



Result Demonstration/Applied Research Report

Nolan County 2006 Dryland Cotton Variety Test

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Summary

Eight varieties of cotton were planted on May 13, 2006 by Don Martin on his farm located 5 miles west 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 Roundup Ready and Roundup Ready Flex 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 available varieties. A field test established in Nolan County would allow producers an 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 Monsanto facilities in Idalou 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 increased costs of genetically modified cotton could be offset by additional lint production.

Materials and Methods

Cooperators: Don Martin

Plot Location: 5 miles southwest of Roscoe, TX

Crop Production Information:

Planting Date: May 13, 2006
Planting Pattern: Solid on 40 inch rows
Planting Rate: 4 seeds per foot which is approximately 8 pounds per acre
Herbicide Applied: Pre-plant application of Roundup Original Max (22 oz/ac) to kill wheat stubble.
At-planting banded 1.5 pt./ac of Prowl.
5th leaf stage applied 22 oz/ac Roundup Original Max.
Insecticides Applied: None
Fertilizer Applied: Pre-plant broadcast application of 40 lbs N, 30 lbs P₂O₅, and 10 lbs S per acre using a 20-15-0-5 liquid fertilizer formulation. An additional application of 50 lbs N per acre using 32-0-0 was applied through the pivot irrigation system in July.
Soil Type: Clay
Previous Crop: Cotton
Plant Growth Regulators: 8 oz./ac of Pix in July.
Harvest: Hand harvested two 10 linear ft. sections per variety on Oct. 13, 2006.

Results and Discussion

The cotton variety test established by Don Martin provides very useful information to producers. The desired cotton emergence was achieved in seven to nine days after planting. Weed competition was kept to a minimum by the herbicide program used by the producer. The glyphosate application at the 5th leaf stage resulted in excellent weed control for the entire growing season. Growing conditions were very poor due to a severe drought and high temperatures.

The lint yields in this test ranged from 677 to 1256 pounds per acre. FiberMax 960 B2R had the highest yields and gross return per acre numerically, however, statistically there probably is no difference from the other varieties. The FiberMax 960 B2R variety had the highest loan value at 58.95 cents per pound.

As you look at Table 1, several varieties performed fairly well considering the growing conditions. However, it 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.

The number of plants per foot of row are shown in Table 2. There were some numerical differences but these differences should not contribute to differences in yield.

Table 1. Agronomic Data from Don Martin's Dryland Cotton Variety Test (Nolan County, 2006)

Variety	Yield Per Acre				Fiber Quality						Lint	Seed	Total	
	In Pounds		% Turnout		Fiber						CCC	Gross	Gross	Gross
	-----		-----		Color-	Length		Strength		Loan	Return	Return	Return	
	Lint	Seed	Lint	Seed	Leaf	(staple)	Mic	(gram/tex)	Uniformity	Value	(\$/acre)	(\$/acre)	(\$/acre)	
FiberMax 960 B2R	1256	2327	28.5	52.8	112	36	4.9	32.4	82.1	58.95	740.38	168.69	909.08	
Beltwide 2038 B2RF	876	1785	26.4	53.8	212	35	4.6	27.2	84.0	57.60	504.45	129.39	633.85	
FiberMax 960 BR	870	1670	27.6	53.0	112	35	4.9	32.2	81.0	57.70	501.71	121.06	622.77	
Phytogen 370 WR	967	1524	31.4	49.5	212	32	4.9	31.9	83.5	51.25	495.40	110.48	605.88	
Beltwide 4630 B2RF	761	1456	27.9	53.4	112	34	4.9	27.6	83.5	55.25	420.18	105.53	525.72	
Deltapine 117 B2RF	806	1335	30.5	50.5	212	33	4.9	29.1	81.6	52.05	419.71	96.80	516.51	
FiberMax 989 B2R	694	1388	26.6	53.2	112	35	4.9	33.3	84.4	58.10	403.25	100.64	503.89	
FiberMax 9063 B2F	677	1529	24.9	56.2	212	35	4.9	32.3	83.0	57.95	392.50	110.83	503.33	

NOTE: 1) Yield was determined by hand harvesting

2) Gross return per acre for cottonseed was based on a sale price of \$145 per ton

Table 2. Plants per foot at harvest.

Variety	Plants per foot
FiberMax 960 B2R	2.95
Beltwide 2038 B2RF	2.75
FiberMax 960 BR	2.90
Phytogen 370 WR	3.00
Beltwide 4630 B2RF	2.70
Deltapine 117 B2RF	2.80
FiberMax 989 B2R	2.15
FiberMax 9063 B2F	2.60

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. 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 determine 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 Don Martin 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:

Bayer CropScience provided the FiberMax 960 B2R, FiberMax 960 BR, FiberMax 989 B2R and FiberMax 9063 B2F

Beltwide Cotton Genetics who provided the Beltwide 2038 B2RF and Beltwide 4630 B2RF

DowElanco/Phytogen Seed Company who provided the Phytogen 370 WR

Delta and Pineland Company who provided Deltapine 117 B2RF

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.