9		89.0		71.2		85.2		76.5	

¹ Unif. Ind. = uniformity index.

Table 10. Yield and related properties–2014 Arkansas Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna.

Variety	Lint yield		Lint frac.		Ht. cm	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density		
	lb/a	r	%	r		r	%	r	g	r	g	mil.	r	no.	r	no.	r	
ST 4747GLB2	1577	1	43.0	21	86	26	70	2	11.2	7	8.6	9	8.329	3	19604	3	179	5
PHY 333 WRF	1542	2	44.7	8	98	7	52	14	10.7	11	8.8	5	7.956	7	18705	7	176	12
ST 4946GLB2	1457	3	44.4	10	85	27	53	11	11.5	3	9.3	1	7.123	16	19458	4	174	13
Mon 12R224B2R2	1450	4	44.4	9	94	13	57	5	10.2	18	8.3	13	7.971	6	18469	9	179	6
PX3122-b51WRF	1424	5	43.8	14	94	13	47	20	10.6	12	8.5	11	7.599	11	18682	8	178	8
DP 1311 B2RF	1418	6	44.9	7	86	24	53	11	8.5	34	7.1	34	9.096	1	16717	22	182	2
NG 1511 B2RF	1403	7	45.3	4	90	20	54	8	10.1	21	8.6	7	7.386	13	17783	16	173	14
Dyna-Gro 2285 B2RF	1397	8	43.0	20	93	17	63	3	10.5	15	8.0	17	7.929	8	17877	14	171	17
ST 5032GLT	1372	9	43.7	15	86	24	48	17	11.2	6	8.8	4	7.078	18	19791	2	181	3
SSG UA222	1371	10	44.1	12	82	30	51	16	9.9	24	7.9	20	7.871	9	17800	15	177	10
DP 0912 B2RF	1368	11	42.0	26	94	13	52	14	10.1	22	7.5	25	8.316	4	16484	24	162	27
PHY 427 WRF	1325	12	43.1	18	95	11	53	11	9.3	30	7.2	30	8.403	2	15288	32	158	28
DP 1321 B2RF	1315	13	43.2	17	98	6	54	8	10.9	9	8.4	12	7.069	19	18077	11	169	20
PX5540-10WRF	1277	14	45.5	3	89	21	43	25	8.5	33	7.1	31	8.112	5	16272	27	177	9
SSG UA103	1275	15	42.3	25	96	8	71	1	10.9	8	8.2	14	7.056	20	18953	5	176	11
PHY 339WRF	1264	16	43.5	16	102	3	48	17	10.2	20	8.0	19	7.187	15	17150	20	167	21
Dyna-Gro 2570 B2RF	1262	17	42.9	22	88	22	47	20	11.2	5	8.6	8	6.673	21	17950	12	164	24
ST 5289GLT	1253	18	42.5	24	82	28	40	27	9.8	27	7.4	28	7.692	10	16331	26	163	25
PHY 499 WRF	1222	19	45.9	1	92	18	41	26	9.9	23	8.6	10	6.457	24	18082	10	179	7
PX3003-14WRF	1221	20	44.0	13	95	12	45	23	9.2	31	7.4	27	7.460	12	16487	23	171	18
Dyna-Gro 2355 B2RF	1218	21	43.1	19	82	31	57	5	9.8	26	7.5	23	7.287	14	17339	19	173	16
PHY 495 W3RF	1190	22	45.1	6	95	9	32	32	9.8	25	8.2	15	6.613	23	17363	18	173	15
FM 1944GLB2	1117	23	39.6	34	80	32	55	7	11.3	4	7.6	22	6.644	22	15199	33	138	33
PX3003-10WRF	1111	24	42.7	23	103	1	38	28	9.1	32	7.1	32	7.098	17	15541	29	162	26
PX4444-13WRF	1103	25	45.8	2	95	10	37	29	10.5	13	9.0	2	5.543	30	21544	1	205	1
AM UA48	1047	26	39.8	33	86	23	58	4	12.0	2	8.1	16	5.871	27	15380	31	134	34
Dyna-Gro CT14515	1025	27	45.2	5	101	4	29	34	10.4	16	8.7	6	5.369	31	18801	6	181	4
Croplan 3787 B2RF	1013	28	44.3	11	100	5	54	8	9.7	29	8.0	18	5.767	29	16866	21	170	19
PX3003-04WRF	1008	29	41.8	27	103	2	36	30	10.2	19	7.5	24	6.108	26	16019	28	156	29
BRS - 335	957	30	41.4	30	92	19	48	17	9.7	28	7.1	33	6.125	25	16418	25	164	23
SSG HQ210CT	954	31	41.2	31	77	34	44	24	10.4	17	7.4	26	5.822	28	15396	30	148	31
BRS - 286	831	32	41.7	28	82	29	46	22	10.8	10	7.9	21	4.794	32	17633	17	165	22
BRS - 293	763	33	41.6	29	80	33	31	33	12.3	1	8.9	3	3.888	33	17932	13	153	30
BRS - 269	587	34	40.5	32	93	16	35	31	10.5	14	7.4	29	3.626	34	15153	34	144	32
Mean	1209		43.2		91		48		10.3		8.0		6.862		17428		168	
LSD 0.10	178		2.1		8		10		0.9		0.7		1.021		1659		15	
C.V.%	14.1		2.8		8.4		18.8		5.2		5.0		14.2		5.6		52.0	
R-sq x 100	69.9		78.8		53.3		63.2		84.3		83.0		69.0		82.9		83.4	

Table 11. Fiber properties–2014 Arkansas Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna.

Variety	Lint		Quality		Fiber properties									
	yield lb/a	r	score	r	Micronaire	r	Length in.	r	Unif. ind. ¹ %	r	Strength g/tex	r	Elongation %	r
ST 4747GLB2	1577	1	70	12	4.4	28	1.19	8	84.3	27	28.9	34	6.2	29
PHY 333 WRF	1542	2	72	10	4.7	19	1.19	8	85.5	10	33.7	15	6.9	25
ST 4946GLB2	1457	3	51	26	5.0	6	1.15	19	83.9	32	34.0	12	7.8	15
Mon 12R224B2R2	1450	4	64	17	4.6	23	1.17	16	84.4	25	31.4	29	7.7	17
PX3122-b51WRF	1424	5	82	3	4.4	29	1.20	6	87.4	1	34.5	8	7.3	21
DP 1311 B2RF	1418	6	53	25	4.5	26	1.12	28	85.3	13	32.6	25	7.5	18
NG 1511 B2RF	1403	7	47	27	5.1	3	1.14	25	84.3	29	33.5	18	8.3	6
Dyna-Gro 2285 B2RF	1397	8	56	22	4.7	19	1.14	25	84.4	26	30.6	33	9.5	2
ST 5032GLT	1372	9	77	6	4.4	29	1.20	4	85.2	15	32.9	22	7.9	11
SSG UA222	1371	10	76	7	4.4	29	1.19	8	86.0	7	35.1	7	8.5	5
DP 0912 B2RF	1368	11	32	33	5.0	4	1.08	34	83.9	31	31.2	32	7.9	14
PHY 427 WRF	1325	12	54	24	4.9	8	1.15	21	84.3	28	33.8	13	8.1	8
DP 1321 B2RF	1315	13	65	16	4.7	18	1.17	16	85.4	11	31.7	28	9.9	1
PX5540-10WRF	1277	14	73	9	4.4	29	1.19	8	85.3	14	33.7	15	6.6	26
SSG UA103	1275	15	76	7	4.3	33	1.19	8	86.1	5	33.5	17	7.8	15
PHY 339WRF	1264	16	80	4	4.5	25	1.20	4	86.2	3	32.8	24	7.9	11
Dyna-Gro 2570 B2RF	1262	17	63	19	4.8	12	1.16	18	86.2	3	35.9	2	8.0	9
ST 5289GLT	1253	18	60	21	4.7	19	1.15	19	84.7	23	31.4	29	6.5	28
PHY 499 WRF	1222	19	45	29	5.0	4	1.12	28	85.2	16	35.7	3	8.2	7
PX3003-14WRF	1221	20	41	32	4.9	8	1.10	32	84.5	24	34.5	9	7.5	20
Dyna-Gro 2355 B2RF	1218	21	43	30	4.7	15	1.12	30	84.2	30	33.4	20	7.9	11
PHY 495 W3RF	1190	22	56	23	4.9	8	1.14	25	85.0	18	36.7	1	8.6	4
FM 1944GLB2	1117	23	80	4	4.8	14	1.23	3	85.2	16	31.3	31	5.9	32
PX3003-10WRF	1111	24	45	28	4.9	8	1.11	31	85.5	9	33.7	14	8.0	10
PX4444-13WRF	1103	25	89	1	4.0	34	1.24	2	86.0	6	33.1	21	7.1	22
AM UA48	1047	26	86	2	4.9	7	1.24	1	86.9	2	35.5	6	5.9	33
Dyna-Gro CT14515	1025	27	71	11	4.6	22	1.18	13	84.9	20	34.1	11	7.5	18
Croplan 3787 B2RF	1013	28	70	13	4.7	15	1.18	13	85.4	11	32.1	27	9.1	3
PX3003-04WRF	1008	29	67	15	4.7	15	1.18	15	84.8	22	35.5	5	6.0	31
BRS - 335	957	30	61	20	4.5	27	1.15	21	84.9	20	32.9	22	6.0	30
SSG HQ210CT	954	31	26	34	5.3	1	1.10	33	83.4	34	33.5	18	7.0	23
BRS - 286	831	32	64	17	4.6	24	1.15	21	85.8	8	34.4	10	6.6	26
BRS - 293	763	33	43	30	5.2	2	1.14	24	83.8	33	35.7	3	7.0	23
BRS - 269	587	34	69	14	4.8	12	1.19	7	85.0	19	32.4	26	5.6	34
Mean	1209		62		4.7		1.16		85.1		33.4		7.5	
LSD 0.10	178		15		0.4		0.04		1.5		2.4		1.0	
C.V.%	14.1		14.0		4.7		2.0		1.0		4.2		7.8	
R-sq x 100	69.9		86.8		77.4		85.3		69.0		75.6		86.7	

¹ Unif. Ind. = uniformity index.

Table 12. Yield and related properties—2014 Arkansas Cotton Variety Test, with irrigation on a Hebert silt loam at Rohwer.

Variety	Lint yield		Lint frac.		Ht. cm	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density		
	lb/a	r	%	r		%	r	g	r	g	r	mil.	r	no.	r	no.	r	
DP 1321 B2RF	1828	1	45.1	10	116	6	77	9	9.8	23	8.3	14	10.060	6	17269	18	172	19
ST 4946GLB2	1808	2	43.7	17	103	23	79	5	11.0	6	8.8	4	9.299	12	18865	7	174	16
DP 0912 B2RF	1793	3	43.6	19	106	16	79	5	10.1	17	8.0	17	10.240	5	17347	17	170	20
NG 1511 B2RF	1781	4	45.7	6	106	17	74	14	10.4	14	8.9	3	9.132	13	18799	8	181	9
PX3122-b51WRF	1738	5	46.5	1	102	27	70	17	10.7	8	9.5	1	8.324	21	20054	4	189	4
Mon 12R224B2R2	1722	6	44.0	15	110	13	77	9	9.9	22	7.9	20	9.905	7	17788	11	177	13
PX3003-14WRF	1721	7	43.0	23	119	3	64	23	9.2	30	7.1	32	10.970	2	16230	27	169	21
ST 5289GLT	1687	8	43.5	21	101	29	70	17	9.4	27	7.3	29	10.430	4	16178	28	165	23
PHY 495 W3RF	1640	9	45.1	11	102	26	63	25	9.2	29	7.8	21	9.513	10	17781	12	184	7
Dyna-Gro 2570 B2RF	1638	10	44.3	14	102	28	78	7	10.6	12	8.6	6	8.634	20	18265	10	173	17
Croplan 3787 B2RF	1634	11	46.0	2	117	4	65	22	9.1	31	7.9	18	9.338	11	16761	22	175	15
PX3003-04WRF	1622	12	40.2	33	123	1	64	23	9.7	25	6.7	34	11.020	1	15843	31	159	27
ST 4747GLB2	1610	13	43.8	16	106	17	85	1	10.2	16	8.1	15	9.071	15	17746	13	173	18
PX5540-10WRF	1606	14	45.3	8	97	33	69	19	8.9	33	7.5	26	9.682	8	17506	15	186	6
PX3003-10WRF	1600	15	44.8	12	114	9	62	26	8.2	34	6.9	33	10.510	3	16038	29	178	10
PHY 339WRF	1599	16	44.8	13	121	2	72	15	9.7	26	8.0	16	9.104	14	17450	16	176	14
PHY 333 WRF	1592	17	45.3	9	116	7	81	3	9.8	24	8.4	10	8.651	19	19602	5	196	3
PX4444-13WRF	1582	18	45.4	7	108	14	61	28	10.6	10	9.0	2	8.025	25	21261	1	201	1
Dyna-Gro 2285 B2RF	1582	19	43.6	18	106	15	75	13	10.3	15	8.3	13	8.688	18	18431	9	177	12
PHY 499 WRF	1560	20	45.7	5	104	22	72	15	9.9	19	8.6	8	8.273	22	17119	20	169	22
PHY 427 WRF	1538	21	43.5	20	113	10	78	7	9.4	28	7.3	30	9.526	9	15952	30	164	25
DP 1311 B2RF	1533	22	45.8	4	110	12	80	4	8.9	32	7.7	24	9.064	16	17563	14	186	5
ST 5032GLT	1529	23	43.3	22	100	31	76	11	11.0	7	8.6	7	8.102	24	19232	6	178	11
FM 1944GLB2	1520	24	41.5	28	100	30	82	2	10.7	9	7.7	23	8.938	17	16242	26	153	30
Dyna-Gro 2355 B2RF	1510	25	41.5	29	105	21	76	11	11.4	2	8.3	11	8.249	23	20212	2	182	8
Dyna-Gro CT14515	1502	26	45.8	3	116	8	68	21	9.9	19	8.6	5	7.911	26	20119	3	199	2
SSG UA222	1231	27	42.1	25	95	34	61	28	11.2	4	8.4	9	6.661	28	17095	21	157	28
BRS - 293	1166	28	42.7	24	103	24	48	33	9.9	18	7.5	28	7.056	27	16652	24	164	24
BRS - 335	1094	29	41.8	26	105	20	62	26	10.5	13	7.8	22	6.399	29	17133	19	163	26
AM UA48	1030	30	40.4	32	100	32	69	19	12.0	1	8.3	12	5.618	32	15182	34	133	34
BRS - 286	1017	31	41.1	31	106	17	61	28	10.6	11	7.6	25	6.113	31	16446	25	156	29
SSG HQ210CT	968	32	41.7	27	103	25	49	32	9.9	21	7.2	31	6.124	30	15268	33	152	32
SSG UA103	944	33	41.1	30	117	4	53	31	11.1	5	7.9	19	5.410	33	16710	23	153	31
BRS - 269	777	34	39.4	34	112	11	48	33	11.2	3	7.5	27	4.689	34	15428	32	141	33
Mean	1493		43.6		108		69		10.1		8.0		8.492		17517		171	
LSD 0.10	165		1.4		13		9		0.8		0.8		0.966		1516		13	
C.V.%	10.6		1.9		11.8		12.5		4.6		6.0		10.9		5.1		4.5	
R-sq x 100	80.6		91.8		31.9		62.8		86.5		77.1		80.5		85.5		89.1	

Table 13. Fiber properties—2014 Arkansas Cotton Variety Test, with irrigation on a Hebert silt loam at Rohwer.

Variety	Lint		Quality		Fiber properties									
	yield lb/a	r	score	r	Micronaire		Length		Unif. ind. ¹		Strength		Elongation	
						r	in.	r	%	r	g/tex	r	%	
DP 1321 B2RF	1828	1	50	30	5.0	4	1.12	32	86.4	4	33.1	13	8.1	5
ST 4946GLB2	1808	2	58	18	4.8	10	1.15	19	85.3	10	33.2	11	7.9	8
DP 0912 B2RF	1793	3	33	34	5.1	1	1.09	34	83.9	32	30.7	28	7.2	18
NG 1511 B2RF	1781	4	47	32	5.0	5	1.13	28	84.7	21	32.4	20	8.7	1
PX3122-b51WRF	1738	5	57	23	4.9	8	1.15	18	84.9	18	31.2	25	6.5	24
Mon 12R224B2R2	1722	6	66	10	4.5	24	1.17	11	84.6	22	30.5	29	7.0	19
PX3003-14WRF	1721	7	48	31	4.7	18	1.13	28	84.0	30	32.9	15	7.2	17
ST 5289GLT	1687	8	51	28	4.8	10	1.15	19	82.9	34	29.1	32	6.1	28
PHY 495 W3RF	1640	9	56	26	4.6	21	1.13	28	85.1	15	34.6	2	8.2	4
Dyna-Gro 2570 B2RF	1638	10	56	26	4.9	8	1.15	19	85.0	17	33.3	10	7.3	14
Croplan 3787 B2RF	1634	11	62	14	4.8	10	1.16	12	85.2	13	31.9	23	7.5	10
PX3003-04WRF	1622	12	71	7	4.2	33	1.17	8	85.8	5	30.9	27	6.2	26
ST 4747GLB2	1610	13	80	5	4.4	29	1.21	5	85.4	9	27.8	34	6.3	25
PX5540-10WRF	1606	14	63	12	4.4	29	1.16	12	84.3	28	32.7	16	6.1	29
PX3003-10WRF	1600	15	57	23	4.5	24	1.13	28	85.2	11	32.9	14	7.5	10
PHY 339WRF	1599	16	75	6	4.5	24	1.19	6	85.7	6	32.3	21	6.7	22
PHY 333 WRF	1592	17	60	16	4.4	29	1.16	17	84.1	29	28.0	33	6.9	21
PX4444-13WRF	1582	18	94	1	3.9	34	1.25	2	86.4	3	32.2	22	7.0	20
Dyna-Gro 2285 B2RF	1582	19	58	18	4.7	18	1.14	25	85.0	16	30.1	31	8.1	6
PHY 499 WRF	1560	20	57	20	5.1	2	1.16	12	85.4	8	33.8	8	8.0	7
PHY 427 WRF	1538	21	67	9	4.7	18	1.17	8	84.9	18	33.8	9	7.5	12
DP 1311 B2RF	1533	22	57	20	4.6	22	1.14	23	84.5	26	30.3	30	8.4	2
ST 5032GLT	1529	23	64	11	4.6	23	1.16	12	84.5	25	31.6	24	7.3	13
FM 1944GLB2	1520	24	68	8	4.8	13	1.19	6	84.6	23	30.9	26	5.6	32
Dyna-Gro 2355 B2RF	1510	25	57	20	4.3	32	1.13	26	84.8	20	34.2	4	7.3	14
Dyna-Gro CT14515	1502	26	60	16	4.5	27	1.16	12	83.1	33	32.5	18	7.8	9
SSG UA222	1231	27	80	4	4.7	15	1.23	4	85.2	11	32.5	18	8.2	3
BRS - 293	1166	28	51	29	4.8	13	1.13	26	84.0	31	33.9	7	7.3	14
BRS - 335	1094	29	57	23	4.7	17	1.14	24	84.6	24	32.6	17	6.1	30
AM UA48	1030	30	90	3	5.0	5	1.28	1	86.9	1	37.1	1	4.8	34
BRS - 286	1017	31	61	15	4.7	15	1.15	19	85.5	7	34.0	6	5.9	31
SSG HQ210CT	968	32	43	33	5.0	3	1.12	33	84.4	27	34.3	3	6.2	26
SSG UA103	944	33	91	2	4.5	27	1.23	3	86.7	2	34.2	5	6.5	23
BRS - 269	777	34	62	13	4.9	7	1.17	8	85.2	13	33.1	12	5.3	33
Mean	1493		62		4.7		1.16		84.9		32.3		7.0	
LSD 0.10	165		18		0.4		0.05		1.5		1.9		1.0	
C.V.%	10.6		17.6		5.0		2.3		1.1		3.5		8.8	
R-sq x 100	83.1		75.3		71.1		81.9		65.6		85.6		82.8	

¹ Unif. Ind. = uniformity index.

Table 14. Yield and related properties–2014 Arkansas Cotton Variety Test (transgenic entries), with irrigation on a Roton-Dundee-Crevasse complex soil at Manila.

Variety	Lint yield		Lint frac.		Ht. cm	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density	
	lb/a	r	%	r		%	r	g	r	g	r	mil.	r	no.	r	no.	r
PX3122-b51WRF	1506	1	44.8	11	79	13	11.1	10	9.3	5	7.382	3	19566	4	179	7	
ST 4747GLB2	1413	2	44.1	14	76	18	11.2	7	9.1	10	7.066	7	18520	8	169	16	
DP 1321 B2RF	1401	3	43.7	15	82	7	10.9	12	8.8	15	7.231	5	18400	10	171	12	
PX3003-04WRF	1363	4	42.9	23	82	6	10.3	16	8.0	21	7.743	2	17170	21	166	21	
Mon 12R224B2R2	1348	5	42.4	24	76	15	10.2	18	7.8	23	7.832	1	17401	17	169	14	
DP 0912 B2RF	1344	6	43.3	19	79	11	11.2	9	8.8	14	6.905	9	17287	18	158	24	
PHY 333 WRF	1334	7	45.7	7	70	23	10.3	17	9.0	12	6.753	11	20216	3	195	2	
ST 4946GLB2	1318	8	43.3	18	73	22	11.8	3	9.2	7	6.512	14	18560	7	164	22	
Dyna-Gro 2285 B2RF	1284	9	43.7	16	74	20	11.2	8	8.9	13	6.522	13	18161	14	166	20	
PX3003-10WRF	1233	10	45.0	10	84	4	9.3	24	7.8	22	7.151	6	16419	25	169	15	
PHY 339WRF	1227	11	44.2	13	83	5	9.9	20	8.1	20	6.887	10	17213	20	171	13	
NG 1511 B2RF	1225	13	45.4	9	90	1	11.1	11	9.5	3	5.869	18	18292	12	168	18	
ST 5289GLT	1225	12	43.4	17	73	21	10.6	14	8.4	17	6.656	12	17007	22	161	23	
Dyna-Gro 2355 B2RF	1214	14	40.6	26	70	24	13.0	1	9.1	9	6.054	16	19070	5	157	25	
PHY 427 WRF	1197	15	43.2	21	84	3	9.5	22	7.5	25	7.250	4	16480	24	167	19	
ST 5032GLT	1186	16	43.3	20	74	19	12.2	2	9.5	2	5.657	20	20256	2	175	10	
Dyna-Gro 2570 B2RF	1172	17	44.7	12	76	17	11.3	5	9.4	4	5.636	21	18496	9	168	17	
DP 1311 B2RF	1156	18	45.9	5	79	12	8.5	26	7.5	24	6.999	8	16552	23	181	5	
PHY 495 W3RF	1142	19	46.5	2	77	14	9.7	21	8.7	16	5.969	17	18319	11	184	3	
Dyna-Gro CT14515	1074	20	45.8	6	81	9	10.6	13	9.2	6	5.307	22	18172	13	172	11	
PX3003-14WRF	1067	21	43.1	22	76	15	9.4	23	7.5	26	6.471	15	17213	19	176	8	
PX5540-10WRF	1042	22	46.3	3	87	2	9.2	25	8.2	19	5.793	19	17668	16	183	4	
Croplan 3787 B2RF	1007	23	45.6	8	81	8	10.5	15	9.1	8	5.006	24	18774	6	179	6	
PX4444-13WRF	993	24	46.2	4	68	25	11.3	6	10.1	1	4.485	26	22556	1	205	1	
PHY 499 WRF	986	25	46.7	1	80	10	10.1	19	9.1	11	4.943	25	17872	15	175	9	
FM 1944GLB2	965	26	41.1	25	66	26	11.5	4	8.3	18	5.291	23	16311	26	146	26	
Mean	1214		44.3		78		10.6		8.7		6.378		18152.0		172		
LSD 0.10	256		1.2		ns		0.8		0.6		1.330		1195.0		12		
C.V.%	20.8		1.6		15.9		42.0		4.2		20.6		3.9		4.0		
R-sq x 100	31.1		91.5		25.0		62.8		88.5		38.2		89.5		86.3		

Table 15. Fiber properties—2014 Arkansas Cotton Variety Test (transgenic entries), with irrigation on a Routon-Dundee-Crevasse complex soil at Manila.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind. ¹	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
PX3122-b51WRF	1506	1	68	6	4.7	17	1.17	10	86.2	4	32.7	17	6.5	19
ST 4747GLB2	1413	2	71	5	4.8	13	1.20	4	85.5	11	30.5	26	4.8	26
DP 1321 B2RF	1401	3	55	16	4.9	10	1.15	17	85.2	17	34.3	6	8.8	1
PX3003-04WRF	1363	4	62	11	4.7	17	1.16	14	85.5	11	34.0	9	5.4	25
Mon 12R224B2R2	1348	5	74	4	4.4	25	1.19	5	85.7	8	31.5	23	6.8	16
DP 0912 B2RF	1344	6	39	26	5.4	1	1.14	22	84.4	22	33.3	12	6.7	17
PHY 333 WRF	1334	7	59	15	4.6	23	1.15	17	84.9	20	31.5	21	5.6	23
ST 4946GLB2	1318	8	54	20	5.1	5	1.16	16	85.0	19	35.4	4	7.6	8
Dyna-Gro 2285 B2RF	1284	9	62	11	4.9	10	1.17	12	86.2	4	32.8	16	7.8	6
PX3003-10WRF	1233	10	49	22	5.0	8	1.14	21	84.5	21	32.7	18	8.0	3
PHY 339WRF	1227	11	62	11	4.8	14	1.18	8	84.4	22	33.2	13	6.4	20
NG 1511 B2RF	1225	13	60	14	5.2	4	1.18	7	85.3	15	35.6	3	7.7	7
ST 5289GLT	1225	12	55	17	5.0	6	1.17	10	84.0	25	31.4	24	5.8	22
Dyna-Gro 2355 B2RF	1214	14	67	8	4.8	14	1.18	8	85.7	9	33.7	10	7.1	13
PHY 427 WRF	1197	15	68	6	4.6	24	1.16	14	86.2	3	34.7	5	6.9	15
ST 5032GLT	1186	16	75	3	4.6	22	1.20	3	85.1	18	33.6	11	7.2	11
Dyna-Gro 2570 B2RF	1172	17	45	24	5.3	2	1.13	23	86.1	6	34.2	7	7.5	9
DP 1311 B2RF	1156	18	55	17	4.7	17	1.15	20	84.2	24	31.0	25	7.8	4
PHY 495 W3RF	1142	19	52	21	4.9	10	1.13	23	85.6	10	35.8	2	7.4	10
Dyna-Gro CT14515	1074	20	63	10	5.0	6	1.19	6	85.3	15	33.1	14	7.2	12
PX3003-14WRF	1067	21	46	23	4.7	20	1.12	26	83.9	26	31.5	22	6.6	18
PX5540-10WRF	1042	22	65	9	4.7	20	1.17	12	85.4	14	34.0	8	6.3	21
Croplan 3787 B2RF	1007	23	55	17	5.0	8	1.15	17	85.5	11	32.9	15	7.8	5
PX4444-13WRF	993	24	87	1	4.2	26	1.23	2	87.5	1	32.4	20	7.1	14
PHY 499 WRF	986	25	44	25	5.3	2	1.13	25	85.8	7	36.0	1	8.2	2
FM 1944GLB2	965	26	87	1	4.8	14	1.24	1	86.2	2	32.5	19	5.6	23
Mean	1214		60		4.8		1.16		85.3		33.2		6.9	
LSD 0.10	256		16		0.3		0.05		1.3		2.3		1.1	
C.V.%	20.8		15.2		3.2		3.2		0.9		4.1		9.4	
R-sq x 100	31.1		77.8		86.0		86.0		68.9		72.0		80.9	

¹ Unif. Ind. = uniformity index.

Table 16. Two-year average lint yields (lb/a) for varieties at the four locations of the 2013-2014 Arkansas Cotton Variety Test.

Variety	Traits	Keiser		Judd Hill		Marianna		Rohwer		All four		All loc, but Keiser	
		Irrigated ¹ lb/a	r	Irrigated lb/a	r	Irrigated lb/a	r	Irrigated lb/a	r	locations lb/a	r	lb/a	r
PX3122-b51WRF	WRF	1109	1	1396	1	1700	1	1850	1	1513	1	1648	1
PHY 333 WRF	WRF	1041	2	1247	2	1606	2	1703	7	1399	2	1519	2
NG 1511 B2RF	B2R	922	6	1220	3	1460	11	1818	3	1355	6	1499	3
DP 0912 B2RF	B2R	997	4	1184	6	1548	5	1759	5	1372	3	1497	4
DP 1321 B2RF	B2R	976	5	1169	7	1493	9	1826	2	1366	4	1496	5
ST 4946GLB2	GLB2	1015	3	1078	13	1565	3	1798	4	1364	5	1480	6
Mon 12R224B2R2	B2R	802	19	1149	10	1549	4	1699	8	1299	7	1465	7
Dyna-Gro 2285 B2RF	B2R	836	14	1152	9	1546	6	1566	12	1275	8	1421	8
Dyna-Gro 2570 B2RF	B2R	807	18	1209	4	1445	12	1602	11	1266	9	1419	9
PX4444-13WRF	WRF	907	8	1201	5	1206	18	1706	6	1255	10	1371	10
PHY 427 WRF	WRF	842	12	1035	17	1526	7	1548	13	1238	12	1369	11
PX3003-10WRF	WRF	889	9	1019	18	1393	15	1681	9	1245	11	1364	12
PHY 339WRF	WRF	834	15	1126	12	1434	14	1524	14	1229	13	1361	13
DP 1311 B2RF	B2R	814	17	1139	11	1442	13	1449	16	1211	15	1343	14
PX3003-04WRF	WRF	888	10	1052	15	1315	17	1640	10	1224	14	1336	15
PHY 499 WRF	WRF	838	13	1043	16	1486	10	1466	15	1208	17	1331	16
SSG UA222	Conv	922	7	1160	8	1503	8	1258	19	1211	16	1307	17
FM 1944GLB2	GLB2	831	16	981	19	1325	16	1411	18	1137	18	1239	18
Croplan 3787 B2RF	B2R	863	11	916	20	1143	21	1434	17	1089	19	1164	19
AM UA48	Conv	757	20	1054	14	1183	19	1012	20	1001	20	1083	20
SSG HQ210CT	Conv	673	21	800	21	1149	20	997	21	905	21	982	21
Mean		884		1111		1429		1559		1246		1366	

¹ Keiser means include data from 2013, which were very low due to unavoidable production problems.

Table 17. Three-year average lint yields (lb/a) for varieties at four locations of the 2012-2014 Arkansas Cotton Variety Test.

Variety	Traits	Keiser		Judd Hill		Marianna		Rohwer		All		All loc, but Keiser	
		Irrigated ¹	r	Irrigated	r	Irrigated	r	Irrigated	r	locations	r	but Keiser	
		lb/a		lb/a		lb/a		lb/a		lb/a		lb/a	
PHY 333 WRF	WRF	1293	1	1389	1	1699	1	1549	5	1482	1	1546	1
DP 1321 B2RF	B2R	1259	2	1282	3	1595	3	1647	1	1446	2	1508	2
NG 1511 B2RF	WRF	1203	4	1333	2	1499	7	1616	2	1413	3	1483	3
ST 4946GLB2	GLB2	1187	5	1206	10	1628	2	1595	4	1404	4	1476	4
DP 0912 B2RF	B2R	1215	3	1254	5	1529	5	1597	3	1398	5	1460	5
Dyna-Gro 2285 B2RF	B2R	1164	7	1246	7	1586	4	1405	9	1350	6	1412	6
DP 1311 B2RF	B2R	1105	9	1238	9	1494	9	1433	6	1318	7	1389	7
PHY 339WRF	WRF	1074	12	1243	8	1497	8	1395	10	1302	8	1378	8
Dyna-Gro 2570 B2RF	B2R	1074	11	1254	6	1428	11	1428	7	1296	9	1370	9
PHY 499 WRF	WRF	1094	10	1185	11	1479	10	1420	8	1295	10	1361	10
SSG UA222	conv	1115	8	1271	4	1528	6	1123	13	1260	11	1308	11
FM 1944GLB2	GLB2	1065	13	1105	13	1339	12	1293	11	1200	12	1245	12
Croplan 3787 B2RF	B2R	1186	6	1046	14	1193	14	1276	12	1175	13	1172	13
AM UA48	conv	945	14	1149	12	1202	13	973	14	1067	14	1108	14
Mean		1130		1216		1461		1400		1302		1359	

¹ Keiser means include data from 2013, which were very low due to unavoidable production problems.

Table 18. Morphological and host plant resistance traits in the 2014 Arkansas Cotton Variety Test.

Variety	Leaf		Stem		Bract		Tarnished plant		Bacterial blight	
	pubescence ¹	r	pubescence ¹	r	trichomes ²	r	bug damage ³	r	Rating ⁴	Response
	rating		rating		no./cm				no. sus.	
NG 1511 B2RF	4.1	5	5.3	5	47.0	1	48	9	9.0	susceptible
FM 1944GLB2	2.2	27	4.9	15	29.3	29	59	27	9.0	susceptible
ST 4747GLB2	3.3	17	5.5	2	40.0	11	56	25	9.0	susceptible
ST 4946GLB2	4.3	2	4.7	18	35.5	22	35	1	6.0	susceptible
ST 5032GLT	3.9	10	4.1	25	39.8	12	52	14	7.5	susceptible
ST 5289GLT	5.1	1	7.0	1	44.7	3	42	2	4.8	susceptible
Croplan 3787 B2RF	1.9	30	3.5	33	21.2	34	47	7	9.0	susceptible
Dyna-Gro 2285 B2RF	3.5	14	5.4	3	43.0	6	46	6	9.0	susceptible
Dyna-Gro 2355 B2Rf	3.9	11	5.2	8	42.0	8	63	32	9.0	susceptible
Dyna-Gro 2570 B2RF	2.1	29	4.6	19	29.5	27	55	21	7.0	susceptible
Dyna-Gro CT14515	2.9	22	4.5	21	29.5	28	72	34	3.5	resistant
Mon 12R224B2R2	4.2	4	5.1	11	37.5	15	54	16	3.0	resistant
DP 1311 B2RF	4.1	7	5.3	7	40.5	10	64	33	9.0	susceptible
DP 1321 B2RF	4.1	8	5.1	10	44.3	5	42	3	9.0	susceptible
DP 0912 B2RF	2.7	25	5.2	8	40.8	9	55	22	7.8	susceptible
PHY 495 W3RF	3.3	17	4.9	17	36.6	16	55	23	9.0	susceptible
PHY 333 WRF	4.1	5	5.3	4	39.8	13	54	17	9.0	susceptible
PHY 339WRF	3.2	20	4.6	19	36.1	17	50	11	2.0	resistant
PHY 427 WRF	3.5	16	4.1	26	34.4	23	54	18	9.0	susceptible
PHY 499 WRF	3.5	15	5.1	11	44.5	4	60	31	9.0	susceptible
PX3003-04WRF	3.3	19	4.0	29	29.9	26	44	5	9.0	susceptible
PX3003-10WRF	3.2	21	3.9	30	37.9	14	54	19	8.0	susceptible
PX3003-14WRF	2.9	24	4.3	24	35.7	20	50	12	7.8	susceptible
PX3122-b51WRF	4.1	8	5.0	14	42.8	7	43	4	9.0	susceptible
PX4444-13WRF	2.2	27	4.1	27	33.8	24	59	28	3.5	resistant
PX5540-10WRF	4.3	3	5.3	5	45.4	2	58	26	2.5	resistant
BRS - 269	1.3	34	1.7	34	31.9	25	52	15	5.5	susceptible
BRS - 286	2.9	23	4.1	27	29.0	30	49	10	3.5	resistant
BRS - 293	1.7	31	4.3	23	35.9	18	47	8	8.0	susceptible
BRS - 335	3.7	13	4.9	16	35.6	21	59	29	4.3	resistant
AM UA48	2.3	26	4.5	21	28.8	31	55	24	4.3	resistant
SSG HQ210CT	1.6	32	3.5	32	22.0	33	59	30	9.0	susceptible
SSG UA103	1.5	33	3.7	31	28.2	32	54	20	2.8	resistant
SSG UA222	3.9	12	5.1	11	35.9	19	51	13	2.3	resistant
Frego bract, ck.							78	35	1.5	resistant
Mean	3.2		4.6		36.1		54		6.6	
LSD 0.10	0.7		0.6		5.5		10		2.9	
C.V.%	20.0		11.8		14.5		22.8		37.6	
R-sq x 100	77.7		76.8		75.5		39.1		62.4	

¹ Leaf and stem pubescence rated at Keiser irrigated test (6 plants per plot, 5 reps) using scale of 1 (smooth leaf) to 9 (pilose, very hairy).

² Marginal trichome density and length of bracts determined on 6 bracts/plot (5 reps) at Keiser irrigated test.

³ 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.

⁴ Varieties/breeding lines were planted in 20 ft x 1 row plots on May 23, then inoculated with 4 races of *X. campestris* pv. *malvacearum* on July 8. Number of susceptible plants per plot were counted. If susceptible plants were found throughout plot, the plots was designated as blight susceptible, and given a score of "9".

Appendix Table A1. 2014 Arkansas large-plot variety evaluation trials for Ashley and Desha counties.

County: Ashley
Latitude: 33.25250
Longitude: -91.48790
Planted: 5/6/14
Cooperator: Bruce Bond
CEA: Kevin Norton

Location: Portland
Soil Type: Herbert Silt Loam
Irrigation: Yes

Previous Crop: Cotton
Planting Pop: 35,000
Replications: 1
Harvested: 10/22/14

Variety	Lint Yield		Length inches	Strength g/tex	Micronaire	Uniformity
	lb/ A	Turnout				
DPL 1321 B2RF	1,510	45.00%	1.19	30.40	5.00	84.20
PHY 333 WRF	1,447	46.00%	1.21	29.40	4.60	85.00
DG 2570 B2RF	1,446	45.00%	1.18	31.20	4.90	84.90
ST 4946 GLB2	1,428	43.00%	1.17	31.10	4.70	83.80
NG 1511 B2RF	1,413	47.00%	1.12	30.80	4.80	83.00
DPL 1311 B2RF	1,371	46.00%	1.12	27.20	4.40	81.90
FM 1944 GLB2	1,343	43.00%	1.22	32.80	4.70	82.30
ST 5289 GLT	1,321	44.00%	1.16	29.10	4.70	84.70
PHY 495 WRF	1,315	46.00%	1.14	31.90	4.70	84.40
MEAN	1,399	45.00%	1.17	30.43	4.72	83.80
LSD (0.05)	-	-	-	-	-	-
CV %	-	-	-	-	-	-

County: Desha
Latitude: 33.7946
Longitude: -91.2696
Planted: 5/6/14
Cooperator: Danny Wilson
CEA: Wes Kirkpatrick/Gus Wilson

Location: Rohwer
Soil Type: Herbert Silt Loam
Irrigation: Yes

Previous Crop: Cotton
Plant Pop: 35000
Replications: 2
Harvested: 10/17/14

Variety	Lint Yield		Length inches	Strength g/tex	Micronaire	Uniformity
	lb/A	Turnout				
PHY 333 WRF	1,298	46.5%	1.18	28.65	4.55	84.00
DPL 1311 B2RF	1,277	49.0%	1.18	28.35	4.45	83.90
PHY 495 WRF	1,203	47.5%	1.13	32.00	4.65	84.00
NG 1511 B2RF	1,182	45.5%	1.15	30.25	4.90	83.60
ST 4946 GLB2	1,168	44.0%	1.20	31.55	4.75	84.45
DPL 1321 B2RF	1,148	45.5%	1.16	30.00	4.85	84.35
ST 5289 GLT	1,116	44.5%	1.17	29.15	4.55	83.30
FM 1944 GLB2	1,077	43.0%	1.23	32.35	4.55	83.15
DG 2570 B2RF	1,047	44.5%	1.17	30.05	4.70	84.65
MEAN	1,168	45.6%	1.17	30.26	4.66	83.93
LSD (0.05)	NS	NS	NS	NS	NS	NS
CV %	9.08	4.05	2.03	4.74	4.96	0.84

Appendix Table A2. 2014 Arkansas large-plot variety evaluation trials for Lee and St. Francis counties.

County: Lee
Latitude: 34.77620
Longitude: -90.86750
Planted: 5/16/14
Cooperator: Ramey Stiles
CEA: Stan Baker

Location: Marianna
Soil Type: Henry Silt Loam
Irrigation: Yes

Previous Crop: Cotton
Planting Pop: 42,000
Replications: 2
Harvested: 10/3/14

Variety	Lint Yield lb/A	Turnout	Length inches	Strength g/tex	Micronaire	Uniformity
ST 4747 GLB2	1,958	47.5%	1.20	29.20	4.65	83.65
ST 4946 GLB2	1,889	45.5%	1.15	32.45	4.75	83.65
PHY 333 WRF	1,878	47.0%	1.17	32.45	4.35	83.90
NG 1511 B2RF	1,764	47.5%	1.12	32.50	4.60	84.25
PHY 495 W3RF	1,741	49.5%	1.15	33.00	4.30	83.70
PHY 499 WRF	1,735	48.0%	1.19	33.30	4.90	85.15
FM 1944 GLB2	1,708	44.5%	1.21	33.65	4.50	83.40
PHY 375 WRF	1,646	46.5%	1.15	30.25	4.40	83.95
DPL 1311 B2RF	1,613	49.0%	1.14	29.55	4.30	82.25
DPL 1321 B2RF	1,601	44.0%	1.18	30.10	4.40	84.95
MEAN	1,753	46.90%	1.16	31.65	4.52	83.89
LSD (0.05)	152.4	2.71%	0.032	1.85	0.255	1.44
CV %	3.84	3.84	1.23	2.54	2.50	0.76

County: St. Francis
Latitude: 34.94560
Longitude: -90.81960
Planted: 5/12/14
Cooperator: Joe Whittenton
CEA: Mitch Crow

Location: Forrest City
Soil Type: Loring Silt Loam
Irrigation: Yes

Previous Crop: Cotton
Planting Pop: 36,700
Replications: 4
Harvested: 11/3/14

Variety	Lint Yield lb/A	Turnout	Length inches	Strength g/tex	Micronaire	Uniformity
DPL 1321 B2RF	1,263	45.00%	1.13	32.10	5.20	85.00
DPL 1311 B2RF	1,252	47.00%	1.11	31.90	5.00	83.20
ST 4946 GLB2	1,242	45.00%	1.13	34.70	5.40	84.90
ST 4747 GLB2	1,207	43.00%	1.17	32.90	5.10	83.60
DG 2285 B2RF	1,193	45.00%	1.10	31.10	5.30	84.60
FM 1944 GLB2	1,127	42.00%	1.18	33.20	5.30	83.20
NG 1511 B2RF	1,118	46.00%	1.13	31.20	5.20	84.30
PHY 339 WRF	1,113	45.00%	1.18	34.50	4.80	84.60
DG 2570 B2RF	1,034	45.00%	1.09	31.10	5.40	83.70
PHY 499 WRF	894	47.00%	1.10	33.90	5.50	84.50
MEAN	1,144	45.00%	1.13	32.66	5.22	84.16
LSD (0.05)	116.3	-	-	-	-	-
CV %	7.00	-	-	-	-	-

Appendix Table A3. 2014 Arkansas large-plot variety evaluation trials for Poinsett and Craighead counties.

County: Poinsett	Location: Judd Hill	Previous Crop: Cotton
Latitude: 35.60010	Soil Type: Dundee Silt Loam	Planting Pop: 39,000
Longitude: -90.51670	Irrigation: Yes	Replications: 4
Planted: 5/8/14		Harvested: 10/24/14
Cooperator: Marty White		
CEA: Mike Hamilton/Craig Allen		

Variety	Lint Yield		Length inches	Strength g/tex	Micronaire	Uniformity
	Ib/A	Turnout				
PHY 333 WRF	1,948	47.00%	1.19	31.33	3.90	84.13
ST 4747 GLB2	1,945	46.00%	1.20	29.28	4.08	82.20
ST 4946 GLB2	1,931	44.25%	1.20	32.48	4.38	84.33
DG 2570 B2RF	1,889	45.00%	1.16	30.75	4.50	84.65
DG 2285 B2RF	1,887	44.25%	1.20	29.95	4.15	84.28
DPL 1321 B2RF	1,808	46.00%	1.18	31.43	4.70	85.00
NG 1511 B2RF	1,728	45.50%	1.16	30.70	4.23	83.85
PHY 339 WRF	1,689	43.50%	1.22	30.80	3.75	84.50
DPL 1311 B2RF	1,685	47.25%	1.16	29.68	3.73	82.75
PHY 427 WRF	1,669	44.75%	1.16	30.90	3.80	83.90
FM 1944 GLB2	1,588	41.75%	1.22	32.93	4.03	83.38
MEAN	1,797	45.02%	1.18	30.93	4.11	83.91
LSD (0.05)	145.7	1.55%	0.028	1.41	0.399	1.07
CV %	5.62	2.42	1.61	3.17	6.73	0.88

County: Craighead	Location: Jonesboro Dundee Silt	Previous Crop: Cotton
Latitude: 35.78890	Soil Type: Loam	Planting Pop: 41,000
Longitude: -90.54600	Irrigation: Yes	Replications: 3
Planted: 5/6/14		Harvested: 10/27/14
Cooperator: John Johnson		
CEA: Branon Thiesse		

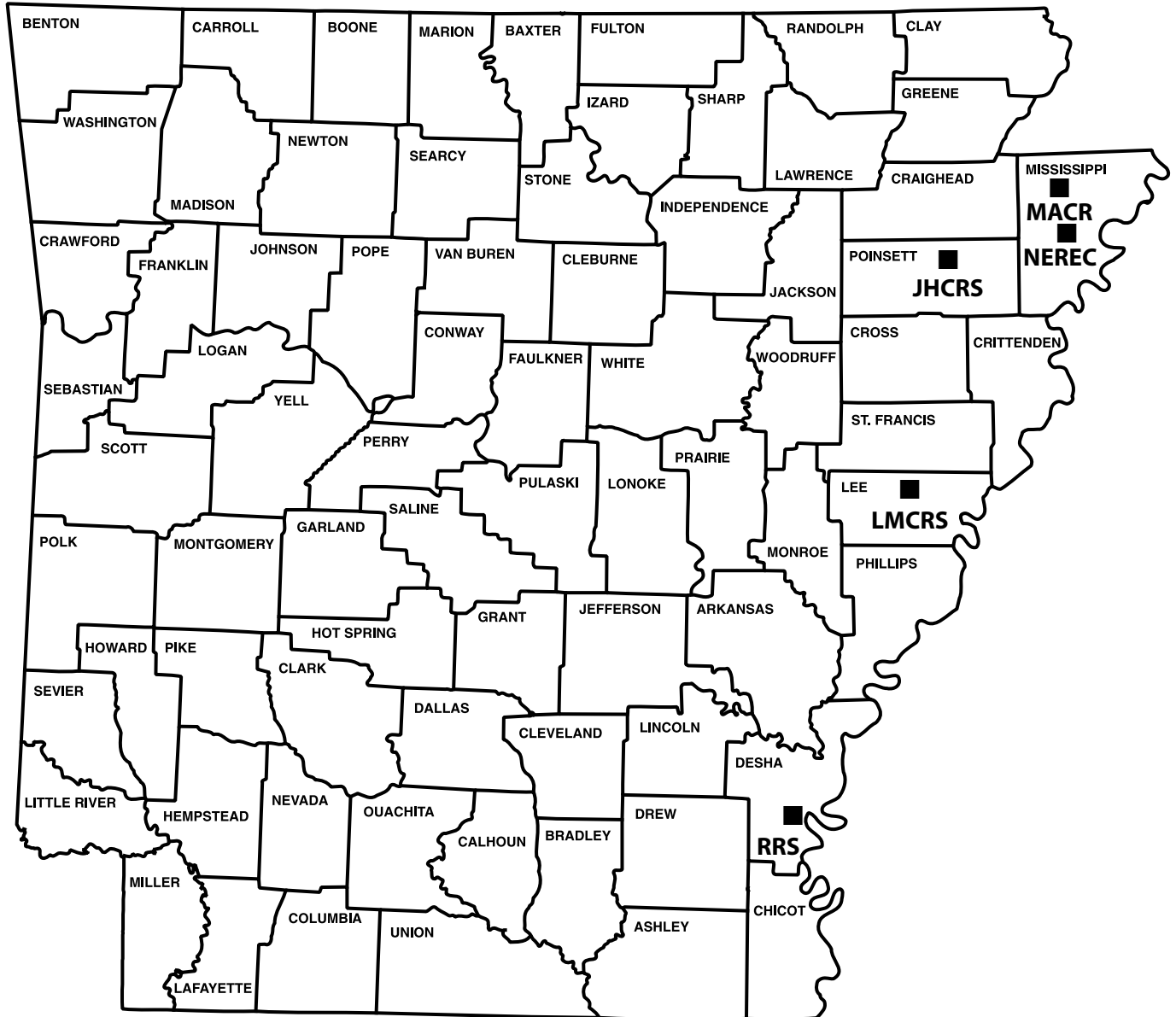
Variety	Lint Yield		Length inches	Strength g/tex	Micronaire	Uniformity
	Ib/A	Turnout				
PHY 333 WRF	1,160	48.0%	1.16	30.47	4.60	84.20
ST 4946 GLB2	1,146	45.7%	1.14	32.63	4.87	83.77
ST 4747 GLB2	1,122	46.0%	1.18	29.90	4.80	82.83
FM 1944 GLB2	1,033	44.7%	1.20	33.57	4.73	83.80
ST 5032 GLT	999	45.0%	1.19	32.67	4.47	83.90
PHY 427 WRF	980	46.0%	1.12	31.20	4.67	83.57
NG 1511 B2RF	971	47.7%	1.11	30.03	4.97	83.23
PHY 339 WRF	924	46.0%	1.17	31.63	4.57	84.30
DPL 1321 B2RF	919	46.3%	1.17	31.97	4.77	85.03
DG 2285 B2RF	909	46.0%	1.16	29.77	4.70	84.13
DG 2570 B2RF	862	45.3%	1.13	31.17	4.83	84.60
DPL 1311 B2RF	842	47.7%	1.14	30.37	4.77	83.57
MEAN	989	46.2%	1.16	31.28	4.73	83.91
LSD (0.05)	110.3	1.78%	0.040	1.18	NS	NS
CV %	6.59	2.32	2.06	2.22	5.10	0.89

Appendix Table A4. 2014 Arkansas large-plot variety evaluation trials for Clay county.

County: Clay	Location: Rector	Previous Crop: Cotton
Latitude: 36.30690	Soil Type: Fountain Silt Loam	Planting Pop: 38,000
Longitude: -90.10200	Irrigation: Yes	Replications: 3
Planted: 5/6/14		Harvested: 11/14/14
Cooperator: Brett Palmer		
CEA: Andy Vangilder		

Variety	Lint Yield		Length inches	Strength g/tex	Micronaire	Uniformity
	lb/A	Turnout				
ST 4747 GLB2	1,021	45.3%	1.19	31.67	4.30	83.53
DG 2285 B2RF	1,012	48.0%	1.16	30.53	4.63	84.43
PHY 333 WRF	1,011	44.7%	1.22	32.70	4.50	84.47
ST 4946 GLB2	1,002	45.3%	1.17	31.87	4.50	84.27
FM 1944 GLB2	1,001	44.7%	1.22	32.70	4.47	83.53
DPL 1321 B2RF	981	46.7%	1.17	32.30	4.87	84.80
DPL 1311 B2RF	964	46.7%	1.15	30.40	4.60	84.17
NG 1511 B2RF	935	46.0%	1.18	31.67	4.73	84.80
PHY 339 WRF	917	44.7%	1.21	32.60	4.53	84.43
DG 2570 B2RF	895	44.7%	1.16	32.47	4.63	84.00
MEAN	974	45.7%	1.18	31.89	4.58	84.24
LSD (0.05)	NS	NS	0.041	NS	NS	NS
CV %	8.52	3.01	2.03	5.45	6.73	1.06

COTTON VARIETY TEST LOCATIONS



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

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