



## **Irrigated Cotton Variety Evaluation**

Chris Bubenik, 2003

Rick Minzenmayer, Tom Green County Extension Agent-IPM

Steve Sturtz, Tom Green County Extension Agent Agriculture

Dr. Billy Warrick, Extension Agronomist

### **Summary:**

The Southern Rolling Plains experienced a challenging growing season during 2003. Many irrigated cotton fields had to be replanted after June 15 due to severe thunderstorms moving through the area. This delay caused many cotton fields to be very immature going into September when temperatures tend to drop off significantly. Fortunately, warm temperatures and good moisture conditions continued well into October and November. This allowed many cotton fields to mature out late fruit which normally does not happen. Mr. Bubenik and other irrigated producers in the area were fortunate to have received several rainfall events at critical time periods to help reduce the effects of limited irrigation water.

Sixteen cotton varieties were compared under similar growing conditions to determine which cotton varieties consistently have higher yields and favorable fiber qualities. Deltapine 468 BGII/RR and Stoneville 5303 RR topped this test in total gross returns of \$790.04 per acre and \$744.46 per acre, respectively. When evaluating this test on just lint yields, FiberMax 960 BG/RR and FiberMax 989 BG/RR top this test with lint yields of 1,258 lbs. per acre and 1,215 lbs. per acre, respectively. Due to the late maturity of the crop, fiber quality had a detrimental effect on a number of cotton varieties in this test. 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:**

Cotton cultivars and commercial cotton varieties require testing each year for determinations of continuity of yield and fiber quality measurements. 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:

Sixteen cotton varieties were planted using an eight row John Deere Maxi-Merge planter and 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: June 17, 2003  
Seeding Rate: 4 seeds per foot  
Planting Pattern: Every row on 40' centers  
Soil Type: Angelo Clay Loam  
Previous Crop: Wheat  
Irrigation Practice: Furrow-irrigated  
Herbicides: Pre plant: 3.0 pts. Prowl® per acre  
At planting: 1 pt. Direx® and 1 pt. Caparol® per acre  
Insecticides: At matchhead square stage, Orthene® 4 oz./acre  
Harvest Date: December 10, 2003

## Plant Populations

Sampling Date: 6-25-03. Growth Stage: cotyledon

Variety	Plants/ten feet of planted row
Stoneville 4892 BG/RR	30
Stoneville 5599 BG/RR	30
FiberMax 989 RR	33
BCG 24 RR	32
FiberMax 960 BG/RR	31
FiberMax 989 BG/RR	29
Deltapine 458 BG/RR	32
FiberMax 958	34
DPLX 03L300 BG/RR	40
Deltapine 488 BG/RR	34

(Contd)

Variety	Plants/ten feet of planted row
Deltapine 468 BGII/RR	38
Deltapine 449 BG/RR	34
Deltapine 555 BG/RR	38
Deltapine 655 BG/RR	37
Stoneville 5303 RR	38
FiberMax 800 BG/RR	35

### **Results and Discussion:**

Table 1 contains the lint yield and fiber quality information for each of the sixteen cotton varieties evaluated in this test. Deltapine 468 BGII/RR, Stoneville 5303 RR and Deltapine 488 BG/RR topped this test in total gross returns of \$790.04 per acre, \$744.46 per acre and \$712.09 per acre, respectively. When evaluating each variety on lint yields alone, FiberMax 960 BG/RR, FiberMax 989 BG/RR and Deltapine 488 BG/RR topped this test with lint yields of 1,258 lbs. per acre, 1,215 lbs. per acre and 1,178 lbs. per acre, respectively. Due to the late maturity of the crop and replanting in mid-June, the fiber quality had a detrimental effect on a number of cotton varieties in this test.

All cotton varieties are planted in four row plots and replicated four times across the field. Each plot was stripper-harvested using a John Deere four row cotton stripper and weights were determined by the use of a boll buggy. Fiber analysis was determined by the Texas Tech Textile Center in Lubbock.

### **Acknowledgments:**

Sincere appreciation is expressed to Chris Bubenik for establishing and managing this test. Also a word of thanks to the seed companies that provided cottonseed, they include:

Delta and Pine Land Company who provided Deltapine 468 BGII/RR, Deltapine 488 BG/RR, Deltapine 449 BG/RR, Deltapine 458 BG/RR, Deltapine 655 BG/RR, Deltapine 555 BG/RR, and DPLX 03L300 BG/RR

Stoneville Southwest, Inc. who provided the Stoneville ST 5303 RR, Stoneville ST 5599 BG/RR and Stoneville ST 4892 BG/RR

Bayer CropScience who provided the FiberMax 989 BG/RR, FiberMax 960 BG/RR, FiberMax 800 BG/RR, FiberMax 958 and FiberMax 989 RR.

Beltwide Cotton Genetics who provided the BCG 24 RR.

**Table 1. Agronomic Data from Chris Bubenik's Cotton Variety Test (Tom Green County, 2003)**

Variety	Yield Per Acre				Fiber Quality						CCC Loan Value	Lint Gross Return (\$/acre)	Seed Gross Return (\$/acre)	Total Gross Return (\$/acre)
	In Pounds		% Turnout		Color- Leaf	Fiber Length (staple)	Mic	Strength (gram/tex)	Uniformity					
	Lint	Seed	Lint	Seed										
Deltapine 468 BGII/RR	1177	2292	26.5	51.6	312	35	3.5	27.6	81.8	54.95	646.82	143.23	790.04	
Stoneville 5303 RR	1171	2119	30.6	55.4	312	36	3.0	31.8	82.0	52.25	612.05	132.42	744.46	
Deltapine 488 BG/RR	1178	1970	29.5	49.3	322	38	3.0	31.4	82.3	50.00	588.96	123.13	712.09	
FiberMax 989 BG/RR	1215	2256	28.5	52.9	312	37	2.6	30.7	80.7	46.30	562.70	140.99	703.68	
FiberMax 960 BG/RR	1258	2318	27.3	50.4	331	37	2.7	30.7	82.8	42.70	537.12	144.89	682.00	
Deltapine 449 BG/RR	1048	2040	26.5	51.6	312	39	3.0	28.5	80.0	51.85	543.46	127.52	670.98	
Stoneville 5599 BG/RR	1150	2261	27.2	53.5	323	37	2.5	27.7	79.8	42.85	492.68	141.32	634.00	
Deltapine 458 BG/RR	1056	2052	26.5	51.6	221	38	2.7	29.2	81.2	47.55	502.03	128.25	630.28	
FiberMax 800 BG/RR	1044	1935	27.0	50.1	212	39	2.5	29.4	81.8	46.20	482.24	120.96	603.20	
Deltapine 655 BG/RR	1138	2111	29.6	55.0	322	37	2.4	26.6	77.9	41.30	470.19	131.94	602.13	
FiberMax 958	1065	2073	26.5	51.6	322	38	2.6	30.2	81.6	43.60	464.26	129.54	593.80	
Stoneville 4892 BG/RR	1066	2054	26.9	51.8	423	36	2.5	28.9	81.5	40.55	432.29	128.35	560.64	
Deltapine 555 BG/RR	847	1675	21.8	43.2	312	37	2.7	29.7	80.4	49.30	417.54	104.69	522.23	
FiberMax 989 RR	1002	1961	26.4	51.7	332	38	2.5	29.2	81.4	38.85	389.45	122.54	511.99	
BCG 24 RR	919	1777	26.7	51.6	232	37	2.6	29.3	81.6	40.15	368.99	111.04	480.03	
Deltapine LX03L300	917	1897	22.1	45.8	333	37	2.4	27.0	79.2	37.10	340.25	118.59	458.84	

Seed income calculated using a price of \$125 per ton.