

# Cotton Variety Trial Results | 2020



# Tennessee Cotton Variety Trial Results | 2020

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## Introduction



The University of Tennessee Cotton Agronomy Program provides an unbiased evaluation of experimental and commercial varieties available for production in Tennessee each year. The 2020 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 CSTs are large plot variety strip trials located throughout the Western and Central regions of Tennessee and are only composed of major commercial cultivars. Six OVTs and ten CSTs were conducted during 2020. Of the ten CSTs, three included GL (Glytol/LibertyLink), FE (Enlist) and XF (XtendFlex) cultivars; five included only XF cultivars; and two included only FE cultivars. Subsequently, the CST data has been summarized in three separate tables; the first average table consists of the averages of all XF cultivars across eight locations; the second average table consists of the averages of all FE cultivars across five locations; and the third consists of the averages of GL, FE, and XF cultivars across three locations.

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

## General Procedures

### Official Variety Trials

Six OVTs were planted in the 2020 growing season. These included three locations on University of Tennessee Research and Education Centers and two locations on producer farms. Seed of commercial cultivars and experimental lines was provided by respective companies. In all, 44 varieties were evaluated. Each variety was randomly assigned to four plots at each location and each plot was arranged in a randomized complete block

design. Individual plots consisted of two 30 ft rows. Soil samples were collected prior to planting and fertilizer and lime were applied according to test results and UT recommendations.

Weed and pest control measures were uniformly applied to all plots per UT-recommendations. Seed cotton was harvested from each plot by either a two row picker outfitted with an in-basket, catch-and-weigh system or a catch-system. Each plot was subsequently harvested and weighed. Except for the Milan location, a minimum of one plot per location was subsampled for turnout and fiber quality. Subsamples from each location were then air-dried and ginned.

### **Large Plot Variety Trials**

Ten CSTs were harvested in the 2020 growing season. Seed of commercial varieties was provided by each respective company. In all, 20 varieties were submitted. Each variety was planted in a single plot at each location and was maintained per the individual producer's production practices. Plot size ranged from two to eight rows wide and 125 to 2500 ft+ in length, depending on producer equipment and field size.

At harvest, plots were picked with the producer's equipment. If using a basket-style picker, weights were collected by catching harvested plots from the picker with a weighing boll buggy prior to dumping into the module builder. If using an on-board round module picker, modules were wrapped at the end of each plot and weighed on a set of transportable scales. Regardless of picker type, an 8-12 lb sub-sample was collected after the picked plot weight was determined. These samples were then air dried and weighed prior to ginning.

### **Ginning**

Samples were ginned at the University of Tennessee Cotton MicroGin located at the West Tennessee Research and Education Center in Jackson, TN. This is a 20-saw gin equipped with a stick machine, incline cleaners, and one lint cleaner. No heat was applied at ginning. Lint yields on a per-plot basis were then 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, TN for HVI analysis.

### **Statistical analysis**

For OVT locations, mean separation of fiber quality was calculated for the combined dataset including all analyzed locations by considering location as replication. Mean separation of OVT variety yield by location was calculated by a PROC MIXED model (JMP, SAS Institute, Inc., Cary, NC) considering replication to be random. Combined analysis was also calculated by a PROC GLM model, with location and replication nested in location. Mean separation of fiber quality and lint yield for the CST combined dataset was calculated by considering location as replication. This analysis was calculated by a PROC GLM model.

### **Seed Sources**

Companies which participated in the 2020 University of Tennessee Cotton Variety Testing Program and their entry abbreviations are listed below:

- American Cotton Breeders, Inc. 5210 88th Street, Lubbock, TX 79424
  - Abbreviated as NG (NexGen) or AMX (experimental)
- BASF Corporation, 100 Park Ave, Florham Park, NJ 07932
  - Abbreviated as ST (Stoneville)
- Croplan Genetics, 8700 Trail Lake Dr., Suite 100, Memphis, TN 38125
  - Abbreviated as AR (Armor)
- Crop Production Services, 3005 Rocky Mountain Ave., Loveland, CO 80538
  - Abbreviated as DG (DynaGro) or DGX (experimental)
- Bayer CropScience, P.O. Box 157, Scott, MS 38772
  - Abbreviated as DP (DeltaPine)

- Phytogen Seed Co., P.O. Box 27, Leland, MS 38756
  - Abbreviated as PHY (Phytogen) or PX (experimental)

### **Acknowledgements**

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Finally, we would like to recognize the USDA-AMS Cotton Division Classing Office in Memphis, TN which provided the fiber quality data reported herein and all who were involved in plot establishment, maintenance and harvest. Thank you.



## 2020 Official Variety Trial Results



**Table OVT1.** 2020 Official Variety Trial details.

Location	Planting Date	Soil Type	Tillage	Fertility	Irrigation
Gift	05/02/2020	Loring Silt Loam	No-Till	70-var P&K	None
Grand Junction <sup>1</sup>	05/14/2020	Memphis Silt Loam	No-Till	80-var P&K	None
Jackson <sup>2</sup>	06/02/2020	Collins Silt Loam	Minimal-Till	107-40-90-12.5	None
Memphis <sup>3</sup>	05/21/2020	Falaya Silt Loam	Raised Bed	100-60-60	Yes
Milan <sup>4</sup>	05/22/2020	Collins Silt Loam	Raised Bed	80-0-90-10	None
Ridgely	05/21/2020	Reelfoot Silt Loam	No-Till	90- var P&K	None

<sup>1</sup>Ames Plantation Research and Education Center, Grand Junction, TN

<sup>2</sup>West Tennessee Research and Education Center, Jackson, TN

<sup>3</sup>Agricenter International, Memphis, TN

<sup>3</sup>Milan Research and Education Center, Milan, TN

**Table OVT2.** Average lint yield, turnout, and fiber quality of 44 entries in the 2020 Official Variety Trials conducted near Gift, Grand Junction, Jackson, Milan, Memphis and Ridgely locations, listed by yield rank.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout <sup>†</sup> (%)	Mic	Length (in.)	Strength (g/tex)	Unif (%)	Leaf Grade	Color
1	ST 4550 GLTP	1356	42.0	4.4	1.19	32.3	84.2	4	41
2	ST 5091 B3XF	1347	42.0	4.1	1.21	30.7	82.2	4	31
3	DP 2115 B3XF	1340	42.2	4.6	1.22	31.2	84.8	4	31
4	AR 9371 B3XF	1335	42.4	4.3	1.19	30.5	84.7	4	41
5	NG 3195 B3XF	1310	41.9	4.3	1.21	31.8	83.6	3	41
6	DP 2038 B3XF	1307	44.7	4.6	1.14	31.6	82.5	3	31
7	DG 3456 B3XF	1295	43.1	4.3	1.19	29.7	83.8	3	31
8	DP 1725 B2XF	1264	43.7	4.5	1.17	30.4	82.8	4	41
9	AR 9210 B3XF	1245	42.4	4.8	1.23	32.8	84.2	3	31
10	PX 4808 W3FE	1243	41.2	4.5	1.15	32.4	83.7	4	41
11	ST 4993 B3XF	1231	42.3	4.6	1.21	33.1	85.3	3	31
12	PHY 390 W3FE	1224	41.3	4.2	1.21	32.2	83.2	3	41
13	BX 2192 B3XF	1220	40.4	4.0	1.31	32.8	84.5	4	41
14	PHY 400 W3FE	1220	42.0	4.2	1.21	33.2	84.1	4	41
15	MON 19R132 B3XF	1217	42.1	4.7	1.22	33.8	85.8	3	31
16	DG 3535 B3XF	1216	39.8	4.3	1.24	31.4	84.2	3	31
17	PHY 360 W3FE	1211	40.4	4.3	1.21	30.4	83.5	4	41
18	ST 4990 B3XF	1209	38.3	4.3	1.25	30.6	85.4	3	41
19	AR 9608 B3XF	1205	43.7	4.1	1.19	30.2	82.9	4	31
20	PHY 443 W3FE	1187	40.4	4.4	1.18	33.1	84.6	4	31
21	PHY 332 W3FE	1186	39.7	4.1	1.25	33.0	83.7	4	31
22	DG 3385 B2XF	1183	39.8	4.6	1.19	30.0	84.6	4	31
23	PHY 350 W3FE	1182	39.5	4.4	1.21	31.4	84.6	4	31
24	DG 3427 B3XF	1180	41.8	4.4	1.19	30.7	82.0	4	41
25	NG 3930 B3XF	1179	40.1	4.3	1.19	31.2	83.8	4	31
26	DG 3317 B3XF	1179	41.6	4.4	1.19	31.3	84.4	4	31
27	AR 9831 B3XF	1169	41.3	4.4	1.21	31.8	83.7	4	31
28	DP 2020 B3XF	1158	38.4	4.1	1.26	31.7	84.0	3	31
29	NG 4936 B3XF	1152	37.5	4.2	1.26	30.3	84.9	4	31
30	NG 4098 B3XF	1142	38.5	4.3	1.26	34.4	84.8	5	41
31	DG 3520 B3XF	1140	38.5	3.8	1.28	32.4	84.6	6	41
32	AMX 19A014 B3XF	1139	38.2	4.1	1.18	29.7	82.8	4	31
33	NG 3729 B2XF	1137	38.7	4.6	1.23	31.2	84.8	4	41
34	DP 1646 B2XF	1120	41.5	4.3	1.28	30.2	84.4	4	41
35	DP 1518 B2XF	1115	37.9	4.1	1.23	31.3	83.9	4	41
36	AMX 19A016 B3XF	1115	40.6	4.3	1.21	31.1	83.1	4	41
37	NG 3522 B2XF	1092	40.8	4.7	1.15	28.1	83.1	3	41
38	BX 2151 GLTP	1089	42.4	4.3	1.23	31.0	84.2	4	41
39	DP 2012 B3XF	1070	38.7	4.3	1.23	31.9	84.6	3	31
40	NG 5150 B3XF	1069	38.4	4.3	1.18	29.5	83.2	4	41
41	BX 2194 B3XF	1032	40.0	3.6	1.27	31.7	84.3	4	31
42	AMX 19A015 B3XF	1026	35.8	4.2	1.24	30.8	83.4	4	31
43	ST 4480 B3XF	1009	38.5	4.2	1.23	33.5	83.8	4	41
44	AMX 19A018 B3XF	992	37.8	4.3	1.18	32.9	83.4	5	41
<b>Average</b>		<b>1183</b>	<b>40.5</b>	<b>4.3</b>	<b>1.21</b>	<b>31.5</b>	<b>84.0</b>	<b>4</b>	<b>41</b>
LSD (p<0.05)		64	1.0	0.2	0.02	1.2	0.9		
CV (%)		13.2							

‡Means followed by the same letter are not significantly different (p=0.05).

†Turnout and fiber quality determined from ginning one replicate from Gift, Grand Junction, Jackson and Ridgely.

Tennessee AgResearch data of Raper et al. (2020).



**Table OVT3.** Average lint yield, turnout, and fiber quality of 44 entries in the 2020 Official Variety Trial conducted in Gift, TN listed by yield rank.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout <sup>†</sup> (%)	Mic	Length (in.)	Strength (g/tex)	Unif (%)	Color	Leaf Grade
1	AR 9210 B3XF	1264 <sub>A</sub> ¥	42.1	5.0	1.23	32.6	84.3	31	3
2	ST 5091 B3XF	1213 <sub>AB</sub>	41.8	4.4	1.21	31.4	83.0	31	4
3	AR 9371 B3XF	1186 <sub>A-E</sub>	42.7	4.5	1.15	33.1	84.7	41	6
4	ST 4550 GLTP	1185 <sub>ABC</sub>	41.8	4.4	1.20	35.8	84.5	41	4
5	DG 3427 B3XF	1176 <sub>ABCD</sub>	43.6	4.6	1.20	30.9	82.7	41	5
6	PHY 332 W3FE	1163 <sub>A-F</sub>	42.2	4.3	1.28	33.7	86.8	31	4
7	DP 2115 B3XF	1155 <sub>A-F</sub>	42.3	4.6	1.23	33.3	85.8	31	4
8	PHY 443 W3FE	1131 <sub>A-G</sub>	40.6	4.7	1.19	34.3	86.6	31	4
9	BX 2192 B3XF	1124 <sub>A-G</sub>	40.8†						
10	DG 3535 B3XF	1112 <sub>A-G</sub>	42.7	4.7	1.24	32.6	86.4	31	3
11	PHY 390 W3FE	1107 <sub>A-H</sub>	42.4	4.0	1.20	32.9	83.5	41	4
12	NG 3930 B3XF	1082 <sub>A-J</sub>	40.5	4.3	1.15	33.5	83.7	41	6
13	ST 4990 B3XF	1081 <sub>A-J</sub>	39.2	4.4	1.25	32.4	86.3	31	3
14	AR 9831 B3XF	1080 <sub>A-J</sub>	41.1	4.6	1.22	33.2	84.1	41	5
15	AMX 19A014 B3XF	1077 <sub>A-J</sub>	39.3	4.3	1.16	31.9	84.1	41	6
16	DG 3456 B3XF	1066 <sub>A-J</sub>	44.6	4.7	1.19	29.7	84.3	41	3
17	PHY 400 W3FE	1060 <sub>A-J</sub>	42.1	4.4	1.25	32.7	84.4	41	5
18	NG 3195 B3XF	1054 <sub>A-J</sub>	41.0	4.5	1.23	34.1	85.8	31	3
19	PHY 360 W3FE	1040 <sub>A-J</sub>	41.3	4.6	1.25	31.2	85.0	41	4
20	ST 4993 B3XF	1033 <sub>A-K</sub>	42.6	4.7	1.20	34.6	85.1	31	3
21	MON 19R132 B3XF	1018 <sub>B-K</sub>	42.8	4.6	1.23	35.7	86.1	31	3
22	NG 4936 B3XF	989 <sub>B-L</sub>	39.6	4.2	1.26	31.5	86.1	41	4
23	PX 4B08 W3FE	985 <sub>B-L</sub>	40.8	4.6	1.13	32.4	84.1	41	6
24	AMX 19A016 B3XF	969 <sub>B-L</sub>	41.0	4.5	1.22	33.1	84.3	41	4
25	DP 2038 B3XF	968 <sub>B-L</sub>	44.2	4.6	1.16	33.4	83.5	31	3
26	AR 9608 B3XF	963 <sub>B-L</sub>	43.1	4.5	1.20	32.5	83.9	41	5
27	AMX 19A015 B3XF	952 <sub>C-L</sub>	36.7	4.1	1.24	32.2	83.7	31	3
28	PHY 350 W3FE	926 <sub>F-M</sub>	39.6	4.5	1.25	33.5	87.0	31	4
29	DP 1518 B2XF	915 <sub>D-N</sub>	38.3	4.0	1.25	32.6	85.4	41	4
30	NG 4098 B3XF	913 <sub>E-N</sub>	39.2	4.4	1.25	35.0	83.2	41	5
31	DP 2012 B3XF	901 <sub>G-N</sub>	38.7	4.2	1.24	33.4	85.7	31	3
32	BX 2194 B3XF	859 <sub>H-N</sub>	40.2	3.8	1.31	32.6	86.0	31	4
33	DP 1725 B2XF	844 <sub>I-N</sub>	42.2	4.4	1.20	31.2	84.2	41	4
34	BX 2151 GLTP	839 <sub>J-N</sub>	42.5	4.3	1.24	31.9	83.9	41	6
35	ST 4480 B3XF	835 <sub>J-N</sub>	38.9	4.1	1.22	34.8	84.6	41	4
36	DG 3385 B2XF	834 <sub>J-N</sub>	39.4	4.8	1.19	33.2	85.5	41	4
37	NG 3729 B2XF	831 <sub>J-N</sub>	39.3	4.8	1.26	32.8	85.5	31	4
38	DP 2020 B3XF	790 <sub>K-N</sub>	38.2	4.3	1.26	32.0	85.1	31	3
39	NG 3522 B2XF	760 <sub>L-N</sub>	41.3	4.6	1.17	28.9	84.2	41	3
40	DG 3520 B3XF	758 <sub>L-N</sub>	39.1	3.6	1.29	32.3	85.5	41	6
41	DG 3317 B3XF	756 <sub>L-N</sub>	41.5	4.7	1.20	31.9	85.3	31	5
42	NG 5150 B3XF	711 <sub>M-N</sub>	38.3	4.4	1.17	28.4	84.1	41	4
43	DP 1646 B2XF	699 <sub>M-N</sub>	40.3	4.5	1.30	29.6	86.0	41	4
44	AMX 19A018 B3XF	659 <sub>N</sub>	37.3	4.6	1.19	34.7	84.4	41	5
<b>Average</b>		<b>979</b>	<b>40.9</b>	<b>4.4</b>	<b>1.22</b>	<b>32.6</b>	<b>84.8</b>	<b>31</b>	<b>4</b>
LSD (p<0.05)		197							
CV (%)		17.6							

¥Means followed by the same letter are not significantly different (p=0.05).

†Turnout and fiber quality determined from ginning one replicate.

‡BX 2192 B3XF gin sample was lost. Turnout was calculated as a missing value. Quality data was not reported.

Tennessee AgResearch data of Raper et al. (2020).

**Table OVT4.** Average lint yield, turnout, and fiber quality of 44 entries in the 2020 Official Variety Trial conducted in Grand Junction, TN listed by yield rank.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout <sup>†</sup> (%)	Mic	Length (in.)	Strength (g/tex)	Unif (%)	Leaf Grade	Color
1	DP 2115 B3XF	1426 <sub>A</sub> ¥	44.0	4.8	1.17	29.9	84.0	3	31
2	DP 2038 B3XF	1368 <sub>AB</sub>	46.3	4.8	1.12	29.9	81.1	2	31
3	ST 4993 B3XF	1344 <sub>ABC</sub>	43.4	4.8	1.19	33.1	84.3	3	31
4	MON 19R132 B3XF	1339 <sub>ABC</sub>	43.9	4.7	1.20	32.8	85.1	3	41
5	AR 9371 B3XF	1326 <sub>ABC</sub>	43.5	4.6	1.15	28.8	84.7	3	41
6	DG 3317 B3XF	1324 <sub>ABC</sub>	42.5	4.4	1.16	31.4	83.4	2	31
7	AR 9831 B3XF	1310 <sub>ABCD</sub>	41.4	4.6	1.18	31.2	82.9	2	32
8	NG 3195 B3XF	1308 <sub>ABCD</sub>	42.9	4.7	1.17	29.3	83.2	3	41
9	AMX 19A016 B3XF	1293 <sub>ABCD</sub>	42.2	4.7	1.19	31.4	83.3	3	41
10	ST 5091 B3XF	1287 <sub>A-E</sub>	42.9	4.3	1.18	30.8	81.2	3	31
11	AR 9210 B3XF	1276 <sub>A-E</sub>	43.2	4.7	1.20	32.2	83.8	4	41
12	DG 3456 B3XF	1273 <sub>A-E</sub>	42.3	4.2	1.16	29.9	83.9	3	31
13	DG 3520 B3XF	1258 <sub>B-F</sub>	39.5	3.9	1.24	32.6	84.4	4	41
14	BX 2192 B3XF	1246 <sub>B-F</sub>	40.6	4.2	1.30	33.7	85.3	4	41
15	ST 4550 GLTP	1240 <sub>B-F</sub>	43.0	4.4	1.20	30.7	84.3	3	41
16	PHY 400 W3FE	1238 <sub>B-F</sub>	43.7	4.6	1.17	32.9	84.2	3	41
17	PX 4B08 W3FE	1238 <sub>B-F</sub>	42.6	4.8	1.13	33.8	83.0	3	41
18	PHY 350 W3FE	1222 <sub>B-G</sub>	41.3	4.5	1.16	30.4	83.3	3	41
19	AR 9608 B3XF	1219 <sub>B-G</sub>	45.1	4.4	1.16	29.8	82.4	3	41
20	DP 2020 B3XF	1213 <sub>B-G</sub>	41.0	4.3	1.20	30.4	82.3	3	41
21	NG 4098 B3XF	1212 <sub>B-H</sub>	39.2	4.4	1.24	34.2	84.7	4	41
22	PHY 332 W3FE	1209 <sub>B-H</sub>	40.5	4.4	1.22	33.4	82.7	3	31
23	DG 3535 B3XF	1206 <sub>B-I</sub>	41.1	4.3	1.19	30.5	83.5	2	31
24	DG 3427 B3XF	1203 <sub>C-I</sub>	41.5	4.3	1.17	30.9	84.0	4	41
25	DP 1725 B2XF	1188 <sub>C-I</sub>	44.2	4.7	1.16	30.4	82.9	3	41
26	NG 3930 B3XF	1186 <sub>C-I</sub>	41.0	4.6	1.19	31.7	83.5	3	41
27	PHY 360 W3FE	1185 <sub>C-I</sub>	40.7	4.4	1.17	28.9	82.2	4	41
28	PHY 443 W3FE	1185 <sub>C-I</sub>	42.9	4.5	1.17	29.4	83.9	3	41
29	NG 3522 B2XF	1183 <sub>C-I</sub>	41.1	5.0	1.12	26.7	83.5	3	41
30	BX 2194 B3XF	1182 <sub>C-I</sub>	41.4	3.6	1.22	30.7	83.1	3	31
31	ST 4990 B3XF	1156 <sub>D-I</sub>	39.0	4.6	1.21	31.6	84.3	3	41
32	DG 3385 B2XF	1154 <sub>D-I</sub>	41.3	5.1	1.12	27.4	82.7	3	41
33	DP 2012 B3XF	1151 <sub>D-I</sub>	39.8	4.3	1.19	31.7	84.0	3	41
34	NG 3729 B2XF	1128 <sub>E-J</sub>	39.3	5.0	1.19	30.5	84.8	4	41
35	PHY 390 W3FE	1109 <sub>F-K</sub>	42.9	4.5	1.15	29.6	81.7	3	41
36	AMX 19A014 B3XF	1108 <sub>F-K</sub>	38.5	4.5	1.18	27.7	82.1	3	31
37	NG 4936 B3XF	1107 <sub>F-K</sub>	39.0	4.6	1.21	29.2	84.4	3	41
38	DP 1646 B2XF	1072 <sub>G-L</sub>	43.7	4.4	1.22	30.6	83.9	3	41
39	AMX 19A015 B3XF	1070 <sub>G-L</sub>	38.2	5.0	1.20	30.1	82.8	4	41
40	DP 1518 B2XF	1051 <sub>H-L</sub>	37.4	4.4	1.19	30.8	83.7	4	41
41	NG 5150 B3XF	1045 <sub>IJKL</sub>	39.0	4.6	1.13	28.8	82.8	5	41
42	AMX 19A018 B3XF	982 <sub>JKL</sub>	39.2	4.6	1.13	32.2	83.6	3	41
43	ST 4480 B3XF	955 <sub>KL</sub>	39.1	4.2	1.20	32.6	82.0	4	41
44	BX 2151 GLTP	910 <sub>L</sub>	42.6	4.3	1.21	31.5	83.9	2	31
<b>Average</b>		<b>1197</b>	<b>41.5</b>	<b>4.5</b>	<b>1.18</b>	<b>30.8</b>	<b>83.4</b>	<b>3</b>	<b>41</b>
LSD (p<0.05)		115							
CV (%)		9.7							

¥Means followed by the same letter are not significantly different (p=0.05).

†Turnout and fiber quality determined from ginning one replicate.

Tennessee AgResearch data of Raper et al. (2020).

**Table OVT5.** Average lint yield, turnout, and fiber quality of 44 entries in the 2020 West Tennessee Research and Education Trial conducted in Jackson, TN listed by yield rank.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif (%)	Leaf Grade	Color
1	ST 5091 B3XF	1455 <sub>A</sub>	42.1	3.9	1.23	30.0	80.9	4	41
2	NG 3195 B3XF	1449 <sub>A</sub>	41.3	3.5	1.20	30.5	81.1	3	41
3	DP 2038 B3XF	1438 <sub>AB</sub>	43.7	4.6	1.12	33.2	82.9	3	41
4	DP 1725 B2XF	1433 <sub>ABC</sub>	44.1	4.2	1.16	30.8	82.5	4	41
5	ST 4550 GLTP	1424 <sub>ABC</sub>	40.7	4.2	1.16	30.6	84.2	4	31
6	DG 3385 B2XF	1407 <sub>ABCD</sub>	39.9	4.2	1.23	30.6	84.3	4	31
7	DP 2115 B3XF	1368 <sub>A-E</sub>	41.3	4.7	1.24	30.1	83.8	4	41
8	PHY 400 W3FE	1355 <sub>A-F</sub>	40.8	3.8	1.19	35.1	84.0	4	41
9	AR 9371 B3XF	1343 <sub>A-F</sub>	41.1	3.9	1.23	30.3	84.8	3	41
10	DP 1518 B2XF	1331 <sub>A-G</sub>	36.9	3.7	1.25	29.8	82.9	5	41
11	PHY 390 W3FE	1314 <sub>A-H</sub>	40.4	4.3	1.26	33.6	84.1	3	41
12	ST 4993 B3XF	1310 <sub>A-I</sub>	42.1	4.5	1.20	32.7	85.3	3	41
13	AR 9210 B3XF	1303 <sub>A-J</sub>	42.0	4.5	1.22	33.5	84.8	3	41
14	PHY 360 W3FE	1295 <sub>A-K</sub>	38.5	3.7	1.20	31.2	83.5	5	41
15	DG 3520 B3XF	1293 <sub>A-K</sub>	37.6	3.9	1.28	34.2	83.2	6	41
16	PHY 350 W3FE	1291 <sub>A-K</sub>	38.8	4.3	1.21	29.9	84.8	4	41
17	DP 1646 B2XF	1289 <sub>A-K</sub>	41.7	4.5	1.28	31.8	84.3	4	41
18	DG 3456 B3XF	1275 <sub>B-K</sub>	40.2	4.1	1.23	30.8	84.1	3	31
19	NG 5150 B3XF	1270 <sub>B-K</sub>	39.8	4.0	1.21	30.3	83.1	3	41
20	PX 4808 W3FE	1267 <sub>B-L</sub>	39.7	4.0	1.14	31.6	83.2	5	41
21	AR 9608 B3XF	1265 <sub>C-L</sub>	42.3	3.7	1.19	29.6	82.0	5	31
22	ST 4990 B3XF	1261 <sub>C-L</sub>	36.5	3.9	1.26	29.0	84.3	3	41
23	NG 3729 B2XF	1250 <sub>D-L</sub>	37.9	4.3	1.24	30.3	85.7	4	41
24	DG 3535 B3XF	1233 <sub>E-M</sub>	37.0	3.8	1.27	29.5	84.0	4	41
25	AMX 19A014 B3XF	1217 <sub>E-M</sub>	37.0	3.8	1.16	30.5	82.1	4	41
26	BX 2192 B3XF	1197 <sub>E-N</sub>	38.9	3.7	1.32	30.8	84.8	4	41
27	MON 19R132 B3XF	1190 <sub>F-N</sub>	40.7	4.8	1.18	34.7	85.4	3	31
28	NG 4936 B3XF	1186 <sub>F-O</sub>	36.5	3.8	1.27	29.6	84.8	4	31
29	DG 3427 B3XF	1186 <sub>F-O</sub>	40.2	4.2	1.19	30.3	80.7	5	41
30	PHY 443 W3FE	1185 <sub>F-O</sub>	37.7	3.8	1.20	35.5	84.9	4	41
31	DG 3317 B3XF	1184 <sub>F-O</sub>	40.3	4.0	1.21	31.3	84.8	4	41
32	ST 4480 B3XF	1165 <sub>G-O</sub>	38.7	4.5	1.25	34.1	85.9	4	41
33	DP 2020 B3XF	1155 <sub>H-O</sub>	37.0	3.8	1.30	32.4	84.8	4	31
34	BX 2151 GLTP	1150 <sub>H-O</sub>	41.2	4.3	1.22	30.9	84.3	3	41
35	PHY 332 W3FE	1140 <sub>I-P</sub>	37.7	3.8	1.26	33.1	82.7	4	31
36	NG 4098 B3XF	1137 <sub>J-P</sub>	35.6	4.4	1.27	35.7	85.6	6	41
37	NG 3522 B2XF	1136 <sub>J-P</sub>	40.0	4.6	1.15	28.6	82.8	4	41
38	NG 3930 B3XF	1127 <sub>K-Q</sub>	37.8	4.1	1.22	29.3	83.8	4	31
39	AMX 19A018 B3XF	1097 <sub>L-Q</sub>	37.5	4.1	1.19	32.4	83.3	6	41
40	DP 2012 B3XF	1075 <sub>M-Q</sub>	36.7	4.4	1.24	31.8	84.4	4	41
41	AMX 19A015 B3XF	1035 <sub>NOPQ</sub>	34.6	3.9	1.26	30.7	84.1	5	41
42	AR 9831 B3XF	1016 <sub>OPQ</sub>	40.6	4.1	1.21	30.8	83.3	5	31
43	AMX 19A016 B3XF	973 <sub>PQ</sub>	37.9	3.8	1.19	30.1	82.4	6	41
44	BX 2194 B3XF	963 <sub>Q</sub>	39.1	3.7	1.25	30.9	84.3	4	41
<b>Average</b>		<b>1237</b>	<b>39.4</b>	<b>4.1</b>	<b>1.22</b>	<b>31.4</b>	<b>83.8</b>	<b>4</b>	<b>41</b>
LSD (p<0.05)		122							
CV (%)		9.9							

‡Means followed by the same letter are not significantly different (p=0.05).

†Turnout and fiber quality determined from ginning one replicate.

Tennessee AgResearch data of Raper et al. (2020).



**Table OVT6.** Average lint yield of 44 entries in the 2020 Agricenter International trial in Memphis, TN, listed by yield rank.

Yield Rank	Variety	Lint Yield <sup>†</sup> (lb/ac)
1	ST 5091 B3XF	1021 <sub>A</sub> ¥
2	DP 2115 B3XF	1019 <sub>A</sub>
3	AR 9608 B3XF	994 <sub>AB</sub>
4	PX 4B08 W3FE	993 <sub>AB</sub>
5	DG 3456 B3XF	984 <sub>ABC</sub>
6	DP 1646 B2XF	968 <sub>ABCD</sub>
7	NG 3195 B3XF	963 <sub>ABCD</sub>
8	ST 4990 B3XF	959 <sub>A-E</sub>
9	AR 9831 B3XF	939 <sub>A-E</sub>
10	AR 9371 B3XF	936 <sub>A-F</sub>
11	DG 3317 B3XF	932 <sub>A-F</sub>
12	DP 1725 B2XF	920 <sub>A-G</sub>
13	ST 4550 GLTP	913 <sub>A-H</sub>
14	PHY 350 W3FE	913 <sub>A-H</sub>
15	DG 3385 B2XF	907 <sub>A-I</sub>
16	NG 4098 B3XF	903 <sub>A-I</sub>
17	DG 3520 B3XF	895 <sub>A-J</sub>
18	NG 5150 B3XF	883 <sub>A-J</sub>
19	ST 4993 B3XF	871 <sub>A-J</sub>
20	PHY 390 W3FE	869 <sub>A-J</sub>
21	DP 2038 B3XF	869 <sub>A-J</sub>
22	DP 2020 B3XF	869 <sub>A-J</sub>
23	PHY 360 W3FE	865 <sub>A-J</sub>
24	AMX 19A016 B3XF	860 <sub>A-J</sub>
25	NG 4936 B3XF	839 <sub>A-K</sub>
26	NG 3930 B3XF	819 <sub>A-K</sub>
27	ST 4480 B3XF	818 <sub>A-K</sub>
28	PHY 400 W3FE	802 <sub>A-K</sub>
29	NG 3522 B2XF	796 <sub>A-K</sub>
30	AMX 19A014 B3XF	783 <sub>A-K</sub>
31	PHY 332 W3FE	778 <sub>A-K</sub>
32	MON 19R132 B3XF	771 <sub>B-K</sub>
33	BX 2192 B3XF	742 <sub>C-K</sub>
34	AMX 19A015 B3XF	738 <sub>D-K</sub>
35	AMX 19A018 B3XF	737 <sub>D-K</sub>
36	DP 1518 B2XF	731 <sub>D-K</sub>
37	AR 9210 B3XF	716 <sub>E-K</sub>
38	DG 3535 B3XF	714 <sub>E-K</sub>
39	BX 2194 B3XF	692 <sub>F-K</sub>
40	DG 3427 B3XF	686 <sub>G-K</sub>
41	PHY 443 W3FE	673 <sub>HJK</sub>
42	BX 2151 GLTP	650 <sub>JK</sub>
43	DP 2012 B3XF	647 <sub>IJK</sub>
44	NG 3729 B2XF	604 <sub>K</sub>
<b>Average</b>		<b>840</b>
LSD (p<0.05)		173
CV (%)		20.8

¥Means followed by the same letter are not significantly different (p=0.05).

<sup>†</sup>Turnout and fiber quality determined from ginning one replicate from Gift, Grand Junction, Jackson and Ridgely. Tennessee AgResearch data of Raper et al. (2020).

**Table OVT7.** Average lint yield of 44 entries in the 2020 Milan Research and Education Center trial in Milan, TN, listed by yield rank.

<b>Yield Rank</b>	<b>Variety</b>	<b>Lint Yield<sup>†</sup> (lb/ac)</b>
1	DP 1725 B2XF	1695 <sub>A</sub> ¥
2	AR 9371 B3XF	1646 <sub>AB</sub>
3	DP 2038 B3XF	1589 <sub>ABC</sub>
4	ST 4550 GLTP	1553 <sub>ABCD</sub>
5	DP 2020 B3XF	1545 <sub>A-E</sub>
6	BX 2151 GLTP	1543 <sub>A-E</sub>
7	BX 2192 B3XF	1537 <sub>A-F</sub>
8	ST 4993 B3XF	1517 <sub>B-G</sub>
9	ST 5091 B3XF	1516 <sub>B-G</sub>
10	NG 3195 B3XF	1515 <sub>B-G</sub>
11	DG 3535 B3XF	1511 <sub>B-G</sub>
12	DP 2115 B3XF	1492 <sub>B-H</sub>
13	PHY 390 W3FE	1489 <sub>B-H</sub>
14	AR 9608 B3XF	1474 <sub>C-I</sub>
15	DG 3317 B3XF	1447 <sub>C-J</sub>
16	AR 9210 B3XF	1443 <sub>C-K</sub>
17	DG 3456 B3XF	1431 <sub>C-L</sub>
18	NG 3930 B3XF	1431 <sub>C-L</sub>
19	DP 1646 B2XF	1430 <sub>C-L</sub>
20	AR 9831 B3XF	1427 <sub>C-M</sub>
21	NG 4936 B3XF	1396 <sub>D-N</sub>
22	MON 19R132 B3XF	1396 <sub>D-N</sub>
23	DG 3385 B2XF	1392 <sub>D-O</sub>
24	PHY 443 W3FE	1384 <sub>D-O</sub>
25	PHY 360 W3FE	1381 <sub>E-O</sub>
26	PHY 332 W3FE	1372 <sub>F-P</sub>
27	NG 3729 B2XF	1369 <sub>F-P</sub>
28	PX 4B08 W3FE	1368 <sub>F-P</sub>
29	NG 5150 B3XF	1367 <sub>F-P</sub>
30	PHY 400 W3FE	1363 <sub>G-P</sub>
31	DG 3427 B3XF	1336 <sub>H-P</sub>
32	PHY 350 W3FE	1329 <sub>H-Q</sub>
33	ST 4990 B3XF	1325 <sub>H-Q</sub>
34	DP 2012 B3XF	1319 <sub>I-Q</sub>
35	NG 4098 B3XF	1302 <sub>J-Q</sub>
36	AMX 19A014 B3XF	1278 <sub>J-Q</sub>
37	NG 3522 B2XF	1276 <sub>K-Q</sub>
38	DG 3520 B3XF	1267 <sub>L-Q</sub>
39	DP 1518 B2XF	1257 <sub>M-Q</sub>
40	AMX 19A018 B3XF	1245 <sub>N-Q</sub>
41	BX 2194 B3XF	1223 <sub>OPQ</sub>
42	AMX 19A015 B3XF	1203 <sub>PQR</sub>
43	AMX 19A016 B3XF	1159 <sub>QR</sub>
44	ST 4480 B3XF	1038 <sub>R</sub>
<b>Average</b>		<b>1399</b>
LSD (p<0.05)		120
CV (%)		8.7

¥Means followed by the same letter are not significantly different (p=0.05).

†Turnout and fiber quality determined from ginning one replicate from Gift, Grand Junction, Jackson and Ridgely. Tennessee AgResearch data of Raper et al. (2020).

**Table OVT8.** Average lint yield, turnout, and fiber quality of 44 entries in the 2020 Official Variety Trial conducted in Ridgely, TN listed by yield rank.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout <sup>†</sup> (%)	Mic	Length (in.)	Strength (g/tex)	Unif (%)	Color	Leaf Grade
1	ST 4550 GLTP	1818 <sub>A</sub> ¥	42.4	4.5	1.20	32.1	83.9	41	4
2	DG 3456 B3XF	1740 <sub>AB</sub>	45.0	4.3	1.19	28.3	83.0	31	3
3	NG 3729 B2XF	1639 <sub>BC</sub>	38.2	4.4	1.23	31.1	83.3	41	5
4	ST 5091 B3XF	1612 <sub>BCD</sub>	41.0	3.9	1.22	30.6	83.6	31	3
5	PX 4808 W3FE	1610 <sub>BCDE</sub>	41.8	4.5	1.18	31.9	84.6	31	3
6	DP 2038 B3XF	1609 <sub>BCDE</sub>	44.5	4.4	1.16	29.7	82.6	31	3
7	PHY 443 W3FE	1601 <sub>BCDEF</sub>	40.5	4.4	1.15	33.3	83.0	31	3
8	AR 9371 B3XF	1588 <sub>B-G</sub>	42.4	4.3	1.21	29.7	84.5	31	4
9	MON 19R132 B3XF	1586 <sub>B-G</sub>	40.9	4.5	1.26	31.9	86.6	31	2
10	DP 2115 B3XF	1582 <sub>B-H</sub>	41.1	4.4	1.24	31.4	85.4	31	4
11	NG 3195 B3XF	1573 <sub>B-I</sub>	42.4	4.4	1.23	33.3	84.1	41	3
12	DG 3535 B3XF	1521 <sub>C-J</sub>	38.6	4.4	1.27	33.0	82.9	31	3
13	BX 2192 B3XF	1517 <sub>C-J</sub>	41.3	4.0	1.32	34.0	83.5	41	4
14	ST 4990 B3XF	1505 <sub>C-J</sub>	38.7	4.2	1.28	29.3	86.7	41	3
15	PHY 400 W3FE	1502 <sub>C-J</sub>	41.4	4.0	1.22	32.0	83.7	31	4
16	DP 1725 B2XF	1502 <sub>C-J</sub>	44.1	4.7	1.17	29.1	81.7	41	3
17	PHY 360 W3FE	1497 <sub>C-J</sub>	40.9	4.6	1.21	30.3	83.2	41	3
18	DG 3427 B3XF	1496 <sub>C-J</sub>	41.9	4.5	1.19	30.6	80.7	41	3
19	AR 9210 B3XF	1468 <sub>C-K</sub>	42.1	5.0	1.25	32.7	83.7	31	3
20	NG 3930 B3XF	1460 <sub>D-K</sub>	41.0	4.2	1.20	30.3	84.3	31	3
21	PHY 390 W3FE	1457 <sub>D-K</sub>	39.6	4.0	1.21	32.6	83.6	31	3
22	PHY 332 W3FE	1452 <sub>D-K</sub>	38.3	4.0	1.25	31.8	82.5	31	3
23	BX 2151 GLTP	1441 <sub>D-L</sub>	43.4	4.4	1.24	29.8	84.6	41	4
24	AMX 19A016 B3XF	1436 <sub>E-M</sub>	41.4	4.3	1.22	29.9	82.2	41	3
25	DG 3317 B3XF	1433 <sub>F-M</sub>	42.1	4.5	1.19	30.7	84.0	41	3
26	PHY 350 W3FE	1413 <sub>G-N</sub>	38.5	4.1	1.23	31.9	83.3	31	3
27	DP 1518 B2XF	1409 <sub>H-N</sub>	38.9	4.4	1.22	31.9	83.4	41	4
28	AMX 19A014 B3XF	1408 <sub>H-N</sub>	38.0	3.8	1.22	28.7	82.8	31	4
29	DG 3385 B2XF	1406 <sub>H-N</sub>	38.6	4.1	1.23	28.8	85.8	31	3
30	NG 4936 B3XF	1400 <sub>I-N</sub>	35.0	4.2	1.29	30.7	84.3	31	3
31	NG 3522 B2XF	1399 <sub>I-N</sub>	40.9	4.7	1.15	28.3	81.7	31	2
32	NG 4098 B3XF	1380 <sub>J-N</sub>	40.2	4.1	1.29	32.8	85.6	41	6
33	DP 2020 B3XF	1376 <sub>J-O</sub>	37.6	3.9	1.28	32.0	83.9	31	3
34	DG 3520 B3XF	1369 <sub>J-O</sub>	37.9	3.7	1.30	30.3	85.2	41	6
35	AR 9608 B3XF	1315 <sub>K-P</sub>	44.4	3.8	1.19	28.9	83.4	31	4
36	ST 4993 B3XF	1312 <sub>K-Q</sub>	41.1	4.2	1.25	32.0	86.5	31	3
37	DP 2012 B3XF	1306 <sub>K-Q</sub>	39.7	4.1	1.23	30.5	84.3	31	3
38	BX 2194 B3XF	1272 <sub>L-Q</sub>	39.2	3.4	1.28	32.4	83.9	31	5
39	DP 1646 B2XF	1263 <sub>M-Q</sub>	40.4	3.9	1.31	28.7	83.5	41	3
40	ST 4480 B3XF	1241 <sub>NOPQ</sub>	37.5	3.8	1.25	32.4	82.7	41	4
41	AR 9831 B3XF	1241 <sub>NOPQ</sub>	42.0	4.3	1.24	31.9	84.3	31	3
42	AMX 19A018 B3XF	1201 <sub>OPQ</sub>	37.2	4.0	1.19	32.1	82.4	41	4
43	AMX 19A015 B3XF	1154 <sub>PQ</sub>	33.7	3.8	1.24	30.3	83.1	31	4
44	NG 5150 B3XF	1137 <sub>Q</sub>	36.6	4.2	1.21	30.5	82.7	41	5
<b>Average</b>		<b>1447</b>	<b>40.3</b>	<b>4.2</b>	<b>1.23</b>	<b>31.0</b>	<b>83.7</b>	<b>31</b>	<b>4</b>
LSD (p<0.05)		124							
CV (%)		8.7							

¥Means followed by the same letter are not significantly different (p=0.05).

†Turnout and fiber quality determined from ginning one replicate.

Tennessee AgResearch data of Raper et al. (2020).



## 2020 County Standard Trial Results



Two summary tables have been constructed from the 2020 CST data. The first (Table CST1) includes fifteen XtendFlex Varieties averaged across nine locations. The second (Table CST2) includes five Enlist Varieties averaged across five locations. The remaining tables consist of location responses.

**Table CST1.** Average lint yield, gin turnout, and fiber quality of the 15 XtendFlex varieties entered in the 2020 Tennessee County Standard Trial Program across nine trial locations.

Yield Rank	Variety	Lint Yield (lb/ac)		Turnout (%)		Mic		Length (in.)		Strength (g/tex)		Unif (%)		Leaf Grade	Color	Loan Value
1	DP 2038 B3XF	1362	A	44.4	A	4.4	BC	1.17	H	32.2	BCD	83.2	F	3	31	56.60
2	DP 1725 B2XF	1337	AB	43.7	AB	4.5	AB	1.18	H	30.5	FG	83.3	F	3	41	54.60
3	DP 2012 B3XF	1271	ABC	41.0	C	4.3	CDE	1.22	FG	32.4	BCD	84.9	ABC	4	41	54.35
4	DP 1646 B2XF	1250	BC	41.7	C	4.3	CDE	1.27	AB	30.5	FG	83.7	EF	4	41	54.10
5	DP 1518 B2XF	1244	BC	40.1	DE	4.2	EF	1.21	G	30.6	FG	84.0	DEF	5	41	52.20
6	AR 9608 B3XF	1243	BC	43.4	B	4.2	DEF	1.18	H	30.1	G	83.6	EF	4	41	54.10
7	ST 4990 B3XF	1233	C	38.7	F	4.4	BCD	1.24	CDE	31.9	BCDE	85.4	AB	4	41	54.35
8	NG 4936 B3XF	1228	C	39.4	DEF	4.4	BC	1.25	BCD	31.1	EFG	84.8	BCD	4	41	54.30
9	DG 3317 B3XF	1225	C	41.4	C	4.4	BCD	1.18	H	31.5	CDEF	84.9	ABC	4	41	54.30
10	NG 4098 B3XF	1217	C	39.6	DEF	4.2	EF	1.26	ABC	34.8	A	84.4	CDE	5	41	52.45
11	NG 3729 B2XF	1210	C	40.1	D	4.7	A	1.23	EFG	31.4	DEF	84.7	BCD	4	41	54.30
12	DG 3520 B3XF	1206	CD	39.2	EF	3.9	G	1.28	A	32.5	BC	85.7	A	5	41	52.45
13	DP 2020 B3XF	1202	CD	40.0	DE	4.3	CDE	1.24	DEF	31.5	CDEF	84.6	CD	4	41	54.30
14	AR 9210 B3XF	1180	CD	41.5	C	4.6	A	1.23	DEF	32.9	B	84.6	CD	4	41	54.30
15	ST 4480 B3XF	1112	D	38.8	F	4.1	F	1.24	CDE	32.9	B	84.4	CDE	5	41	52.40
<b>Average</b>		<b>1235</b>		<b>40.9</b>		<b>4.3</b>		<b>1.23</b>		<b>31.8</b>		<b>84.4</b>		<b>4</b>	<b>41</b>	<b>53.90</b>
LSD (p<0.05)		72		0.7		0.1		0.01		0.8		0.6				
CV (%)		8.2		2.3		4.5		1.7		3.6		1.0				

**Table CST2.** Average lint yield, gin turnout, and fiber quality of the 5 Enlist varieties entered in the 2020 Tennessee County Standard Trial Program across five trial locations.

Yield Rank	Variety	Lint Yield (lb/ac)		Turnout (%)		Mic		Length (in.)		Strength (g/tex)		Unif (%)		Leaf Grade	Color	Loan Value
1	PHY 360 W3FE	1316	ns	40.9	B	4.5	AB	1.18	B	31.0	C	82.96	B	4	41	54.15
2	PHY 390 W3FE	1230		42.0	A	4.4	AB	1.18	B	33.6	A	83.34	B	4	41	54.30
3	PHY 400 W3FE	1220		42.4	A	4.3	B	1.18	B	33.0	AB	83.86	AB	5	41	52.35
4	PHY 332 W3FE	1282		39.9	C	4.4	AB	1.23	A	32.2	B	84.98	A	4	41	54.30
5	PHY 443 W3FE	1229		40.4	BC	4.5	A	1.17	B	33.1	AB	85.00	A	4	41	54.40
<b>Average</b>		<b>1255</b>		<b>41.1</b>		<b>4.4</b>		<b>1.19</b>		<b>32.6</b>		<b>84.03</b>		<b>4</b>	<b>41</b>	<b>53.90</b>
LSD (p<0.05)		101		0.8		0.2		0.02		1.1		1.22				
CV (%)		6.0		1.4		4.1		1.4		2.6		1.1				

**Table CST3.** Results from the 2020 Crockett XtendFlex County Standard Trial planted May 20<sup>th</sup> and harvested Nov. 3<sup>rd</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	DP 2012 B3XF	1162	39.6	4.4	1.20	29.2	84.7	41	5	51.95
2	DP 2038 B3XF	1160	44.6	4.7	1.11	31.4	83.7	41	3	54.55
3	ST 4990 B3XF	1157	40.5	4.7	1.19	29.7	84.5	41	4	53.90
4	DP 1518 B2XF	1154	40.6	4.1	1.20	29.5	82.8	41	4	53.80
5	DG 3317 B3XF	1130	40.4	4.3	1.17	30.7	83.6	41	4	53.95
6	AR 9608 B3XF	1125	42.7	4.3	1.15	29.6	82.5	41	4	53.65
7	NG 4936 B3XF	1124	39.1	4.8	1.23	28.8	84.2	41	3	54.40
8	DP 1725 B2XF	1114	43.0	4.8	1.13	29.7	82.5	41	3	54.05
9	NG 4098 B3XF	1099	39.3	4.5	1.23	35.3	83.8	41	5	52.35
10	DG 3520 B3XF	1052	39.0	4.1	1.25	32.4	84.7	41	5	52.40
11	DP 1646 B2XF	1046	41.0	4.7	1.23	29.1	82.5	41	3	54.30
12	DP 2020 B3XF	997	40.2	4.6	1.20	30.3	83.9	41	3	54.60
13	ST 4480 B3XF	951	38.5	3.9	1.23	30.3	82.4	41	4	54.00
14	NG 3729 B2XF	921	39.2	5.0	1.19	29.4	83.9	41	4	51.50
15	AR 9210 B3XF	767	39.4	4.3	1.22	33.1	83.3	41	4	54.30
<b>Mean</b>		<b>1064</b>	<b>40.5</b>	<b>4.5</b>	<b>1.20</b>	<b>30.6</b>	<b>83.5</b>	<b>41</b>	<b>4</b>	<b>53.58</b>

**Table CST4.** Results from the 2020 Fayette XtendFlex County Standard Trial planted May 26<sup>th</sup> and harvested Nov. 16<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	DP 1725 B2XF	1150	44.3	5.0	1.15	30.2	84.1	41	4	51.65
2	NG 4936 B3XF	1147	39.5	4.8	1.23	31.3	84.8	41	4	54.30
3	AR 9210 B3XF	1147	42.0	5.3	1.21	32.1	84.0	31	3	52.95
4	DP 2012 B3XF	1136	44.5	4.8	1.21	33.5	84.6	41	4	54.35
5	DP 1518 B2XF	1121	39.6	4.8	1.18	30.1	83.9	41	4	54.05
6	DP 2038 B3XF	1119	44.7	5.1	1.13	31.2	82.9	31	3	53.75
7	DP 1646 B2XF	1046	42.0	4.5	1.23	28.7	83.0	41	3	54.35
8	NG 4098 B3XF	1046	38.8	4.6	1.26	34.0	84.2	41	5	52.40
9	ST 4990 B3XF	1041	39.4	5.1	1.24	31.8	85.2	41	3	52.55
10	AR 9608 B3XF	1036	42.2	4.7	1.18	28.3	82.1	41	4	53.70
11	ST 4480 B3XF	1033	38.4	4.4	1.23	31.7	83.8	41	5	52.30
12	DP 2020 B3XF	1024	39.9	4.7	1.21	31.1	83.3	41	4	54.25
13	DG 3520 B3XF	1011	39.2	4.2	1.26	31.1	85.8	41	5	52.45
14	NG 3729 B2XF	980	39.3	5.0	1.17	32.2	82.8	41	4	51.70
15	DG 3317 B3XF	937	40.5	5.0	1.16	30.7	84.9	41	4	51.65
<b>Mean</b>		<b>1065</b>	<b>41.0</b>	<b>4.8</b>	<b>1.20</b>	<b>31.2</b>	<b>84.0</b>	<b>41</b>	<b>4</b>	<b>53.09</b>



**Table CST5.** Results from the 2020 Gibson County Standard Trial including both Enlist and XtendFlex varieties planted May 22<sup>nd</sup> and harvested Nov. 18<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	PHY 360 W3FE	1203	39.4	4.0	1.18	30.3	82.5	51	5	49.20
2	ST 4990 B3XF	1191	37.8	4.1	1.24	32.3	84.4	41	5	52.40
3	DP 1646 B2XF	1169	39.5	4.0	1.22	31.2	83.3	41	5	52.35
4	DP 2012 B3XF	1164	39.0	3.8	1.20	32.6	84.3	41	5	52.40
5	PHY 332 W3FE	1143	38.8	4.0	1.23	31.0	85.0	41	5	52.45
6	NG 3729 B2XF	1143	40.3	4.2	1.23	31.1	84.5	41	5	52.40
7	PHY 400 W3FE	1133	40.4	3.8	1.18	32.9	82.7	41	5	52.25
8	PHY 443 W3FE	1115	38.8	4.0	1.19	32.9	85.0	41	5	52.45
9	DG 3520 B3XF	1111	38.5	4.1	1.24	33.4	84.0	41	4	54.40
10	NG 4098 B3XF	1091	39.4	3.8	1.26	32.6	84.4	41	5	52.40
11	DP 2020 B3XF	1084	38.7	3.8	1.23	30.4	84.7	41	6	49.50
12	DG 3317 B3XF	1081	40.2	4.0	1.17	29.6	83.5	41	5	51.95
13	PHY 390 W3FE	1076	41.3	4.0	1.21	33.3	84.7	41	5	52.45
14	DP 2038 B3XF	1065	41.1	3.9	1.23	31.5	81.3	41	5	52.25
15	AR 9210 B3XF	996	39.6	4.1	1.22	31.0	84.4	41	4	54.35
16	AR 9608 B3XF	986	40.3	3.7	1.19	29.0	84.3	41	5	52.00
17	DP 1518 B2XF	913	35.5	3.5	1.22	29.2	83.3	41	6	49.20
18	DP 1725 B2XF	898	42.5	4.3	1.20	29.6	83.3	41	4	53.85
19	NG 4936 B3XF	865	38.7	3.9	1.27	31.3	84.6	41	4	54.35
20	ST 4480 B3XF	645	37.5	3.8	1.24	35.7	84.6	41	5	52.45
<b>Mean</b>		<b>1054</b>	<b>39.4</b>	<b>3.9</b>	<b>1.22</b>	<b>31.5</b>	<b>83.9</b>	<b>42</b>	<b>5</b>	<b>52.25</b>

**Table CST6.** Results from the 2020 Hardeman Enlist County Standard Trial planted May 14<sup>th</sup> and harvested Oct. 16<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	PHY 443 W3FE	1210	42.3	4.8	1.16	32.9	84.0	31	4	55.15
2	PHY 390 W3FE	1141	43.8	4.5	1.16	34.0	83.2	41	5	52.35
3	PHY 332 W3FE	1137	42.2	4.8	1.23	31.6	85.7	41	4	54.35
4	PHY 360 W3FE	1106	42.7	4.9	1.16	31.2	83.7	41	3	54.70
5	PHY 400 W3FE	1069	44.3	4.6	1.13	31.7	83.8	31	4	54.85
<b>Mean</b>		<b>1133</b>	<b>43.1</b>	<b>4.7</b>	<b>1.17</b>	<b>32.3</b>	<b>84.1</b>	<b>41</b>	<b>4</b>	<b>54.28</b>

**Table CST7.** Results from the 2020 Hardeman XtendFlex County Standard Trial planted May 7<sup>th</sup> and harvested Oct. 20<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	DP 1646 B2XF	1399	42.6	3.5	1.28	32.2	83.3	31	5	53.30
2	DP 1725 B2XF	1371	44.7	4.2	1.18	29.7	83.5	31	3	56.40
3	DP 2038 B3XF	1324	45.4	4.1	1.18	31.7	82.1	31	4	55.05
4	AR 9608 B3XF	1277	44.8	3.9	1.19	30.3	83.6	31	5	53.15
5	DP 2012 B3XF	1204	43.3	4.0	1.21	31.2	85.1	31	3	56.90
6	NG 3729 B2XF	1186	40.9	4.4	1.23	31.1	85.2	31	4	55.20
7	DG 3520 B3XF	1164	41.0	3.5	1.26	33.9	83.6	41	5	52.35
8	DP 1518 B2XF	1157	42.2	4.1	1.19	31.5	84.0	41	5	52.40
9	ST 4480 B3XF	1043	40.4	4.1	1.24	33.5	84.5	41	5	52.45
10	NG 4936 B3XF	1027	39.9	4.2	1.25	30.6	84.1	31	4	55.00
11	DG 3317 B3XF	1015	43.0	4.1	1.18	33.1	84.7	31	5	53.45
12	NG 4098 B3XF	980	39.7	3.7	1.26	36.2	83.5	41	6	49.70
13	ST 4990 B3XF	927	40.1	4.0	1.24	32.3	84.6	31	4	55.20
14	DP 2020 B3XF	916	39.6	3.8	1.24	32.6	84.7	31	4	55.20
<b>Mean</b>		<b>1142</b>	<b>42.0</b>	<b>4.0</b>	<b>1.22</b>	<b>32.1</b>	<b>84.0</b>	<b>31</b>	<b>4</b>	<b>53.98</b>

**Table CST8.** Results from the 2020 Haywood County Standard Trial including both Enlist and XtendFlex varieties planted May 19<sup>th</sup> and harvested Oct. 17<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	DP 2038 B3XF	1536	47.0	4.3	1.19	33.1	83.6	31	4	55.15
2	DP 1725 B2XF	1490	44.5	4.8	1.19	30.4	84.3	31	3	56.60
3	NG 4936 B3XF	1411	40.6	4.1	1.21	31.3	82.7	31	4	55.05
4	ST 4990 B3XF	1397	39.4	4.1	1.25	32.0	86.7	31	3	56.95
5	PHY 360 W3FE	1396	41.1	4.4	1.21	32.0	84.2	41	5	52.35
6	NG 4098 B3XF	1393	41.6	4.3	1.28	35.4	83.5	41	6	49.65
7	DP 1518 B2XF	1391	42.1	4.6	1.19	30.8	85.4	41	5	52.20
8	AR 9608 B3XF	1387	45.4	4.5	1.18	30.6	84.1	31	5	53.15
9	DP 1646 B2XF	1375	44.0	4.4	1.23	32.1	82.8	31	4	55.00
10	DP 2020 B3XF	1353	42.3	4.4	1.24	32.7	84.5	31	5	53.35
11	NG 3729 B2XF	1351	42.5	4.9	1.24	32.3	84.9	41	5	52.35
12	PHY 332 W3FE	1350	40.3	4.3	1.26	32.4	85.0	31	4	55.20
13	PHY 390 W3FE	1319	42.6	4.4	1.21	34.9	83.8	41	4	54.30
14	PHY 400 W3FE	1309	43.0	3.8	1.21	33.6	84.3	31	5	53.45
15	DG 3317 B3XF	1281	43.5	4.3	1.18	31.5	85.4	31	4	55.20
16	ST 4480 B3XF	1279	40.1	3.9	1.23	32.5	84.5	41	5	52.40
17	DP 2012 B3XF	1278	41.5	4.0	1.21	34.1	85.1	31	4	55.30
18	AR 9210 B3XF	1262	42.1	4.6	1.24	32.6	86.5	31	4	55.25
19	PHY 443 W3FE	1259	40.8	4.4	1.21	34.3	87.1	31	5	53.50
20	DG 3520 B3XF	1156	39.8	3.7	1.29	32.6	86.2	41	6	49.80
<b>Mean</b>		<b>1348</b>	<b>42.2</b>	<b>4.3</b>	<b>1.22</b>	<b>32.6</b>	<b>84.7</b>	<b>31</b>	<b>5</b>	<b>53.81</b>

**Table CST9.** Results from the 2020 Lake XtendFlex County Standard Trial planted May 22<sup>nd</sup> and harvested Nov. 4<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	DP 1725 B2XF	1747	43.3	4.2	1.23	31.5	82.1	41	4	54.20
2	DP 2020 B3XF	1670	39.6	3.9	1.28	30.9	83.8	41	4	54.10
3	DP 2038 B3XF	1613	43.8	4.2	1.19	31.7	83.8	31	3	56.80
4	DP 2012 B3XF	1607	39.3	4.2	1.27	33.0	83.3	41	3	54.90
5	DG 3520 B3XF	1598	38.4	3.2	1.32	30.5	85.3	41	5	45.75
6	DG 3317 B3XF	1526	41.1	4.0	1.22	31.5	85.3	41	5	52.45
7	NG 4936 B3XF	1520	38.1	4.1	1.30	30.0	84.6	41	3	54.70
8	NG 4098 B3XF	1507	38.3	3.9	1.24	29.0	83.6	41	5	51.95
9	NG 3729 B2XF	1485	38.1	4.2	1.27	30.8	84.1	41	5	52.20
10	ST 4990 B3XF	1468	35.6	4.0	1.27	32.5	85.3	31	3	56.90
11	AR 9210 B3XF	1452	41.8	4.5	1.28	32.7	84.2	31	4	55.15
12	DP 1518 B2XF	1433	38.7	3.9	1.22	30.4	82.8	41	5	52.05
13	DP 1646 B2XF	1391	39.2	3.8	1.33	29.5	84.0	31	4	54.80
14	ST 4480 B3XF	1373	37.0	3.7	1.29	30.5	84.8	41	4	54.15
15	AR 9608 B3XF	1361	42.5	3.7	1.19	28.7	83.3	31	4	54.70
<b>Mean</b>		<b>1517</b>	<b>39.7</b>	<b>4.0</b>	<b>1.26</b>	<b>30.9</b>	<b>84.0</b>	<b>41</b>	<b>4</b>	<b>53.65</b>

**Table CST10.** Results from the 2020 Lauderdale XtendFlex County Standard Trial planted May 20<sup>th</sup> and harvested Oct. 26<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	DP 1518 B2XF	1100	40.7	4.6	1.23	32.9	85.1	41	4	54.35
2	DP 1725 B2XF	1049	43.0	4.6	1.22	33.5	86.0	41	3	55.00
3	ST 4990 B3XF	1044	38.5	4.6	1.28	33.9	86.9	41	3	55.00
4	DP 2038 B3XF	1043	44.2	4.8	1.18	35.5	85.8	41	3	54.95
5	AR 9210 B3XF	1016	40.4	4.8	1.27	35.8	86.9	41	4	54.45
6	NG 4936 B3XF	997	38.8	4.9	1.27	33.2	87.6	41	3	55.00
7	DP 2020 B3XF	993	39.1	4.7	1.27	33.6	86.9	41	4	54.45
8	AR 9608 B3XF	977	42.9	4.5	1.20	33.0	86.0	41	4	54.45
9	DP 1646 B2XF	964	41.8	4.6	1.32	32.5	86.5	41	4	54.40
10	DP 2012 B3XF	955	39.5	4.5	1.25	34.2	85.9	41	3	54.95
11	NG 3729 B2XF	905	40.3	4.7	1.29	33.9	87.3	41	5	52.50
12	DG 3317 B3XF	899	40.4	4.8	1.22	35.1	87.4	41	4	54.45
13	ST 4480 B3XF	894	39.1	4.2	1.26	34.9	86.2	41	4	54.50
14	NG 4098 B3XF	878	39.1	4.4	1.33	38.5	85.9	51	6	48.20
15	DG 3520 B3XF	875	38.0	4.3	1.32	34.9	87.8	41	4	54.45
<b>Mean</b>		<b>973</b>	<b>40.4</b>	<b>4.6</b>	<b>1.26</b>	<b>34.4</b>	<b>86.5</b>	<b>41</b>	<b>4</b>	<b>54.07</b>

**Table CST11.** Results from the 2020 Lincoln XtendFlex County Standard Trial planted May 13<sup>th</sup> and harvested Oct. 30<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	DP 2038 B3XF	1785	46.4	4.3	1.16	32.1	83.3	31	3	56.60
2	DP 1646 B2XF	1658	43.2	4.0	1.29	30.9	84.4	41	4	54.15
3	DG 3317 B3XF	1623	42.0	4.3	1.19	31.0	85.1	31	4	55.20
4	AR 9210 B3XF	1610	43.6	4.7	1.24	34.0	84.1	41	5	52.40
5	NG 4098 B3XF	1515	40.6	4.0	1.26	36.5	85.2	41	6	49.80
6	AR 9608 B3XF	1512	44.8	4.3	1.21	31.9	84.2	31	3	56.80
7	DP 2012 B3XF	1504	40.9	4.2	1.28	34.2	86.2	41	5	52.55
8	DP 1518 B2XF	1502	41.7	3.6	1.30	34.4	87.0	41	5	52.50
9	DG 3520 B3XF	1501	40.2	3.6	1.27	32.7	86.6	41	5	52.45
10	ST 5600 B2XF	1499	41.7	4.7	1.25	32.4	85.4	41	5	52.40
11	NG 3729 B2XF	1493	40.2	4.7	1.22	31.2	85.5	41	4	54.35
12	NG 4936 B3XF	1485	40.2	4.2	1.28	32.9	85.7	41	3	54.95
13	DP 2020 B3XF	1484	39.8	4.1	1.27	33.2	85.7	41	4	54.45
14	ST 4990 B3XF	1464	39.2	4.3	1.28	33.0	87.0	41	3	55.00
15	ST 4480 B3XF	1335	39.8	4.1	1.28	35.2	85.5	41	5	52.50
<b>Mean</b>		<b>1513</b>	<b>41.3</b>	<b>4.2</b>	<b>1.26</b>	<b>33.1</b>	<b>85.5</b>	<b>41</b>	<b>4</b>	<b>53.54</b>

**Table CST12.** Results from the 2020 Madison County Standard Trial including both Enlist and XtendFlex varieties planted May 19<sup>th</sup> and harvested Oct. 17<sup>th</sup>.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif. (%)	HVI Color	Leaf Grade	Loan Value
1	DP 2038 B3XF	1610	42.9	4.5	1.13	31.9	82.7	31	3	56.10
2	DP 1725 B2XF	1568	43.0	4.6	1.12	28.6	79.7	41	3	53.50
3	DG 3317 B3XF	1532	41.8	4.5	1.15	30.2	84.0	41	4	54.00
4	AR 9608 B3XF	1530	44.8	4.3	1.16	29.6	82.7	41	4	53.65
5	PHY 360 W3FE	1516	40.2	4.4	1.14	29.4	82.3	41	5	51.80
6	NG 4936 B3XF	1473	39.6	4.6	1.21	30.7	84.7	41	3	54.65
7	ST 4480 B3XF	1453	38.9	4.4	1.20	32.2	83.0	41	4	54.25
8	NG 4098 B3XF	1447	39.6	4.4	1.23	35.3	85.2	41	5	52.45
9	PHY 332 W3FE	1430	40.2	4.1	1.17	31.8	85.0	41	4	54.30
10	DP 2012 B3XF	1429	41.3	4.6	1.18	29.6	85.2	41	4	53.95
11	DP 1518 B2XF	1423	39.6	4.3	1.13	26.8	81.7	41	5	51.70
12	NG 3729 B2XF	1423	40.1	5.0	1.19	30.6	84.3	41	4	51.75
13	ST 4990 B3XF	1411	38.2	4.5	1.20	29.8	84.4	41	3	54.45
14	DG 3520 B3XF	1388	38.8	4.0	1.27	31.1	86.9	41	5	52.50
15	DP 2020 B3XF	1297	40.3	4.7	1.21	28.9	83.6	41	4	53.80
16	AR 9210 B3XF	1285	41.8	5.1	1.16	31.2	84.0	41	4	51.85
17	PHY 400 W3FE	1247	42.8	4.6	1.15	30.5	83.1	41	5	52.10
18	PHY 443 W3FE	1215	40.0	4.7	1.11	31.9	84.0	41	4	54.00
19	DP 1646 B2XF	1206	42.0	4.8	1.28	28.7	83.1	31	3	56.30
20	PHY 390 W3FE	1170	41.6	4.5	1.13	31.4	81.7	41	4	53.85
<b>Mean</b>		<b>1403</b>	<b>40.9</b>	<b>4.5</b>	<b>1.18</b>	<b>30.5</b>	<b>83.6</b>	<b>41</b>	<b>4</b>	<b>53.55</b>

**Table CST13.** Results from the 2020 Tipton Enlist County Standard Trial planted May 18<sup>th</sup> and harvested Oct. 27<sup>th</sup>.

<b>Yield Rank</b>	<b>Variety</b>	<b>Lint Yield (lb/ac)</b>	<b>Turnout (%)</b>	<b>Mic</b>	<b>Length (in.)</b>	<b>Strength (g/tex)</b>	<b>Unif. (%)</b>	<b>HVI Color</b>	<b>Leaf Grade</b>	<b>Loan Value</b>
1	PHY 390 W3FE	1444	40.5	4.4	1.21	34.3	83.3	31	4	55.15
2	PHY 360 W3FE	1360	41.0	4.8	1.21	32.3	82.1	41	4	54.15
3	PHY 332 W3FE	1349	38.0	4.8	1.26	34.3	84.2	41	4	54.35
4	PHY 443 W3FE	1348	40.0	4.8	1.19	33.5	84.9	41	3	54.90
5	PHY 400 W3FE	1340	41.6	4.6	1.25	36.1	85.4	41	5	52.45
<b>Mean</b>		<b>1368</b>	<b>40.2</b>	<b>4.7</b>	<b>1.22</b>	<b>34.1</b>	<b>84.0</b>	<b>41</b>	<b>4</b>	<b>54.20</b>

## Glossary

**Bollgard II:** A two-gene trait which expresses the Cry1Ac and Cry2Ab proteins from *Bacillus thuringiensis* (Bt) and provides resistance to certain lepidopteran pests such as tobacco budworm. Abbreviated **B2** in variety names.

**Bollgard III:** A three-gene trait which expresses the Cry1Ac, Cry2Ab and Vip3A proteins from *Bacillus thuringiensis* (Bt) and provides resistance to certain lepidopteran pests such as tobacco budworm. Abbreviated **B3** in variety names.

**Commodity Credit Corporation:** An entity administered by the Farm Services Agency of the United States Department of Agriculture. Commonly abbreviated as CCC.

**Color:** See **HVI Color Grade**.

**Conventional tillage:** Systems in which the entire surface layer of soil is mixed or inverted by plowing, power tilling, or multiple disking before planting. Conventional tillage systems may also involve inter-row cultivation after planting.

**County Standard Test:** A large plot variety trial consisting of no-replications and only commercially available cotton varieties. Abbreviated as CST.

**Coefficient of variation:** A statistical estimate of experimental variability, calculated as the standard deviation divided by the mean, and expressed as a percentage. A relatively low CV indicates greater experimental precision. Abbreviated as CV.

**Earliness:** A measure of how rapidly a cotton crop reaches maturity. Relative earliness of varieties can be measured by the heat units needed to mature the highest harvestable boll. Earliness is under genetic control but is strongly influenced by crop management.

**Enlist:** A trait which provides tolerance (in cotton) to the herbicides 2,4-D, glyphosate, and glufosinate. Abbreviated **FE** in variety names.

**Gin turnout:** Weight of lint as a percent of seedcotton weight, which is composed of lint, seed, trash, and excess moisture.

**Glytol:** A trait which provides tolerance to the herbicide glyphosate. Abbreviated **G** in variety names.

**Heat Units:** A measure of thermal time used to describe crop growth and development. Commonly abbreviated as *GDD* (growing degree days) or *DD60s* (degree-days above a threshold of 60° F).

**High Volume Instrument:** A classing instrument providing accurate measurements of fiber length, strength, micronaire, length uniformity, trash, and color. Abbreviated as HVI.

**HVI Color Grade:** Cotton color grade is a function of white reflectance (Rd) and yellowness (+b) of the lint sample. The HVI color code identifies the quadrant of the Nickerson-Hunter cotton colorimeter diagram in which Rd and +b values intersect (USDA, 1999). Color may be affected by moisture and temperature after boll opening, during harvest, ginning or storage.



**Height to Node Ratio:** A ratio of the main stem height divided by the total number of nodes. This measurement can provide insight into vegetative vigor.

**Leaf Grade:** The classer's leaf grade is a visual estimate of the amount of cotton plant leaf particles in a sample of lint. There are seven leaf grades represented by physical standards, plus a below grade designation. See **Trash**.

**Length:** Average fiber length of the longer one-half of the fibers sampled, in hundredths of an inch. Fiber length is under strong genetic control but may be reduced by environmental stress, nutrient deficiency, or fiber breakage. Staple expresses fiber length in 32nds of an inch.

Length (32nds)	Length (Inches)	Length (32nds)	Length (Inches)
24	0.79 & shorter	36	1.11 – 1.13
26	0.80 – 0.85	37	1.14 – 1.17
28	0.86 – 0.89	38	1.18 – 1.20
29	0.90 – 0.92	39	1.21 – 1.23
30	0.93 – 0.95	40	1.24 – 1.26
31	0.96 – 0.98	41	1.27 – 1.29
32	0.99 – 1.01	42	1.30 – 1.32
33	1.02 – 1.04	43	1.33 – 1.35
34	1.05 – 1.07	44 & +	1.36 & +
35	1.08 – 1.10		

Source: USDA (1999)

**Lint yield:** Weight of lint harvested per unit ground area (typically reported as pounds per acre).

**Liberty Link:** A trait which provides tolerance to the herbicide glufosinate. Abbreviated **LL** in variety names.

**Least Significant Difference:** Least significant difference is the statistical estimate of the smallest difference between two means that are significantly different at a fixed p-value (usually 0.05).

**Micronaire:** A measure of fiber fineness or maturity. An airflow instrument measures the air permeability of a given mass of cotton lint compressed to a fixed volume. Low "mike" values indicate finer or less mature fibers. Mike is strongly influenced by boll load, leaf retention and environmental conditions (especially moisture supply) during boll maturation. Abbreviated as mike or mic. No decimal point is used by the USDA (1999) in reporting micronaire values, while others report values in tenths of units.

Market Value	HVI Micronaire
Low discount range	34 and below
Base range	35 – 36
Premium range	37 – 42
Base range	43 – 49
High discount range	50 and above

Source: USDA (1999)

**Nodes above cracked boll:** A measure of plant maturity measured by the number of nodes from the highest first-position cracked boll to the node of the highest harvestable boll. Abbreviated as NACB.

**Nodes above white flower:** A measure of the number of main-stem nodes above the uppermost white flower at

first position, indicating relative crop maturity. An average NAWF count of 5 is used as a reference point of physiological cutout or last effective boll population. Abbreviated as NAWF.

**No-till:** A system in which a crop is planted directly into a seedbed not tilled since the previous crop and only the immediate seed zone is disturbed during planting. Other surface residues are not moved, and weed control is accomplished primarily with herbicides.

**Official Variety Trail:** A replicated small-plot test conducted at several locations to evaluate the adaptation of the most promising commercial cultivars for Tennessee. Abbreviated as OVT.

**P-value:** Observed significance level in an analysis of variance. It estimates the probability of error in concluding that differences truly exist among treatments (varieties).

**Randomized Complete Block Design:** An experimental design in which all treatments are randomly assigned to plots in separate within-field blocks (replications). This design increases the power of the trial to isolate treatment differences from inherent field variability.

**Rd and +b:** Measures of white reflectance (%) and of yellow pigmentation (Hunter's scale), respectively, in a sample of lint. Lower Rd values indicate grayer samples, while higher +b values indicate yellower samples. Field weathering can decrease reflectance, while excess moisture in storage can cause yellowing.

**Roundup Ready:** A trait which provides tolerance to a broadcast application of the herbicide glyphosate until the fifth true leaf reaches the size of a quarter. Subsequent glyphosate applications must be directed towards the base of the plant. Abbreviated **R** or **RR** in variety names.

**Roundup Ready Flex:** A trait which provides tolerance to a broadcast application of the herbicide glyphosate beyond the fifth true leaf stage. Abbreviated **F** or **RF** in variety names.

**Seedcotton:** Lint plus seed, trash and excess moisture.

**Staple:** A traditional term applied to lengths of fiber that require spinning or twisting in the manufacture of yarn. Staple also refers to the average length of the bulk fibers measured in 32nds of one inch. Cotton fiber considered with regard to its length.

**Strength:** Force required to break a bundle of fibers one tex unit in size. A tex is the weight in grams of 1,000 meters of fiber. HVI clamp jaw spacing is 1/8 inch. Fiber strength is under strong genetic control, but may be reduced by nutrient deficiency or stress.

Strength category	HVI Strength (grams per tex)
Very strong	31 and above
Strong	29 – 30
Intermediate	26 – 28
Weak	24 – 25
Very weak	23 and below
Source: USDA (1999)	

**Transgenic variety:** A variety containing genes from dissimilar species or other foreign sources that confer desirable traits such as insect or herbicide resistance.

**Trash:** Percentage of the sample surface area covered by non-lint materials, as determined by a video scanner.

Typical sources of trash include leaf fragments and bark. HVI trash measurement is correlated to a hand classer's leaf grade:

**Twinlink:** A two-gene trait which expresses the Cry1Ab and Cry2Ae proteins from *Bacillus thuringiensis* (Bt) and provides resistance to certain lepidopteran pests such as tobacco budworm. Abbreviated **T** in variety names.

**TwinlinkPlus:** A three-gene trait which expresses the Cry1Ab, Cry2Ae, and Vip3Aa19 proteins from *Bacillus thuringiensis* (Bt) and provides resistance to certain lepidopteran pests such as tobacco budworm. Abbreviated **TP** in variety names.

**Uniformity:** Length uniformity is the ratio between the mean length and the upper-half mean length of the fibers, expressed as a percentage. Also referred to as the length uniformity index.

Uniformity Group	Length Uniformity Index
Very high	86 and above
High	83- 85
Intermediate	80- 82
Low	77- 79
Very low	76 and below

Source: USDA (1999)

**Widestrike:** A two-gene trait which expresses the Cry1Ac and Cry1F proteins from *Bacillus thuringiensis* (Bt) and provides resistance to certain lepidopteran pests such as tobacco budworm. Abbreviated **W** in variety names.

**Widestrike 3:** A three-gene trait which expresses the Cry1Ac, Cry1F, and Vip3A proteins from *Bacillus thuringiensis* (Bt) and provides resistance to certain lepidopteran pests such as tobacco budworm and improved resistance management. Abbreviated **W3** in variety names.

**XtendFlex:** A trait which provides tolerance (in cotton) to the herbicides dicamba, glyphosate, and glufosinate. Abbreviated **XF** in variety names.

## References

- USDA. 1997. Cotton Classification Results -- Understanding the Data. Agricultural Marketing Service, Cotton Div. Rev. 5/97. 12 pp.
- USDA. 1999. The Classification of Cotton. Agricultural Marketing Service, Agric. Handbook 566. Rev. 1/99. Washington, DC. 23 pp.



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