Supplemental Irrigation Cotton Variety Test

Daryl and Doyle Schniers Farm, 2012
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Summary:

Twenty-four cotton varieties were compared under similar growing conditions to determine which cotton varieties consistently have higher yields and favorable fiber qualities. Phytogen 499 WRF, FiberMax 9170 B2F, FiberMax 2484 B2F, and CropLan 3787 B2F topped this test in Total Gross Returns ($/acre), of $1,321.00 per acre, $1,285.00 per acre, $1,269.00 per acre and $1,247.00 per acre, respectively. Producers should keep in mind that these results can change under different field conditions, soil fertility and irrigation practices, it is suggested that you look at the better cultivars on your farm to determine if they are compatible with your management style.

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 view varieties.

Materials and Methods:

Twenty-four cotton varieties were planted using a four row John Deere Maxi-Merge planter in a randomized complete block design using four planted row plots with four replications in the Wall farming community. The following is a list of materials and methods used in this test.

Planting Date: May 24, 2012
Seeding Rate: 39,600/acre

Row Width: 40” centers
Rows Planted: 4 rows x 31 ft. long, 4 replications
Planting Pattern: Every Row
Last Year’s Crop: Cotton
Irrigated: Supplemental
Soil Moisture: Excellent
Fertilizer: 100 lb. 11-52-0 pre-plant, 60 lbs. 32-0-0 through SSI during season
Insecticide: None
Harvest Date: October 29, 2012

Variety	Plant Stand Avg. #/10 ft. 3rd True Leaf Stage
All-Tex 65207 B2RF	33
All-Tex Dinero B2RF	26
All-Tex Nitro 44 B2RF	31
Americot 1550 B2RF	28
NexGen 1511 B2RF	34
NGX 0012 B2RF	23
CropLan 3428 B2F	22
CropLan 3787 B2F	27
Deltapine 0935 B2RF	29
Deltapine 1032 B2RF	26
Deltapine 1359 B2RF	28
Deltapine 1219 B2RF	26
Dyna-Gro 2595 B2RF	22
Dyna-Gro 2570 B2RF	34
FiberMax 1944 GLB2	29
FiberMax 1740 B2F	30
FiberMax 2989 GLB2	27
FiberMax 2484 B2F	30

Cont'd

Variety	Plant Stand Avg. #/10 ft. 3rd True Leaf Stage
FiberMax 9170 B2F	25
Stoneville 5458 B2RF	31
Stoneville 4288 B2RF	30
Phytogen 375 WRF	27
Phytogen 499 WRF	29
Phytogen 367 WRF	30

Average plant populations were determined from three different locations within each plot at each growth stage.

Results and Discussion:

Due to extreme heat and drought conditions throughout the growing season, this test received supplemental irrigation through SSI. Approximately 12-inches of water was applied during the growing season.

Table 1 contains the yield and fiber quality information for each of the twenty-two cotton varieties evaluated in this test. Phytogen 499 WRF, FiberMax 9170 B2F, FiberMax 2484 B2F, and CropLan 3787 B2F topped this test in Total Gross Returns ($/acre), of $1,321.00 per acre, $1,285.00 per acre, $1,269.00 per acre and $1,247.00 per acre, respectively.

All cotton varieties were planted on 40 inch centers across the field and stripper-harvested using a John Deere four row cotton stripper. Each cotton variety consisted of 4 planted row plots replicated four times in a randomized complete block design. Seed cotton weights were determined by on-board load scales. Fiber quality analysis were determined by the Fiber & Biopolymer Research Institute in Lubbock.

Table 1. Agronomic Data from Daryl and Doyle Schnier's Supplemental Irrigated Cotton Variety Test, (Tom Green County, 2012)

Variety [1]	Yield (lbs/ac) Lint	Yield (lbs/ac) Seed	Percent Turnout Lint	Percent Turnout Seed	Fiber Quality [2] Color-Leaf	Mic	Fiber Length (inches)	Uniformity	Strength (gram/tex)	CCC Loan Value	Lint Gross Return ($/acre)	Seed Gross Return [4] ($/acre)	Total Gross Return ($/acre)
PHY 499 WRF	**1753a**	**2564**	**29.5a**	43.2	41-2*	**4.60a**	1.10	82.2	32.3	$53.43	**$937**	**$385**	**$1,321**
FM 9170 B2F	**1624a**	**2728**	28.2	47.4	41-4	3.85	1.16	81.8	31.8	$53.90	**$875**	**$409**	**$1,285**
FM 2484 B2F	**1618a**	**2421**	**30.9a**	46.1	31-2*	3.80	**1.17a**	**82.3a**	31.9	**$55.98a**	**$906**	**$363**	**$1,269**
CropLan 3787 B2F	**1622a**	2345	**30.1a**	43.5	31-1*	4.25	1.12	**83.0a**	29.8	**$55.23a**	**$896**	$352	**$1,247**
AM 1550 B2RF	**1659a**	**2504**	**29.7a**	44.9	41-2*	**4.40a**	1.06	81.2	28.6	$52.50	**$871**	**$376**	**$1,246**
DP 0935 B2RF	**1658a**	**2600**	28.9	45.3	42-2*	4.30	1.09	81.2	29.3	$51.23	**$849**	**$390**	**$1,239**
DP 1359 B2R2	**1556a**	**2433**	28.6	44.7	31-2*	4.30	1.14	81.2	32.3	**$55.48a**	**$863**	**$365**	**$1,228**
NG 1511 B2RF	**1676a**	2328	**30.9a**	42.9	41-3*	**4.65a**	1.09	81.8	30.2	$52.45	**$879**	$349	**$1,228**
DP 1219 B2RF	**1561a**	**2502**	27.5	44.0	41-2*	4.00	1.13	81.5	32.1	**$54.45a**	**$850**	**$375**	**$1,225**
FM 2989 GLB2	1482	**2576**	27.0	47.0	41-4	4.05	1.12	81.2	30.4	$53.50	$793	**$386**	**$1,179**
NGX 0012 B2RF	1507	2228	**29.8a**	43.7	31-2*	4.15	1.14	**83.2a**	30.0	**$55.88a**	**$842**	$334	**$1,176**
DG 2595 B2RF	1510	2386	**29.2a**	46.1	41-2*	**4.60a**	1.11	**82.6a**	30.3	**$54.08a**	**$817**	$358	**$1,175**
FM 1740 B2F	1513	2398	29.0	46.0	41-4	4.35	1.10	81.5	29.1	$52.95	$801	**$360**	$1,161
ST 4288 B2RF	1444	**2580**	27.6	**49.4a**	41-2*	**4.50a**	1.10	81.2	29.2	$53.48	$772	**$387**	$1,159
CropLan 3428 B2F	1515	2242	**29.2a**	43.3	41-3*	4.30	**1.18a**	**82.8a**	29.8	$53.83	**$815**	$336	$1,152
DG 2570 B2RF	1514	2347	**30.5a**	47.2	42-1	4.35	1.09	**83.1a**	30.2	$51.50	$780	$352	$1,132
PHY 367 WRF	1533	**2418**	28.2	44.4	52-3	4.30	1.10	81.0	29.7	$48.78	$748	**$363**	$1,111
PHY 375 WRF	1497	2266	**29.8a**	45.1	41-2*	4.35	1.06	81.7	29.4	$51.45	$770	$340	$1,110
DP 1032 B2RF	1441	2194	27.7	42.2	41-3*	4.25	1.11	81.5	29.9	$53.85	$776	$329	$1,105
ST 5458 B2RF	1445	2367	27.0	44.2	42-4*	**4.50a**	1.10	80.7	29.5	$49.85	$720	$355	$1,075
FM 1944 GLB2	1353	2285	27.6	46.6	41-2*	4.15	1.15	80.6	29.3	**$54.15a**	$733	$343	$1,075
ATX Dinero B2RF	1329	2280	26.7	46.0	41-3*	4.25	1.09	81.4	28.8	$53.28	$708	$342	$1,050
ATX 65207 B2RF	1371	2308	27.8	46.9	42-4*	4.15	1.10	81.8	30.2	$49.13	$674	$346	$1,020
ATX Nitro 44 B2RF	1340	2334	27.1	47.3	41-5*	3.70	**1.18a**	82.2	**33.5a**	$49.73	$666	$350	$1,016
Average	1522	2401	28.7	45.3	-	4.25	1.11	81.8	30.3	$52.92	$806	$360	$1,166
P>(F)[5]	0.004	0.010	0.035	0.001	-	0.001	0.001	0.018	0.001	0.001	----------	min/max	---------
Lsd (0.05 or 0.10)	208	n.s.	1.73	1.16	-	0.209	0.023	0.95	1.05	$1.92	$666	$329	$1,016
C.V.	9.7	9.3	4.3	1.8	-	3.49	1.5	0.8	2.5	2.56	$937	$409	$1,321

[1] Values for varieties in **bold** font and followed by an (a) in are not significantly different than the highest treatment in the column and values in **bold** font are above the average value for that parameter/column

[2] Fiber quality analysis conducted by sending two ginned fiber subsamples for HVI at the Fiber and biopolymer Research Institute, Texas Tech University, Lubbock, TX

[3] color and leaf grade based on two subsamples. Values followed by an (*) indicate differences between the sample for color and/or leaf

[4] Gross Seed Return based on $300/ton

[5] The statistical analysis indicates a general overview of the uniformity or variability of the test conditions, such as soil type, cultural practices, insect damage, etc. Trial locations with large least significant differences (LSD's) and CVs indicate a higher degree of variability. The smaller the LSD, the more precise are the test results and higher likelihood of identifying differences among varieties Differences between varieties that are greater than the LSD indicate a significant difference between the them for the measurement in a column. n.s. indicates no statistical difference among the treatments for that particular measurement/column. Maximum and minimum values in a column are listed for parameters based on a single sample.

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Dow AgroScience who provided Phytogen 375 WRF, Phytogen 499 WRF, and Phytogen 367 WRF

Stoneville Pedigreed Seed owned by Bayer CropScience who provided Stoneville 5458 B2RF and Stoneville 4288 B2RF

Delta and Pine Land Company who provided Deltapine 0935 B2RF, Deltapine 1032 B2RF, Deltapine 1219 B2RF and Deltapine 1359 B2RF

All-Tex Seed Company who provided All-Tex 65207 B2RF, All-Tex Dinero B2RF and All-Tex Nitro 44 B2RF

Americot Inc. who provided Americot 1550 B2RF, NGX 0012 B2RF and NexGen 1511 B2RF

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Winfield Solutions who provided CropLan 3428 B2RF and CropLan 3787 B2RF