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Arkansas Cotton Variety Test 2012

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ARKANSAS COTTON VARIETY TEST 2012



*F.M. Bourland, A.B. Beach,
D.P. Roberts Jr., and C. Kennedy*

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**ARKANSAS
COTTON
VARIETY TEST
2012**

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**Arkansas Agricultural Experiment Station
University of Arkansas System
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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). Entries in 2012 Arkansas Cotton Variety Test were separated into two groups. The first group included transgenic lines that were evaluated in both 2011 and 2012. The second group included 5 conventional varieties, 12 first-year transgenic entries, and 3 check varieties. Reported data include yield, lint percentage, plant height, 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 in a separate test at Keiser. The 2012 growing season was characterized by warm, dry conditions throughout most of the season, but wet conditions during harvest.

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Arkansas Cotton Variety Test 2012

*F.M. Bourland, A.B. Beach,
D.P. Roberts Jr., and C. Kennedy¹*

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), Liberty Link[®] (LL) varieties, BollGard[®] (B2) varieties, Widestrike[®] (W) and conventional varieties were all treated equally with respect to weed and insect control.

Transgenic cotton varieties that were evaluated in the 2011 Arkansas Cotton Variety Test and were re-submitted in 2012 were entered in the 2012 Group 1 experiment. Conventional varieties and lines submitted in 2012 that were not evaluated in the 2011 test were entered into the 2012 Group 2 Experiment. Common check varieties were included in both experiments.

Materials and Methods

Both 2012 experiments had 20 entries (Table 1). All 20 entries in Group 1 were Round-up Ready Flex[®] varieties (15 B2RF and 5 WRF). Group 2 included 17 entries plus three check varieties (2 B2RF and 1 WRF). The 17 entries included 12 Round-up Ready Flex[®] varieties (5 B2RF, 4 WRF, and 3 GLB2) and 5 non-Round-up Ready

Flex[®] varieties (all conventional). GL varieties (possess both RF and LL characteristics) had not been evaluated in the Arkansas Cotton Variety Test prior to 2012. Check varieties were chosen at the discretion of the project leader. All test sites included the same entries. Replications of the two experiments were randomized within each field.

Test sites included the Northeast Research and Extension Center at Keiser; the Judd Hill Cooperative Research Site 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 four times. Although exact inputs varied across locations, cultural inputs at each location were generally based on the 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.

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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 (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 two experiments were evaluated for response to TPB in a separate field at Keiser. Each experiment included 12 replications of 1-row plots (20 feet long on 38-inch wide rows). The experiments were planted on May 31 and managed to encourage TPB infestations. Four rows of frego bract cotton between the experiments were planted on May 11. Response to TPB was determined by examining white flowers (6 flowers/plot/day for 6 days in late August) for presence of anther damage. A cumulative percentage of damaged flowers (“dirty blooms”) was determined for each plot.

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 defoliation. 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 (4 replications), then averaged for each plot.

Boll samples and lint percentage: Prior to mechanical harvest, hand-harvested samples of 50 open bolls were obtained from two replications at each location. The samples were obtained by picking all open bolls from consecutive plants. Within each row of two-row plots, a site having average or above plant density was chosen and 25 consecutive 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 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 50 fuzzy seed from the ginned seed of each 50-boll sample were counted and weighed. If the two weights varied greatly, a third sample was taken. Two consistent weights of 50 seed were added to obtain 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 2-row 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 Group 1 and 2 experiments 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 reports weather information for north, central, and south Arkansas locations during the 2012 production season.

Excellent planting conditions were experienced in 2012 (Tables 2 and 3). Consequently, good stands were obtained at all locations. Except for a relatively warm June, July, and August, heat units from May through the growing season were near normal. Total rainfall for the season was near normal, but was higher than normal in north Arkansas in May and in south Arkansas in August.

Other observations associated with each test site include:

Keiser. Good stands were achieved and good growing conditions were experienced through most of the season. Rainfall in September was detrimental to harvest. No mepiquat chloride was applied.

Judd Hill. Stands and growing conditions were similar to those experienced at Keiser. Apparent incidence of Verticillium wilt was relatively low in 2012. Since wilt symptoms did not occur until late in the season, they were confounded by maturity of the varieties. Mepiquat chloride (total of 26 oz/a) was used to control plant height.

Marianna. Good plant stands were achieved, and plants grew at a rapid, unrestricted pace. Subsequently, early maturation and high yields were attained. Mepiquat chloride (total of 64 oz/a) was used to control plant height.

Rohwer. Good plant stands were achieved, and plants grew at a rapid, unrestricted pace. Excessive rainfall in late August contributed to high incidence of boll rots. Mepiquat chloride (total of 32 oz/a) was used to control plant height.

Performance of entries in the Group 1 experiment of the 2012 Arkansas Cotton Variety Test, which includes transgenic varieties that were evaluated in both 2011 and 2012, 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 for Group 2 entries are in Tables 14-23 with yield and yield-related variables in the even-numbered tables and fiber properties in the odd-numbered tables. Two- and three-year yield means for entries evaluated in previous years are in Tables 24 and 25, respectively. Morphological and host plant resistance measurements for the Group 1 and Group 2 entries are in Tables 26 and 27, respectively.

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Hill Foundation generously provides the test site for experiments at Judd Hill. Annual evaluation of cotton varieties is made possible by the work of the research assistants and technicians at these locations, and by the contributions of seed companies participating in the Arkansas Cotton Variety Test.

Table 1. Participants and entries in the 2012 Arkansas Cotton Variety Test.

Institution/Contact person	Group 1	Experimental no.	1st year Test	Experimental no.
Americot Inc./Tom Brooks	AM 1511 B2RF	AMX 001 B2RF	AM UA48	Ark 0102-48
	AM 1550 B2RF	XAM 1550 B2RF		
	NGX 0012 B2RF	10R051B2R2		
Bayer Crop Science/Steve Lee	FM 1740 B2F		BX 1346GLB2	
	ST 5288 B2RF		BX 1348GLB2	
	ST 5458 B2RF		FM 1944GLB2 ST 5458 B2RF, ck.	BX 1244GLB2
Crop Production Services/Stacey Bruff	DG 2595 B2RF	CT 10624	CT12214	
	DG 2450 B2RF			
	DG 2570 B2RF	DG CT07550		
	DG 2610 B2RF	CT 11622		
Monsanto/David Albers	DP 0912 B2RF		DP 1311 B2RF	11R124 B2R2
	DP 0920 B2RF		DP 1321 B2RF	11R112 B2R2
	DP 1133 B2RF	09R555B2R2	DP 1359 B2RF	11R159 B2R2
	DP 1219 B2RF	10R011B2R2	11R136 B2R2 DP 0912 B2RF, ck.	
PhytoGen Seed Co./Chad Brewer	PHY 367 WRF		PHX312240	
	PHY 375 WRF		PHX443314	
	PHY 499 WRF		PHX540305	
	PHX4339CB	PX433906WRF	PHY 375 WRF, ck.	
	PX433915WRF			
Seed Source Genetics/Edward Jungmann			SGS UA103	Ark 9803-23-04
			SGS UA222	Ark 0222-12
			SGS HQ110CT	
Winfield Solutions, LLC/Robert Cossar	CG 3787 B2RF		CG 3428 B2RF	
Ark. Agric. Exp. Station/Fred Bourland			Ark 0222-15	

Table 2. Cultural practices for locations of the 2012 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	5/1	5/4	5/9	5/2
Irrigation method	furrow	furrow	furrow	furrow
Irrigation dates	6/18,28; 7/6,26; 8/9	5/23; 6/1,13,19,23,28; 7/3,13,20,25; 8/2	6/17,23,30; 7/7,21,28; 8/4,10,17	6/4, 28; 7/9,23,31; 8/7
Defoliation date	9/10,20	9/4,10	9/10,20	9/7;13
Harvest date	10/4	10/3	10/4	10/23

Table 3. Weather summary for the 2012 production season in north, central and south Arkansas.

	Month	DD60s in 2012	Historical avg. ¹ DD60s	Rainfall (in.) in 2012	Historical avg. ¹ rainfall
Keiser (northeast)	May	510	314	4.2	5.2
	June	579	532	2.5	3.9
	July	773	644	2.4	3.7
	August	663	583	1.2	2.9
	September	417	363	7.0	3.7
	October	130	127	3.5	3.3
	Total	3072	2563	20.7	22.6
Marianna (central)	May	477	336	1.5	5.1
	June	543	538	0.8	3.9
	July	728	646	2.6	3.9
	August	653	601	1.2	2.8
	September	436	397	4.9	3.2
	October	121	154	4.5	3.5
	Total	2958	2672	15.4	22.4
Rohwer (southeast)	May	470	354	0.7	4.9
	June	534	551	4.2	3.6
	July	702	661	2.6	3.7
	August	627	618	7.1	2.6
	September	456	415	4.5	3.0
	October	117	167	3.7	3.4
	Total	2906	2766	22.7	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–2012 Arkansas Cotton Variety Test, Group 1 across four test sites.

Variety	Lint yield		Lint frac.		Ht. cm	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.		
AM 1511 B2RF	1529	1	41.9	4	106	9	60	11	10.6	9	7.9	3	8.949	6	16392	4	155	3
PX433915WRF	1493	2	40	14	99	16	64	3	10.8	8	7.3	14	9.311	2	14840	14	139	15
PHY 499 WRF	1468	3	42.8	1	111	3	58	15	10.4	15	8.0	2	8.416	10	16535	2	159	1
DP 0912 B2RF	1467	4	39.2	18	103	13	61	5	10.9	7	7.2	17	9.274	3	14439	17	134	19
DP 0920 B2RF	1457	5	41.1	8	101	14	59	12	10.1	18	7.3	16	9.215	4	14433	18	141	13
ST 5288 B2RF	1456	6	39.4	16	103	12	59	12	9.8	20	6.5	20	10.210	1	13415	20	134	20
PHX4339CB	1448	7	40.3	12	107	8	61	5	10.5	14	7.3	15	9.059	5	15444	11	147	10
PHY 375 WRF	1447	8	40.6	9	109	5	60	8	11.0	4	7.7	6	8.528	7	16942	1	157	2
AM 1550 B2RF	1395	9	40.6	10	89	20	69	1	11.0	5	7.7	5	8.282	12	16464	3	152	5
DP 1133 B2RF	1377	10	42.3	2	111	4	55	18	10.2	17	7.7	7	8.137	14	15429	12	150	7
ST 5458 B2RF	1361	11	38.6	20	104	10	55	17	11.4	1	7.3	13	8.485	9	14817	15	134	18
DG 2570 B2RF	1357	12	41.1	7	104	11	60	8	11.2	2	8.0	1	7.736	17	15822	7	145	12
CG 3787 B2RF	1348	13	41.9	3	108	6	59	14	10.6	12	7.8	4	7.861	16	15746	8	149	8
PHY 367 WRF	1334	14	40.1	13	98	17	63	4	10.6	11	7.3	12	8.344	11	15512	10	147	11
DG 2450 B2RF	1326	15	38.9	19	98	18	67	2	10.9	6	7.2	18	8.495	8	15047	13	140	14
DG 2595 B2RF	1313	16	40.4	11	101	15	61	7	10.6	10	7.4	11	8.123	15	14647	16	139	16
NGX 0012 B2RF	1254	17	41.6	5	114	2	55	16	10.4	16	7.6	9	7.545	18	15720	9	151	6
DG 2610 B2RF	1235	18	41.4	6	108	7	54	19	10.6	13	7.6	8	7.403	19	16171	6	154	4
FM 1740 B2F	1214	19	39.5	15	92	19	60	10	11.2	3	7.5	10	7.358	20	16215	5	148	9
DP 1219 B2RF	1211	20	39.3	17	114	1	47	20	9.9	19	6.6	19	8.247	13	13613	19	135	17
Mean	1375		40.5		104		59		10.5		7.5		8.449		15382		146	
Var. LSD 0.10	74		0.8		5		4		0.4		0.3		0.451		721		6	
Loc. LSD 0.10	33		0.4		2		2		0.2		0.1		0.201		332		3	
C.V.%	9.1		2.4		8.2		10.8		4.1		4.8		9.1		5.6		5.3	
R-sq x 100	81.6		89.4		81.4		90.0		86.4		86.2		86.6		79.4		80.5	
Prob (var x loc)	<.0001		0.006		<.0001		<.001		0.069		0.044		<.0001		0.408		0.436	

Table 5. Fiber properties–2012 Arkansas Cotton Variety Test, Group 1 across four test sites.

Variety	Lint		Quality		Fiber properties									
	yield ¹ lb/a	r	score	r	Micronaire	r	Length in.	r	Unif. index %	r	Strength g/tex	r	Elongation %	r
AM 1511 B2RF	1529	1	57	12	4.8	11	1.18	14	84.4	12	33.5	4	8.1	3
PX433915WRF	1493	2	70	1	4.8	12	1.21	1	84.8	8	32.9	8	7.2	12
PHY 499 WRF	1468	3	57	14	4.9	7	1.17	17	84.7	10	34.8	2	7.9	6
DP 0912 B2RF	1467	4	48	20	5.1	1	1.16	19	84.9	6	31.5	15	7.3	10
DP 0920 B2RF	1457	5	57	15	5.0	3	1.19	12	84.4	14	30.6	18	7.2	13
ST 5288 B2RF	1456	6	54	17	4.9	6	1.18	15	84.1	18	30.9	17	7.5	9
PHX4339CB	1448	7	70	1	4.6	19	1.21	3	85.0	4	32.8	9	7.3	11
PHY 375 WRF	1447	8	63	9	4.6	20	1.19	11	84.2	16	31.0	16	6.7	18
AM 1550 B2RF	1395	9	48	19	4.9	9	1.15	20	84.0	19	30.6	19	7.0	14
DP 1133 B2RF	1377	10	69	3	4.9	9	1.20	4	85.7	1	34.5	3	7.5	8
ST 5458 B2RF	1361	11	57	13	5.0	5	1.20	9	83.5	20	33.2	6	6.7	19
DG 2570 B2RF	1357	12	53	18	5.1	2	1.17	16	85.0	3	33.4	5	8.0	4
CG 3787 B2RF	1348	13	65	7	4.9	7	1.20	5	85.1	2	32.0	13	8.2	1
PHY 367 WRF	1334	14	59	11	4.8	14	1.18	13	84.3	15	33.0	7	7.6	7
DG 2450 B2RF	1326	15	66	6	4.7	17	1.20	6	84.9	7	30.3	20	6.8	16
DG 2595 B2RF	1313	16	60	10	5.0	4	1.20	9	84.7	9	32.0	12	6.9	15
NGX 0012 B2RF	1254	17	64	8	4.8	13	1.20	7	84.4	13	32.1	11	8.2	2
DG 2610 B2RF	1235	18	67	5	4.7	18	1.20	8	84.9	5	31.8	14	8.0	5
FM 1740 B2F	1214	19	55	16	4.7	15	1.17	18	84.1	17	32.3	10	6.8	17
DP 1219 B2RF	1211	20	68	4	4.7	16	1.21	2	84.6	11	35.0	1	6.4	20
Mean	1375		60		4.8		1.19		84.6		32.4		7.4	
Var. LSD 0.10	74		7		0.2		0.02		0.6		0.8		0.4	
Loc. LSD 0.10	33		ns		0.1		0.04		0.3		0.4		0.2	
C.V.%	9.1		13.1		4.5		1.6		0.9		3.0		6.9	
R-sq x 100	81.6		76.1		80.8		86.2		76.1		83.4		83.0	
Prob (var x loc)	<.0001		0.143		0.171		0.314		0.385		0.490		0.555	

¹ Lint yield means are across three locations; Judd Hill yield data excluded due to possible glyphosate drift.

Table 6. Yield and related properties–2012 Cotton Variety Test, Group 1 with irrigation on a Tunica silty clay soil at Keiser, 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	g	r	g	r	mil.	r	no.	r	no.		
CG 3787 B2RF	1833	1	41.8	4	108	3	64	3	10.2	11	7.5	3	11.100	4	14638	10	142	10
DP 0920 B2RF	1777	2	40.8	7	93	17	59	13	9.8	16	6.9	12	11.670	2	14078	15	140	11
AM 1511 B2RF	1765	3	42.7	2	96	13	60	11	10.1	13	7.7	1	10.490	7	15641	5	153	3
ST 5288 B2RF	1755	4	40.1	11	100	11	59	13	8.9	20	6.1	20	13.040	1	13013	20	138	13
DP 0912 B2RF	1710	5	39.9	13	92	18	63	6	10.4	8	7.0	10	11.060	5	13792	16	132	19
PHY 375 WRF	1684	6	40.6	8	108	4	61	9	10.7	3	7.5	4	10.210	10	17326	1	164	1
PX433915WRF	1676	7	39.1	16	94	15	64	3	10.5	6	6.8	14	11.130	3	14229	13	136	16
DP 1133 B2RF	1656	8	42.8	1	107	6	55	18	9.8	15	7.6	2	9.952	12	15100	8	151	7
DG 2570 B2RF	1608	9	40.0	12	105	8	63	6	11.0	1	7.5	5	9.771	15	14850	9	137	14
PHY 499 WRF	1607	10	41.8	3	111	2	60	11	9.7	18	7.1	9	10.270	8	15783	3	159	2
DP 1219 B2RF	1593	11	40.6	9	108	4	54	20	9.5	19	6.6	16	10.930	6	13264	19	135	18
PHX4339CB	1554	12	38.9	17	106	7	59	13	10.6	4	6.9	13	10.230	9	14590	11	138	12
NGX 0012 B2RF	1507	13	41.2	5	113	1	58	16	10.3	9	7.4	7	9.272	18	15427	7	149	8
AM 1550 B2RF	1500	14	39.6	14	90	20	68	1	10.3	10	6.9	11	9.818	14	15773	4	153	4
ST 5458 B2RF	1473	15	38.4	19	95	14	58	16	10.6	5	6.7	15	9.928	13	13759	17	130	20
DG 2595 B2RF	1458	16	39.3	15	105	10	61	9	9.9	14	6.6	17	10.010	11	13746	18	136	15
DG 2610 B2RF	1457	17	41.1	6	105	9	55	18	10.2	12	7.3	8	9.113	19	15485	6	151	6
PHY 367 WRF	1359	18	38.8	18	99	12	64	3	9.8	17	6.4	19	9.664	16	14435	12	144	9
FM 1740 B2F	1348	19	40.2	10	93	16	63	6	10.9	2	7.5	6	8.199	20	16218	2	151	5
DG 2450 B2RF	1333	20	37.7	20	91	19	66	2	10.4	7	6.5	18	9.381	17	14135	14	135	17
Mean	1583		40.3		101		61		10.2		7.0		10.262		14765		144	
LSD 0.10	150		1.5		8		5		0.8		0.7		0.966		1652		17	
C.V.%	8.0		2.2		7.0		7.2		4.3		5.4		8.0		6.5		7	
R-sq x 100	68.7		83.1		62.4		64.2		73.5		73.4		71.5		72.0		63.3	

Table 7. Fiber properties–2012 Cotton Variety Test, Group 1 with irrigation on a Tunica silty clay soil at Keiser, Ark.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind.	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
CG 3787 B2RF	1833	1	71	5	4.9	3	1.23	2	85.4	3	31.0	18	8.4	1
DP 0920 B2RF	1777	2	53	16	5.0	2	1.18	13	84.1	14	31.1	17	7.4	10
AM 1511 B2RF	1765	3	55	15	4.9	3	1.18	13	84.4	11	33.2	6	7.9	5
ST 5288 B2RF	1755	4	52	17	4.8	9	1.17	16	83.7	17	31.3	14	7.7	6
DP 0912 B2RF	1710	5	43	20	5.2	1	1.16	20	84.9	9	31.3	14	7.0	14
PHY 375 WRF	1684	6	61	11	4.4	20	1.19	12	84.0	15	30.7	19	6.2	20
PX433915WRF	1676	7	77	1	4.6	13	1.23	1	84.9	7	31.9	13	7.1	12
DP 1133 B2RF	1656	8	63	9	4.9	3	1.20	9	85.1	4	34.3	3	7.7	7
DG 2570 B2RF	1608	9	69	7	4.9	7	1.21	6	85.8	1	33.6	4	8.4	2
PHY 499 WRF	1607	10	57	13	4.6	13	1.17	16	84.4	12	34.4	1	8.0	4
DP 1219 B2RF	1593	11	68	8	4.9	7	1.22	5	84.8	10	34.4	2	6.7	15
PHX4339CB	1554	12	71	4	4.6	13	1.21	6	84.9	7	33.0	7	7.4	11
NGX 0012 B2RF	1507	13	63	10	4.8	10	1.20	10	84.4	12	32.0	10	7.6	8
AM 1550 B2RF	1500	14	50	18	4.6	16	1.16	18	83.5	19	30.3	20	6.5	19
ST 5458 B2RF	1473	15	57	13	4.9	3	1.20	10	83.6	18	33.2	5	6.5	16
DG 2595 B2RF	1458	16	73	3	4.7	12	1.22	3	85.0	5	32.0	10	6.5	16
DG 2610 B2RF	1457	17	76	2	4.5	17	1.22	3	85.4	2	32.0	12	8.3	3
PHY 367 WRF	1359	18	58	12	4.5	17	1.18	13	83.4	20	32.8	8	7.5	9
FM 1740 B2F	1348	19	49	19	4.8	10	1.16	18	84.0	15	32.6	9	6.5	16
DG 2450 B2RF	1333	20	69	6	4.5	19	1.21	6	85.0	6	31.2	16	7.1	12
Mean	1583		62		4.7		1.19		84.5		32.3		7.3	
LSD 0.10	150		13		ns		0.04		ns		2.0		1.0	
C.V.%	8.0		12.7		5.4		1.8		1.0		3.5		7.8	
R-sq x 100	68.7		77.6		58.4		72.8		60.8		71.3		75.8	

Table 8. Yield and related properties–2012 Cotton Variety Test, Group 1 with irrigation on a Dundee silt loam soil at Judd Hill, Ark.

Variety	Lint yield ¹		Lint frac.		Ht. cm	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.		
AM 1511 B2RF	1558	1	40.5	6	121	6	43	8	10.0	17	7.0	13	10.070	1	15081	11	148	7
PHX4339CB	1478	2	41.1	2	117	10	49	5	9.9	19	7.1	11	9.387	5	14973	13	148	8
PHY 499 WRF	1470	3	41.5	1	131	2	39	17	10.9	8	8.0	2	8.361	13	16851	3	157	1
DG 2450 B2RF	1455	4	37.6	16	103	17	59	2	11.0	7	6.8	16	9.747	2	13956	17	129	20
AM 1550 B2RF	1454	5	40.1	7	86	20	65	1	10.8	11	7.4	5	8.918	8	15686	7	147	9
PHY 375 WRF	1438	6	39.0	11	124	5	45	7	11.9	1	7.8	3	8.383	12	16969	2	149	6
PHY 367 WRF	1434	7	38.4	15	111	15	49	5	10.9	9	7.0	14	9.311	7	15007	12	140	11
PX433915WRF	1396	8	38.7	13	99	18	58	3	11.1	5	7.2	10	8.863	9	15162	10	139	12
DP 0920 B2RF	1388	9	40.5	5	116	12	41	10	9.6	20	6.7	17	9.362	6	13564	20	137	15
DP 0912 B2RF	1363	10	36.8	19	116	11	41	10	10.8	10	6.5	18	9.583	3	14675	14	137	14
DG 2570 B2RF	1345	11	40.0	8	119	8	40	13	11.4	4	7.7	4	7.883	17	15193	8	137	13
ST 5458 B2RF	1340	12	37.2	18	119	7	36	18	11.8	2	7.2	9	8.466	11	15163	9	133	17
FM 1740 B2F	1335	13	38.7	12	92	19	54	4	10.7	13	7.0	12	8.597	10	15890	6	149	5
DG 2610 B2RF	1308	14	39.9	9	113	14	40	13	10.7	12	7.3	6	8.124	14	16536	4	156	2
CG 3787 B2RF	1305	15	40.7	4	118	9	41	10	11.4	3	8.1	1	7.373	19	17007	1	154	4
ST 5288 B2RF	1290	16	37.4	17	116	12	40	13	10.0	18	6.1	19	9.524	4	13733	18	135	16
NGX 0012 B2RF	1274	17	40.7	3	130	3	40	13	10.2	15	7.2	7	7.994	16	15976	5	155	3
DG 2595 B2RF	1266	18	38.7	14	109	16	43	8	11.0	6	7.2	8	8.005	15	14049	16	130	19
DP 1133 B2RF	1192	19	39.9	10	126	4	35	19	10.2	14	7.0	15	7.752	18	14636	15	142	10
DP 1219 B2RF	765	20	35.9	20	133	1	25	20	10.1	16	5.8	20	5.989	20	13569	19	133	18
Mean	1343		39.2		115		44		10.7		7.1		8.584		15184		144	
LSD 0.10	135		2.3		15		10		1.0		0.7		0.887		1605		10	
C.V.%	8.5		3.4		11.2		19.9		5.5		5.7		8.7		6.1		4.1	
R-sq x 100	73.4		74.0		59.1		63.8		70.4		80.3		69.6		74.0		82.2	

¹ Due to possible glyphosate drift, lint yield and seed per acre only determined for varieties tolerant to glyphosate.

Table 9. Fiber properties–2012 Cotton Variety Test, Group 1 with irrigation on a Dundee silt loam soil at Judd Hill, Ark.

Variety	Lint		Quality		Fiber properties									
	yield ¹	r	score	r	Micronaire	r	Length	r	Unif. ind.	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
AM 1511 B2RF	1558	1	60	14	4.6	10	1.20	14	84.7	11	33.2	6	8.5	2
PHX4339CB	1478	2	65	7	4.7	6	1.21	10	85.3	8	32.2	11	7.2	15
PHY 499 WRF	1470	3	58	15	4.7	5	1.18	17	85.3	6	34.6	2	8.5	2
DG 2450 B2RF	1455	4	70	4	4.7	6	1.23	3	85.4	5	30.2	20	7.3	14
AM 1550 B2RF	1454	5	53	18	4.8	4	1.18	18	84.7	11	30.7	19	7.6	11
PHY 375 WRF	1438	6	69	5	4.5	17	1.21	7	85.3	6	31.9	14	7.1	17
PHY 367 WRF	1434	7	68	6	4.5	11	1.22	5	85.4	4	32.4	9	7.7	7
PX433915WRF	1396	8	74	3	4.5	11	1.22	4	86.0	2	33.2	7	7.7	7
DP 0920 B2RF	1388	9	61	12	4.9	3	1.21	7	84.7	14	30.8	18	7.3	13
DP 0912 B2RF	1363	10	52	20	4.5	11	1.16	20	84.3	19	31.2	16	7.7	7
DG 2570 B2RF	1345	11	55	17	5.0	1	1.19	16	85.8	3	33.7	5	7.6	12
ST 5458 B2RF	1340	12	62	11	4.7	6	1.22	5	83.9	20	34.0	3	6.9	19
FM 1740 B2F	1335	13	53	18	4.5	11	1.18	18	84.7	14	32.8	8	7.2	15
DG 2610 B2RF	1308	14	64	10	4.4	19	1.20	12	84.7	14	31.5	15	8.1	5
CG 3787 B2RF	1305	15	61	12	4.7	6	1.20	14	85.2	9	32.2	12	8.4	4
ST 5288 B2RF	1290	16	64	8	4.4	18	1.21	10	84.6	17	31.1	17	7.7	7
NGX 0012 B2RF	1274	17	64	8	4.5	16	1.20	12	84.8	10	32.3	10	8.8	1
DG 2595 B2RF	1266	18	57	16	5.0	1	1.21	7	84.7	11	31.9	13	7.0	18
DP 1133 B2RF	1192	19	78	1	4.5	11	1.23	2	86.2	1	33.9	4	8.1	5
DP 1219 B2RF	765	20	75	2	4.1	20	1.24	1	84.5	18	36.4	1	5.6	20
Mean	1343		63		4.6		1.21		85.0		32.5		7.6	
LSD 0.10	135		ns		ns		ns		1.0		1.6		1.1	
C.V.%	8.5		15.1		5.8		1.8		0.7		2.8		8.2	
R-sq x 100	73.4		58.8		61.3		63.7		66.1		84.5		72.8	

¹ Due to possible glyphosate drift, lint yield was only determined for varieties tolerant to glyphosate.

Table 10. Yield and related properties–2012 Cotton Variety Test, Group 1 with irrigation on a Calloway silt loam soil at Marianna, Ark.

Variety	Lint yield lb/a	r	Lint frac. %	r	Ht. cm	r	Open bolls %	r	Seed index g	r	Lint index g	r	Seed/ acre mil.	r	Fibers/ seed no.	r	Fiber density no.	r
PHX4339CB	1625	1	38.9	14	119	6	51	10	11.3	13	7.4	17	9.960	2	15890	12	144	10
ST 5288 B2RF	1588	2	38.8	15	106	16	55	6	10.6	20	6.9	19	10.490	1	13485	19	128	16
AM 1511 B2RF	1579	3	40.3	10	117	8	53	7	11.8	6	8.1	6	8.873	6	17339	2	153	2
PHY 367 WRF	1549	4	41.2	6	99	19	56	3	11.2	15	8.1	5	8.700	8	16216	7	148	6
DP 0912 B2RF	1548	5	38.9	13	114	12	53	7	11.7	7	7.6	14	9.252	5	14408	15	128	17
ST 5458 B2RF	1540	6	37.0	20	116	9	43	19	12.6	1	7.5	15	9.292	4	14136	17	119	20
PX433915WRF	1526	7	39.0	12	118	7	50	13	11.4	9	7.4	16	9.321	3	14334	16	129	15
PHY 499 WRF	1466	8	42.7	1	115	10	51	10	11.4	11	8.7	2	7.690	13	16932	3	153	1
DG 2450 B2RF	1458	9	38.7	17	108	14	61	1	11.8	5	7.6	13	8.659	9	16196	8	142	12
DG 2595 B2RF	1447	10	40.3	9	103	17	56	3	11.3	12	7.8	11	8.371	10	15552	14	141	13
DP 0920 B2RF	1428	11	38.8	16	109	13	51	10	11.4	10	7.4	18	8.815	7	14089	18	127	18
DP 1133 B2RF	1421	12	42.1	2	121	5	48	15	10.9	17	8.1	7	8.004	12	16182	9	151	4
DG 2570 B2RF	1395	13	41.5	4	107	15	56	3	12.1	4	8.8	1	7.219	17	16782	4	146	9
PHY 375 WRF	1380	14	39.6	11	115	11	53	7	11.6	8	7.8	12	8.052	11	16105	10	143	11
AM 1550 B2RF	1375	15	40.6	8	96	20	61	1	12.3	3	8.6	3	7.250	16	17761	1	152	3
FM 1740 B2F	1334	16	38.2	18	100	18	50	13	12.4	2	7.9	10	7.688	14	16269	6	138	14
CG 3787 B2RF	1295	17	41.9	3	121	4	48	15	10.8	18	7.9	9	7.438	15	15608	13	146	8
DG 2610 B2RF	1106	18	41.4	5	124	3	45	18	11.3	14	8.1	4	6.166	19	16434	5	149	5
NGX 0012 B2RF	1065	19	40.9	7	124	2	46	17	11.2	16	8.0	8	6.077	20	16086	11	147	7
DP 1219 B2RF	1022	20	37.1	19	130	1	31	20	10.8	19	6.5	20	7.092	18	13295	20	125	19
Mean	1407		39.9		113		51		11.5		7.8		8.221		15655		141	
LSD 0.10	171		1.3		9		8		0.6		0.5		0.997		1330		12	
C.V.%	10.3		2.0		6.7		13.7		3.2		3.9		10.3		4.9		4.8	
R-sq x 100	65.8		89.9		76.2		74.7		82.0		86.8		72.3		84.6		83.3	

Table 11. Fiber properties--2012 Cotton Variety Test, Group 1 with irrigation on a Calloway silt loam soil at Marianna, Ark.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind.	r	Strength	r	Elongation	r
PHX4339CB	1625	1	76	1	4.4	20	1.24	2	85.4	10	32.7	11	7.6	13
ST 5288 B2RF	1588	2	55	14	5.0	4	1.21	10	84.6	17	30.3	20	7.8	10
AM 1511 B2RF	1579	3	52	15	4.7	17	1.18	18	84.4	19	33.7	5	8.7	2
PHY 367 WRF	1549	4	49	18	5.0	4	1.19	16	84.5	18	33.5	7	8.4	5
DP 0912 B2RF	1548	5	45	20	5.3	1	1.17	20	85.9	3	33.0	9	7.8	9
ST 5458 B2RF	1540	6	50	17	5.3	1	1.21	9	84.0	20	33.8	4	7.3	17
PX433915WRF	1526	7	74	2	4.9	9	1.25	1	85.6	6	33.6	6	7.5	14
PHY 499 WRF	1466	8	57	13	5.0	4	1.20	15	85.6	6	35.9	1	8.2	7
DG 2450 B2RF	1458	9	68	5	4.6	19	1.22	6	85.6	6	30.4	19	6.9	20
DG 2595 B2RF	1447	10	60	11	4.9	8	1.21	10	85.5	9	31.5	17	7.0	19
DP 0920 B2RF	1428	11	67	7	5.0	7	1.23	4	85.9	3	30.8	18	7.7	11
DP 1133 B2RF	1421	12	64	9	4.8	13	1.21	10	86.1	1	33.8	3	7.9	8
DG 2570 B2RF	1395	13	46	19	5.2	3	1.18	17	85.2	11	33.3	8	8.5	4
PHY 375 WRF	1380	14	68	5	4.7	18	1.22	6	85.7	5	31.7	15	7.4	15
AM 1550 B2RF	1375	15	51	16	4.9	9	1.18	18	85.1	12	31.7	14	7.7	11
FM 1740 B2F	1334	16	60	10	4.8	14	1.21	10	84.6	16	31.6	16	7.3	16
CG 3787 B2RF	1295	17	65	8	4.9	9	1.22	6	86.0	2	32.6	12	9.1	1
DG 2610 B2RF	1106	18	59	12	4.9	9	1.21	10	84.8	15	32.4	13	8.3	6
NGX 0012 B2RF	1065	19	71	3	4.7	15	1.24	2	85.0	14	32.9	10	8.6	3
DP 1219 B2RF	1022	20	71	4	4.7	15	1.23	4	85.1	13	35.5	2	7.2	18
Mean	1407		60		4.9		1.21		85.2		32.7		7.8	
LSD 0.10	171		13		0.3		0.03		1.1		1.5		0.8	
C.V.%	10.3		12.3		3.4		1.7		0.7		2.6		6.2	
R-sq x 100	65.8		77.2		77.9		72.8		64.9		86.6		80.8	

Table 12. Yield and related properties–2012 Cotton Variety Test, Group 1 with irrigation on a Hebert silt loam at Rohwer, 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.		
DP 1219 B2RF	1463	1	43.5	5	85	14	79	17	9.4	20	7.4	19	8.981	1	14323	19	147	18
PX433915WRF	1372	2	43	12	86	12	84	4	10.1	12	7.9	12	7.935	2	15633	15	153	15
PHY 499 WRF	1330	3	45.1	1	87	10	84	4	9.7	18	8.2	3	7.346	5	16573	4	167	2
PHY 375 WRF	1287	4	43.1	9	88	7	83	9	10.0	13	7.8	13	7.461	4	17369	2	171	1
AM 1550 B2RF	1249	5	42.1	14	84	18	84	4	10.6	3	8.0	7	7.142	7	16638	3	157	8
DP 0912 B2RF	1246	6	41.3	18	89	5	88	1	10.8	1	7.9	11	7.203	6	14881	18	139	19
DP 1133 B2RF	1239	7	44.4	2	89	4	81	16	10.0	13	8.2	2	6.839	9	15800	13	156	10
DP 0920 B2RF	1234	8	44.2	3	86	13	85	2	9.8	16	8.0	6	7.011	8	16001	11	159	5
AM 1511 B2RF	1214	9	44	4	90	1	84	4	10.6	4	8.7	1	6.361	12	17508	1	165	3
ST 5288 B2RF	1191	10	41.1	19	89	2	83	9	9.6	19	7.0	20	7.764	3	13431	20	136	20
NGX 0012 B2RF	1169	11	43.5	6	88	8	78	18	9.7	17	7.8	15	6.838	10	15389	16	154	14
PHX4339CB	1137	12	42.5	13	85	16	85	2	10.1	10	7.8	17	6.662	11	16324	8	160	4
ST 5458 B2RF	1089	13	41.8	16	87	9	84	4	10.5	5	7.9	9	6.252	13	16211	10	154	13
DG 2570 B2RF	1080	14	43	11	84	19	83	9	10.4	8	8.1	4	6.070	17	16464	6	158	7
DG 2595 B2RF	1080	15	43.2	8	86	11	83	9	10.2	9	8.0	5	6.099	16	15240	17	148	17
DG 2610 B2RF	1069	16	43.1	10	89	3	76	19	10.1	10	7.8	14	6.209	14	16230	9	159	6
DG 2450 B2RF	1059	17	41.6	17	88	6	83	9	10.5	6	7.8	16	6.194	15	15902	12	151	16
PHY 367 WRF	993	18	41.9	15	83	20	83	9	10.5	7	7.9	8	5.699	18	16389	7	156	9
CG 3787 B2RF	959	19	43.3	7	85	14	83	9	9.9	15	7.9	10	5.532	19	15732	14	156	11
FM 1740 B2F	839	20	40.7	20	85	17	74	20	10.7	2	7.7	18	4.947	20	16484	5	155	12
Mean	1165		42.8		87		82		10.2		7.9		6.727		15926		155	
LSD 0.10	137		1.5		ns		5		0.5		0.6		0.792		1381		13	
C.V.%	9.9		2.0		4.9		5.5		2.7		4.2		10.0		5.0		4.8	
R-sq x 100	77.3		79.7		71.9		45.5		82.5		67.3		79.1		74.8		73.3	

Table 13. Fiber properties--2012 Cotton Variety Test, Group 1 with irrigation on a Hebert silt loam at Rohwer, Ark.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind.	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
DP 1219 B2RF	1463	1	60	7	5.3	5	1.16	4	84.0	6	33.6	4	6.2	17
PX433915WRF	1372	2	56	11	5.3	7	1.16	7	82.9	17	33.0	7	6.8	10
PHY 499 WRF	1330	3	56	13	5.2	10	1.14	13	83.7	10	34.5	2	6.9	8
PHY 375 WRF	1287	4	55	14	4.9	19	1.14	13	81.7	20	29.9	17	6.3	14
AM 1550 B2RF	1249	5	40	20	5.3	7	1.10	20	82.8	18	29.8	19	6.3	15
DP 0912 B2RF	1246	6	52	16	5.5	2	1.14	15	84.6	3	30.7	16	6.7	12
DP 1133 B2RF	1239	7	71	1	5.2	10	1.18	1	85.2	1	35.9	1	6.5	13
DP 0920 B2RF	1234	8	47	17	5.4	4	1.13	17	83.0	16	29.9	17	6.3	15
AM 1511 B2RF	1214	9	63	5	5.1	12	1.16	7	84.3	5	34.1	3	7.5	3
ST 5288 B2RF	1191	10	43	19	5.6	1	1.12	18	83.5	13	30.7	15	6.8	10
NGX 0012 B2RF	1169	11	57	10	5.3	7	1.15	9	83.6	11	31.2	14	7.9	1
PHX4339CB	1137	12	70	2	4.9	19	1.17	3	84.4	4	33.5	5	7.0	6
ST 5458 B2RF	1089	13	59	8	5.1	12	1.16	4	82.7	19	31.8	12	6.0	19
DG 2570 B2RF	1080	14	44	18	5.3	5	1.11	19	83.5	13	32.9	8	7.7	2
DG 2595 B2RF	1080	15	52	15	5.5	2	1.15	11	83.8	9	32.4	10	7.0	6
DG 2610 B2RF	1069	16	69	3	4.9	18	1.16	4	84.8	2	31.6	13	7.4	4
DG 2450 B2RF	1059	17	58	9	5.1	12	1.15	11	83.6	12	29.7	20	5.9	20
PHY 367 WRF	993	18	62	6	5.0	16	1.15	9	84.0	6	33.3	6	6.8	9
CG 3787 B2RF	959	19	66	4	5.1	12	1.17	2	83.9	8	32.1	11	7.1	5
FM 1740 B2F	839	20	56	11	5.0	17	1.14	16	83.4	15	32.4	9	6.2	17
Mean	1165		57		5.2		1.14		83.5		32.1		6.7	
LSD 0.10	137		12		0.3		0.03		ns		1.6		0.5	
C.V.%	9.9		11.9		3.1		1.3		1.1		2.9		4.4	
R-sq x 100	77.3		83.4		78.4		84.1		66.9		87.1		88.2	

Table 14. Yield and related properties—2012 Arkansas Cotton Variety Test, Group 2 across four Arkansas test sites.

Variety	Lint yield	r	Lint frac.	r	Ht.	r	Open bolls	r	Seed index	r	Lint index	r	Seed/ acre ¹	r	Fibers/ seed	r	Fiber density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
PHX312240	1649	1	42.8	1	103	9	68	2	10.7	12	8.2	2	9.232	3	17343	1	164	1
DP 1321 B2RF	1605	2	41.4	4	103	8	66	5	11.0	10	7.9	4	9.258	2	15560	8	144	9
DP 1311 B2RF	1532	3	42.3	2	99	11	65	8	8.9	20	6.7	17	10.490	1	15128	10	161	2
CT12214	1501	4	39.8	11	97	16	66	7	11.5	6	7.8	8	8.778	6	16801	4	151	6
BX 1346GLB2	1484	5	40.6	7	97	14	64	11	11.6	4	8.1	3	8.347	9	16426	6	147	7
Ark 0222-15	1474	6	41.0	6	99	12	66	5	11.6	5	8.3	1	8.232	10	17074	2	153	4
DP 0912 B2RF, ck.	1437	7	39.2	14	95	20	65	10	11.1	9	7.3	12	8.987	4	14500	13	133	15
PHY 375 WRF, ck.	1410	8	41.6	3	97	13	67	4	10.8	11	7.9	6	8.195	12	16863	3	158	3
ST 5458 B2RF, ck.	1406	9	38.9	16	101	10	57	17	11.5	7	7.5	10	8.596	8	15144	9	136	13
SGS UA222	1358	10	39.6	13	95	18	64	12	11.8	3	7.9	5	7.919	14	16440	5	145	8
PHX443314	1333	11	40.6	8	107	3	65	8	9.7	18	6.8	16	8.950	5	15071	11	151	5
FM 1944GLB2	1328	12	38.6	17	97	15	64	12	11.5	8	7.4	11	8.231	11	14596	12	131	18
SGS UA103	1289	13	39.0	15	105	6	68	2	12.0	2	7.8	7	7.523	19	15984	7	139	12
CG 3428 B2RF	1227	14	41.1	5	106	5	60	14	9.9	17	7.1	14	7.900	15	14059	15	139	11
11R136 B2R2	1202	15	39.7	12	107	4	57	17	10.2	16	6.9	15	8.038	13	13880	17	135	14
AM UA48	1199	16	36.7	20	95	19	68	1	12.9	1	7.6	9	7.155	20	13913	16	115	20
SGS HQ210CT	1185	17	37.5	19	97	17	58	15	10.3	14	6.3	20	8.630	7	12674	20	122	19
DP 1359 B2RF	1178	18	40.3	9	111	1	47	20	10.3	15	7.1	13	7.592	18	14409	14	139	10
PHX540305	1118	19	39.9	10	109	2	52	19	9.6	19	6.5	19	7.764	16	13196	19	133	16
BX 1348GLB2	1117	20	38.5	18	105	7	58	16	10.4	13	6.6	18	7.760	17	13684	18	132	17
Mean	1352		40.0		101		62		10.9		7.4		8.379		15137		141	
Var. LSD 0.10	82		0.7		5		4		0.4		0.3		0.512		629		6	
Loc. LSD 0.10	37		0.3		2		2		0.2		0.1		0.228		281		3	
C.V.%	10.4		2.2		8.7		12.3		4.0		4.8		10.5		5.0		5.0	
R-sq x 100	83.5		92.6		77.4		85.9		93.2		90.1		84.5		88.9		89.2	
Prob (var x loc)	<.0001		0.022		0.327		0.003		0.219		0.426		<.0001		0.832		0.649	

Table 15. Fiber properties–2012 Arkansas Cotton Variety Test, Group 2 across four test sites.

Variety	Lint		Quality		Fiber properties									
	yield ¹ lb/a	r	score	r	Micronaire	r	Length in.	r	Unif. ind. %	r	Strength g/tex	r	Elongation %	r
PHX312240	1649	1	65	7	4.6	17	1.21	9	84.9	7	31.6	15	6.6	16
DP 1321 B2RF	1605	2	51	15	5.1	2	1.19	14	84.6	11	34.1	4	8.5	3
DP 1311 B2RF	1532	3	47	17	4.6	19	1.16	19	83.6	20	30.5	19	7.8	5
CT12214	1501	4	63	10	4.6	18	1.20	11	84.7	10	31.2	17	7.8	6
BX 1346GLB2	1484	5	50	16	5.0	5	1.18	16	84.3	15	33.5	6	7.3	9
Ark 0222-15	1474	6	62	11	4.7	12	1.20	10	84.8	8	32.9	10	9.5	1
DP 0912 B2RF, ck.	1437	7	37	20	5.2	1	1.16	20	83.8	18	31.5	16	7.2	10
PHY 375 WRF, ck.	1410	8	47	18	4.8	10	1.17	18	83.7	19	31.0	18	6.6	15
ST 5458 B2RF, ck.	1406	9	53	14	5.0	5	1.20	12	83.9	17	32.9	10	6.7	14
SGS UA222	1358	10	68	5	4.7	15	1.23	3	84.5	13	33.5	7	8.1	4
PHX443314	1333	11	58	12	4.5	20	1.18	15	84.5	14	34.6	3	8.6	2
FM 1944GLB2	1328	12	68	6	4.9	9	1.22	5	85.2	4	32.5	13	5.4	20
SGS UA103	1289	13	70	4	4.7	13	1.23	4	85.1	5	34.0	5	7.3	8
CG 3428 B2RF	1227	14	64	9	4.9	8	1.22	7	85.0	6	31.8	14	7.7	7
11R136 B2R2	1202	15	80	2	4.6	16	1.25	2	85.5	3	33.1	9	7.1	11
AM UA48	1199	16	83	1	5.0	4	1.28	1	86.5	1	35.6	1	5.9	18
SGS HQ210CT	1185	17	46	19	5.0	3	1.17	17	84.2	16	32.6	12	6.8	13
DP 1359 B2RF	1178	18	57	13	4.9	7	1.19	13	84.6	12	35.2	2	6.5	17
PHX540305	1118	19	70	3	4.8	11	1.22	6	85.5	2	33.3	8	7.1	12
BX 1348GLB2	1117	20	65	7	4.7	13	1.21	8	84.8	9	30.4	20	5.7	19
Mean	1352		60		4.8		1.20		84.7		32.8		7.2	
Var. LSD 0.10	82		7		0.2		0.02		0.6		0.7		0.4	
Loc. LSD 0.10	37		ns		ns		0.01		0.3		0.3		0.2	
C.V.%	10.4		13.0		4.8		1.5		0.9		2.5		7.1	
R-sq x 100	83.5		87.6		82.0		91.2		78.1		89.9		91.2	
Prob (var x loc)	<.0001		0.001		0.047		0.009		0.297		0.019		0.339	

¹ Lint yield means are across three locations; Judd Hill yield data excluded due to possible glyphosate drift.

Table 16. Yield and related properties—2012 Cotton Variety Test, Group 2 with irrigation on a Tunica silty clay soil at Keiser, 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.	
DP 1321 B2RF	1824	1	41.5	3	93	16	66	3	10.2	10	7.5	6	11.060	3	14405	11	140	9
CT12214	1821	2	40.7	7	92	17	61	16	10.9	6	7.7	2	10.790	4	15870	4	147	7
PHX312240	1796	3	42.1	1	98	7	68	1	10.2	11	7.6	4	10.760	5	16535	2	161	2
Ark 0222-15	1702	4	40.6	8	96	11	66	3	11.1	5	7.7	1	9.974	13	16898	1	156	3
DP 1311 B2RF	1687	5	42.1	2	96	11	65	7	8.8	20	6.6	15	11.620	1	15746	5	168	1
DP 0912 B2RF, ck.	1591	6	39.1	13	90	19	65	7	10.4	9	6.9	13	10.490	8	13162	16	126	18
PHY 375 WRF, ck.	1587	7	41.1	4	97	10	64	11	10.1	12	7.2	9	10.070	11	15590	6	152	4
FM 1944GLB2	1535	8	38.3	17	98	9	65	7	11.3	3	7.1	10	9.795	14	14852	9	135	12
BX 1346GLB2	1531	9	40.7	6	94	15	66	3	10.7	8	7.6	3	9.173	17	15882	3	149	5
SGS UA222	1503	10	39.6	11	91	18	68	1	11.1	4	7.5	5	9.055	18	15460	7	142	8
PHX443314	1494	11	39.6	12	106	3	64	11	9.5	17	6.4	16	10.580	6	14567	10	148	6
ST 5458 B2RF, ck.	1485	12	38.4	16	95	14	59	17	10.9	7	6.9	12	9.713	15	13904	12	129	16
PHX540305	1469	13	39.9	10	110	2	58	18	9.3	19	6.3	17	10.500	7	13389	15	138	10
DP 1359 B2RF	1450	14	40.3	9	113	1	51	20	9.6	15	6.6	14	9.992	12	13661	14	138	11
BX 1348GLB2	1443	15	37.6	18	106	4	58	18	10.1	13	6.3	18	10.470	9	12927	19	127	17
CG 3428 B2RF	1443	16	40.7	5	104	5	63	15	10.0	14	7.1	11	9.267	16	13670	13	134	14
SGS HQ210CT	1436	17	37.5	19	89	20	66	3	9.3	18	5.7	20	11.370	2	12195	20	126	19
11R136 B2R2	1384	18	38.7	14	102	6	64	11	9.6	15	6.2	19	10.110	10	13158	17	133	15
SGS UA103	1358	19	38.7	15	98	8	65	7	11.5	2	7.4	7	8.348	19	14949	8	134	13
AM UA48	1321	20	36.7	20	96	13	64	11	12.5	1	7.4	8	8.140	20	13136	18	111	20
Mean	1543		39.7		98		63		10.4		7.0		10.064		14498		140	
LSD 0.10	192		0.9		8		5		0.7		0.5		1.250		1255		12	
C.V.%	10.5		1.4		6.7		6.1		4.1		3.8		10.5		5.0		5.1	
R-sq x 100	55.8		94.0		60.9		67.4		90.4		90.4		52.7		87.1		87.9	

Table 17. Fiber properties–2012 Cotton Variety Test, Group 2 with irrigation on a Tunica silty clay soil at Keiser, Ark.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind.	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
DP 1321 B2RF	1824	1	45	17	5.3	2	1.18	16	84.4	9	35.4	1	8.4	2
CT12214	1821	2	59	12	4.8	7	1.20	13	84.3	10	31.6	17	7.2	7
PHX312240	1796	3	71	4	4.5	17	1.22	5	84.8	5	31.9	13	6.5	14
Ark 0222-15	1702	4	64	10	4.6	16	1.20	11	84.2	13	33.4	6	9.8	1
DP 1311 B2RF	1687	5	42	20	4.5	17	1.14	20	82.9	20	30.1	20	7.8	5
DP 0912 B2RF, ck.	1591	6	43	18	5.3	1	1.18	16	84.1	14	32.4	11	6.6	13
PHY 375 WRF, ck.	1587	7	56	15	4.7	13	1.18	15	83.7	18	30.1	19	6.5	15
FM 1944GLB2	1535	8	66	9	4.7	11	1.22	5	84.0	16	31.9	13	5.4	20
BX 1346GLB2	1531	9	42	19	5.0	5	1.16	19	83.5	19	32.1	12	7.1	9
SGS UA222	1503	10	66	8	4.8	10	1.22	4	84.2	11	33.2	8	8.1	4
PHX443314	1494	11	62	11	4.4	19	1.19	14	84.1	14	35.0	2	8.1	3
ST 5458 B2RF, ck.	1485	12	57	14	5.0	5	1.20	11	84.2	11	33.3	7	7.3	6
PHX540305	1469	13	71	5	4.6	15	1.21	8	85.2	3	31.8	16	7.0	10
DP 1359 B2RF	1450	14	68	6	4.7	11	1.21	8	84.9	4	34.9	3	6.4	16
BX 1348GLB2	1443	15	72	3	4.7	13	1.23	3	84.7	6	30.4	18	5.7	19
CG 3428 B2RF	1443	16	59	12	5.1	4	1.21	8	84.5	8	31.9	13	7.2	7
SGS HQ210CT	1436	17	51	16	4.8	7	1.17	18	83.8	17	32.7	10	6.4	16
11R136 B2R2	1384	18	85	1	4.4	19	1.26	2	85.3	2	32.9	9	6.9	11
SGS UA103	1358	19	67	7	4.8	7	1.22	5	84.7	7	34.2	5	6.8	12
AM UA48	1321	20	78	2	5.2	3	1.27	1	85.8	1	34.8	4	6.4	16
Mean	1543		61		4.8		1.20		84.3		32.7		7.1	
LSD 0.10	192		12		0.4		0.03		1.4		1.4		0.9	
C.V.%	10.5		11.5		4.4		1.4		1.0		2.4		7.7	
R-sq x 100	55.8		86.2		76.9		88.6		56.5		89.2		87.5	

Table 18. Yield and related properties—2012 Cotton Variety Test, Group 2 with irrigation on a Dundee silt loam at Judd Hill, Ark.

Variety	Lint yield ¹		Lint frac.		Ht.	Open bolls		Seed index		Lint index		Seed/acre ¹		Fibers/seed		Fiber density		
	lb/a	r	%	r		cm	%	r	g	r	g	r	mil.	r	no.	r	no.	
PHX312240	1674	1	41.8	2	114	9	58	4	10.6	12	7.7	4	9.897	2	17496	1	166	1
ST 5458 B2RF, ck.	1539	2	37.0	18	113	10	41	16	12.0	4	7.1	11	9.819	3	15058	10	131	13
DP 1321 B2RF	1508	3	39.6	8	124	1	49	11	11.0	11	7.2	8	9.463	5	15242	8	141	9
PHY 375 WRF, ck.	1508	4	41.9	1	99	18	60	2	11.2	9	8.2	1	8.336	13	16384	5	149	5
Ark 0222-15	1505	5	40.7	4	104	16	48	12	11.4	8	7.9	2	8.677	9	16531	3	149	6
SGS UA222	1493	6	39.1	10	109	12	45	13	11.6	5	7.5	7	9.067	7	16334	6	146	7
BX 1346GLB2	1461	7	38.7	12	107	14	44	14	12.4	3	7.8	3	8.467	11	16174	7	138	11
DP 1311 B2RF	1437	8	40.5	5	113	11	51	8	9.1	20	6.2	18	10.480	1	14673	12	154	3
CT12214	1434	9	38.1	14	102	17	61	1	11.6	6	7.2	9	9.057	8	16835	2	150	4
PHX443314	1428	10	40.8	3	119	5	58	4	9.6	19	6.7	16	9.648	4	15215	9	154	2
DP 0912 B2RF, ck.	1427	11	37.9	15	97	20	55	6	11.5	7	7.0	13	9.198	6	14472	13	130	14
SGS UA103	1377	12	37.7	16	120	3	55	6	12.5	2	7.6	5	8.186	14	16442	4	139	10
FM 1944GLB2	1352	13	38.6	13	105	15	51	8	11.2	9	7.1	10	8.637	10	14067	14	128	16
AM UA48	1341	14	36.2	20	99	19	60	2	13.4	1	7.6	6	8.025	15	13839	16	112	20
CG 3428 B2RF	1246	15	39.9	7	115	8	50	10	10.1	16	6.7	15	8.416	12	14064	15	137	12
11R136 B2R2	1166	16	39.2	9	119	4	35	18	10.4	14	6.8	14	7.832	18	13443	17	129	15
DP 1359 B2RF	1073	17	40.4	6	122	2	28	20	10.4	15	7.1	12	6.895	19	14684	11	141	8
BX 1348GLB2	1053	18	37.7	17	115	7	44	14	10.0	17	6.1	19	7.857	17	12901	18	127	17
SGS HQ210CT	1037	19	36.2	19	109	13	39	17	10.4	13	5.9	20	7.930	16	12742	20	122	19
PHX540305	783	20	38.9	11	117	6	31	19	9.9	18	6.4	17	5.580	20	12784	19	126	18
Mean	1342		39.0		111		48		11.0		7.1		8.573		14969		138	
LSD 0.10	128		2.2		ns		13		0.8		0.9		0.862		1218		11	
C.V.%	8.1		3.3		12.9		23.7		4.1		7.0		8.5		4.7		4.6	
R-sq x 100	86.0		80.5		40.8		64.7		91.8		79.8		79.2		89.5		89.2	

¹ Due to possible glyphosate drift, lint yield and seed per acre only determined for varieties tolerant to glyphosate.

Table 19. Fiber properties–2012 Cotton Variety Test, Group 2 with irrigation on a Dundee silt loam soil at Judd Hill, Ark.

Variety	Lint yield ¹ lb/a	Quality		Fiber properties										
		r	score	r	Micronaire	r	Length	r	Unif. ind.	r	Strength	r	Elongation	r
									%		g/tex		%	
PHX312240	1674	1	53	16	4.3	18	1.22	9	84.4	16	34.0	11	6.7	15
ST 5458 B2RF, ck.	1539	2	63	10	4.6	10	1.23	7	84.5	14	33.7	13	6.7	14
DP 1321 B2RF	1508	3	64	8	4.6	10	1.22	9	85.7	5	34.1	10	8.5	4
PHY 375 WRF, ck.	1508	4	43	19	5.0	1	1.19	17	84.7	12	32.0	16	6.6	16
Ark 0222-15	1505	5	64	8	4.6	7	1.22	9	84.9	10	33.2	14	9.7	1
SGS UA222	1493	6	69	6	4.4	16	1.25	4	85.0	9	34.5	7	8.3	6
BX 1346GLB2	1461	7	55	13	4.8	5	1.21	14	84.8	11	34.8	5	7.0	12
DP 1311 B2RF	1437	8	47	17	4.3	19	1.18	18	84.1	20	31.3	19	8.2	7
CT12214	1434	9	62	11	4.2	20	1.22	9	84.4	18	31.2	20	8.4	5
PHX443314	1428	10	54	14	4.4	15	1.19	16	84.4	16	35.8	3	8.8	2
DP 0912 B2RF, ck.	1427	11	42	20	4.9	2	1.18	20	84.6	13	32.3	15	7.6	10
SGS UA103	1377	12	75	4	4.4	17	1.25	4	85.6	6	34.4	8	7.9	8
FM 1944GLB2	1352	13	59	12	4.9	3	1.22	9	85.5	7	34.7	6	5.2	20
AM UA48	1341	14	93	1	4.7	6	1.33	1	88.0	1	37.0	1	5.5	19
CG 3428 B2RF	1246	15	72	5	4.5	12	1.24	6	85.8	4	31.9	17	8.7	3
11R136 B2R2	1166	16	88	2	4.5	12	1.29	2	87.0	2	34.2	9	7.7	9
DP 1359 B2RF	1073	17	45	18	4.9	3	1.18	18	84.2	19	36.1	2	6.4	17
BX 1348GLB2	1053	18	67	7	4.5	12	1.23	7	85.3	8	31.7	18	5.7	18
SGS HQ210CT	1037	19	54	14	4.6	7	1.20	15	84.5	14	33.8	12	7.1	11
PHX540305	783	20	76	3	4.6	7	1.26	3	86.2	3	35.2	4	6.8	13
Mean	1342		62		4.6		1.22		85.2		33.8		7.4	
LSD 0.10	128		12		0.5		0.03		1.3		1.6		1.0	
C.V.%	8.1		11.6		6.6		1.2		0.9		2.8		8.1	
R-sq x 100	86.0		90.3		67.0		93.9		79.3		85.7		89.4	

¹ Due to possible glyphosate drift, lint yield was only determined for varieties tolerant to glyphosate.

Table 20. Yield and related properties—2012 Cotton Variety Test, Group 2 with irrigation on a Calloway silt loam soil at Marianna, 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.	
PHX312240	1884	1	42.3	1	114	7	61	4	11.9	9	8.8	1	9.723	4	17510	2	154	2
DP 1321 B2RF	1798	2	40.9	3	108	12	69	1	11.8	10	8.4	3	9.769	3	16016	8	141	9
Ark 0222-15	1796	3	40.2	6	106	13	61	4	12.0	7	8.3	5	9.851	2	17330	3	151	3
BX 1346GLB2	1755	4	40.9	2	104	15	60	6	12.3	4	8.7	2	9.185	5	16315	7	140	10
CT12214	1665	5	39.2	10	104	14	59	8	12.6	2	8.3	4	9.109	7	17255	4	146	5
DP 1311 B2RF	1600	6	40.8	4	98	20	60	6	9.3	20	6.6	20	11.050	1	14484	14	149	4
SGS UA222	1580	7	38.2	14	100	19	58	10	12.6	3	7.9	7	9.129	6	16734	6	141	8
SGS UA103	1521	8	39.5	8	117	3	66	2	12.2	5	8.1	6	8.523	11	16769	5	145	6
ST 5458 B2RF, ck.	1512	9	39.0	11	109	10	48	15	12.0	8	7.8	9	8.757	10	15532	9	135	12
DP 0912 B2RF, ck.	1431	10	38.4	12	108	11	54	11	11.6	12	7.4	11	8.787	9	15013	10	134	13
PHX443314	1375	11	39.5	9	117	4	51	13	10.5	19	7.0	15	8.974	8	15012	11	144	7
FM 1944GLB2	1366	12	37.4	16	102	18	54	11	12.1	6	7.4	12	8.415	12	14531	13	126	18
PHY 375 WRF, ck.	1364	13	40.2	7	109	9	59	8	11.4	15	7.9	8	7.886	13	17575	1	158	1
AM UA48	1239	14	35.8	20	102	17	63	3	13.6	1	7.7	10	7.277	16	13678	18	109	20
SGS HQ210CT	1174	15	36.8	18	103	16	48	15	11.5	13	6.8	18	7.862	14	12870	20	116	19
11R136 B2R2	1160	16	38.2	13	114	7	43	18	11.3	16	7.1	14	7.374	15	14673	12	133	14
CG 3428 B2RF	1116	17	40.8	5	117	5	51	13	10.5	18	7.3	13	6.911	17	14404	15	138	11
DP 1359 B2RF	972	18	37.3	17	120	2	36	20	11.5	14	7.0	16	6.348	18	14151	17	127	15
BX 1348GLB2	921	19	36.8	19	115	6	45	17	11.6	11	6.9	17	6.070	19	14230	16	127	16
PHX540305	893	20	38.0	15	122	1	40	19	10.6	17	6.7	19	6.064	20	13375	19	127	17
Mean	1406		39.0		109		54		11.6		7.6		8.535		15373		137	
LSD 0.10	160		1.3		7		10		0.9		0.5		1.000		1088		11	
C.V.%	9.6		1.9		5.6		1510.0		4.3		4.0		9.7		4.1		4.6	
R-sq x 100	87.4		92.7		87.7		65.8		88.1		91.2		80.0		91.6		89.0	

Table 21. Fiber properties–2012 Cotton Variety Test, Group 2 with irrigation on a Calloway silt loam soil at Marianna, Ark.

Variety	Lint yield lb/a	Quality		Fiber properties										
		r	score	r	Micronaire	r	Length	r	Unif. ind.	r	Strength	r	Elongation	r
PHX312240	1884	1	68	9	4.8	8	1.23	9	86.0	2	31.8	15	6.9	17
DP 1321 B2RF	1798	2	35	19	5.3	1	1.17	19	84.2	18	32.8	10	9.3	3
Ark 0222-15	1796	3	68	10	4.6	14	1.23	9	85.5	8	33.2	5	9.5	2
BX 1346GLB2	1755	4	39	18	5.3	1	1.18	17	84.8	15	33.2	5	8.4	6
CT12214	1665	5	55	14	4.8	8	1.19	14	85.1	11	31.0	17	9.0	4
DP 1311 B2RF	1600	6	57	13	4.5	16	1.20	13	84.4	16	30.8	18	8.2	8
SGS UA222	1580	7	76	3	4.4	20	1.26	3	85.1	12	32.9	9	8.9	5
SGS UA103	1521	8	72	6	4.6	14	1.24	6	85.9	4	33.4	4	8.3	7
ST 5458 B2RF, ck.	1512	9	41	16	5.1	4	1.18	17	84.1	19	32.7	11	7.0	16
DP 0912 B2RF, ck.	1431	10	32	20	5.1	4	1.15	20	84.0	20	30.7	19	7.7	10
PHX443314	1375	11	61	12	4.5	16	1.21	12	85.7	6	33.5	3	9.5	1
FM 1944GLB2	1366	12	76	3	4.7	10	1.26	3	86.0	2	32.3	13	5.9	20
PHY 375 WRF, ck.	1364	13	54	15	4.5	19	1.19	15	85.1	13	31.9	14	7.1	14
AM UA48	1239	14	83	1	5.1	6	1.29	1	86.8	1	35.9	1	6.5	18
SGS HQ210CT	1174	15	40	17	5.3	3	1.19	15	84.4	16	32.6	12	7.7	10
11R136 B2R2	1160	16	80	2	4.5	16	1.27	2	85.5	7	33.0	8	7.2	13
CG 3428 B2RF	1116	17	65	11	4.9	7	1.23	9	85.5	8	31.3	16	8.1	9
DP 1359 B2RF	972	18	70	7	4.7	12	1.24	8	85.7	5	35.4	2	7.1	14
BX 1348GLB2	921	19	69	8	4.6	13	1.24	6	85.0	14	29.9	20	6.3	19
PHX540305	893	20	72	5	4.7	11	1.25	5	85.5	8	33.0	7	7.7	12
Mean	1406		60		4.8		1.22		85.2		32.5		7.8	
LSD 0.10	160		13		0.4		0.03		ns		1.4		0.7	
C.V.%	9.6		12.8		4.3		1.4		0.9		2.5		5.3	
R-sq x 100	87.4		90.5		83.3		91.3		67.6		87.2		93.3	

Table 22. Yield and related properties–2012 Cotton Variety Test, Group 2 with irrigation on a Hebert silt loam at Rohwer, 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	g	r	g	r	mil.	r	no.	r	no.		
DP 1311 B2RF	1403	1	45.6	1	90	3	85	7	8.4	20	7.2	15	8.821	2	15610	10	171	3
PHX540305	1328	2	42.9	7	89	4	78	18	8.8	19	6.8	19	8.909	1	13234	19	142	16
DP 0912 B2RF, ck.	1299	3	41.3	14	85	12	85	7	10.8	10	7.9	11	7.478	3	15355	12	144	15
DP 1321 B2RF	1290	4	43.5	3	88	5	81	14	10.8	9	8.7	3	6.743	8	16576	7	155	8
PHX312240	1240	5	45.2	2	85	13	85	7	10.1	12	8.6	4	6.541	12	17830	2	175	1
DP 1359 B2RF	1216	6	43.4	4	91	2	73	20	9.8	14	7.7	13	7.133	5	15141	13	151	9
BX 1346GLB2	1188	7	41.9	11	85	13	86	4	11.0	8	8.2	6	6.562	11	17333	4	160	4
PHY 375 WRF, ck.	1181	8	43.3	5	84	16	86	4	10.4	11	8.3	5	6.488	13	17902	1	172	2
CG 3428 B2RF	1104	9	43.1	6	88	9	76	19	9.1	18	7.2	17	7.006	6	14097	18	147	12
11R136 B2R2	1098	10	42.6	9	92	1	88	3	9.5	16	7.3	14	6.834	7	14246	17	145	14
SGS HQ210CT	1095	11	39.7	19	86	10	80	17	10.0	13	6.8	20	7.352	4	12890	20	127	20
ST 5458 B2RF, ck.	1087	12	41.2	15	88	6	81	14	11.1	6	8.1	8	6.095	15	16082	8	148	11
CT12214	1083	13	41.2	16	88	8	81	14	11.0	7	8.0	9	6.152	14	17243	5	159	6
FM 1944GLB2	1057	14	40.2	17	83	19	85	7	11.5	5	7.9	10	6.079	16	14934	15	134	18
BX 1348GLB2	1053	15	41.8	12	83	18	84	13	9.8	15	7.2	16	6.645	9	14677	16	147	13
PHX443314	1037	16	42.3	10	85	15	89	2	9.3	17	7.1	18	6.601	10	15491	11	159	5
SGS UA103	900	17	39.9	18	86	10	85	7	11.9	3	8.1	7	5.034	18	15775	9	138	17
AM UA48	896	18	38.2	20	84	17	86	4	12.3	1	7.9	12	5.176	17	14999	14	129	19
Ark 0222-15	894	19	42.6	8	88	6	90	1	11.7	4	9.2	1	4.426	19	17537	3	155	7
SGS UA222	854	20	41.6	13	82	20	85	7	11.9	2	8.8	2	4.425	20	17233	6	151	10
Mean	1115		42.1		86		83		10.5		7.8		6.525		15709		150	
LSD 0.10	178		1.3		ns		6		0.6		0.5		1.036		1605		14	
C.V.%	13.5		1.8		5.8		5.7		3.5		3.8		13.4		5.9		5.4	
R-sq x 100	61.1		92.2		62.2		52.9		94.9		91.1		72.0		83.8		84.7	

Table 23. Fiber properties–2012 Cotton Variety Test, Group 2 with irrigation on a Hebert silt loam at Rohwer, Ark.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind.	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
DP 1311 B2RF	1403	1	44	16	5.0	16	1.13	18	83.1	17	29.8	18	7.1	5
PHX540305	1328	2	63	8	5.1	8	1.18	10	85.4	2	33.3	8	6.7	8
DP 0912 B2RF, ck.	1299	3	31	20	5.6	1	1.12	19	82.6	19	30.7	16	6.7	8
DP 1321 B2RF	1290	4	60	11	5.3	5	1.19	8	84.4	8	34.0	6	7.9	3
PHX312240	1240	5	69	4	4.8	17	1.19	6	84.4	8	29.0	20	6.2	15
DP 1359 B2RF	1216	6	44	16	5.4	3	1.15	15	83.5	16	34.4	2	6.3	14
BX 1346GLB2	1188	7	64	7	4.8	17	1.18	10	84.1	11	34.1	4	7.0	6
PHY 375 WRF, ck.	1181	8	35	19	5.1	8	1.12	20	81.3	20	30.1	17	6.5	11
CG 3428 B2RF	1104	9	62	10	5.1	8	1.19	8	84.4	7	32.1	10	6.8	7
11R136 B2R2	1098	10	69	4	5.1	13	1.21	2	84.3	10	32.4	9	6.5	11
SGS HQ210CT	1095	11	41	18	5.5	2	1.14	17	84.1	11	31.2	13	5.9	17
ST 5458 B2RF, ck.	1087	12	53	15	5.2	6	1.18	10	82.8	18	31.8	11	6.0	16
CT12214	1083	13	76	2	4.6	20	1.20	4	85.0	4	31.0	15	6.6	10
FM 1944GLB2	1057	14	70	3	5.2	7	1.21	2	85.2	3	31.2	14	5.2	19
BX 1348GLB2	1053	15	54	14	5.1	14	1.16	14	84.1	13	29.7	19	5.3	18
PHX443314	1037	16	55	12	4.8	19	1.15	15	83.9	15	34.3	3	7.9	2
SGS UA103	900	17	66	6	5.1	8	1.20	5	84.5	6	34.0	5	6.4	13
AM UA48	896	18	80	1	5.0	15	1.23	1	85.6	1	34.5	1	5.1	20
Ark 0222-15	894	19	55	13	5.3	4	1.17	13	84.7	5	31.7	12	8.9	1
SGS UA222	854	20	63	8	5.1	8	1.19	6	84.0	14	33.6	7	7.2	4
Mean	1115		57		5.1		1.17		84.0		32.1		6.6	
LSD 0.10	178		16		0.3		0.04		1.2		1.3		0.8	
C.V.%	13.5		16.0		5.7		2.1		0.8		2.4		7.2	
R-sq x 100	61.1		80.4		77.7		77.3		80.5		91.6		88.7	

Table 24. Two-year average lint yields (lb/a) for varieties at the four locations of the 2011-2012 Arkansas Cotton Variety Test.

Variety	Traits	Keiser		Judd Hill		Marianna		Rohwer		All locations	
		Irrigated lb/a	r	Irrigated ¹ lb/a	r	Irrigated lb/a	r	Irrigated lb/a	r	Irrigated lb/a	r
Glyphosate-tolerant:											
AM 1511 B2RF	B2R	1670	1	1580	1	1670	1	1285	9	1551	1
AM 1550 B2RF	B2R	1400	13	1348	9	1293	18	1215	12	1314	14
NGX 0012 B2RF	B2R	1367	14	1227	16	1153	20	1262	10	1252	17
CG 3787 B2RF	B2R	1622	2	1211	17	1296	17	1206	14	1334	11
DG 2450 B2RF	B2R	1331	17	1402	3	1440	10	1138	16	1328	12
DG 2570 B2RF	B2R	1433	11	1297	11	1462	8	1180	15	1343	10
DG 2595 B2RF	B2R	1354	16	1240	15	1435	11	1096	19	1281	15
DG 2610 B2RF	B2R	1269	21	1060	19	1150	21	1123	17	1150	20
DP 0912 B2RF	B2R	1524	7	1355	6	1454	9	1319	5	1413	5
DP 0920 B2RF	B2R	1579	4	1328	10	1487	7	1228	11	1405	6
DP 1133 B2RF	B2R	1479	10	1141	18	1351	14	1287	8	1315	13
DP 1219 B2RF	B2R	1364	15	867	20	1062	23	1419	2	1178	19
PHY 367 WRF	WRF	1286	19	1279	13	1397	13	1044	21	1251	18
PHY 375 WRF	WRF	1524	8	1352	8	1323	16	1290	7	1372	8
PHY 499 WRF	WRF	1585	3	1401	4	1499	6	1391	3	1469	4
PHX4339CB	WRF	1494	9	1455	2	1633	2	1327	4	1477	2
PX433915WRF	WRF	1566	5	1354	7	1531	3	1447	1	1474	3
FM 1740 B2F	B2R	1271	20	1289	12	1345	15	1109	18	1253	16
ST 5288 B2RF	B2R	1529	6	1260	14	1530	4	1299	6	1404	7
ST 5458 B2RF	B2R	1323	18	1364	5	1527	5	1207	13	1355	9
Mean		1448		1290		1402		1243		1346	
Not glyphosate tol.:											
AM UA48	Conv	1154	23			1165	19	1088	20	1136	3
SGS HQ210CT	Conv	1267	22			1117	22	1037	22	1140	2
SGS UA222	Conv	1418	12			1410	12	1028	23	1285	1
Mean		1280				1231		1051		1187	

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

Table 25. Three-year average lint yields (lb/a) for varieties at four locations of the 2010-2012 Arkansas Cotton Variety Test.

Variety		Keiser		Judd Hill		Marianna		Rohwer		All	
		Irrigated	r	Irrigated ¹	r	Irrigated	r	Irrigated	r	locations	r
		lb/a		lb/a		lb/a		lb/a		lb/a	
Glyphosate-tolerant:											
AM 1511 B2RF	B2R	1434	1	1437	1	1557	1	1405	3	1458	1
AM 1550 B2RF	B2R	1225	8	1387	3	1282	14	1273	11	1292	9
DG 2450 B2RF	B2R	1175	13	1365	5	1359	11	1234	14	1283	10
DG 2570 B2RF	B2R	1243	7	1328	7	1411	4	1314	8	1324	6
DG 2595 B2RF	B2R	1183	12	1222	12	1361	10	1247	12	1253	11
DP 0912 B2RF	B2R	1299	5	1387	4	1410	5	1401	4	1374	3
DP 0920 B2RF	B2R	1334	3	1286	9	1447	2	1298	9	1341	5
DP 1133 B2RF	B2R	1188	11	1147	14	1292	13	1350	6	1244	12
DP 1219 B2RF	B2R	1083	15	909	15	1010	18	1454	1	1114	15
PHY 367 WRF	WRF	1121	14	1211	13	1386	9	1126	17	1211	13
PHY 375 WRF	WRF	1324	4	1289	8	1308	12	1291	10	1303	8
PHY 499 WRF	WRF	1377	2	1342	6	1401	6	1432	2	1388	2
FM 1740 B2F	B2R	1075	16	1233	10	1257	15	1232	15	1200	14
ST 5288 B2RF	B2R	1290	6	1224	11	1395	7	1358	5	1317	7
ST 5458 B2RF	B2R	1189	10	1411	2	1429	3	1344	7	1343	4
Mean		1236		1279		1354		1317		1296	
Not glyphosate tol.:											
AM UA48	Conv	1008	18			1163	16	1163	16	1111	2
SGS HQ210CT	Conv	1011	17			1028	17	1057	18	1032	3
SGS UA222	Conv	1224	9			1393	8	1241	13	1286	1
Mean		1081				1195		1154		1143	

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

Table 26. Morphological and host plant resistance traits in the 2012 Arkansas Cotton Variety Test-Group 1.

Variety	Leaf		Stem		Bract		Tarnished plant	
	pubescence ¹	r	pubescence ¹	r	trichomes ²	r	bug damage ³	r
	rating		rating		no./cm		%	
AM 1511 B2RF	3.4	3	5.8	3	26.5	14	45	6
AM 1550 B2RF	1	19	3.9	15	18	18	50	13
NGX 0012 B2RF	1	19	3	19	16.7	20	47	9
FM 1740 B2F	1.6	12	5.3	9	28.2	10	57	18
ST 5288 B2RF	5.9	1	8	1	35	1	44	5
ST 5458 B2RF	2.5	8	5.8	4	25.9	15	48	10
CG 3787 B2RF	1.1	15	3.4	18	22	17	43	1
DG 2595 B2RF	2.9	5	6.1	2	32.4	4	47	7
DG 2450 B2RF	1.3	14	5.6	6	31.2	7	57	19
DG 2570 B2RF	1.1	15	4.6	13	26.5	12	49	12
DG 2610 B2RF	1.1	15	3	19	17.9	19	43	3
DP 0912 B2RF	1.7	11	5.3	8	34.2	3	49	11
DP 0920 B2RF	1.8	9	5.4	7	31.6	6	43	2
DP 1133 B2RF	1.5	13	3.9	15	27.1	11	53	14
DP 1219 B2RF	1.1	15	3.8	17	31.6	5	54	15
PHY 367 WRF	3	4	5	11	26.5	13	47	8
PHY 375 WRF	2.6	7	5	11	30.3	9	58	20
PHY 499 WRF	3.8	2	5.8	5	34.8	2	55	17
PHX4339CB	2.8	6	4.5	14	30.4	8	55	16
PX433915WRF	1.8	9	5.2	10	23.8	16	44	4
Frego bract, ck.	.		.		.		81	21
Mean	2.1		4.9		27.5		52	
LSD 0.10	0.8		1.1		6.3		8	
C.V.%	32.8		18.5		19.2		11.1	
R-sq x 100	81.8		77.6		60.0		52.0	

¹ Leaf and stem pubescence rated at Keiser irrigated test (6 plants per plots, 4 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 (4 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 12 times.

Table 27. Morphological and host plant resistance traits for the 2012 Arkansas Cotton Variety Test–Group 2.

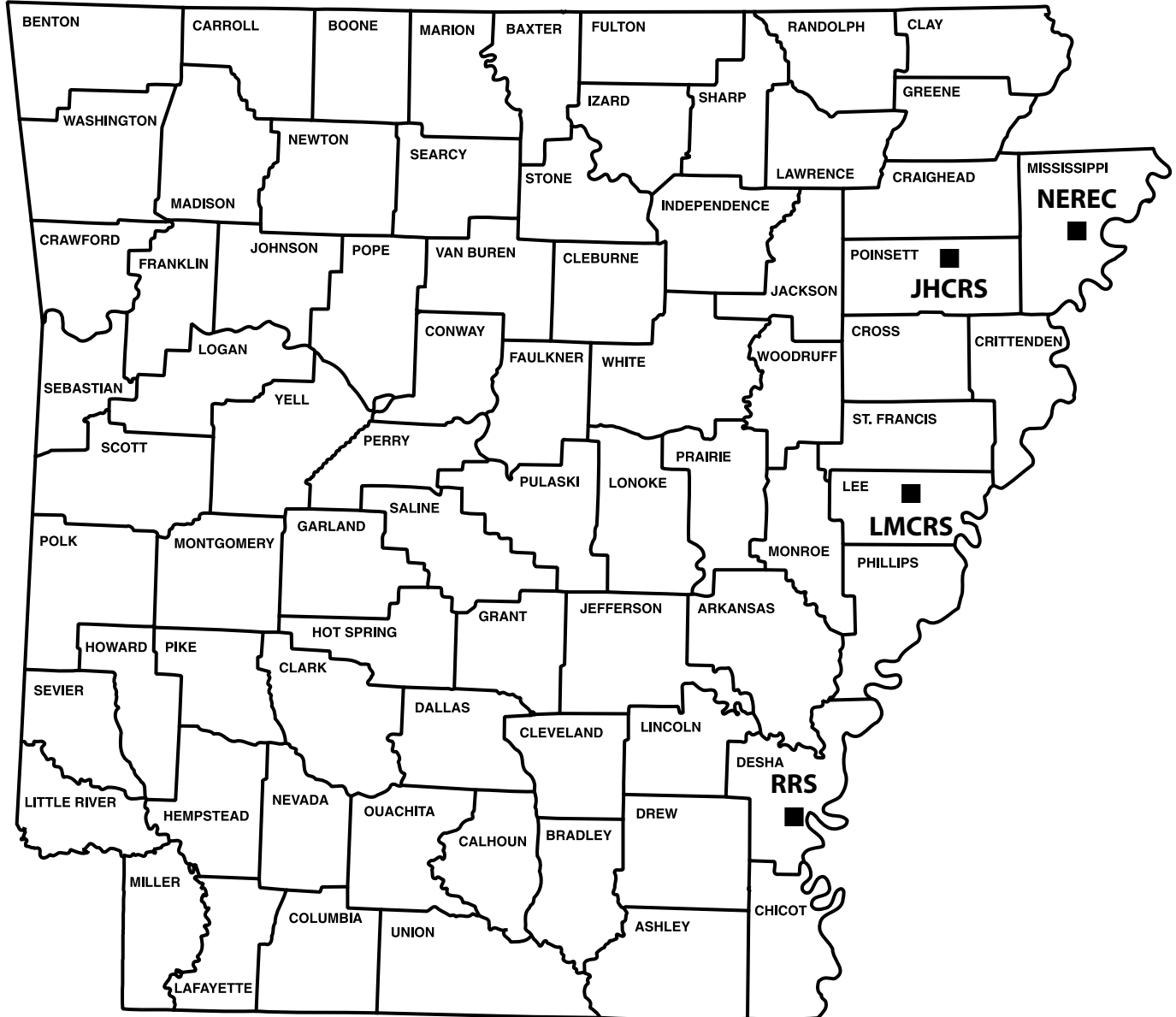
Variety	Leaf		Stem		Bract		Tarnished plant	
	pubescence ¹	r	pubescence ¹	r	trichomes ²	r	bug damage ³	r
	rating		rating		no./cm		%	
Ark 0222-15	4.3	1	4.3	15	36.5	1	50	7
AM UA48	1.0	17	4.9	11	21.4	18	62	17
BX 1346GLB2	3.3	5	5.6	8	31.1	9	42	3
BX 1348GLB2	1.7	15	6.6	2	31.9	7	62	16
FM 1944GLB2	2.2	11	5.2	10	30.4	12	62	15
CG 3428 B2RF	2.0	13	3.3	19	23.3	17	48	5
CT12214	2.1	12	6.3	4	32.7	6	40	1
DP 1321 B2RF	3.3	6	6.4	3	36.2	3	46	4
DP 1311 B2RF	3.7	2	6.1	6	34.5	5	59	14
11R136 B2R2	3.3	7	4.5	14	29.6	13	54	9
DP 1359 B2RF	1.0	17	3.8	17	31.0	11	57	12
PHX312240	2.6	8	7.2	1	36.4	2	54	10
PHX443314	2.5	9	3.9	16	25.6	16	64	18
PHX540305	1.1	16	5.6	8	35.2	4	64	19
SGS UA103	1.0	17	2.5	20	20.3	19	56	11
SGS UA222	3.6	3	4.9	11	31.8	8	42	2
SGS HQ210CT	1.0	17	3.7	18	16.7	20	65	20
ST 5458 B2RF, ck.	3.4	4	6.0	7	29.2	14	54	8
PHY 375 WRF, ck.	1.9	14	4.6	13	26.5	15	57	13
DP 0912 B2RF, ck.	2.5	9	6.3	5	31.1	9	49	6
Frego bract, ck.	86	21
Mean	2.4		5.1		29.6		57	
LSD 0.10	1.3		1.2		5.3		10	
C.V.%	45.7		20.1		15.1		25.6	
R-sq x 100	59.2		69.1		69.1		42.9	

¹ Leaf and stem pubescence rated at Keiser irrigated test (6 plants per plots, 4 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 (4 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 12 times.

COTTON VARIETY TEST LOCATIONS



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

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