Result Demonstration/Applied Research Report

2005 Nolan County Dryland Cotton Variety Test

Cooperator: Jimmy Joy

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Summary

Seventeen varieties of cotton were planted between June 10 to 13, 2005 by Jimmy Joy on his farm located 6 miles southwest of Roscoe, TX. All varieties in the test were resistant to Roundup and some combined with Bollgard, Bollgard 2, or Widestrike technology. This test was established to monitor yield and quality traits on newer varieties of genetically modified cotton.

Objective

Due to the increased interest in genetically modified cotton, primarily for the control of problem weeds, field tests are needed to determine the production potential of the available varieties. A field test established in Nolan County would allow producers the opportunity of observing the growth and development patterns of the cotton through the growing season. Taking the plots to harvest would provide producers information on yield and fiber quality.

A field test was established in western Nolan County with yield being determined from hand harvesting. A two pound sample of seed cotton was ginned at the Texas Agricultural Experiment Station in Lubbock to determine the percent turnout of lint and seed. A sample of the ginned cotton was taken to the International Textile Center in Lubbock to have fiber properties determined using a HVI classing machine. This test provided additional information to see if the increased cost of genetically modified cotton could be offset by additional lint production.

Materials and Methods

Cooperators: Jimmy Joy
Plot Location: 6 miles southwest of Roscoe, TX

Crop Production Information:

Planting Date:	June 10 - Bollgard varieties June 13 - Non-Bt varieties
Planting Pattern:	Solid on 40 inch rows
Planting Rate:	3 seeds per foot which is approximately 6 pounds per acre
Herbicide Applied:	Pre-plant incorporated 1.5 pints of trifluralin per acre in April 5th leaf stage applied 20 oz of Glyphomax Plus per acre
Insecticides Applied:	August 11, 2.56 ounces of Karate + 1.5 ounces of Centric + 10 ounces of Penetrator per acre (aerially applied at 3 gpa) September 8, 2.56 ounces of Ammo + 1 pint of Lorsban + 10 ounces of Penetrator per acre (ground application at 7gpa)
Fertilizer Applied:	None
Soil Type:	Clay
Previous Crop:	Cotton
Harvest Aids:	October 28, 16 ounces of DEF + 20 ounces of ethephon applied per acre (aerially applied at 3gpa)

Results and Discussion

The cotton variety test established by Jimmy Joy provided very useful information to producers. The desired cotton emergence was achieved in seven days after planting. Weed competition was kept to a minimum by the herbicide program used by the producer. The PPI application of trifluralin and the glyphosate application at the 5th leaf stage resulted in excellent weed control for the entire growing season. Insecticides were only applied to cotton varieties that did not have Bollgard, Bollgard 2, or Widestrike technology.

Observations made by the producer at harvest were that FM 800 R and B2R had very tight bolls, FM 960 R had tight bolls, and FM 989 B2R was moderately loose. The picker type Phytogen varieties were generally tall with loose bolls. Stoneville varieties looked good and ST6848 appeared to have tighter bolls than the Phytogen varieties. The Deltapine varieties seemed to be fairly storm proof. The producer believed that all varieties yielded 2 bales per acre or better when he was harvesting and that the hand samples for yield should have been collected from more than one location.

The lint yields in this test ranged from 538 to 1096 pounds per acre. Stoneville ST 6848 R had the highest gross return per acre numerically, however, several of the varieties were close in yield and fiber quality and probably are not statistically different. Stoneville ST 6848 R had the highest loan value at 58.80 cents per pound.

As you look at Table 1, several varieties performed well in most categories and would be worth testing on a five acre plot on the farm to see how it performs under your management. Remember that this is only one years result and continued testing is recommended before making a significant switch to a new variety.

Table 1. Agronomic Data from Jimmy Joy's Dryland Cotton Variety Test (Nolan County, 2005)

	Yield Per Acre				Fiber Quality								
	In Pounds		% Turnout								Lint	Seed	Total
						Fiber				CCC	Gross	Gross	Gross
					Color-	Length		Strength		Loan	Return	Return	Return
Variety	Lint	Seed	Lint	Seed	Leaf	(staple)	Mic	(gram/tex)	Uniformity	Value	($/acre)	($/acre)	($/acre)
Stoneville ST 6848 R	1075	1710	27.2	43.2	211	37	3.6	34.3	85.3	58.80	632.07	85.52	717.59
FiberMax 800 R	1096	1532	29.3	41.0	212	35	3.7	32.3	82.5	57.65	631.98	76.60	708.58
Stoneville ST 4686 R	1045	1555	29.7	44.2	313	33	3.3	27.5	81.8	49.75	520.07	77.73	597.81
Phytogen 470 WR	879	1376	24.7	38.6	312	36	3.7	28.6	82.8	57.40	504.74	68.81	573.55
Deltapine 488 BR	882	1434	26.5	43.1	312	36	3.6	28.3	80.6	56.90	501.77	71.70	573.47
FiberMax 960 R	871	1348	27.2	42.1	312	35	3.3	29.4	80.7	54.20	471.99	67.38	539.38
Stoneville ST 5242 BR	771	1039	32.2	43.4	311	34	4.5	26.7	84.0	54.40	419.22	51.96	471.18
FiberMax 800 B2R	704	1100	27.7	43.2	312	36	3.6	30.7	81.1	57.35	403.59	54.98	458.57
ADF 3511 R	693	1247	24.2	43.6	312	35	3.6	29.5	82.5	56.60	392.00	62.33	454.34
FiberMax 989 B2R	728	1197	26.9	44.3	312	36	3.1	27.9	80.7	53.30	387.89	59.84	447.73
ADF 3602 R	679	1077	25.2	39.9	211	35	3.8	29.8	82.3	57.20	388.50	53.86	442.37
Stoneville ST 4575 BR	719	1030	29.0	41.5	312	33	4.2	27.3	83.0	52.30	376.00	51.49	427.48
BCG 24 R	703	1055	26.1	39.1	212	34	3.3	28.2	82.4	52.80	371.29	52.74	424.03
Phytogen 310 R	557	756	27.5	37.3	211	34	4.1	28.3	81.5	54.95	306.04	37.79	343.83
Phytogen 480 WR	533	823	25.5	39.4	411	35	4.2	27.3	82.6	54.40	289.79	41.14	330.93
FiberMax 960 B2R	510	777	25.2	38.3	312	36	4.1	28.7	82.3	57.15	291.55	38.83	330.37
Deltapine 555 BR	538	813	27.2	41.1	312	33	3.8	26.9	79.5	52.05	279.87	40.66	320.53

N0TE: 1) Yield was determined by hand harvesting
2) Gross return per acre for cottonseed was based on a sale price of $100 per ton

Economic Analysis

Let me stress that looking at the total gross return can be deceiving in selecting varieties from one test. Year to year variation and differences in plots and production practices make a difference. The variability between the samples collected showed significant difference in yield only between the top and bottom variety. It is recommended that producers look at tests conducted in the region for the last 2 to 3 years and from ten or more field tests and find a variety that is in the upper third. Those selected varieties can then be tested on your farm under your production practices to determined if increased acreage of that variety is justified. Most of the varieties in this test have a fiber quality that is desired by the buyers with high strength, length, and uniformity.

Acknowledgements:

I want to take this opportunity to thank Jimmy Joy for establishing and managing this cotton variety test.

A word of appreciation is extended to the following seed companies for providing seed for this plot they include:

- Monsanto/Stoneville Pedigreed Seed who provided the Stoneville ST 6848 R, Stoneville ST 4686 R, Stoneville ST 5242 BR and Stoneville ST 4575 BR
- Bayer CropScience provided the FiberMax 800 R, FiberMax 960 R, FiberMax 800 B2R, FiberMax 989 B2R, and FiberMax 960 B2R
- DowElanco/Phytogen Seed Company who provided the Phytogen 470 WR, Phytogen 310 R and Phytogen 480 WR
- Delta and Pineland Company who provided Deltapine 488 BR and Deltapine 555 BR
- Associated Farmers Delinting, Inc. Provided AFD 3511 R and AFD 3602 R now owned by Bayer CropScience
- Beltwide Cotton Genetics who provided the BCG 24