

County Standardized Testing of Cotton Cultivars in Tennessee

Lindsay Stephenson, Tyson B. Raper PhD., Ryan Blair

University of Tennessee Extension; LSS@utk.edu



OBJECTIVES

- Summarize results from the 2024 TN CST program
- Provide unbiased cotton yield data for producers
- Highlight benefits of maintaining a CST program

INTRODUCTION

Data generated on production farms continues to be preferred by growers in the MidSouth region; while small plot replicated trials provide an integral component of variety testing, large plot variety trials planted, maintained and harvested with commercial scale equipment provide information on variety performance across a wide range of environments

The University of Tennessee Cotton Agronomy Program provides an unbiased evaluation of commercial varieties available for production in Tennessee each year through the County Standard Trials (CSTs) program. The CSTs are large plot variety strip trials located throughout the Western and Central regions of Tennessee and are composed of major commercial cultivars. Fifteen CSTs were planned for the 2024 season, only eight were harvested due to challenging weather conditions at planting.

METHODS

Sixteen commercial varieties were submitted by each respective company. 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 six to eight rows wide and 125 to 2500 ft+ in length, depending on producer equipment and field size. Only two locations contained Phytogen Varieties, therefore that data is not included.

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, approximately 6 lb of seedcotton from each plot was collected, transported to the University of Tennessee 20 saw Cotton MicroGin to generate turnout and allow for subsampling in order to collect information on fiber quality. A subsample of lint from each ginned sample was submitted to the USDA Cotton Classing Office in Memphis, TN for HVI analysis.

CONCLUSION

Yield and fiber quality data obtained from the UT variety trials, serve as base for seed selection for planting future years crops for area producers. Producers request for the information prove the tests are valuable resources.



Fig. 1, 2, & 3: Large-plot variety trials were conducted within six Tennessee counties in 2024. As plots are harvested, seedcotton is weighed and a subsample of 6-8 lbs of seedcotton is collected. Pictured is planting and harvest from one of the two Haywood County locations. This trial encompassed 62 acres.

Yield Rank	Variety	Lint Yield (lb/ac)	Turnout (%)	Mic	Length (in.)	Strength (g/tex)	Unif (%)	Leaf Grade	HVI Color	Loan Value
1	DP 2414 B3TXF	1159 a	42.9 ab	4.1 bcd	1.15 abc	29.7 bc	83.0 ab	4	41	53.75
2	DP 2333 B3XF	1083 ab	42.0 bc	4.4 b	1.14 cd	29.7 bc	82.2 c	4	41	53.60
3	DP 2328 B3TXF	1075 b	43.7 a	4.1 bcd	1.16 ab	29.9 ab	82.2 c	4	41	53.70
4	DP 2211 B3TXF	1071 b	41.9 bc	4.1 cd	1.17 a	30.8 a	83.6 a	4	41	53.90
5	DP 2115 B3XF	1061 b	41.4 cd	4.3 bc	1.15 bcd	30.5 ab	83.4 ab	4	41	53.80
6	DP 2127 B3XF	1060 b	42.0 bc	4.6 a	1.13 d	30.4 ab	83.6 a	4	41	53.55
7	NG 3457 B3XF	1052 bc	40.3 de	4.0 d	1.17 a	30.1 ab	83.2 ab	4	41	53.90
8	AR 9371 B3XF	1011 bcd	41.2 cd	4.0 d	1.17 ab	30.4 ab	83.2 ab	4	41	53.90
9	AR 9383 B3TXF	977 cd	39.3 e	4.1 cd	1.15 bcd	28.8 c	82.8 bc	4	41	53.65
10	NG 4405 B3TXF	965 d	39.6 e	3.7 e	1.16 abc	30.1 ab	82.8 bc	4	41	53.85
11	DG 4530 B3TXF	958 d	40.9 cd	4.0 d	1.16 ab	30.3 ab	83.3 ab	4	41	53.90
Average		1043	41.4	4.1	1.16	30.1	83.3	4	41	53.80
LSD (p<0.05)		79.7	1.2	0.2	0.02	1.0	0.7			
CV (%)		7.6	2.9	5.7	1.70	3.3	0.9			

Table 1: Average lint yield, gin turnout, and fiber quality of the eleven XtendFlex varieties entered in the 2024 Tennessee County Standard Trial Program across eight trial locations.



Figure 4: UT 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.

MATERIALS

County Locations

- Gibson (2)
- Haywood (2)
- Fayette
- Lauderdale
- Lincoln
- Madison (2)

Varieties

AR 9371 B3XF	Armor	Winfield Solutions LLC
AR 9383 B3TXF	Armor	Winfield Solutions LLC
DG 4530 B3TXF	Dyna-Gro	Nutrien
DP 2414 B3TXF	DeltaPine	Bayer CropScience
DP 2333 B3TXF	DeltaPine	Bayer CropScience
DP 2328 B3XF	DeltaPine	Bayer CropScience
DP 2211 B3TXF	DeltaPine	Bayer CropScience
DP 2115 B3XF	DeltaPine	Bayer CropScience
DP 2127 B3XF	DeltaPine	Bayer CropScience
NG 3457 B3XF	NexGen	Americot
NG 4405 B3TXF	NexGen	Americot



Please scan for the complete UT 2024 Variety Trial Results.