2014 LOUISIANA ON-FARM COTTON VARIETY EVALUATIONS

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Abstract

Variety selection is the most important decision made during the year. Unlike herbicide or insecticide decisions that can be changed during the season to address specific conditions and pest, variety selection is made only once, and variety selection dictates the management of that field for the entire season. In 2014, two on-farm cotton variety trials were planted in the state of Louisiana. The objective of these trials is to assist Louisiana cotton producers in the selection of varieties for the upcoming season. Each year, these on-farm trials contain 10-12 commercial cotton varieties. These two trials were located in Point Coupee and Franklin parishes. At the end of the season, statistical analyses are conducted on lint yield, gin turnout, fiber quality parameters, loan value, and gross lint value per acre. Results are summarized and distributed to the seed companies, consultants, and producers.

Introduction

Variety selection is the most important decision made during the year. Unlike herbicide or insecticide decisions that can be changed during the season to address specific conditions and pest, variety selection is made only once, and variety selection dictates the management of that field for the entire season. To assist cotton producers with variety selection, two on-farm cotton variety trials were planted in Point Coupee and Franklin parishes which are located in the central and north east regions of the state, respectively. Each year, these trials contain 10-12 commercial cotton varieties. The objectives of these trials to assist cotton producers and seed companies in evaluating varieties under Louisiana growing conditions.

Data featured in the two tables include statistical analyses of lint yield, gin turnout, fiber quality parameters (micronaire, length, strength, and uniformity, loan value, gross lint value per acre. Values reported for any two varieties that differ by more than the LSD value are expected to be different in 95 of every 100 comparisons. Varieties that are statistically different from one another will not have the same letter next to the corresponding number value in the column. The coefficient of variation (CV) is reported for each of the variables measured at both locations. The CV is a measure of the uniformity of the test location (soil uniformity, moisture, drainage, disease, etc.). Lower coefficients (<10) of variation are desirable. Seed cotton samples from both trials were ginned on a research gin with no lint cleaner. Consequently, our gin turnout percentages will always be higher when compared to gin turnout percentages from a commercial gin. Lint samples are sent to the LSU fiber sample lab for fiber measurements.

Materials/Methods

The Point Coupee parish trial was planted on May 5, 2014 on the George LaCour, Jr. farm. Soil type was a silt loam. Seeding rate was 38,000 seed per acre. Row spacing was 38 inches. Plot sizes were 6 rows by 1350 feet in length. Experimental design was a randomized complete block. Number of replications was three. Harvest date was October 5, 2014. Harvest method was with a commercial cotton picker (Table 1).

The Franklin parish trial was planted on April 22, 2014 on the Adam Faulk farm. Soil type was a Gigger-Gilbert complex silt loam. Seeding rate was 42,000 seed per acre. Row spacing was 38 inches. Plot sizes were 12 rows by 1150 feet in length. Experimental design was a randomized complete block. Number of replications was three. Harvest date was October 17, 2014. Harvest method was with a commercial cotton picker (Table 2).

Results

The trial mean for the Point Coupee parish trial was 653 pounds of lint per acre. The top yielding variety was NG 1511B2RF with a lint yield of 715 pounds of lint per acre. The variety that produced the highest gin turnout was DP 13R352. PHY 339WRF and DP 13R352 produced the highest loan value and highest gross lint value, respectively (Table 1).

The trial mean for the Franklin parish trial was 1,521 pounds of lint per acre. The top yielding variety was DP 1133B2RF with a lint yield of 1,660 pounds of lint per acre. The variety that produced the highest gin turnout was DP 1133B2RF. PHY 499WRF and DP 1133B2RF produced the highest loan value and highest gross lint value, respectively (Table 2).

Table 1. Summary of results for the Point Coupee parish cotton variety trial, 2014.

Variety	Lint (lbs/ac)		Turnout (%)		Micronaire		Length (inches)		Strength (g/tex)		Uniform. (%)		Loan Value (¢/lb)	
NG1511B2RF	715	a	48.8	bc	4.83	bc	1.08	f	28.97	a-d	83.8	a	52.93	a
DP13R352	713	a	51.2	a	4.80	bcd	1.11	cde	28.87	a-d	84.1	a	53.78	a
NG5315B2RF	706	ab	49.3	b	4.73	cd	1.12	cd	28.10	cde	83.1	a	53.58	a
DP1133B2RF	696	ab	48.9	bc	4.83	bc	1.10	def	30.10	ab	83.9	a	53.62	a
PHY333WRF	688	abc	49.2	b	4.63	de	1.12	bcd	27.17	ef	83.8	a	53.87	a
DP1321B2RF	679	abc	48.0	bcd	5.07	a	1.11	c-f	28.63	b-e	83.9	a	51.80	a
ST6448GLB2	676	abc	46.7	def	4.70	cde	1.16	a	27.70	def	82.8	a	53.83	a
PHY499WRF	626	bcd	48.9	bc	4.93	ab	1.10	def	30.30	a	84.0	a	52.72	a
PHY339WRF	610	cd	47.6	cde	4.53	e	1.15	ab	28.63	b-e	83.9	a	53.93	a
ST4946GLB2	593	d	45.9	f	4.80	bcd	1.10	def	29.60	abc	84.7	a	53.57	a
ST5289GLT	573	d	46.3	ef	4.77	bcd	1.09	ef	26.43	f	82.4	a	52.22	a
ST5032GLT	564	d	45.6	f	4.23	f	1.13	bc	28.13	cde	83.2	a	53.70	a
Mean	653.17		48.03		4.74		1.11		28.55		83.63		53.3	
P>F	0.0019		0.0001		0.0001		0.0001		0.0018		0.202		0.1273	
LSD (P=.05)	80.33		1.372		0.192		0.0283		1.622		NS		NS	
STD DEV	47.44		0.81		0.113		0.0167		0.958		0.904		0.9299	
CV%	7.26		1.69		2.39		1.5		3.35		1.08		1.74	

Table 2. Summary of results for the Franklin parish cotton variety trial, 2014.

Variety	Lint (lbs/ac)		Turnout (%)		Micronaire		Length (inches)		Strength (g/tex)		Uniform. (%)		Loan Value (¢/lb)	
DP1133B2RF	1660	a	46.5	a	4.43	ab	1.14	bcd	29.5	ab	83.6	a	54.07	a
NG5315B2RF	1644	a	44.7	a	4.40	abc	1.14	cd	28.5	bc	83.6	a	53.87	a
PHY333WRF	1623	a	42.7	a	3.85	fg	1.18	ab	28.8	b	85.1	a	54.17	a
ST5032GLT	1599	a	43.6	a	3.77	g	1.20	a	29.1	ab	83.2	a	54.12	a
PHY339WRF	1574	ab	42.1	a	3.97	f	1.16	abc	28.9	b	83.4	a	54.15	a
ST4946GLB2	1570	ab	42.5	a	4.23	cd	1.14	cd	29.7	ab	83.2	a	54.12	a
ST5289GLT	1449	bc	42.1	a	3.90	fg	1.15	bcd	27.0	c	82.6	a	53.97	a
NG1511B2RF	1442	c	44.8	a	4.54	a	1.11	d	29.5	ab	83.0	a	53.64	a
ST6448GLB2	1417	c	43.3	a	4.03	ef	1.19	a	27.3	c	82.9	a	54.00	a
DP1321B2RF	1391	c	41.5	a	4.30	bcd	1.14	bcd	29.7	ab	84.1	a	54.07	a
PHY499WRF	1358	c	43.7	a	4.17	de	1.15	bcd	30.5	a	84.3	a	54.42	a
Mean	1520.76		43.42		4.15		1.15		28.94		83.54		54.05	
P>F	0.0002		0.1094		0.0001		0.0064		0.0034		0.066		0.0657	
LSD (P=.05)	127.37		NS		0.197		0.0373		1.451		NS		NS	
STD DEV	74.78		1.858		0.114		0.0215		0.838		0.824		0.2229	
CV%	4.92		4.28		2.74		1.86		2.9		0.99		0.41	

Acknowledgements

Appreciation is expressed to George LaCour, Jr. (Point Coupee Parish) and Adam Faulk (Franklin Parish) for providing the land, labor, and equipment for these two trials. Cotton Incorporated and the participating seed companies for providing the seed and financial support.