



Irrigated Cotton Variety Evaluation

Kevin Niehues, 2003

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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. Niehues 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 491, a conventional cotton variety, topped this test with a lint yield of 1,252 lbs. per acre and a total gross return of \$601.07 per acre. DPLX03L300 BG/RR, FiberMax 800 BG/RR and FiberMax 958 also did quite well with lint yields of 1,000 lbs. per acre, 996 lbs. per acre and 1,171 lbs. per acre, respectively. The lint gross returns per acre for these three varieties were \$592.02 per acre, \$590.43 per acre, and \$574.30 per acre, respectively. A cotton producer 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 a John Deere Maxi-Merge planter and replicated two time across the field in the Mereta farming community. The following is a list of materials and methods used in this test.

Planting Date: June 16, 2003
Seeding Rate: 4 seeds per foot
Planting Pattern: Every row on 40' centers
Soil Type: Angelo Clay Loam
Previous Crop: Corn
Irrigation Practice: Drip-irrigation
Herbicides: Pre plant 1.5 pts. Treflan® per acre
Insecticides: Deltapine Seed was treated with Cruiser® as a seed treatment.
At matchhead square stage, 4 oz. Orthene® 75 S per acre was applied for fleahopper control.
Harvest Date: December 1, 2003

Plant Populations

Sampling Date: 6-25-03. Growth Stage: 1st true leaf

Variety	Plants / 10 feet of planted row
Deltapine 491	31
FiberMax 958	33
Deltapine 493	35
BCG 24 R	30
Deltapine 555 BG/RR	31
FiberMax 989 BG/RR	29
Deltapine 458 BG/RR	33
FiberMax 800 BG/RR (okra leaf)	28
Deltapine 655 BG/RR	32
FiberMax 989 RR	30

(Contd.)

Variety	Plants / 10 feet of planted row
Deltapine 488 BG/RR	32
Stoneville 5599 BG/RR	31
Delta Pine 468 BGII/R	30
FiberMax 960 BG/RR	30
DPLX 03L300 BG/RR	31
Stoneville 4892 BG/RR	28
Delta Pine 449 BG/RR	32
Stoneville 5303 RR	32

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 491, DPLX03L300 BG/RR, FiberMax 800 BG/RR and Fiber Max 958 topped this test with lint yields of 1,252 lbs. per acre, 1,000 lbs. per acre, 996 lbs. per acre and 1,171 lbs. per acre, respectively. The total gross returns per acre were \$601.07 per acre, \$592.02 per acre, \$590.43 per acre and \$574.30 per acre, respectively.

All cotton varieties are planted in four row plots and replicated two 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 Kevin Niehues 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 491, DPLX 03L300 BG/RR, Deltapine 488 BG/RR, Deltapine 655 BG/RR, Deltapine 449 BG/RR, Deltapine 493, Deltapine 468 BGII/RR, Deltapine 458 BG/RR, and Deltapine 555 BG/RR.

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

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

Beltwide Cotton Genetics who provided the BCG 24 RR.

Table 1. Agronomic Data from Kevin Niehues'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							
	Lint	Seed	Lint	Seed		Length (staple)	Mic	Strength (gram/tex)					
									Uniformity				
Deltapine 491	1252	1837	31.0	45.5	311	35	3.2	26.6	79.9	38.85	486.25	114.82	601.07
DPLX 03L300 BG/RR	1000	1491	30.5	45.5	312	32	3.5	26.4	79.4	49.90	498.82	93.20	592.02
FiberMax 800 BG/RR	996	1526	29.7	45.5	311	35	3.0	28.4	79.4	49.70	495.06	95.37	590.43
FiberMax 958	1171	1665	32.0	45.5	312	35	3.7	29.5	80.3	40.15	470.22	104.08	574.30
FiberMax 989 RR	957	1456	29.9	45.5	311	34	3.0	27.6	78.6	49.75	476.13	91.02	567.15
Stoneville 5303 RR	889	1366	29.6	45.5	311	33	3.3	30.4	80.7	50.60	449.66	85.38	535.04
Deltapine 488 BG/RR	912	1451	28.6	45.5	311	34	2.9	26.7	78.8	47.20	430.41	90.67	521.08
FiberMax 960 BG/RR	929	1463	28.9	45.5	312	36	3.1	27.0	80.3	46.05	427.93	91.44	519.37
Deltapine 655 BG/RR	816	1312	28.3	45.5	311	34	2.8	27.9	77.6	53.50	436.73	82.03	518.76
Deltapine 449 BG/RR	830	1363	27.7	45.5	312	33	2.6	26.1	78.2	50.90	422.45	85.20	507.65
FiberMax 989 BG/RR	965	1464	30.0	45.5	312	34	3.0	27.6	79.4	42.20	407.30	91.49	498.79
Deltapine 493	948	1340	32.2	45.5	311	32	2.8	23.6	76.3	42.70	404.96	83.75	488.71
Deltapine 468 BGII/RR	775	1341	26.3	45.5	311	34	2.9	28.5	78.0	50.35	390.15	83.79	473.95
Stoneville 4892 BG/RR	801	1252	29.1	45.5	313	32	3.4	26.0	78.2	49.30	394.82	78.26	473.09
Stoneville 5599 BG/RR	987	1486	30.2	45.5	312	32	3.0	24.4	76.8	36.80	363.05	92.91	455.96
Deltapine 458 BG/RR	917	1444	28.9	45.5	312	34	3.1	26.7	80.2	37.10	340.33	90.26	430.59
BCG 24 RR	849	1292	29.9	45.5	311	32	3.3	26.2	78.8	41.00	348.03	80.73	428.76
Deltapine 555 BG/RR	817	1200	31.0	45.5	312	33	2.9	27.1	76.8	43.25	353.45	74.97	428.42

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