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Arkansas Cotton Variety Test 2013

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ARKANSAS COTTON VARIETY TEST 2013



F.M. Bourland, A.B. Beach,
C. Kennedy, and L. Martin

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**ARKANSAS
COTTON
VARIETY TEST
2013**

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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 2013 Arkansas Cotton Variety Test were evaluated in one group. The 40 entries included 24 entries (12 B2RF, 6 WRF, 3 GLB2, and 3 conventional) returning from the 2012 test and 16 entries (6 B2RF, 9 WRF, and 1 conventional) first-year entries. 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. Entries in both experiments were evaluated for response to tarnished plant bug and bacterial blight in a separate test at Keiser. The 2013 growing season at the north Delta locations differed greatly from locations further south in Arkansas. Due to severe production problems, yield and fiber quality data from the Keiser site are not included with the other locations in this report but are available in the appendix.

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Arkansas Cotton Variety Test 2013

*F.M. Bourland, A.B. Beach,
C. Kennedy¹, and L. Martin*

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 a location. 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) varieties, Widestrike[®] (W) and conventional varieties were all treated equally with respect to weed and insect control. Since relatively few new varieties/lines were submitted for testing, the entries were not divided into two groups. The 40 entries were evaluated in one test at each location.

Materials and Methods

The 40 entries in the 2013 test included 23 entries (12 B2RF, 6 WRF, 3 GLB2, and 2 conventional) that were evaluated in the 2012 test, and 17 new entries (6 B2RF, 9 WRF, and 2 conventional) (Table 1). All test sites included the same entries.

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; 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. Although exact inputs varied across locations, cultural inputs at each location were generally based on University of Arkansas System 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 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 variables: After cutout, a bract from a full-sized, mid-canopy, 1st position boll was randomly sampled from six plants per plot (4 replications) in the Keiser experiments. Each bract was examined for marginal trichome density

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(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 June 4 and received no insecticide treatment for TPB infestations. Four rows of frego bract cotton between the experiments were planted on May 29. 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. High TPB infestations on the late-planted cotton destroyed almost all flowering buds on the cotton. Number of white flowers examined per plot instead of % dirty flowers is presented.

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 crop development problems, open bolls were not determined for plots at Keiser in 2013.

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.), mean length (length times uniformity index), 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 the 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 \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 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 2013 production season.

Rainfall in April and early May delayed planting at all locations in 2013 (Tables 2 and 3). With adequate moisture and warm temperatures, good stands were obtained at each location. Heat unit accumulation was near normal at each location, but higher rainfall (and associated cloudy conditions) in north Arkansas differed greatly from central and south Arkansas in 2013. Rainfall at the north Arkansas sites in June through August was 30% higher than the historical average. In contrast, rainfall for the same period was 49% and 43% lower than the historical average at Marianna and Rohwer, respectively.

Other observations associated with each test site include:

Keiser. With recurring rains in April and May on this clay soil, the test was not planted until May 28. Excellent stands and subsequent early growth were obtained. However, when the first irrigation was initiated on July 11, the irrigation power unit broke and replacement parts could not be readily obtained. The plants suffered moisture stress until we were able to irrigate on July 18. This irrigation was followed by 2.5 inches of rain on July 22, and the field remained wet until mid-August. Measureable rainfall was

received on 12 of 14 days from July 31 through August 13. During that time, tarnished plant bug populations reached near historic highs. The muddy conditions prevented spraying with a ground rig, and the presence of entomological tests in the same field precluded aerial spraying. With the delayed maturity and severe plant bug injury, average yields of less than one bale per acre were attained. No mepiquat chloride was applied.

The Keiser data may be important in showing how the varieties performed under these harsh conditions, but do not reflect the agronomic potential for the varieties. Therefore, the data are excluded from the main report, but are included in appendix tables for reference only.

Judd Hill. The test site at Judd Hill experienced some of the same weather conditions as Keiser. However, the silt loam soil permitted an earlier (May 20) planting and timely management through most of the season. Incidence of Verticillium wilt was more severe than normal at this site due to relatively cool, wet conditions in August. Nevertheless, average yields of over 2 bales/a were achieved. Mepiquat chloride (total of 52 oz/a) was used to control plant height.

Marianna. Weather conditions at Marianna strongly contrasted conditions at the north Arkansas sites. Planting was delayed until mid-May, and dry 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. Mepiquat chloride (total of 44 oz/a) was used to control plant height.

Rohwer. Weather conditions at Rohwer were similar to Marianna—planting was delayed until mid-May, and dry 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. However, harvest at Rohwer was delayed due to a breakdown of the plot picker at the site. Early maturing lines likely suffered proportionately more damage by this delay in harvest than did late maturing lines. Mepiquat chloride (total of 48 oz/a) was used to control plant height.

Performance of entries in the 2013 Arkansas Cotton Variety Test are provided in Tables 4 through 15 with yield and yield-related variables in the even-numbered tables and fiber properties in the odd-numbered tables. Performance data across all locations are presented in Tables 4 and 5. Since the Keiser data differed so much from the other locations and from normal expectations, performance data over the other three locations (Judd

Hill, Marianna, and Rohwer) are presented in Tables 6 and 7. The coefficient of variation (CV) and coefficient of determination (R^2) associated with lint yield were improved with the Keiser data included. The Keiser data may be important in showing how the varieties performed under these harsh conditions, but do not reflect the agronomic potential for the varieties. 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.

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Table 1. Participants and entries in the 2013 Arkansas Cotton Variety Test.

Institution/Contact person	Returning entries	Experimental no.	1st year entries
Americot Inc./ Tom Brooks	NG 1511 B2RF AM UA48 NG 5315 B2RF	AMX 001 B2RF; AM1511B2RF Ark 0102-48 10R051B2R2, NGX0012	
Bayer Crop Science/ Steve Lee	FM 1944GLB2 ST 4946GLB2 ST 5288 B2RF ST 5458 B2RF ST 6448GLB2	BX 1244GLB2 BX 1346GLB2 BX 1348GLB2	
Crop Production Services/ Stacie Bruff Charlie Cook	Dyna-Gro 2285 B2RF Dyna-Gro 2570 B2RF	CT12214 DG CT07550	Dyna-Gro CT 13414 CT 13125
Monsanto/ David Albers	DP 0912 B2RF DP 1133 B2RF DP 1311 B2RF DP 1321 B2RF	 09R555B2R2 11R124 B2R2 11R112 B2R2	12R224B2R2 12R242B2R2 DP 1044 B2RF
PhytoGen Seed Co./ Chris Main	PHY 339WRF PHY 375 WRF PHY 499 WRF PHY 333 WRF PHY 417 WRF PHY 367 WRF	PX433906WRF PX312240WRF PHX4433-14; PX443325WRF	PX300304WRF PX300310WRF PX3122b51WRF PX375001WRF PX444413WRF PX444414WRF PX445022WRF PX553840WRF PHY 427 WRF (PX443327)
Seed Source Genetics/ Edward Jungmann	SGS UA222	Ark 0222-12	HQ210CT
Winfield Solutions, LLC/ Robert Cossar	Croplan 3428 B2RF Croplan 3787 B2RF		
Ark. Agric. Exp. Station/ Fred Bourland	DP 393	check conventional variety	Ark 0620-48 B2RF

Table 2. Cultural practices for locations of the 2013 Arkansas Cotton Variety Test.

Input	Location			
	Keiser	Judd Hill	Marianna	Rohwer
Soil type	Sharkey clay	Dundee silt loam	Callaway silt loam	Hebert silt loam
N, P, K (lbs)	130-0-0	100-23-40	100-0-90	100-0-100
Planting date	5/28	5/20	5/14	5/15
Irrigation method	furrow	furrow	furrow	furrow
Irrigation dates	7/11,18	6/26; 7/2,10,17	6/25,29; 7/7,14; 8/2	7/4,24; 8/5,23
Defoliation date	9/26; 10/4	9/26; 10/4	7/24; 10/1	9/30;10/10
Harvest date	10/29	10/26	10/13	11/11

Table 3. Weather summary for the 2013 production season in north, central and south Arkansas.

	Month	DD60s in 2013	Historical avg. ¹ DD60s	Rainfall (in.) in 2013	Historical avg. ¹ rainfall
Keiser (northeast)	May	342	314	7.8	5.2
	June	618	532	4.8	3.9
	July	611	644	4.0	3.7
	August	597	583	4.8	2.9
	September	459	363	2.9	3.7
	October	176	127	2.7	3.3
	Total	2803	2563	26.9	22.6
Marianna (central)	May	314	336	7.4	5.1
	June	580	538	0.7	3.9
	July	570	646	2.8	3.9
	August	598	601	1.9	2.8
	September	494	397	4.4	3.2
	October	165	154	2.7	3.5
	Total	2721	2672	19.9	22.4
Rohwer (southeast)	May	332	354	5.7	4.9
	June	563	551	2.1	3.6
	July	569	661	1.9	3.7
	August	618	618	1.6	2.6
	September	507	415	7.3	3.0
	October	182	167	1.1	3.4
	Total	2771	2766	19.7	21.3

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—2013 Arkansas Cotton Variety Test across three test sites (Keiser data discarded).

Variety	Lint yield		Lint frac.		Ht.	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density		
	lb/a	r	%	r		cm	%	r	g	r	g	r	mil.	r	no.	r	no.	r
PX3122b51WRF	1778	1	42.7	8	105	33	42	1	10.9	13	8.3	6	9.361	3	18869	5	176	7
PX375001WRF	1717	2	44.2	1	107	27	35	10	10.5	20	8.5	3	8.930	10	18824	6	180	4
ST 5288 B2RF	1618	3	40.8	27	106	31	38	3	9.5	37	6.8	38	10.050	1	15360	36	157	27
PX445022WRF	1609	4	41.7	21	109	24	31	22	10.2	27	7.5	28	9.170	6	16836	21	164	14
PHY 333 WRF	1583	5	41.8	18	110	21	38	4	10.8	16	7.9	13	8.931	9	18335	7	172	9
DP 1321 B2RF	1572	6	42.0	17	114	12	33	15	10.7	18	7.9	14	8.599	12	16848	20	159	24
PX300310WRF	1558	7	42.4	10	114	11	33	18	9.4	38	7.1	31	9.576	2	15467	35	159	25
NG 1511 B2RF	1540	8	43.0	4	107	28	38	4	10.8	14	8.4	4	8.263	20	17921	10	168	11
PX444414WRF	1534	9	41.7	22	114	14	31	22	10.9	12	8.0	11	8.480	14	19042	3	177	5
DP 0912 B2RF	1532	10	40.4	31	108	26	31	22	10.8	17	7.5	27	8.422	15	16046	29	151	33
Dyna-Gro 2570 B2RF	1519	11	41.5	24	112	16	32	20	11.1	10	8.1	9	8.361	16	17442	11	161	19
12R224B2R2	1515	12	41.0	26	110	19	33	14	10.6	19	7.6	25	8.070	21	17202	13	163	16
ST 4946GLB2	1499	13	41.0	25	106	30	31	26	12.4	2	8.8	2	6.496	33	18097	8	155	31
PX300304WRF	1489	14	40.3	33	116	9	30	29	10.1	28	7.0	32	9.113	7	15890	32	156	29
Dyna-Gro 2285 B2RF	1481	15	40.5	29	106	29	35	10	11.1	11	7.7	20	8.926	11	17415	12	160	22
Ark 0620 B2RF	1479	16	42.0	12	121	3	36	9	10.8	15	8.0	10	8.526	13	18058	9	169	10
PX553840WRF	1475	17	40.5	30	118	4	28	32	9.7	36	6.8	37	9.007	8	15786	33	158	26
PX444413WRF	1472	18	43.4	2	106	32	33	15	11.4	5	9.0	1	7.177	28	21671	1	196	1
PHY 427 WRF	1469	19	40.6	28	121	1	30	27	9.8	34	6.8	36	9.333	4	16061	28	160	20
PHY 499 WRF	1425	20	43.1	3	114	13	32	21	9.9	33	7.7	21	8.340	17	16291	26	161	17
PHY 339WRF	1424	21	42.0	14	116	7	35	12	10.2	25	7.6	26	7.995	22	16558	23	161	18
DP 393	1413	22	40.3	32	98	37	37	6	11.5	4	7.9	15	7.548	25	16405	24	147	35
PHY 367 WRF	1406	23	41.5	23	103	34	36	8	10.5	21	7.6	23	7.977	23	17157	15	164	15
PHY 417 WRF	1397	24	42.0	15	112	17	35	13	8.7	40	6.5	39	9.256	5	17143	16	184	2
CT 13125	1379	25	42.5	9	110	20	31	22	11.2	8	8.4	5	6.986	30	19763	2	181	3
SGS UA222	1345	26	39.9	34	108	25	30	27	11.4	6	7.7	19	7.540	26	17193	14	155	30
DP 1311 B2RF	1341	27	42.1	11	109	23	26	36	9.2	39	6.9	33	8.339	18	17002	18	177	6
DP 1044 B2RF	1337	28	39.7	36	101	36	33	15	10.0	31	6.8	35	8.339	19	15644	34	154	32
ST 5458 B2RF	1320	29	39.8	35	101	35	33	18	11.4	7	7.7	22	7.489	27	16025	30	145	37
FM 1944GLB2	1296	30	39.2	38	97	39	39	2	11.8	3	7.8	17	7.075	29	16112	27	142	39
PHY 375 WRF	1296	31	41.8	19	115	10	27	34	11.1	9	8.2	7	6.623	32	18892	4	174	8
Dyna-Gro CT 13414	1266	32	43.0	5	113	15	28	30	10.1	30	7.8	18	6.852	31	16952	19	167	12
Croplan 3787 B2RF	1177	34	42.9	6	117	6	24	38	10.4	22	7.9	12	6.157	37	16615	22	160	21
12R242B2R2	1177	33	42.0	13	117	5	23	39	10.1	29	7.5	29	6.328	35	15952	31	157	28
ST 6448GLB2	1151	35	38.7	39	110	22	28	30	10.0	32	6.4	40	7.586	24	14580	40	144	38
AM UA48	1143	36	37.0	40	97	38	37	7	13.7	1	8.2	8	5.947	38	14762	39	118	40
HQ210CT	1078	37	39.3	37	94	40	27	35	10.3	23	6.8	34	6.339	34	14999	38	146	36
DP 1133 B2RF	1045	38	42.0	16	116	8	22	40	10.2	26	7.6	24	5.666	40	16298	25	159	23
NG 5315 B2RF	1034	39	42.8	7	121	2	25	37	10.2	24	7.9	16	5.931	39	17115	17	166	13
Croplan 3428 B2RF	1034	40	41.7	20	110	18	28	32	9.7	35	7.2	30	6.200	36	15017	37	151	34
Mean	1398		41.4		110		32		10.6		7.6		7.883		16941		161	
Var. LSD 0.10	97		1.0		6		5		0.5		0.3		0.870		818		8	
Loc. LSD 0.10	26		0.3		2		1		0.1		0.1		0.167		222		2	
C.V.%	11.5		2.5		8.7		25.5		5.1		4.7		11.5		5.0		4.9	
R-sq x 100	79.6		83.9		48.7		83.5		90.0		92.5		84.9		87.6		90.2	
Prob (var x loc)	<.0001		0.752		0.841		<.0001		0.253		0.091		0.003		0.073		0.123	

Table 5. Fiber properties–2013 Arkansas Cotton Variety Test, across three test sites (Keiser data discarded).

Variety	Lint yield ¹ lb/a	Quality			Fiber properties											
		r	score	r	Mic.	r	Length in.	r	Mean len. in.	r	Unif.Ind. %	r	Strength g/tex	r	Elong. %	r
PX3122b51WRF	1778	1	65	15	4.5	30	1.18	16	0.99	15	84.2	8	31.4	34	7.0	23
PX375001WRF	1717	2	65	16	4.6	22	1.18	14	0.99	14	83.9	20	32.3	19	7.7	14
ST 5288 B2RF	1618	3	48	38	4.7	18	1.14	38	0.94	39	82.9	39	30.0	40	7.1	22
PX445022WRF	1609	4	65	14	4.5	28	1.18	15	0.99	16	84.0	13	32.6	14	6.9	27
PHY 333 WRF	1583	5	68	8	4.4	32	1.19	10	0.99	12	83.7	29	30.9	37	6.7	30
DP 1321 B2RF	1572	6	56	26	4.8	8	1.16	26	0.97	27	83.9	23	33.7	5	8.3	3
PX300310WRF	1558	7	46	39	4.9	6	1.13	40	0.94	40	83.7	28	31.9	27	7.5	18
NG 1511 B2RF	1540	8	53	32	4.9	6	1.16	30	0.97	30	83.9	19	33.6	6	8.0	7
PX444414WRF	1534	9	70	7	4.2	38	1.19	8	1.00	7	84.3	7	32.5	16	6.7	31
DP 0912 B2RF	1532	10	44	40	4.9	5	1.14	39	0.95	38	83.3	37	31.4	33	7.2	21
Dyna-Gro 2570 B2RF	1519	11	54	30	4.8	14	1.15	31	0.97	28	84.2	9	32.7	12	7.8	12
12R224B2R2	1515	12	63	18	4.5	27	1.17	18	0.98	19	83.8	25	31.0	36	6.7	33
ST 4946GLB2	1499	13	56	27	5.0	2	1.17	19	0.98	18	84.0	14	33.5	7	7.5	17
PX300304WRF	1489	14	57	25	4.5	25	1.16	26	0.97	31	83.5	34	32.6	13	6.3	36
Dyna-Gro 2285 B2RF	1481	15	64	17	4.5	26	1.17	17	0.98	17	83.9	20	30.9	37	7.9	9
Ark 0620 B2RF	1479	16	60	20	4.6	24	1.16	24	0.98	23	84.0	14	31.5	31	7.3	19
PX553840WRF	1475	17	71	6	4.3	36	1.19	7	1.01	6	84.9	2	32.7	11	6.3	35
PX444413WRF	1472	18	78	2	4.0	39	1.24	2	1.04	2	84.3	5	32.0	23	6.4	34
PHY 427 WRF	1469	19	61	19	4.4	34	1.17	20	0.98	21	83.7	30	33.3	8	7.3	20
PHY 499 WRF	1425	20	59	23	4.8	8	1.16	24	0.98	20	84.3	6	34.9	2	7.8	12
PHY 339WRF	1424	21	66	11	4.6	20	1.19	11	1.00	11	84.1	10	32.2	21	6.9	26
DP 393	1413	22	53	33	5.0	1	1.15	34	0.97	26	84.6	4	31.9	25	6.8	28
PHY 367 WRF	1406	23	59	21	4.6	22	1.17	21	0.98	25	83.7	30	33.3	9	7.0	24
PHY 417 WRF	1397	24	52	35	4.0	39	1.15	35	0.96	35	83.4	36	32.2	20	8.1	6
CT 13125	1379	25	66	10	4.3	35	1.18	12	0.99	13	83.9	20	32.4	17	7.9	10
SGS UA222	1345	26	75	3	4.5	31	1.21	4	1.02	3	84.1	11	33.2	10	8.1	5
DP 1311 B2RF	1341	27	54	31	4.3	36	1.15	36	0.95	37	82.7	40	31.1	35	7.6	16
DP 1044 B2RF	1337	28	50	37	4.6	21	1.14	37	0.95	36	83.2	38	32.4	18	8.2	4
ST 5458 B2RF	1320	29	55	28	5.0	3	1.17	22	0.98	24	83.8	24	32.6	14	6.2	37
FM 1944GLB2	1296	30	71	5	4.8	11	1.21	5	1.01	5	83.9	18	31.8	29	5.4	40
PHY 375 WRF	1296	31	58	24	4.5	28	1.16	29	0.97	32	83.6	32	31.6	30	6.7	29
Dyna-Gro CT 13414	1266	32	53	34	4.8	14	1.15	32	0.96	34	83.6	32	31.4	32	8.7	2
Croplan 3787 B2RF	1177	34	65	12	4.8	11	1.19	9	1.00	10	84.0	14	32.0	22	7.9	8
12R242B2R2	1177	33	55	29	4.8	10	1.16	28	0.97	29	83.8	27	31.8	28	8.8	1
ST 6448GLB2	1151	35	74	4	4.4	32	1.22	3	1.02	4	83.5	35	30.8	39	5.4	39
AM UA48	1143	36	89	1	5.0	3	1.30	1	1.12	1	86.5	1	35.2	1	5.6	38
HQ210CT	1078	37	51	36	4.8	14	1.15	32	0.97	33	83.8	26	33.8	4	6.7	32
DP 1133 B2RF	1045	38	68	9	4.7	19	1.18	12	1.00	8	84.8	3	34.7	3	7.0	25
NG 5315 B2RF	1034	39	59	22	4.7	17	1.16	23	0.98	22	84.0	12	31.9	24	7.9	11
Croplan 3428 B2RF	1034	40	65	12	4.8	11	1.19	6	1.00	9	84.0	17	31.9	26	7.6	15
Mean	1398		61		4.6		1.17		0.99		83.9		32.3		7.2	
Var. LSD 0.10	97		8		0.2		0.03		0.03		0.7		0.8		0.4	
Loc. LSD 0.10	26		2		0.1		ns		ns		ns		0.2		0.1	
C.V.%	11.5		15.6		4.1		2.2		2.8		0.9		2.5		6.3	
R-sq x 100	79.6		74.1		93.3		77.0		77.3		71.3		84.8		88.9	
Prob (var x loc)	<0.0001		0.380		0.326		0.856		0.616		0.043		0.140		0.353	

Abbreviations: Mic. = Micronaire; Mean len. = mean length; Unif. Ind. = uniformity index; Elong. = elongation.

Table 6. Yield and related properties–2013 Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill, Ark.

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.		
PX375001WRF	1557	1	43.5	1	109	31	24	1	10.0	16	7.9	3	9.051	2	19580	3	193	3
PX3122b51WRF	1398	2	41.2	16	112	27	22	6	10.5	8	7.5	6	8.361	8	19495	4	186	8
PX445022WRF	1368	3	40.1	26	113	24	21	9	9.4	29	6.5	30	8.560	6	16490	25	169	21
Dyna-Gro 2570 B2RF	1364	4	40.6	23	114	18	20	15	9.7	21	6.9	25	8.184	11	17300	16	174	14
PX444414WRF	1338	5	41.2	17	118	10	24	1	9.7	20	6.9	23	8.629	4	19133	7	192	6
Ark 0620 B2RF	1325	6	42.3	5	122	5	22	6	9.8	18	7.3	12	8.292	10	19294	6	193	4
DP 393	1278	7	40.2	25	103	37	23	4	10.6	7	7.2	14	7.532	19	16697	22	158	35
PX444413WRF	1277	8	42.6	3	116	12	20	15	10.5	10	8.0	1	6.858	25	22737	1	217	1
PHY 333 WRF	1266	9	41.0	18	113	23	17	28	10.5	9	7.5	7	7.592	17	18931	9	180	10
NG 1511 B2RF	1249	10	42.0	7	115	13	17	28	9.7	21	7.2	15	7.930	13	17549	14	176	12
CT 13125	1246	11	41.7	11	113	22	18	26	10.2	12	7.5	9	7.237	22	19796	2	192	5
PX300310WRF	1237	12	41.8	9	119	9	19	17	8.9	37	6.5	29	7.480	20	15226	40	162	33
12R224B2R2	1223	13	40.2	24	113	21	21	9	10.1	15	6.9	22	7.782	15	17504	15	172	18
DP 1321 B2RF	1221	14	41.4	14	122	6	17	28	10.2	12	7.3	11	7.112	24	17105	19	166	26
ST 5288 B2RF	1220	15	39.2	33	111	29	21	9	8.7	38	5.8	39	9.512	1	15405	38	166	29
PHY 339WRF	1218	16	40.7	22	125	1	21	9	10.1	14	7.1	17	7.569	18	17290	17	169	20
PHY 367 WRF	1210	17	41.0	19	108	32	23	4	9.9	17	7.1	18	7.414	21	17914	11	177	11
PX553840WRF	1208	18	39.6	29	115	16	18	26	8.9	36	6.0	37	8.426	7	15819	35	168	23
Dyna-Gro 2285 B2RF	1197	19	39.7	28	113	19	21	9	10.6	6	7.2	16	7.983	12	17720	13	167	24
DP 1311 B2RF	1195	20	41.7	10	106	36	19	17	8.5	39	6.3	33	8.307	9	16858	20	183	9
PX300304WRF	1186	21	39.8	27	124	3	19	17	9.4	28	6.4	32	8.624	5	16089	31	165	31
PHY 417 WRF	1161	22	40.7	20	114	17	19	17	8.2	40	5.8	38	8.817	3	17758	12	199	2
PHY 499 WRF	1154	23	42.1	6	121	7	16	32	9.6	26	7.1	19	7.161	23	16396	27	166	25
DP 0912 B2RF	1145	24	38.7	36	112	26	17	28	9.8	18	6.4	31	7.846	14	15809	36	158	36
PHY 427 WRF	1123	25	39.4	31	124	4	14	39	9.2	30	6.1	34	7.773	16	16000	33	166	27
SGS UA222	1117	26	39.2	34	113	24	15	35	11.0	5	7.3	13	6.628	27	18755	10	174	15
AM UA48	1116	27	37.2	40	100	39	24	1	12.9	1	7.8	4	5.810	34	16346	28	135	40
ST 5458 B2RF	1094	28	38.8	35	110	30	19	17	11.3	4	7.3	10	6.487	28	16521	24	150	38
PHY 375 WRF	1084	29	41.5	12	116	11	19	17	10.4	11	7.6	5	6.060	31	19481	5	186	7
Dyna-Gro CT 13414	1069	30	42.3	4	113	19	21	9	9.1	33	6.9	24	6.724	26	16758	21	175	13
FM 1944GLB2	1052	31	38.4	37	102	38	22	6	11.7	3	7.5	8	5.865	33	16196	30	144	39
ST 4946GLB2	1038	32	39.3	32	108	33	19	17	12.1	2	8.0	2	5.003	40	19002	8	165	30
Croplan 3787 B2RF	1025	33	43.0	2	119	8	15	35	9.2	31	7.1	20	5.905	32	16468	26	171	19
12R242B2R2	974	34	40.7	21	115	15	15	35	9.7	24	6.8	26	5.729	36	15897	34	160	34
NG 5315 B2RF	946	35	41.4	13	124	2	16	32	9.7	23	7.0	21	5.611	37	17134	18	172	17
Croplan 3428 B2RF	930	36	41.9	8	107	34	19	17	8.9	35	6.7	27	5.770	35	15448	37	163	32
DP 1044 B2RF	870	37	37.7	38	107	35	19	17	9.6	25	6.0	36	6.220	29	16327	29	166	28
HQ210CT	865	38	39.4	30	98	40	12	40	9.1	32	6.1	35	5.014	39	16622	23	173	16
ST 6448GLB2	856	39	37.2	39	115	14	15	35	9.6	26	5.8	40	6.123	30	15315	39	155	37
DP 1133 B2RF	837	40	41.3	15	111	28	16	32	9.0	34	6.5	28	5.549	38	16040	32	168	22
Mean	1156		40.5		113		19		9.9		6.9		7.213		17305		172	
LSD 0.10	111		1.8		5		5		0.7		0.5		1.104		1401		14	
C.V.%	9.1		2.6		4.5		23.7		4.2		4.5		9.1		4.8		4.9	
R-sq x 100	78.1		81.4		72.8		49.1		91.4		89.1		88.1		88.1		86.7	

Table 7. Fiber properties–2013 Arkansas Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill, Ark.

Variety	Lint		Quality		Fiber properties											
	yield ¹ lb/a	r	score	r	Mic.	r	Length in.	r	Mean len. in.	r	Unif.Ind. %	r	Strength g/tex	r	Elong. %	r
PX375001WRF	1557	1	65	18	4.1	17	1.18	15	0.98	20	83.3	33	32.2	27	7.4	19
PX3122b51WRF	1398	2	68	16	3.9	29	1.18	15	0.99	10	84.7	5	31.9	33	7.2	21
PX445022WRF	1368	3	74	3	3.9	29	1.19	7	1.01	4	84.9	3	33.3	12	7.0	23
Dyna-Gro 2570 B2RF	1364	4	61	28	4.1	17	1.15	31	0.97	27	84.5	8	33.0	18	7.7	11
PX444414WRF	1338	5	65	20	3.7	38	1.19	9	0.99	14	83.7	26	32.8	21	6.3	34
Ark 0620 B2RF	1325	6	57	31	4.0	28	1.14	35	0.96	33	84.2	11	32.4	25	8.1	8
DP 393	1278	7	63	26	4.5	5	1.15	29	0.97	23	84.7	4	32.1	28	6.7	30
PX444413WRF	1277	8	74	4	3.4	40	1.25	2	1.05	2	84.5	7	32.0	29	6.2	35
PHY 333 WRF	1266	9	70	10	4.0	25	1.19	9	0.99	12	83.8	24	31.8	34	6.6	31
NG 1511 B2RF	1249	10	61	27	4.3	14	1.16	25	0.97	28	83.7	29	33.5	10	7.7	13
CT 13125	1246	11	70	8	3.8	35	1.19	9	0.99	15	83.7	27	33.6	9	7.6	17
PX300310WRF	1237	12	50	36	4.6	1	1.13	39	0.94	37	83.8	25	33.2	15	7.7	13
12R224B2R2	1223	13	65	20	4.1	21	1.17	20	0.98	21	83.9	18	31.8	35	6.6	31
DP 1321 B2RF	1221	14	64	23	4.4	6	1.16	24	0.97	25	83.9	23	35.1	2	8.3	4
ST 5288 B2RF	1220	15	50	37	4.1	21	1.13	37	0.93	39	82.4	40	29.2	40	7.6	17
PHY 339WRF	1218	16	74	4	4.1	17	1.20	5	1.00	8	83.7	27	32.7	22	6.9	26
PHY 367 WRF	1210	17	70	10	4.0	25	1.18	14	0.99	13	84.1	13	34.3	6	6.8	28
PX553840WRF	1208	18	69	13	3.8	36	1.19	9	1.01	5	85.0	2	32.9	20	6.0	36
Dyna-Gro 2285 B2RF	1197	19	70	10	4.1	17	1.19	9	0.99	16	83.7	29	32.0	29	7.8	10
DP 1311 B2RF	1195	20	59	30	3.9	29	1.16	25	0.96	32	82.9	36	31.4	38	7.3	20
PX300304WRF	1186	21	65	18	4.1	21	1.17	20	0.98	19	84.1	13	33.3	14	6.5	33
PHY 417 WRF	1161	22	47	39	3.4	39	1.15	29	0.97	29	83.9	18	32.6	24	8.1	7
PHY 499 WRF	1154	23	70	8	4.4	10	1.18	15	0.99	11	84.6	6	34.9	3	7.9	9
DP 0912 B2RF	1145	24	55	33	4.3	14	1.15	31	0.95	36	82.8	38	31.9	32	7.2	22
PHY 427 WRF	1123	25	68	14	3.9	34	1.19	7	1.00	9	83.9	18	33.8	7	7.0	23
SGS UA222	1117	26	72	7	3.9	32	1.20	6	1.01	6	84.2	11	33.3	13	9.0	2
AM UA48	1116	27	95	1	4.4	6	1.27	1	1.08	1	85.4	1	34.8	5	5.7	38
ST 5458 B2RF	1094	28	68	16	4.5	2	1.18	15	0.99	18	84.0	17	33.5	10	6.0	36
PHY 375 WRF	1084	29	59	29	4.1	21	1.15	31	0.96	30	84.1	13	33.2	15	6.7	29
Dyna-Gro CT 13414	1069	30	46	40	4.4	6	1.13	37	0.94	38	82.9	36	31.8	35	8.9	3
FM 1944GLB2	1052	31	80	2	4.5	2	1.22	3	1.02	3	84.3	9	30.8	39	5.5	40
ST 4946GLB2	1038	32	65	20	4.3	13	1.17	20	0.98	22	83.9	18	33.8	7	7.6	16
Croplan 3787 B2RF	1025	33	68	14	4.4	10	1.18	15	0.99	17	84.3	10	32.7	22	8.1	6
12R242B2R2	974	34	63	24	4.4	6	1.17	20	0.97	24	83.5	32	32.3	26	9.2	1
NG 5315 B2RF	946	35	56	32	4.3	12	1.14	34	0.95	34	83.6	31	33.0	19	7.7	12
Croplan 3428 B2RF	930	36	52	35	4.5	2	1.16	25	0.96	31	83.0	35	32.0	29	7.7	13
DP 1044 B2RF	870	37	48	38	4.0	27	1.13	39	0.93	40	82.7	39	33.2	17	8.2	5
HQ210CT	865	38	55	34	3.9	32	1.14	35	0.95	35	83.9	18	34.9	4	6.9	27
ST 6448GLB2	856	39	73	6	3.8	36	1.21	4	1.00	7	83.1	34	31.5	37	5.6	39
DP 1133 B2RF	837	40	63	24	4.2	16	1.16	25	0.97	26	84.1	16	35.4	1	7.0	25
Mean	1156		64		4.1		1.17		0.98		83.9		32.8		7.2	
LSD 0.10	111		13		0.4		0.04		0.04		1.1		1.5		0.8	
C.V.%	9.1		12.5		5.7		1.9		2.3		0.8		2.7		6.6	
R-sq x 100	78.1		74.5		77.0		79.1		78.2		66.7		79.2		87.7	

Abbreviations: Mic. = Micronaire; Mean len. = mean length; Unif. Ind. = uniformity index; Elong. = elongation.

Table 8. Yield and related properties—2013 Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna, Ark.

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
PX3122b51WRF	1975	1	43.4	6	104	28	28	5	11.0	11	8.6	3	9.406	12	19388	3	179	5
PX375001WRF	1828	2	44.0	1	105	25	26	13	10.3	20	8.3	6	9.279	15	18838	4	182	4
ST 5288 B2RF	1777	3	41.6	25	101	32	26	13	9.8	33	7.1	32	10.690	3	15782	33	158	27
PHY 499 WRF	1749	4	43.4	5	112	11	30	2	9.5	37	7.4	26	10.730	2	15810	32	161	20
DP 0912 B2RF	1728	5	42.0	19	104	27	25	20	10.3	19	7.6	22	9.137	19	16182	27	156	30
PHY 427 WRF	1726	6	41.3	28	121	1	21	31	10.0	26	7.2	31	11.150	1	16345	26	161	21
PX445022WRF	1725	7	43.1	11	107	23	22	29	10.1	25	7.8	18	9.199	18	17803	10	174	7
Dyna-Gro 2285 B2RF	1695	8	40.7	32	101	31	28	5	11.2	8	7.8	17	10.010	7	17218	13	157	28
PX300310WRF	1675	9	43.3	8	112	10	25	20	9.6	35	7.4	29	10.160	6	16596	22	168	10
ST 4946GLB2	1672	10	42.0	20	107	23	18	39	12.2	2	9.0	2	6.832	35	17869	9	154	32
DP 1321 B2RF	1671	11	41.6	26	109	18	26	13	10.1	23	7.4	27	9.737	9	16381	24	160	23
PHY 333 WRF	1670	12	42.1	18	109	19	28	5	10.6	16	7.8	19	10.260	5	18023	7	171	8
PX553840WRF	1668	13	40.7	33	121	2	21	31	9.8	32	6.9	34	9.343	14	16057	28	160	22
12R224B2R2	1648	14	41.6	24	105	25	27	10	10.2	21	7.4	28	9.504	11	16798	17	164	16
SGS UA222	1634	15	40.7	31	103	29	26	13	10.7	13	7.5	25	9.404	13	15737	34	148	36
Dyna-Gro 2570 B2RF	1627	16	41.9	22	108	20	25	20	11.7	3	8.6	5	8.637	25	17897	8	159	25
PX300304WRF	1622	17	40.6	34	113	7	20	38	9.5	36	6.6	38	9.969	8	15342	35	156	31
DP 1044 B2RF	1620	18	40.3	36	93	37	26	13	9.9	28	6.8	35	10.410	4	15184	36	151	33
PHY 339WRF	1603	19	42.7	13	110	15	28	5	9.8	31	7.5	24	8.998	21	16632	21	166	13
PHY 375 WRF	1584	20	41.2	29	117	5	21	31	11.1	10	8.0	12	8.086	28	18456	6	169	9
PHY 367 WRF	1583	21	41.7	23	96	36	26	13	10.3	17	7.7	20	9.259	17	16719	20	161	19
Ark 0620 B2RF	1576	22	42.2	16	118	4	27	10	10.6	15	7.8	16	8.908	23	16804	16	159	24
PX444414WRF	1558	23	41.4	27	113	8	21	31	11.5	6	8.3	8	8.455	27	18511	5	167	12
FM 1944GLB2	1533	24	40.6	35	91	39	35	1	10.8	12	7.6	23	8.716	24	16036	30	150	35
CT 13125	1532	25	42.9	12	108	21	25	20	11.3	7	8.6	4	7.620	31	20812	2	190	2
NG 1511 B2RF	1516	26	43.2	9	102	30	29	3	10.6	14	8.3	7	8.007	29	17525	11	166	14
ST 5458 B2RF	1504	27	41.1	30	99	33	24	24	11.2	9	8.0	14	8.525	26	17065	14	156	29
PHY 417 WRF	1503	28	42.4	14	111	13	27	10	8.6	40	6.5	39	9.266	16	16947	15	184	3
DP 1311 B2RF	1465	29	42.2	17	108	22	21	31	9.0	39	6.7	37	8.958	22	16516	23	174	6
DP 393	1455	30	40.2	37	92	38	28	5	11.7	4	8.0	11	7.688	30	16044	29	142	37
HQ210CT	1343	31	39.7	38	89	40	23	27	10.2	22	6.8	36	9.078	20	14182	38	138	38
AM UA48	1319	32	37.0	40	96	35	29	3	13.8	1	8.2	9	6.658	36	14058	39	111	40
PX444413WRF	1308	33	43.8	2	99	34	26	13	11.5	5	9.1	1	6.144	40	21820	1	196	1
Dyna-Gro CT 13414	1297	34	43.6	3	112	9	22	29	10.0	27	7.9	15	7.121	32	16726	19	165	15
Croplan 3787 B2RF	1272	35	43.6	4	111	12	24	24	10.1	23	8.0	13	6.630	37	16753	18	163	18
12R242B2R2	1264	37	42.3	15	118	3	17	40	9.9	28	7.4	30	6.915	34	15950	31	158	26
DP 1133 B2RF	1264	36	43.1	10	117	6	23	27	10.3	17	8.2	10	6.940	33	17319	12	167	11
ST 6448GLB2	1227	38	38.4	39	109	17	21	31	9.8	30	6.3	40	9.704	10	13641	40	136	39
Croplan 3428 B2RF	1061	39	41.9	21	110	16	24	24	9.3	38	6.9	33	6.363	38	14530	37	150	34
NG 5315 B2RF	1044	40	43.3	7	111	13	21	31	9.8	34	7.6	21	6.314	39	16348	25	163	17
Mean	1538		41.8		107		25		10.4		7.7		8.705		16816		161	
LSD 0.10	173		2.0		12		6		1.1		0.7		1.415		1638		14	
C.V.%	10.8		2.9		10.5		24.5		6.5		5.7		9.6		5.8		5.3	
R-sq x 100	68.3		75.8		40.2		57.3		80.0		82.6		84.0		85.2		86.1	

Table 9. Fiber properties–2013 Arkansas Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna, Ark.

Variety	Lint		Quality		Fiber properties											
	yield	r	score	r	Mic.	r	Length	r	Mean len.	r	Unif.Ind.	r	Strength	r	Elong.	r
	lb/a						in.		in.		%		g/tex		%	
PX3122b51WRF	1975	1	68	11	4.5	28	1.18	13	0.99	15	84.1	13	30.7	34	7.2	26
PX375001WRF	1828	2	70	7	4.5	31	1.19	8	1.00	8	84.0	16	31.6	20	7.8	16
ST 5288 B2RF	1777	3	52	31	4.8	14	1.15	32	0.95	36	83.1	34	29.9	38	7.3	24
PHY 499 WRF	1749	4	62	21	4.8	11	1.17	17	0.98	17	84.1	13	33.8	3	7.9	14
DP 0912 B2RF	1728	5	31	40	5.2	2	1.11	40	0.92	40	82.9	37	30.8	32	7.1	30
PHY 427 WRF	1726	6	62	21	4.5	28	1.16	24	0.97	21	84.0	18	32.7	5	7.9	14
PX445022WRF	1725	7	63	17	4.5	28	1.17	20	0.97	23	83.5	29	31.4	22	7.1	29
Dyna-Gro 2285 B2RF	1695	8	67	12	4.6	23	1.18	13	0.99	16	84.0	16	29.8	39	8.6	5
PX300310WRF	1675	9	51	35	4.7	18	1.13	39	0.95	37	84.2	12	31.3	25	7.8	16
ST 4946GLB2	1672	10	47	39	5.2	1	1.16	24	0.97	26	83.5	29	31.9	17	8.1	10
DP 1321 B2RF	1671	11	53	30	4.8	14	1.15	30	0.95	35	82.9	37	32.4	10	8.7	4
PHY 333 WRF	1670	12	69	10	4.4	34	1.19	8	0.99	13	83.7	24	31.0	31	7.1	30
PX553840WRF	1668	13	67	13	4.4	34	1.18	13	0.99	14	84.4	7	32.2	11	6.4	35
12R224B2R2	1648	14	60	24	4.6	23	1.16	24	0.96	28	83.0	35	29.7	40	7.6	19
SGS UA222	1634	15	84	3	4.6	23	1.23	3	1.04	3	84.4	6	32.6	6	8.0	13
Dyna-Gro 2570 B2RF	1627	16	57	25	4.9	7	1.17	17	0.98	20	83.6	26	32.0	14	8.1	10
PX300304WRF	1622	17	62	19	4.5	31	1.17	20	0.97	25	83.4	32	32.5	8	6.2	37
DP 1044 B2RF	1620	18	55	26	4.7	18	1.15	32	0.96	31	83.7	23	31.6	18	8.8	2
PHY 339WRF	1603	19	70	8	4.6	26	1.18	10	0.99	9	84.3	9	31.6	18	7.2	27
PHY 375 WRF	1584	20	62	19	4.5	31	1.16	24	0.97	24	83.8	21	30.5	36	6.8	34
PHY 367 WRF	1583	21	52	31	4.8	13	1.15	30	0.95	34	83.0	35	32.0	14	7.6	19
Ark 0620 B2RF	1576	22	67	13	4.7	18	1.18	10	0.99	10	84.3	9	31.1	30	7.2	27
PX444414WRF	1558	23	80	4	4.4	34	1.21	5	1.03	4	85.1	3	32.5	8	7.3	24
FM 1944GLB2	1533	24	66	15	4.8	14	1.19	7	0.99	11	83.5	27	31.9	16	5.2	40
CT 13125	1532	25	63	17	4.3	38	1.17	20	0.97	22	83.5	28	31.2	27	8.3	6
NG 1511 B2RF	1516	26	54	27	4.9	7	1.16	28	0.97	27	83.6	25	32.6	6	8.3	6
ST 5458 B2RF	1504	27	49	37	4.9	7	1.14	36	0.95	33	83.7	22	32.1	12	6.3	36
PHY 417 WRF	1503	28	54	27	4.1	39	1.14	38	0.95	38	83.3	33	32.0	13	8.2	9
DP 1311 B2RF	1465	29	54	27	4.3	37	1.15	32	0.94	39	82.3	39	31.3	24	7.6	19
DP 393	1455	30	52	34	5.1	3	1.16	28	0.98	19	84.7	5	31.4	22	7.4	22
HQ210CT	1343	31	49	38	5.0	5	1.15	32	0.96	30	83.9	19	33.3	4	7.0	32
AM UA48	1319	32	87	1	5.1	3	1.32	1	1.14	1	86.8	1	34.6	1	5.9	38
PX444413WRF	1308	33	87	2	4.0	40	1.24	2	1.05	2	85.0	4	31.2	27	6.8	33
Dyna-Gro CT 13414	1297	34	61	23	4.8	11	1.17	20	0.98	18	84.4	7	30.4	37	9.4	1
Croplan 3787 B2RF	1272	35	52	31	5.0	6	1.17	17	0.96	29	82.2	40	31.2	26	8.1	10
12R242B2R2	1264	37	51	36	4.9	10	1.14	36	0.96	32	83.8	20	31.1	29	8.7	3
DP 1133 B2RF	1264	36	69	9	4.7	18	1.18	13	1.00	7	85.4	2	34.2	2	7.4	22
ST 6448GLB2	1227	38	74	5	4.6	26	1.22	4	1.01	6	83.4	31	30.7	35	5.6	39
Croplan 3428 B2RF	1061	39	74	5	4.7	18	1.21	6	1.01	5	84.2	11	31.6	20	7.7	18
NG 5315 B2RF	1044	40	65	16	4.7	17	1.18	10	0.99	12	84.1	15	30.8	33	8.3	8
Mean	1538		62		4.7		1.17		0.98		83.8		31.7		7.5	
LSD 0.10	173		19		0.3		0.05		0.06		1.3		1.2		0.6	
C.V.%	10.8		18.7		3.6		2.7		3.3		0.7		2.2		5.1	
R-sq x 100	68.3		66.8		85.2		71.0		72.2		70.2		83.0		91.9	

Abbreviations: Mic. = Micronaire; Mean len. = mean length; Unif. Ind. = uniformity index; Elong. = elongation.

Table 10. Yield and related properties—2013 Cotton Variety Test, with irrigation on a Hebert silt loam at Rohwer, Ark.

Variety	Lint yield		Lint frac.		Ht.	Open bolls		Seed index		Lint index		Seed/acre		Fibers/seed		Fiber density		
	lb/a	r	%	r		cm	%	r	g	r	g	r	mil.	r	no.	r	no.	
PX3122b51WRF	1961	1	43.4	6	98	35	75	1	11.2	24	8.8	10	10.320	2	17724	10	162	9
ST 5288 B2RF	1856	2	41.6	23	107	25	68	2	10.0	38	7.4	36	9.951	3	14894	35	147	25
NG 1511 B2RF	1854	3	43.9	2	103	32	67	4	12.2	7	9.8	1	8.852	10	18690	4	161	11
PX444413WRF	1830	4	43.8	4	103	33	53	20	12.3	5	9.8	2	8.530	13	20456	1	175	1
DP 1321 B2RF	1823	5	42.9	10	110	16	56	12	11.7	14	9.1	6	8.947	8	17058	18	151	20
PHY 333 WRF	1814	6	42.4	15	108	23	68	2	11.3	21	8.6	17	8.938	9	18050	8	164	7
ST 4946GLB2	1788	7	41.8	22	105	30	55	16	12.8	3	9.4	3	7.652	21	17421	12	145	30
PX375001WRF	1765	8	45.0	1	107	26	56	12	11.2	23	9.4	4	8.461	14	18054	7	165	6
PX300310WRF	1762	9	42.1	17	111	15	54	18	9.7	39	7.3	39	11.090	1	14580	37	147	27
PX445022WRF	1735	10	41.9	20	106	27	50	24	11.0	28	8.1	26	9.751	4	16213	25	150	22
DP 0912 B2RF	1724	11	40.4	35	108	23	51	23	12.2	8	8.5	20	8.282	18	16148	26	139	36
PX444414WRF	1706	12	42.6	14	110	18	48	29	11.6	18	8.8	13	8.355	17	19483	2	174	2
12R224B2R2	1675	13	41.2	28	112	13	52	21	11.7	15	8.4	21	6.924	28	17303	15	154	18
PX300304WRF	1658	14	40.5	33	109	21	50	24	11.4	20	7.9	30	8.746	12	16238	24	147	26
Dyna-Gro 2570 B2RF	1566	15	41.9	19	114	11	52	21	11.8	11	8.8	12	8.263	19	17128	16	151	21
PHY 427 WRF	1558	16	41.1	30	119	6	56	12	10.1	36	7.1	40	9.080	7	15837	29	155	17
Dyna-Gro 2285 B2RF	1550	17	41.2	29	105	30	57	10	11.4	19	8.2	25	8.789	11	17306	14	156	15
PX553840WRF	1548	18	41.3	27	118	7	44	32	10.5	34	7.5	35	9.252	6	15481	32	148	24
Ark 0620 B2RF	1536	19	41.6	24	122	2	58	8	12.2	9	8.9	9	8.378	16	18077	6	156	14
PHY 417 WRF	1529	20	42.9	9	110	16	58	8	9.5	40	7.3	37	9.684	5	16723	20	170	4
DP 1044 B2RF	1521	21	41.0	31	102	34	54	18	10.7	32	7.7	32	8.384	15	15419	33	146	29
DP 393	1505	22	40.6	32	98	35	61	5	12.2	6	8.6	16	7.426	23	16473	23	142	33
PHY 339WRF	1449	23	42.6	12	112	12	56	12	10.7	30	8.1	28	7.417	24	15752	30	148	23
Dyna-Gro CT 13414	1432	24	43.0	8	115	8	41	34	11.1	26	8.6	14	6.709	29	17373	13	160	12
PHY 367 WRF	1427	25	41.8	21	106	28	60	6	11.1	27	8.2	23	7.258	25	16838	19	155	16
PHY 499 WRF	1371	26	43.9	3	109	22	49	28	10.7	31	8.6	15	7.126	26	16667	21	157	13
ST 6448GLB2	1370	27	40.5	34	105	29	48	29	10.5	34	7.3	38	6.930	27	14783	36	141	34
DP 1311 B2RF	1364	28	42.3	16	114	9	37	36	10.1	37	7.6	34	7.754	20	17632	11	173	3
ST 5458 B2RF	1361	29	39.6	37	94	39	55	16	11.7	17	7.8	31	7.455	22	14490	38	129	38
CT 13125	1358	30	42.8	11	109	19	50	24	12.1	10	9.3	5	6.103	34	18680	5	162	10
FM 1944GLB2	1302	31	38.7	39	97	37	59	7	13.0	2	8.4	22	6.643	30	16105	27	133	37
12R242B2R2	1294	32	43.1	7	119	4	36	38	10.6	33	8.2	24	6.339	33	16008	28	151	19
SGS UA222	1285	33	39.9	36	109	19	50	24	12.6	4	8.5	19	6.588	31	17088	17	144	31
Croplan 3787 B2RF	1234	34	42.0	18	120	3	32	39	11.8	12	8.8	11	5.936	35	16626	22	147	28
PHY 375 WRF	1219	35	42.6	13	112	14	42	33	11.8	13	9.0	8	5.725	37	18740	3	165	5
NG 5315 B2RF	1113	36	43.7	5	127	1	37	36	11.3	22	9.0	7	5.868	36	17864	9	163	8
Croplan 3428 B2RF	1112	37	41.4	26	114	10	40	35	11.0	29	8.0	29	6.466	32	15072	34	140	35
DP 1133 B2RF	1033	38	41.5	25	119	5	26	40	11.2	25	8.1	27	4.509	40	15536	31	142	32
HQ210CT	1026	39	39.0	38	93	40	45	31	11.7	16	7.6	33	4.925	39	14193	39	126	39
AM UA48	993	40	36.7	40	96	38	57	10	14.3	1	8.5	18	5.372	38	13882	40	107	40
Mean	1500		41.8		109		52		11.4		8.4		7.729		16702		151	
LSD 0.10	207		1.4		12		12		0.8		0.6		1.951		1253		11	
C.V.%	13.2		1.9		10.1		22.9		4.2		4.0		15.0		4.5		4.3	
R-sq x 100	69.9		88.8		38.7		51.8		88.8		89.8		77.7		88.8		89.8	

Table 11. Fiber properties—2013 Arkansas Cotton Variety Test, with irrigation on a Hebert silt loam at Rohwer, Ark.

Variety	Lint		Quality		Fiber properties											
	yield lb/a	r	score	r	Mic.	r	Length		Mean len.		Unif.Ind.		Strength		Elong.	
							in.	r	in.	r	%	r	g/tex	r	%	r
PX3122b51WRF	1961	1	59	14	5.0	25	1.19	14	0.99	15	83.9	24	31.5	32	6.7	23
ST 5288 B2RF	1856	2	43	39	5.2	13	1.15	36	0.95	38	83.2	35	31.0	37	6.4	31
NG 1511 B2RF	1854	3	46	33	5.4	3	1.16	32	0.97	27	84.4	13	34.7	4	8.0	5
PX444413WRF	1830	4	75	4	4.7	35	1.23	2	1.02	8	83.6	32	32.8	15	6.2	35
DP 1321 B2RF	1823	5	52	26	5.4	6	1.17	22	0.99	17	84.8	5	33.6	8	8.0	3
PHY 333 WRF	1814	6	66	11	4.8	34	1.20	11	1.00	14	83.7	27	30.0	40	6.5	30
ST 4946GLB2	1788	7	56	17	5.4	3	1.19	14	1.00	12	84.7	7	35.0	3	6.9	19
PX375001WRF	1765	8	59	15	5.2	12	1.19	12	1.00	13	84.3	15	33.1	11	8.1	2
PX300310WRF	1762	9	37	40	5.3	10	1.13	40	0.94	40	83.3	33	31.2	34	7.0	18
PX445022WRF	1735	10	58	16	5.1	23	1.19	14	0.99	16	83.8	25	33.0	14	6.6	27
DP 0912 B2RF	1724	11	46	33	5.4	3	1.16	28	0.98	26	84.1	18	31.6	31	7.3	16
PX444414WRF	1706	12	64	13	4.6	38	1.18	19	0.99	19	84.2	17	32.1	26	6.5	28
12R224B2R2	1675	13	65	12	4.9	31	1.19	12	1.01	11	84.6	9	31.7	30	5.9	37
PX300304WRF	1658	14	45	35	5.1	18	1.15	34	0.96	37	83.1	38	32.0	28	6.1	36
Dyna-Gro 2570 B2RF	1566	15	45	37	5.3	10	1.15	36	0.97	31	84.6	8	33.1	11	7.6	10
PHY 427 WRF	1558	16	54	24	4.7	36	1.16	32	0.96	36	83.2	35	33.6	9	6.9	20
Dyna-Gro 2285 B2RF	1550	17	55	22	4.9	31	1.16	28	0.97	29	84.0	20	31.0	36	7.3	17
PX553840WRF	1548	18	78	2	4.7	37	1.22	8	1.04	3	85.4	3	33.1	11	6.4	31
Ark 0620 B2RF	1536	19	56	19	5.0	25	1.18	19	0.98	24	83.6	29	31.2	35	6.8	21
PHY 417 WRF	1529	20	56	19	4.6	38	1.16	28	0.96	35	83.0	39	32.2	22	8.0	3
DP 1044 B2RF	1521	21	48	32	5.2	16	1.16	28	0.97	33	83.3	33	32.6	16	7.6	13
DP 393	1505	22	45	35	5.4	6	1.15	34	0.97	30	84.6	9	32.4	19	6.5	28
PHY 339WRF	1449	23	55	22	5.2	13	1.18	19	0.99	18	84.4	13	32.3	20	6.7	25
Dyna-Gro CT 13414	1432	24	51	28	5.1	18	1.17	26	0.97	28	83.7	28	32.2	21	8.0	6
PHY 367 WRF	1427	25	56	17	5.0	27	1.17	22	0.98	23	84.0	22	33.8	6	6.7	23
PHY 499 WRF	1371	26	44	38	5.4	6	1.15	36	0.97	34	84.3	16	36.0	2	7.6	10
ST 6448GLB2	1370	27	74	5	4.8	33	1.23	2	1.03	6	84.0	19	30.2	39	5.2	39
DP 1311 B2RF	1364	28	49	31	4.6	38	1.14	39	0.95	39	83.0	39	30.5	38	7.8	7
ST 5458 B2RF	1361	29	50	29	5.5	2	1.18	17	0.99	20	83.8	26	32.2	23	6.3	33
CT 13125	1358	30	67	10	4.9	29	1.20	10	1.01	10	84.5	11	32.6	16	7.8	8
FM 1944GLB2	1302	31	68	9	5.1	18	1.22	5	1.02	7	83.9	23	32.6	16	5.4	38
12R242B2R2	1294	32	52	26	5.2	13	1.17	22	0.98	25	84.0	20	32.0	28	8.6	1
SGS UA222	1285	33	69	8	4.9	29	1.22	8	1.02	9	83.6	29	33.6	7	7.4	14
Croplan 3787 B2RF	1234	34	75	3	5.1	22	1.23	2	1.05	2	85.7	2	32.2	23	7.7	9
PHY 375 WRF	1219	35	52	25	5.0	27	1.17	26	0.97	32	83.1	37	31.2	33	6.7	22
NG 5315 B2RF	1113	36	55	21	5.1	18	1.17	22	0.99	21	84.5	11	32.1	27	7.6	10
Croplan 3428 B2RF	1112	37	70	7	5.2	16	1.22	5	1.03	5	84.8	5	32.2	23	7.4	14
DP 1133 B2RF	1033	38	72	6	5.1	23	1.22	5	1.04	4	84.9	4	34.5	5	6.6	26
HQ210CT	1026	39	50	29	5.5	1	1.18	17	0.99	22	83.6	29	33.4	10	6.2	34
AM UA48	993	40	87	1	5.4	6	1.32	1	1.15	1	87.4	1	36.2	1	5.2	39
Mean	1500		57		5.1		1.18		0.99		84.1		32.5		6.9	
LSD 0.10	207		14		0.2		0.04		0.04		1.2		1.4		0.8	
C.V.%	13.2		14.7		2.9		2.0		2.5		0.8		2.5		7.1	
R-sq x 100	69.9		78.9		86.7		81.2		81.1		74.6		85.7		85.1	

Abbreviations: Mic. = Micronaire; Mean len. = mean length; Unif. Ind. = uniformity index; Elong. = elongation.

Table 12. Two-year average lint yields (lb/a) for varieties at the four locations of the 2012-2013 Arkansas Cotton Variety Test.

Variety	Traits	Judd Hill		Marianna		Rohwer		All loc, but Keiser	
		Irrigated lb/a	r	Irrigated lb/a	r	Irrigated lb/a	r	Irrigated lb/a	r
PHX312240WRF	WRF	1470	1	1777	1	1527	4	1591	1
DP 1321 B2RF	B2R	1365	2	1735	2	1557	2	1552	2
ST 4946 GLB2	GLB2	1250	10	1714	10	1488	6	1484	3
NG 1511 B2RF	B2R	1356	3	1522	3	1562	1	1480	4
ST 5288 B2RF	B2R	1229	14	1537	14	1553	3	1440	5
DG 2285 B2RF	B2R	1316	5	1680	5	1317	12	1437	6
DP 0912 B2RF	B2R	1243	11	1501	11	1514	5	1419	7
DP 1311 B2RF	B2R	1316	4	1533	4	1384	10	1411	8
PHY 339WRF	WRF	1267	7	1535	7	1403	8	1402	9
PHY 499 WRF	WRF	1260	8	1511	8	1428	7	1400	10
DG 2570 B2RF	B2R	1258	9	1447	9	1388	9	1364	11
PX443325WRF	WRF	1295	6	1439	6	1283	15	1339	12
PHY 367 WRF	WRF	1226	15	1463	15	1293	13	1327	13
SGS UA222	Conv	1239	12	1506	12	1208	17	1318	14
ST 5458 B2RF	B2R	1177	18	1435	18	1323	11	1311	15
PHY 375 WRF	WRF	1237	13	1406	13	1288	14	1310	16
FM 1944GLB2	GLB2	1202	16	1450	16	1180	19	1277	17
CG 3787 B2RF	B2R	1188	17	1239	17	1160	20	1195	18
DP 1133 B2RF	B2R	1048	21	1242	21	1198	18	1162	19
AM UA48	Conv	1119	19	1262	19	1035	22	1139	20
CG 3428 B2RF	B2R	1088	20	1089	20	1108	21	1095	21
ST 6448 GLB2	GLB2	955	22	1074	22	1212	16	1080	22
Mean		1232		1459		1337		1342	

Table 13. Three-year average lint yields (lb/a) for varieties at four locations of the 2011-2013 Arkansas Cotton Variety Test.

Variety		Judd Hill		Marianna		Rohwer		All loc, but Keiser	
		Irrigated ¹	r	Irrigated	r	Irrigated	r	Irrigated	r
		lb/a		lb/a		lb/a		lb/a	
Glyphosate-tolerant:									
NG 1511 B2RF	B2R	1470	1	1619	2	1475	2	1521	1
PHY 339WRF	WRF	1376	2	1623	1	1368	5	1456	2
ST 5288 B2RF	B2R	1246	9	1612	3	1485	1	1448	3
PHY 499 WRF	WRF	1319	4	1582	4	1384	4	1428	4
DP 0912 B2RF	B2R	1285	5	1546	5	1454	3	1428	5
DG 2570 B2RF	B2R	1319	3	1517	7	1308	6	1382	6
ST 5458 B2RF	B2R	1274	6	1519	6	1258	8	1350	7
PHY 375 WRF	WRF	1262	7	1410	10	1266	7	1313	8
PHY 367 WRF	WRF	1256	8	1459	9	1172	11	1296	9
CG 3787 B2RF	B2R	1149	10	1288	12	1215	9	1217	10
DP 1133 B2RF	B2R	1040	11	1322	11	1202	10	1188	11
Mean		1272		1500		1326		1366	
Not glyphosate tol.:									
SGS UA222	conv	.		1485	8	1114	12	.	
AM UA48	conv	.		1216	13	1056	13	.	
Mean		.		1350		1085		.	

¹ Lint yield not determined at Judd Hill in 2011 due to possible glyphosate drift.

Table 14. Morphological and host plant resistance traits in the 2013 Arkansas Cotton Variety Test.

Variety	Leaf		Stem		Bract		Tarnished plant		Bacterial blight	
	pubescence ¹ rating	r	pubescence ¹ rating	r	trichomes ² no./cm	r	bug damage ³ no. flowers/plot	r	Rating ⁴ no. sus.	Response
Ark 0620 B2RF	1.5	38	4.1	29	23.7	35	5.3	25	0.0	resistant
NG 1511 B2RF	5.1	9	4.5	15	40.6	2	8.8	4	9.0	susceptible
AM UA48	2.3	34	4.1	23	24.4	34	2.6	40	0.0	resistant
NG 5315 B2RF	2.3	35	3.1	39	22.7	37	3.5	36	9.0	susceptible
DP 393	2.4	31	4.4	16	31.1	23	6.1	14	9.0	susceptible
FM 1944GLB2	1.4	39	4.8	6	28.5	28	4.1	31	9.0	susceptible
ST 4946GLB2	5.1	8	4.1	28	33.3	19	5.9	19	9.0	susceptible
ST 5288 B2RF	5.3	5	5.8	1	42.8	1	15.0	1	0.0	resistant
ST 5458 B2RF	4.6	12	4.9	2	28.8	25	7.4	7	9.0	susceptible
ST 6448GLB2	3.0	25	4.9	5	35.9	11	4.1	31	0.5	resistant
Croplan 3428 B2RF	2.3	33	3.8	33	19.3	40	3.0	37	7.8	susceptible
Croplan 3787 B2RF	2.7	29	3.5	38	23.4	36	3.9	35	9.0	susceptible
CT 13125	2.5	30	4.4	16	38.5	6	5.9	19	3.0	intermediate
Dyna-Gro 2285 B2Rf	2.9	27	4.4	19	39.9	4	6.9	11	9.0	susceptible
Dyna-Gro 2570 B2Rf	2.4	31	4.0	31	21.6	38	4.8	26	8.3	susceptible
Dyna-Gro CT 13414	2.8	28	4.3	21	26.1	31	2.7	39	9.0	susceptible
12R224B2R2	5.7	1	4.7	8	32.8	20	4.5	28	0.0	resistant
12R242B2R2	4.5	13	4.1	29	25.9	32	8.1	6	9.0	susceptible
DP 0912 B2RF	3.9	16	3.9	32	38.7	5	6.1	14	9.0	susceptible
DP 1044 B2RF	3.0	26	4.3	21	26.7	30	7.3	8	5.5	susceptible
DP 1133 B2RF	2.1	36	4.1	23	25.1	33	4.0	33	2.3	intermediate
DP 1311 B2RF	5.0	10	4.7	9	38.5	7	2.0	41	9.0	susceptible
DP 1321 B2RF	5.2	7	4.9	2	40.2	3	6.0	17	9.0	susceptible
PHY 339WRF	4.3	14	4.1	27	29.0	24	4.3	30	2.3	intermediate
PHY 375 WRF	3.5	23	4.8	6	28.7	26	7.0	10	0.3	resistant
PHY 499 WRF	4.2	15	4.7	10	35.5	13	6.0	17	9.0	susceptible
PX300304WRF	3.4	24	3.7	36	28.4	29	4.6	27	7.3	susceptible
PX300310WRF	3.8	18	3.7	35	36.4	10	4.4	29	9.0	susceptible
PHY 333 WRF	5.4	3	4.6	12	35.4	15	9.9	2	7.3	susceptible
PX3122b51WRF	3.6	21	4.4	16	35.8	12	8.5	5	6.0	susceptible
PX375001WRF	5.4	3	4.7	10	38.0	8	6.3	12	0.5	resistant
PHY 417 WRF	3.9	17	4.1	23	35.5	13	5.5	23	8.0	susceptible
PHY 427 WRF	5.2	6	3.8	33	32.6	21	5.9	19	9.0	susceptible
PX444413WRF	1.9	37	3.6	37	28.7	27	4.0	33	3.5	intermediate
PX444414WRF	4.9	11	4.5	13	36.5	9	6.3	12	6.3	susceptible
PX445022WRF	3.8	18	4.1	23	34.1	18	6.1	14	6.8	susceptible
PX553840WRF	5.7	2	4.9	2	35.0	16	7.1	9	9.0	susceptible
PHY 367 WRF	3.7	20	4.3	20	32.0	22	9.9	2	7.5	susceptible
HQ210CT	1.0	40	3.1	39	19.8	39	5.5	23	6.8	susceptible
SGS UA222	3.6	21	4.5	13	34.9	17	5.9	19	0.0	resistant
Frego bract, ck.	.	.	.	.	.	.	1.7	42	0.0	resistant
Mean	2.1		4.9		27.5		5.7		5.0	
LSD 0.10	0.8		1.1		6.3		3.1		2.4	
C.V.%	32.8		18.5		19.2		65.4		41.4	
R-sq x 100	81.8		77.6		60.0		50.1		82.4	

¹ Leaf and stem pubescence rated at Keiser irrigated test (6 plants/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 High tarnished plant bug populations in late-planted (June 14) test overwhelm square and flower development. Reliable evaluation of anther damage was not attained. Total number of white flowers per 20-foot plot over 5 samples dates provided some indication of response to tarnished plant bug. Plots were 1-row, replicated 8 times.

⁴ Varieties/breeding lines were planted in 20 ft x 1 row plots on June 14, then inoculated with 3 races of *X. axonopodis* pv. *malvacearum* on July 9. Number of susceptible plants per plot were counted. If susceptible plants were found throughout plot, the plot was designated as blight susceptible, and given a score of "9".

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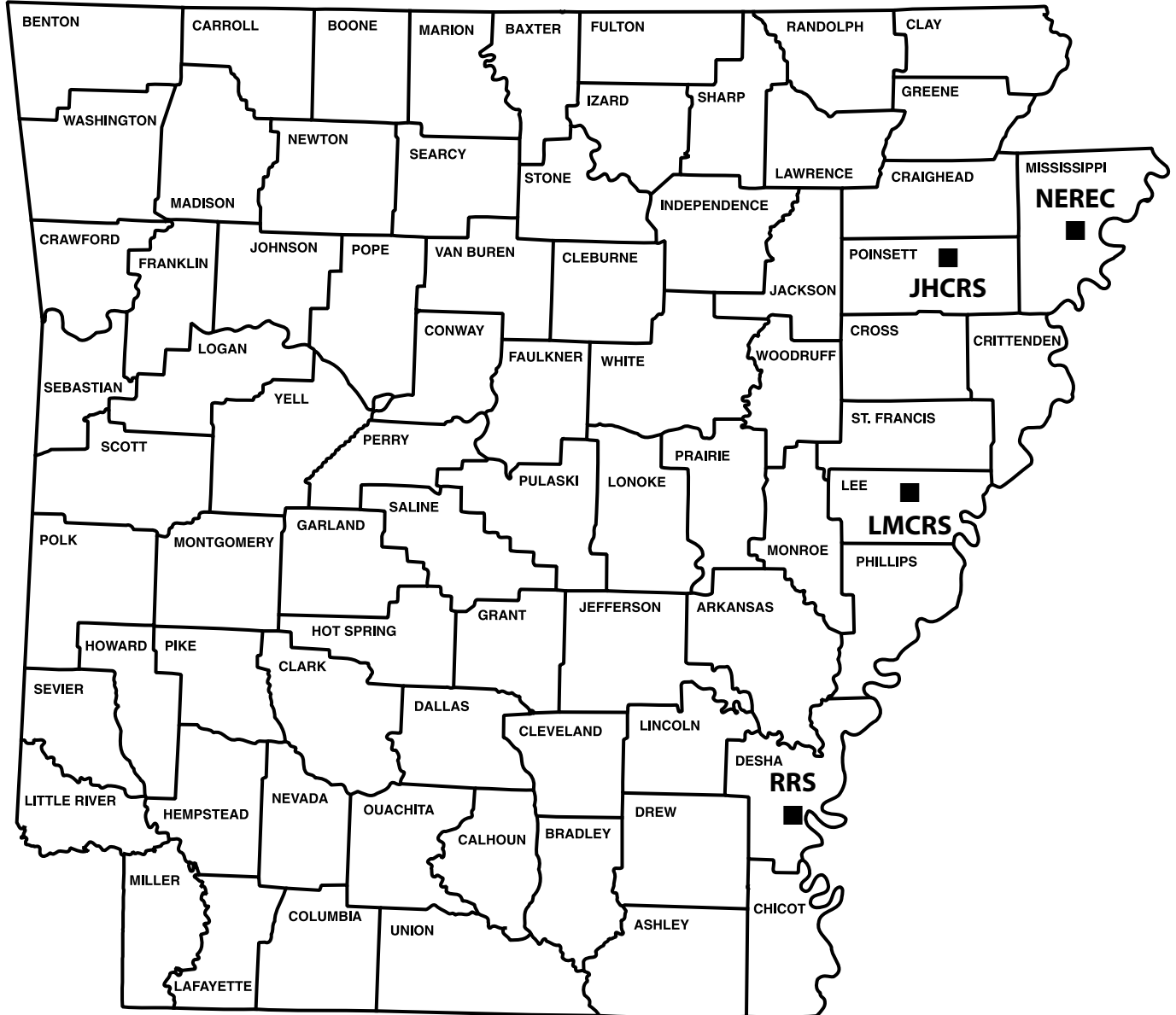
Table A1. Yield and related properties–2013 Cotton Variety Test, with irrigation on a Tunica silty clay soil at Keiser, Ark.

Variety	Lint		Seed			Lint		Seed/		Fibers/		Fiber				
	yield	r	frac.	r	Ht.	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm		g		g		mil.		no.		no.	
ST 4946GLB2	638	1	41.1	18	110	37	9.1	16	6.5	15	4.290	2	15184	13	159	14
PX3122b51WRF	595	2	42.4	7	117	16	9.5	9	7.2	2	3.348	9	15456	10	157	16
PX375001WRF	591	3	42.8	4	114	28	8.7	28	6.7	12	3.755	4	15458	9	166	9
PHY 333 WRF	585	4	43.3	1	118	12	9.0	19	7.0	5	4.106	3	16040	5	169	6
PHY 367 WRF	528	5	41.8	8	112	33	8.3	35	6.2	26	3.340	10	15801	8	175	3
DP 0912 B2RF	516	6	40.1	28	112	32	8.8	25	6.0	28	3.652	6	13796	31	148	29
PHY 427 WRF	506	7	40.1	29	121	6	8.3	36	5.7	34	3.360	8	14117	26	157	17
PX553840WRF	494	8	39.1	32	116	19	8.2	37	5.5	36	4.397	1	13368	37	148	27
SGS UA222	485	9	40.4	22	115	25	10.2	2	7.1	4	2.800	24	15305	12	149	26
DP 1321 B2RF	476	10	41.4	15	110	35	8.6	29	6.2	24	3.682	5	14400	23	156	18
PX444414WRF	474	11	42.5	5	118	13	9.2	14	6.9	7	2.943	16	16746	3	174	4
ST 5288 B2RF	472	12	38.8	35	110	38	10.2	1	6.6	13	2.921	19	14611	19	141	36
Croplan 3787 B2RF	455	13	43.3	2	124	1	8.8	25	6.9	9	3.367	7	14975	14	160	10
Dyna-Gro 2285 B2RF	445	14	41.5	11	110	36	8.9	21	6.5	16	2.811	23	15819	6	168	7
NG 1511 B2RF	440	15	42.5	6	114	29	8.4	34	6.4	19	2.520	30	14426	21	158	15
12R242B2R2	438	16	40.4	23	114	27	8.6	30	6.0	30	2.984	15	13795	32	149	25
CT 13125	437	17	41.3	17	121	5	9.4	10	6.8	10	3.018	14	16345	4	168	8
PX300310WRF	424	18	40.3	25	113	30	7.7	40	5.4	37	2.930	18	12646	38	146	32
PX300304WRF	414	19	39.0	33	119	11	8.9	22	5.9	33	2.850	20	14555	20	155	20
DP 1044 B2RF	412	20	37.6	40	108	39	8.5	32	5.2	40	3.257	11	13437	36	146	31
PHY 375 WRF	412	21	41.7	9	120	8	9.3	12	6.9	8	3.037	13	17633	2	182	1
PX444413WRF	407	22	42.8	3	116	18	10.0	6	7.6	1	2.017	36	17818	1	176	2
DP 393	404	23	40.2	27	116	20	10.1	5	6.9	6	2.341	31	14683	18	144	33
AM UA48	392	24	37.6	39	113	31	10.1	4	6.2	25	3.100	12	11648	40	113	40
PHY 417 WRF	391	25	41.4	12	118	14	7.7	39	5.7	35	2.629	28	14751	17	170	5
Croplan 3428 B2RF	383	27	40.8	19	120	9	9.0	20	6.4	21	2.942	17	13491	35	142	35
DP 1133 B2RF	383	26	40.6	20	121	4	8.6	31	6.0	29	2.841	22	14047	27	152	23
Ark 0620 B2RF	377	28	40.6	21	122	3	10.2	3	7.1	3	2.678	25	15806	7	154	21
NG 5315 B2RF	359	29	41.7	10	121	7	9.2	13	6.8	11	2.657	27	14259	24	148	28
ST 5458 B2RF	342	30	38.6	36	117	15	9.1	17	5.9	32	2.296	32	13699	33	144	34
12R224B2R2	333	31	38.8	34	112	33	9.7	8	6.3	22	1.839	37	13807	30	139	37
Dyna-Gro 2570 B2RF	331	32	40.3	26	115	26	9.3	11	6.4	18	2.080	35	15449	11	160	11
PHY 339WRF	331	33	40.3	24	120	9	9.1	15	6.3	23	2.668	26	14795	16	155	19
HQ210CT	310	34	39.3	31	103	40	7.8	38	5.3	39	2.538	29	13889	29	160	12
Dyna-Gro CT 13414	308	35	41.3	16	115	22	9.0	18	6.6	14	2.226	33	13970	28	147	30
PHY 499 WRF	298	36	41.4	14	115	23	8.8	23	6.5	17	2.088	34	14973	15	160	13
ST 6448GLB2	294	37	37.7	37	122	2	8.5	33	5.3	38	2.842	21	12600	39	137	38
PX445022WRF	285	38	40.1	30	116	20	8.8	27	6.0	31	1.593	38	14134	25	151	24
FM 1944GLB2	260	39	37.7	38	117	17	9.8	7	6.1	27	1.566	39	13614	34	136	39
DP 1311 B2RF	258	40	41.4	13	115	23	8.8	24	6.4	20	1.533	40	14407	22	154	22
Mean	417		40.6		116		9.0		6.3		2.846		14644		154	
LSD 0.10	109		1.2		7		1.2		0.8		1.211		1663		13	
C.V.%	24.9		1.7		6.2		7.7		7.3		25.3		6.7		4.8	
R-sq x 100	52.5		90.8		35.4		65.3		76.0		65.1		76.9		86.1	

Table A2. Fiber properties–2013 Arkansas Cotton Variety Test, with irrigation on a Tunica silty clay soil at Keiser, Ark.

Variety	Lint		Quality		Fiber properties											
	yield lb/a	r	score	r	Mic	r	Length in.	r	Mean len. in.	r	Unif.Ind. %	r	Stren. g/tex	r	Elong %	r
ST 4946GLB2	638	1	66	17	4.6	22	1.14	20	0.95	21	83.6	18	36.6	6	6.5	23
PX3122b51WRF	595	2	87	2	4.6	21	1.20	3	1.02	3	85.1	1	35.5	18	6.4	24
PX375001WRF	591	3	75	7	4.5	24	1.16	8	0.98	8	84.3	5	37.6	2	7.4	13
PHY 333 WRF	585	4	66	17	4.6	17	1.14	20	0.95	19	83.9	12	32.4	39	6.4	26
PHY 367 WRF	528	5	45	36	4.4	28	1.09	38	0.89	40	82.2	37	34.4	26	7.3	14
DP 0912 B2RF	516	6	43	39	4.9	7	1.09	38	0.90	37	83.3	24	33.4	33	6.8	19
PHY 427 WRF	506	7	54	32	4.5	26	1.09	37	0.91	35	83.9	12	35.6	16	7.7	7
PX553840WRF	494	8	73	8	4.2	35	1.15	13	0.97	9	84.7	2	36.6	7	5.9	34
SGS UA222	485	9	81	5	4.6	17	1.19	5	1.00	5	84.2	7	36.5	11	8.8	1
DP 1321 B2RF	476	10	56	28	4.7	14	1.12	28	0.93	27	83.2	25	34.6	24	7.6	10
PX444414WRF	474	11	67	15	4.4	30	1.14	18	0.95	18	83.6	17	35.7	14	6.4	24
ST 5288 B2RF	472	12	54	30	4.9	7	1.12	30	0.94	25	84.0	9	33.6	30	5.9	34
Croplan 3787 B2RF	455	13	54	30	4.9	4	1.14	23	0.94	24	82.6	32	33.5	31	7.5	12
Dyna-Gro 2285 B2RF	445	14	59	25	4.5	24	1.13	25	0.93	29	82.5	34	33.3	34	7.1	16
NG 1511 B2RF	440	15	45	36	4.9	4	1.11	35	0.91	36	82.2	37	35.1	20	7.6	8
12R242B2R2	438	16	51	33	4.8	12	1.12	32	0.92	34	82.1	39	33.0	38	8.3	3
CT 13125	437	17	72	10	4.3	32	1.16	11	0.97	10	84.1	8	34.6	25	7.8	5
PX300310WRF	424	18	57	27	4.7	14	1.13	25	0.92	30	82.1	40	35.6	16	6.9	18
PX300304WRF	414	19	70	12	4.2	36	1.15	15	0.96	15	84.0	9	36.6	7	5.4	37
DP 1044 B2RF	412	20	63	20	4.2	39	1.14	20	0.94	23	82.7	30	35.7	15	7.2	15
PHY 375 WRF	412	21	55	29	4.3	33	1.12	30	0.92	32	82.3	36	32.3	40	6.7	21
PX444413WRF	407	22	88	1	4.2	36	1.22	2	1.02	2	83.8	14	34.1	28	6.0	33
DP 393	404	23	68	13	4.9	7	1.16	8	0.98	7	84.3	5	34.9	22	6.5	22
AM UA48	392	24	83	4	5.1	2	1.25	1	1.05	1	84.7	3	36.6	7	5.4	37
PHY 417 WRF	391	25	59	23	4.2	39	1.12	28	0.93	28	83.0	26	35.8	13	7.7	6
Croplan 3428 B2RF	383	27	64	19	4.9	4	1.16	7	0.97	12	83.4	23	33.3	35	6.4	26
DP 1133 B2RF	383	26	68	14	4.5	23	1.14	18	0.95	17	83.7	16	36.5	10	7.0	17
Ark 0620 B2RF	377	28	66	16	4.7	13	1.15	13	0.96	14	83.8	14	37.2	4	6.1	32
NG 5315 B2RF	359	29	61	22	5.0	3	1.15	15	0.96	16	84.0	9	34.8	23	7.9	4
ST 5458 B2RF	342	30	58	26	4.6	17	1.13	24	0.93	26	82.7	30	35.2	19	5.8	36
12R224B2R2	333	31	61	21	4.8	11	1.14	17	0.95	20	83.5	21	34.2	27	6.2	30
Dyna-Gro 2570 B2RF	331	32	45	36	4.7	14	1.09	38	0.90	39	82.9	27	35.1	20	7.5	11
PHY 339WRF	331	33	71	11	4.4	28	1.16	11	0.96	13	83.5	19	37.3	3	6.3	28
HQ210CT	310	34	51	34	4.2	36	1.10	36	0.90	38	82.5	34	36.0	12	6.2	30
Dyna-Gro CT 13414	308	35	43	39	5.1	1	1.11	33	0.92	31	82.9	27	33.6	29	8.4	2
PHY 499 WRF	298	36	59	23	4.6	17	1.13	25	0.94	22	83.5	19	36.9	5	7.6	8
ST 6448GLB2	294	37	78	6	4.3	33	1.19	5	0.99	6	82.9	27	33.2	36	5.3	39
PX445022WRF	285	38	73	8	4.4	30	1.16	8	0.97	11	83.5	21	38.6	1	6.3	28
FM 1944GLB2	260	39	86	3	4.5	26	1.20	3	1.01	4	84.3	4	33.4	32	5.0	40
DP 1311 B2RF	258	40	48	35	4.9	7	1.11	33	0.92	33	82.5	33	33.1	37	6.8	20
Mean	417		63		4.6		1.14		0.95		83.4		35.0		6.8	
LSD 0.10	109		16		0.4		0.05		0.05		1.4		2.2		0.6	
C.V.%	24.9		15.5		4.7		2.4		2.9		1.0		3.7		5.3	
R-sq x 100	52.5		76.5		75.8		77.9		78.2		65.2		74.3		92.7	

COTTON VARIETY TEST LOCATIONS



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

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