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Cotton Variety Guide | 2017



UT Cotton Agronomy

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TN Cotton Variety Guide | 2017

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2016 Tennessee Cotton Variety Trials

The University of Tennessee Cotton Agronomy Program provides an unbiased evaluation of experimental and commercial varieties available for production in Tennessee each year. The 2016 program consisted of three types of trials: the Official Variety Trials (OVTs), large replicated on-farm variety trials, and the County Standard Trials (CSTs). The OVTs are small plot, replicated variety trials composed of experimental and commercial varieties. The large replicated on-farm trials and CSTs are large plot variety trials located throughout the Western and Central regions of Tennessee and are only composed of major commercial cultivars. Six OVTs, four large replicated trials, and 15 CSTs were conducted during the 2016 season (Fig.1).

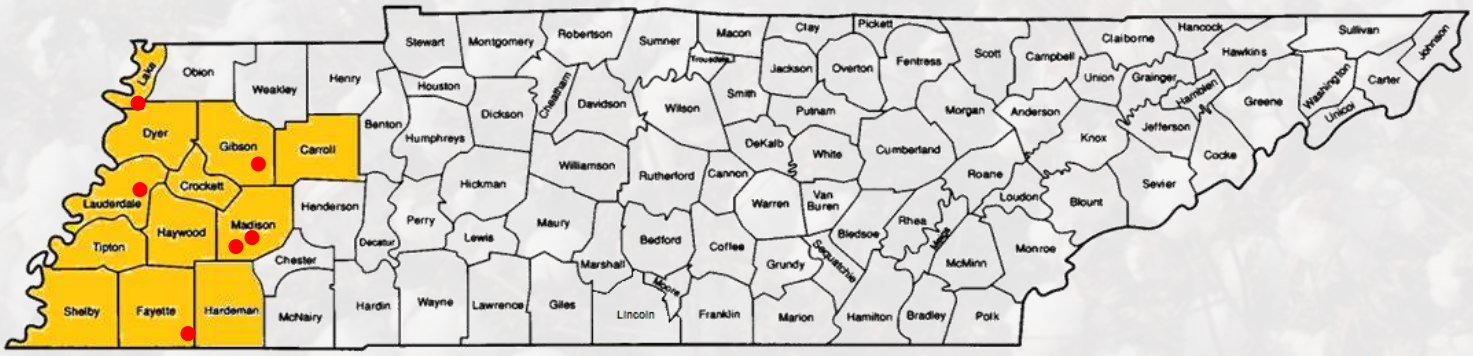


Figure 1: County map of Tennessee, with counties participating in the 2016 Large-Plot Variety Trial Program highlighted in orange. Red points represent planted locations of the 2016 Official Variety Trials.

Samples from each plot were ginned at the University of Tennessee Cotton MicroGin located at the West Tennessee AgResearch and Education Center in Jackson, Tennessee. This is a 20-saw gin equipped with a stick machine, inline cleaners and two lint cleaners. No heat was applied at ginning. Lint yields on a per plot basis were calculated from gin turnouts and harvested plot areas. A subsample of lint from each ginned sample was submitted to the USDA Cotton Classing Office in Memphis, Tennessee, for HVI analysis.

Information reported in this publication includes average gin turnout, lint yield, and fiber quality averaged by program. This brief report serves as a precursor for the 2016 Tennessee Cotton Variety Trial Results (PB 1742). Specific results from each trial location and plant growth measurements are included in PB 1742.

This publication is intended to help cotton producers identify varieties that are high yielding, stable in yield performance across environments and years, and consistently produce high-quality fiber; therein, included information should also provide those in the seed industry, crop consultants, and UT Extension insight into varietal adaptation of all tested varieties to Tennessee field environments.

Large On-Farm Trial Results

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County Standard Trials

Lint yield, gin turnout, fiber quality, and CCC loan value of 15 entries entered in the 2016 Tennessee County Standard Trial Program.*

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value (¢/lb)
1	PHY 312 WRF	1325 a	38.4 efgh	4.7 fgh	1.20 bc	32.0 cd	82.7 abc	41	4 abc	54.75
2	DP 1614 B2XF	1281 ab	40.1 ab	5.2 a	1.20 bc	31.4 de	83.1 a	41	4 abcd	52.55
3	PHY 333 WRF	1264 ab	40.1 ab	4.6 gh	1.20 b	31.7 cde	82.3 bcd	41	4 bcd	54.75
4	NG 3405 B2XF	1264 ab	39.3 bcde	4.7 efg	1.11 i	28.9 g	81.2 e	31	3 g	55.95
5	PHY 444 WRF	1261 ab	39.8 bc	4.2 i	1.25 a	33.1 a	83.3 a	31	3 g	57.00
6	DG 3385 B2XF	1260 ab	39.7 bcd	5.1 b	1.15 gh	30.2 f	82.7 abc	31	3 g	54.10
7	ST 4946 GLB2	1257 abc	37.7 ghi	5.1 ab	1.17 def	33.0 ab	82.9 ab	31	4 def	52.90
8	DP 1518 B2XF	1246 abcd	38.7 def	4.6 h	1.17 de	30.5 f	82.4 bcd	41	4 bcd	54.50
9	DP 1612 B2XF	1244 abcd	37.8 fghi	4.9 cd	1.18 cd	32.3 bc	83.2 a	41	4 ab	54.85
10	ST 4848 GLT	1220 bcd	40.9 a	4.9 c	1.16 fgh	31.6 de	82.8 ab	31	4 def	55.15
11	NG 3406 B2XF	1208 bcde	38.9 cde	4.9 cd	1.14 h	30.1 f	82.6 abcd	31	3 fg	56.40
12	DP 1522 B2XF	1201 bcde	38.5 efg	5.1 ab	1.16 efg	31.2 e	82.6 abc	41	4 cde	52.35
13	ST 5032 GLT	1176 cde	37.2 i	4.6 h	1.21 b	32.8 ab	83.0 ab	31	4 cde	55.35
14	ST 4747 GLB2	1166 de	37.3 i	4.8 cde	1.20 b	31.4 de	82.0 cd	41	4 a	54.75
15	ST 5115 GLT	1129 e	37.5 hi	4.8 def	1.15 gh	31.9 cde	81.9 de	31	3 efg	56.50
	Mean	**1233**	**38.8**	**4.8**	**1.18**	**31.5**	**82.6**	**31**	**4**	**54.79**
	LSD ($p \leq 0.05$)	82	1.0	0.1	0.02	0.7	0.7		0.4	

*Mean and LSD values were calculated from 15 varieties planted and harvested in fifteen independent 2016 Tennessee County Standard Trials.

Replicated On-Farm Variety Trials

Lint yield, gin turnout, fiber quality and CCC loan value of 8 entries entered in the 2016 Cotton Incorporated Replicated Large Plot Variety Trial Program.**

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value (¢/lb)
1	PHY 444 WRF	1382 a	40.5 ab	4.3 e	1.25 a	33.0 a	83.4 a	31	3 cd	56.80
2	PHY 333 WRF	1342 ab	40.3 ab	4.8 d	1.20 b	32.2 b	82.5 b	31	4 a	56.70
3	ST 4946 GLB2	1326 ab	38.2 d	5.2 b	1.17 c	33.4 a	83.3 ab	31	3 bc	54.40
4	DG 3385 B2XF	1320 ab	39.8 bc	5.1 b	1.15 de	30.0 c	82.7 ab	31	3 d	54.60
5	DP 1614 B2XF	1314 ab	41.1 a	5.4 a	1.20 b	31.6 b	82.7 ab	31	4 a	52.95
6	ST 4848 GLT	1292 b	41.3 a	5.2 b	1.15 de	31.9 b	82.6 ab	31	4 a	54.25
7	NG 3406 B2XF	1270 b	38.7 cd	5.0 c	1.14 e	30.3 c	82.6 ab	31	3 bcd	56.25
8	DP 1522 B2XF	1266 b	38.9 cd	5.3 b	1.16 cd	31.5 b	82.8 ab	31	4 ab	54.25
	Mean	**1313**	**39.8**	**5.0**	**1.18**	**31.7**	**82.8**	**31**	**3**	**55.03**
	LSD ($p \leq 0.05$)	81	1.2	0.1	0.02	0.8	0.9		0.5	

**Mean and LSD values were calculated from 8 entries replicated three times at four independent locations during the 2016 season.

Official Variety Trial Results

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Commercial Varieties and Experimental Lines

Lint yield, gin turnout, and fiber quality of 32 entries entered in the 2016 Tennessee Official Variety Trial Program.*

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	Leaf Grade
1	PHY 312 WRF	1533 a¥	38.9 efgh	4.7 klmn	1.17 cde	32.4 cde	82.8 abc	3 bcde
2	PHY 333 WRF	1529 a	40.4 abcd	4.7 j-n	1.16 defg	30.9 f-j	80.9 hijk	3 cdef
3	MON15R535 B2XF	1492 ab	41.3 a	4.9 e-k	1.15 e-j	30.6 g-k	81.2 g-k	2 ghi
4	CPS16214 B2XF	1466 abc	39.6 cde	4.5 no	1.23 a	31.0 f-j	81.5 e-i	3 defg
5	PHY 444 WRF	1465 abc	39.5 cde	4.4 o	1.24 a	33.3 bcd	82.8 abc	3 fghi
6	DP 1522 B2XF	1452 abcd	39.1 efg	5.4 a	1.13 jkl	30.4 hijk	82.1 b-g	3 defg
7	MON16R229 B2XF	1447 bcde	39.2 def	5.1 b-f	1.10 mn	30.5 hijk	80.9 hijk	3 defg
8	DP 1614 B2XF	1424 b-f	41.1 ab	5.3 ab	1.20 bc	31.4 efgh	82.6 bcde	3 bcde
9	DG 3526 B2XF	1421 b-g	40.7 abc	4.9 f-l	1.14 ghij	29.6 k	82.4 b-f	3 defg
10	DG 3385 B2XF	1417 b-h	38.8 e-i	5.0 c-i	1.14 f-j	29.6 k	82.2 b-g	2 ghi
11	ST 4946 GLB2	1416 b-h	37.0 klm	4.9 d-i	1.13 ijkl	33.4 bc	81.8 c-i	3 cdef
12	DP 1518 B2XF	1405 c-i	37.7 hijk	4.6 mno	1.16 e-i	30.4 hijk	81.1 g-k	4 abc
13	BX 1771 GLTP	1399 c-i	37.8 hijk	5.0 b-h	1.14 f-j	33.7 ab	82.8 abc	3 cdef
14	BX 1737 GLT	1399 c-i	36.9 klm	4.7 i-n	1.17 def	31.3 e-i	82.0 b-g	3 fghi
15	AMX1601 B2XF	1397 c-i	40.0 bcde	5.1 b-g	1.18 bcd	34.1 ab	82.4 b-f	3 fghi
16	NG 3522 B2XF	1394 c-i	39.3 def	4.8 h-l	1.09 mn	27.9 l	80.8 ijk	2 hi
17	ST 4848 GLT	1379 d-j	39.0 efg	5.1 b-g	1.16 defg	31.5 efgh	81.9 c-i	3 cdef
18	NG 3405 B2XF	1367 e-j	38.2 f-j	4.8 i-m	1.09 n	27.5 l	80.2 k	2 ghi
19	CG 3475 B2XF	1357 f-k	37.0 jklm	5.1 b-h	1.14 ghij	31.7 efg	82.9 abc	4 abcd
20	ST 4747 GLB2	1355 f-k	37.1 jklm	4.9 d-j	1.17 def	29.9 jk	80.3 k	3 cdef
21	SSG UA 222	1341 g-k	37.1 jklm	5.0 c-i	1.20 bc	32.3 cde	81.5 f-j	3 bcde
22	NG 3406 B2XF	1338 hijk	38.1 f-k	4.9 d-i	1.13 jkl	29.5 k	82.6 bcd	3 defg
23	DP 1612 B2XF	1330 ijkl	36.4 lm	5.0 b-h	1.16 defg	32.3 cde	83.0 ab	4 ab
24	BX 1775 GLTP	1330 ijkl	37.6 ijkl	4.7 klmn	1.17 defg	30.5 hijk	80.4 jk	2 hi
25	BX 1776 GLTP	1304 jkl	38.2 f-j	4.7 j-n	1.17 de	30.2 ijk	81.6 d-i	2 ghi
26	AMX1604 B2XF	1279 kl	37.9 g-k	5.1 bcde	1.13 hijk	32.4 cde	81.5 f-j	3 fghi
27	AMX1606 B2XF	1249 lm	36.3 mn	4.7 i-n	1.16 e-i	33.5 b	81.7 d-i	3 efgh
28	SSG HQ 210	1194 mn	36.4 lm	5.2 abc	1.11 lmn	32.2 de	81.9 c-i	2 ghi
29	BRS 335	1168 mno	36.0 mn	4.6 lmno	1.16 efgh	31.3 efgh	81.2 ghijk	4 a
30	BRS 286	1145 no	35.1 no	4.9 g-l	1.11 klm	31.7 ef	81.9 c-h	3 defg
31	BRS 293	1116 no	34.6 o	5.2 abcd	1.13 ijkl	33.9 ab	82.3 b-f	2 i
32	DG 3544 B2XF	1098 o	37.1 jklm	5.1 b-g	1.20 b	34.8 a	83.8 a	3 fghi
	Average	**1356**	**38.1**	**4.9**	**1.15**	**31.4**	**81.8**	**3**
	LSD ($p \leq 0.05$)	82	1.3	0.3	0.03	1.1	1.1	0.7

*Mean and LSD lint values were calculated from 32 entries replicated four times at five separate 2016 Tennessee Official Variety Trials. Mean and LSD fiber quality values were calculated from 32 representative samples from five 2016 Tennessee Official Variety Trials.

¥Means followed by the same letter are not significantly different.

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Two Year OVT Averages

Lint yield, gin turnout, and fiber quality of 19 like-entries entered in the 2015 and 2016 Tennessee Official Variety Trial Programs.*

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	Leaf Grade
1	PHY 333 WRF	1525 a	39.9 ab	4.5 hi	1.18 def	31.1 efg	82.0 efg	4 cdef
2	PHY 312 WRF	1475 ab	38.5 cd	4.5 ghi	1.19 cd	32.1 cde	83.1 abcd	4 abcd
3	DP 1614 B2XF	1450 abc	40.7 a	5.0 ab	1.20 bc	31.1 efg	83.1 abc	4 b-f
4	PHY 444 WRF	1445 abc	39.0 bc	4.3 j	1.24 a	32.8 bc	83.2 abc	3 ghi
5	DP 1522 B2XF	1444 abc	38.7 cd	5.1 a	1.16 fghi	30.9 fgh	82.9 a-e	4 cdef
6	DG 3526 B2XF	1432 bcd	40.0 ab	4.8 cdef	1.16 fghi	30.1 h	82.9 abcd	4 efg
7	ST 4747 GLB2	1419 bcd	37.8 defg	4.7 cdefg	1.18 cde	30.4 gh	81.0 h	4 def
8	NG 3405 B2XF	1418 bcd	38.4 cd	4.6 fgh	1.12 j	28.0 i	81.3 gh	3 i
9	ST 4946 GLB2	1392 bcde	37.1 efgh	4.8 cdef	1.15 hi	33.4 ab	82.3 def	4 cdef
10	DP 1518 B2XF	1390 bcde	37.7 defg	4.4 ij	1.18 defg	30.4 gh	82.0 fg	5 abc
11	NG 3406 B2XF	1378 cde	38.0 cdef	4.7 c-g	1.15 hi	30.0 h	83.0 abcd	4 fgh
12	ST 4848 GLT	1373 cde	38.8 cd	4.8 b-f	1.17 d-h	31.3 efg	82.4 cdef	4 cdef
13	DP 1612 B2XF	1362 cde	36.9 fgh	4.8 bcde	1.18 cde	32.7 bcd	83.5 a	5 a
14	DG 3385 B2XF	1351 de	38.2 cde	4.8 b-f	1.17 d-h	30.5 gh	82.9 abcd	3 ghi
15	CG 3475 B2XF	1343 de	36.7 gh	4.9 bcd	1.16 e-i	31.7 def	83.3 ab	4 a-e
16	SSG UA 222	1302 ef	36.8 gh	4.7 d-h	1.21 b	31.9 cdef	82.0 efg	4 b-f
17	SSG HQ 210	1250 fg	36.1 hi	4.9 abc	1.14 ij	32.7 bcd	82.7 b-f	3 hi
18	BRS 335	1240 fg	36.1 hi	4.5 ghi	1.17 d-h	31.9 cdef	81.8 fgh	5 ab
19	BRS 293	1172 g	35.4 i	4.9 abcd	1.15 ghi	34.0 a	82.5 b-f	3 hi
20	BRS 286	1165 g	35.3 i	4.6 efgh	1.14 i	32.4 bcd	82.2 def	4 efg
	Average	**1366**	**37.8**	**4.7**	**1.17**	**31.5**	**82.5**	**4**
	LSD ($p \leq 0.05$)	90	1.1	0.2	0.02	1.1	0.8	0.6

*Mean and LSD values were calculated from 20 identical-entries in the 2015 and 2016 Tennessee Official Variety Trials. Table compiled from UTIA AgResearch data of Raper et al. (2015) and Raper et al. (2016).

Two Year CST Averages

Lint yield, gin turnout, and fiber quality of 10 like-entries in the 2015 and 2016 Tennessee County Standard Trial Programs.**

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade
1	PHY 312 WRF	1325 a	38.1 b	4.5 cde	1.21 bc	32.4 b	83.5 bc	41	5 ab
2	PHY 444 WRF	1267 ab	39.5 a	4.0 f	1.27 a	33.1 a	84.0 a	31	4 e
3	PHY 333 WRF	1244 bc	39.6 a	4.5 cd	1.21 c	32.0 bc	83.0 cd	41	5 bc
4	DP 1518 B2XF	1242 bc	38.7 b	4.4 de	1.19 d	30.9 d	82.6 de	41	4 c
5	DG 3385 B2XF	1241 bc	39.4 a	4.9 a	1.16 f	30.5 d	83.3 bc	31	3 f
6	DP 1522 B2XF	1230 bcd	38.5 b	5.0 a	1.17 ef	31.6 c	83.3 bc	41	4 cd
7	ST 4946 GLB2	1221 bcd	37.5 c	4.9 a	1.18 de	33.2 a	83.5 ab	41	4 d
8	ST 4747 GLB2	1182 cd	37.2 c	4.6 b	1.21 bc	31.9 bc	82.5 de	41	5 a
9	ST 5032 GLT	1169 d	36.9 c	4.4 e	1.22 b	33.0 a	83.4 bc	41	4 c
10	ST 5115 GLT	1103 e	37.3 c	4.5 c	1.16 f	32.4 b	82.3 e	31	4 de
	Mean	**1222**	**38.3**	**4.6**	**1.20**	**32.1**	**83.1**	**41**	**4**
	LSD ($p \leq 0.05$)	64	0.6	0.1	0.01	0.6	0.5		0.4

**Mean and LSD values were calculated from 10 identical-entries in the 2015 and 2016 Tennessee County Standard Trials. Table compiled from UTIA AgResearch data of Raper et al. (2015) and Raper et al. (2016).









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