

## **Performance of Cotton Varieties, 2020**

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### **Objective**

To evaluate twelve commercial cotton varieties for southeastern New Mexico.

### **Materials and Methods**

Twelve cotton varieties were entered into a yield and quality trial in the Pecos Valley at the NMSU Agricultural Science Center. Twelve varieties were planted on May 10, 2020, in two, 40-inch rows 40 feet long and using a planting population of 40,000 seeds/acre. Varieties were from BASF, Phytogen, and Furrow irrigation was employed on a Karro loam (56%) and Reagan loam (44%) at an elevation of 3356 ft. Individual plots consisted of two, 40-inch rows forty feet long from which a total of 20 ft of row was hand picked due to machine picker problems. The number of entries evaluated in 2020 was twelve (four varieties from Phytogen, and eight varieties from BASF seed company). There were four replications for each entry, planted in a completely random block. Individual plots were planted at a seed rate of 5 seeds/foot. Plots were planted with a John Deere Max Emerge planter.

Fertilizer applied was 113-100-0 N:P:K per acre on April 23 and 92 lb N/ac on June 10<sup>th</sup>. Weed control performed with cultivation and a hoe crew.

The total irrigation amount was 16.7 inches/ac of irrigation plus 6 inches of rain for a total of 22.8 acre inches applied over the growing period. The plots were harvested on November 18-16, 2020, using hand labor due to the mechanical cotton picker not able to harvest. Individual plot weights were recorded. For fiber quality, 25 random bolls per two-row plot were hand-harvested, and ginned at the ASC Artesia. The fiber samples were sent to the Louisiana State University ginning lab after calculating the lint percent from 25 boll samples.

### **Statistical Analysis**

All data were subjected to SAS<sup>®</sup> procedures for a test of significant difference between varieties. Mean separation procedures ((protected (P<0.05) least significant differences)) were used to determine where differences exist. USDA loan calculator was used for estimating loan value and estimated net return \$ per acre.


### **Results and Discussion**

Yield data and quality traits for the 2020 cotton trial are presented in Table 1. Lint yield for the 12 varieties in the trial ranged from 579 to 2162 lb/ac with a trial average of 1322 lbs/acre. The average gross return was \$2,393.

Artesia 2020 Cotton Yield and Quality Results.

| Variety    | Company      | %Fiber | Boll Yield | Lint Yield | Seed Yield | Bales  | TrashC | TrashA | Trash  | Length | Unif   | SFI    | Str    | Elg    | Mic    | Maturity | Rd     | Yellow | color  | grade  | Net Loan | GrossRtn |
|------------|--------------|--------|------------|------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|--------|--------|--------|--------|----------|----------|
| BX2116GLTP | Bayer        | 44.2   | 3263       | 1439       | 1734       | 3.00   | 2.3    | 0.2    | 10     | 1.10   | 81.7   | 8.9    | 29.0   | 6.1    | 5.2    | 84       | 77.6   | 8.1    | 31     | 2      | 49.63    | 2634     |
| BX2141GLTP | Bayer        | 47.5   | 3216       | 1528       | 1661       | 3.19   | 2.5    | 0.3    | 13     | 1.14   | 80.4   | 9.0    | 30.6   | 5.8    | 4.5    | 83       | 80.0   | 7.7    | 26     | 2      | 51.91    | 2614     |
| B1646B2XF  | Bayer        | 45.1   | 2919       | 1309       | 1431       | 2.73   | 2.0    | 0.2    | 13     | 1.19   | 81.2   | 8.5    | 29.8   | 8.2    | 4.7    | 82       | 79.8   | 7.8    | 26     | 2      | 51.54    | 2359     |
| B1845B3XF  | Bayer        | 46.7   | 2661       | 1238       | 1356       | 2.58   | 1.5    | 0.2    | 9      | 1.17   | 82.8   | 8.4    | 32.1   | 7.9    | 4.6    | 82       | 80.4   | 7.7    | 26     | 1      | 52.41    | 2159     |
| B2020B3XF  | Bayer        | 45.1   | 2655       | 1197       | 1406       | 2.49   | 2.3    | 0.3    | 18     | 1.16   | 81.4   | 9.3    | 28.6   | 5.3    | 4.5    | 83       | 79.1   | 8.2    | 26     | 1      | 52.04    | 2148     |
| B2055B3XF  | Bayer        | 50.9   | 2999       | 1527       | 1426       | 3.18   | 1.0    | 0.1    | 8      | 1.15   | 81.1   | 8.6    | 27.0   | 8.0    | 4.5    | 81       | 80.0   | 7.7    | 31     | 1      | 52.00    | 2451     |
| B2055B3XF  | Bayer        | 44.4   | 3156       | 1397       | 1685       | 2.91   | 1.0    | 0.1    | 5      | 1.18   | 82.2   | 9.1    | 29.6   | 7.2    | 4.7    | 82       | 81.7   | 8.2    | 14     | 2      | 52.28    | 2549     |
| B341RFPIMA | Bayer        | 38.9   | 2895       | 1120       | 1683       | 2.33   | 1.5    | 0.2    | 9      | 1.35   | 86.4   | 6.0    | 47.7   | 6.1    | 4.1    | 83       | 71.6   | 11.5   | 28     | 2      | 52.84    | 2308     |
| B359RFPIMA | Bayer        | 39.1   | 2727       | 1060       | 1574       | 2.21   | 2.0    | 0.2    | 9      | 1.31   | 86.3   | 5.7    | 49.9   | 6.2    | 4.3    | 83       | 70.4   | 12.2   | 28     | 3      | 52.79    | 2175     |
| FM1830GLT  | Bayer        | 46.4   | 2890       | 1342       | 1490       | 2.80   | 1.8    | 0.2    | 11     | 1.18   | 83.2   | 7.9    | 31.0   | 6.1    | 4.6    | 83       | 80.0   | 7.8    | 26     | 2      | 52.39    | 2344     |
| FM2334GLT  | Bayer        | 46.2   | 2771       | 1275       | 1460       | 2.66   | 1.3    | 0.1    | 6      | 1.15   | 82.1   | 8.6    | 28.7   | 5.6    | 5.0    | 84       | 80.7   | 7.7    | 21     | 2      | 50.54    | 2245     |
| PHY400W3FE | Phytogen     | 46.1   | 2887       | 1341       | 1531       | 2.79   | 1.8    | 0.2    | 13     | 1.12   | 80.5   | 9.9    | 30.8   | 6.8    | 4.5    | 82       | 80.7   | 7.6    | 26     | 2      | 52.30    | 2341     |
| PHY480W3FE | Phytogen     | 44.7   | 3546       | 1585       | 1915       | 3.30   | 1.5    | 0.2    | 12     | 1.13   | 83.5   | 7.1    | 31.2   | 9.2    | 4.8    | 81       | 79.3   | 8.5    | 24     | 2      | 52.41    | 2867     |
|            | Trial Mean   | 44.7   | 2962       | 1322       | 1752.0     | 2.75   | 1.8    | 0.1    | 10     | 1.18   | 82.6   | 8.2    | 33.2   | 6.7    | 4.6    | 83       | 7.8    | 8.6    | 3      | 2      | 51.92    | 2393     |
|            | LSD P < 0.05 | 3.0    | NS         | 323        | NS         | 0.67   | 0.8    | 0.1    | 6      | 0.06   | 2.1    | 0.8    | 2.5    | 0.9    | 0.3    | 1        | 1.7    | 0.7    | NS     | NS     | 1.17     | NS       |
|            | CV           | 4.6    | 17.2       | 17.0       | 18.4       | 17.2   | 33.1   | 35.1   | 39.0   | 3.3    | 1.7    | 6.7    | 5.2    | 9.6    | 4.3    | 0.9      | 1.5    | 5.3    | 25.5   | 38.9   | 1.6      | 17       |
|            | F Test       | 0.0001 | 0.3583     | 0.0072     | 0.3096     | 0.0667 | 0.0314 | 0.0338 | 0.0145 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0010   | 0.0001 | 0.0001 | 0.4614 | 0.1044 | 0.0001   | 0.3301   |

**2020 Artesia ASC Cotton Cultural Practice's and monthly weather averages.**

| Location:  |  | Management Practices:    |            |             |    |       |          | Growing Conditions         |         |            |       |
|--|--|--------------------------|------------|-------------|----|-------|----------|----------------------------|---------|------------|-------|
| County/Area:   | Eddy                                   | Previous Crop:           | Corn       |             |    |       |          | Monthly Average Weather    |         |            |       |
| Longitude:   | 104 22.87W                             | Planting Rate:           | 40,000     |             |    |       |          | Temp                       | Precip. | Irrigation |       |
| Latitude:  | 32 45.203N                             | Planting date:           | 5/10/2020  |             |    |       |          | °F                         | in.     | acre in.   |       |
| Elevation:   | 3356 ft                                | Harvest Date:            | 11/23/2020 |             |    |       | January  | 42.6                       | 0.39    |            |       |
| Soil Name:   | Karro loam (56%) and Reagan loam (44%) |                          |            |             |    |       | February | 42.9                       | 0.56    |            |       |
| Soil Texture:  | loam                                   | <b>Production Inputs</b> |            |             |    | lbs/a |          | March                      | 55.7    | 2.95       |       |
| Soil Depth:  | 78 in                                  | Fertilize                | Date       | Rate lbs/ac | N  | P     | K        | April                      | 61.1    | 0.04       | 4.40  |
|  |  | 46-0-0                   | 4/23/2020  | 200         | 92 |       |          | May                        | 72.8    | 0          | 4.71  |
|  |  | 11-52-0                  | 4/23/2020  | 192         | 21 | 100   | 0        | June                       | 80.0    | 0.28       | 12.02 |
|  |  | 46-0-0                   | 6/10/2020  | 200         | 92 |       |          | July                       | 85.1    | 0.6        | 8.62  |
| <b>Test Design:</b>  |  |                          |            |             |    |       |          | August                     | 82.9    | 1.24       | 8.62  |
| Replication:   | 4                                      | Herbicide                | Date       | Rate        |    |       |          | September                  | 70.2    | 0.02       |       |
| Plot Lengths:  | 20 ft                                  | none                     |            |             |    |       |          | October                    | 60.0    | 0.05       |       |
| Rows per Plot:   | 2                                      |                          |            |             |    |       |          |                            |         |            |       |
| Row Spacing:   | 40in                                   |                          |            |             |    |       |          |                            |         |            |       |
| Bench area (acres)   | 2.3                                    |                          |            |             | -  |       |          |                            |         |            |       |
|  |  |                          |            |             |    |       |          | Seasonal Precipitation:    |         | 6.13 in    |       |
|  |  |                          |            |             |    |       |          | Total Irrigation:          |         | 16.7 in    |       |
|  |  |                          |            |             |    |       |          | per acre                   |         | 22.8 in    |       |
|  |  |                          |            |             |    |       |          | Frost Free Period          |         | 197 days   |       |
|  |  |                          |            |             |    |       |          | Date of Last Spring Frost: |         | 4/13/2020  |       |
|  |  |                          |            |             |    |       |          | Frost Free Period:         |         | 197        |       |

