UNIFORM STACKED-GENE COTTON VARIETY PERFORMANCE EVALUATION

Texas AgriLife Extension Service
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Summary
This test was located on the Jim Massey Farm, south of Robstown on CR 34. Soil moisture conditions at planting were fair. Nine commercial cotton uniform stacked-gene varieties were evaluated for agronomic performance. The best performing variety in this test was PHY 499 WRF at 857.7 pounds per acre lint yield. The lint yield average for this test was 766 pounds per acre.

Objective
To evaluate commercially available cotton varieties growing under Nueces County conditions in a replicated evaluation.

Materials and Methods
Cotton varieties were planted in a replicated study with three replications in a randomized complete block design. Each variety plot consisted of 8 rows, 1,525 feet in length and was 0.7 acre in size. Soil moisture conditions at planting were marginal at planting depth. Stand counts were taken at three areas in the field for each variety approximately one month following planting. Rainfall was below normal. The monthly rainfall received was; March= 0.03, April= 0 inch, May = 2.90 inches, June = 0.50 inches, and July = 0.25 inch for a total of 3.68 inches from planting through harvest. Plots were harvested on August 2, 2011 with a John Deere 9976 Picker. Seed cotton from 0.52 acre was weighed in the field at harvest using an electronic scale equipped cotton weigh-wagon. Random grab samples were collected from each variety at weighing for lint turn-out and fiber quality analysis. Fiber analysis was conducted by the Fiber & Bio-polymer Research Institute using standard HVI classing procedures.

Table 1: Agronomic data for Commercial Uniform Stacked-Gene Variety Performance Demonstration, Massey Farm, Robstown, (Nueces County), Texas, 2011.

Planting Date: 3/18/2011 Harvest Date: 8/2/2011	Rows/Plot: 8 row - with 3 replicates 6 rows by 1027 feet	Row Width: 30 inch
Fertility: 380# 24-8-0	Herbicide: 2 apps 20oz/ac Gylphosate	Previous Crop: Sorghum
Planting Rate: 50,000/acre	Soil Type: Victoria clay	Insecticide: Seed treatment

Results and Discussion

The data tables below provide a comparison of data on plant population, lint yield and loan value per acre.

Table 2. Comparison of cotton plant population, Seed Cotton, and lint yield between varieties, Massey Farm, Nueces County, Texas, 2011.

Cotton Variety	Plant Population (plants/acre)	Lint Yield (pounds/acre)
PHY 499 WRF	28,663	857.7 a
DP 1044 B2F	29,268	803.7 ab
AM 1550 B2RF	24,672	798.7 bc
FM 1740 B2F	21,830	796.3 bc
ST 5458B2RF	28,784	748.3 cd
PHY 367WRF	25,398	746.3 cd
FM 9160B2F	21,527	716.7 d
DP 1032B2RF	14,996	714.0 d
ATX 3039 B2F	27,454	712.7 d

Table 3. Comparison of lint yield, lint quality, and loan value ranked by highest gross income per acre between varieties, Massey Farm, Nueces County, Texas, 2011.

Variety	Lint (lbs/acre)		Turnout %		Micronaire		Length (inches)		Strength (g/tex)		Uniformity		Loan Value (¢/lb)		Lint Value ($/acre)	
PHY 499WRF	857.7	a	44.27	a	4.77	a	1.02	b	29.6	a	80.7	ab	49.85	bc	427.74	a
DP 1044B2RF	803.7	ab	41.07	cd	4.57	b	1.02	b	27.1	bc	80.1	abc	49.07	bcd	394.03	b
AM 1550B2RF	798.7	bc	41.73	bc	4.57	b	1.02	b	25.3	de	80.3	ab	48.33	cd	386.01	b
FM 1740B2RF	796.3	bc	41.63	bc	4.53	b	1.02	b	26.8	bc	79.3	bc	49.28	bc	392.58	b
ST 5458B2RF	748.3	cd	40.47	de	4.47	b	1.03	b	26.3	cd	79.8	bc	49.10	bcd	367.46	bcd
PHY 367WRF	746.3	cd	41.57	bc	4.23	c	1.02	b	26.6	bc	80.9	ab	50.20	b	374.66	bc
FM 9160B2F	716.7	d	39.93	e	4.17	c	1.08	a	27.8	b	81.4	a	52.27	a	374.10	bc
DP 1032B2RF	714	d	42.27	b	4.80	a	1.01	b	25.2	de	78.6	c	47.27	d	337.53	d
AT 3039B2RF	712.7	d	41.57	bc	4.50	b	1.04	b	24.2	e	80.2	abc	49.28	bc	351.09	cd
Mean	**766**		**41.61**		**4.51**		**1.03**		**26.5**		**80.14**		**49.41**		**378.36**	
P>F	0.0003		0.0001		0.0001		0.0225		0.0001		0.0496		0.0031		0.0006	
LSD (P=.05)	55.19		1.021		0.15		0.0378		1.285		1.555		1.8356		30.33	
STD DEV	31.88		0.59		0.087		0.0219		0.742		0.898		1.0605		17.52	
CV%	4.16		1.42		1.92		2.13		2.8		1.12		2.15		4.63	

Means followed by same letter do not significantly differ (P=.05, LSD).

Conclusions

Cotton varieties performed well in a growing season with below normal rainfall. The best performing variety in this test was PHY 499WRF with a loan value of $427 per acre. The significant differences between varieties points out the importance of variety testing and evaluating varieties under local growing conditions.

Acknowledgements

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