



OSU Cotton Official Variety Tests - 2012 and 2013

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The Experiment Station cotton official variety tests (OVTs) were planted at the Southwest Research and Extension Center at Altus Center (SWREC) (furrow irrigated), Southwest Agronomy Research Station at Tipton (dryland), and Caddo Research Station at Fort Cobb (center pivot irrigated) in 2012 and 2013. Since the SWREC is located within Lugert-Altus Irrigation District, no irrigation was available in 2012 or in 2013 and the trials there failed in both years. The Tipton dryland location also failed due to drought in both 2012 and 2013.

The Fort Cobb site is classified as a Binger fine sandy loam, 1 to 3 percent slopes. The taxonomic classification is: Fine-loamy, mixed, active, thermic Udic Rhodustalfs. The trial consisted of 4 replicates of entries in both 2012 and 2013. Plot size was four 40-inch rows wide by 30 ft in length in 2012. In 2013, row spacing was changed to 36 inches, and plots were four rows wide by 30 ft in length. Harvested area was the center two rows by the length of the plot.

Fort Cobb 2012 OVT results can be found in Tables 1 and 2, and the 2013 results can be found in Tables 3 and 4.

2012 Methodology Change

It should be noted that the methodology for the OVT program was changed in 2012 as compared to previous years. **This methodology is similar to other experiment station stripper harvested OVT locations such as Dr. Jane Dever's Texas A&M AgriLife Research program at Lubbock. At harvest, grab samples were taken from each plot in 3 of the 4 replicates. These grab samples were used to determine the lint and seed turnout for each individual entry and were used to convert plot bur cotton weights to lint per acre. Lint from these grab samples was submitted to the Texas Tech University Fiber and Biopolymer Research Institute to obtain high volume instrument (HVI) data.** Additionally, 50-boll samples were taken from each plot in 3 of the 4 replicates and other data (including boll sample lint fractions, boll size, seed index, lint index, and seed per boll) were derived from

those. Additional collected data included a visual estimate of storm resistance, which is important in our area.

Understanding the Statistics Presented

Replicated trials are used in order to obtain multiple independent observations of each variety's performance in comparison with other entries. Statistical analyses of each characteristic reported are represented by "protected" LSD (least significant difference) values given at the bottom of each column in the table. If the difference between the characteristic of concern (i.e. yield, lint turnout, fiber length, etc) of any two varieties exceeds the LSD (0.05) value provided, then the chances are approximately 95 out of 100 that the difference is real and not a result of other factors such as random error.

Lint Yield

Yield potential is probably the single most important agronomic characteristic, because pounds do drive profitability and provides for the safety net of higher crop insurance actual production history (APH) in case of catastrophic loss of acres. The benefit this can provide from the crop insurance perspective is important in our high risk area. Yield stability across environments is going to be important, and basically what we want to identify is a variety that has the ability to provide high yield across varying water inputs.

Lint Percentages

Lint percentage (sometimes called "gin turnout" or "lint turnout") influences ginning costs. As mentioned above, a change in methodology in 2012. Since we harvest our plots with a modified stripper, grab sample turnouts are the closest estimate of lint turnout. The fiber from these grab samples also provides the closest estimates of overall fiber quality. Historically, many states have use 50-boll samples to derive these estimates. However, most of these states use picker harvesters in their variety testing programs. Lint percentages from 50-boll boll samples are reported on both a picked and a pulled basis. Picked lint percentage was calculated as the fraction of lint in a sample of seedcotton, while pulled lint percentage was calculated as the fraction of lint in a sample of "snapped" cotton – which includes the bur. Producers who harvest with mechanical pickers should examine picked lint percentages, while those who harvest with strippers should compare pulled lint percentages. As the price received for gin-run cottonseed increases, the importance of a high lint percentage decreases. In addition, a variety with high lint yield per acre (but with a moderate lint percentage) often gives higher net returns per acre than does a lower yielding variety with a higher lint percentage. Differences in lint yield are considerably more important to net returns than are differences in lint percentage.

Fiber Properties Measured and Their Importance

The classification of U.S. cotton is dependent upon HVI analyses.¹ Lint from ginned grab samples was submitted to the Texas Tech University Fiber and Biopolymer

Research Institute to obtain HVI data. The HVI data include several important fiber property measurements. Fiber length, micronaire, and strength are the fiber properties reported here which partially determine the price per pound for lint. While uniformity and elongation are important in the manufacturing process, at present, little or no price incentives are received by producers for either. Fiber length was measured as the upper half mean (in inches). Those measurements were also converted into 32's. Uniformity ratios were obtained by dividing mean length (also measured in inches) by the upper half mean length and expressing the result as a percentage. Micronaire is actually a confounded measurement of both fiber fineness and maturity. Micronaire was measured in standard micronaire units. Fiber strength was measured in grams-force per tex on a "beard of fibers" during HVI analysis. The same "fiber beard" is used to determine elongation (or "stretch") prior to breaking. This measurement was estimated as a percentage of its length prior to breaking. Percentage reflectance (rd) and yellowness (+b) are both components of HVI color grade and are used in its determination. Since color grade is not a quantitative variable, the average reflectance and +b are provided. Higher rd values and lower +b values are desired. In general, the more highly weathered cotton fiber becomes, lower rd values but higher +b values are observed.

Higher values for lint yield, the lint percentages, fiber length, uniformity ratio, fiber strength, elongation, and reflectance are generally more desirable than lower ones. Micronaire is acceptable anywhere within the micronaire "base" range of 3.5 to 4.9 inclusive. The "premium" range is between 3.7 and 4.2 inclusive. If micronaire falls in the "discount" range (below 3.5 or above 4.9), the price per pound of lint is reduced. Penalties tend to be more severe for micronaire values below 3.5 (especially below 3.0) than for those above 4.9. Therefore, producers should probably select varieties with micronaire values toward the upper half of the range, rather than the lower.

In recent years, the demand from international markets for cotton with high fiber quality has forced producers to pay more attention to the quality of fiber they produce. A large percentage of Oklahoma's cotton crop is exported. Therefore, fiber quality must become increasingly important to Oklahoma producers. The general recommendations include "31 color or better; 3 leaf grade or better; 35 staple (1.08-1.10 inches) or better; length uniformity of 81% or higher; 26 grams/tex or stronger and mid-range micronaire of 4.1 to 4.6."² When coupled with other critical management components, including proper harvesting and ginning techniques, many of today's cotton varieties can meet or exceed these criteria.

Other Agronomic Measurements Reported

These additional measurements are useful to better describe the characteristics of varieties planted.

Boll Size - Weight, in grams, of seedcotton per boll.

Seed Index - Weight, in grams, of 100 fuzzy seed.

Lint Index - Weight, in grams, of lint from 100 seed (calculated).

Seed Per Boll - Average number of seed per boll (calculated).

Storm Resistance - Visual estimate rating from 1 (very loose boll type, considerable seed cotton loss) to 9 (very tight boll type, no seed cotton loss).

References

¹ The Classification of Cotton. Agricultural Handbook 566. 2001. Cotton Program, Agricultural Marketing Service, U.S. Department of Agriculture. Wash. D.C.

² US Fiber Advantages, Cotton Grower Plus, November 2004, p. 17-18, 20; see also Estur, G. 2004. Quality Requirements on Export Markets for U.S. Cotton. In Proc. Beltwide Cotton Conf., San Antonio, TX. 5-9 Jan. 2004. Natl. Cotton Counc. Am., Memphis, TN. (Also available at http://www.icac.org/cotton_info/speeches/estur/2004/quality_reqs_us_exp.pdf .)

Site Information and Cultural Practices

2012

| <u>Date</u> | <u>Activity</u> |
|-------------|--|
| 4-30 | 400 lb/acre 26-12-16 + 1 lb/acre zinc & springtoothed/incorporated |
| 5-4 | Treflan at 1 qt/acre and incorporated with field cultivator |
| 5-9 | Planted |
| 5-17 | Roundup PowerMax at 1 qt/acre |
| 5-30 | Orthene at 2.3 oz/acre |
| 6-14 | Roundup PowerMax at 1 qt/acre |
| 6-27 | Vydate at 6 oz/acre |
| 6-27 | Roundup PowerMax at 1 qt/acre |
| 7-10 | Roundup PowerMax at 1 qt/acre |
| 7-31 | Mepiquat chloride at 20 oz/acre |
| 10-2 | Finish 6 Pro 1 qt/acre + 11 oz/acre Ginstar (freeze terminated trial) |
| 10-29 | Storm resistance ratings and 50-boll sampling |
| 10-30 | Stripped with JD 482 plot stripper, grab samples taken at harvest for turnouts and lint samples for HVI analysis |

Center pivot irrigation and rainfall by month in inches:

| | May | June | July | Aug | Sept | Total |
|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Irrigation: | 1.00 | 2.00 | 5.50 | 4.75 | 3.50 | 16.75 |
| Rainfall: | <u>3.64</u> | <u>3.36</u> | <u>0.10</u> | <u>3.09</u> | <u>2.30</u> | <u>12.50</u> |
| Total: | 4.64 | 5.56 | 5.60 | 7.84 | 5.80 | 29.24 |

2013

Soil Test: pH: 7.7 Surface N: 2 P: 28 K: 194 Ca: 1807 Mg: 174 Fe: 18.7 Zn: 0.98
 B: 0.31 Cu: 1.27, Subsoil: pH: 7.0 N: 5

- 4/15 Glyphos @ 1 qt. + Barrage @ 1.5 pt. + Induce @ 3 oz. (terminated wheat cover)
- 4/24 450 lb/acre 140-40-50
- 5/6 Glyphos @ 1 qt. + Induce @ 3 oz.
- 5/23 No-till planted into residue / Prowl H2O @ 1 qt. + Round-Up Power Max @ 1 qt.
+ 17 lb. AMS/100 gal. water
- 6/3 Orthene @ 2.3 oz.
- 6/7 Roundup Power Max @ 1 qt. + Orthene @ 4 oz.
- 6/27 Vydate @ 8 oz.
- 6/27 Roundup Power Max @ 1 qt. + Medal @ 1.33 pt.
- 7/8 Roundup Power Max @ 1 qt.
- 7/12 Mepiquat chloride PGR @ 8 oz.
- 7/23 Mepiquat chloride PGR @ 8 oz.
- 8/2 Mepiquat chloride PGR @ 16 oz.
- 10/16 Prep 42 oz + Ginstar 12 oz
- 11/7 Paraquat 32 oz + 0.5% NIS
- 11/17 Storm resistance ratings, and boll sampling
- 11/18 Stripped with JD 482 plot stripper, grab samples taken at harvest for turnouts and lint samples for HVI analysis

Center pivot irrigation and rainfall by month in inches:

| | May | June | July | Aug | Sept | Oct | Total |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Irrigation: | 1.25 | 1.75 | 2.00 | 5.00 | 3.00 | -- | 13.00 |
| Rainfall: | <u>3.18</u> | <u>4.69</u> | <u>5.93</u> | <u>2.22</u> | <u>2.01</u> | <u>2.14</u> | <u>20.17</u> |
| Total: | 4.43 | 6.44 | 7.93 | 7.22 | 5.01 | 2.14 | 33.17 |

Daily temperatures, rainfall, and other weather data are presented in the Mesonet data for the site (see appendix for Fort Cobb Mesonet site). Note: 5 rainfall events totaling 2.22 inches were recorded at the site in August, but due to instrumentation failure were not recorded by the Mesonet.



Table 1. Yield and agronomic results from the OSU cotton official variety test, Caddo Research Station, Fort Cobb, OK 2012.

| Entry | Lint yield lb/acre | Grab sample turnout | | Boll sample lint fraction | | Boll size | Seed index | Lint index | Seed per boll | Storm resistance |
|----------------------------------|-----------------------|---------------------|---------|---------------------------|---------|--------------------|---------------------|-------------------------------|---------------|---------------------------------|
| | | Lint | Seed | Picked | Pulled | | | | | |
| | | -----%----- | | | | g seed cotton/boll | g wt 100 fuzzy seed | g wt lint from 100 fuzzy seed | count/boll | visual scale (1=loose, 9=tight) |
| PhytoGen PHY 499WRF | 1643 | 28.1 | 40.4 | 44.2 | 33.8 | 5.0 | 10.3 | 8.4 | 26.4 | 4.4 |
| Deltapine DP 0912 B2RF | 1640 | 27.6 | 42.9 | 41.8 | 32.5 | 5.5 | 10.8 | 8.0 | 29.3 | 3.4 |
| NexGen NG 1511 B2RF | 1611 | 28.3 | 39.0 | 44.6 | 34.0 | 5.4 | 10.8 | 9.0 | 27.0 | 5.6 |
| Monsanto MON11R154B2R2 | 1608 | 26.6 | 42.4 | 42.8 | 32.4 | 5.4 | 10.2 | 7.8 | 29.6 | 3.9 |
| Stoneville ST 5458 B2RF | 1584 | 27.0 | 43.2 | 41.2 | 32.2 | 5.9 | 11.2 | 8.0 | 30.1 | 4.9 |
| Deltapine DP 1044 B2RF | 1573 | 26.1 | 42.7 | 42.4 | 32.6 | 4.9 | 10.5 | 7.7 | 26.8 | 5.0 |
| Deltapine DP 1321 B2RF | 1569 | 27.9 | 41.3 | 43.4 | 33.0 | 5.2 | 10.7 | 8.5 | 26.4 | 4.6 |
| Bayer CropScience BCSBX1346GLB2 | 1564 | 26.8 | 43.4 | 41.7 | 32.9 | 6.2 | 11.6 | 8.5 | 30.4 | 5.3 |
| Dyna-Gro DG 2595 B2RF | 1553 | 27.5 | 42.5 | 42.3 | 32.7 | 5.6 | 10.9 | 8.2 | 29.0 | 4.0 |
| All-Tex AT 9CR253 B2RF | 1514 | 26.9 | 42.9 | 43.0 | 32.5 | 5.4 | 11.0 | 8.5 | 27.5 | 6.5 |
| All-Tex AT Nitro 44 B2RF | 1483 | 27.4 | 42.6 | 40.5 | 30.8 | 5.4 | 11.4 | 7.9 | 27.9 | 5.5 |
| Deltapine DP 1212 B2RF | 1480 | 28.5 | 42.7 | 42.9 | 32.7 | 5.7 | 11.3 | 8.6 | 28.4 | 4.6 |
| Croplan Genetics CG 3156 B2RF | 1453 | 27.9 | 38.9 | 43.3 | 32.8 | 4.9 | 11.0 | 8.6 | 24.6 | 5.8 |
| Deltapine DP 1359 B2RF | 1429 | 25.7 | 41.6 | 43.6 | 33.3 | 5.0 | 9.8 | 7.8 | 28.4 | 4.4 |
| Dyna-Gro DG 2285 B2RF | 1426 | 27.2 | 41.6 | 42.6 | 32.6 | 5.8 | 11.3 | 8.7 | 28.3 | 6.1 |
| All-Tex AT Epic RF | 1423 | 24.8 | 42.8 | 42.2 | 31.2 | 5.4 | 11.1 | 8.3 | 27.4 | 6.1 |
| Croplan Genetics CG 3787 B2RF | 1422 | 26.6 | 40.9 | 44.7 | 33.3 | 5.1 | 9.7 | 8.0 | 28.7 | 4.0 |
| Deltapine DP 1311 B2RF | 1413 | 27.7 | 41.6 | 44.2 | 34.3 | 5.1 | 8.9 | 7.2 | 30.8 | 6.9 |
| Deltapine DP 1219 B2RF | 1412 | 27.1 | 42.3 | 42.4 | 32.8 | 4.9 | 10.0 | 7.5 | 27.4 | 4.4 |
| FiberMax FM 1740B2F | 1410 | 27.2 | 40.8 | 42.7 | 32.7 | 5.4 | 10.8 | 8.3 | 28.4 | 5.6 |
| Dyna-Gro DG 2570 B2RF | 1409 | 26.3 | 44.1 | 41.7 | 31.9 | 6.1 | 11.6 | 8.4 | 30.7 | 5.6 |
| Bayer CropScience BCSBX1347 GLB2 | 1407 | 27.6 | 41.1 | 41.1 | 31.3 | 5.8 | 10.9 | 7.8 | 30.4 | 6.1 |
| Bayer CropScience BCSBX1348 GLB2 | 1395 | 24.8 | 44.0 | 41.2 | 31.8 | 5.1 | 10.9 | 7.7 | 27.5 | 4.1 |
| Deltapine DP 1032 B2RF | 1393 | 26.6 | 39.1 | 44.2 | 34.4 | 5.2 | 10.2 | 8.1 | 28.4 | 4.3 |
| FiberMax FM 1944GLB2 | 1372 | 25.6 | 44.3 | 40.2 | 31.1 | 6.1 | 11.5 | 7.9 | 31.0 | 5.5 |
| PhytoGen PHY 367WRF | 1346 | 25.1 | 43.0 | 42.6 | 31.6 | 4.8 | 10.4 | 7.8 | 26.6 | 3.5 |
| Monsanto MON 11R136B2R2 | 1336 | 25.4 | 41.9 | 41.2 | 31.1 | 5.5 | 10.6 | 7.5 | 30.0 | 5.0 |
| PhytoGen PHY 375WRF | 1325 | 25.7 | 40.3 | 42.8 | 31.9 | 5.5 | 10.9 | 8.3 | 28.0 | 4.3 |
| FiberMax FM 2011GT | 1321 | 28.0 | 40.7 | 43.3 | 33.3 | 6.4 | 12.5 | 9.9 | 28.1 | 7.3 |
| FiberMax FM 2484B2F | 1270 | 27.4 | 42.5 | 41.9 | 32.6 | 5.0 | 11.1 | 8.3 | 25.5 | 6.1 |
| NexGen NG 3348 B2RF | 1241 | 24.9 | 45.4 | 39.2 | 30.1 | 5.8 | 12.6 | 8.2 | 28.1 | 6.1 |
| All-Tex AT Edge B2RF | 1229 | 25.7 | 44.5 | 39.8 | 30.3 | 5.4 | 10.9 | 7.2 | 29.7 | 6.0 |
| FiberMax FM 9058F | 1146 | 23.4 | 41.5 | 40.0 | 29.3 | 5.1 | 12.5 | 8.5 | 24.0 | 7.6 |
| NexGen NG 4012 B2RF | 1125 | 24.9 | 41.9 | 40.9 | 30.5 | 5.6 | 11.8 | 8.3 | 27.5 | 6.0 |
| FiberMax FM 9180B2F | 1115 | 24.0 | 42.9 | 39.5 | 29.6 | 6.0 | 12.2 | 8.0 | 29.3 | 7.1 |
| Dyna-Gro DG 2610 B2RF | 1090 | 23.3 | 39.3 | 42.8 | 30.9 | 5.1 | 10.1 | 7.7 | 28.1 | 4.5 |
| NexGen NG 4010 B2RF | 1012 | 22.6 | 42.6 | 39.7 | 29.3 | 5.2 | 11.1 | 7.4 | 28.3 | 5.9 |
| PhytoGen PHY 725RF | 960 | 22.4 | 41.4 | 39.3 | 28.7 | 5.3 | 11.9 | 7.8 | 26.8 | 4.3 |
| Test average | 1387 | 26.2 | 42.0 | 42.0 | 32.0 | 5.4 | 11.0 | 8.1 | 28.2 | 5.3 |
| CV, % | 15.2 | 3.3 | 3.1 | 2.2 | 2.7 | 5.2 | 5.2 | 5.0 | 5.8 | 12.6 |
| OSL | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| LSD | 296 | 1.7 | 2.1 | 1.5 | 1.4 | 0.5 | 0.9 | 0.7 | 2.7 | 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, † indicates significance at the 0.10 level, NS - not significant.



Table 2. Fiber property results from the OSU cotton official variety test, Caddo Research Station, Fort Cobb, OK 2012.

| Entry | Micronaire | Length | Staple | Strength | Uniformity | Elongation | Reflectance | Yellowness |
|---------------------------------|------------|--------|------------|----------|------------|------------|-------------|------------|
| | units | inches | 32nds inch | g/tex | % | % | rd % | +b % |
| All-Tex AT 9CR253 B2RF | 4.9 | 1.16 | 37.1 | 35.1 | 84.2 | 6.0 | 75.7 | 7.1 |
| All-Tex AT Edge B2RF | 4.9 | 1.21 | 38.6 | 35.2 | 82.6 | 5.8 | 65.7 | 5.9 |
| All-Tex AT Epic RF | 4.1 | 1.18 | 37.8 | 32.8 | 83.5 | 7.6 | 74.8 | 8.0 |
| All-Tex AT Nitro 44 B2RF | 4.9 | 1.24 | 39.6 | 36.6 | 84.0 | 6.5 | 65.5 | 6.4 |
| Bayer CropScience BCSBX1346GLB2 | 4.6 | 1.20 | 38.4 | 35.3 | 84.4 | 6.6 | 69.5 | 7.3 |
| Bayer CropScience BCSBX1347GLB2 | 4.8 | 1.19 | 38.1 | 31.1 | 82.9 | 4.3 | 67.9 | 6.5 |
| Bayer CropScience BCSBX1348GLB2 | 4.4 | 1.22 | 39.1 | 30.9 | 82.1 | 4.7 | 72.5 | 6.8 |
| Croplan Genetics CG 3156 B2RF | 3.9 | 1.17 | 37.4 | 31.7 | 84.1 | 5.9 | 67.6 | 5.9 |
| Croplan Genetics CG 3787 B2RF | 4.5 | 1.21 | 38.6 | 31.3 | 84.7 | 7.1 | 74.9 | 7.4 |
| Dyna-Gro DG 2595 B2RF | 4.7 | 1.19 | 38.1 | 33.5 | 84.1 | 5.7 | 72.0 | 6.9 |
| Dyna-Gro DG 2285 B2RF | 4.8 | 1.18 | 37.7 | 32.3 | 84.0 | 7.1 | 71.6 | 7.5 |
| Dyna-Gro DG 2570 B2RF | 4.6 | 1.20 | 38.3 | 35.2 | 85.1 | 7.0 | 74.0 | 7.7 |
| Dyna-Gro DG 2610 B2RF | 3.9 | 1.20 | 38.5 | 31.3 | 84.5 | 7.4 | 75.6 | 7.7 |
| Deltapine DP 0912 B2RF | 5.2 | 1.15 | 36.8 | 33.9 | 84.2 | 6.3 | 70.1 | 6.9 |
| Deltapine DP 1032 B2RF | 4.6 | 1.20 | 38.3 | 32.8 | 82.8 | 5.7 | 72.8 | 7.0 |
| Deltapine DP 1044 B2RF | 4.7 | 1.16 | 37.0 | 32.7 | 82.5 | 7.1 | 70.6 | 7.0 |
| Deltapine DP 1212 B2RF | 5.0 | 1.21 | 38.7 | 35.1 | 84.2 | 7.4 | 68.3 | 7.2 |
| Deltapine DP 1219 B2RF | 4.4 | 1.22 | 39.1 | 35.8 | 83.3 | 5.8 | 73.1 | 6.7 |
| FiberMax FM 1740B2F | 5.2 | 1.18 | 37.9 | 35.9 | 83.9 | 5.2 | 72.5 | 7.3 |
| FiberMax FM 1944GLB2 | 4.6 | 1.22 | 39.1 | 34.8 | 82.9 | 4.6 | 71.3 | 5.9 |
| FiberMax FM 2011GT | 5.0 | 1.18 | 37.6 | 33.8 | 83.8 | 5.2 | 71.3 | 6.9 |
| FiberMax FM 2484B2F | 4.7 | 1.19 | 38.0 | 35.9 | 82.0 | 5.0 | 73.1 | 6.4 |
| FiberMax FM 9058F | 4.2 | 1.26 | 40.3 | 34.8 | 84.4 | 4.5 | 71.2 | 6.5 |
| FiberMax FM 9180B2F | 4.8 | 1.18 | 37.8 | 34.8 | 85.4 | 5.3 | 70.9 | 6.3 |
| Deltapine DP 1321 B2RF | 5.0 | 1.19 | 38.2 | 33.8 | 84.6 | 7.8 | 70.1 | 7.2 |
| Deltapine DP 1311 B2RF | 4.1 | 1.19 | 38.0 | 33.8 | 83.9 | 7.1 | 71.6 | 6.4 |
| Monsanto MON 11R136B2R2 | 4.3 | 1.27 | 40.6 | 35.0 | 82.7 | 6.1 | 71.9 | 6.6 |
| Monsanto MON 11R154B2R2 | 4.5 | 1.21 | 38.6 | 37.9 | 83.5 | 5.9 | 72.1 | 7.1 |
| Deltapine DP 1359 B2RF | 4.2 | 1.21 | 38.7 | 36.8 | 83.0 | 5.8 | 74.2 | 7.7 |
| NexGen NG 1511 B2RF | 5.0 | 1.17 | 37.4 | 33.3 | 84.5 | 7.6 | 68.6 | 6.8 |
| NexGen NG 3348 B2RF | 4.2 | 1.18 | 37.6 | 34.1 | 83.4 | 5.6 | 69.3 | 7.1 |
| NexGen NG 4010 B2RF | 4.4 | 1.21 | 38.7 | 36.3 | 84.5 | 6.0 | 71.3 | 7.7 |
| NexGen NG 4012 B2RF | 4.6 | 1.19 | 38.0 | 35.1 | 83.4 | 5.1 | 70.1 | 7.2 |
| PhytoGen PHY 367WRF | 4.4 | 1.20 | 38.3 | 35.1 | 84.3 | 7.3 | 70.7 | 7.0 |
| PhytoGen PHY 375WRF | 4.5 | 1.17 | 37.4 | 32.7 | 83.6 | 6.1 | 71.3 | 6.9 |
| PhytoGen PHY 499WRF | 4.6 | 1.17 | 37.5 | 34.7 | 84.4 | 7.6 | 69.5 | 6.9 |
| PhytoGen PHY 725RF | 4.4 | 1.27 | 40.5 | 37.4 | 84.6 | 6.6 | 68.4 | 7.3 |
| Stoneville ST 5458B2RF | 5.2 | 1.16 | 37.2 | 34.5 | 82.0 | 5.6 | 67.3 | 7.3 |
| Test average | 4.6 | 1.20 | 38.3 | 34.3 | 83.7 | 6.2 | 71.0 | 7.0 |
| CV, % | 6.9 | 2.6 | 2.6 | 3.7 | 1.6 | 6.2 | 1.6 | 4.1 |
| OSL | <0.0001 | 0.0004 | 0.0004 | <0.0001 | 0.1960 | <0.0001 | <0.0001 | <0.0001 |
| LSD | 0.5 | 0.05 | 1.6 | 2.1 | NS | 0.6 | 1.8 | 0.5 |

CV - coefficient of variation.

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

LSD - least significant difference at the 0.05 level, † indicates significance at the 0.10 level, NS - not significant.



Table 3. Yield and agronomic results from the OSU cotton official variety test, Caddo Research Station, Fort Cobb, OK 2013.

| Entry | Lint yield | Grab sample turnout | | Boll sample lint fraction | | Boll size | Seed index | Lint index | Seed per boll | Storm resistance | Final plant height |
|------------------------------|------------|---------------------|---------|---------------------------|---------|--------------------|---------------------|-------------------------------|---------------|---------------------------------|--------------------|
| | | Lint | Seed | Picked | Pulled | | | | | | |
| | lb/acre | -----%----- | | | | g seed cotton/boll | g wt 100 fuzzy seed | g wt lint from 100 fuzzy seed | count/boll | visual scale (1=loose, 9=tight) | inches |
| PhytoGen PHY 333WRF | 2358 | 26.7 | 44.8 | 42.9 | 33.1 | 8.1 | 10.3 | 8.0 | 33.5 | 4 | 42 |
| Deltapine DP 1321B2RF | 2350 | 28.0 | 44.9 | 43.9 | 34.4 | 7.3 | 9.9 | 7.9 | 31.8 | 5 | 40 |
| Deltapine DP 0912B2RF | 2264 | 26.6 | 45.8 | 40.5 | 32.7 | 7.8 | 11.1 | 7.8 | 32.6 | 3 | 37 |
| Dyna-Gro DG 2285B2RF | 2216 | 26.4 | 47.5 | 41.9 | 33.0 | 7.5 | 10.7 | 7.8 | 31.5 | 6 | 40 |
| NexGen NG 1511B2RF | 2195 | 27.6 | 43.7 | 43.9 | 34.3 | 7.9 | 10.5 | 8.5 | 31.9 | 5 | 39 |
| All-Tex CT13125B2RF | 2192 | 26.6 | 46.1 | 43.1 | 33.9 | 7.8 | 10.7 | 8.2 | 32.1 | 5 | 43 |
| PhytoGen PHY 339WRF | 2186 | 27.3 | 48.3 | 42.9 | 33.9 | 6.9 | 9.9 | 7.6 | 30.6 | 5 | 42 |
| PhytoGen PHY 499WRF | 2160 | 26.7 | 44.0 | 44.2 | 35.6 | 7.5 | 10.0 | 7.9 | 33.5 | 5 | 45 |
| Dyna-Gro DG 2595B2RF | 2142 | 27.2 | 46.6 | 45.7 | 33.7 | 7.3 | 10.2 | 7.9 | 31.2 | 5 | 39 |
| Stoneville ST 4747GLB2 | 2127 | 26.3 | 46.3 | 41.9 | 32.6 | 8.1 | 10.9 | 8.2 | 32.4 | 7 | 37 |
| PhytoGen PHY 367WRF | 2106 | 25.6 | 47.3 | 42.2 | 32.6 | 7.3 | 10.3 | 7.6 | 31.3 | 5 | 39 |
| All-Tex AT Nitro-44 B2RF | 2092 | 25.4 | 48.3 | 41.1 | 33.2 | 7.7 | 10.8 | 7.8 | 32.8 | 7 | 38 |
| Deltapine DP 1219B2RF | 2091 | 26.3 | 46.9 | 42.9 | 33.4 | 6.8 | 9.0 | 6.8 | 33.3 | 5 | 46 |
| FiberMax FM 2484B2F | 2074 | 26.7 | 45.9 | 42.6 | 33.6 | 7.4 | 10.9 | 8.3 | 30.0 | 7 | 39 |
| All-Tex AT Epic RF | 2059 | 26.5 | 45.0 | 43.5 | 33.8 | 7.9 | 10.7 | 8.5 | 31.7 | 4 | 43 |
| Croplan Genetics CG 3428B2RF | 2056 | 25.1 | 45.0 | 43.7 | 32.7 | 7.2 | 9.5 | 7.5 | 31.2 | 5 | 41 |
| PhytoGen PHY 375WRF | 2052 | 25.3 | 45.4 | 44.4 | 33.4 | 8.3 | 10.7 | 8.1 | 34.4 | 3 | 42 |
| Stoneville ST 5458B2RF | 2048 | 25.3 | 47.8 | 40.2 | 32.0 | 7.5 | 11.3 | 7.8 | 30.9 | 5 | 42 |
| FiberMax FM 2011GT | 2012 | 25.9 | 45.0 | 42.3 | 33.6 | 8.8 | 12.3 | 9.3 | 31.8 | 8 | 39 |
| Deltapine DP 1044B2RF | 1997 | 24.6 | 48.5 | 41.6 | 32.5 | 6.4 | 9.6 | 7.0 | 29.8 | 7 | 40 |
| Dyna-Gro DGCT 12353B2RF | 1989 | 26.4 | 45.3 | 43.9 | 32.5 | 7.4 | 10.4 | 8.4 | 28.9 | 7 | 45 |
| Stoneville ST 4946GLB2 | 1986 | 24.2 | 45.6 | 41.3 | 32.7 | 8.9 | 11.8 | 8.6 | 34.0 | 7 | 40 |
| FiberMax FM 9180B2F | 1935 | 23.8 | 48.9 | 39.4 | 31.4 | 7.9 | 11.7 | 7.7 | 32.0 | 8 | 37 |
| Croplan Genetics CG 3156B2RF | 1919 | 25.4 | 44.6 | 42.0 | 32.6 | 6.9 | 10.0 | 7.5 | 30.2 | 6 | 40 |
| Deltapine DP 1359B2RF | 1901 | 26.1 | 46.7 | 42.8 | 33.3 | 7.3 | 8.8 | 6.7 | 36.1 | 4 | 47 |
| Croplan Genetics CG 3787B2RF | 1893 | 25.4 | 43.8 | 44.6 | 34.3 | 7.9 | 9.4 | 7.7 | 35.3 | 4 | 42 |
| FiberMax FM 9058F | 1871 | 24.6 | 47.1 | 40.5 | 31.5 | 8.5 | 11.5 | 7.9 | 33.7 | 8 | 39 |
| NexGen NG 3348B2RF | 1870 | 24.1 | 51.1 | 38.6 | 30.5 | 7.7 | 11.7 | 7.4 | 31.8 | 7 | 36 |
| FiberMax FM 9250GL | 1829 | 23.8 | 47.6 | 40.8 | 31.7 | 9.1 | 12.2 | 8.6 | 33.4 | 8 | 41 |
| NexGen NG 4010B2RF | 1753 | 22.5 | 46.0 | 40.5 | 31.6 | 7.5 | 11.0 | 7.6 | 31.2 | 5 | 41 |
| NexGen NG 4012B2RF | 1749 | 24.3 | 46.0 | 41.4 | 32.3 | 7.8 | 10.6 | 7.7 | 33.0 | 5 | 43 |
| FiberMax FM 1944GLB2 | 1744 | 23.9 | 47.9 | 40.2 | 31.8 | 7.7 | 11.7 | 8.3 | 29.5 | 6 | 35 |
| PhytoGen PHY 725RF | 1687 | 23.7 | 48.8 | 39.3 | 31.3 | 7.7 | 11.9 | 7.8 | 30.6 | 3 | 43 |
| Test average | 2027 | 25.6 | 46.4 | 42.1 | 32.9 | 7.7 | 10.7 | 7.9 | 32.1 | 6 | 41 |
| CV, % | 6.7 | 3.3 | 3.2 | 3.5 | 2.9 | 7.3 | 5.5 | 5.3 | 7.3 | 9.7 | 7.5 |
| OSL | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0961 | <0.0001 | <0.0001 |
| LSD | 190 | 1.4 | 2.4 | 2.4 | 1.6 | 0.9 | 1.0 | 0.7 | 3.2† | 1 | 4 |

CV - coefficient of variation.

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

LSD - least significant difference at the 0.05 level, † indicates significance at the 0.10 level.



Table 4. Fiber property results from the OSU cotton official variety test, Caddo Research Station, Fort Cobb, OK 2013.

| Entry | Micronaire | Length | Staple | Strength | Uniformity | Elongation | Reflectance | Yellowness |
|------------------------------|------------|---------|------------|----------|------------|------------|-------------|------------|
| | units | inches | 32nds inch | g/tex | % | % | rd % | +b % |
| All-Tex CT13125B2RF | 3.6 | 1.21 | 38.7 | 31.1 | 82.4 | 9.1 | 70.1 | 6.1 |
| All-Tex AT Epic RF | 4.3 | 1.15 | 36.9 | 30.9 | 83.5 | 9.7 | 73.4 | 7.5 |
| All-Tex AT Nitro-44 B2RF | 3.6 | 1.31 | 42.1 | 32.9 | 82.7 | 8.3 | 67.1 | 6.2 |
| Croplan Genetics CG 3156B2RF | 3.2 | 1.18 | 37.8 | 30.1 | 82.3 | 7.4 | 68.3 | 5.8 |
| Croplan Genetics CG 3428B2RF | 4.3 | 1.27 | 40.6 | 30.1 | 83.0 | 8.4 | 74.7 | 6.9 |
| Croplan Genetics CG 3787B2RF | 4.1 | 1.21 | 38.8 | 29.7 | 83.3 | 8.9 | 75.6 | 7.1 |
| Dyna-Gro DG 2285B2RF | 4.0 | 1.22 | 38.9 | 31.4 | 82.7 | 9.3 | 69.9 | 6.6 |
| Dyna-Gro DG 2595B2RF | 4.3 | 1.19 | 38.1 | 30.3 | 81.9 | 8.3 | 72.0 | 6.4 |
| Dyna-Gro DGCT 12353B2RF | 4.5 | 1.17 | 37.6 | 31.3 | 83.2 | 7.7 | 75.2 | 7.3 |
| Deltapine DP 0912B2RF | 4.4 | 1.14 | 36.4 | 30.7 | 82.3 | 8.9 | 68.9 | 6.5 |
| Deltapine DP 1044B2RF | 3.8 | 1.18 | 37.8 | 31.9 | 83.0 | 9.4 | 71.2 | 6.5 |
| Deltapine DP 1219B2RF | 3.8 | 1.21 | 38.8 | 32.0 | 81.0 | 7.8 | 72.6 | 6.7 |
| Deltapine DP 1321B2RF | 4.3 | 1.20 | 38.4 | 32.4 | 83.5 | 9.7 | 68.6 | 6.5 |
| Deltapine DP 1359B2RF | 3.7 | 1.23 | 39.2 | 30.7 | 79.6 | 8.1 | 71.5 | 7.2 |
| FiberMax FM 1944GLB2 | 3.7 | 1.24 | 39.7 | 32.2 | 82.6 | 6.9 | 72.6 | 5.8 |
| FiberMax FM 2011GT | 3.9 | 1.22 | 39.1 | 31.7 | 82.5 | 7.1 | 69.6 | 6.4 |
| FiberMax FM 2484B2F | 3.5 | 1.22 | 39.1 | 31.0 | 81.1 | 7.0 | 74.1 | 6.2 |
| FiberMax FM 9058F | 3.6 | 1.25 | 40.1 | 31.1 | 82.5 | 7.3 | 70.4 | 6.3 |
| FiberMax FM 9180B2F | 3.8 | 1.23 | 39.3 | 32.1 | 83.1 | 7.3 | 71.9 | 5.8 |
| FiberMax FM 9250GL | 3.9 | 1.23 | 39.2 | 31.3 | 82.4 | 6.3 | 70.6 | 5.8 |
| NexGen NG 1511B2RF | 4.4 | 1.17 | 37.4 | 31.3 | 82.9 | 9.4 | 70.4 | 6.8 |
| NexGen NG 3348B2RF | 3.5 | 1.19 | 38.2 | 30.9 | 82.1 | 8.0 | 67.3 | 6.1 |
| NexGen NG 4010B2RF | 3.8 | 1.23 | 39.4 | 33.9 | 82.5 | 8.3 | 67.5 | 6.9 |
| NexGen NG 4012B2RF | 3.7 | 1.22 | 38.9 | 32.2 | 82.3 | 7.4 | 69.3 | 6.5 |
| PhytoGen PHY 333WRF | 3.6 | 1.20 | 38.5 | 30.5 | 82.2 | 7.5 | 65.6 | 6.7 |
| PhytoGen PHY 339WRF | 3.9 | 1.21 | 38.7 | 31.6 | 82.2 | 8.2 | 71.6 | 6.2 |
| PhytoGen PHY 367WRF | 3.8 | 1.19 | 38.0 | 32.0 | 81.1 | 8.6 | 67.7 | 6.8 |
| PhytoGen PHY 375WRF | 3.7 | 1.19 | 38.2 | 29.1 | 81.3 | 8.1 | 70.1 | 6.7 |
| PhytoGen PHY 499WRF | 4.0 | 1.20 | 38.3 | 33.3 | 83.0 | 9.0 | 66.2 | 6.6 |
| PhytoGen PHY 725RF | 3.9 | 1.25 | 40.0 | 35.1 | 82.9 | 8.6 | 66.6 | 7.1 |
| Stoneville ST 4747GLB2 | 4.0 | 1.24 | 39.6 | 29.1 | 80.6 | 6.4 | 68.5 | 5.3 |
| Stoneville ST 4946GLB2 | 3.8 | 1.23 | 39.3 | 32.9 | 83.4 | 8.8 | 69.2 | 6.1 |
| Stoneville ST 5458B2RF | 4.2 | 1.21 | 38.7 | 31.2 | 81.5 | 7.4 | 66.9 | 6.8 |
| Test average | 3.9 | 1.21 | 38.8 | 31.5 | 82.3 | 8.1 | 70.2 | 6.5 |
| CV, % | 4.9 | 2.1 | 2.1 | 3.5 | 1.4 | 5.7 | 3.1 | 4.6 |
| OSL | <0.0001 | <0.0001 | <0.0001 | <0.0001 | 0.0216 | <0.0001 | <0.0001 | <0.0001 |
| LSD | 0.3 | 0.04 | 1.3 | 1.8 | 1.9 | 0.8 | 0.4 | 0.5 |

CV - coefficient of variation.

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

LSD - least significant difference at the 0.05 level.