Irrigated Cotton Variety Test

John & Doug Wilde's Farm, 2013
Rick Minzenmayer, Extension Agent-IPM
Joshua Blanek, County Extension Agent-Agriculture
and Dr. David Drake, Extension Agronomist
Tom Green County

Summary:

Sixteen cotton varieties were compared under similar growing conditions to determine which cotton varieties consistently have higher yields and favorable fiber qualities. Deltapine 1359 B2RF, Deltapine 1321 B2RF and Dyna-Gro 2570 B2RF topped this test in Net Value ($/acre), of $718.95 per acre, $712.18 per acre, and $695.27 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:

Sixteen cotton varieties were planted using an eight-row John Deere Maxi-Merge planter in a strip test fashion using sixteen planted row plots in the Wall farming community. The following is a list of materials and methods used in this test.

Planting Date:	May 22, 2013
Seeding Rate:	45,477 Seeds/Acre
Row Width:	40" Centers

Rows Planted: 16 rows-except for NG 5313 B2RF with twenty rows
Planting Pattern: Every Row
Last Year's Crop: Cotton
Irrigated: SSI
Soil Moisture: Excellent
Herbicide: post plant 1 pt. Direx, 2 pts. Caparol 1 ½ pts. Generic RoundUp
Fertilizer: 15 gal 10-34-0 pre-plant; 120 units of Nitrogen during growing season applied through SSI
Insecticide: 5 lbs. Temik @ planting
Harvest Date: November 4, 2013

Variety	Plant Stand Avg. #/10 ft. 2nd True Leaf Stage	Plant Stand Avg. #/10 ft. 6th True Leaf Stage
All-Tex Nitro 44 B2RF	27	27
Dyna-Gro 2570 B2RF	24	26
Dyna-Gro CT 13545 B2RF	22	24
Phytogen 565 WRF	21	24
Phytogen 499 WRF	22	24
Phytogen 367 WRF	19	21
Deltapine 1044 B2RF	28	27
Deltapine 1321 B2RF	26	31
Deltapine 1219 B2RF	30	29
Deltapine 1359 B2RF	26	29
Stoneville 4946 GLB2	25	27
FiberMax 2484 B2F	30	21
FiberMax 1944 GLB2	26	27
FiberMax 2989 GLB2	24	26
NexGen 1511 B2RF	28	26
NexGen 5313 B2RF	26	18

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

Results and Discussion:

Table 1 contains the yield and economic information and Table 2 contains the fiber quality analysis for each of the sixteen cotton varieties evaluated in this test. Deltapine 1359 B2RF, Deltapine 1321 B2RF and Dyna-Gro 2570 B2RF topped this test in Net Value ($/acre) of $718.95 per acre, $712.18 per acre, and $695.27, respectively. Yields were down this year due to extreme drought conditions throughout the growing season.

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 16 planted rows. Weights were determined using a weigh wagon. Fiber quality analysis were determined by the Fiber & Biopolymer Research Institute in Lubbock.

Table 1. Lint yield and economic information from John and Doug Wilde's Irrigated Cotton Variety Test (Tom Green County, 2013)

Variety	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed technology cost	Net value
	-------- % --------		---------- lb/acre ----------			$/lb	---------- $/acre ----------					
DP 1359B2RF	27.5	53.2	4980	1368	2647	0.5180	708.59	231.62	940.22	149.39	71.87	718.95
DP 1321B2RF	27.1	46.9	5045	1370	2368	0.5325	729.37	207.19	936.56	151.36	73.03	712.18
DG 2570B2RF	27.6	53.2	4643	1283	2468	0.5380	690.32	215.97	906.29	139.28	71.75	695.27
PHY 499WRF	27.3	48.5	4586	1251	2222	0.5385	673.52	194.47	867.99	137.58	66.60	663.81
NG 1511B2RF	27.8	46.9	4869	1355	2286	0.4920	666.70	199.99	866.69	146.08	67.78	652.83
DP 1219B2RF	25.8	42.6	4912	1269	2090	0.5415	687.34	182.91	870.25	147.37	73.35	649.53
FM 1944GLB2	27.3	51.1	4307	1176	2200	0.5420	637.57	192.46	830.03	129.22	64.24	636.57
PHY 565WRF	26.7	48.0	4522	1207	2168	0.5365	647.50	189.72	837.22	135.65	66.60	634.98
DG CT 13545B2RF	27.4	47.1	4419	1213	2081	0.5330	646.41	182.09	828.51	132.56	71.75	624.20
ST 4946GLB2	27.4	49.9	4436	1216	2213	0.5055	614.61	193.66	808.26	133.08	73.35	601.83
All-Tex Nitro-44 B2RF	25.8	49.4	4888	1263	2414	0.4765	601.74	211.20	812.94	145.63	71.54	594.77
DP 1044B2RF	25.2	49.1	4426	1115	2171	0.5390	600.99	189.95	790.93	132.77	73.03	585.13
FM 2989GLB2	26.4	51.5	4259	1125	2195	0.4895	550.93	192.08	743.01	127.77	67.78	547.46
NG 5315B2RF	27.9	46.2	3956	1102	1829	0.4940	544.36	160.03	704.39	118.90	67.78	517.92
FM 2484B2F	26.9	47.2	3969	1066	1872	0.4940	526.81	163.83	690.64	119.06	64.24	507.34
Phytogen 367WRF	26.5	33.6	4356	1155	1464	0.4955	572.44	128.10	700.54	130.68	73.03	496.84

Table 2. Fiber quality analysis from John and Doug Wilde's Irrigated Cotton Variety Test (Tom Green County, 2013)

Variety	Mic units	Staple 32^{nds} inches	Uniformity %	Strength g/tex	Elongation %	Leaf grade	Rd reflectance	+b yellowness	Color grade CG
DP 1359B2RF	4.1	36.5	78.9	33.4	8.0	3.0	75.2	7.7	41-1
DP 1321B2RF	4.1	35.5	81.9	36.3	10.0	5.0	68.6	7.3	51-1
DG 2570B2RF	4.2	35.8	80.2	32.8	10.0	4.0	73.6	7.8	41-1
PHY 499WRF	4.4	34.6	82.3	31.8	11.1	5.0	70.1	7.7	51-1
NG 1511B2RF	4.4	35.5	80.6	32.9	9.5	5.0	70.0	7.9	51-3
DP 1219B2RF	4.0	36.8	80.2	33.0	8.3	4.0	73.3	7.9	41-2
FM 1944GLB2	4.1	36.8	79.6	32.2	7.5	3.0	73.8	7.2	41-2
PHY 565WRF	4.3	35.8	81.7	33.1	10.2	5.0	70.7	7.8	51-1
DG CT 13545B2RF	4.3	35.5	79.2	32.9	8.7	4.0	71.3	8.0	41-4
ST 4946GLB2	4.4	35.8	80.4	31.8	9.6	4.0	72.3	7.5	51-1
All-Tex Nitro-44 B2RF	3.8	38.7	81.4	35.8	8.9	6.0	68.4	6.9	51-2
DP 1044B2RF	4.3	35.5	81.0	31.0	10.7	4.0	72.0	7.7	41-2
FM 2989GLB2	4.2	36.2	80.3	30.9	7.7	4.0	71.6	7.1	51-1
NG 5315B2RF	4.5	36.2	82.0	30.2	10.6	3.0	74.7	8.1	41-1
FM 2484B2F	4.1	37.8	80.7	33.0	7.4	5.0	74.6	7.0	41-2
PHY 367WRF	4.1	35.2	79.7	32.9	9.7	5.0	70.3	8.0	51-3

Acknowledgments:

Sincere appreciation is expressed to John and Doug Wilde for establishing and managing this test. Also a word of thanks to the seed companies that provided cotton seed and financial support, they include:

Bayer CropScience who provided the FiberMax 2484 B2F, FiberMax 1944 GLB2, and FiberMax 2989 GLB2

Dow AgroScience who provided Phytogen 565 WRF, Phytogen 367 WRF, and Phytogen 499 WRF

Stoneville Pedigreed Seed owned by Bayer CropScience who provided Stoneville 4946 GLB2

Delta and Pine Land Company who provided Deltapine 1044 B2RF, Deltapine 1321 B2RF, Deltapine 1219 B2RF and Deltapine 1359 B2RF

Crop Production Services who provided Dyna-Gro CT 13545 B2RF and Dyna-Gro 2570 B2RF

All-Tex Seed Company owned by Crop Production Services who provided All-Tex Nitro 44 B2RF

Americot Inc. who provided NexGen 1511 B2RF and NexGen 5315 B2RF