

Texas Panhandle Cotton Variety Trials - 2009

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Introduction

Interest in growing cotton north of I-40 continues to be strong in the Texas panhandle. This region had historically been a corn/wheat production area, but decline in available irrigation water is resulting in a shift of acres to cotton. Because of the area's short growing season, the choice of which variety to plant is critical to cotton's success. With the introduction of the Roundup Ready Flex system many new varieties are now available. It is critical that these new varieties are compared in grower fields in the panhandle to provide farmers with unbiased data from which to choose varieties for their operation. The objective of this study was to compare yield, commercial gin turnout, and fiber quality of varieties under Texas panhandle conditions.

Materials and Methods

Five replicated large strip plot variety trials were initiated in May of 2009 in producer fields. Of these trials three made it to harvest with one trial abandoned due to poor stand establishment and a second trial not harvested as a result of hail damage. All trials were conducted in cooperation with producers using their specific farming practices. All of the varieties tested contained the Roundup Ready Flex trait. Following harvest at each trial, samples were collected and ginned at the Texas AgriLife Research and Extension Center near Lubbock, TX to determine gin turnout. Lint samples were submitted to the Fiber and Biopolymer Research Institute at Texas Tech University for HVI analysis and Commodity Credit Corporation (CCC) loan values were determined for each variety by plot. Seed and technology costs were calculated using the appropriate seeding rate and row spacing using the online Plains Cotton Growers Seed Cost Comparison Worksheet.

The trials were located in Sherman, Moore and Carson counties. The same 12 varieties were planted at each location. Each trial was grown under center pivot irrigation. The Sherman county trial was considered fully irrigated and the Moore and Carson county sites limited irrigated. Row spacing was either 20 or 30-inches depending on the location. Individual plots ranged from 500 to 625 ft in length, and consisted of 6, 8 or 12 rows depending on location. Harvest was achieved with a John Deere 7460 or 7450 stripper with field cleaner. Bur cotton weight from each plot was determined with a weigh wagon with integral electronic scales. Plot weights were then converted to lb/acre.

The specific cultural practices utilized at each site are listed below:

Moore County

Cooperator: Tommy Cartite farm, located approximately 7 miles north of Sunray, TX

Experimental design: Randomized complete block with 3 replications

Seeding rate: 3.3 seeds/row-ft in 20-inch row spacing (85,268 seed/acre)

Plot size: 12 rows approximately 618 ft in length

Planting date: 13-May

Herbicide: Preplant application of 28 ozs/acre RT3 (glyphosate). Preplant application of 2 pts/acre Prowl H₂O. Two in-season applications of 28 ozs/acre Roundup PowerMax.

Rainfall/irrigation: 5 inches pre-irrigation and 8 inches in-season irrigation with LESA center pivot system. 10 inches rainfall after 15-July.

Insecticides: 3 ozs/acre acephate on 15-June and 4 ozs/acre acephate on 12-July.

Fertilizer management: 72 lbs N/acre as anhydrous ammonia (82-0-0) and 14 lbs N and 48 lbs P₂O₅/acre as 10-34-0 prior to planting.

Plant growth regulators: Applied mepiquat chloride at 20 ozs/acre on 28-July.

Harvest aids: One harvest aid application was applied consisting of 32 ozs/acre ethephon and 1 oz/acre Aim with crop oil concentrate at 1% volume/volume.

Carson County

Cooperator: Dudley Pohnert, near White Deere, TX

Experimental design: Randomized complete block with 3 replications

Seeding rate: 4.1 seeds/row-ft in 30-inch row spacing (71,500 seeds/acre)

Plot size: 8 rows by approximately 509 ft

Planting date: 20-May

Rainfall/irrigation: Approximately 8" of rainfall was accumulated from 25-May through 29-October. During the growing season, 4.5" of irrigation were applied through a LESA center pivot.

Herbicides: Diuron at 1.5 pt/acre was applied pre-emergence. Roundup PowerMax at 22 oz/acre with 8.5 lb/100 gal. ammonium sulfate was applied three times during the season. (29-May, 2-July, and 24-July).

Insecticides: 4 lbs/acre Temik was applied in-furrow at planting

Fertilizer management: At planting 35.4 lbs N/acre, using 32-0-0, and 1lb Zn/acre were applied. An additional 32 lbs N/acre was applied through pivot irrigation at first bloom.

Plant growth regulators: Applied 16 oz/acre Pix and 5 oz/acre Chaperon on 25-July. An additional 16 oz/acre of Pix was applied on 25-August.

Harvest aids: Applied 1 qt/acre Prep 12-October

Sherman County

Cooperator: Joe Reinhart, between Stratford and Dalhart, TX

Experimental design: Randomized complete block with 2 replications

Seeding rate: 50,000 seed/acre on 30-inch rows (2.9 seeds/row ft)

Plot size: 6 rows approximately 600 ft in length

Planting date: 15-May No-till following wheat in 2008

Herbicide: 20-April 20 oz generic glyphosate. 15-June and 30-July 12 oz generic glyphosate

Rainfall/Irrigation: 1.3 inches total irrigation water applied through a LESA half pivot. 0.5 inch after planting and 0.8 inch after 15-June glyphosate application. Rainfall totaled 5.5 inches during the growing season (15-May through 1-November)

Insecticides: Temik applied in-furrow at planting

Fertilizer management: No fertilizer

Plant growth regulators: 12 oz Pix on 30-July

Harvest aids: None

Results and Discussion

Moore County

Extreme immaturity led to abnormally low quality leaf and color grades, which resulted in low loan values. A commercial gin would have likely been able to clean the lint better than we were able to achieve. Therefore, leaf and color grades were set at 3 and 32, respectively, to better represent commercial ginning.

Lint turnout ranged from a low of 16.2% to a high of 21.0% for Croplan Genetics 3220B2RF and Deltapine 121RF, respectively (Table 1). Lint yields varied from a low of 336 lb/acre (Deltapine 0924B2RF) to a high of 758 lb/acre (Deltapine 104B2RF). After adjusting leaf and color grades, lint loan values averaged \$0.4158/lb. After adding lint and seed value, total value/acre ranged from a low of \$208.43 for Deltapine 0924B2RF to a high of \$475.00 for Deltapine 104B2RF. When subtracting ginning, seed and technology fee costs (no cap cost applied), the net value/acre among varieties ranged from a low of \$37.79 for Deltapine 0924B2RF to a high of \$256.14 for Deltapine 104B2RF, a difference of \$218.35.

Micronaire values ranged from a low of 2.0 for Deltapine 0912B2RF to a high of 2.4 for Deltapine 104B2RF (Table 2). Staple averaged 36.0 across all varieties with a low of 34.6 for Deltapine 0912B2RF to a high of 37.7 for FiberMax 9180B2F. The highest uniformity was observed for FiberMax 9180B2RF and Deltapine 104B2RF (80.5%) and NexGen 1572RF had the lowest with 76.9%. Strength averaged 24.3 g/tex with a high of 28.2 g/tex for Deltapine 104B2RF and a low of 21.2 g/tex for Deltapine 0912B2RF. Significant differences were observed among varieties for elongation (10.2% average), Rd or reflectance (73.8 average) and +b or yellowness (10.3 average).

Carson County

Lint turnout ranged from a low of 20% to a high of 24.8% for Croplan Genetics 3220B2RF and NexGen 1551RF, respectively (Table 3). Lint yields varied with a low of 633 lb/acre (Croplan Genetics 3220B2RF) and a high of 1,010 lb/acre (Deltapine 104B2RF). Lint loan values ranged from a low of \$0.3845/lb (NexGen 3410RF) to a high of \$0.5055/lb (NexGen 1551RF). After adding lint and seed value, total value/acre for varieties ranged from a low of \$401.60 for Croplan Genetics 3220B2RF to a high of \$642.46 for Deltapine 104B2RF. After subtracting ginning, seed and technology fee costs, the net value/acre among varieties ranged from a high of \$444.08 (NexGen 1551RF) to a low of \$213.95 (Croplan Genetics 3220B2RF), a difference of \$230.13.

Micronaire values ranged from a low of 2.1 for Deltapine 0912B2RF and PhytoGen 315RF to a high of 2.9 for NexGen 1551RF (Table 4). Most micronaire values were clustered around the mean of 2.3. Staple length averaged 36.0 across all varieties with a low of 34.4 for PhytoGen 315RF to a high of 38.3 for NexGen 3410RF. The highest percent uniformity was observed for NexGen 1551RF (81.9%) and PhytoGen 315RF had the lowest (77.6%). Strength values averaged 26.3 g/tex with a high of 30.5 g/tex for NexGen 1551RF and a low of 22.5 for PhytoGen 315RF. Elongation ranged from a high of 11.2% for Deltapine 104B2RF and Deltapine 0924B2RF to a low of 9.7% for FiberMax 9058F. Leaf grades were relatively high with a range from 2.0 to 6.3 with a test average of 4.0. Values for reflectance (Rd) and yellowness (+b) averaged 80.9 and 8.5, respectively.

Sherman County

Average Lint yield at this location was 570 lb/acre and was achieved with 1.3 inches of limited irrigation (Table 5). Lint turnout averaged 32.7%, with a range of 36.2% to 29.7%. Three varieties (NexGen 1551RF, Deltapine 121RF and PhytoGen 315RF) had over a 35% lint turnout. Lint yields varied from a low of 411 lb/acre with Croplan Genetics 3220B2RF to a high of 738 lb/acre with Deltapine 104B2RF. Lint loan value ranged from \$0.3948/lb (Deltapine 0935B2RF) to \$0.4838 (NexGen 1551RF). When subtracting ginning, seed and technology fee costs, the net value/acre among varieties ranged from a high of \$314.89 (Deltapine 104B2RF) to a low of \$106.82 (Deltapine 0935B2RF), a difference of \$208.07. Other top net valued varieties were NexGen 1551RF, NexGen 1572RF, Deltapine 121RF, and NexGen 3410 RF all of which had a net value of over \$237.00 per acre.

Differences in fiber properties influenced the loan value obtained for each variety (Table 6). Micronaire was similar at 3.2 units for all varieties except NexGen 1551RF at 4.2. Staple

averaged 33.4 for all varieties. The highest percent uniformity was observed for Deltapine 104B2RF (82.4%) and Deltapine 0935B2RF had the lowest (78.0%). Strength values averaged 27.7 g/tex with a high of 31.0 g/tex for NexGen 1551RF and a low of 24.6 g/tex with Deltapine 0935B2RF. Elongation ranged from a high of 11.6% for All-Tex Summit B2RF to a low of 9.5% with FiberMax 9058F. Leaf grades averaged 3.7, excluding a low of 1.5 with Deltapine 0935B2RF and a high of 5.5 with NexGen 1572RF. Fiber reflectiveness (Rd) and yellowness (+b) averaged 67.0 and 12.7, respectively, also affected loan value.

Summary and Conclusions

The importance of variety selection was clearly evident at all three locations. Net value/acre (lint plus seed value minus ginning and seed/technology costs) differed by as much as \$218, \$230, and \$208 at the Moore, Carson, and Sherman county sites, respectively, depending on the variety planted. Variety performance was similar at all locations. Four varieties, Deltapine 104B2RF, Deltapine 121F, NexGen 1551RF, and NexGen 1572RF were the top net value/acre varieties tested at all three locations.

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Table 1. Harvest results from the replicated irrigated cotton variety demonstration, Tommy Cartrite Farm, Sunray, TX, 2009.

| Entry | 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 ----- | | |
| Deltapine 104B2RF | 20.8 | 49.8 | 3659 | 758 | 1819 | 0.4352 | 329.48 | 145.52 | 475.00 | 109.77 | 109.09 | 256.14 a |
| NexGen 1572RF | 19.6 | 48.7 | 3413 | 675 | 1656 | 0.4075 | 275.69 | 132.50 | 408.19 | 102.39 | 92.61 | 213.19 ab |
| NexGen 3410RF | 20.3 | 48.6 | 3103 | 633 | 1511 | 0.4227 | 268.57 | 120.87 | 389.43 | 93.10 | 92.61 | 203.72 abc |
| NexGen 1551RF | 19.4 | 47.8 | 3124 | 607 | 1486 | 0.4268 | 258.12 | 118.90 | 377.01 | 93.71 | 92.61 | 190.69 abc |
| NexGen 2549B2RF | 20.1 | 44.2 | 3047 | 612 | 1349 | 0.4120 | 252.23 | 107.91 | 360.13 | 91.41 | 111.18 | 157.54 bcd |
| Deltapine 121RF | 21.0 | 44.7 | 2595 | 547 | 1165 | 0.4145 | 227.94 | 93.17 | 321.11 | 77.84 | 95.62 | 147.65 bcd |
| FiberMax 9180B2RF | 20.4 | 46.2 | 3078 | 555 | 1259 | 0.4365 | 242.26 | 100.71 | 342.96 | 92.35 | 113.37 | 137.24 cd |
| FiberMax 9058F | 19.5 | 43.9 | 2475 | 483 | 1089 | 0.4162 | 201.01 | 87.11 | 288.13 | 74.25 | 98.45 | 115.43 de |
| All-Tex Summit B2RF | 18.1 | 45.6 | 2568 | 464 | 1169 | 0.4025 | 187.10 | 93.52 | 280.63 | 77.04 | 110.27 | 93.32 def |
| Deltapine 0912B2RF | 17.8 | 45.6 | 2257 | 404 | 1030 | 0.3940 | 159.69 | 82.44 | 242.13 | 67.70 | 112.49 | 61.94 ef |
| Croplan Genetics 3220B2RF | 16.2 | 42.2 | 2404 | 391 | 1012 | 0.3975 | 155.70 | 81.00 | 236.70 | 72.12 | 110.07 | 54.51 ef |
| Deltapine 0924B2RF | 17.3 | 42.1 | 1938 | 336 | 817 | 0.4238 | 143.10 | 65.32 | 208.43 | 58.15 | 112.49 | 37.79 f |
| Test average | 19.2 | 45.8 | 2805 | 539 | 1280 | 0.4158 | 225.07 | 102.41 | | 84.15 | 104.24 | 139.10 |
| CV, % | 6.7 | 4.8 | 14.3 | 16.0 | 13.7 | 2.9 | 16.7 | 14.0 | 15.5 | 14.3 | -- | 30.1 |
| OSL | 0.0022 | 0.0032 | 0.0008 | 0.0001 | <0.0001 | 0.0030 | <0.0001 | <0.0001 | <0.0001 | 0.0008 | -- | <0.0001 |
| LSD | 2.2 | 3.7 | 677 | 146 | 296 | 0.0205 | 63.52 | 23.69 | 85.86 | 20.32 | -- | 70.80 |
| For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level. | | | | | | | | | | | | |
| CV - coefficient of variation. | | | | | | | | | | | | |
| OSL - observed significance level, or probability of a greater F value. | | | | | | | | | | | | |
| LSD - least significant difference at the 0.05 level, NS - not significant. | | | | | | | | | | | | |
| Note: some columns may not add up due to rounding error. | | | | | | | | | | | | |
| Assumes: | | | | | | | | | | | | |
| \$3.00/cwt ginning cost. | | | | | | | | | | | | |
| \$160/ton for seed. | | | | | | | | | | | | |
| Value for lint based on CCC loan value from grab samples and FBRI HVI results. | | | | | | | | | | | | |
| No Cap Cost for seed and technology and 85,268 seed/acre dropped. | | | | | | | | | | | | |

Table 2. HVI fiber property results from the irrigated replicated cotton variety demonstration, Tommy Cartrite Farm, Sunray, TX, 2009.

| Entry | Micronaire | Staple | Uniformity | Strength | Elongation | Rd | +b |
|--|-------------------|--------------------------------|-------------------|-----------------|-------------------|--------------------|-------------------|
| | units | 32^{nds} inches | % | g/tex | % | reflectance | yellowness |
| All-Tex Summit B2RF | 2.1 | 34.9 | 78.4 | 22.6 | 10.6 | 73.5 | 10.8 |
| Croplan Genetics 3220B2RF | 2.1 | 35.0 | 77.3 | 22.1 | 10.3 | 74.4 | 11.2 |
| Deltapine 0912B2RF | 2.0 | 34.6 | 78.0 | 21.2 | 9.9 | 74.8 | 10.3 |
| Deltapine 0924B2RF | 2.1 | 35.8 | 79.1 | 23.9 | 10.5 | 71.3 | 10.8 |
| Deltapine 104B2RF | 2.4 | 36.6 | 80.5 | 28.2 | 10.7 | 72.9 | 10.6 |
| Deltapine 121RF | 2.2 | 35.5 | 79.1 | 24.1 | 10.4 | 72.1 | 11.2 |
| FiberMax 9058F | 2.1 | 36.9 | 77.7 | 24.0 | 9.2 | 74.7 | 9.8 |
| FiberMax 9180B2RF | 2.2 | 37.7 | 80.5 | 26.5 | 10.2 | 77.9 | 8.8 |
| NexGen 1551RF | 2.2 | 36.2 | 79.6 | 26.2 | 10.4 | 74.2 | 10.2 |
| NexGen 1572RF | 2.1 | 35.7 | 76.9 | 23.3 | 10.1 | 74.4 | 9.6 |
| NexGen 2549B2RF | 2.2 | 35.1 | 79.4 | 24.2 | 10.5 | 71.1 | 10.6 |
| NexGen 3410RF | 2.1 | 37.5 | 78.6 | 24.8 | 10.1 | 74.0 | 10.0 |
| Test average | 2.2 | 36.0 | 78.7 | 24.3 | 10.2 | 73.8 | 10.3 |
| CV, % | 4.6 | 2.0 | 1.5 | 6.5 | 3.7 | 1.8 | 4.4 |
| OSL | 0.0103 | 0.0002 | 0.0114 | 0.0012 | 0.0094 | 0.0010 | <0.0001 |
| LSD | 0.2 | 1.2 | 2.0 | 2.7 | 0.6 | 2.3 | 0.8 |
| CV - coefficient of variation. | | | | | | | |
| OSL - observed significance level, or probability of a greater F value. | | | | | | | |
| LSD - least significant difference at the 0.05 level. | | | | | | | |
| Leaf values were set at 3 and color grades were set at 32. | | | | | | | |

Table 3. Harvest results from the replicated irrigated cotton variety demonstration, Dudley Pohnert Farm, White Deer, TX, 2009.

| Variety | Lint Turnout | Seed Turnout | Bur Cotton Yield | Lint Yield | Seed Yield | Lint Loan Value | Lint Value | Seed Value | Total Value | Ginning Cost | Seed/tech. Cost | Net Value | |
|---|---------------|--------------|-------------------|------------|------------|-------------------|------------|------------|-------------|--------------|-----------------|-----------|----|
| | ----- % ----- | | -----lb/acre----- | | | -----\$/acre----- | | | | | | | |
| NexGen 1551RF | 24.8 | 50.8 | 3837 | 951 | 1949 | 0.5055 | 480.94 | 155.92 | 636.86 | 115.12 | 77.66 | 444.08 | a |
| Deltapine 104B2RF | 23.4 | 52.4 | 4328 | 1010 | 2268 | 0.4567 | 461.01 | 181.46 | 642.46 | 129.84 | 91.48 | 421.15 | a |
| NexGen 1572RF | 22.0 | 49.8 | 3840 | 847 | 1911 | 0.4545 | 384.76 | 152.85 | 537.62 | 115.18 | 77.66 | 344.78 | b |
| NexGen 3410RF | 23.8 | 52.4 | 4066 | 966 | 2130 | 0.3845 | 371.56 | 170.36 | 541.92 | 121.98 | 77.66 | 342.28 | b |
| FiberMax 9058F | 24.3 | 48.8 | 3639 | 884 | 1776 | 0.4215 | 372.18 | 142.12 | 514.29 | 109.16 | 93.23 | 311.90 | bc |
| NexGen 2549B2RF | 22.6 | 46.7 | 3499 | 791 | 1634 | 0.4548 | 360.16 | 130.71 | 490.87 | 104.97 | 80.18 | 305.71 | bc |
| Deltapine 121RF | 24.1 | 49.4 | 3559 | 858 | 1757 | 0.4142 | 355.47 | 140.58 | 496.05 | 106.76 | 94.32 | 294.96 | cd |
| FiberMax 9180B2RF | 21.8 | 48.1 | 3590 | 781 | 1726 | 0.4590 | 358.38 | 138.06 | 496.44 | 107.70 | 95.06 | 293.67 | cd |
| PhytoGen 315RF | 22.4 | 48.3 | 3433 | 767 | 1657 | 0.4505 | 345.78 | 132.52 | 478.31 | 103.00 | 82.55 | 292.76 | cd |
| Deltapine 0912B2RF | 23.2 | 48.9 | 3268 | 757 | 1598 | 0.4402 | 333.81 | 127.81 | 461.62 | 98.03 | 94.32 | 269.27 | cd |
| Deltapine 0924B2RF | 22.5 | 49.0 | 3213 | 723 | 1575 | 0.4258 | 308.22 | 126.02 | 434.24 | 96.39 | 80.14 | 257.70 | d |
| Croplan Genetics 3220B2RF | 20.0 | 48.3 | 3178 | 633 | 1536 | 0.4398 | 278.74 | 122.86 | 401.60 | 95.35 | 92.30 | 213.95 | e |
| Test Avg. | 22.9 | 49.4 | 3621 | 831 | 1793 | 0.4423 | 367.58 | 143.44 | 511.02 | 108.6 | 86.38 | 316.02 | |
| CV | 5.1 | 2.4 | 4.6 | 4.6 | 4.7 | 4 | 6.5 | 4.7 | 5.8 | 4.6 | -- | 8 | |
| OSL | 0.0033 | 0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | -- | <0.0001 | |
| LSD (P=.05) | 2.0 | 2.0 | 280 | 65 | 142 | 0.0299 | 40.73 | 11.31 | 49.97 | 8.41 | -- | 43.03 | |
| For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level. | | | | | | | | | | | | | |
| CV - coefficient of variation. | | | | | | | | | | | | | |
| OSL - observed significance level, or probability of a greater F value. | | | | | | | | | | | | | |
| LSD - least significant difference at the 0.05 level, NS - not significant. | | | | | | | | | | | | | |
| Note: some columns may not add up due to rounding error. | | | | | | | | | | | | | |
| Assumes: | | | | | | | | | | | | | |
| \$3.00/cwt ginning cost. | | | | | | | | | | | | | |
| \$160/ton for seed. | | | | | | | | | | | | | |
| Lint value based on CCC loan value from grab samples and FBRI HVI results. | | | | | | | | | | | | | |

Table 4. HVI fiber property results from the replicated cotton variety demonstration, Dudley Pohnert, White Deer, TX, 2009.

| Variety | Micronaire | Staple | Uniformity | Strength | Elongation | Leaf | Rd | +b | Color Grade | |
|---|------------|---------------|------------|----------|------------|---------|-------------|------------|-------------|---------|
| | units | 32nd inchs | % | g/tex | % | grade | reflectance | yellowness | color 1 | color 2 |
| Croplan Genetics 3220B2RF | 2.2 | 35.60 | 78.3 | 25.1 | 11.0 | 3.3 | 82.2 | 8.2 | 1.3 | 1.0 |
| Deltapine 0912B2RF | 2.1 | 35.0 | 78.7 | 24.1 | 10.7 | 4.7 | 78.5 | 9.7 | 1.7 | 1.7 |
| Deltapine 0924B2RF | 2.2 | 35.0 | 79.2 | 25.4 | 11.2 | 3.7 | 81.7 | 8.6 | 1.0 | 1.0 |
| Deltapine 104B2RF | 2.3 | 36.6 | 80.5 | 28.4 | 11.2 | 4.0 | 80.7 | 8.3 | 2.3 | 1.0 |
| Deltapine 121RF | 2.2 | 36.1 | 79.8 | 25.7 | 10.8 | 3.3 | 80.9 | 8.9 | 1.3 | 1.0 |
| FiberMax 9058F | 2.2 | 37.1 | 78.9 | 25.8 | 9.7 | 4.0 | 82.7 | 7.8 | 1.7 | 1.0 |
| FiberMax 9180B2RF | 2.2 | 37.8 | 80.5 | 28.8 | 9.9 | 4.0 | 82.6 | 7.3 | 2.0 | 1.0 |
| NexGen 1551RF | 2.9 | 35.9 | 81.9 | 30.5 | 10.2 | 2.0 | 80.3 | 8.9 | 1.7 | 1.0 |
| NexGen 1572RF | 2.2 | 35.6 | 78.0 | 25.6 | 10.2 | 6.3 | 79.4 | 7.9 | 3.0 | 1.0 |
| NexGen 2549B2RF | 2.4 | 34.5 | 80.8 | 26.2 | 11.1 | 5.3 | 80.3 | 8.8 | 1.7 | 1.0 |
| NexGen 3410RF | 2.2 | 38.3 | 80.2 | 27.9 | 10.1 | 4.3 | 79.9 | 8.6 | 2.0 | 1.0 |
| PhytoGen 315RF | 2.1 | 34.4 | 77.6 | 22.5 | 10.1 | 3.0 | 81.2 | 9.3 | 1.0 | 1.0 |
| Test Avg. | 2.3 | 36.0 | 79.5 | 26.3 | 10.5 | 4.0 | 80.9 | 8.5 | 1.7 | 1.1 |
| CV | 4 | 1.5 | 0.9 | 4.2 | 2.4 | 17.8 | 1.6 | 6.4 | -- | -- |
| OSL | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0108 | 0.0011 | -- | -- |
| LSD (P=.05) | 0.2 | 0.9 | 1.2 | 1.9 | 0.4 | 1.2 | 2.1 | 0.9 | -- | -- |
| CV - coefficient of variation. | | | | | | | | | | |
| OSL - observed significance level, or probability of a greater F value. | | | | | | | | | | |
| LSD - least significant difference at the 0.05 level, NS - not significant. | | | | | | | | | | |

Table 5. Harvest results from the replicated irrigated cotton variety demonstration, Joe Reinart Farm, Sherman County, TX 2009.

| Variety | Lint Turnout | Seed Turnout | Bur Cotton Yield | Lint Yield | Seed Yield | Lint Loan Value | Lint Value | Seed Value | Total Value | Ginning Cost | Seed/tech. Cost | Net Value | | |
|---------------------------|---------------|--------------|-------------------|------------|------------|-------------------|------------|------------|-------------|--------------|-----------------|-----------|----|--|
| | ----- % ----- | | -----lb/acre----- | | | -----\$/acre----- | | | | | | | | |
| Deltapine 104B2RF | 31.7 | 53.0 | 2325 | 738 | 1233 | 0.4780 | 353.07 | 98.65 | 451.73 | 69.75 | 67.08 | 314.89 | a | |
| NexGen 1551RF | 36.2 | 53.3 | 1915 | 697 | 1021 | 0.4838 | 335.15 | 81.63 | 416.78 | 57.45 | 50.40 | 308.93 | a | |
| NexGen 1572RF | 32.1 | 51.2 | 2019 | 649 | 1034 | 0.4470 | 289.69 | 82.71 | 372.40 | 60.55 | 50.40 | 261.45 | ab | |
| Deltapine 121RF | 35.9 | 47.9 | 1752 | 629 | 838 | 0.4510 | 283.52 | 67.07 | 350.58 | 52.56 | 58.82 | 239.20 | ab | |
| NexGen 3410RF | 32.5 | 49.4 | 1841 | 598 | 908 | 0.4520 | 270.21 | 72.64 | 342.85 | 55.22 | 50.40 | 237.23 | ab | |
| PhytoGen 315RF | 35.4 | 48.4 | 1618 | 574 | 782 | 0.4510 | 258.84 | 62.58 | 321.41 | 48.55 | 59.96 | 212.91 | b | |
| NexGen 2549B2RF | 32.3 | 48.2 | 1804 | 583 | 869 | 0.4443 | 258.58 | 69.51 | 328.09 | 54.10 | 62.57 | 211.42 | b | |
| FiberMax 9180B2RF | 33.3 | 48.9 | 1706 | 568 | 834 | 0.4503 | 255.87 | 66.67 | 322.54 | 51.19 | 60.60 | 210.75 | b | |
| FiberMax 9058F | 30.6 | 48.5 | 1746 | 536 | 847 | 0.4725 | 252.90 | 67.79 | 320.69 | 52.38 | 68.85 | 199.47 | b | |
| All-Tex Summitt B2RF | 31.7 | 49.8 | 1753 | 556 | 873 | 0.4188 | 233.71 | 69.83 | 303.53 | 52.58 | 65.21 | 185.74 | bc | |
| Deltapine 0924B2RF | 32.7 | 49.1 | 1503 | 491 | 739 | 0.4568 | 223.99 | 59.09 | 283.08 | 45.09 | 70.08 | 167.91 | bc | |
| Deltapine 0912B2RF | 31.7 | 48.7 | 1692 | 537 | 824 | 0.4165 | 222.75 | 65.92 | 288.67 | 50.76 | 71.08 | 166.83 | bc | |
| Croplan Genetics 3220B2RF | 29.7 | 48.7 | 1385 | 411 | 674 | 0.4088 | 167.91 | 53.93 | 221.83 | 41.55 | 67.36 | 112.93 | c | |
| Deltapine 0935B2RF | 32.7 | 47.5 | 1282 | 418 | 607 | 0.3948 | 164.75 | 48.54 | 213.28 | 38.44 | 68.02 | 106.82 | c | |
| Test Avg. | 32.7 | 49.5 | 1738 | 570 | 863 | 0.4447 | 255.06 | 69.04 | 324.10 | 52.15 | 62.20 | 209.75 | | |
| CV | 6.06 | 3.05 | 3.25 | 8.78 | 5.04 | 3.51 | 9.61 | 5.04 | 8.4 | 3.25 | 1.25 | 12.25 | | |
| OSL | 0.1397 | 0.0361 | 0.0001 | 0.0007 | 0.0001 | 0.0018 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | | |
| LSD (P=.05) | 4.285 | 3.262 | 121.88 | 108.14 | 94.02 | 0.033698 | 52.9343 | 7.5089 | 58.8142 | 3.6564 | 1.6736 | 55.4814 | | |

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.05 level, NS - not significant.

Note: some columns may not add up due to rounding error.

Assumes:

\$3.00/cwt ginning cost.

\$160/ton for seed.

Lint value based on CCC loan value from grab samples and FBRI HVI results.

Table 6. HVI fiber property results from the replicated cotton variety demonstration, Joe Reinart, Sherman County, TX, 2009.

| Variety | Micronaire | Staple | Uniformity | Strength | Elongation | Leaf | Rd | +b | Color Grade | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|------------|
| | units | 32nd inchs | % | g/tex | % | grade | reflectance | yellowness | color 1 | color 2 |
| NexGen 1572RF | 3.4 | 33.9 | 80.5 | 28.1 | 10.6 | 5.5 | 68.3 | 11.9 | 3.0 | 3.5 |
| Deltapine 0935B2RF | 3.0 | 31.9 | 78.0 | 24.6 | 10.4 | 1.5 | 64.0 | 14.0 | 3.0 | 4.0 |
| NexGen 1551RF | 4.2 | 33.3 | 81.4 | 31.0 | 9.7 | 4.0 | 68.4 | 11.7 | 3.5 | 3.0 |
| PhytoGen 315RF | 3.4 | 32.8 | 78.7 | 26.7 | 10.0 | 2.5 | 64.5 | 13.5 | 3.0 | 4.0 |
| FiberMax 9180B2RF | 3.2 | 34.9 | 81.5 | 30.0 | 9.7 | 3.0 | 70.4 | 11.9 | 2.5 | 3.0 |
| Deltapine 0924B2RF | 3.3 | 33.0 | 80.1 | 28.4 | 11.5 | 3.0 | 67.1 | 12.8 | 3.0 | 3.5 |
| NexGen 3410RF | 3.2 | 34.6 | 79.5 | 28.1 | 9.8 | 3.5 | 67.5 | 12.7 | 3.0 | 3.5 |
| Croplan Genetics 3220 B2RF | 3.0 | 33.2 | 78.9 | 27.3 | 11.4 | 3.5 | 66.5 | 12.9 | 3.0 | 4.0 |
| FiberMax 9058F | 3.1 | 34.8 | 79.6 | 27.2 | 9.5 | 3.0 | 71.2 | 11.8 | 2.5 | 3.0 |
| Deltapine 104B2RF | 3.4 | 34.2 | 82.4 | 30.2 | 11.4 | 3.0 | 68.3 | 12.4 | 3.0 | 3.5 |
| Nexgen 2549 B2RF | 3.5 | 32.5 | 82.0 | 28.4 | 11.3 | 4.5 | 64.7 | 12.8 | 3.5 | 4.0 |
| Deltapine 121RF | 3.4 | 33.1 | 80.0 | 27.0 | 11.4 | 3.5 | 63.3 | 13.9 | 3.0 | 4.0 |
| All-Tex Summitt B2RF | 3.0 | 32.5 | 80.1 | 25.2 | 11.6 | 2.5 | 67.7 | 12.7 | 3.0 | 3.5 |
| Deltapine 0912B2RF | 3.2 | 33.8 | 80.0 | 26.7 | 10.5 | 4.5 | 66.5 | 13.1 | 3.0 | 4.0 |
| Test Average | 3.3 | 33.4 | 80.2 | 27.7 | 10.6 | 3.4 | 67.0 | 12.7 | 3.0 | 3.6 |
| CV | 4.83 | 1.94 | 1.08 | 3.35 | 3.59 | 33.17 | 1.99 | 4.89 | -- | -- |
| OSL | 0.0005 | 0.0085 | 0.0072 | 0.0004 | 0.0002 | 0.2071 | 0.0013 | 0.0313 | -- | -- |
| LSD (P=.05) | 0.342 | 1.405 | 1.87 | 2.007 | 0.823 | NS | 2.88 | 1.341 | -- | -- |
| CV - coefficient of variation. | | | | | | | | | | |
| OSL - observed significance level, or probability of a greater F value. | | | | | | | | | | |
| LSD - least significant difference at the 0.05 level, NS - not significant. | | | | | | | | | | |