

# Arkansas Cotton Variety Test

2015

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



ARKANSAS AGRICULTURAL EXPERIMENT STATION

February 2016

Research Series 632

This publication is available on the internet at: <http://arkansasagnews.uark.edu/1356.htm> and at [www.arkansasvarietytesting.com](http://www.arkansasvarietytesting.com)

Technical editing and cover design by Gail Halleck.

Photo Credits: Arkansas Agricultural Experiment Station, University of Arkansas System, Division of Agriculture.

---

Arkansas Agricultural Experiment Station, University of Arkansas System Division of Agriculture, Fayetteville. Mark J. Cochran, Vice President for Agriculture; Clarence E. Watson, Associate Vice-President for Agriculture–Research and Director, AAES. SG120/InddCS6.

The University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services without regard to race, color, sex, gender identity, sexual orientation, national origin, religion, age, disability, marital or veteran status, genetic information, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

ISSN: 1941-1537 CODEN: AKAMA6

**ARKANSAS  
COTTON  
VARIETY TEST  
2015**

**F. Bourland  
A. Beach  
C. Kennedy  
L. Martin  
A. Rouse  
B. Robertson**

**Arkansas Agricultural Experiment Station  
University of Arkansas System  
Division of Agriculture  
Fayetteville, Arkansas 72701**



## SUMMARY

The primary goal of the Arkansas Cotton Variety Test is to provide unbiased data regarding the agronomic performance of cotton varieties and advanced breeding lines in the major cotton-growing areas of Arkansas. This information helps seed companies establish marketing strategies and assists producers in choosing varieties to plant. These annual evaluations will then facilitate the inclusion of new, improved genetic material in Arkansas cotton production. Adaptation of varieties is determined by evaluating the lines at five University of Arkansas research sites (Manila, Keiser, Judd Hill, Marianna, and Rohwer). Entries in the 2015 Arkansas Cotton Variety Test were evaluated in two groups—transgenic and conventional varieties. The 32 entries in the transgenic test included 16 entries (3 B2RF, 7 WRF, 1 W3RF, 3 GLB2, and 2 GLT) returning from the 2013 test and 16 first-year entries (12 B2XF, 1 WRF, 1 W3RF, and 2 GLT) and were evaluated at all five locations. The conventional test included 9 entries and 1 B2RF check variety and were evaluated at all locations except Manila. Reported data include lint yield, lint percentage, plant height, percent open bolls, yield component variables, fiber properties, leaf pubescence, stem pubescence, and bract trichome density. All entries in experiments were evaluated for response to tarnished plant bug and bacterial blight in separate tests at Keiser. Except for wet conditions that delayed planting in the north Arkansas sites, climatic conditions were relatively mild and good at all test locations in 2015. This 2015 report includes results of large-plot variety tests in seven counties that were coordinated by Bill Robertson.

## CONTENTS

Introduction.....	4
Materials and Methods.....	4
References.....	7
Acknowledgements.....	7
Participants in 2015 Arkansas Cotton Variety Test (Table 1).....	8
Production information for all locations (Table 2).....	9
Environmental conditions (Table 3).....	9
 Results	
Transgenic Variety Test:	
All locations (Tables 4-5).....	10
Manila (Tables 6-7).....	12
Keiser (Tables 8-9).....	14
Judd Hill (Tables 10-11).....	16
Marianna (Tables 12-13).....	18
Rohwer (Tables 14-15).....	20
2-year and 3-year yield averages (Table 16).....	22
Morphological and host-plant resistance traits (Table 17).....	23
 Conventional Variety Test:	
All locations (Tables 18-19).....	24
Keiser (Tables 20-21).....	25
Judd Hill (Tables 22-23).....	26
Marianna (Tables 24-25).....	27
Rohwer (Tables 26-27).....	28
2-year and 3-year yield averages (Table 28).....	29
Morphological and host-plant resistance traits (Table 29).....	29
 County Large-Plot, Replicated Variety Evaluation:	
Appendix Tables A1-A6.....	30



# Arkansas Cotton Variety Test 2015

*F. Bourland, A. Beach, C. Kennedy,  
L. Martin, A. Rouse, and B. Robertson<sup>1</sup>*

---

## Introduction

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

## Materials and Methods

The 32 entries in the transgenic test included 16 entries (3 B2RF, 7 WRF, 1 W3RF, 3 GLB2, and 2 GLT) returning from the 2013 test and 16 first-year entries (12 B2XF, 1 WRF, 1 W3RF, and 2 GLT) (Table 1). The transgenic test was replicated 8 times at Manila, 5 times at Judd Hill, and 6 times at Keiser, Marianna, and Rohwer. The conventional test included 9 entries and 1 B2RF check variety and were evaluated using 6 replications at Keiser, Judd Hill, Marianna and Rohwer.

Test sites included the Northeast Research and Extension Center at Keiser; the Judd Hill Cooperative Research Station at Judd Hill (near Trumann); the Lon Mann Cotton Research Station at Marianna; the Manila Airport Cotton

Research Farm at Manila; and the Rohwer Research Station at Rohwer. Cultural practices and weather data (heat units and rainfall) associated with the test sites are listed in Table 2 and Table 3, respectively.

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

## Data Collected at Single Location:

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

**Bract Trichomes:** After cutout, a bract from a full-sized, mid-canopy, 1st position boll was randomly sampled from six plants per plot (4 of the 6 replications) in the Keiser experiments. Each bract was examined for marginal trichome

---

<sup>1</sup>F. Bourland is center director and professor and A. Beach is a program technician at the Northeast Research and Extension Center; C. Kennedy is resident director at the Lon Mann Cotton Research Station; L. Martin is a program technician at the Rohwer Research Station; A. Rouse is a Program Technician at the Judd Hill Cooperative Research Station; and B. Robertson is an Extension Cotton Agronomist.

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

**Bacterial Blight:** Entries in both tests were planted in flats (2 replications, 13 seed/plot) in greenhouse, and scratch inoculated with *Xanthomonas axonopodis* pv. *malvacearum*. The inoculum was obtained from naturally infected leaves collected at the 2015 Manila location. Scratches were examined for water-soaking, and percent of susceptible plants were determined.

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

#### Data Collected at All Locations:

**Plant Height:** Plant height measurements (in cm) were collected after harvest. 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 lateness of the crop, open bolls were not determined for plots at Keiser in 2015.

**Boll Samples and Lint Percentage:** Prior to mechanical harvest, hand-harvested samples of 40 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 20 bolls (5 bottom, 10 mid-canopy and 5 top bolls) were harvested and bulked to form a 40-boll sample. The 40-boll samples were ginned (lab gin without the use of lint cleaners) to determine lint fraction (the percentage of lint weight to seedcotton weight).

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

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

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

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

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

**Fiber Density:** Fiber density, reported as the number of fibers per mm<sup>2</sup>, 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 analysis of variance was significant. Yields of varieties are considered significantly different if the difference between mean yields of two varieties is greater than the LSD value. Differences that are smaller than the LSD may have occurred by chance or may be associated with uncontrolled variation, and are therefore considered not significant.

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

## Results

Entries and participants in the test are listed in Table 1. Cultural inputs and production information for variety trials at Manila, Keiser, Judd Hill, Marianna, and Rohwer are reported in Table 2. Table 3 includes weather information for north, central, and south Arkansas locations during the 2015 production season.

Rainfall in April and early May delayed planting at Keiser in 2015 (Tables 2 and 3). Relatively good distribution of rainfall occurred through most of the summer. Harvest was completed prior to late October rains at all locations except Keiser. Harvest at Keiser was delayed by late maturity (associated with late planting) and with mechanical problems associated the plot picker. With adequate moisture and warm temperatures, good stands were obtained at each location. Rainfall amounts accumulated in May at Keiser, Marianna and Rohwer were 75%, 24%, and 24% higher than the historical averages at those locations, respectively. Compared to historical averages, accumulative rainfall from May through October, 2015, was 19% higher at Keiser, 21% lower at Marianna, and 40% higher at Rohwer. Heat unit accumulation was about 10% higher than normal at each location.

Performance data of entries in the 2015 Arkansas Transgenic Cotton Variety Test at Manila, Keiser, Judd Hill, Marianna and Rohwer are provided in Tables 4 through

15 with yield and yield-related variables in the even-numbered tables and fiber properties in the odd-numbered tables. Performance data across all five locations are presented in Tables 4 and 5. Two- and three-year yield means for entries evaluated in previous years are in Table 16. Morphological and host-plant resistance measurements for the transgenic entries are in Table 17. Performance data of entries in the 2015 Arkansas Conventional Cotton Variety Test at Keiser, Judd Hill, Marianna and Rohwer are provided in Tables 18 through 27 with yield and yield-related variables in the even-numbered tables and fiber properties in the odd-numbered tables. Two- and three-year yield means for the conventional entries evaluated in previous years are in Table 28. Morphological and host-plant resistance measurements for the conventional entries are in Table 29.

Other observations associated with each test site include:

**Manila (Tables 6 and 7).** The test at Manila was planted in the same field as in 2014, but moved about 20 rows west. In 2014, the chosen test site was located in an area with much variation in soil texture, which added to unexplained variation in the data. The soil in the field area used in 2015 was more uniform and provided better evaluation of the entries. In anticipation of high field variability, the number of replications was increased from six in 2014 to eight in 2015. The front half of the test became heavily infested with bacterial blight in early August. Mepiquat chloride (total of 64 oz/a) was used to control plant height.

**Keiser (Tables 8, 9, 20 and 21).** With recurring rains in April and May on this clay soil, the test was not planted until June 5. Excellent stands and subsequent early growth were obtained. The plants fruited well, but simply ran out of time to reach full maturity. No mepiquat chloride was applied.

**Judd Hill (Tables 10, 11, 22 and 23).** The test site at Judd Hill experienced some of the same weather conditions as Keiser, but we were able to plant the site on May 22. Incidence of Verticillium wilt was more severe than normal at this site due to relatively cool, wet conditions in early August. Nevertheless, good yields were achieved. Mepiquat chloride (total of 40 oz/a) was used to control plant height.

**Marianna (Tables 12, 13, 24 and 25).** Planting was accomplished in early May, and relatively good conditions prevailed through most of the season. Good plant stands were achieved, and plants grew at a rapid, unrestricted pace. Subsequently, early maturation and high yields (av-



eraged over 3 bales per acre) were attained. Yields at Marianna exceeded yields at all other locations. Incidence of Verticillium wilt was higher than normal. Mepiquat chloride (total of 38 oz/a) was used to control plant height.

**Rohwer (Tables 14, 15, 26 and 27).** Weather conditions allowed normal planting at Rohwer, but conditions were wet during much of August. Some early season rainfall events were heavy and caused some loss of residual herbicides and erosion of soil. Subsequent weed pressure was higher than usual. Plant growth and development were generally excellent, and lint yields averaged over 3 bales per acre were achieved by most entries. Incidence of Verticillium wilt was higher than normal at this location. Mepiquat chloride (total of 46 oz/a) was used to control plant height.

### References

- Bourland, F.M., N.R. Benson, and W.C. Robertson. 2000. Inherent biases in the Arkansas cotton variety testing program. pp. 547-549. *In Proc. Beltwide Cotton Prod. Res. Conf.*, San Antonio, Texas. 4-8 Jan. 2000. National Cotton Council, Memphis, Tenn.
- Bourland, F.M., R. Hogan, D.C. Jones, and E. Barnes. 2010. Development and utility of Q-score for characterizing cotton fiber quality. *J. Cotton Sci.* 14:53-63. Available at <http://www.cotton.org/journal/2010-14/2/upload/JCS14-53.pdf>
- Bourland, F.M., J.M. Hornbeck, A.B. McFall, and S.D. Calhoun. 2003. A rating system for leaf pubescence of cotton [Online]. *J. Cotton Sci.* 7:8-15. Available at <http://www.cotton.org/journal/2003-07/2/8.cfm>
- Bourland, F.M. and J.M. Hornbeck. 2007. Variation in marginal bract trichomes on Upland cotton. *J. Cotton Sci.* 11:242-251. Available at <http://www.cotton.org/journal/2007/11/4/242.cfm>
- Groves, F.E., and F.M. Bourland. 2010. Estimating seed surface area of cottonseed. *J. Cotton Sci.* 14:74-81. Available at <http://www.cotton.org/journal/2010-14/2/upload/JCS14-74.pdf>

### Acknowledgments

We express our appreciation to the Directors, Program Technicians and staff at the University of Arkansas System Division of Agriculture's Northeast Research and Extension Center, Lon Mann Cotton Research Station, and the Rohwer Research Station. Annually, the Judd Hill Foundation generously provides the test site for experiments at Judd Hill. We are particularly grateful to the City of Manila for making land available for testing, and to the Mississippi County Cooperative Extension Agents for assisting with this test site. 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 2015 Arkansas Cotton Variety Test.**

<b>Institution/Contact person</b>	<b>Returning entries</b>	<b>Experimental no.</b>	<b>1st year entries</b>	<b>Experimental no.</b>
Americot Inc./ Thomas Brooks			AMDG-7824 NG 3405 B2XF NG 3406 B2XF	
Bayer Crop Science / Steve Lee	FM 1944GLB2 ST 4747GLB2 ST 4946GLB2 ST 5032GLT ST 5289GLT	BX 1244GLB2  BX 1346GLB2	ST 5115GLT ST 6182GLT	
Crop Production Services / Stacie Bruff	Dyna-Gro 2285 B2RF Dyna-Gro CT14515	CT12214	Dyna-Gro 3385 B2XF Dyna-Gro CT15426	
Monsanto / David Albers	DP0912 B2RF		DP 1518 B2XF DP 1522 B2XF DP 1612 B2XF DP 1639 B2XF MON 15R513B2XF DP 1614 B2XF DP 1646 B2XF	14R925B2XF 14R922B2XF MON 14R913B2XF MON 14R934B2XF MON 15R515B2XF MON 15R551B2XF
PhytoGen Seed Co./ Chris Main	PHY 312 WRF PHY 333 WRF PHY 339 WRF PHY 427 WRF PHY 444 WRF PHY 487 WRF PHY 495 W3RF PHY 499 WRF	PX3122b-51WRF PX312240WRF PX433906WRF PX443327 PX4444-13WRF PX3003-10WRF	PHY 222 WRF PHY 496 W3RF	
<b>Conventional entries</b>				
Americot Inc.	AM UA48	Ark 0102-48		
Seed Source Genetics / Edward Jungmann	SSG UA222 SSG UA103 SSG HQ 210CT	Ark 0222-12 Ark 9803-23-04		
Insternational Seed Technology / Rafaela Carvajal	BRS - 269 BRS - 286 BRS - 293 BRS - 335			

**Table 2. Cultural practices for locations of the 2015 Arkansas Cotton Variety Test.**

Input	Location				
	Manila	Keiser	Judd Hill	Marianna	Rohwer
Soil type	Routon-Dundee- Crevasse complex	Sharkey clay	Dundee silt loam	Callaway silt loam	Hebert silt loam
N, P, K (lbs)	100-0-0	130-0-0	100-23-40	100-0-90	100-0-109
Planting date	5/14	6/5	5/6	5/2	5/1
Irrigation method	furrow	furrow	furrow	furrow	furrow
Irrigation dates	6/25, 7/20, 7/31	7/30, 8/6	7/29, 8/6, 8/17	7/2, 7/10, 7/18, 7/31, 8/7, 8/26	6/23, 7/16, 7/30, 8/10
Defoliation date	9/30, 10/7	9/30, 10/8	9/22, 9/30	9/21, 9/29	9/16, 9/23
Harvest date	10/15	10/23, 10/29	10/14	10/9	9/28

**Table 3. Weather summary for the 2015 production season in north, central and south Arkansas.**

	Month	Historical avg. <sup>a</sup>		Rainfall (in.)	Historical avg. <sup>a</sup>
		DD60s in 2015	DD60s	in 2015	rainfall
Keiser (northeast)	May	366	314	9.1	5.2
	June	647	532	3.3	3.9
	July	738	644	3.9	3.7
	August	567	583	7.3	2.9
	September	452	363	0.7	3.7
	October	169	127	2.6	3.3
	Total	2938	2563	26.9	22.6
Marianna (central)	May	355	336	6.4	5.1
	June	587	538	3.4	3.9
	July	709	646	2.9	3.9
	August	590	601	1.5	2.8
	September	490	397	0.5	3.2
	October	169	154	2.9	3.5
	Total	2900	2672	17.6	22.4
Rohwer (southeast)	May	352	354	6.1	4.9
	June	559	551	5.5	3.6
	July	704	661	2.9	3.7
	August	616	618	6.1	2.6
	September	570	415	1.6	3.0
	October	188	167	7.7	3.4
	Total	2989	2766	29.9	21.3

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

**Table 4. Yield and related properties–2015 Arkansas Cotton Variety Test across five test sites.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre <sup>1</sup>	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
PHY 312 WRF	1471	1	41.1	17	111	12	44	18	11.3	10	8.0	7	8.207	10	17091	5	156	12
DP 1518 B2XF	1459	2	40.6	20	108	19	46	11	10.0	25	7.0	30	9.479	1	15261	25	151	17
DP 1522 B2XF	1419	3	41.8	12	110	15	45	14	10.2	23	7.4	24	8.615	6	14617	27	142	27
DP 1646 B2XF	1417	4	43.4	3	114	6	44	18	9.2	31	7.2	27	8.854	5	14165	31	147	19
PHY 333 WRF	1415	5	42.5	8	111	13	45	15	10.3	20	7.8	14	8.131	11	16818	9	162	7
PHY 339 WRF	1404	6	40.9	19	112	10	47	10	10.2	24	7.1	28	8.871	4	15531	19	151	15
DP0912 B2RF	1382	7	40.1	25	107	23	49	6	10.9	12	7.5	23	8.403	7	15317	24	143	25
PHY 444 WRF	1381	8	41.7	14	113	7	41	24	11.9	7	8.6	1	7.231	22	19138	1	168	3
DG 3385 B2XF	1369	9	42.2	9	104	29	51	2	10.6	17	7.9	12	7.830	13	16151	18	154	14
DP 1612 B2XF	1358	10	39.5	29	106	27	50	5	11.2	11	7.5	22	8.224	9	15483	22	142	28
AMDG-7824	1340	11	42.6	7	100	32	46	12	10.4	19	7.9	11	7.620	16	17692	4	169	2
PHY 496 W3RF	1338	12	42.1	10	107	21	52	1	10.8	13	8.0	8	7.567	17	16607	13	156	11
DG 2285 B2RF	1329	13	40.4	22	108	20	49	6	11.5	8	7.9	10	7.527	19	16811	10	151	16
ST 4946GLB2	1328	14	40.2	24	107	22	44	17	12.4	1	8.4	3	7.072	25	16654	12	144	24
DP 1614 B2XF	1315	15	43.5	2	104	30	41	23	9.1	32	7.2	25	8.242	8	13601	32	142	26
PHY 487 WRF	1308	16	39.9	26	113	9	43	20	9.5	30	6.5	31	9.127	2	14316	30	146	21
MON 15R513B2XF	1305	17	41.1	18	115	4	47	9	10.5	18	7.5	21	7.839	12	14442	29	137	31
NG 3406 B2XF	1297	18	41.4	15	106	25	48	8	10.7	14	7.8	16	7.516	20	16701	11	157	9
ST 4747GLB2	1297	19	39.3	31	109	18	45	13	11.5	9	7.7	19	7.677	14	15495	21	139	30
PHY 495 W3RF	1293	20	42.8	6	110	14	42	21	10.2	22	7.8	15	7.466	21	17047	6	166	5
ST 5032GLT	1272	21	39.4	30	119	1	42	22	12.1	2	8.0	9	7.141	23	16969	8	147	20
PHY 222 WRF	1266	22	40.4	23	105	28	51	3	12.0	5	8.3	5	6.919	28	16535	14	144	23
ST 5115GLT	1263	23	40.4	21	109	17	37	31	12.0	4	8.2	6	6.889	29	18205	2	160	8
PHY 427 WRF	1259	24	39.6	27	112	11	45	15	9.6	29	6.4	32	8.882	3	14615	28	147	18
NG 3405 B2XF	1226	25	41.7	13	101	31	50	4	9.8	27	7.2	26	7.666	15	16336	16	163	6
DP 1639 B2XF	1209	26	43.3	4	113	8	38	30	9.7	28	7.6	20	7.103	24	15509	20	156	10
FM 1944GLB2	1197	27	38.8	32	106	26	40	26	12.0	3	7.7	18	6.984	26	15403	23	135	32
DG CT15426	1191	28	43.2	5	114	5	41	24	10.0	26	7.7	17	6.922	27	16992	7	168	4
ST 5289GLT	1179	29	39.5	28	107	24	39	28	10.6	15	7.1	29	7.552	18	14905	26	141	29
PHY 499 WRF	1156	30	42.1	11	115	3	40	27	10.6	16	7.9	13	6.611	30	16223	17	154	13
ST 6182GLT	1130	31	44.5	1	118	2	38	29	10.3	21	8.4	4	6.096	31	17730	3	172	1
DG CT14515	1088	32	41.2	16	110	16	34	32	12.0	6	8.5	2	5.736	32	16421	15	145	22
Mean	1302		41.3		110		44		10.7		7.7		7.687		16087		152	
Var. LSD 0.10	61		0.7		7		3		0.4		0.3		0.364		610		6	
Loc. LSD 0.10	25		0.4		3		1		0.2		0.1		0.151		234		2	
C.V.%	11.2		2.4		15.9		16.2		5.0		5.5		11.3		51.0		5.1	
R-sq x 100	83.6		88.0		43.9		88.0		90.9		84.4		83.0		86.6		88.6	
Prob (var x loc)	<.0001		0.8		<.0001		<.0001		0.007		0.178		<.0001		0.099		0.022	

Table 5. Fiber properties–2015 Arkansas Transgenic Cotton Variety Test across five test sites.

Variety	Lint		Quality			Fiber properties								
	yield lb/a	r	score	r	Micronaire	r	Length in.	r	Unif. ind. <sup>a</sup> %	r	Strength g/tex	r	Elongation %	r
PHY 312 WRF	1471	1	74	5	4.4	29	1.24	9	87.2	2	32.2	16	6.6	23
DP 1518 B2XF	1459	2	70	8	4.3	31	1.24	10	86.2	10	30.9	25	6.2	27
DP 1522 B2XF	1419	3	55	22	4.9	2	1.21	18	85.8	20	33.0	10	8.7	2
DP 1646 B2XF	1417	4	86	2	4.5	22	1.30	2	87.0	3	30.9	26	7.2	15
PHY 333 WRF	1415	5	70	8	4.4	28	1.24	11	86.0	15	30.8	27	6.2	29
PHY 339 WRF	1404	6	63	13	4.4	26	1.22	14	85.6	23	32.3	14	6.8	20
DP0912 B2RF	1382	7	38	32	5.0	1	1.16	32	85.2	28	32.5	13	6.9	19
PHY 444 WRF	1381	8	87	1	4.0	32	1.30	1	87.9	1	32.8	11	6.3	26
DG 3385 B2XF	1369	9	52	28	4.8	8	1.20	24	85.6	24	31.3	24	8.1	4
DP 1612 B2XF	1358	10	70	8	4.6	19	1.24	12	86.0	16	34.3	3	7.7	7
AMDG-7824	1340	11	39	31	4.6	14	1.16	30	83.7	32	29.2	31	6.3	25
PHY 496 W3RF	1338	12	53	24	4.7	10	1.19	28	86.1	14	33.8	6	7.2	13
DG 2285 B2RF	1329	13	59	19	4.6	16	1.20	22	85.9	18	31.5	22	7.7	8
ST 4946GLB2	1328	14	52	26	4.9	3	1.20	21	86.1	13	33.8	5	7.1	18
DP 1614 B2XF	1315	15	74	6	4.9	4	1.26	5	86.9	4	31.8	19	8.0	5
PHY 487 WRF	1308	16	53	24	4.5	24	1.19	26	85.1	29	32.7	12	7.3	12
MON 15R513B2XF	1305	17	69	11	4.9	4	1.24	8	86.7	5	31.6	20	7.2	13
NG 3406 B2XF	1297	18	54	23	4.6	15	1.20	25	85.6	22	32.1	17	7.8	6
ST 4747GLB2	1297	19	74	7	4.6	16	1.26	3	85.9	19	29.7	30	5.0	32
PHY 495 W3RF	1293	20	51	29	4.6	18	1.18	29	85.3	26	36.1	1	7.6	9
ST 5032GLT	1272	21	74	4	4.4	27	1.25	6	86.2	9	32.2	15	7.2	17
PHY 222 WRF	1266	22	60	15	4.8	7	1.22	15	86.0	17	32.0	18	7.5	10
ST 5115GLT	1263	23	57	21	4.5	25	1.21	17	85.3	27	33.3	9	6.7	21
PHY 427 WRF	1259	24	58	20	4.3	30	1.20	23	86.1	12	33.5	7	7.2	15
NG 3405 B2XF	1226	25	40	30	4.5	23	1.16	31	84.2	31	28.7	32	6.4	24
DP 1639 B2XF	1209	26	59	16	4.8	9	1.21	19	86.5	8	35.2	2	7.4	11
FM 1944GLB2	1197	27	77	3	4.6	12	1.26	3	86.7	6	31.5	21	5.5	31
DG CT15426	1191	28	52	27	4.5	21	1.19	27	85.4	25	31.4	23	8.8	1
ST 5289GLT	1179	29	59	18	4.6	12	1.22	16	85.0	30	30.6	29	5.5	30
PHY 499 WRF	1156	30	59	16	4.7	11	1.21	20	86.6	7	34.3	3	8.2	3
ST 6182GLT	1130	31	62	14	4.6	20	1.22	13	85.7	21	30.8	28	6.2	28
DG CT14515	1088	32	66	12	4.9	4	1.25	7	86.2	11	33.4	8	6.7	22
Mean	1302		61		4.6		1.22		85.9		32.2		7.0	
Var. LSD 0.10	61		6		0.2		0.02		0.8		0.8		0.4	
Loc. LSD 0.10	25		ns		0.1		0.01		0.3		ns		0.2	
C.V.%	11.2		14.1		4.5		1.7		1.2		3.4		7.7	
R-sq x 100	83.6		85.6		93.1		93.8		79.2		85.4		87.2	
Prob (var x loc)	<.0001		0.001		0.031		<.0001		0.218		0.088		0.650	

<sup>a</sup> Unif. ind. = uniformity index.



**Table 6. Yield and related properties–2015 Ark. Cotton Variety Test, with irrigation on a Routon-Dundee-Crevasse complex soil at Manila.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
DP 1646 B2XF	1603	1	42.3	4	106	2	41	27	10.0	30	7.4	24	9.822	2	14100	30	139	24
DP 1518 B2XF	1571	2	39.6	20	100	22	44	21	10.3	29	6.9	30	10.330	1	14967	26	144	17
PHY 312 WRF	1543	3	39.9	19	100	27	51	4	12.2	7	8.3	9	8.396	9	17798	4	153	11
PHY 444 WRF	1542	4	41.3	10	103	9	42	23	12.1	9	8.7	3	8.092	13	18527	2	161	4
PHY 333 WRF	1460	5	40.5	14	97	32	51	4	11.4	15	8.0	13	8.275	12	17610	6	159	5
DP0912 B2RF	1448	6	38.9	25	105	4	46	13	11.5	13	7.5	22	8.790	7	15107	25	136	28
DP 1522 B2XF	1439	7	41.0	13	102	13	46	13	10.4	28	7.3	25	8.908	6	14611	27	140	19
DP 1614 B2XF	1429	8	42.4	2	103	10	41	26	9.3	32	7.0	29	9.225	4	13523	32	139	21
PHY 496 W3RF	1414	9	41.1	11	104	6	50	7	10.8	22	7.8	19	8.279	11	16755	12	157	6
ST 4946GLB2	1403	10	38.7	26	101	17	46	13	14.4	1	9.3	1	6.865	25	16476	17	126	32
PHY 487 WRF	1382	11	39.1	24	100	25	43	22	9.9	31	6.5	31	9.708	3	13990	31	139	23
PHY 339 WRF	1367	12	39.3	23	100	27	49	9	10.8	19	7.2	27	8.661	8	16078	19	150	13
AMDG-7824	1364	13	41.4	9	99	29	46	12	11.5	12	8.3	11	7.440	18	18802	1	168	1
DG 3385 B2XF	1350	14	41.7	8	108	1	50	7	11.3	17	8.4	6	7.276	20	16808	11	152	12
PHY 495 W3RF	1348	15	41.9	6	100	20	44	18	10.7	23	7.9	18	7.765	16	16713	13	157	7
DP 1612 B2XF	1333	16	38.6	27	103	8	51	3	11.3	18	7.3	26	8.335	10	15294	23	139	22
NG 3406 B2XF	1329	17	41.0	12	100	21	51	4	11.7	11	8.3	10	7.252	22	17553	7	155	9
ST 5032GLT	1328	18	38.3	28	100	19	42	23	13.3	2	8.3	12	7.252	21	17351	9	141	18
DG 2285 B2RF	1319	19	40.2	17	102	12	49	9	12.2	8	8.4	8	7.136	24	17372	8	150	14
MON 15R513B2XF	1318	20	40.1	18	105	5	45	17	11.5	14	8.0	14	7.528	17	15262	24	137	26
ST 4747GLB2	1270	21	38.0	30	103	10	49	9	11.9	10	7.4	23	7.778	15	15459	22	135	29
PHY 427 WRF	1261	22	37.4	32	101	16	44	18	10.5	27	6.4	32	8.945	5	14371	28	137	25
ST 5289GLT	1252	23	38.2	29	106	3	39	30	11.4	16	7.2	28	7.937	14	14111	29	128	31
PHY 222 WRF	1250	24	39.5	21	98	31	53	1	12.5	5	8.4	7	6.745	27	16502	16	139	20
ST 5115GLT	1239	25	39.4	22	100	22	42	23	12.8	4	8.5	4	6.639	29	17876	3	149	15
FM 1944GLB2	1230	26	37.4	31	102	14	46	13	12.4	6	7.6	20	7.381	19	15675	21	133	30
DP 1639 B2XF	1186	27	42.0	5	104	7	41	27	10.6	26	8.0	16	6.768	26	16166	18	153	10
NG 3405 B2XF	1182	28	40.5	15	102	15	53	1	10.8	20	7.5	21	7.159	23	16646	14	156	8
DG CT14515	1176	29	40.5	16	99	30	31	32	13.1	3	9.1	2	5.874	32	16610	15	136	27
PHY 499 WRF	1160	30	41.8	7	100	24	44	18	10.8	21	7.9	17	6.674	28	15901	20	149	16
DG CT15426	1155	31	42.3	3	100	25	41	27	10.6	25	8.0	15	6.589	30	17310	10	164	3
ST 6182GLT	1116	32	43.5	1	101	18	37	31	10.7	24	8.4	5	6.010	31	17779	5	167	2
Mean	1336		40.2		102		45		11.4		7.8		7.807		16222		147	
LSD 0.10	120		1.7		ns		5		0.6		0.6		0.690		1225		11	
C.V.%	10.8		2.4		7.8		14.5		3.1		4.6		10.7		4.5		4.3	
R-sq x 100	61.2		84.1		28.7		60.6		95.1		88.0		73.0		88.5		86.5	

**Table 7. Fiber properties–2015 Arkansas Transgenic Cotton Variety Test, with irrigation on a Routon-Dundee-Crevasse complex soil at Manila.**

Variety	Lint yield lb/a	Quality		Fiber properties										
		r	score	r	Micronaire	r	Length in.	r	Unif. ind. <sup>a</sup> %	r	Strength g/tex	r	Elongation %	r
DP 1646 B2XF	1603	1	95	2	4.4	16	1.35	1	88.5	3	31.5	24	6.6	21
DP 1518 B2XF	1571	2	78	4	4.1	29	1.29	5	87.3	9	31.3	26	6.3	27
PHY 312 WRF	1543	3	74	5	4.2	27	1.26	11	88.7	2	31.2	27	6.9	16
PHY 444 WRF	1542	4	96	1	3.9	32	1.35	2	89.1	1	31.8	19	6.5	24
PHY 333 WRF	1460	5	67	13	4.2	27	1.27	10	86.0	28	31.5	24	6.0	28
DP0912 B2RF	1448	6	33	32	4.9	2	1.17	32	86.4	24	32.6	15	6.7	19
DP 1522 B2XF	1439	7	52	27	4.8	6	1.24	19	85.5	29	32.7	13	8.6	1
DP 1614 B2XF	1429	8	73	6	4.7	8	1.28	6	87.4	7	31.6	22	7.3	11
PHY 496 W3RF	1414	9	59	21	4.4	21	1.23	23	86.9	15	33.7	7	6.9	16
ST 4946GLB2	1403	10	48	28	5.2	1	1.25	18	87.1	11	33.9	6	7.4	8
PHY 487 WRF	1382	11	59	22	4.4	21	1.23	23	86.8	18	33.6	8	7.2	13
PHY 339 WRF	1367	12	67	13	4.1	29	1.26	11	86.3	26	31.9	18	7.0	15
AMDG-7824	1364	13	42	29	4.4	16	1.19	30	84.6	31	29.5	31	6.3	26
DG 3385 B2XF	1350	14	40	31	4.9	2	1.20	29	85.3	30	32.3	17	7.6	6
PHY 495 W3RF	1348	15	56	24	4.5	12	1.22	27	86.4	24	35.7	1	7.6	7
DP 1612 B2XF	1333	16	65	16	4.4	16	1.25	17	86.4	22	35.0	2	7.4	8
NG 3406 B2XF	1329	17	56	24	4.5	12	1.22	25	86.4	22	32.5	16	8.0	4
ST 5032GLT	1328	18	80	3	4.3	26	1.30	3	87.0	12	33.4	12	6.8	18
DG 2285 B2RF	1319	19	61	19	4.5	12	1.23	21	87.3	9	31.7	20	7.8	5
MON 15R513B2XF	1318	20	60	20	4.8	5	1.26	13	86.6	20	33.5	10	6.5	23
ST 4747GLB2	1270	21	72	8	4.4	21	1.28	6	86.3	27	30.4	30	5.0	32
PHY 427 WRF	1261	22	71	9	4.1	31	1.26	13	87.9	6	33.6	8	7.4	8
ST 5289GLT	1252	23	69	12	4.6	10	1.27	8	87.0	12	30.7	29	5.5	30
PHY 222 WRF	1250	24	67	13	4.7	8	1.26	13	87.3	8	32.6	14	7.3	11
ST 5115GLT	1239	25	63	18	4.4	16	1.24	19	86.9	17	33.9	5	6.5	24
FM 1944GLB2	1230	26	71	9	4.4	16	1.27	8	86.6	20	31.7	20	5.3	31
DP 1639 B2XF	1186	27	64	17	4.6	11	1.23	21	88.0	4	34.8	3	7.1	14
NG 3405 B2XF	1182	28	41	30	4.5	12	1.19	30	84.1	32	28.9	32	6.6	22
DG CT14515	1176	29	73	6	4.9	4	1.30	3	86.9	15	33.5	10	6.7	19
PHY 499 WRF	1160	30	54	26	4.7	7	1.22	27	87.0	14	34.2	4	8.4	2
DG CT15426	1155	31	57	23	4.4	21	1.22	25	86.8	18	31.1	28	8.4	2
ST 6182GLT	1116	32	70	11	4.3	25	1.26	13	87.9	5	31.6	22	5.8	29
Mean	1336		63		4.5		1.25		86.8		32.4		6.9	
LSD 0.10	120		16		0.4		0.03		ns		1.8		0.9	
C.V.%	10.8		14.8		5.1		1.4		1.4		3.3		7.3	
R-sq x 100	61.2		82.0		75.1		91.4		61.0		81.0		85.5	

<sup>a</sup> Unif. ind. = uniformity index.

**Table 8. Yield and related properties–2015 Ark. Cotton Variety Test, with irrigation on a Tunica silty clay soil at Keiser.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
PHY 312 WRF	980	1	41.3	23	113	6	.	.	9.7	16	6.9	22	6.422	1	15937	24	160	24
DP 1612 B2XF	952	2	40.5	29	98	27	.	.	10.8	3	7.6	8	5.699	10	16203	22	152	29
DP0912 B2RF	936	3	42.4	14	109	12	.	.	9.8	11	7.4	12	5.730	8	16890	12	168	17
PHY 222 WRF	930	4	40.7	28	98	28	.	.	11.4	1	8.0	3	5.300	17	16700	15	150	31
PHY 339 WRF	927	5	42.0	18	105	20	.	.	9.4	19	6.9	23	6.129	3	16752	13	172	15
PHY 333 WRF	925	6	43.2	10	108	15	.	.	8.6	28	6.7	27	6.251	2	16100	23	174	12
DG 3385 B2XF	919	7	44.3	6	100	25	.	.	9.3	20	7.6	7	5.523	15	16742	14	172	14
DG 2285 B2RF	902	8	41.7	20	109	11	.	.	10.1	9	7.3	14	5.582	14	17093	11	167	18
DP 1518 B2XF	897	9	40.5	30	101	24	.	.	9.8	12	6.8	25	5.963	5	15071	30	151	30
PHY 495 W3RF	883	10	44.7	3	114	4	.	.	8.7	27	7.2	16	5.590	12	17483	8	188	6
PHY 496 W3RF	882	11	43.9	8	100	26	.	.	9.8	13	7.8	5	5.159	22	16418	18	164	21
NG 3406 B2XF	874	12	42.8	13	105	18	.	.	9.2	23	7.1	18	5.585	13	17882	7	186	7
PHY 427 WRF	861	13	41.3	22	111	8	.	.	8.8	26	6.4	31	6.124	4	16335	19	175	11
ST 4946GLB2	855	14	41.2	24	105	19	.	.	9.6	17	6.9	24	5.650	11	17443	9	176	10
ST 4747GLB2	850	15	40.4	32	110	10	.	.	10.3	5	7.3	15	5.317	16	16449	17	159	27
AMDG-7824	842	16	43.3	9	93	31	.	.	9.7	15	7.6	6	5.038	25	19090	3	191	3
ST 5115GLT	840	17	41.7	19	109	13	.	.	10.1	7	7.4	11	5.136	23	20202	2	197	1
PHY 444 WRF	839	18	41.6	21	116	3	.	.	11.2	2	8.1	2	4.697	27	20876	1	191	4
PHY 487 WRF	831	19	40.9	26	110	9	.	.	8.9	25	6.5	29	5.803	7	15411	28	163	22
MON 15R513B2XF	829	20	42.0	17	108	14	.	.	10.1	10	7.5	10	5.045	24	15096	29	148	32
NG 3405 B2XF	821	21	42.2	15	95	30	.	.	8.5	29	6.3	32	5.883	6	15879	25	174	13
DP 1522 B2XF	817	22	43.1	11	103	22	.	.	9.3	21	7.1	17	5.187	19	15533	27	160	25
DP 1646 B2XF	810	23	44.9	2	107	16	.	.	7.7	32	6.4	30	5.718	9	14769	31	171	16
FM 1944GLB2	807	24	40.7	27	102	23	.	.	10.1	8	7.1	19	5.171	21	16220	21	159	26
DP 1614 B2XF	774	25	44.3	5	92	32	.	.	8.1	31	6.6	28	5.299	18	14619	32	165	20
DP 1639 B2XF	765	26	44.7	4	106	17	.	.	8.1	30	6.7	26	5.180	20	16487	16	185	8
ST 6182GLT	750	27	46.6	1	124	1	.	.	9.3	22	8.1	1	4.171	29	18167	5	188	5
ST 5289GLT	731	28	41.0	25	104	21	.	.	9.8	14	7.0	20	4.724	26	15677	26	156	28
PHY 499 WRF	698	29	42.1	16	118	2	.	.	9.4	18	7.0	21	4.540	28	16287	20	167	19
ST 5032GLT	635	30	40.5	31	95	29	.	.	10.8	3	7.5	9	3.838	30	17394	10	163	23
DG CT14515	606	31	43.1	12	114	4	.	.	10.1	6	7.8	4	3.522	32	17939	6	176	9
DG CT15426	590	32	44.2	7	113	7	.	.	9.2	24	7.4	13	3.615	31	18500	4	192	2
Mean	830		42.4		106		.		9.6		7.2		5.268		16801		171	
LSD 0.10	128		1.8		9		.		1.3		0.8		0.820		1852		21	
C.V.%	16.4		2.6		9.0		.		7.9		6.8		16.3		6.5		7.3	
R-sq x 100	45.0		81.3		50.1		.		73.3		67.3		50.9		78.0		70.6	

**Table 9. Fiber properties—2015 Arkansas Transgenic Cotton Variety Test, with irrigation on a Sharkey clay soil at Keiser.**

Variety	Lint		Quality		Fiber properties									
	yield lb/a	r	score	r	Micronaire	r	Length in.	r	Unif. ind. <sup>a</sup> %	r	Strength g/tex	r	Elongation %	r
PHY 312 WRF	980	1	84	2	4.0	24	1.25	5	86.9	3	33.8	7	6.4	25
DP 1612 B2XF	952	2	73	10	4.5	6	1.23	10	85.7	10	35.7	2	8.0	6
DP0912 B2RF	936	3	42	31	4.6	3	1.15	29	84.3	26	33.2	11	7.6	13
PHY 222 WRF	930	4	82	5	4.5	7	1.26	4	85.5	12	31.6	23	7.9	8
PHY 339 WRF	927	5	62	18	4.1	21	1.20	15	84.4	24	32.6	14	7.0	20
PHY 333 WRF	925	6	79	7	3.9	29	1.24	7	86.2	7	30.9	25	6.6	24
DG 3385 B2XF	919	7	57	21	4.5	4	1.19	20	84.7	20	31.9	19	8.5	2
DG 2285 B2RF	902	8	65	16	4.2	14	1.19	16	86.0	8	31.7	21	7.5	14
DP 1518 B2XF	897	9	83	4	4.2	14	1.25	5	86.5	4	32.0	18	6.1	27
PHY 495 W3RF	883	10	52	27	4.2	18	1.16	28	84.3	26	34.7	6	7.7	10
PHY 496 W3RF	882	11	65	14	4.6	1	1.19	16	86.4	5	36.1	1	7.7	12
NG 3406 B2XF	874	12	58	20	4.0	28	1.18	23	85.5	13	32.9	12	8.0	6
PHY 427 WRF	861	13	54	26	3.9	29	1.19	20	84.9	17	32.5	15	7.7	10
ST 4946GLB2	855	14	55	23	4.0	24	1.18	25	84.2	28	33.3	10	7.0	21
ST 4747GLB2	850	15	72	11	4.2	14	1.24	7	84.9	17	28.4	32	5.6	30
AMDG-7824	842	16	40	32	4.3	12	1.14	32	82.0	32	29.7	30	5.9	28
ST 5115GLT	840	17	49	29	3.8	31	1.17	26	84.0	30	33.4	9	7.1	17
PHY 444 WRF	839	18	79	8	3.6	32	1.27	1	86.4	6	32.3	17	5.9	28
PHY 487 WRF	831	19	45	30	4.4	9	1.15	29	83.4	31	32.8	13	7.3	15
MON 15R513B2XF	829	20	88	1	4.5	4	1.26	2	87.2	2	31.8	20	7.1	17
NG 3405 B2XF	821	21	51	28	4.1	21	1.15	29	85.2	16	28.8	31	6.2	26
DP 1522 B2XF	817	22	55	23	4.6	1	1.19	20	84.6	22	33.5	8	8.5	3
DP 1646 B2XF	810	23	74	9	4.2	19	1.23	9	85.4	14	31.2	24	6.7	23
FM 1944GLB2	807	24	71	12	4.2	14	1.22	13	85.3	15	30.9	26	5.4	32
DP 1614 B2XF	774	25	68	13	4.4	9	1.23	10	84.5	23	30.1	29	8.1	5
DP 1639 B2XF	765	26	57	21	4.1	20	1.18	23	84.2	28	35.7	3	7.8	9
ST 6182GLT	750	27	61	19	4.5	7	1.19	16	84.8	19	30.8	27	6.9	22
ST 5289GLT	731	28	65	14	4.4	9	1.21	14	84.3	25	30.2	28	5.5	31
PHY 499 WRF	698	29	80	6	4.0	24	1.23	10	87.6	1	35.1	5	8.3	4
ST 5032GLT	635	30	84	2	4.0	24	1.26	2	85.7	9	32.4	16	7.3	16
DG CT14515	606	31	65	16	4.3	12	1.19	16	85.7	10	35.3	4	7.1	19
DG CT15426	590	32	55	23	4.1	21	1.17	26	84.7	20	31.7	22	9.3	1
Mean	830		64		4.2		1.20		85.1		32.3		7.2	
LSD 0.10	128		18		0.4		0.05		2.1		2.0		1.0	
C.V.%	16.4		16.6		5.5		2.2		1.4		3.6		8.0	
R-sq x 100	45.0		77.1		74.6		81.0		64.6		85.1		85.3	

<sup>a</sup> Unif. ind. = uniformity index.

**Table 10. Yield and related properties–2015 Ark. Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre <sup>1</sup>	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
DP 1518 B2XF	1385	1	39.5	17	130	13	29	16	9.9	28	6.6	30	9.476	1	16266	16	161	9
DG 3385 B2XF	1384	2	40.3	12	117	31	35	4	10.8	15	7.4	18	8.504	4	16585	14	155	15
PHY 312 WRF	1370	3	39.2	19	130	14	32	12	11.3	12	7.4	17	8.394	8	17633	4	160	10
DP 1646 B2XF	1362	4	42.5	4	139	4	28	18	9.7	30	7.3	21	8.504	5	15041	27	151	16
PHY 333 WRF	1352	5	41.5	6	133	10	30	14	10.6	19	7.7	9	7.997	12	17428	7	165	6
DP 1522 B2XF	1349	6	41.0	7	124	20	27	19	10.3	25	7.3	22	8.449	7	14376	30	139	26
AMDG-7824	1338	7	40.9	8	112	32	30	14	10.3	23	7.4	19	8.232	9	16951	12	163	7
ST 4747GLB2	1320	8	38.4	26	123	21	29	16	11.9	8	7.6	12	7.899	13	15819	21	138	27
PHY 339 WRF	1305	9	38.9	23	137	7	33	8	10.7	18	6.9	29	8.594	3	15202	24	143	20
DP0912 B2RF	1297	10	38.5	25	123	22	35	4	11.6	10	7.5	16	7.886	15	15510	22	138	28
DP 1612 B2XF	1270	11	38.3	28	119	28	40	1	11.1	14	7.0	27	8.176	10	15907	20	146	18
DP 1614 B2XF	1262	12	43.2	2	119	29	25	20	9.1	32	7.1	26	8.090	11	13470	32	141	24
PHY 222 WRF	1258	13	38.3	27	128	16	35	4	12.0	7	7.6	13	7.527	17	16934	13	147	17
PHY 495 W3RF	1253	14	40.9	9	126	19	35	4	10.6	20	7.5	15	7.598	16	17491	6	166	3
PHY 499 WRF	1237	15	40.4	11	138	6	22	25	10.4	22	7.1	25	7.892	14	16127	18	155	14
ST 4946GLB2	1233	16	39.2	20	127	17	20	30	13.5	1	8.8	1	6.389	30	16371	15	131	30
PHY 487 WRF	1226	17	38.0	30	133	10	25	20	9.7	31	6.1	32	9.199	2	13897	31	140	25
DG 2285 B2RF	1213	18	38.9	24	123	23	33	8	11.8	9	7.6	14	7.287	21	16188	17	143	22
PHY 427 WRF	1206	19	38.1	29	135	8	25	20	10.3	24	6.5	31	8.469	6	14986	28	145	19
ST 5115GLT	1196	20	39.6	16	126	18	21	27	12.2	6	8.1	5	6.690	27	18929	2	163	8
DG CT15426	1189	21	42.1	5	141	3	20	30	9.9	29	7.3	20	7.376	20	17400	8	173	2
PHY 496 W3RF	1188	22	40.2	13	122	24	37	2	11.3	13	7.8	7	6.954	24	17592	5	160	11
NG 3405 B2XF	1186	23	40.5	10	120	27	33	8	10.3	26	7.2	23	7.509	18	17119	10	166	5
ST 5032GLT	1184	24	37.5	31	225	1	22	25	12.7	4	7.7	8	6.955	23	17115	11	143	21
MON 15R513B2XF	1177	25	39.6	15	139	5	33	8	10.8	16	7.2	24	7.462	19	14552	29	136	29
PHY 444 WRF	1175	26	39.2	18	131	12	31	13	12.5	5	8.2	3	6.505	29	19629	1	166	4
DP 1639 B2XF	1160	27	42.6	3	135	8	21	27	10.0	27	7.7	10	6.886	25	15933	19	157	12
FM 1944GLB2	1144	28	37.4	32	122	25	23	23	13.0	2	7.9	6	6.596	28	15411	23	127	31
NG 3406 B2XF	1121	29	39.7	14	119	29	36	3	11.4	11	7.6	11	6.694	26	17374	9	157	13
DG CT14515	1096	30	39.1	21	129	15	19	32	12.8	3	8.4	2	5.923	31	15109	26	126	32
ST 5289GLT	1084	31	39.1	22	121	26	21	27	10.7	17	6.9	28	7.091	22	15165	25	143	23
ST 6182GLT	942	32	43.6	1	141	2	23	23	10.4	21	8.2	4	5.258	32	18658	3	178	1
Mean	1233		39.9		131		28		11.0		7.5		7.577		16318		151	
LSD 0.10	163		1.9		ns		8		0.9		0.9		0.995		1205		9	
C.V.%	12.6		2.8		30.3		25.3		5.0		6.8		12.5		4.4		3.6	
R-sq x 100	43.5		81.5		24.1		49.6		88.9		70.8		60.0		89.2		92.3	



**Table 11. Fiber properties—2015 Arkansas Transgenic Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.**

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind. <sup>a</sup>	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
DP 1518 B2XF	1385	1	67	10	3.7	31	1.29	8	87.2	13	31.6	22	7.5	18
DG 3385 B2XF	1384	2	58	21	4.2	13	1.23	24	87.5	10	32.2	19	8.1	8
PHY 312 WRF	1370	3	60	18	3.9	29	1.25	17	86.2	23	30.9	27	6.8	22
DP 1646 B2XF	1362	4	94	1	4.1	21	1.36	1	88.0	6	30.7	28	8.2	7
PHY 333 WRF	1352	5	66	14	4.1	21	1.28	12	85.6	28	30.7	29	6.5	29
DP 1522 B2XF	1349	6	63	17	4.6	4	1.25	17	87.7	8	33.0	11	8.5	2
AMDG-7824	1338	7	52	27	4.2	13	1.23	27	85.7	27	31.5	23	6.7	26
ST 4747GLB2	1320	8	73	8	4.3	10	1.29	7	86.7	18	29.8	32	5.8	31
PHY 339 WRF	1305	9	66	14	4.2	13	1.27	13	86.1	25	32.6	16	6.7	26
DP0912 B2RF	1297	10	42	32	4.7	3	1.20	32	86.2	24	32.6	15	7.0	21
DP 1612 B2XF	1270	11	67	13	4.1	21	1.28	10	85.5	29	34.0	6	7.8	12
DP 1614 B2XF	1262	12	83	3	4.6	5	1.31	4	88.5	1	32.4	17	8.1	8
PHY 222 WRF	1258	13	60	19	4.2	13	1.24	22	87.1	15	32.2	18	7.9	11
PHY 495 W3RF	1253	14	55	26	4.1	21	1.23	27	86.3	22	36.7	1	7.7	15
PHY 499 WRF	1237	15	59	20	4.1	17	1.23	24	87.5	10	33.7	7	8.3	5
ST 4946GLB2	1233	16	52	27	4.9	1	1.25	17	87.5	12	34.2	4	7.8	12
PHY 487 WRF	1226	17	58	21	4.1	20	1.25	21	86.5	20	33.1	9	7.8	14
DG 2285 B2RF	1213	18	58	21	4.4	7	1.24	23	86.9	17	32.0	21	8.4	3
PHY 427 WRF	1206	19	65	16	4.0	26	1.26	15	87.1	14	34.7	3	7.3	20
ST 5115GLT	1196	20	67	10	3.9	29	1.27	13	86.7	19	33.4	8	7.5	17
DG CT15426	1189	21	48	29	4.1	21	1.22	29	85.5	29	31.1	26	9.3	1
PHY 496 W3RF	1188	22	47	30	4.3	12	1.21	30	86.1	25	33.0	11	7.4	19
NG 3405 B2XF	1186	23	44	31	4.1	17	1.21	30	84.8	32	31.3	24	6.8	23
ST 5032GLT	1184	24	80	5	4.0	26	1.31	4	87.6	9	33.1	10	8.4	3
MON 15R513B2XF	1177	25	76	7	4.4	7	1.29	8	88.3	3	31.3	25	7.7	15
PHY 444 WRF	1175	26	83	4	3.5	32	1.35	2	88.5	1	33.0	11	6.6	28
DP 1639 B2XF	1160	27	68	9	4.4	7	1.26	15	88.1	4	34.8	2	8.3	5
FM 1944GLB2	1144	28	78	6	4.5	6	1.30	6	87.7	7	32.6	14	5.6	32
NG 3406 B2XF	1121	29	57	25	4.1	17	1.23	24	87.0	16	32.2	19	8.0	10
DG CT14515	1096	30	84	2	4.7	2	1.35	3	88.1	4	34.1	5	6.7	24
ST 5289GLT	1084	31	58	24	4.3	10	1.25	17	85.4	31	30.4	31	6.5	29
ST 6182GLT	942	32	67	10	4.0	26	1.28	10	86.4	21	30.7	29	6.7	24
Mean	1233		64		4.2		1.26		86.9		32.5		7.4	
LSD 0.10	163		13		0.4		0.03		1.4		1.8		1.1	
C.V.%	12.6		11.8		5.8		1.6		1.0		3.2		9.1	
R-sq x 100	43.5		86.1		74.9		90.2		76.0		81.4		75.5	

<sup>a</sup> Unif. ind. = uniformity index.

**Table 12. Yield and related properties–2015 Ark. Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
DP 1518 B2XF	1833	1	41.7	18	108	15	38	8	9.6	29	7.0	30	11.940	1	15231	21	154	8
DP 1522 B2XF	1804	2	42.5	11	114	7	30	16	10.4	20	7.8	20	10.510	4	14689	26	141	25
PHY 312 WRF	1787	3	41.9	16	108	14	27	21	11.5	8	8.5	4	9.569	13	17137	4	154	10
PHY 333 WRF	1737	4	43.3	7	115	5	27	21	10.4	20	8.1	13	9.781	10	16816	7	161	4
PHY 339 WRF	1728	5	41.9	15	115	4	30	16	9.9	24	7.3	26	10.800	3	14883	24	147	15
DP 1612 B2XF	1722	6	40.1	26	104	21	35	10	11.4	11	7.8	18	10.000	9	15420	18	139	27
MON 15R513B2XF	1696	7	41.8	17	117	2	31	14	10.1	22	7.4	25	10.350	7	13721	30	134	29
AMDG-7824	1682	8	43.9	4	100	29	31	14	10.8	15	8.5	5	9.027	19	17452	2	164	3
DG 3385 B2XF	1676	9	42.6	9	95	31	46	1	10.7	18	8.0	15	9.514	15	15960	13	150	12
PHY 444 WRF	1675	10	42.3	13	108	13	23	25	11.8	5	8.7	2	8.769	22	18678	1	165	2
DP 1646 B2XF	1669	11	43.8	5	111	10	38	6	9.4	30	7.4	24	10.200	8	13677	31	140	26
ST 5032GLT	1665	12	39.7	29	102	26	33	12	11.7	7	7.8	19	9.671	11	15852	14	141	24
DP0912 B2RF	1649	13	39.6	30	103	24	39	5	10.7	16	7.2	28	10.420	5	14211	29	134	30
ST 4747GLB2	1647	14	40.5	24	106	20	28	18	11.4	10	7.9	17	9.429	16	14771	25	133	31
PHY 487 WRF	1610	15	40.8	22	114	6	28	20	9.3	32	6.4	32	11.360	2	14899	23	154	9
DG 2285 B2RF	1606	16	40.1	27	103	25	41	3	12.1	3	8.3	7	8.798	20	17408	3	151	11
ST 4946GLB2	1600	17	40.6	23	100	30	38	8	12.2	2	8.5	3	8.549	25	16533	8	142	19
DP 1614 B2XF	1593	18	44.4	2	101	28	28	18	9.3	31	7.5	23	9.621	12	13242	32	136	28
DG CT15426	1588	19	43.8	6	113	8	27	21	9.8	28	7.7	22	9.378	17	15436	17	154	7
NG 3406 B2XF	1572	20	41.3	21	102	27	33	12	10.7	17	7.7	21	9.247	18	15736	16	148	14
PHY 496 W3RF	1568	21	41.5	19	107	19	42	2	11.3	12	8.1	12	8.753	23	16117	11	147	16
PHY 222 WRF	1553	22	41.5	20	109	11	41	3	11.7	6	8.4	6	8.391	27	16014	12	142	21
DP 1639 B2XF	1538	23	44.0	3	112	9	19	29	9.8	26	7.9	16	8.790	21	14490	27	145	17
NG 3405 B2XF	1525	24	42.1	14	88	32	38	6	9.8	26	7.2	27	9.559	14	15760	15	158	6
PHY 427 WRF	1518	25	39.8	28	109	12	34	11	9.9	25	6.6	31	10.400	6	14380	28	142	20
ST 5115GLT	1516	26	40.4	25	107	17	23	25	11.9	4	8.2	10	8.419	26	16223	10	142	23
ST 6182GLT	1515	27	44.8	1	122	1	24	24	10.0	23	8.2	9	8.359	28	17054	5	168	1
FM 1944GLB2	1394	28	38.5	32	103	22	19	29	12.8	1	8.1	11	7.775	29	14972	22	125	32
PHY 495 W3RF	1342	29	42.8	8	107	18	17	31	10.5	19	8.0	14	7.619	30	16840	6	160	5
DG CT14515	1328	30	42.5	12	107	16	23	27	10.9	13	8.2	8	7.292	31	15262	20	142	22
ST 5289GLT	1328	31	39.2	31	103	23	22	28	10.8	14	7.0	29	8.602	24	15400	19	144	18
PHY 499 WRF	1234	32	42.6	10	116	3	17	31	11.5	9	8.7	1	6.450	32	16505	9	148	13
Mean	1591		41.8		107		30		10.7		7.8		9.292		15649		147	
LSD 0.10	139		1.7		6		7		0.7		0.7		0.832		1271		10	
C.V.%	9.1		2.4		6.2		22.9		3.9		5.1		9.4		4.8		4.2	
R-sq x 100	68.3		85.3		61.6		67.2		91.5		80.6		75.1		84.8		84.9	

**Table 13. Fiber properties—2015 Arkansas Transgenic Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna.**

Variety	Lint yield		Quality		Fiber properties									
	lb/a	r	score	r	Micronaire		Length		Unif. ind. <sup>a</sup>		Strength		Elongation	
						r	in.	r	%	r	g/tex	r	%	
DP 1518 B2XF	1833	1	64	11	4.4	30	1.23	13	85.6	23	30.6	28	6.0	28
DP 1522 B2XF	1804	2	53	21	5.1	4	1.22	16	86.6	12	32.5	12	9.6	1
PHY 312 WRF	1787	3	84	4	4.4	27	1.28	6	88.3	1	32.8	10	7.0	17
PHY 333 WRF	1737	4	75	7	4.4	27	1.26	8	86.9	8	31.7	17	6.0	30
PHY 339 WRF	1728	5	61	14	4.7	20	1.22	15	86.1	18	32.1	14	7.1	16
DP 1612 B2XF	1722	6	74	8	4.7	20	1.25	9	87.3	5	33.1	8	7.8	8
MON 15R513B2XF	1696	7	56	16	5.1	2	1.23	13	86.6	10	30.7	26	8.1	5
AMDG-7824	1682	8	38	32	4.9	10	1.18	32	84.3	31	28.9	31	6.7	22
DG 3385 B2XF	1676	9	48	27	4.9	10	1.20	23	85.4	25	30.3	30	8.4	4
PHY 444 WRF	1675	10	92	2	4.1	32	1.30	2	88.2	2	33.3	7	6.5	24
DP 1646 B2XF	1669	11	95	1	4.7	20	1.33	1	87.9	4	31.3	21	7.5	12
ST 5032GLT	1665	12	81	5	4.5	25	1.28	4	86.6	11	30.9	24	6.8	20
DP0912 B2RF	1649	13	46	28	5.0	8	1.19	27	85.8	21	31.8	16	7.3	15
ST 4747GLB2	1647	14	76	6	4.9	14	1.28	4	86.5	15	30.4	29	4.7	32
PHY 487 WRF	1610	15	53	20	4.3	31	1.20	23	84.8	29	32.1	14	7.4	14
DG 2285 B2RF	1606	16	49	25	4.7	19	1.19	27	85.1	28	31.4	20	7.5	13
ST 4946GLB2	1600	17	56	17	4.9	10	1.22	16	86.4	16	33.6	6	7.0	18
DP 1614 B2XF	1593	18	71	9	5.1	2	1.28	6	87.3	6	32.7	11	8.4	3
DG CT15426	1588	19	46	28	4.9	10	1.19	27	85.5	24	31.5	19	8.7	2
NG 3406 B2XF	1572	20	54	19	4.8	15	1.21	19	85.4	26	31.6	18	7.9	7
PHY 496 W3RF	1568	21	46	28	5.0	8	1.19	30	86.1	19	33.7	5	7.6	10
PHY 222 WRF	1553	22	49	26	5.1	5	1.20	23	86.6	12	31.1	23	7.6	10
DP 1639 B2XF	1538	23	51	22	5.2	1	1.21	19	87.1	7	34.7	2	6.6	23
NG 3405 B2XF	1525	24	46	28	4.6	23	1.20	26	84.6	30	27.7	32	6.8	20
PHY 427 WRF	1518	25	62	13	4.4	27	1.21	19	86.8	9	34.2	4	7.0	18
ST 5115GLT	1516	26	64	12	4.8	15	1.24	12	86.0	20	32.9	9	6.3	26
ST 6182GLT	1515	27	65	10	4.6	24	1.24	10	85.7	22	30.7	26	6.1	27
FM 1944GLB2	1394	28	88	3	4.8	15	1.30	2	88.1	3	30.9	25	6.0	28
PHY 495 W3RF	1342	29	50	24	4.7	18	1.19	30	85.3	27	35.7	1	7.6	9
DG CT14515	1328	30	59	15	5.1	5	1.24	10	86.2	17	32.2	13	6.4	25
ST 5289GLT	1328	31	56	17	4.5	26	1.22	16	84.2	32	31.3	21	5.6	31
PHY 499 WRF	1234	32	50	23	5.1	5	1.21	22	86.6	12	34.3	3	7.9	6
Mean	1591		60.9		4.7		1.23		86.2		31.9		7.1	
LSD 0.10	139		10		0.2		0.03		1.4		16.0		0.8	
C.V.%	9.1		9.8		3.0		1.3		1.0		2.9		6.3	
R-sq x 100	68.3		92.8		89.4		92.8		77.9		86.3		91.0	

<sup>a</sup> Unif. ind. = uniformity index.

**Table 14. Yield and related properties—2015 Ark. Cotton Variety Test, with irrigation on a Hebert silt loam at Rohwer.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
PHY 339 WRF	1686	1	42.3	14	114	3	72	7	10.1	25	7.5	28	10.190	2	14737	21	144	14
DP 1522 B2XF	1665	2	41.3	20	113	10	73	4	10.5	20	7.6	25	9.897	3	13875	27	132	28
PHY 312 WRF	1635	3	43.4	9	114	3	63	30	11.5	9	9.0	4	8.222	20	16947	6	152	9
PHY 495 W3RF	1611	4	43.9	4	111	12	70	17	10.5	22	8.4	12	8.682	13	16707	7	159	4
DG 2285 B2RF	1587	5	41.1	24	106	22	70	17	11.3	10	8.1	14	8.920	9	15993	16	145	13
PHY 496 W3RF	1587	6	43.9	3	109	18	76	2	10.8	15	8.6	9	8.349	18	16155	14	151	10
PHY 444 WRF	1585	7	43.8	5	112	11	64	29	11.7	8	9.4	1	7.685	28	17982	1	159	3
PHY 333 WRF	1574	8	44.2	1	110	14	67	25	10.6	18	8.6	11	8.280	19	16135	15	153	7
DP 1646 B2XF	1568	9	43.3	11	111	13	68	23	9.4	31	7.4	29	9.641	4	13237	30	135	24
DP 1518 B2XF	1559	10	41.7	19	109	17	71	15	10.3	24	7.5	27	9.404	5	14773	20	143	15
NG 3406 B2XF	1551	11	42.1	16	108	20	70	17	10.7	16	8.0	17	8.753	12	14961	18	141	20
DP0912 B2RF	1544	12	41.3	22	99	31	74	3	10.9	13	7.8	20	8.971	8	14867	19	138	23
DG 3385 B2XF	1524	13	42.2	15	101	28	72	7	10.6	17	8.0	18	8.627	14	14662	23	139	21
ST 5115GLT	1518	14	41.0	25	110	14	59	32	12.8	2	9.0	2	7.611	29	17797	2	148	11
ST 5032GLT	1517	15	40.9	26	98	32	66	28	12.2	4	8.7	8	7.920	23	17135	4	148	12
ST 4946GLB2	1511	16	41.2	23	110	16	70	17	12.2	5	8.7	7	7.860	24	16445	9	142	19
DP 1612 B2XF	1507	17	39.9	30	106	23	72	7	11.3	11	7.7	24	8.859	10	14592	24	132	27
MON 15R513B2XF	1480	18	41.9	17	114	6	77	1	10.3	23	7.6	26	8.853	11	13578	28	131	31
DP 1614 B2XF	1472	19	43.3	12	106	21	67	25	9.8	30	7.7	22	8.620	15	13150	31	131	30
AMDG-7824	1467	20	43.5	8	99	30	73	6	9.9	28	7.8	21	8.528	16	16167	13	161	2
ST 5289GLT	1462	21	40.2	29	102	27	70	17	10.6	18	7.2	30	9.200	7	14171	26	134	25
PHY 499 WRF	1461	22	43.5	7	115	2	71	15	10.9	14	8.6	10	7.694	27	16296	11	152	8
PHY 487 WRF	1452	23	40.6	28	114	6	72	7	9.9	28	7.0	31	9.387	6	13386	29	133	26
DG CT15426	1445	24	43.7	6	115	1	72	7	10.5	21	8.4	13	7.837	25	16316	10	155	6
PHY 427 WRF	1442	25	41.3	21	114	8	72	7	8.8	32	6.3	32	10.380	1	13007	32	138	22
NG 3405 B2XF	1423	26	43.0	13	102	26	73	4	9.9	27	7.7	23	8.361	17	16279	12	162	1
ST 4747GLB2	1411	27	39.4	32	108	19	72	7	11.9	6	8.0	16	7.966	22	14976	17	131	29
DP 1639 B2XF	1399	28	43.4	10	114	8	68	24	10.0	26	8.0	19	7.966	21	14466	25	142	17
FM 1944GLB2	1387	29	39.7	31	105	25	69	22	11.9	7	8.1	15	7.802	26	14736	22	129	32
PHY 222 WRF	1344	30	41.8	18	101	29	72	7	12.2	3	9.0	5	6.790	30	16527	8	142	18
ST 6182GLT	1297	31	44.2	2	114	5	67	25	11.0	12	9.0	6	6.571	31	16990	5	157	5
DG CT14515	1204	32	40.8	27	106	24	60	31	12.9	1	9.0	3	6.056	32	17183	3	142	16
Mean	1496		42.1		108		70		10.9		8.1		8.434		15445		144	
LSD 0.10	146		1.3		9		8		0.9		0.5		0.824		1331		11	
C.V.%	10.3		1.8		8.6		11.5		4.6		3.9		10.2		5.1		4.4	
R-sq x 100	41.8		87.2		30.2		27.5		88.5		90.7		62.8		86.8		83.5	

Table 15. Fiber properties—2015 Arkansas Transgenic Cotton Variety Test, with irrigation on a Hebert silt loam at Rohwer.

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind. <sup>a</sup>	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
PHY 339 WRF	1686	1	59	11	5.2	29	1.15	13	85.2	9	32.3	13	6.5	19
DP 1522 B2XF	1665	2	52	17	5.7	3	1.15	13	84.8	13	33.5	7	8.5	1
PHY 312 WRF	1635	3	69	6	5.3	25	1.18	8	86.0	3	32.4	12	5.9	24
PHY 495 W3RF	1611	4	43	26	5.4	16	1.11	28	84.5	17	37.6	1	7.3	8
DG 2285 B2RF	1587	5	61	9	5.2	31	1.17	9	84.2	22	30.6	24	7.3	8
PHY 496 W3RF	1587	6	49	21	5.6	8	1.14	21	84.8	13	32.5	10	6.5	18
PHY 444 WRF	1585	7	87	1	4.9	32	1.22	2	87.5	1	33.8	6	5.9	24
PHY 333 WRF	1574	8	61	9	5.4	19	1.17	9	85.7	4	29.3	29	6.0	23
DP 1646 B2XF	1568	9	74	5	5.4	16	1.21	5	85.5	6	30.0	26	7.1	11
DP 1518 B2XF	1559	10	56	13	5.3	25	1.15	13	84.5	19	29.2	30	5.5	29
NG 3406 B2XF	1551	11	45	25	5.7	3	1.14	23	83.9	24	31.6	18	7.2	10
DP0912 B2RF	1544	12	29	30	5.8	1	1.09	30	83.2	29	32.3	14	6.1	21
DG 3385 B2XF	1524	13	56	13	5.6	8	1.16	11	85.0	12	29.9	27	7.7	5
ST 5115GLT	1518	14	42	27	5.5	12	1.13	26	83.1	30	33.0	8	6.1	21
ST 5032GLT	1517	15	47	24	5.4	19	1.13	26	84.3	21	31.5	20	6.7	15
ST 4946GLB2	1511	16	51	20	5.5	10	1.13	24	85.4	7	34.3	4	6.3	20
DP 1612 B2XF	1507	17	69	6	5.3	25	1.19	7	85.1	10	34.0	5	7.3	7
MON 15R513B2XF	1480	18	64	8	5.6	7	1.19	6	84.7	15	31.0	22	6.7	14
DP 1614 B2XF	1472	19	76	4	5.6	5	1.22	2	86.6	2	32.2	15	8.2	3
AMDG-7824	1467	20	24	31	5.4	16	1.09	30	82.1	32	26.6	32	5.8	26
ST 5289GLT	1462	21	49	23	5.4	19	1.13	24	84.3	20	30.8	23	4.6	31
PHY 499 WRF	1461	22	54	16	5.5	12	1.15	13	84.5	17	34.4	3	8.1	4
PHY 487 WRF	1452	23	51	19	5.5	12	1.15	18	84.2	23	31.8	17	7.0	12
DG CT15426	1445	24	55	15	5.3	23	1.15	18	84.6	16	31.6	18	8.3	2
PHY 427 WRF	1442	25	38	29	5.3	23	1.10	29	83.8	27	32.5	11	6.6	16
NG 3405 B2XF	1423	26	22	32	5.4	19	1.08	32	82.6	31	26.7	31	5.7	27
ST 4747GLB2	1411	27	76	3	5.2	29	1.22	2	85.1	11	29.7	28	4.1	32
DP 1639 B2XF	1399	28	57	12	5.6	5	1.16	12	85.4	7	36.0	2	7.4	6
FM 1944GLB2	1387	29	80	2	5.3	25	1.22	1	85.6	5	31.3	21	5.0	30
PHY 222 WRF	1344	30	42	28	5.8	2	1.14	21	83.4	28	32.6	9	6.8	13
ST 6182GLT	1297	31	49	21	5.5	10	1.15	18	83.8	26	30.3	25	5.6	28
DG CT14515	1204	32	52	17	5.5	12	1.15	13	83.9	24	32.2	16	6.6	17
Mean	1496		54		5.4		1.15		84.6		31.8		6.5	
LSD 0.10	146		15		0.3		0.04		1.8		2.1		0.8	
C.V.%	10.3		16.4		2.9		1.9		1.2		3.9		7.2	
R-sq x 100	41.8		85.8		73.9		86.6		69.7		88.1		90.7	

<sup>a</sup> Unif. ind. = uniformity index.



**Table 16. Two-year and 3-year average lint yields (lb/a) for transgenic varieties at the five locations of the 2014-2015 Arkansas Cotton Variety Test.**

Variety	Traits	Manila		Keiser		Judd Hill		Marianna		Rohwer		All locations	
		Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r
		lb/a		lb/a		lb/a		lb/a		lb/a		lb/a	
Two-year (2014-2015) means													
PHY 312 WRF	WRF	1525	1	1301	1	1382	1	1606	3	1687	1	1500	1
DP0912 B2RF	B2RF	1396	3	1207	3	1260	4	1509	6	1669	2	1408	3
ST 4946GLB2	GLB2	1361	4	1123	7	1176	5	1529	4	1660	3	1369	5
PHY 339 WRF	WRF	1297	8	1132	5	1169	6	1496	8	1643	4	1347	6
PHY 495 W3RF	W3RF	1245	11	1130	6	1168	7	1266	13	1626	5	1287	9
DG 2285 B2RF	B2RF	1302	7	1065	11	1160	8	1502	7	1585	6	1322	7
PHY 444 WRF	WRF	1268	9	1123	8	1150	9	1389	10	1584	7	1302	8
PHY 333 WRF	WRF	1397	2	1211	2	1290	3	1640	1	1583	8	1424	2
ST 5289GLT	GLT	1239	12	1024	13	963	16	1291	12	1575	9	1218	13
PHY 487 WRF	WRF	1308	6	1092	10	1014	15	1361	11	1526	10	1260	11
ST 5032GLT	GLT	1257	10	1021	14	1101	10	1519	5	1523	11	1284	10
ST 4747GLB2	GLB2	1342	5	1158	4	1307	2	1612	2	1511	12	1386	4
PHY 499 WRF	WRF	1073	16	1038	12	1084	11	1228	15	1511	13	1187	15
PHY 427 WRF	WRF	1229	13	1020	15	1076	12	1422	9	1490	14	1247	12
FM 1944GLB2	GLB2	1098	15	1104	9	1027	13	1256	14	1454	15	1188	14
DG CT14515	B2RF	1125	14	923	16	1022	14	1177	16	1353	16	1120	16
Mean		1279		1104		1147		1425		1561		1303	
Three-year (2013-2015) means													
PHY 312 WRF	WRF					1387	1	1729	1	1778	1	1631	1
ST 4946GLB2	GLB2					1130	7	1576	4	1702	2	1469	4
DP0912 B2RF	B2RF					1222	3	1582	3	1687	3	1497	3
PHY 444 WRF	WRF					1192	4	1362	10	1666	4	1407	7
PHY 333 WRF	WRF					1282	2	1650	2	1660	5	1531	2
PHY 487 WRF	WRF					1088	10	1465	8	1605	6	1386	8
PHY 339 WRF	WRF					1185	5	1532	6	1578	7	1432	6
DG 2285 B2RF	B2RF					1172	6	1566	5	1573	8	1437	5
PHY 427 WRF	WRF					1092	9	1523	7	1513	9	1376	9
PHY 499 WRF	WRF					1107	8	1402	9	1464	10	1324	10
FM 1944GLB2	GLB2					1035	11	1348	11	1403	11	1262	11
Mean						1172		1521		1603		1432	

**Table 17. Morphological and host plant resistance traits in the 2015 Arkansas Transgenic Cotton Variety Test.**

Variety	Leaf		Stem		Bract		Tarnished plant		Bacterial
	pubescence <sup>a</sup> rating	r	pubescence <sup>a</sup> rating	r	trichomes <sup>b</sup> no./cm	r	bug damage <sup>c</sup> % dam. flowers	r	blight <sup>d</sup> % sus
AMDG-7824	1.1	30	4.5	31	19.3	31	76	19	96
NG 3405 B2XF	1.0	32	5.1	30	16.2	32	74	11	91
NG 3406 B2XF	3.1	24	6.5	11	34.9	9	74	13	91
FM 1944GLB2	1.7	26	6.3	15	32.5	16	84	29	56
ST 4747GLB2	5.1	12	6.8	4	34.0	12	77	21	87
ST 4946GLB2	5.7	10	5.8	23	33.6	14	75	16	68
ST 5032GLT	6.8	3	6.2	18	31.6	17	74	14	38
ST 5115GLT	2.6	25	5.4	28	30.1	20	84	30	0
ST 5289GLT	7.0	1	7.6	1	41.7	1	64	5	0
ST 6182GLT	1.6	28	4.1	32	23.7	30	80	26	80
DG 2285 B2RF	3.6	20	6.4	12	33.6	15	70	7	91
DG 3385 B2XF	1.7	27	6.3	15	30.6	19	63	2	83
DG CT14515	3.3	23	6.1	19	29.2	21	91	32	0
DG CT15426	4.5	16	5.9	21	26.5	26	73	9	58
DP0912 B2RF	4.0	17	6.4	12	34.8	10	75	17	68
DP 1518 B2XF	6.9	2	6.9	3	36.5	5	68	6	0
DP 1522 B2XF	6.4	6	6.4	12	36.4	6	61	1	90
DP 1612 B2XF	4.9	13	7.0	2	33.7	13	63	3	27
DP 1639 B2XF	3.9	18	6.0	20	27.9	22	77	20	0
MON 15R513B2XF	6.6	5	6.8	5	38.9	3	79	25	61
DP 1614 B2XF	6.4	7	6.5	10	40.3	2	63	4	100
DP 1646 B2XF	1.1	30	5.8	25	27.7	23	79	23	11
PHY 222 WRF	6.1	9	6.6	8	36.0	8	79	24	100
PHY 312 WRF	6.6	4	6.7	7	38.1	4	72	8	71
PHY 333 WRF	6.3	8	6.8	5	36.4	7	78	22	90
PHY 339 WRF	3.6	21	5.8	24	24.8	28	85	31	0
PHY 427 WRF	4.5	15	5.7	26	25.9	27	74	12	94
PHY 444 WRF	1.2	29	5.3	29	26.7	25	76	18	38
PHY 487 WRF	3.4	22	5.4	27	31.4	18	74	15	100
PHY 495 W3RF	3.8	19	6.3	17	27.2	24	81	28	100
PHY 496 W3RF	4.8	14	5.9	22	24.3	29	81	27	100
PHY 499 WRF	5.2	11	6.6	8	34.3	11	74	10	96
Frego bract, ck.							99	33	
Mean	4.2		6.1		31.2		76		62
LSD 0.10	0.9		0.6		4.3		7		22
C.V.%	22.3		10.5		11.6		11.8		20.6
R-sq x 100	84.5		65.4		81.4		56.5		94.6

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

<sup>b</sup> Marginal trichome density of bracts determined on 6 bracts/plot (4 reps) at Keiser irrigated test.

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

<sup>d</sup> Varieties/breeding lines were planted in flats (2 replications, 13 seed/plot) in greenhouse, and scratch inoculated with *Xanthomonas axonopodis* pv. *malvacearum*. The inoculum was obtained from naturally infected leaves collected at the 2015 Manila location. Scatches were examined for water-soaking, and % of susceptible plants were determined.

**Table 18. Yield and related properties–2015 Arkansas Cotton Variety Test across four test sites.**

Variety	Lint		Lint		Open			Seed		Lint		Seed/		Fibers/		Fiber		
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre <sup>1</sup>	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
DP0912 B2RF, ck.	1460	1	40.5	1	104	8	52	3	10.5	9	7.3	6	9.073	1	14524	5	139	3
SSG UA222	1221	2	39.7	2	107	6	41	5	11.8	3	7.9	1	7.093	4	15727	1	140	2
DP 393	1181	3	38.5	5	106	7	50	4	11.7	4	7.4	5	7.178	3	14407	6	128	7
SSG UA103	1132	4	38.7	4	110	5	53	2	12.1	2	7.8	2	6.553	7	15371	2	134	5
AM UA48	1103	5	36.5	10	99	10	54	1	12.8	1	7.5	3	6.653	6	13179	9	110	10
SSG HQ 210CT	1023	6	37.8	8	100	9	39	7	10.1	10	6.3	10	7.332	2	12675	10	124	8
BRS - 335	1009	7	38.3	6	113	3	36	8	10.7	8	6.8	9	6.690	5	15133	3	142	1
BRS - 293	986	8	39.0	3	112	4	34	10	11.4	6	7.5	4	6.054	9	14263	7	129	6
BRS - 286	984	9	38.0	7	119	2	39	6	11.3	7	7.0	7	6.382	8	15088	4	138	4
BRS - 269	833	10	36.9	9	124	1	34	9	11.5	5	6.8	8	5.593	10	13329	8	120	9
Mean	1093		38.4		109		43		11.5		7.2		6.860		14370		130	
Var. LSD 0.10	58		0.6		3		3		0.5		0.3		0.362		640		7	
Loc. LSD 0.10	36		0.4		2		2		0.3		0.2		0.228		ns		4	
C.V.%	11.0		1.9		6.8		14.5		4.7		4.4		11.1		5.3		5.9	
R-sq x 100	92.4		89.0		73.3		89.5		89.9		88.7		92.2		84.5		86.9	
Prob (var x loc)	0.047		0.087		0.136		<.0001		0.008		0.005		<.0001		0.106		0.152	

**Table 19. Fiber properties–2015 Arkansas Conventional Cotton Variety Test across four test sites.**

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind <sup>a</sup>	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
DP0912 B2RF, ck.	1460	1	37	10	5.1	2	1.15	10	84.8	6	31.5	9	6.6	3
SSG UA222	1221	2	72	3	4.7	8	1.24	3	86.2	2	33.3	5	7.7	1
DP 393	1181	3	52	6	5.1	3	1.20	6	84.8	5	33.0	7	6.5	4
SSG UA103	1132	4	75	2	4.7	7	1.25	2	85.9	3	34.2	3	6.8	2
AM UA48	1103	5	87	1	5.0	4	1.30	1	87.6	1	37.0	1	4.8	10
SSG HQ 210CT	1023	6	46	9	5.0	4	1.18	8	84.6	9	33.1	6	6.0	7
BRS - 335	1009	7	59	5	4.4	10	1.20	5	84.3	10	30.7	10	6.3	5
BRS - 293	986	8	52	7	5.2	1	1.20	7	85.2	4	35.1	2	6.3	6
BRS - 286	984	9	50	8	4.7	9	1.17	9	84.6	7	33.9	4	5.4	8
BRS - 269	833	10	62	4	4.9	6	1.23	4	84.6	8	31.7	8	5.0	9
Mean	1093		59		4.9		1.21		85.2		33.3		6.1	
Var. LSD 0.10	58		7		0.2		0.02		0.8		1.2		0.4	
Loc. LSD 0.10	36		ns		0.1		ns		ns		0.8		0.2	
C.V.%	11.0		14.2		3.8		2.4		1.0		4.2		7.1	
R-sq x 100	92.4		88.4		90.4		84.6		80.2		81.9		93.0	
Prob (var x loc)	0.047		0.372		0.019		0.648		0.225		0.768		0.079	

<sup>a</sup> Unif. ind. = uniformity index.

**Table 20. Yield and related properties—2015 Ark. Cotton Variety Test, with irrigation on a Sharkey clay soil at Keiser.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
DP0912 B2RF, ck.	963	1	41.2	1	99	9	.		9.7	8	7.0	6	6.265	1	15165	4	152	2
SSG UA103	684	2	39.8	4	108	5	.		11.0	4	7.3	2	4.212	3	14860	5	138	7
DP 393	677	3	38.9	7	102	8	.		10.6	5	6.9	7	4.436	2	14621	6	138	8
SSG UA222	646	4	40.2	3	104	7	.		11.6	2	8.0	1	3.681	6	15790	1	141	4
AM UA48	608	5	36.2	10	93	10	.		12.3	1	7.1	5	3.896	4	13608	9	116	10
BRS - 286	525	6	38.7	8	120	2	.		10.4	6	6.7	8	3.532	7	15525	2	149	3
SSG HQ 210CT	517	7	39.4	6	104	6	.		9.3	10	6.2	10	3.770	5	13486	10	139	5
BRS - 335	452	8	39.6	5	116	3	.		9.6	9	6.4	9	3.229	8	15192	3	154	1
BRS - 293	406	9	40.6	2	112	4	.		10.4	7	7.3	3	2.537	9	14464	7	138	6
BRS - 269	305	10	37.8	9	124	1	.		11.4	3	7.1	4	1.949	10	13631	8	123	9
Mean	578		39.2		108		.		10.6		7.0		3.751		14634		139	
LSD 0.10	126		1.7		8		.		1.3		0.6		0.806		ns		18	
C.V.%	22.5		2.3		7.9		.		6.5		4.5		22.2		5.3		6.9	
R-sq x 100	73.0		84.0		69.3		.		79.6		83.3		72.6		71.7		76.7	

**Table 21. Fiber properties—2015 Arkansas Conventional Cotton Variety Test, with irrigation on a Sharkey clay soil at Keiser.**

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind <sup>a</sup>	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
DP0912 B2RF, ck.	963	1	38	10	4.9	3	1.14	9	83.3	9	32.2	8	6.7	3
SSG UA103	684	2	75	3	4.7	6	1.24	3	86.1	3	32.5	7	7.1	2
DP 393	677	3	61	5	4.7	5	1.20	5	84.1	7	32.8	6	6.3	5
SSG UA222	646	4	85	2	4.7	6	1.26	2	86.5	2	33.3	5	8.0	1
AM UA48	608	5	94	1	4.7	6	1.29	1	87.1	1	37.2	1	5.1	10
BRS - 286	525	6	48	8	4.5	9	1.14	9	84.7	6	34.0	3	5.6	9
SSG HQ 210CT	517	7	45	9	4.8	4	1.17	8	82.7	10	33.7	4	5.8	8
BRS - 335	452	8	56	6	4.3	10	1.18	7	84.0	8	31.2	9	6.1	6
BRS - 293	406	9	53	7	5.0	1	1.18	6	85.2	4	35.9	2	6.3	4
BRS - 269	305	10	64	4	5.0	1	1.23	4	84.9	5	30.5	10	5.9	7
Mean	578		62		4.7		1.20		84.8		33.3		6.3	
LSD 0.10	126		15		0.3		0.05		1.9		2.8		0.9	
C.V.%	22.5		13.6		4.0		2.3		1.2		46.0		7.6	
R-sq x 100	73.0		90.2		77.3		86.8		78.8		78.2		85.5	

<sup>a</sup> Unif. ind. = uniformity index.

**Table 22. Yield and related properties—2015 Ark. Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre <sup>1</sup>	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
DP0912 B2RF, ck.	1472	1	39.5	2	113	8	29	4	10.6	8	7.0	7	9.535	1	14431	6	137	3
SSG UA222	1329	2	40.3	1	117	6	29	4	11.9	6	8.1	1	7.428	5	16421	1	144	1
DP 393	1323	3	37.7	7	115	7	30	3	12.5	2	7.7	4	7.819	4	14774	5	125	7
SSG UA103	1205	4	38.1	4	120	4	35	1	12.2	3	7.6	5	7.183	6	15211	3	131	6
BRS - 293	1183	5	39.2	3	119	5	25	8	12.1	4	7.9	2	6.810	8	15495	2	134	4
SSG HQ 210CT	1173	6	37.9	5	100	10	29	4	10.5	9	6.5	8	8.173	2	12655	10	121	9
AM UA48	1139	7	36.7	10	109	9	31	2	13.2	1	7.8	3	6.628	9	13367	9	109	10
BRS - 335	1094	8	37.8	6	122	3	22	10	10.3	10	6.3	10	7.837	3	14201	7	137	2
BRS - 286	1079	9	37.0	8	124	2	28	7	11.9	5	7.1	6	6.860	7	15163	4	133	5
BRS - 269	925	10	36.7	9	135	1	24	9	10.9	7	6.4	9	6.528	10	13413	8	125	8
Mean	1192		38.1		117		28		11.6		7.3		7.480		14513		130	
LSD 0.10	137		1.6		8		4		0.8		0.5		0.850		1260		14	
C.V.%	11.8		2.4		7.0		12.9		4.0		4.1		11.7		4.7		5.9	
R-sq x 100	63.7		79.8		61.5		60.9		90.4		91.2		62.4		87.0		80.4	

**Table 23. Fiber properties—2015 Arkansas Conventional Cotton Variety Test, with irrigation on a Dundee silt loam soil at Judd Hill.**

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire		Length		Unif. ind <sup>a</sup>		Strength		Elongation	
	lb/a					r	in.	r	%	r	g/tex	r	%	r
DP0912 B2RF, ck.	1472	1	43	10	4.9	5	1.17	10	85.1	6	31.9	9	7.4	4
SSG UA222	1329	2	66	4	4.7	6	1.23	4	85.8	3	32.5	8	8.9	1
DP 393	1323	3	51	7	5.1	3	1.20	8	86.0	2	33.4	4	7.7	2
SSG UA103	1205	4	79	2	4.6	8	1.28	2	85.4	4	33.3	5	7.1	5
BRS - 293	1183	5	49	8	5.0	4	1.21	7	84.5	8	34.4	2	6.8	7
SSG HQ 210CT	1173	6	44	9	5.1	2	1.19	9	85.3	5	33.5	3	7.0	6
AM UA48	1139	7	82	1	5.2	1	1.30	1	87.5	1	35.9	1	5.1	10
BRS - 335	1094	8	69	3	4.3	10	1.25	3	84.5	8	30.3	10	7.6	3
BRS - 286	1079	9	62	5	4.6	9	1.22	6	84.9	7	32.6	6	6.2	8
BRS - 269	925	10	62	5	4.7	7	1.23	4	83.9	10	32.6	6	5.6	9
Mean	1192		61		4.8		1.23		85.3		33.0		6.9	
LSD 0.10	137		17		0.4		0.06		1.4		1.3		0.4	
C.V.%	11.8		9.5		4.0		2.6		0.9		2.1		3.5	
R-sq x 100	63.7		15.7		82.2		76.0		80.4		90.0		97.6	

<sup>a</sup> Unif. ind. = uniformity index.

**Table 24. Yield and related properties—2015 Ark. Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
DP0912 B2RF, ck.	1742	1	41.1	1	100	8	57	4	10.7	6	7.6	2	10.450	1	14356	5	135	5
SSG UA222	1631	2	40.2	2	104	6	42	5	10.5	8	7.2	5	10.310	2	16265	3	156	1
DP 393	1506	3	38.7	4	100	7	60	3	11.3	4	7.3	4	9.409	4	14107	6	128	7
AM UA48	1430	4	36.0	10	92	10	73	1	12.5	1	7.2	6	9.048	7	12516	10	106	10
SSG UA103	1423	5	39.0	3	106	4	64	2	12.0	2	7.9	1	8.202	9	16916	1	147	3
BRS - 286	1380	6	38.5	5	113	2	36	7	10.4	10	6.6	8	9.466	3	14925	4	144	4
BRS - 335	1363	7	38.1	7	104	5	29	8	11.5	3	7.3	3	8.509	8	16565	2	148	2
BRS - 293	1347	8	38.3	6	110	3	24	10	10.5	9	6.7	7	9.130	5	13636	7	130	6
SSG HQ 210CT	1290	9	37.4	8	93	9	37	6	10.5	7	6.5	10	9.064	6	12626	9	120	8
BRS - 269	1180	10	36.7	9	114	1	26	9	11.2	5	6.6	9	8.136	10	12654	8	116	9
Mean	1429		38.4		104		45		11.1		7.1		9.173		14457		133	
LSD 0.10	90		0.9		4		6		1.1		ns		0.571		1701		14	
C.V.%	6.5		1.2		4.2		13.5		5.4		6.1		6.4		6.4		5.7	
R-sq x 100	84.3		95.3		83.6		91.7		75.6		70.6		79.4		86.7		89.8	

**Table 25. Fiber properties—2015 Arkansas Conventional Cotton Variety Test, with irrigation on a Calloway silt loam soil at Marianna.**

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind <sup>a</sup>	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
DP0912 B2RF, ck.	1742	1	34	10	5.3	1	1.17	9	85.4	6	30.2	10	7.1	2
SSG UA222	1631	2	64	3	4.3	10	1.22	4	85.5	5	33.2	5	7.4	1
DP 393	1506	3	49	8	5.1	2	1.21	6	84.3	8	31.8	6	6.9	3
AM UA48	1430	4	92	1	4.9	5	1.34	1	88.4	1	37.3	1	4.8	9
SSG UA103	1423	5	78	2	4.3	9	1.26	2	86.3	2	34.8	2	6.7	4
BRS - 286	1380	6	44	9	4.6	7	1.16	10	84.1	9	33.3	4	5.3	8
BRS - 335	1363	7	56	7	4.4	8	1.21	8	83.7	10	30.4	9	6.4	6
BRS - 293	1347	8	60	5	4.8	6	1.21	6	85.7	4	33.3	3	6.5	5
SSG HQ 210CT	1290	9	59	6	4.9	4	1.22	4	86.0	3	31.8	6	6.3	7
BRS - 269	1180	10	63	4	5.0	3	1.25	3	84.7	7	31.6	8	4.3	10
Mean	1429		60		4.7		1.22		85.4		32.7		6.1	
LSD 0.10	90		10		0.4		0.05		1.5		1.8		0.8	
C.V.%	6.5		8.9		4.1		2.3		0.9		3.1		7.2	
R-sq x 100	84.3		95.2		86.9		86.8		85.3		89.8		91.4	

<sup>a</sup> Unif. ind. = uniformity index.

**Table 26. Yield and related properties—2015 Ark. Cotton Variety Test, with irrigation on a Hebert silt loam at Rohwer.**

Variety	Lint		Lint		Open		Seed		Lint		Seed/		Fibers/		Fiber			
	yield	r	frac.	r	Ht.	r	bolts	r	index	r	index	r	acre	r	seed	r	density	r
	lb/a		%		cm		%		g		g		mil.		no.		no.	
DP0912 B2RF, ck.	1663	1	40.1	1	104	7	71	1	10.8	9	7.5	7	10.040	1	14144	5	132	1
SSG UA222	1275	2	38.0	4	102	8	52	7	13.2	2	8.3	2	6.952	6	14433	4	118	6
AM UA48	1235	3	37.2	8	101	10	59	2	13.1	3	8.0	4	7.041	5	13225	9	108	10
DP 393	1218	4	38.5	2	107	4	59	2	12.3	7	7.8	5	7.048	4	14127	6	121	4
SSG UA103	1215	5	38.1	3	105	5	58	4	13.2	1	8.3	1	6.616	7	14498	3	118	5
BRS - 335	1127	6	37.5	7	111	3	58	5	11.5	8	7.1	9	7.186	3	14574	2	131	2
SSG HQ 210CT	1111	7	36.6	9	101	9	51	10	10.2	10	6.1	10	8.319	2	11932	10	116	7
BRS - 293	1009	8	37.9	5	105	6	52	7	12.8	4	8.0	3	5.737	9	13457	8	112	9
BRS - 286	953	9	37.6	6	117	2	54	6	12.4	6	7.6	6	5.670	10	14738	1	126	3
BRS - 269	920	10	36.2	10	122	1	52	7	12.5	5	7.3	8	5.760	8	13619	7	115	8
Mean	1173		37.8		107		57		12.2		7.6		7.037		13875		120	
LSD 0.10	110		0.9		7		8		0.5		0.4		0.686		1122		11	
C.V.%	9.7		1.3		6.7		14.5		2.4		2.7		10.0		4.4		4.8	
R-sq x 100	82.5		90.4		59.1		42.3		96.2		95.7		82.7		80.0		78.8	

**Table 27. Fiber properties—2015 Arkansas Conventional Cotton Variety Test, with irrigation on a Hebert silt loam at Rohwer.**

Variety	Lint		Quality		Fiber properties									
	yield	r	score	r	Micronaire	r	Length	r	Unif. ind <sup>a</sup>	r	Strength	r	Elongation	r
	lb/a						in.		%		g/tex		%	
DP0912 B2RF, ck.	1663	1	33	10	5.5	2	1.14	10	85.3	4	31.7	9	5.4	5
SSG UA222	1275	2	75	2	5.3	6	1.26	2	86.9	2	34.4	5	6.6	1
AM UA48	1235	3	79	1	5.4	4	1.28	1	87.5	1	37.8	1	4.4	9
DP 393	1218	4	48	7	5.5	2	1.19	5	84.9	7	34.1	6	5.3	6
SSG UA103	1215	5	68	3	5.4	4	1.24	3	86.0	3	36.0	3	6.4	2
BRS - 335	1127	6	57	5	4.9	10	1.19	7	85.1	6	30.9	10	5.4	4
SSG HQ 210CT	1111	7	39	9	5.3	7	1.15	9	84.4	10	33.6	7	5.0	7
BRS - 293	1009	8	45	8	5.9	1	1.19	5	85.3	4	36.8	2	5.7	3
BRS - 286	953	9	48	6	5.2	8	1.18	8	84.9	8	35.7	4	4.7	8
BRS - 269	920	10	61	4	5.2	9	1.22	4	84.8	9	32.0	8	4.0	10
Mean	1173		55		5.3		1.20		85.5		34.3		5.3	
LSD 0.10	110		18		0.3		0.05		ns		3.7		1.0	
C.V.%	9.7		17.8		3.0		2.5		1.1		5.9		10.2	
R-sq x 100	82.5		84.0		84.0		83.3		72.1		73.1		83.0	

<sup>a</sup> Unif. ind. = uniformity index.



**Table 28. Two-year and 3-year average lint yields (lb/a) for conventional varieties at the four locations of the 2014-2014 Arkansas Cotton Variety Test.**

Variety	Traits	Keiser		Judd Hill		Marianna		Rohwer		All	
		Irrigated	r	Irrigated	r	Irrigated	r	Irrigated	r	locations	r
		lb/a		lb/a		lb/a		lb/a		lb/a	
Two-year (2014-15) means											
SGS UA222	conv	1002	1	1266	1	1501	1	1253	1	1256	1
DP 393	conv	903	2	1122	2	1393	2	1178	2	1149	2
SGS UA103	conv	874	3	1032	4	1349	3	1080	6	1084	3
AM UA48	conv	865	4	1065	3	1239	4	1133	3	1075	4
BRS - 335	conv	780	6	1028	5	1160	5	1111	4	1020	5
SGS HQ210CT	conv	777	7	954	7	1122	6	1040	7	973	6
BRS - 286	conv	799	5	942	8	1106	7	985	8	958	7
BRS - 293	conv	626	8	1015	6	1055	8	1088	5	946	8
BRS - 269	conv	525	9	739	9	884	9	849	9	749	9
Mean		794		1018		1201		1079		1023	
Three-year (2013-15) means											
SGS UA222	conv			1216	1	1545	1	1264	2	1342	1
DP 393	conv			1174	2	1413	2	1287	1	1291	2
AM UA48	conv			1082	3	1265	3	1086	3	1144	3
SGS HQ210CT	conv			924	4	1196	4	1035	4	1052	4
Mean				1060		1291		1136		1162	

**Table 29. Morphological and host plant resistance traits in the 2015 Arkansas Conventional Cotton Variety Test.**

Variety	Leaf		Stem		Bract		Tarnished plant		Bacterial	
	pubescence <sup>a</sup>	r	pubescence <sup>a</sup>	r	trichomes <sup>b</sup>	r	bug damage <sup>c</sup>	r	blight <sup>d</sup>	
		rating		rating		no./cm	% dam. flowers		% res.	
BRS - 269		1.1	9	2.4	10	33.4	4	86	7	30
BRS - 286		1.8	6	6.0	3	29.1	6	81	5	9
BRS - 293		1.6	7	4.8	7	34.7	3	79	4	19
BRS - 335		5.1	1	6.3	1	34.9	2	87	9	8
SSG UA222		4.8	2	6.2	2	35.9	1	75	2	0
SSG UA103		1.2	8	4.2	9	19.3	9	85	6	0
SSG HQ 210CT		1.0	10	5.2	5	20.6	8	77	3	91
AM UA48		1.9	5	5.6	4	18.6	10	86	8	0
DP 393		2.1	4	4.7	8	28.2	7	87	10	100
DP0912 B2RF, ck.		2.9	3	4.8	6	32.4	5	73	1	100
Frego bract, ck.								99	11	.
Mean		2.3		5.0		28.7		84		36.0
LSD 0.10		0.8		1.3		4.7		9		19.0
C.V.%		35.8		27.2		13.7		12.6		29.5
R-sq x 100		80.3		50.0		80.1		49.8		97.2

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

<sup>b</sup> Marginal trichome density of bracts determined on 6 bracts/plot (4 reps) at Keiser irrigated test.

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

<sup>d</sup> Varieties/breeding lines were planted in flats (2 replications, 13 seed/plot) in greenhouse, and scratch inoculated with *Xanthomonas axonopodis* pv. *malvacearum*. The inoculum was obtained from naturally infected leaves collected at the 2015 Manila location. Scatches were examined for water-soaking, and % of susceptible plants were determined.

**Appendix Table A1. 2015 Arkansas large-plot, replicated variety evaluation trials for St. Francis county.**

<b>Year:</b> 2015	<b>Location:</b> Forrest City	<b>Previous Crop:</b> Cotton
<b>State:</b> AR	<b>Soil Type:</b> Loring Silt Loam	<b>Planting Pop:</b> 48,000
<b>County:</b> St. Francis	<b>Irrigation:</b> Yes	<b>Replications:</b> 4
<b>Latitude:</b> 34.9456	<b>Date Planted:</b> 5/6/15	
<b>Longitude:</b> -90.8196	<b>Date Harvest Aid:</b> 9/17/15	
	<b>Date Harvested:</b> 10/15/15	

Company	Variety	Traits	Yield			Strength		Uniformity
			lb/A	Turnout	Staple	g/tex	Micronaire	Index
Stoneville	ST 5115GLT	GLT	1,363	0.4210	36.50	33.55	5.10	83.10%
Stoneville	ST 4747GLB2	GLB2	1,309	0.4196	37.00	32.68	5.15	83.43%
Stoneville	ST 4946GLB2	GLB2	1,671	0.4250	37.30	34.13	5.38	84.53%
Deltapine	DP 1522B2XF	B2XF	1,510	0.4311	36.80	32.08	5.33	83.40%
Deltapine	DP 1518B2XF	B2XF	1,755	0.4319	37.30	31.58	4.88	83.58%
PhytoGen	PHY 487WRF	WRF	1,579	0.4425	36.80	32.23	5.23	83.10%
PhytoGen	PHY 312WRF	WRF	1,525	0.4352	37.80	32.78	5.00	84.38%
NexGen	NG 3405B2XF	B2XF	1,523	0.4387	37.30	32.23	4.80	83.95%
NexGen	NG 3406B2XF	B2XF	1,564	0.4333	36.70	30.43	5.07	83.83%
Dyna-Gro	DG 3385B2XF	B2XF	1,557	0.4303	36.80	31.85	5.15	84.55%

**Appendix Table A2. 2015 Arkansas large-plot, replicated variety evaluation trials for Craighead county.**

<b>Year:</b> 2015	<b>Location:</b> Jonesboro	<b>Previous Crop:</b> Cotton
<b>State:</b> AR	<b>Soil Type:</b> Amagon Silt Loam	<b>Planting Pop:</b> 42,700
<b>County:</b> Craighead	<b>Irrigation:</b> Yes	<b>Replications:</b> 4
<b>Latitude:</b> 35.7930	<b>Date Planted:</b> 5/1/15	
<b>Longitude:</b> -90.5400	<b>Date Harvest Aid:</b> 9/30/15	
	<b>Date Harvested:</b> 10/21/15	

Company	Variety	Traits	Yield			Strength		Uniformity
			lb/A	Turnout	Staple	g/tex	Micronaire	Index
Stoneville	ST 5115GLT	GLT	1,141	0.4149	38.50	33.18	4.25	83.33%
Stoneville	ST 4747GLB2	GLB2	1,250	0.4117	40.00	31.63	4.48	84.43%
Stoneville	ST 4946GLB2	GLB2	1,192	0.4170	39.30	33.33	4.70	85.10%
Deltapine	DP 1522B2XF	B2XF	1,309	0.4257	38.80	31.48	4.40	84.70%
Deltapine	DP 1518B2XF	B2XF	1,331	0.4255	39.80	32.08	4.10	83.95%
PhytoGen	PHY 487WRF	WRF	1,220	0.4337	38.30	31.98	4.78	83.18%
PhytoGen	PHY 312WRF	WRF	1,435	0.4284	39.80	32.28	4.15	84.35%
NexGen	NG 3405B2XF	B2XF	1,309	0.4195	37.80	30.55	4.30	84.08%
NexGen	NG 3406B2XF	B2XF	1,348	0.4244	37.80	31.63	4.25	84.23%
Dyna-Gro	DG 3385B2XF	B2XF	1,382	0.4309	38.30	29.85	4.20	84.78%

**Appendix Table A3. 2015 Arkansas large-plot, replicated variety evaluation trials for Ashley county.**

**Year:** 2015      **Location:** Portland      **Previous Crop:** Cotton  
**State:** AR      **Soil Type:** Herbert Silt Loam      **Planting Pop:** 35,000  
**County:** Ashley      **Irrigation:** Yes      **Replications:** 4

**Latitude:** 33.2487      **Date Planted:** 5/8/15  
**Longitude:** -91.4843      **Date Harvest Aid:** 9/17/15  
**Date Harvested:** 10/12/15

Company	Variety	Traits	Yield		Staple	Strength		Uniformity
			lb/A	Turnout		g/tex	Micronaire	Index
Stoneville	ST 5115GLT	GLT	1,926	0.4446	39.00	33.98	4.55	85.25%
Stoneville	ST 4747GLB2	GLB2	1,776	0.4410	37.00	32.03	4.80	83.93%
Stoneville	ST 4946GLB2	GLB2	1,777	0.4267	37.80	30.68	4.53	84.95%
Deltapine	DP 1522B2XF	B2XF	1,641	0.4250	37.80	30.73	4.45	84.28%
Deltapine	DP 1518B2XF	B2XF	1,714	0.4314	37.80	29.78	4.63	84.28%
PhytoGen	PHY 487WRF	WRF	1,499	0.4116	40.00	33.27	4.63	84.27%
PhytoGen	PHY 312WRF	WRF	1,444	0.4257	37.00	33.40	4.75	82.83%
NexGen	NG 3405B2XF	B2XF	1,930	0.4277	38.30	32.05	4.48	84.55%
NexGen	NG 3406B2XF	B2XF	1,737	0.4361	38.00	33.15	4.88	84.70%
Dyna-Gro	DG 3385B2XF	B2XF	1,565	0.4144	37.80	35.45	4.75	84.85%

**Appendix Table A4. 2015 Arkansas large-plot, replicated variety evaluation trials for Lee county.**

**Year:** 2015      **Location:** Marianna      **Previous Crop:** Cotton  
**State:** AR      **Soil Type:** Henry Silt Loam      **Planting Pop:** 42,000  
**County:** Lee      **Irrigation:** Yes      **Replications:** 4

**Latitude:** 34.7762      **Date Planted:** 5/4/15  
**Longitude:** -90.8675      **Date Harvest Aid:** 9/9/15  
**Date Harvested:** 9/30/15

Company	Variety	Traits	Yield		Staple	Strength		Uniformity
			lb/A	Turnout		g/tex	Micronaire	Index
Stoneville	ST 5115GLT	GLT	1,684	0.4343	38.30	32.48	4.90	83.55%
Stoneville	ST 4747GLB2	GLB2	1,623	0.4185	39.30	31.15	4.93	83.18%
Stoneville	ST 4946GLB2	GLB2	1,877	0.4309	38.00	34.30	5.17	83.83%
Deltapine	DP 1522B2XF	B2XF	1,829	0.4489	38.80	32.80	5.10	84.53%
Deltapine	DP 1518B2XF	B2XF	1,951	0.4427	37.80	31.00	4.68	84.03%
PhytoGen	PHY 487WRF	WRF	1,954	0.4712	37.30	32.05	5.05	83.20%
PhytoGen	PHY 312WRF	WRF	1,888	0.4471	39.80	33.78	4.85	85.13%
NexGen	NG 3405B2XF	B2XF	1,754	0.4420	36.80	29.58	4.70	83.58%
NexGen	NG 3406B2XF	B2XF	1,700	0.4405	37.70	33.27	4.80	84.33%
Dyna-Gro	DG 3385B2XF	B2XF	1,875	0.4562	37.30	30.90	4.93	84.60%

**Appendix Table A5. 2015 Arkansas large-plot, replicated variety evaluation trials for Mississippi county.**

**Year:** 2015                      **Location:** Basset                      **Previous Crop:** Cotton  
**State:** AR                      **Soil Type:** Tiptonville and Dubbs Silt Loam                      **Planting Pop:** 40,000  
**County:** Mississippi                      **Irrigation:** Yes                      **Replications:** 2

**Latitude:** 35.5377                      **Date Planted:** 5/6/15  
**Longitude:** -90.1329                      **Date Harvest Aid:** 10/14/15  
**Date Harvested:** 11/10/15

Company	Variety	Traits	Yield			Strength		Uniformity
			lb/A	Turnout	Staple	g/tex	Micronaire	Index
Stoneville	ST 5115GLT	GLT	1,384	0.4237	38.50	32.45	4.75	84.40%
Stoneville	ST 4747GLB2	GLB2	1,230	0.4205	38.50	31.00	4.70	82.25%
Stoneville	ST 4946GLB2	GLB2	1,158	0.4236	39.00	34.50	4.85	84.45%
Deltapine	DP 1522B2XF	B2XF	1,426	0.4514	38.00	32.00	4.95	83.35%
Deltapine	DP 1518B2XF	B2XF	1,447	0.4463	39.50	30.40	4.55	83.40%
PhytoGen	PHY 487WRF	WRF	1,250	0.4355	38.50	27.40	4.60	84.20%
PhytoGen	PHY 312WRF	WRF	1,261	0.4266	38.50	31.45	4.80	83.60%
NexGen	NG 3405B2XF	B2XF	1,281	0.4186	39.00	31.00	4.20	84.90%
NexGen	NG 3406B2XF	B2XF	1,340	0.4392	38.50	31.90	4.70	84.65%
Dyna-Gro	DG 3385B2XF	B2XF	1,395	0.4455	39.50	31.40	5.00	85.00%

**Appendix Table A6. 2015 Arkansas large-plot, replicated variety evaluation trials for Clay county.**

**Year:** 2015                      **Location:** Nimmons                      **Previous Crop:** Cotton  
**State:** AR                      **Soil Type:** Patterson Fine Sandy Loam                      **Planting Pop:** 38,000  
**County:** Clay                      **Irrigation:** Yes                      **Replications:** 4

**Latitude:** 36.2748                      **Date Planted:** 5/7/15  
**Longitude:** -90.0018                      **Date Harvest Aid:** 10/1/15  
**Date Harvested:** 10/23/15

Company	Variety	Traits	Yield			Strength		Uniformity
			lb/A	Turnout	Staple	g/tex	Micronaire	Index
NexGen	NG 3406B2XF	B2XF	1,474	0.4281	38.67	31.77	4.27	84.53%
Deltapine	DP 1518B2XF	B2XF	1,417	0.4271	40.00	31.40	3.97	84.47%
PhytoGen	PHY 487WRF	WRF	1,092	0.4292	38.67	34.57	4.13	83.87%
Stoneville	ST 4946GLB2	GLB2	1,180	0.4066	39.00	33.93	4.70	84.20%
Stoneville	ST 5115GLB2	GLB2	1,205	0.4139	39.00	32.70	4.13	83.93%
NexGen	NG 3405B2XF	B2XF	1,273	0.4174	38.00	30.63	4.00	84.00%
Deltapine	DP 1522B2XF	B2XF	1,376	0.4250	39.67	32.47	4.47	85.27%
Dyna-Gro	DG 3385B2XF	B2XF	1,465	0.4299	38.67	31.03	4.33	84.77%
PhytoGen	PHY 312WRF	WRF	1,235	0.4019	41.67	32.87	4.20	85.67%
Stoneville	ST 4747GLB2	GLB2	1,292	0.4185	40.67	34.23	3.67	84.63%



**DIVISION OF AGRICULTURE**  

---

**RESEARCH & EXTENSION**

*University of Arkansas System*