

Cotton Cultivar Trials for 2017 Central and South Texas

Steve Hague, Wayne Smith, Dawn Deno, Conner Cross
Texas A&M AgriLife Research-Department of Soil and Crop Sciences

TABLE OF CONTENTS

Introduction – Agronomic and Fiber Quality Determinations	Page 3
Acknowledgments	Page 5
Table 1 Locations, soil types, and irrigated/dryland sites	Page 6
Table 2 Agronomic performance and fiber quality of cotton cultivars evaluated at Weslaco under irrigated culture	Page 7
Table 3 Agronomic performance and fiber quality of cotton cultivars evaluated in San Patricio Co. under dryland culture.	Page 9
Table 4 Agronomic performance and fiber quality of cotton cultivars evaluated at Corpus Christi under dryland culture.	Page 11
Table 5 Agronomic performance and fiber quality of cotton cultivars evaluated at College Station under irrigated culture.	Page 13
Table 6 Agronomic performance and fiber quality of cotton cultivars evaluated at College Station under dryland culture.	Page 15
Table 7 Agronomic performance and fiber quality of cotton cultivars evaluated at Thrall under dryland culture.	Page 17
Table 8 Agronomic performance and fiber quality of cotton cultivars evaluated at Commerce under dryland culture.	Page 19
Table 9 Agronomic performance and fiber quality of cotton cultivars evaluated at Chillicothe under irrigated culture.	Page 21

Introduction

Official Cultivar Trials (OCT) in cotton are conducted each year by Texas A&M AgriLife Research to determine the relative performance of varieties available to producers in Texas. These tests are conducted statewide to evaluate commercial cultivars in every cotton growing region. Since Texas is a large state with diverse climates and growing seasons, the OVT results are reported separately for Central and South Texas, and the Rolling and High Plains. This report concentrates on the cotton production regions of Central and South Texas.

Yield and other characteristics were analyzed as randomized complete block designs. Least significant differences (LSD) are used to determine if two cultivars are different at $k=100$, which approximates the 5% probability level. Values reported for any two cultivars at each location that differ by more than the LSD value are expected to be different in 95 of every 100 comparisons. The test average (mean) and the coefficient of variation (CV) also are reported for each characteristic measured at each location. The coefficient of variation is a measure of the uniformity of the test site (e.g. soil uniformity, drainage, disease, etc.). Lower coefficients of variation are desirable.

Agronomic Determinations

Lint yield: Lint yield per acre is determined as (lbs. seed cotton/plot) x (appropriate gin turnout) x (area conversion factor).

Gin turnout: Amount of lint in a random sample of machine harvested seed cotton expressed as a percent of seed cotton in the sample.

Fiber Quality Determinations

Fiber quality parameters were determined by high volume instrument (HVI) testing at the Texas Tech University Fiber and Biopolymer Research Institute at Lubbock, TX.

Fiber Fineness: Fiber fineness, micronaire, is a measure of the maturity and/or the fineness of cotton fibers and is reported in micronaire units. Micronaire is a relative measure of the development, or maturity, of the secondary wall of the cotton fiber throughout its entire length. Processing rates, fabric dyeing, and yarn and fabric appearance are adversely affected by immature fibers. Fine fibers, although mature, weigh less per unit length and may require reduced processing speeds compared to thicker fibers, yet these finer fibers may produce stronger yarns. Thick or coarse fibers result in fewer fibers in a cross section of yarn, and therefore, may produce weaker yarns.

Fiber fineness is determined by forcing air through a specified weight of lint. The rate of air flow is related to fiber thickness. Finer fibers result in more fibers per specified weight and, therefore, have greater resistance to air flow. Micronaire values of 3.4 or below indicate fine and perhaps immature fibers and values of 5.0 or higher

indicate coarse fibers. Values of 3.5 to 4.9 are desirable and indicate mature, well-developed fibers.

Fiber Length: Fiber length is reported in hundredths of an inch as measured by High Volumn instrument and is the average of the longest 50 percent of the fibers in the sample, usually referred to as the upper half mean (UHM). Long fibers are desirable because they produce greater yarn strength, aid in spinning finer yarns, and can be processed at higher speeds.

**HVI fiber lengths (in.)
and descriptive designation**

Below 0.97	Short
0.97 - 1.10	Medium
1.11 -1.28	Long
1.29 – 1.36	Extra long
1.37 and above	Extra long staple upland

Fiber Uniformity: Fiber uniformity index (UI) provides a relative measure of the length uniformity of cotton fibers. Uniformity is calculated as the ratio of the average length of all fibers to the average length of the longest 50 percent of the fibers in the sample. High uniformity values indicate uniform fiber length distribution and are associated with a high-quality product and with low manufacturing waste.

**Uniformity ratios
and descriptive designation**

Below 77	Very low
77-79	Low
80-82	Average
83-85	High
Above 85	Very high

Fiber Strength: Yarn strength and ease of processing are positively correlated with strong fibers. Strength values are reported in grams of force required to break a bundle of cotton fibers with the holding jaws separated by 1/8 inch. The size of the bundle of fibers is described in tex units. Fiber strength is described from very low to very high within UHM classifications.

HVI 1/8-inch gauge strength (g/tex)	Fiber length group and descriptive designation
Short (0.96 inch or less)	
18-19	Very low
20-21	Low

22-23	Average
24-25	High
26-27	Very high

Medium
(0.97-1.10 inch)

17-19	Very low
20-22	Low
23-25	Average
26-28	High
29-31	Very high

Long
(1.11-1.28 inch)

18-20	Very low
21-23	Low
24-26	Average
27-29	High
30-32	Very high

Fiber Elongation: Elongation is the degree of extension of the fibers before break occurs when measuring strength. Fiber bundle elongation is correlated with yarn elongation but has an insignificant effect on yarn strength. Its value and importance in yarn manufacture has not been fully established.

Fiber elongation
and descriptive designation

4.9 and below	Very low
5.0-5.8	Low
5.9-6.7	Average
6.8-7.6	High
7.7 and above	Very high

Work to break: An estimate of the amount of work required to completely break the bundle of fibers during HVI determination of fiber bundle strength. Work to break is estimated by multiplying HVI fiber bundle strength by elongation. This value provides an additional estimate of the yarn performance derived from each variety.

Acknowledgments

The authors wish to recognize the contributions of personnel at the Texas A&M AgriLife Research and Extension Centers, graduate students and undergraduate students who contributed to the conduct of these cultivar evaluations.

Table 1. 2017 Cotton Cultivar Tests and Preliminary Cultivar Tests locations, soil types, and irrigated/dryland.

Location	Soil Type	Irrigated
Weslaco	Hildago s.c.l. ¹	yes
Corpus Christi	Victoria clay	no
San Patricio Co.	Victoria clay	no
College Station	Westwood s.l. ²	yes
College Station	Westwood s.l. ²	no
Thrall	Burleson clay	no
Commerce	Houston c.l. ³	no
Chillicothe	Abilene c.l. ³	yes

1. s.c.l.=sandy clay loam

2. s.l.=silt loam

3. c.l.=clay loam

Table 2. Agronomic performance and fiber quality of cotton cultivars evaluated at Weslaco, 2017 (irrigated).

Cultivar	Lint Yield (lb/ac)	Gin Turnout (%)	Micro-naire (units)	Length (in)	Strength (g/tex)	UI (ratio)	Elongation (%)	Work to Break
PHY 312 WRF	1988	43.7	4.8	1.20	30.6	85.3	6.1	187
DP 1646 B2XF	1980	45.1	4.9	1.27	29.0	84.9	6.2	178
UA114	1898	41.1	5.0	1.19	32.4	86.9	7.0	225
BRS-335	1812	41.3	4.5	1.19	31.6	85.2	5.6	176
DP 1522 B2XF	1774	42.8	5.3	1.19	29.9	85.2	7.0	208
ST 4848GLT	1748	44.8	5.3	1.17	30.1	86.1	5.4	163
Phy 499 WRF	1732	45.0	5.0	1.19	31.0	86.2	6.4	198
TAM 12 K-24	1693	38.2	4.5	1.26	33.1	85.1	6.1	202
UA 222	1679	40.5	5.1	1.24	31.8	85.4	7.2	228
PHY 444 WRF	1669	44.6	4.5	1.24	31.8	87.0	5.6	176
NG 3406 B2XF	1662	43.1	4.8	1.17	29.8	85.2	8.1	241
DG 3605 B2XF	1652	43.8	4.6	1.26	29.1	84.0	6.9	199
UA107	1645	41.1	4.7	1.19	30.8	84.6	6.0	183
PHY 450 W3FE	1622	43.5	5.3	1.14	33.2	85.9	7.5	249
DP 1725 B2XF	1622	46.7	4.9	1.19	29.7	84.5	5.1	150
TAM 12 F-06	1602	40.3	4.7	1.15	28.3	83.7	6.9	194
DG 3385 B2XF	1592	43.4	5.0	1.17	30.0	85.6	7.2	215
TAM 12 I-72	1591	41.4	5.3	1.16	33.6	85.3	5.1	170
UA 103	1586	38.8	4.8	1.22	31.9	85.8	6.0	191
TAM 12 D-05	1569	40.4	4.9	1.22	33.4	85.2	5.3	177
TAM 12KJ-Q14	1545	36.7	4.6	1.30	37.4	86.1	4.7	176
PHY 300 W3FE	1540	43.2	4.9	1.16	28.7	84.0	5.2	149
NG 4601 B2XF	1533	43.4	5.3	1.18	31.6	85.7	6.3	198
FM 1830GLT	1518	44.9	4.7	1.23	33.4	84.7	4.8	159
NexGen 4545 B2XM	1511	41.7	4.8	1.17	28.7	84.4	4.8	138
PHY 340 W3FE	1507	44.9	5.0	1.17	30.4	85.6	6.0	182
TAM 12 J-39	1506	40.3	5.2	1.18	34.4	85.5	5.5	189
TAM 12 BBF5-2139	1497	37.7	4.3	1.41	31.8	85.8	3.5	109
PHY 490 W3FE	1492	44.0	4.9	1.16	32.9	85.5	7.2	235
PHY 330 W3FE	1488	45.1	4.7	1.17	28.4	85.4	5.3	150
BRS-286	1486	39.6	4.9	1.11	29.9	82.7	5.4	160
HQ210 CT	1481	39.6	5.3	1.15	29.4	83.4	5.0	147

AT 558	1439	39.5	4.7	1.27	34.1	86.6	5.3	179
PHY 764 WRF	1422	40.6	4.1	1.21	36.1	85.4	6.0	214
NG 5007 B2XF	1403	44.4	4.7	1.16	27.1	84.6	6.4	172
DP 1518 B2XF	1399	42.5	4.9	1.19	29.5	86.2	6.2	183
BRS-293	.	.	5.5	1.10	31.6	84.3	6.6	207
LSD (k=100)1	434	2.3	0.3	0.05	1.6	2.2	1.1	36.9
%CV	13.7	2.9	3.3	2.20	2.7	1.0	9.0	10.0
Mean	1608	42.1	4.9	1.20	31.2	85.2	5.9	185

1. Values within columns are different at $p=0.05$ ($k=100$) if they differ by more than the LSD value.

Table 3. Agronomic performance and fiber quality of cotton cultivars evaluated in San Patricio County, 2017 (dryland).

Cultivar	Lint Yield (lb/ac)	Gin Turnout (%)	Micro-naire (units)	Length (in)	Strength (g/tex)	UI (ratio)	Elongation (%)	Work to Break
PHY 312 WRF	2770	42.5	4.4	1.17	30.9	86.7	5.9	182
Phy 499 WRF	2653	41.8	4.9	1.14	34.5	85.2	7.6	261
Experimental	2444	42.4	5.2	1.15	31.1	86.0	6.8	211
Experimental	1951	42.9	4.7	1.14	29.9	84.6	5.0	147
Experimental	1878	44.6	4.5	1.06	31.1	84.2	7.1	218
Experimental	1774	42.6	4.4	1.15	31.3	85.8	7.1	222
Experimental	1717	43.7	4.6	1.13	32.1	84.7	6.4	205
PHY 300 W3FE	1713	43.8	4.8	1.15	31.4	85.4	6.2	193
DP 1549 B2XF	1664	41.7	4.7	1.11	30.6	83.7	5.6	170
Experimental	1634	44.1	4.4	1.20	34.0	86.4	5.8	195
PHY 340 W3FE	1618	44.5	4.5	1.17	31.9	85.4	5.9	187
PHY 444 WRF	1614	43.8	4.2	1.22	31.8	86.2	5.7	179
Experimental	1566	43.4	4.5	1.12	30.4	85.9	6.2	186
NexGen 4545 B2XM	1550	42.9	5.1	1.07	27.2	83.8	5.5	149
NG 3406 B2XF	1534	43.1	5.0	1.11	29.2	84.7	7.3	211
PHY 330 W3FE	1522	43.9	4.6	1.13	29.8	84.9	5.8	171
ST 4848GLT	1512	42.9	4.5	1.13	29.5	84.8	5.7	168
DG 3605 B2XF	1499	44.3	4.7	1.20	29.7	84.2	6.4	190
Experimental	1487	40.7	4.6	1.15	31.1	85.4	5.7	175
PHY 490 W3FE	1481	41.8	4.8	1.15	34.0	86.5	7.9	267
FM 1830GLT	1476	43.3	4.8	1.24	32.3	86.4	4.8	153
DP 1845 B3XF	1447	44.4	4.5	1.21	32.6	84.8	6.1	199
NG 3522 B2XF	1447	44.5	4.9	1.05	25.3	83.0	5.9	148
Experimental	1444	42.0	4.5	1.13	30.9	84.1	5.8	178
Experimental	1439	42.7	4.5	1.11	32.3	86.7	7.5	243
PHY 450 W3FE	1421	42.4	4.9	1.10	32.3	85.7	7.6	244
DP 1646 B2XF	1339	44.2	4.6	1.20	29.9	84.2	6.8	203
DG 3385 B2XF	1333	43.9	5.1	1.10	28.6	84.9	7.4	210
NG 4601 B2XF	1332	43.3	5.1	1.12	31.1	84.4	6.0	185
Experimental	1322	43.0	4.7	1.23	32.7	86.0	7.2	234
Experimental	1262	42.9	4.6	1.17	32.2	85.9	6.7	214

Experimental	1237	40.8	4.6	1.14	32.4	85.9	5.8	188
DG 3109 B2XF	1198	41.5	4.2	1.13	31.8	84.5	6.4	202
NG 5007 B2XF	1176	45.0	4.7	1.10	26.5	83.7	6.8	180
DP 1522 B2XF	1156	41.6	5.1	1.13	31.6	85.6	7.6	240
PHY 764 WRF	1130	39.4	4.0	1.17	35.1	85.2	6.5	226
AT 558	.	42.5	5.1	1.05	33.7	85.5	5.6	187
LSD (k=100)1	531	3.2	0.5	0.06	2.6	2.8	0.9	28.4
%CV	17.2	2.8	5.1	2.6	4.2	1.2	7.1	7.4
Mean	1453	43.0	4.7	1.14	31.1	85.1	6.4	198

1. Values within columns are different at $p=0.05$ ($k=100$) if they differ by more than the LSD value.

Table 4. Agronomic performance and fiber quality of cotton cultivars evaluated at Corpus Christi, 2017 (dryland).

Cultivar	Lint Yield (lb/ac)	Gin Turnout (%)	Micro- naire (units)	Length (in)	Strength (g/tex)	UI (ratio)	Elong- ation (%)	Work to Break
NG 4601 B2XF	1442	44.7	5.3	1.11	32.1	83.1	6.8	217
NexGen 4545 B2XM	1436	42.1	4.8	1.11	28.0	83.3	5.4	150
UA114	1409	39.5	4.4	1.17	30.2	85.4	7.0	212
NG 3406 B2XF	1403	42.4	4.6	1.11	29.2	84.5	7.2	209
DG 3109 B2XF	1366	41.4	4.7	1.09	28.6	82.0	8.0	229
PHY 340 W3FE	1361	44.2	4.8	1.10	28.7	83.1	5.8	164
DG 3385 B2XF	1359	42.2	4.8	1.15	30.0	84.2	7.7	229
UA 103	1342	39.4	4.0	1.19	29.8	83.8	5.4	159
PHY 450 W3FE	1338	42.6	4.7	1.09	32.3	84.6	7.5	242
DP 1725 B2XF	1329	46.9	5.0	1.06	27.0	82.3	5.9	159
TAM 12 J-39	1328	41.7	5.1	1.13	35.1	85.1	6.1	212
ST 4848GLT	1323	44.2	4.8	1.10	28.1	83.6	6.1	170
Phy 499 WRF	1300	44.7	4.8	1.09	30.3	83.0	6.4	194
PHY 312 WRF	1257	42.9	4.7	1.14	29.7	84.3	5.8	173
DP 1646 B2XF	1239	45.3	4.8	1.17	29.2	82.5	7.0	206
BRS-335	1224	40.0	4.4	1.10	28.0	82.6	5.9	163
DP 1522 B2XF	1220	43.1	5.2	1.06	30.0	82.3	7.6	226
PHY 444 WRF	1211	44.2	3.8	1.23	30.8	85.1	5.6	171
HQ210 CT	1209	38.0	4.6	1.09	29.0	82.8	5.7	164
DG 3605 B2XF	1166	45.7	4.9	1.13	28.7	82.7	6.1	175
TAM 12 D-05	1145	40.1	4.7	1.13	31.1	83.6	5.4	166
NG 3522 B2XF	1130	43.7	4.4	1.07	25.0	82.7	5.4	135
FM 1830GLT	1129	43.9	4.8	1.24	31.4	85.2	5.0	155
UA107	1094	40.9	4.3	1.17	30.3	84.8	5.4	162
TAM 12 I-72	1074	39.3	4.9	1.16	32.9	85.1	5.0	165
PHY 300 W3FE	1070	45.4	4.7	1.07	28.0	83.2	5.4	152
TAM 12KJ-Q14	1064	37.3	4.4	1.24	34.9	85.8	5.1	176
PHY 490 W3FE	1063	43.2	4.8	1.06	31.6	84.0	7.9	249
DP 1518 B2XF	1063	41.6	5.1	1.12	29.9	84.8	5.6	166
BRS-286	1032	45.3	4.5	1.15	29.4	82.9	4.4	127
NG 5007 B2XF	1029	43.5	4.7	1.10	27.3	81.4	6.6	180

TAM 12 K-24	1028	37.2	4.5	1.19	32.8	83.6	5.3	172
TAM 12 F-06	1000	39.0	4.4	1.14	29.2	84.0	6.6	191
UA 222	990	40.1	4.5	1.18	30.5	83.7	7.6	232
TAM 12 BBF5-2139	977	34.6	4.4	1.21	30.2	83.1	4.3	129
PHY 330 W3FE	958	45.1	4.7	1.08	27.7	83.1	5.6	153
PHY 764 WRF	909	40.2	4.1	1.19	34.9	85.3	5.9	206
BRS-293	.	40.8	5.1	1.05	29.9	83.0	6.6	197
LSD (k=100)1	244	2.9	0.5	0.10	2.6	2.8	1.3	46.0
%CV	12.1	3.5	5.3	4.7	4.3	1.3	10.4	12.1
Mean	1189	42.0	4.6	1.13	30.0	83.6	6.1	183

1. Values within columns are different at $p=0.05$ ($k=100$) if they differ by more than the LSD value.

Table 5. Agronomic performance and fiber quality of cotton cultivars evaluated at College Station, 2017 (irrigated).

Cultivar	Lint Yield (lb/ac)	Gin Turnout (%)	Micro-naire (units)	Length (in)	Strength (g/tex)	UI (ratio)	Elongation (%)	Work to Break
Phy 499 WRF	1721	44.2	5.0	1.20	33.1	87.6	6.9	227
DG 3605 B2XF	1697	44.9	4.6	1.29	30.1	85.9	6.6	197
PHY 490 W3FE	1618	44.3	4.9	1.19	34.7	86.6	7.8	268
NexGen 4545 B2XM	1601	41.1	4.8	1.20	32.6	86.6	4.4	142
PHY 444 WRF	1585	43.4	4.1	1.30	33.5	87.0	5.5	184
DP 1646 B2XF	1578	44.5	4.7	1.29	30.8	84.8	6.5	201
PHY 312 WRF	1564	41.5	4.6	1.24	31.8	87.6	6.6	208
PHY 300 W3FE	1547	44.0	4.8	1.22	33.9	87.0	5.9	200
NG 4601 B2XF	1544	43.9	5.2	1.20	33.9	86.3	6.4	217
DG 3385 B2XF	1532	42.4	5.1	1.18	30.8	86.5	7.5	231
PHY 330 W3FE	1507	43.8	4.6	1.20	31.6	85.6	5.1	161
ST 4848GLT	1500	43.7	4.9	1.18	32.1	85.5	5.4	173
DP 1522 B2XF	1495	42.8	5.1	1.16	33.2	85.9	7.3	240
BRS-286	1483	41.0	4.9	1.15	31.5	83.9	5.3	166
PHY 340 W3FE	1482	44.1	4.7	1.22	32.0	86.6	5.1	163
TAM 12 F-06	1448	38.7	4.8	1.19	30.9	85.6	5.9	182
NG 5007 B2XF	1441	43.1	4.6	1.23	29.8	84.7	6.6	195
UA 222	1426	39.8	5.0	1.27	32.1	86.4	7.0	225
DP 1518 B2XF	1415	43.2	4.8	1.20	29.7	86.0	5.7	169
UA 103	1400	38.8	4.9	1.25	34.4	86.7	6.4	220
BRS-335	1395	40.1	4.5	1.21	31.2	85.1	5.4	168
DP 1725 B2XF	1390	45.9	4.9	1.18	31.8	85.0	5.2	165
FM 1830GLT	1385	42.9	4.8	1.26	34.2	85.9	4.9	167
PHY 450 W3FE	1372	41.1	5.1	1.15	34.4	86.6	7.1	243
TAM 12 D-05	1345	38.9	4.9	1.31	34.5	87.7	4.9	167
UA114	1335	37.9	4.9	1.24	32.8	87.8	7.2	234
BRS-293	1326	38.5	5.0	1.22	35.4	86.1	6.1	214
UA107	1271	39.7	4.7	1.24	33.9	86.7	4.7	158
NG 3522 B2XF	1267	41.4	4.9	1.11	28.2	82.9	5.9	167
TAM 12 J-39	1262	39.1	4.9	1.21	40.1	86.7	4.6	185

TAM 12 I-72	1229	39.1	4.9	1.26	35.9	87.2	4.8	170
NG 3406 B2XF	1174	39.7	4.5	1.22	31.7	86.1	6.9	219
TAM 12 K-24	1110	35.7	4.2	1.33	35.2	84.9	5.2	181
TAM 12 BBF5-2139	1108	36.2	4.1	1.50	33.9	88.4	4.1	137
TAM 12KJ-Q14	1071	35.2	4.6	1.36	38.7	87.7	5.0	191
PHY 764 WRF	993	37.5	4.0	1.24	37.6	86.2	5.7	214
LSD (k=100)1	168	1.6	2.0	0.40	2.0	1.7	1.1	37.4
%CV	8.9	2.1	2.3	1.90	3.2	0.9	9.1	9.6
Mean	1406	41.2	4.7	1.23	33.1	86.2	5.9	193

1. Values within columns are different at $p=0.05$ ($k=100$) if they differ by more than the LSD value.

Table 6. Agronomic performance and fiber quality of cotton cultivars evaluated at College Station, 2017 (dryland).

Cultivar	Lint Yield (lb/ac)	Gin Turnout (%)	Micro- naire (units)	Length (in)	Strength (g/tex)	UI (ratio)	Elong- ation (%)	Work to Break
PHY 450 W3FE	1045	43.5	5.4	1.12	34.5	86.5	7.2	247
NG 5007 B2XF	1023	43.8	4.7	1.17	29.7	83.9	6.3	187
DG 3605 B2XF	1015	44.7	4.9	1.26	30.5	84.7	6.0	183
PHY 330 W3FE	948	45.3	4.7	1.20	33.3	86.2	5.3	175
ST 4848GLT	941	45.2	5.4	1.14	30.8	84.3	5.9	181
TAM 12 J-39	936	39.9	5.2	1.18	35.8	86.7	4.1	147
BRS-335	922	40.0	4.7	1.15	30.0	84.1	4.8	145
DP 1522 B2XF	922	43.1	5.4	1.17	33.4	85.9	7.7	258
NG 3522 B2XF	915	44.6	5.1	1.09	27.1	83.9	5.7	153
PHY 312 WRF	891	43.2	5.0	1.15	32.3	85.9	5.9	190
PHY 490 W3FE	881	43.4	5.1	1.12	33.8	84.9	6.5	219
Phy 499 WRF	863	44.2	5.1	1.15	33.1	85.7	6.5	215
NG 3406 B2XF	858	43.0	4.8	1.13	31.0	84.8	7.3	225
DP 1646 B2XF	832	45.8	5.0	1.23	30.2	85.5	6.6	197
NG 4601 B2XF	815	45.5	5.5	1.17	32.9	85.5	5.4	176
UA114	814	38.5	5.4	1.17	33.9	86.3	6.0	201
DP 1549 B2XF	808	44.4	5.2	1.11	31.8	84.2	5.4	170
FM 1830GLT	803	43.6	5.2	1.22	32.7	86.2	4.2	135
PHY 444 WRF	791	44.9	4.5	1.22	32.1	86.0	4.8	154
PHY 300 W3FE	764	45.2	4.7	1.18	32.7	86.7	4.7	153
BRS-286	744	40.5	5.2	1.10	30.9	84.4	5.5	168
PHY 340 W3FE	736	44.0	4.9	1.19	30.2	86.3	5.7	170
PHY 764 WRF	731	40.2	4.4	1.22	36.0	86.3	5.7	205
TAM 12 F-06	731	39.2	4.9	1.16	31.9	84.4	6.3	201
UA 222	728	39.7	5.1	1.22	32.7	85.9	5.9	192
TAM 12 BBF5-2139	720	37.3	4.3	1.41	34.3	88.1	3.5	118
TAM 12 I-72	700	38.3	5.1	1.21	36.3	87.0	4.4	159
DG 3385 B2XF	691	41.2	5.2	1.16	31.2	86.3	7.2	223
NexGen 4545 B2XM	686	41.6	4.9	1.16	31.8	84.5	3.6	115
TAM 12 D-05	664	38.4	5.1	1.24	37.6	86.9	4.5	167
TAM 12 K-24	657	37.6	4.6	1.32	33.1	86.5	5.9	193

UA 103	619	39.1	5.1	1.23	34.7	85.5	5.4	185
TAM 12KJ-Q14	590	35.5	4.8	1.33	39.6	87.9	4.4	172
UA107	573	41.2	4.7	1.21	34.8	86.1	5.3	184
BRS-293	.	39.7	5.4	1.16	34.0	85.6	6.9	228
LSD (k=100)1	290	1.7	0.3	0.06	2.4	2.3	1.4	43.4
%CV	19.2	2.2	3	2.5	3.8	1.1	12	11.6
Mean	802	41.9	5.0	1.19	32.9	86.0	5.6	183

1. Values within columns are different at $p=0.05$ ($k=100$) if they differ by more than the LSD value.

Table 7. Agronomic performance and fiber quality of cotton cultivars evaluated at Thrall, 2017 (dryland).

Cultivar	Lint Yield (lb/ac)	Gin Turnout (%)	Micro-naire (units)	Length (in)	Strength (g/tex)	UI (ratio)	Elongation (%)	Work to Break
TAM 12 K-24	489	39.5	4.2	1.19	32.9	84.2	5.4	176
BRS-335	484	41.8	4.2	1.08	27.7	83.6	5.4	149
DG 3385 B2XF	479	45.3	4.7	1.07	28.8	84.5	6.7	193
PHY 312 WRF	472	46.0	4.8	1.07	27.1	83.6	5.8	157
PHY 444 WRF	440	48.4	4.1	1.16	30.5	84.9	4.8	144
FM 1830GLT	435	46.8	4.7	1.12	28.8	83.8	4.9	140
NG 4601 B2XF	435	46.6	5.1	1.08	30.5	83.0	6.1	186
BRS-286	432	41.8	4.4	1.08	27.4	84.1	5.2	143
ST 4848GLT	426	46.3	4.8	1.07	28.3	83.2	5.4	153
DG 3605 B2XF	421	47.3	4.9	1.15	29.9	84.2	6.8	204
PHY 340 W3FE	410	48.6	4.8	1.09	28.0	84.4	5.7	160
TAM 12 BBF5-2139	407	41.4	4.2	1.28	31.7	84.1	4.5	142
Phy 499 WRF	399	47.5	4.9	1.04	30.8	83.0	7.3	223
PHY 450 W3FE	397	44.5	5.1	1.03	31.8	84.1	7.6	242
TAM 12 J-39	395	43.4	4.9	1.08	31.4	84.5	5.5	171
NG 5007 B2XF	394	46.2	4.7	1.10	27.9	82.5	6.7	185
TAM 12KJ-Q14	389	37.6	4.2	1.19	37.0	84.7	4.9	179
NG 3406 B2XF	379	44.6	4.6	1.05	28.4	84.0	7.4	210
PHY 330 W3FE	371	47.9	4.8	1.08	28.9	84.7	4.8	138
DP 1522 B2XF	357	46.1	5.0	1.07	29.7	84.2	7.6	224
PHY 300 W3FE	333	48.2	4.5	1.04	27.0	83.2	5.4	145
DP 1549 B2XF	329	46.4	4.8	1.05	26.9	82.6	5.2	138
DP 1646 B2XF	329	47.2	4.9	1.12	29.4	82.9	6.4	187
TAM 12 D-05	328	41.8	4.6	1.15	32.4	84.0	6.6	212
UA107	326	42.6	4.4	1.10	30.2	83.7	5.8	174
TAM 12 F-06	321	40.2	4.4	1.07	30.7	82.6	6.8	209
NG 3522 B2XF	315	47.2	4.9	1.00	24.0	81.8	5.2	126
NexGen 4545 B2XM	301	43.9	4.3	1.05	26.2	82.5	4.5	116
PHY 764 WRF	262	43.9	4.3	1.12	33.6	84.4	5.9	196
BRS-293	.	42.7	5.4	1.05	30.8	83.5	5.6	171

LSD (k=100)1	141	1.2	0.3	0.03	2.4	1.7	1.4	47.9
%CV	19.7	1.5	3.6	1.60	4.2	0.8	11.2	13.0
Mean	396	44.7	4.6	1.09	29.7	83.7	5.9	176

1. Values within columns are different at $p=0.05$ ($k=100$) if they differ by more than the LSD value.

Table 8. Agronomic performance and fiber quality of cotton cultivars evaluated at Commerce, 2017 (dryland)

Cultivar	Lint Yield (lb/ac)	Gin Turnout (%)	Micro-naire (units)	Length (in)	Strength (g/tex)	UI (ratio)	Elongation (%)	Work to Break
DP 1646 B2XF	911	44.6	5.5	1.20	30.8	84.2	6.7	205
ST 4848GLT	903	43.8	5.8	1.08	31.1	84.2	6.0	186
PHY 300 W3FE	872	45.0	5.6	1.09	32.8	84.7	5.8	188
DG 3605 B2XF	847	43.6	5.3	1.19	30.9	83.4	6.9	212
FM 1830GLT	804	44.4	5.4	1.17	33.5	86.4	5.0	167
TAM 12 I-72	790	37.6	5.4	1.18	34.8	84.7	5.1	175
BRS-335	787	37.8	4.9	1.16	31.6	85.8	5.3	167
NG 5007 B2XF	783	43.8	5.4	1.12	29.2	83.6	7.2	210
PHY 450 W3FE	774	41.3	5.6	1.10	38.0	86.1	8.6	328
NexGen 4545 B2XM	772	40.4	5.5	1.12	33.0	85.1	4.7	155
PHY 312 WRF	758	42.5	5.6	1.17	32.9	86.1	5.9	193
PHY 444 WRF	748	43.7	5.1	1.19	34.4	85.6	5.5	187
TAM 12 K-24	742	36.2	5.0	1.24	36.6	86.6	5.8	210
BRS-286	740	36.5	5.2	1.13	34.7	84.9	5.2	179
UA114	733	37.6	5.9	1.16	34.6	86.4	7.0	242
TAM 12 D-05	726	36.9	5.1	1.25	36.8	86.5	5.9	215
TAM 12 J-39	721	39.1	5.5	1.16	39.9	87.2	5.7	225
PHY 490 W3FE	717	42.1	5.3	1.14	36.5	86.1	7.5	274
NG 3406 B2XF	703	42.5	5.6	1.08	31.2	84.5	7.8	241
PHY 330 W3FE	694	44.5	5.7	1.13	33.3	85.0	5.7	189
Phy 499 WRF	692	42.7	5.5	1.12	32.8	85.4	7.4	242
PHY 340 W3FE	690	45.3	5.7	1.09	32.1	84.3	6.2	198
TAM 12 F-06	673	37.8	5.1	1.16	34.1	85.5	6.5	221
NG 3522 B2XF	650	41.7	5.5	1.08	28.8	83.9	6.0	173
NG 4601 B2XF	645	42.5	5.9	1.17	33.5	85.0	6.2	206
DP 1549 B2XF	630	41.3	5.6	1.12	32.7	83.6	5.7	186
TAM 12KJ-Q14	628	34.2	4.7	1.32	40.2	87.9	5.0	199
DP 1522 B2XF	613	41.4	6.0	1.07	30.8	82.9	7.7	236
DG 3385 B2XF	600	43.3	6.0	1.05	29.7	83.8	7.3	217
PHY 764 WRF	598	40.1	4.8	1.18	37.9	85.5	6.3	239
NG 3699 B2XF	593	41.4	5.7	1.11	31.8	83.0	5.0	157

TAM 12 BBF5-2139	562	36.1	4.7	1.39	34.6	88.2	4.6	157
UA107	560	39.1	5.2	1.20	34.2	85.6	5.6	192
AT 558	514	38.1	5.2	1.20	37.3	86.5	4.9	183
BRS-293	.	37.3	5.5	1.15	35.2	86.0	6.0	209
LSD (k=100)1	198	1.5	0.3	0.06	2.1	1.8	0.8	34.2
%CV	16.3	2.0	2.9	2.7	3.3	1.0	7.2	8.6
Mean	709	40.1	5.4	1.15	33.8	85.2	6.1	205

1. Values within columns are different at $p=0.05$ ($k=100$) if they differ by more than the LSD value.

Table 9. Agronomic performance and fiber quality of cotton cultivars evaluated at Chillicothe, 2017 (irrigated)

Cultivar	Lint Yield (lb/ac)	Gin Turnout (%)	Micro-naire (units)	Length (in)	Strength (g/tex)	UI (ratio)	Elongation (%)	Work to Break
TAM 12 J-39	1190	42.0	4.3	1.14	37.8	85.0	6.2	232
PHY 300 W3FE	1143	44.1	4.2	1.12	30.2	82.8	7.5	224
BRS-286	1091	42.0	4.4	1.13	32.3	83.1	6.1	195
NexGen 4545 B2XM	1053	42.6	4.5	1.16	32.0	84.0	5.6	180
PHY 450 W3FE	1011	43.3	4.7	1.12	32.7	84.6	8.8	287
UA114	1010	41.3	3.7	1.19	32.4	85.7	8.2	266
DP 1646 B2XF	1001	45.3	4.5	1.26	30.4	84.7	7.5	226
Phy 499 WRF	999	47.3	4.4	1.15	32.4	83.9	8.0	258
NG 3522 B2XF	998	42.5	4.4	1.11	27.4	83.7	7.2	198
PHY 444 WRF	993	46.2	3.7	1.26	31.5	85.8	6.7	211
PHY 330 W3FE	991	43.5	4.4	1.14	31.0	84.2	7.7	239
PHY 490 W3FE	981	43.4	4.7	1.15	33.4	85.5	8.7	288
PHY 340 W3FE	972	45.5	4.1	1.14	30.8	84.3	7.6	234
TAM 12 D-05	952	40.9	4.4	1.22	34.8	84.8	6.3	220
DP 1518 B2XF	947	43.2	4.6	1.18	30.2	84.9	6.0	181
NG 3699 B2XF	943	43.3	4.5	1.22	31.2	84.6	6.1	189
NG 3406 B2XF	925	44.3	4.5	1.13	31.7	85.0	9.5	303
DG 3605 B2XF	903	46.7	4.4	1.20	30.1	83.9	7.7	230
ST 5517GLTP	897	41.3	4.2	1.18	32.0	82.0	6.4	205
UA107	893	43.3	4.4	1.14	29.7	83.7	6.3	185
ST 4848GLT	889	46.7	4.5	1.12	29.7	82.6	6.9	203
FM 1911 GLT	826	44.5	4.6	1.15	29.1	83.6	5.8	167
DG 3109 B2XF	817	42.5	4.1	1.18	33.0	84.0	7.5	248
BRS-335	773	41.8	4.4	1.18	31.2	83.7	7.9	246
DP 1612 B2xF	767	39.6	4.1	1.18	33.2	84.8	8.5	282
TAM 12KJ-Q14	753	37.5	4.1	1.31	37.9	87.0	5.5	206
TAM 12 K-24	739	39.4	3.8	1.28	33.9	85.8	6.9	232
TAM 12 I-72	730	41.3	4.8	1.15	33.6	85.3	6.7	225
PHY 764 WRF	723	42.9	3.4	1.18	32.3	83.2	7.3	233
TAM 12 F-06	655	41.8	4.2	1.14	31.9	85.4	8.8	278

TAM 12 BBF5-2139	599	39.8	3.7	1.38	33.4	85.7	5.2	172
NG 5007 B2XF	597	42.8	4.3	1.14	30.4	83.5	8.0	242
DP 1549 B2XF	555	45.8	3.7	1.13	30.9	82.5	6.9	213
BRS-293	.	41.4	4.3	1.11	31.9	84.0	8.0	253
LSD (k=100)1	291	4.0	0.4	0.60	3.4	2.5	1.5	52.8
%CV	18.8	4.1	5.0	2.50	4.8	1.2	9.7	10.7
Mean	892	43.0	4.3	1.17	31.9	84.3	7.1	227

1. Values within columns are different at $p=0.05$ ($k=100$) if they differ by more than the LSD value.