Agriculture and Natural Resources

CONVENTIONAL COTTON VARIETY PERFORMANCE EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Jungmann Farms

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Summary

This test was located on the Jungmann Farm, north of Bishop on FM 3354. Soil conditions at planting were fair. Eight commercial cotton varieties were evaluated for agronomic performance. The best numerically performing variety in this test was ARK 222-12 at 994 pounds per acre lint yield and it also generated the highest lint value at $525.32 per acre, using the loan value. Statistically the lint yield of ARK 222-12 was not different from ARK 114-53, ARK 9803-23-04, or SSG HQ210CT. The plot lint yield average for this test was 934 pounds per acre.

Objective

To evaluate commercially available conventional 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 6 rows, 975 feet in length. Soil moisture conditions at planting were fair 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=0.87 inches, April=0 inches May = 1.54 inches, June = 0.56 inches, for a total of 2.97 inches from planting through harvest. Plots were harvested on July 27, 2011 with a John Deere Stripper. Seed cotton from 0.33 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 Conventional Cotton Variety Performance Demonstration, Jungman Farm, Bishop, (Nueces County), Texas, 2011.

Planting Date: 3/09/2011 Haevest Date: 7/27/11	Rows/Plot: 6 - with 3 replicates Plot Length 975 ft	Row Width: 30 inch
Fertility: 220# 25-5-0	Herbicide: 1.5 qt/A Trust 1 qt/A Roundup 0.10 oz/A Invoke 10 oz/A Arrow	Previous Crop: Sorghum
Planting Rate: 55,000 plants/Ac	Soil Type: Victoria clay	Insecticide: Seed treatment

Results and Discussion

The data table below provides a comparison of data on plant population and lint yield per acre.

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

Variety	Plant Population per Acre	Lint Yield (pounds/acre)
ARK 222-12	41,121	994.3 a
ARK 114-53	40,637	991.3 a
ARK 9803-23-04	37,250	963.3 ab
SSG HQ210CT	38,702	935.3 abc
SSG HQ212CT	37,734	920.7 bcd
ALL TEX LA122	37,250	919.0 bcd
SSG HQ120CT	38,702	889.7 cd
ALL TEX 7A21	35,315	860.3 d
AVERAGE	38,339	934.2

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

Variety	Lint (lbs/ac)		Turnout %		Micronaire		Length (inches)		Strength (g/tex)		Uniformity		Loan Value (¢/lb)		Lint Value ($/ac)	
ARK 222-12	994	a	41.37	b	4.3	a	1.09	a	29.0	b	81.9	a	52.88	a	525.32	a
ARK 114-53	991	ab	39.5	c	4.4	a	1.05	b	28.2	bcd	81.2	ab	51.35	b	508.80	a
ARK 9803-23-04	963	ab	39.9	bc	4.2	a	1.10	a	31.1	a	81.8	a	53.47	a	515.15	a
SSG HQ210CT	935	abc	39.07	c	4.2	a	1.01	c	28.2	bcd	79.4	c	48.92	c	457.77	b
SSG HQ212CT	921	bcd	38.47	c	4.1	a	1.00	c	28.2	bcd	79.4	c	48.82	c	449.38	b
AT LA122	919	bcd	43.8	a	4.3	a	1.01	c	27.5	cd	79.8	bc	49.03	c	449.86	b
SSG HQ120CT	890	cd	39.97	bc	4.7	a	1.01	c	27.0	d	81.5	a	49.68	c	442.03	b
AT 7A21	860	d	41.17	b	4.2	a	1.06	b	28.5	bc	81.0	ab	52.43	ab	451.06	b
Mean	**934.21**		**40.4**		**4.31**		**1.04**		**28.46**		**80.75**		**50.82**		**474.92**	
P>F	0.0142		0.0002		0.1174		0.0001		0.0009		0.0106		0.0001		0.0002	
LSD P=.05)	72.22		1.645		NS		0.0224		1.416		1.566		1.36		33.67	
STD DEV	41.23		0.94		0.203		0.0128		0.809		0.894		0.7765		19.23	
CV%	4.41		2.33		4.72		1.23		2.84		1.11		1.53		4.05	

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

Conclusions

Despite below normal rainfall during the growing season, the varieties in this test performed well with lint loan values ranging from $451 to $525 per acre. There was not a statistical difference in pounds of lint produced per acre between the top four varieties as yields ranged from 935 to 994 pounds of lint per acre.

Acknowledgements

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