2020 MSU Extension On-Farm Cotton Variety Demonstration Program

2020 County Trial Locations and Cooperators

Trials arranged and conducted by Brian Pieralisi, PhD.

Assistance provided by Jake McNeal, Steven Hall, Brint Lindsey, Spencer Land, Ty Dickson, Eli Hobbs, Bryce Bullock, and Wilson Whitlock.

Special thanks to Tyson Raper, PhD, University of Tennessee – West Tennessee Research and Education Center.

Table 1. Locations, growers, and cooperating agronomists for 2020 MSU Extension On-Farm Cotton Variety Demonstration Program.

Location	Grower	MSU Agronomist
Brooksville	Brian Pieralisi	Brian Pieralisi
Coffeeville	Coley Bailey	Brian Pieralisi
Crawford	Rodney Mast/Lowell Mullett	Brian Pieralisi
Delta Island	Travis Dunn	Andy Braswell
Edwards	Kendall Garraway	Brian Pieralisi
Ellistown	Larry Coker	Charlie Stokes
Greenwood	John Moor	Andy Braswell
Louise	Byron Seward	Brian Pieralisi
Mayersville	Chase Mahalitic	Brian Pieralisi
Natchez	Matthew Guedon	Brian Pieralisi
Prairie	Ben Harlow	Charlie Stokes
Sledge	Sledge Taylor	Brian Pieralisi
Mississippi State	Brian Pieralisi	Brian Pieralisi
Tallahatchie	Mike Sturdivant Jr.	Brian Pieralisi
Washington County	Tyler Horn	Brian Pieralisi
West Point	Brandon Litwiller	Charlie Stokes

Mississippi State University Extension sincerely appreciates the time and effort of the cooperating growers and Mississippi State University agronomists. In addition, several independent consultants provided a tremendous level of assistance with these trials, including Ty Edwards, Jason Grafton, Bert Falkner, Tucker Miller, and Tim Richards. Sincere gratitude is also extended to the following seed companies and representatives for providing seed for these trials: BASF, Andy White; Crop Production Services/Dyna-Gro, Scott Cummings; Phytogen Cottonseed, Tom Eubank; Americot/NexGen, Chase Samples and Terry Campbell; and Delta and Pine Land, Greg Ferguson. Cooperation from all aforementioned parties is essential for success of the MSU Extension On-Farm Cotton Variety Demonstration Program. In addition, partial financial support for this project was provided by each participating company and Cotton Incorporated.

Introduction

The cotton variety selection process is often difficult and, in many cases, leaves growers wondering for the remainder of the growing season whether they made the right variety selection decisions. Furthermore, the rapid introduction of new varieties and discontinued production of "older" varieties has become commonplace over the past several years.

Historically, a premier variety would remain in the marketplace for a long period. However, a variety that performs well today typically has a life span of 4–6 years. One that does not perform well will likely remain on the market for less than 3 years. In addition, the historical standard for variety testing information was to have 2–3 years of data before releasing any given variety. Today, 1–2 years of "broad-scale" variety testing is common before releasing a new variety. Therefore, greater demand has been placed on testing a variety in as many environments as possible as a substitute for multiple years of data. In most cases, variety testing before release is conducted by private industry through a series of testing methods and through university official variety trial (OVT) programs. Official variety trial data is typically available for 1 year before the release of a given variety.

Our on-farm testing program is not designed to replace or compete with small-plot OVT testing programs; rather, it is designed to complement the data that is provided by OVT programs. The use of large-plot variety trial data in conjunction with small-plot OVT data provides a tremendous resource to Mississippi growers with respect to variety performance.

Methodology

The on-farm testing program at Mississippi State University is designed to test varieties in as many environments as possible. Limiting the number of entries allows for efficient planting and harvest operations and requires a minimum amount of time from cooperating growers. The number of variety entries each company is given depends on market share. In addition, one to two at-large entries are given to smaller companies in order to provide equal opportunity to as many seed providers as possible.

Our on-farm variety tests are usually planted in 8- or 12-row sets using planting equipment provided by each grower. In some cases, 4- or 6-row sets are used, depending on site characteristics and grower preference. In addition, two replications of each variety are planted and harvested at all locations. Plot lengths ranged from 500 to 2,600 feet in 2020, depending on the characteristics of the field the trial was conducted in. Seed treatments are at the discretion of the company providing seed. A premium seed treatment package including an insecticide, fungicide, and nematicide was provided for each variety. In-season management is at the discretion of growers, who are encouraged to manage the plot area as they would manage any given field on their farm.

Each replication for each variety was individually harvested using standard harvest equipment. Harvest weights were collected using a boll buggy or trailer modified to display the weight of seed cotton contained therein. Before all harvest operations, each boll buggy or trailer was calibrated by the Mississippi Department of Agriculture and Commerce to ensure that accurate harvest weights were collected. An 8- to 10-pound seed cotton sample was collected for each variety tested.

To reduce ginning time, subsamples from replications number 1 and 2 were composited into a single sample. Seed cotton was ginned at the University of Tennessee – West Tennessee Research and Education Center. Ginning equipment at the WTREC consists of a 20-saw Continental Eagle gin equipped with a stick machine, incline cleaners, two lint cleaners, and a condenser. Fiber quality for each ginned sample was determined using a high-volume instrument (HVI) located at the United States Department of Agriculture Classing Office in Memphis.

Entries

A maximum of 10 core variety entries per year are allowed in the MSU Extension On-Farm Cotton Variety Demonstration Program. Entries are allotted by market share from respective companies. One entry per year is automatically given to the variety planted on the highest acreage in the previous year based on the annual Varieties Planted Report from USDA-AMS. In 2020, Bayer/ Delta and Pine Land was allotted three spots; Phytogen Cottonseed was allotted three spots; Americot was allotted two spots; and two additional "at-large" entries were given to provide parity to smaller companies with less resources than larger companies. Entries in the 2020 MSU Extension On-Farm Cotton Variety Demonstration Program are listed in Table 2.

Table 2. 2020 MSU Extension On-Farm Cotton Variety Demonstration Program entry list.

Slot #	Criteria/Company	Variety
1	At-large entry – Crop Production Services/Dyna-Gro	DG 3520 B2XF
2	At-large entry – BASF	ST 4990 BX3
3	Delta and Pine Land	DP 1646 B2XF
4	Delta and Pine Land	DP 2012 B3XF
5	Delta and Pine Land	DP 2038 B3XF
6	Americot	NG 4098 B3XF
7	Americot	NG 4936 B3XF
8	Phytogen Cottonseed	PHY 400 W3FE
9	Phytogen Cottonseed	PHY 443 W3FE
10	Phytogen Cottonseed	PHY 390 W3FE

Site Characteristics

Locations for the 2020 MSU Extension On-Farm Cotton Variety Demonstration Program are listed in Table 1. Yield trials were conducted at a total of 16 locations. Seven locations were in the Delta and nine in the Hills region. All Delta locations were irrigated, and eight of nine Hill locations were dryland. The remaining Hill location (Crawford) was pivot irrigated. Field sites were chosen based on grower preference and required elements to conduct a reliable yield trial.

Reported Data and Analysis

Each data table includes the following: variety, lint yield, lint percent, micronaire, staple length (in inches), fiber strength, fiber uniformity, and leaf grade. Data analysis using SAS v. 9.4 was conducted on all replicated trials. Grand means (averages) are presented as well as least significant differences (LSD). Least significant differences are the smallest value with which we can confidently say there is a difference between two means. Differences in means less than the given LSD value are likely due to variability within a given field or environment. For non-replicated trials and fiber data at individual locations, LSDs are not applicable. For locations that were replicated and data from one replication of a given variety was lost, SAS will interpret these data as missing and provide data analysis based on estimates. Therefore, average data for a given location may be slightly different than data reported.

Table 3. Yield and fiber quality data pooled across all 16 locations.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
PHY 443 W3FE	**1188**	40.3	4.5	1.21	32.2	84.3	4.2
DP 2038 B3XF	**1139**	43.9	4.6	1.19	31.7	82.4	3.6
PHY 400 W3FE	**1136**	40.3	4.2	1.23	34.4	83.9	5.0
DP 2012 B3XF	**1134**	38.2	4.3	1.23	31.8	83.7	4.7
DP 1646 B2XF	1118	41.1	4.4	1.25	31.0	83.3	3.8
PHY 390 W3FE	1110	39.7	4.4	1.21	32.1	82.9	4.5
ST 4990 B3XF	1105	38.9	4.5	1.23	30.8	84.2	3.8
NG 4936 B3XF	1058	37.6	4.4	1.24	31.3	84.4	4.2
DG 3520 B2XF	1040	37.9	4.0	1.25	31.4	84.3	5.6
NG 4098 B3XF	998	37.5	4.3	1.26	34.1	84.0	5.3
Grand Mean	1103	39.5	4.4	1.23	32.08	83.74	4.5
LSD (0.05)	64	1.4	0.1	0.02	0.9	0.5	0.5

*Yield in bold type are not significantly different from the highest yielding variety.

Table 4. Yield and fiber quality data pooled over seven Delta locations.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
PHY 443 W3FE	**1496**	41.4	4.6	1.21	32.9	84.0	4.2
PHY 400 W3FE	1369	41.5	4.2	1.23	32.7	84.3	5.0
PHY 390 W3FE	1352	40.5	4.2	1.20	32.1	81.9	5.0
DP 2012 B3XF	1290	38.4	4.3	1.24	30.9	83.7	4.5
DP 2038 B3XF	1216	44.7	4.5	1.89	32.0	82.0	3.7
DP 1646 B2XF	1203	40.8	4.3	1.28	31.1	83.5	4.2
NG 4936 B3XF	1190	37.4	4.4	1.26	31.0	84.7	4.1
ST 4990 B3XF	1190	37.5	4.3	1.25	30.4	84.6	4.4
DG 3520 B2XF	1143	37.0	4.0	1.26	31.5	84.2	6.4
NG 4098 B3XF	1100	37.7	4.2	1.29	33.9	84.0	5.8
Grand Mean	1255	39.7	4.3	1.31	31.8	83.7	4.7
LSD (0.05)	92	1.9	0.2	0.03	1.3	0.7	0.7

*Yield in bold type are not significantly different from the highest yielding variety.

Delta region locations included Delta Island, Greenwood, Louise, Mayersville, Sledge, Tallahatchie, and Washington County.

Table 5. Yield and fiber quality data pooled over nine Hill region locations.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 2038 B3XF	**1089**	43.4	4.7	1.18	31.5	82.6	3.5
DP 1646 B2XF	**1062**	41.4	4.5	1.23	31.0	83.1	3.5
ST 4990 B3XF	**1049**	39.9	4.5	1.22	31.1	84.0	3.4
DP 2012 B3XF	**1025**	38.0	4.3	1.22	32.4	83.8	4.9
PHY 443 W3FE	1007	39.8	4.5	1.20	32.0	84.4	4.2
PHY 400 W3FE	995	39.7	4.3	1.23	35.0	83.7	5.0
DG 3520 B2XF	970	38.5	4.1	1.23	31.3	84.3	5.0
NG 4936 B3XF	967	37.7	4.4	1.23	31.6	84.2	4.2
PHY 390 W3FE	963	39.3	4.4	1.22	32.1	83.3	4.3
NG 4098 B3XF	928	37.4	4.4	1.24	34.3	83.9	5.0
Grand Mean	1006	39.5	4.4	1.22	32.2	83.7	4.3
LSD (0.05)	75	1.9	0.2	0.02	1.2	0.6	0.6

*Yield in bold type are not significantly different from the highest yielding variety.

Hill region locations included Brooksville, Coffeeville, Crawford, Edwards, Ellistown, Natchez, Prairie, Starkville, and West Point.

Table 6. Yield and fiber quality data pooled over eight irrigated locations.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
PHY 443 W3FE	**1289**	40.2	4.8	1.21	33.6	84.2	4.2
PHY 400 W3FE	**1214**	40.8	4.4	1.23	33.8	84.2	5.0
PHY 390 W3FE	**1207**	39.9	4.4	1.21	33.3	82.8	5.0
DP 2012 B3XF	1164	38.0	4.5	1.24	31.5	83.8	4.4
DP 2038 B3XF	1106	44.0	4.7	1.18	33.2	82.4	3.8
DP 1646 B2XF	1092	40.3	4.5	1.28	31.7	83.7	4.2
NG 4936 B3XF	1069	36.9	4.5	1.26	32.0	85.0	4.3
ST 4990 B3XF	1061	36.7	4.5	1.25	31.2	84.7	4.2
DG 3520 B2XF	1022	36.8	4.1	1.26	32.2	84.5	6.3
NG 4098 B3XF	984	37.2	4.4	1.29	35.0	84.3	6.0
Grand Mean	1121	39.1	4.5	1.24	32.8	84.0	4.7
LSD (0.05)	84	1.6	0.1	0.02	1.1	0.6	0.6

*Yield in bold type are not significantly different from the highest yielding variety.

Irrigated locations included Crawford, Delta Island, Greenwood, Louise, Mayersville, Sledge, Tallahatchie, Washington County.

Table 7. Yield and fiber quality data pooled over eight dryland locations.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 2038 B3XF	**1101**	43.6	4.7	1.19	30.9	82.5	3.4
ST 4990 B3XF	**1078**	40.8	4.5	1.21	31.0	83.9	3.5
DP 1646 B2XF	**1073**	41.6	4.5	1.23	31.0	83.0	3.5
DP 2012 B3XF	**1034**	38.1	4.3	1.22	32.6	84.0	4.8
PHY 443 W3FE	**1029**	40.3	4.4	1.19	31.6	84.4	4.2
PHY 400 W3FE	996	39.8	4.2	1.23	35.1	83.7	5.0
DG 3520 B2XF	986	38.6	4.1	1.23	31.2	84.2	4.9
NG 4936 B3XF	976	38.0	4.4	1.22	31.3	84.0	4.1
PHY 390 W3FE	953	39.4	4.4	1.21	31.5	83.1	4.1
NG 4098 B3XF	941	37.5	4.4	1.24	33.9	83.9	4.7
Grand Mean	1017	39.8	4.4	1.22	32.0	83.7	4.2
LSD (0.05)	85	2.1	0.2	0.02	1.3	0.7	0.7

*Yield in bold type are not significantly different from the highest yielding variety.

Dryland locations included Brooksville, Coffeeville, Edwards, Ellistown, Natchez, Prairie, Starkville, and West Point.

Individual Trial Location Data

Location: Brooksville
Grower: Brian Pieralisi
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Dryland
Planting date: May 5, 2020

Harvest date: November 9, 2020
Soil series: Brooksville Silty Clay

Table 8. Yield and fiber quality data at Brooksville.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
ST 4990 B3XF	**507**	44.3	4.6	1.13	33.0	83.4	3.0
DP 2038 B3XF	**503**	42.1	4.7	1.22	29.5	82.5	3.0
DG 3520 B2XF	**471**	40.7	4.5	1.15	30.7	82.7	4.0
DP 1646 B2XF	**449**	44.7	4.6	1.12	30.6	82.2	2.0
NG 4098 B3XF	**446**	41.1	4.4	1.17	34.2	83.5	4.0
NG 4936 B3XF	**437**	41.2	4.4	1.13	29.7	83.0	4.0
PHY 400 W3FE	390	37.7	4.3	1.21	37.0	83.2	5.0
PHY 443 W3FE	389	38.4	4.2	1.18	28.8	83.3	4.0
PHY 390 W3FE	373	39.1	4.6	1.19	29.4	84.0	3.0
DP 2012 B3XF	339	32.6	3.9	1.19	32.0	84.0	6.0
Grand Mean	430	40.2	4.4	1.17	31.5	83.2	3.8
LSD (0.05)	95	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Location: Coffeeville
Grower: Coley Bailey
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Dryland
Planting date: May 6, 2020

Harvest date: November 10, 2020
Soil series: Collins Silt Loam

Table 9. Yield and fiber quality data at Coffeeville.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 1646 B2XF	**1280**	41.7	4.6	1.22	29.4	82.6	4.0
DP 2038 B3XF	**1249**	44.3	4.8	1.14	31.8	81.7	4.0
ST 4990 B3XF	**1239**	37.5	4.7	1.24	29.9	83.3	3.0
DP 2012 B3XF	**1215**	39.5	4.4	1.22	31.5	83.9	5.0
NG 4098 B3XF	1079	38.7	4.3	1.26	34.5	84.5	7.0
DG 3520 B2XF	1057	37.3	4.1	1.27	30.0	84.5	5.0
NG 4936 B3XF	931	29.7	4.6	1.23	29.6	84.5	3.0
Grand Mean	1150	38.4	4.5	1.23	31.0	83.6	4.4
LSD (0.05)	175	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Phytogen varieties omitted per the grower's request.

Location: Crawford
Grower: Rodney Mast/Lowell Mullett
MSU Agronomist: B. Pieralisi

Row width: 30"
Irrigated: Pivot
Planting date: May 4, 2020

Harvest date: October 8, 2020
Soil series: Vaiden Silty Clay

Table 10. Yield and fiber quality data at Crawford.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 2038 B3XF	**989**	41.9	4.8	1.16	35.8	83.1	4.0
DP 1646 B2XF	**977**	39.6	4.8	1.30	31.1	83.9	4.0
PHY 390 W3FE	**963**	38.9	4.5	1.24	35.0	84.5	5.0
DP 2012 B3XF	**949**	37.9	5.0	1.22	31.2	83.8	4.0
PHY 400 W3FE	**940**	39.3	4.7	1.23	35.1	83.9	5.0
NG 4936 B3XF	**890**	36.0	4.4	1.27	33.4	85.4	5.0
PHY 443 W3FE	859	37.3	5.1	1.22	34.1	84.6	4.0
DG 3520 B2XF	844	38.2	4.1	1.26	32.3	85.0	6.0
ST 4990 B3XF	831	34.2	4.5	1.25	31.8	84.6	3.0
NG 4098 B3XF	830	37.0	4.8	1.28	37.1	84.6	7.0
Grand Mean	907	38.0	4.7	1.24	33.7	84.3	4.7
LSD (0.05)	104	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Location: Delta Island
Grower: Travis Dunn
MSU Agronomist: A. Braswell

Row width: 38"
Irrigated: Furrow
Planting date: May 14, 2020

Harvest date: October 15, 2020
Soil series: Dundee Loam/Tensas Silty Clay Loam

Table 11. Yield and fiber quality data at Delta Island.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 2012 B3XF	1414	39.0	4.2	1.27	29.6	83.9	4.0
ST 4990 B3XF	1410	37.2	4.3	1.25	29.7	84.9	5.0
NG 4936 B3XF	1408	37.2	4.3	1.26	31.3	85.8	4.0
DG 3520 B2XF	1344	36.3	4.0	1.29	30.6	84.1	6.0
DP 2038 B3XF	1321	41.8	4.3	1.18	33.0	81.7	4.0
DP 1646 B2XF	1297	39.0	4.2	1.28	31.3	84.0	5.0
NG 4098 B3XF	1232	34.9	4.1	1.31	34.8	84.0	6.0
Grand Mean	1347	37.9	4.2	1.26	31.5	84.1	4.9
LSD (0.05)	NSD	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Phytogen varieties omitted per the grower's request.

Location: Edwards
Grower: Kendall Garraway
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Dryland
Planting date: May 12, 2020

Harvest date: November 10, 2020
Soil series: McRaven Silt Loam/Riedtown Silt Loam

Table 12. Yield and fiber quality data at Edwards.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
PHY 443 W3FE	1321	41.4	4.3	1.20	31.4	83.4	4.0
DP 2012 B3XF	1307	41.0	4.4	1.24	32.1	82.5	4.0
DP 1646 B2XF	1260	41.1	4.0	1.24	29.4	81.9	3.0
PHY 400 W3FE	1213	40.2	3.9	1.22	34.9	83.1	5.0
NG 4098 B3XF	1143	37.8	4.3	1.22	29.6	84.3	3.0
DP 2038 B3XF	1137	42.9	3.9	1.12	29.7	79.4	3.0
PHY 390 W3FE	1131	39.7	3.7	1.19	33.3	82.3	4.0
DG 3520 B2XF	1097	37.8	3.7	1.24	31.5	84.0	6.0
ST 4990 B3XF	1093	38.2	4.4	1.25	30.6	84.8	3.0
NG 4936 B3XF	1007	39.5	4.3	1.23	31.8	83.7	5.0
Grand Mean	1171	40.0	4.1	1.22	31.4	82.9	4.0

*Yield in bold type are not significantly different from the highest yielding variety.

Location: Ellistown
Grower: Larry Coker
MSU Agronomist: C. Stokes

Row width: 38"
Irrigated: Dryland
Planting date: May 13, 2020

Harvest date: November 16, 2020
Soil series: Mantachie/Talla Sandy Loam

Table 13. Yield and fiber quality data at Ellistown.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 1646 B2XF	1103	40.0	4.6	1.23	30.5	82.7	4.0
DP 2038 B3XF	1091	46.8	4.9	1.18	32.3	84.5	3.0
NG 4936 B3XF	1061	41.5	4.8	1.22	32.3	84.6	4.0
DP 2012 B3XF	1031	39.4	4.6	1.22	33.4	85.4	4.0
ST 4990 B3XF	1015	40.5	4.9	1.19	30.1	83.1	4.0
DG 3520 B2XF	823	36.9	4.1	1.25	31.2	85.1	6.0
NG 4098 B3XF	730	31.3	4.5	1.24	36.8	85.4	4.0
Grand Mean	979	39.5	4.6	1.22	32.4	84.4	4.1
LSD (0.05)	NSD	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Phytogen varieties omitted per the grower's request.

Location: Greenwood
Grower: John Moor
MSU Agronomist: A. Braswell

Row width: 38"
Irrigated: Furrow
Planting date: May 4, 2020

Harvest date: October 19, 2020
Soil series: Dubbs Loam/Tensas Silty Clay Loam

Table 14. Yield and fiber quality data at Greenwood.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
PHY 443 W3FE	**1558**	42.1	4.7	1.21	32.5	83.6	4.0
PHY 400 W3FE	1382	41.0	4.2	1.23	32.6	84.5	5.0
PHY 390 W3FE	1311	40.6	4.2	1.18	31.7	81.1	5.0
DP 2038 B3XF	1233	49.6	4.5	1.18	32.4	82.2	4.0
DP 2012 B3XF	1162	34.0	4.2	1.25	31.5	83.7	5.0
DP 1646 B2XF	1129	41.4	4.2	1.28	32.1	83.2	4.0
ST 4990 B3XF	1068	37.9	4.6	1.25	29.8	84.8	4.0
DG 3520 B2XF	1062	36.3	3.9	1.27	30.5	84.3	7.0
NG 4936 B3XF	1024	36.4	4.6	1.25	31.3	84.6	4.0
NG 4098 B3XF	997	38.1	4.2	1.29	33.6	83.4	6.0
Grand Mean	1193	39.7	4.3	1.24	31.8	83.5	4.8
LSD (0.05)	108	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Location: Louise
Grower: Byron Seward
MSU Agronomist: B. Pieralisi

Row width: 30" 2x1 Skip
Irrigated: Furrow
Planting date: May 12, 2020

Harvest date: October 19, 2020
Soil series: Forestdale-Brittain Silt Loam

Table 15. Yield and fiber quality data at Louise.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 2012 B3XF	1273	43.0	4.6	1.24	31.3	83.0	5.0
DP 2038 B3XF	1251	41.4	4.5	1.31	32.1	83.4	4.0
ST 4990 B3XF	1170	33.9	4.1	1.27	31.5	84.6	7.0
DP 1646 B2XF	1154	40.7	4.7	1.26	32.2	83.8	4.0
DG 3520 B2XF	1125	42.8	4.5	1.20	30.9	83.5	4.0
NG 4098 B3XF	1079	37.0	4.5	1.26	31.6	85.1	5.0
NG 4936 B3XF	965	35.2	4.4	1.30	34.3	83.1	5.0
Grand Mean	1145	39.1	4.5	1.26	32.0	83.8	4.9

*Yield in bold type are not significantly different from the highest yielding variety.

Phytogen varieties omitted per the grower's request.

Location: Mayersville
Grower: Chase Mahalitic
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Furrow
Planting date: May 22, 2020

Harvest date: October 27, 2020
Soil series: Commerce Silty Clay Loam/Tunica Clay

Table 16. Yield and fiber quality data at Mayersville.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 2012 B3XF	1649	40.6	3.8	1.26	31.6	84.3	7.0
DP 2038 B3XF	1535	44.6	4.3	1.31	31.5	83.5	4.0
ST 4990 B3XF	1511	38.3	4.6	1.21	29.1	84.3	4.0
DP 1646 B2XF	1500	41.0	4.6	1.15	31.1	81.8	3.0
NG 4936 B3XF	1458	37.1	4.4	1.27	33.7	84.1	7.0
NG 4098 B3XF	1388	36.5	4.2	1.24	29.2	83.9	4.0
DG 3520 B2XF	1291	31.2	4.5	1.27	31.2	85.3	4.0
Grand Mean	1476	38.5	4.3	1.20	31.1	83.9	4.7

*Yield in bold type are not significantly different from the highest yielding variety.

Phytogen varieties omitted per the grower's request.

Location: Natchez
Grower: Matthew Guedon
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Dryland
Planting date: May 6, 2020

Harvest date: October 20, 2020
Soil series: Adler Silt Loam

Table 17. Yield and fiber quality data at Natchez.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
ST 4990 B3XF	1509	40.6	4.1	1.24	31.0	84.1	6.0
NG 4098 B3XF	1314	42.0	4.2	1.26	33.4	83.7	3.0
DP 2038 B3XF	1292	41.0	3.9	1.26	35.7	84.0	7.0
DG 3520 B2XF	1263	38.4	4.6	1.22	32.0	83.0	4.0
DP 2012 B3XF	1228	35.6	4.0	1.28	30.3	83.1	4.0
NG 4936 B3XF	1223	34.1	4.2	1.25	31.3	84.1	5.0
DP 1646 B2XF	1068	36.1	3.7	1.23	29.6	83.4	4.0
Grand Mean	1271	38.3	4.1	1.25	31.9	83.6	4.7

*Yield in bold type are not significantly different from the highest yielding variety.

Phytogen varieties omitted per the grower's request.

Location: Prairie
Grower: Ben Harlow
MSU Agronomist: C. Stokes

Row width: 30"
Irrigated: Dryland
Planting date: May 18, 2020

Harvest date: October 22, 2020
Soil series: Houston Clay

Table 18. Yield and fiber quality data at Prairie.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 2038 B3XF	1322	45.9	5.0	1.14	31.9	81.8	3.0
ST 4990 B3XF	1299	39.3	4.8	1.20	30.8	85.2	4.0
NG 4936 B3XF	1269	39.7	4.8	1.22	32.6	83.4	4.0
DP 1646 B2XF	1200	42.5	4.6	1.27	30.3	84.3	4.0
DP 2012 B3XF	1195	41.3	4.8	1.20	32.3	83.6	5.0
PHY 400 W3FE	1171	43.3	4.7	1.17	34.3	83.7	4.0
DG 3520 B2XF	1163	41.8	4.3	1.24	33.2	84.8	6.0
NG 4098 B3XF	1094	37.3	4.3	1.24	35.6	83.5	5.0
PHY 390 W3FE	1070	41.0	4.8	1.19	32.3	81.6	5.0
PHY 443 W3FE	1068	42.1	4.9	1.16	34.7	84.6	4.0
Grand Mean	1185	41.4	4.7	1.20	32.8	83.7	4.4
LSD (0.05)	NSD	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Location: Sledge
Grower: Sledge Taylor
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Furrow
Planting date: May 21, 2020

Harvest date: November 12, 2020
Soil series: Falaya/Collins Silt Loam

Table 19. Yield and fiber quality data at Sledge.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
NG 4936 B3XF	1354	39.3	4.3	1.27	30.0	84.6	4.0
ST 4990 B3XF	1320	37.3	4.3	1.26	31.1	83.3	4.0
DP 2012 B3XF	1316	39.6	4.3	1.21	31.8	83.1	4.0
DP 2038 B3XF	1293	44.5	4.7	1.15	30.8	81.4	3.0
DP 1646 B2XF	1290	40.9	4.4	1.26	29.7	82.0	4.0
DG 3520 B2XF	1102	37.5	3.9	1.25	35.2	84.3	7.0
NG 4098 B3XF	1099	38.8	4.2	1.30	33.4	84.3	5.0
Grand Mean	1253	39.7	4.3	1.24	31.7	83.3	4.4
LSD (0.05)	NSD	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Phytogen varieties omitted per the grower's request.

Location: Starkville
Grower: Brian Pieralisi
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Dryland
Planting date: May 5, 2020

Harvest date: November 5, 2020
Soil series: Catalpa/Leeper silty clay loam

Table 20. Yield and fiber quality data at Starkville.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
PHY 443 W3FE	886	42.5	4.7	1.17	32.7	85.5	4.0
DP 1646 B2XF	773	41.0	4.7	1.22	31.2	83.2	4.0
DG 3520 B2XF	743	36.5	4.3	1.23	30.4	85.2	3.0
DP 2038 B3XF	732	40.8	4.9	1.21	29.3	83.1	4.0
DP 2012 B3XF	725	39.5	4.5	1.19	31.4	83.0	4.0
PHY 390 W3FE	711	39.7	4.5	1.19	31.5	82.4	4.0
ST 4990 B3XF	657	42.4	4.6	1.22	30.4	84.0	3.0
PHY 400 W3FE	648	39.3	4.1	1.23	33.8	83.8	5.0
NG 4936 B3XF	601	38.0	4.6	1.22	32.0	85.0	3.0
NG 4098 B3XF	586	35.1	4.5	1.23	34.8	83.2	5.0
Grand Mean	706	39.5	4.5	1.21	31.8	83.8	3.9
LSD (0.05)	NSD	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Location: Tallahatchie
Grower: Mike Sturdivant Jr.
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Furrow
Planting date: May 6, 2020

Harvest date: October 20, 2020
Soil series: Dundee Silt Loam

Table 21. Yield and fiber quality data at Tallahatchie.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
PHY 443 W3FE	1179	37.8	4.4	1.21	33.9	85.0	5.0
NG 4936 B3XF	1114	38.5	4.3	1.25	29.6	85.0	4.0
DP 2012 B3XF	1063	39.2	4.2	1.22	31.1	83.7	5.0
DP 1646 B2XF	1047	42.2	4.4	1.32	29.3	85.4	4.0
ST 4990 B3XF	971	38.8	4.3	1.23	30.2	84.4	3.0
PHY 400 W3FE	969	41.4	4.3	1.23	32.8	83.7	5.0
PHY 390 W3FE	957	38.6	4.3	1.26	33.1	84.1	5.0
DG 3520 B2XF	902	36.5	3.9	1.28	29.4	84.1	6.0
NG 4098 B3XF	849	35.8	4.0	1.25	36.3	83.8	6.0
DP 2038 B3XF	844	38.1	4.4	1.22	31.7	81.9	4.0
Grand Mean	990	38.7	4.3	1.25	31.7	84.1	4.7

*Yield in bold type are not significantly different from the highest yielding variety.

Location: Washington County
Grower: Tyler Horn
MSU Agronomist: B. Pieralisi

Row width: 38"
Irrigated: Furrow
Planting date: May 17, 2020

Harvest date: October 28, 2020
Soil series: Commerce Silt Loam

Table 22. Yield and fiber quality data at Washington County.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
PHY 390 W3FE	1206	42.4	4.6	1.28	33.7	87.1	6.5
DP 2012 B3XF	1192	39.8	4.2	1.29	30.5	87.1	6.0
PHY 443 W3FE	1158	43.1	4.7	1.24	32.2	86.2	4.5
PHY 400 W3FE	1147	43.3	4.3	1.26	32.7	86.1	6.0
DG 3520 B2XF	1073	38.9	4.4	1.29	32.5	86.1	6.0
NG 4098 B3XF	1032	41.0	4.5	1.27	31.5	86.1	4.5
DP 1646 B2XF	1000	41.6	4.6	1.24	31.0	85.2	4.0
NG 4936 B3XF	989	38.4	4.3	1.28	32.0	85.5	6.5
ST 4990 B3XF	980	38.4	4.5	1.23	33.5	84.7	5.5
DP 2038 B3XF	933	46.3	4.2	1.19	34.5	84.4	5.0
Grand Mean	1071	41.3	4.4	1.25	32.4	85.8	5.5
LSD (0.05)	NSD	•	•	•	•	•	•

*Yield in bold type are not significantly different from the highest yielding variety.

Location: West Point
Grower: Brandon Litwiller
MSU Agronomist: C. Stokes

Row width: 38"
Irrigated: Dryland
Planting date: May 18, 2020

Harvest date: October 19, 2020
Soil series: Okolona Silty Clay

Table 23. Yield and fiber quality data at West Point.

Variety	Lint Yield (lb/acre)	Lint Percent	Mic	Staple (in)	Strength (g/tex)	Uniformity (%)	Leaf
DP 2038 B3XF	1480	46.4	4.6	1.17	31.7	82.7	3.0
DP 1646 B2XF	1423	41.5	4.2	1.23	36.0	84.2	4.0
DP 2012 B3XF	1379	39.6	3.8	1.23	34.3	82.7	4.0
PHY 400 W3FE	1344	42.6	4.1	1.28	33.4	84.7	6.0
ST 4990 B3XF	1342	40.2	4.5	1.25	32.4	85.5	4.0
PHY 443 W3FE	1264	39.8	4.3	1.21	31.7	85.2	5.0
DG 3520 B2XF	1248	37.8	4.0	1.23	32.0	83.8	4.0
NG 4936 B3XF	1184	37.3	3.6	1.29	32.5	84.7	7.0
NG 4098 B3XF	1183	36.7	4.3	1.26	28.4	82.8	4.0
PHY 390 W3FE	1163	39.6	4.1	1.27	34.3	84.0	5.0
Grand Mean	1301	40.2	4.2	1.24	32.7	84.0	4.6

*Yield in bold type are not significantly different from the highest yielding variety.

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