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Cotton Variety Guide | 2019

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Cotton Variety Guide | 2019

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2018 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 2018 program consisted of two types of trials: the Official Variety Trials (OVTs) 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. Seven OVTs and 13 CSTs were conducted during the 2018 season.

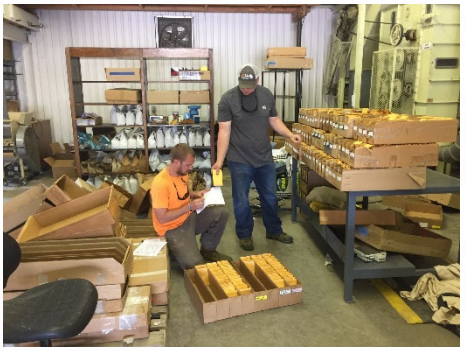

Figure 1: LEFT: Seed is packaged and organized for Official Variety Trials in early spring. **CENTER:** Large plot variety trials are planted in every major cotton producing county in the state with standard production equipment. **RIGHT:** Seedcotton samples from Official Variety Trials and County Standard Trials are ginned at the UT MicroGin in Jackson before submitting to the USDA Classing Office in Memphis, TN.

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, incline 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 2018 Tennessee Cotton Variety Trial Results (PB 1742). Specific results from each trial location and plant growth measurements are included in PB 1742. These publications are 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

County Standard Trials

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Lint yield, gin turnout, fiber quality, and CCC loan value of 18 entries entered in the 2018 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	DP 1725 B2XF	1317a	42.8	4.6	1.17	29.8	82.6	41	3.8	53.95
2	DP 1646 B2XF	1293ab	40.8	4.4	1.25	29.6	82.7	41	3.9	54.00
3	PHY 350 W3FE	1249a-c	39.1	4.6	1.21	30.7	83.7	51	4.3	51.00
4	ST 4949 GLT	1247a-c	42.9	4.7	1.15	29.1	82.4	41	4.5	53.95
5	ST 5471 GLTP	1245a-d	39.8	4.2	1.17	30.6	81.9	41	4.0	54.25
6	PHY 430 W3FE	1224b-e	40.9	4.6	1.14	31.0	83.0	41	4.4	54.25
7	NG 3729 B2XF	1222b-f	39.2	4.7	1.22	30.3	83.9	41	4.4	54.30
8	DP 1614 B2XF	1210b-f	41.0	4.8	1.21	30.2	83.5	51	4.5	49.70
9	PHY 320 W3FE	1205c-f	39.1	4.3	1.19	31.6	83.8	41	4.6	52.45
10	DP 1820 B3XF	1180c-f	41.4	4.6	1.23	32.6	82.7	41	4.3	54.35
11	DP 1518 B2XF	1179c-g	39.8	4.2	1.20	29.6	82.7	41	4.8	52.10
12	ST 5122 GLT	1178c-g	39.5	4.4	1.16	29.5	81.3	51	4.1	50.65
13	DG 3385 B2XF	1171c-g	39.5	4.6	1.16	28.8	83.6	41	3.1	54.50
14	DG 3214 B2XF	1160d-h	39.2	4.8	1.18	30.4	84.0	41	4.4	54.30
15	PHY 330 W3FE	1145e-h	41.0	4.6	1.18	32.0	83.7	51	4.9	49.85
16	ST 5517 GLTP	1139f-h	37.1	4.2	1.19	31.1	81.6	51	4.0	51.10
17	ST 5020 GLT	1094g-h	37.8	4.7	1.23	32.3	83.4	41	4.8	52.45
18	NG 4777 B2XF	1075h	37.8	4.4	1.19	32.3	82.6	51	4.4	51.05
	Mean	**1196**	**39.9**	**4.5**	**1.19**	**30.6**	**82.9**	**41**	**4.3**	**52.68**
	LSD (p<0.05)	85.7	1.0	0.2	0.02	0.8	0.6		0.6	
	CV(%)	7.7	2.8	3.2	1.40	2.4	0.7		14.2	

*Mean and LSD values for lint yield and turnout were calculated from 18 varieties planted and harvested in 8 independent 2018 Tennessee County Standard Trials. Mean and LSD values for fiber quality parameters were calculated from 6 independent 2018 Tennessee County Standard Trials.

Official Variety Trial Results

Commercial Varieties and Experimental Lines

UT AgRESEARCH INSTITUTE OF AGRICULTURE THE UNIVERSITY OF TENNESSEE

Lint yield, gin turnout, and fiber quality of 58 entries entered in the 2018 Tennessee Official Variety Trial Program.*

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif (%)	Color	Leaf Grade
1	PX3C06W3FE	1289a	39.5	4.7	1.17	30.4	81.8	51	3.9
2	PX3B07W3FE	1279ab	40.9	4.5	1.17	32.6	82.0	41	4.1
3	PX3B09W3FE	1267a-c	40.8	4.4	1.16	32.1	82.4	41	3.9
4	BX 1973GLTP	1264a-d	42.8	4.8	1.16	32.7	83.5	41	3.1
5	CP 9608 B3XF	1251a-e	43.7	4.7	1.17	30.0	81.8	41	3.6
6	DP 1646 B2XF	1249a-f	40.7	4.7	1.24	30.6	83.0	41	3.5
7	NG 3522 B2XF	1239a-g	40.8	4.8	1.12	29.3	82.1	41	3.1
8	DP 1725 B2XF	1238a-g	42.5	4.9	1.15	30.7	81.8	41	3.3
9	PHY 330 W3FE	1234a-h	41.0	4.6	1.17	32.3	82.6	41	4.1
10	PHY 340 W3FE	1232a-h	41.5	4.7	1.19	32.4	82.9	41	4.3
11	PHY 430 W3FE	1229a-h	41.3	4.7	1.11	32.0	82.5	41	4.3
12	PHY 480 W3FE	1217a-i	39.8	4.6	1.15	31.2	83.2	31	3.8
13	PHY 300 W3FE	1204a-j	40.6	4.7	1.16	32.1	82.7	41	3.3
14	DP 1835 B3XF	1198a-k	42.6	4.8	1.19	32.0	82.3	41	3.6
15	PHY 320 W3FE	1189b-l	39.2	4.5	1.17	32.3	83.5	41	4.3
16	DG 3385 B2XF	1184c-m	38.5	4.9	1.14	29.4	83.2	41	3.4
17	PX5C09W3FE	1179c-n	42.1	4.8	1.15	31.7	82.1	41	3.8
18	ST 4949GLT	1177c-n	42.2	5.0	1.12	30.0	82.3	41	3.3
19	DP 1820 B3XF	1177c-n	41.3	4.8	1.22	34.2	82.7	41	3.6
20	PHY 350 W3FE	1173d-n	38.9	4.7	1.19	31.4	83.5	41	3.9
21	NG 5007 B2XF	1168e-o	40.3	4.7	1.16	29.3	82.0	41	2.9
22	DP 1614 B2XF	1165e-p	41.2	5.1	1.20	30.9	83.3	41	4.0
23	CPS 18817 B3XF	1159f-p	40.3	4.9	1.16	31.4	83.4	41	4.1
24	PX4A64W3FE	1156g-p	40.0	4.7	1.14	33.4	82.9	31	3.6
25	AMX 1817 B3XF	1153g-p	41.0	4.9	1.18	30.3	81.9	41	3.8
26	ST 5020GLT	1151g-p	38.4	4.6	1.21	33.5	83.3	41	4.4
27	PX4A69W3FE	1149g-p	41.7	4.2	1.17	32.1	82.6	31	3.9
28	CPS 18507-B B3XF	1143h-p	41.2	5.1	1.16	30.8	83.2	41	3.0
29	PX5B73W3FE	1143h-p	39.9	4.7	1.16	31.3	82.1	41	3.9
30	PX5D28BW3FE	1134i-q	40.1	4.5	1.16	33.9	82.8	41	3.8
31	BX 1975GLTP	1121j-r	41.4	4.9	1.15	31.2	82.0	31	3.1
32	CP 9178 B3XF	1121j-r	41.6	4.9	1.17	33.1	83.4	41	3.4
33	ST 5471GLTP	1116j-r	38.6	4.6	1.14	31.6	81.5	41	3.3
34	MON 17R821B3XF	1116j-r	40.4	4.9	1.14	30.3	82.3	41	3.3
35	DG 3214 B2XF	1112j-r	38.8	4.9	1.19	30.8	84.1	41	3.5
36	PHY 440 W3FE	1107k-r	40.4	4.3	1.21	34.4	82.6	41	4.0
37	DP 1518 B2XF	1107k-r	39.0	4.4	1.16	29.8	82.2	41	3.9
38	BX 1974GLTP	1101l-r	41.9	4.9	1.19	31.0	83.3	31	3.3
39	NG 3729 B2XF	1098l-s	37.9	4.8	1.21	30.7	83.7	41	4.0
40	CP 3475 B2XF	1097m-s	37.2	4.7	1.15	31.7	83.3	41	4.3

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Average	**1124**	**39.8**	**4.7**	**1.17**	**31.8**	**82.7**	**41**	**3.7**
LSD (p<0.05)	92	1.0	0.2	0.02	0.9	0.9		
CV(%)	14.2	2.5	3.7	1.90	2.9	1.1		

*Mean and LSD values for lint yield were calculated from 58 entries replicated four times at five separate 2018 Tennessee Official Variety Trials. Missing values were replaced with location treatment means. Mean turnout and fiber quality values were calculated from two locations.

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

Official Variety Trial Results

Commercial Varieties and Experimental Lines

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Lint yield, gin turnout, and fiber quality of 58 entries entered in the 2018 Tennessee Official Variety Trial Program.*

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif (%)	Color	Leaf Grade
41	NG 4601 B2XF	1091 n-t	40.6	5.1	1.20	33.1	83.1	41	2.9
42	ST 5818GLT	1078 o-u	38.5	4.7	1.17	31.8	81.9	41	3.4
43	ST 5517GLTP	1073 p-v	37.9	4.5	1.18	32.3	81.8	41	3.6
44	ST 5122GLT	1049 q-w	38.6	4.5	1.16	31.4	81.4	41	3.1
45	MON 17R818B3XF	1045 r-w	39.9	4.9	1.19	32.9	82.8	41	3.6
46	BX 1976GLTP	1038 r-w	41.5	5.1	1.17	33.2	83.4	41	3.3
47	AMX 1816 B3XF	1033 r-w	35.7	4.0	1.20	31.2	83.2	41	4.0
48	AMX 1819 B3XF	1008 s-w	37.8	4.7	1.17	30.4	82.3	31	3.8
49	NG 4777 B2XF	1007 s-w	37.8	4.6	1.16	32.4	81.6	41	3.4
50	AMX 1801 B3XF	1003 t-w	38.9	4.8	1.22	30.7	83.8	41	3.3
51	NG 4689 B2XF	993 u-w	38.3	4.8	1.16	32.8	82.6	41	3.8
52	NG 3517 B2XF	993 u-w	36.0	4.6	1.19	33.5	83.0	41	4.3
53	CP 18XC9 B3XF	983 vw	38.1	4.7	1.19	33.0	82.6	41	3.8
54	AMX 1818 B3XF	976 w	39.4	4.7	1.21	33.0	83.2	41	3.5
55	NG 3780 B2XF	975 w	37.1	4.8	1.17	32.0	82.3	41	4.3
56	CPS 18864 GLTP	963 wx	38.1	4.7	1.19	33.0	82.6	41	3.8
57	NG 3699 B2XF	962 wx	36.9	4.6	1.22	32.4	82.7	41	4.1
58	AMX 1815 B3XF	882 x	35.0	4.0	1.14	33.6	83.0	51	5.8
	Average	**1124**	**39.8**	**4.7**	**1.17**	**31.8**	**82.7**	**41**	**3.7**
	LSD (p<0.05)	92	1.0	0.2	0.02	0.9	0.9		
	CV(%)	14.2	2.5	3.7	1.90	2.9	1.1		

*Mean and LSD values for lint yield were calculated from 58 entries replicated four times at five separate 2018 Tennessee Official Variety Trials. Missing values were replaced with location treatment means. Mean turnout and fiber quality values were calculated from two locations.

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