



2006 Tom Green County Irrigated Cotton Variety Evaluation

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Summary:

Twelve cotton varieties were compared under similar growing conditions to determine which cotton varieties consistently have higher yields and favorable fiber qualities. Deltapine 455 BR, FiberMax 960 B2R, PhytoGen 745 WRF and PhytoGen 470 WR topped this test with lint yields of 1547, 1520, 1486 and 1407, respectively. The best combination of fiber qualities of fiber length, strength, micronaire and uniformity was found in PhytoGen 745 WRF and PhytoGen 485 WRF. Producers should keep in mind that these results can change under different field conditions, soil fertility and irrigation practices, so it is suggested that you look at the better cultivars on your farm for several seasons.

Objective:

Commercial cotton varieties require testing each year for determinations of consistency of yield and fiber quality. Through the use of a field test, a comparison is made of new varieties of cotton with varieties that have proven to be successful, long term yielders. Testing of said varieties within a geographic area of production is important to provide local producers with the latest information on old and new varieties.

Materials and Methods:

Twelve cotton varieties were planted using an eight row John Deere Maxi-Merge planter in a strip test fashion using 4 planted row plots replicated four times across the field in the Wall farming community. The following is a list of materials and methods used in this test.

Planting Date: May 23, 2006
Seeding Rate: 52,500 seeds per acre
Planting Pattern: Planted every row on 40" centers
Soil Type: Angelo Clay Loam
Previous Crop: Corn
Herbicides: 2.6 pts. Treflan® pre-plant; 1.5 pts. Prowl H₂O® and 1 pt. Coteran® at planting
Fertilizer: 150 lbs. 11-52-0 pre-plant; 120 lbs.; 20-8-0, 5 side dress at matchhead square stage
Insecticides: None
Harvest Date: November 10, 2006

Variety	Plant Stand Avg. # per foot Cotyledon Stage	Plant Stand Avg. # per foot 2nd True Leaf Stage
Stoneville 5007 B2RF	3.7	3.3
Deltapine 445 BGRR	1.8	2.7
FiberMax 9063 B2F	2.6	2.3
Phytogen 470 WF	3.8	3.4
Phytogen 745 WRF	2.7	3.2
FiberMax 960 B2R	2.8	2.7
Stoneville 4357 B2RF	2.4	2.6
Deltapine 143 B2RF	2.9	2.6
FiberMax 800 B2R	2.4	2.3
Deltapine 455 WRF	2.4	2.1
Phytogen 485 WRF	2.8	3.0
Stoneville 6611 B2RF	2.8	2.8

Average populations were determined from three different plant stand counts within each variety at each listed growth stage.

Results and Discussion:

Table 1 contains the yield and fiber quality information for each of the twelve cotton varieties. In this test Deltapine 455 BR, FiberMax 960 B2R, Phytogen 745 WRF and Phytogen 470 WR topped this test with lint yields of 1547, 1520, 1486 and 1407, respectively. The best combination of fiber qualities of fiber length, strength, micronaire and uniformity was found in Phytogen 745 WRF and Phytogen 485 WRF.

All cotton varieties were planted in an every row pattern across the field and stripper-harvested using a John Deere eight row cotton stripper. Each cotton variety consisted of four planted rows. Weights were determined using a boll buggy. Fiber quality analysis was determined by the Texas Tech Textile Center in Lubbock.

Table 1. Agronomic Data from Chris Bubenik Irrigated Cotton Variety Test (Tom Green County, 2006)

Variety	Yield Per Acre		Fiber Quality						Loan Price @.5160 base	Total Gross Return (\$/acre)
	In Pounds	% Turnout	Grade	Fiber		Strength (gram/tex)	Leaf	Uniformity		
	Lint	Lint		Length (staple)	Mic					
Deltapine 455 BR	1547 a	33.4	31	35.6 bcd	3.5bc	30.5 abc	2	82.5 cd	0.5803	\$897.64
FiberMax 960 B2R	1520 a	29.9	31	37.4 ab	3.4c	33.1 a	1	84.7 a	0.5730	\$872.60
Phytogen 745 WRF	1486 ab	31.9	41	36.2 abcd	4.0a	33.3 a	1	84.4 ab	0.5552	\$825.17
Phytogen 470 WR	1407 abc	30.2	41	34.6 d	3.4c	29.3 bc	1	83.1 bcd	0.5232	\$737.44
FiberMax 9063 B2F	1301 cd	29.7	32	37.6 ab	3.5bc	30.0 bc	2	84.0 ab	0.5662	\$734.93
Phytogen 485 WRF	1332 bcd	29.8	41	36.6 abc	3.9ab	30.3 abc	2	83.0 abcd	0.5497	\$731.90
Stoneville 5007 B2RF	1246 cd	26.9	32	36.7 abcd	3.5bc	29.3 bc	1	83.8 abc	0.5470	\$681.82
Stoneville 6611 B2RF	1253cd	28.1	41	36.5 abcd	3.5bc	31.5 ab	1	84.3 ab	0.5432	\$681.34
Stoneville 4357 B2RF	1238 cd	29.7	32	35.8 bcd	3.6abc	27.8 c	2	82.9 cd	0.5478	\$678.78
Deltapine 143 B2RF	1276 cd	29.9	31	37.5 a	3.3c	27.8 c	1	81.7 d	0.5277	\$673.41
FiberMax 800 B2R	1186 d	29.5	21	36.8 abc	3.3c	31.0 ab	2	83.6 abc	0.5663	\$671.24
Deltapine 445 BR	1175 d	32.1	31	34.9 cd	2.9d	31.4 ab	1	83.6 abc	0.5025	\$591.34

Seed income calculated using a price of \$145 per ton.

In Table 1 the individual or combination of letter a, b, c or d shown in the lint yield, fiber length, micronaire, fiber strength and fiber uniformity columns, to the right of the number, are to indicate statistical significance. There is no statistical difference between numbers that have the same letter (even when there appears to be a large difference in results).

Economics

In this test there is a significant difference in lint yield between the top four varieties and the bottom two. The difference in lint yield ranges from 221 to 370 pounds per acre. Using a cost of 55 cents per pound, the difference in production was worth an additional \$121.55 to \$203.50 per acre. Variety selection should not be based on one test's results. You should look at one to two years of information from at least ten tests and if a variety is consistently in the upper one-third then plant some acreage of that variety to see how it responds to your management.

Acknowledgments:

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Delta and Pine Land Company who provided Deltapine 455 BR, Deltapine 143 B2RF and Deltapine 445 BR

Bayer CropScience who provided the FiberMax 960 B2R, FiberMax 9063 B2F and FiberMax 800 B2R

Dow Agrosciences who provided Phytogen 745 WRF, Phytogen 470 WR and Phytogen 485 WRF

Stoneville Pedigreed Seed owned by Monsanto who provided Stoneville ST 5007 B2RF, Stoneville ST 6611 B2RF and Stoneville ST 4357 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.