



## **Result Demonstration/Applied Research Report**

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### **2005 JONES COUNTY DRYLAND COTTON VARIETY TEST**

**Cooperator: Eric Richards**

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#### **SUMMARY**

Ten cotton varieties were planted to compare fiber yield and quality characteristic under similar dryland production conditions. Stoneville ST 5599 BR and Deltapine 488 BR were the highest yielding varieties in this test. Stoneville ST 5599 BR had the highest loan value at 54.70 cents per pound. This is only one years result and continued testing is recommended before making a significant switch to a new variety.

#### **PROBLEMS**

Several new varieties of cotton become available each year and when combined with the varieties already available makes planting seed selection increasingly difficult. Producers need local data to help in selecting adapted high yielding varieties with desirable fiber quality traits. The primary fiber quality characteristics of interest to producers are higher strength and longer staple.

#### **OBJECTIVE**

With improved varieties being introduced each season, testing is a necessary part of any farming operation. This field test was established to compare new and traditional varieties. The main focus is to find those varieties that provide high lint yield with desirable fiber traits. Since some varieties have a limited success within a narrow range of production conditions, local testing is necessary and justified. This test will allow area producers to determine if new varieties being introduced are more productive than what they currently plant. Also, it will provide area producers with the opportunity to examine differences in plant development between the old and new varieties.

## **MATERIALS AND METHODS**

Cooperator: Eric Richards  
County Precinct: 2  
Planting Date: June 10, 2005  
Planting Rate: 1 seed every 4 inches  
Plantin Pattern: 2-in-1-out  
Row Width: 40 inches  
Previous Crop: Cotton  
Irrigation: None  
Fertilizer: May 25, applied 125 pounds of nitrogen and 24 pounds of phosphorus per acre  
Herbicide: May 15, pre-plant burn down with a generic brand of glyphosate applied at 1 qt./acre  
June 27, post-emergence application of a generic brand of glyphosate at 1 qt./acre  
Insecticide: July 18, applied 0.6 ounce of Intruder per acre  
Soil Moisture at Planting: Very good  
Harvest Aid: October 27 applied 16 ounces of Ethephon plus 4 ounces of Def per acre followed by 16 ounces of Gramoxone Max applied on November 18.

The test plots were stripper harvested to determine the yield per acre. The sample was large enough to gin at Ericksdahl Coop Gin, located 6 miles east and 1 mile south of Stamford, Texas. Then samples for fiber quality were sent to the U.S.D.A. Cotton Classing Office. Yield information and fiber quality information are summarized in Table 3.

## **RESULTS, DISCUSSION AND ECONOMIC ANALYSIS**

As seen in Table 3, the yields in this test ranged from 564 pounds per acre to 704 pounds per acre. Stoneville ST 5599 BR and Deltapine 488 BR were the highest yielding varieties in this test. Stoneville ST 5599 BR had the highest loan value at 54.70 cents per pound.

The data in Table 1 shows the cotton aphid infestation on July 28. Six locations within each variety were rated for cotton aphid densities. The rating was based on a 0 to 5 scale with 0 = no aphids, 1 = aphids in terminal and on 1<sup>st</sup> true leaf, 2 = aphids on top 4 node leaves and terminal, 3 = aphids on top 7 node leaves and terminal, 4 = aphids on top 10 node leaves and terminal, 5 = aphids throughout entire plant. This data indicates possible variety differences to aphid infestations. However, the information is only preliminary and further evaluations using replicated trials will need to be conducted to better understand varietal differences to aphid infestations.

Table 1. Mean rating for cotton aphid infestation on Bollgard cotton varieties. Jones Co. 2005.

Variety	Rating <sup>a,b</sup>
DP 455 B/R	0.67 c
Stoneville 5599 B/R	0.67 c
DP 449 B/R	0.67 c
DP 444 B/R	1.00 bc
DP 445 B/R	1.17 bc
DP 488 B/R	1.33 abc
Stoneville 5242 B/R	1.33 abc
FM 960 B2/R	1.67 abc
FM 960 B/R	2.00 ab
Stoneville 4575 B/R	2.33 a

<sup>a</sup> Aphid infestations were rated based on a 0 to 5 scale; 0 = no aphids, 1 = aphids in terminal and on 1<sup>st</sup> true leaf, 2 = aphids on top 4 node leaves and terminal, 3 = aphids on top 7 node leaves and terminal, 4 = aphids on top 10 node leaves and terminal, 5 = aphids throughout entire plant.

<sup>B</sup> Mean is a column followed by the same lowercase letter are not significantly different according to Duncan's multiple range test (P=0.05).

The data in Table 2 shows the number of bolls per plant for each variety. This was determined from counting the number of bolls and plants on one-thousandth of an acre in four locations per variety on September 8. The highest plant population was 30,300 plants per acre and the target population should have been approximately 39,200 plants per acre which would average three plants per foot. To make up for the lower plant population you have to make more bolls per plant. The impressive part of this is that this plot was planted on June 10 and all the micronaire was in an acceptable range between 3.9 and 4.4 which indicated it had layered enough cellulose in the fiber that averaged between 1 inch and 1.06 inches in length.

Table 2. Mean number of bolls per row, plants per row, and bolls per plant for Bollgard cotton varieties. Jones Co. 2005.

Variety	Mean Number <sup>a</sup>		
	Bolls / 13.1 row ft.	Plants / 13.1 row ft.	Bolls / Plant
DP 455 B/R	315.7 ab	18.7 a	16.9 a
DP 488 B/R	342.7 a	27.3 a	14.6 ab
Stoneville 4575 B/R	250.0 bcd	22.3 a	13.1abc
DP 445 B/R	316.7 ab	25.0 a	12.9 abc
DP 444 B/R	308.3 abc	24.3 a	12.6 abc
DP 449 B/R	290.7 abc	23.7 a	12.2 abc
Stoneville 5242 B/R	244.0 bcd	22.3 a	10.9 bc
FM 960 B2/R	285.0 abc	27.3 a	10.6 bc
Stoneville 5599 B/R	209.3 d	23.3 a	8.9 bc
FM 960 B/R	240.0 dc	30.3 a	7.9 c

<sup>a</sup> Means in each column followed by the same lowercase letter are not significantly different according to Duncan's multiple range test (P=0.05).

Table 3. Data from Eric Richards' 2005 Dryland Cotton Variety Test (Jones County)

Variety	Yield Per Acre		Fiber Quality					CCC Loan Value	Lint Gross Return (\$/acre)	Seed Gross Return (\$/acre)	Total Gross Return (\$/acre)
	In Pounds		Color- Leaf	Fiber			Uniformity				
	Lint	Seed		Length (staple)	Mic	Strength (gram/tex)					
Stoneville ST 5599 BR	704	892	112	34	4.3	27.2	79.9	54.70	385.09	44.60	429.69
Deltapine 488 BR	658	867	211	33	4.3	28.3	78.9	51.65	339.86	43.35	383.21
Deltapine 444 BR	645	850	211	33	4.1	26.6	79.7	52.30	337.34	42.50	379.84
Deltapine 455 BR	650	833	112	33	3.8	26.8	78.7	51.90	337.35	41.65	379.00
FiberMax 960 B2R	640	858	112	33	4.1	26.7	78.8	51.90	332.16	42.90	375.06
FiberMax 960 BR	648	842	112	32	4.2	28.3	78.6	49.95	323.68	42.10	365.78
Deltapine 445 BR	618	767	112	33	4.2	26.8	80.5	52.30	323.21	38.35	361.56
Stoneville ST 5242 BR	614	775	111	33	4.4	24.8	80.2	50.95	312.83	38.75	351.58
Stoneville ST 4575 BR	600	775	112	32	4.2	27.8	79.8	50.35	302.10	38.75	340.85
Deltapine 449 BR	564	767	111	32	3.9	26.6	79.5	50.35	283.97	38.35	322.32

NOTE: Seed income was calculated using a cottonseed price of \$100 per ton

### Acknowledgements:

A word of thanks to Eric Richards for his management of this dryland cotton variety test.

A word of thanks to Dennis Olsen at Ericksdahl Coop Gin for ginning each cotton variety.

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 5999 BR, Stoneville ST 5242 BR, and Stoneville ST 4575 BR
- ! Delta and Pineland Company who provided Deltapine 488 BR, Deltapine 444 BR, Deltapine 455 BR, Deltapine 445 BR, and Deltapine 449 BR
- ! Bayer CropScience provided the FiberMax 960 B2R and FiberMax 960 BR

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