

Upland Variety Tests

W. D. Fisher, L. L. Patterson

Summary

Twenty varieties of cotton were grown in tests at Phoenix and Marana. Harvests were delayed in both tests because of weather. Yields are from a once over harvest rather late in the season.

Yields and laboratory data for these tests are shown in the following tables.

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Upland Variety Test  
Phoenix 1982

| Variety        | Yield<br>lbs.<br>lint/A | Lint<br>% *<br>Lab | Lint<br>index | Seed<br>index | Fiber<br>2.5% | Length<br>.50 | Strength<br>1/8"<br>Pressley | Micronaire |
|----------------|-------------------------|--------------------|---------------|---------------|---------------|---------------|------------------------------|------------|
| Deltapine 70   | 1654                    | 41.0               | 6.3           | 9.1           | 1.07          | .48           | 3.14                         | 5.18       |
| Deltapine 62   | 1611                    | 39.0               | 7.1           | 11.3          | 1.13          | .51           | 3.37                         | 5.34       |
| Deltapine 41   | 1590                    | 42.4               | 6.8           | 9.2           | 1.09          | .51           | 3.18                         | 5.10       |
| McNair 220     | 1588                    | 39.2               | 7.1           | 11.1          | 1.08          | .52           | 3.20                         | 5.34       |
| Deltapine 55   | 1573                    | 40.6               | 6.9           | 10.2          | 1.11          | .51           | 3.15                         | 4.81       |
| 7209-107       | 1565                    | 40.2               | 7.9           | 11.8          | 1.09          | .51           | 3.37                         | 4.99       |
| Stoneville 506 | 1534                    | 38.6               | 7.0           | 11.1          | 1.11          | .50           | 3.05                         | 5.12       |
| McNair 235     | 1522                    | 39.6               | 7.1           | 10.8          | 1.08          | .52           | 3.29                         | 5.06       |
| Deltapine 90   | 1521                    | 40.3               | 6.4           | 9.4           | 1.11          | .54           | 3.44                         | 5.25       |
| KNX 2019       | 1520                    | 39.1               | 7.1           | 11.0          | 1.11          | .52           | 3.10                         | 5.33       |
| Stoneville 825 | 1518                    | 39.0               | 6.9           | 10.8          | 1.10          | .50           | 2.92                         | 5.18       |
| Stoneville 213 | 1509                    | 39.2               | 7.0           | 10.8          | 1.08          | .52           | 2.96                         | 5.29       |
| DES 56-188     | 1475                    | 39.3               | 6.1           | 9.5           | 1.09          | .52           | 3.08                         | 5.01       |
| Halo 646       | 1419                    | 38.0               | 8.1           | 13.2          | 1.11          | .54           | 3.62                         | 5.15       |
| DES 56         | 1389                    | 38.6               | 6.4           | 10.2          | 1.08          | .52           | 3.16                         | 5.12       |
| Germain 363    | 1191                    | 38.2               | 7.8           | 12.6          | 1.09          | .54           | 3.94                         | 4.94       |
| Germain 362    | 1165                    | 38.3               | 7.6           | 12.2          | 1.13          | .56           | 3.99                         | 4.90       |
| SJ-5           | 1108                    | 38.9               | 7.7           | 12.0          | 1.13          | .55           | 3.93                         | 4.82       |
| Germain 364    | 1102                    | 39.9               | 8.2           | 12.4          | 1.14          | .58           | 4.07                         | 4.63       |
| Lockett 77     | 1075                    | 37.7               | 7.1           | 11.8          | 1.03          | .48           | 3.15                         | 4.61       |
| Average        | 1431                    | 39.3               | 7.1           | 11.0          | 1.10          | .52           | 3.36                         | 5.06       |
| LDS 05         | 104                     | 0.9                | .34           | .4            | .02           | .02           | .17                          | .18        |
| 01             | 137                     | 1.2                | .45           | .5            | .03           | .03           | .23                          | .24        |
| C.V.           | 6.3%                    | 2.0%               | 4.2%          | 3.1%          | 2.0%          | 3.4%          | 4.4%                         | 3.2%       |

\* Gin turnout, which was approximately 4% lower, was used to calculate yields.  
Planted: April 2  
Harvested once over: December 7

Upland Variety Test  
Marana 1982

| Variety        | Yield<br>lbs.<br>lint/A | Lint<br>% *<br>Lab | Lint<br>index | Seed<br>index | Fiber<br>2.5% | Length<br>50% | Strength<br>1/8"<br>Pressley | Micronaire |
|----------------|-------------------------|--------------------|---------------|---------------|---------------|---------------|------------------------------|------------|
| Stoneville 825 | 1457                    | 38.6               | 7.0           | 11.2          | 1.15          | .53           | 3.19                         | 5.26       |
| Deltapine 41   | 1433                    | 41.4               | 6.7           | 9.4           | 1.13          | .51           | 3.28                         | 4.84       |
| DES 56-188     | 1402                    | 38.8               | 6.3           | 9.8           | 1.17          | .55           | 3.18                         | 4.94       |
| DES 56         | 1394                    | 38.2               | 6.5           | 10.5          | 1.14          | .53           | 3.24                         | 4.95       |
| Deltapine 70   | 1308                    | 39.1               | 6.2           | 9.6           | 1.15          | .55           | 3.32                         | 4.73       |
| Deltapine 55   | 1300                    | 40.1               | 6.8           | 10.2          | 1.16          | .52           | 3.32                         | 4.72       |
| Stoneville 506 | 1292                    | 38.7               | 7.2           | 11.4          | 1.12          | .51           | 3.27                         | 5.29       |
| Stoneville 213 | 1280                    | 38.8               | 7.0           | 11.0          | 1.15          | .54           | 3.18                         | 5.15       |
| Deltapine 62   | 1226                    | 37.8               | 7.0           | 11.4          | 1.20          | .55           | 3.44                         | 4.93       |
| McNair 235     | 1223                    | 39.7               | 7.1           | 10.8          | 1.12          | .53           | 3.24                         | 5.15       |
| Halo 646       | 1220                    | 38.0               | 7.9           | 12.9          | 1.13          | .53           | 3.69                         | 5.09       |
| McNair 220     | 1213                    | 39.1               | 7.0           | 10.8          | 1.12          | .53           | 3.43                         | 5.29       |
| Deltapine 90   | 1190                    | 39.2               | 6.8           | 10.2          | 1.16          | .55           | 3.83                         | 4.74       |
| 7209-107       | 1137                    | 39.1               | 7.9           | 12.3          | 1.13          | .54           | 3.57                         | 4.80       |
| 7203-104       | 1041                    | 38.5               | 6.4           | 10.3          | 1.17          | .53           | 3.34                         | 5.02       |
| Germain 362    | 932                     | 38.7               | 7.3           | 11.6          | 1.16          | .57           | 3.85                         | 4.87       |
| Lockett 77     | 919                     | 37.6               | 7.1           | 11.8          | 1.08          | .51           | 3.27                         | 4.61       |
| Germain 363    | 900                     | 38.3               | 7.9           | 12.7          | 1.15          | .56           | 3.84                         | 5.10       |
| SJ-5           | 841                     | 38.9               | 7.7           | 12.1          | 1.17          | .57           | 3.84                         | 4.78       |
| Germain 364    | 748                     | 39.0               | 7.9           | 12.4          | 1.16          | .55           | 3.84                         | 4.59       |
| Average        | 1173                    | 38.9               | 7.1           | 11.1          | 1.15          | .54           | 3.46                         | 4.94       |
| LSD 05         | 124                     | 0.8                | .4            | .5            | .03           | .03           | .18                          | .24        |
| C.V.           | 9.2%                    | 1.9%               | 4.8%          | 4.2%          | 2.5%          | 4.4%          | 4.6%                         | 4.1%       |

\* Gin turnout, which was approximately 4% lower, was used to calculate yields.  
Planted: April 22  
Harvested once over: November 29

One row from each of two reps of the Phoenix test were harvested by hand every two weeks throughout the season starting on September 3. Earliness or maturity distribution of several varieties is shown in the following table.

Percent of Crop Open by Date  
Phoenix 1982

| Variety        | 09/03 | 09/17 | 10/01 | 10/15 | 10/28 | 11/15 | Total Yield<br>Lint/A |
|----------------|-------|-------|-------|-------|-------|-------|-----------------------|
| Deltapine 62   | 39.2  | 63.5  | 78.2  | 90.2  | 92.2  | 95.4  | 1611                  |
| Deltapine 70   | 48.2  | 71.0  | 78.4  | 85.8  | 88.8  | 93.1  | 1654                  |
| Deltapine 90   | 42.5  | 67.0  | 83.3  | 88.6  | 90.7  | 93.9  | 1521                  |
| Deltapine 41   | 46.2  | 70.3  | 83.1  | 89.8  | 91.7  | 94.9  | 1590                  |
| Deltapine 55   | 57.5  | 78.0  | 86.7  | 92.4  | 93.1  | 95.1  | 1573                  |
| Stoneville 825 | 58.6  | 76.8  | 83.9  | 90.7  | 91.5  | 93.8  | 1518                  |
| Stoneville 506 | 58.7  | 80.5  | 85.8  | 90.2  | 91.0  | 92.9  | 1534                  |
| Stoneville 213 | 59.8  | 77.8  | 82.9  | 86.7  | 88.0  | 91.5  | 1509                  |
| McNair 220     | 66.1  | 78.0  | 80.8  | 83.9  | 85.6  | 88.4  | 1588                  |
| McNair 235     | 57.9  | 74.0  | 79.4  | 83.1  | 85.3  | 90.1  | 1522                  |
| DES 56         | 64.3  | 78.6  | 85.0  | 88.2  | 89.2  | 91.6  | 1389                  |
| 7209-107       | 52.5  | 69.7  | 77.5  | 84.0  | 85.6  | 90.4  | 1565                  |

Host Plant Resistance Research

B. W. George and F. D. Wilson

AET-5, a pink bollworm resistant stock, and 24-8ne were grown, along with their F<sub>1</sub>, F<sub>2</sub>, and back-cross hybrids. Genetic analysis of 1979 and 1980 combined data showed that gene action for percent seed damage was mainly additive, that narrow-sense heritability was significantly different from zero, and that an estimated 2 pairs of genes conditioned this character. Genetic analyses of 1980 data of seed damage in parents and hybrid generations of Texas 167 and AET-5 (T-167 has antibiosis to pink bollworm) also showed that gene action was additive.

In the greenhouse, in a free-choice test, pink bollworm moths laid significantly more eggs on the bolls but slightly fewer on the axils of AET-5 than on those of DPL-61.

In the field, more total eggs were laid on DPL-61 than on AET-5 but the distribution on the plant was different. On plants of DPL-61, 58% of the pink bollworm eggs were laid in axils and 23% were laid on bolls; the remaining 19% were laid on terminals, leaves, squares and flowers. Comparable figures for AET-5 were: axils 49%, bolls 26%, other plant parts 25%

Bolls of DPL-61, Pima S-5 and AET-5, from sprayed and unsprayed plots, were graded visibly into damage classes. Damage boll percentages were significantly higher in the two susceptible cultivars than in the resistant AET-5. These results agree well with seed damage percentages and suggest the possibility of a visual damage-rating scheme to identify resistant cottons. Methods of increasing the efficiency of the X-ray procedure were also investigated. One such method was to place a 35-ml sample of seeds on the X-ray plate to standardize the total number of seeds per sample, then to count only the damaged seeds. The number of damaged seeds in unsprayed plots was highly correlated with percent seed damage ( $r=0.978$ , 109 df). Another method was to place two, rather than one, sample on each radiograph.

SHORT STAPLE VARIETY DEMONSTRATION

| Safford Experiment Station |  | Agent-in-charge-Ron Cluff            |     |
|----------------------------|--|--------------------------------------|-----|
| Variety                    | % Defoliation <sup>1/</sup><br>10/6/82 | Lint Yield <sup>2/</sup><br>lbs/acre |     |
| Germain 364                | 12                                     | 1062                                 | a   |
| DPL 90                     | 34                                     | 1038                                 | ab  |
| Germain 510                | 12                                     | 968                                  | abc |
| Germain 555                | 12                                     | 940                                  | bc  |
| Germain 362                | 22                                     | 885                                  | cd  |
| Germain 363                | 18                                     | 883                                  | cd  |
| DPL NSL                    | 42                                     | 810                                  | de  |
| DPL 55                     | 66                                     | 748                                  | ef  |
| Stoneville 506             | 70                                     | 729                                  | ef  |
| DPL 61                     | 42                                     | 710                                  | ef  |
| DPL 70                     | 60                                     | 697                                  | ef  |
| DPL 41                     | 58                                     | 666                                  | f   |
| DPL 62                     | 68                                     | 663                                  | f   |
| McNair 235                 | 68                                     | 660                                  | f   |
| Stoneville 825             | 86                                     | 643                                  | fg  |
| McNair 220                 | 72                                     | 629                                  | fg  |
| DPL 733                    | 76                                     | 533                                  | gh  |
| 7209                       | 76                                     | 470                                  | h   |
| C.V.                       | 16%                                    | 11%                                  |     |

<sup>1/</sup> Natural Defoliation

<sup>2/</sup> Based on trailer load combined gin turn-out.

<sup>3/</sup> Values followed by the same letter are not significantly different at the .05 level by Duncan's New Multiple Range test.

CROP HISTORY

PREVIOUS CROP: Cotton--then leveled  
 SOIL TYPE: Guest clay  
 PLANTED: April 14, 1982 @ 20 lbs/acre  
 HERBICIDE: Prowl 1.75 pints (0.87 lbs ai.)/acre  
 FERTILIZER: 110 lbs N as urea, 1000 lbs sulfur  
 IRRIGATION: Three post-plant, 21" total water  
 INSECTICIDE: Four treatments for pink bollworm  
 DEFOLIATION: None; killing frost on 12 November  
 HARVEST: December 22, 1982  
 NOTE: Test was on a field with a history of low productivity for all crops. Verticillium wilt damage was severe on some varieties.

Table 1. Lint yield of Upland and Pima cotton double cropped following Inia wheat and Poco barley at Safford, Arizona in 1982.

| Variety                                 | After Barley     | After Wheat      |
|---|------------------|------------------|
|   | (planted 26 May) | (planted 7 June) |
| -----lbs. lint/acre <sup>1/</sup> ----- |                  |                  |
| <u>Upland Cotton</u>                    |                  |                  |
| DPL 712                                 | 919 a            | 745 a            |
| DPL 41                                  | 729 b            | 595 a            |
| 7209                                    | 668 b            | 617 a            |
| <u>Pima Cotton</u>                      |                  |                  |
| 81-102                                  | 363 c            | 310 b            |
| S-6                                     | 380 c            | 226 b            |
| C.V.                                    | 11%              | 15%              |

<sup>1/</sup> Lint yields were calculated from seed cotton yields using trailer load gin turn-out for upland and pima cotton, respectively.

SHORT STAPLE VARIETY DEMONSTRATION

| Melburn Palmer - Cork (Grahm Co.) |                       | Agent-in-Charge - Ron Cluff |       |
|-----------------------------------|-----------------------|-----------------------------|-------|
| Variety                           | Turnout <sup>1/</sup> | Lint lbs/A                  |       |
|                                   | %                     | First Pick                  | Total |
| DP-62                             | 35.3                  | 1147 ab <sup>2/</sup>       | 1320  |
| ST-825                            | 36.0                  | 1190 a                      | 1291  |
| ST-506                            | 33.8                  | 1176 a                      | 1261  |
| DP-55                             | 36.2                  | 1138 ab                     | 1258  |
| DP-733                            | 35.1                  | 1089 bc                     | 1240  |
| DP-41                             | 36.5                  | 1071 bc                     | 1224  |
| MN-235                            | 35.5                  | 1118 ab                     | 1222  |
| MN-220                            | 34.5                  | 1115 ab                     | 1197  |
| DP-90                             | 36.2                  | 1010 c                      | 1190  |
| ST-213                            | 34.7                  | 1089 bc                     | 1182  |

<sup>1/</sup> Turnouts are based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C.V.: Yield = 6.6%

CROP HISTORY

SOIL TYPE: Sandy Clay Loam. PREVIOUS CROP: Cotton  
 TILLAGE: Disc, plowed, listed, mulched, harrowed.  
 PLANTING: April 20th at 20 lbs/A in 36" rows under cap.  
 HERBICIDE: None  
 FERTILIZER: 100 lbs. of 11-48/Acre plowed under.  
 IRRIGATION: Pre-irrigation of 1 Acre foot on March 1st. Five more irrigations totaling 3.5 Acre feet. Last irrigation on August 20th.  
 INSECTICIDE: None  
 DEFOLIANT: None  
 HARVEST: First Pick: 10-18-82. Second Pick: 11-22-82.

SHORT STAPLE VARIETY DEMONSTRATION

Johnny Vanderslice - Mohave Valley Agent-in-Charge - Rob Grumbles

| Variety | Turnout <sup>1/</sup><br>% | Lint<br>lbs./A       |
|---------|----------------------------|----------------------|
| DP-62   | 37.8                       | 1197 a <sup>2/</sup> |
| DP-90   | 35.5                       | 1124 ab              |
| ST-506  | 33.1                       | 1105 abc             |
| DP-41   | 33.5                       | 1074 bc              |
| MN-235  | 34.3                       | 1032 bc              |
| DP-70   | 33.3                       | 1029 bc              |
| DP-61   | 31.8                       | 1029 bc              |
| MN-220  | 31.9                       | 1000 bc              |
| ST-825  | 30.9                       | 987 c                |

<sup>1/</sup> Turnouts are based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C.V.: Yield = 5.13%

CROP HISTORY

PLANTING: May 7th at 12 lbs/Acre.  
 HERBICIDE: Treflan disc incorporated before listing.  
 FERTILIZER: 220 lbs. of 16-20-0 preplant. 100 lbs. UN 32 after planting.  
 IRRIGATION: Pre-irrigation 1 Acre foot with 5 additional irrigations.  
 INSECTICIDE: Sprayed 8 times for pink bollworm.  
 HARVEST: December 21, 1982.

SHORT STAPLE VARIETY DEMONSTRATION

Mike & Wilbur Lunt Agent-in-Charge - Steve Farrell

| Variety     | Turnout <sup>1/</sup><br>% | Lint<br>lbs./A      |
|-------------|----------------------------|---------------------|
| MN-220      | 33.5                       | 817 a <sup>2/</sup> |
| MN-235      | 34.4                       | 811 a               |
| ST-506      | 33.6                       | 797 a               |
| 1517-E2     | 34.4                       | 797 a               |
| AZ-7209-107 | 33.6                       | 718 a               |
| ST-825      | 34.8                       | 686 a               |
| DP-90       | 34.5                       | 404 b               |
| DP-41       | 35.6                       | 355 b               |

<sup>1/</sup> Turnouts are based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C.V.: Yield = 10.46%

CROP HISTORY

SOIL TYPE: Sandy Clay Loam                      PREVIOUS CROP: Pinto Beans  
 TILLAGE: Double rip disc, land plane, disc in herbicide.  
 PLANTING: April 14th at 20 lbs/A under cap in 38" rows.  
 HERBICIDE: Treflan at 1.5 pt./A.  
 IRRIGATION: Pre-irrigation of 1 Acre foot on March 10th with 5 additional  
 irrigations totaling 3 Acre feet on alternate rows.  
 INSECTICIDE: Methyl Parathion for Stink Bugs on Aug. 1st.  
 HARVEST: November 1, 1982.

SHORT STAPLE VARIETY DEMONSTRATION

Wesley Bates - Mohave Valley                      Agent-in-Charge - Rob Grumbles

| Variety | Turnout <sup>1/</sup><br>% | Lint<br>lbs./A       |
|---------|----------------------------|----------------------|
| DP-90   | 32.9                       | 1440 a <sup>2/</sup> |
| ST-506  | 35.3                       | 1343 ab              |
| DP-41   | 36.0                       | 1246 ab              |
| DP-61   | 35.0                       | 1162 b               |
| ST-825  | 31.7                       | 1138 b               |
| DP-70   | 34.5                       | 1125 b               |
| MN-235  | 34.9                       | 1093 b               |
| DP-62   | 34.1                       | 1093 b               |
| MN-220  | 34.7                       | 1061 b               |

<sup>1/</sup> Turnouts are based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C.V.: Yield = 15.07%

CROP HISTORY

PREVIOUS CROP: Melon. Fallow since July.  
 PLANTING: April 23rd at 10 lbs/A in 40" rows.  
 FERTILIZER: Injected 10-34 after first cultivation and before first  
 irrigation at 11.7 lbs/A (15 gal.).  
 INSECTICIDE: 10 lbs. of 6.5-6.5 Disyston.  
 HARVEST: November 19th & 20th.

SHORT STAPLE VARIETY DEMONSTRATION

Dennis Layton - Thatcher                      Agent-in-Charge - Ron Cluff

| Variety | Turnout <sup>1/</sup><br>% | Lint lbs/A           | Total |
|---------|----------------------------|----------------------|-------|
|         |                            | First Pick           |       |
| DP-90   | 37.3                       | 1234 a <sup>2/</sup> | 1387  |
| DP-41   | 37.7                       | 1110 ab              | 1246  |
| GER-362 | 35.9                       | 1072 abc             | 1186  |
| DP-55   | 37.9                       | 998 bc               | 1139  |
| DP-62   | 35.2                       | 1004 bc              | 1103  |
| MN-220  | 35.7                       | 958 bc               | 1038  |
| ST-825  | 35.3                       | 952 bc               | 1024  |
| ST-506  | 35.2                       | 918 bc               | 1000  |
| MN-235  | 36.4                       | 918 bc               | 988   |
| DP-733  | 34.7                       | 840 c                | 948   |

<sup>1/</sup> Turnouts are based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C.V.: Yield = 9.95%

CROP HISTORY

SOIL TYPE: Clay loam                      PREVIOUS CROP: Wheat  
 TILLAGE: Disc, plowed, dragged, listed and mulched.  
 PLANTING: April 10th at 23 lbs/A in 38" rows.  
 HERBICIDE: None  
 FERTILIZER: None  
 IRRIGATION: Pre-irrigation of 1 Acre foot on March 15th with 6 additional  
 irrigations totaling 4 Acre feet. Last irrigation on Sept. 3rd.  
 INSECTICIDE: Four applications of Pydrin for pink bollworm.  
 DEFOLIATION: None  
 HARVEST: First pick Oct. 7th. Second pick Jan. 12th.

LONG STAPLE VARIETY TRIAL

Delbert Householder - Thatcher                      Agent-in-Charge - Ron Cluff

| Variety | Turnout <sup>1/</sup><br>% | Lint lbs/A          |       |
|---------|----------------------------|---------------------|-------|
|         |                            | First Pick          | Total |
| P-34    | 35.5                       | 701 b <sup>2/</sup> | 1262  |
| P-102   | 31.5                       | 842 a               | 1140  |
| S-5     | 35.0                       | 551 c               | 943   |

<sup>1/</sup> Turnouts are based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C. V.: Yield = 7.02%

CROP HISTORY

SOIL TYPE: Clay loam                      PREVIOUS CROP: Cotton  
 TILLAGE: Disc, plowed, dragged, listed, mulched.  
 PLANTING: April 8th at 20 lbs./Acre in 36" rows under cap.  
 HERBICIDE: None  
 FERTILIZER: Fifty lbs. of NH<sub>3</sub> on May 10th.  
 IRRIGATION: Pre-irrigation on March 15th with 6 additional irrigations  
 totaling 4 Acre feet.  
 INSECTICIDE: Sprayed pydrin 4 times for pink bollworm.  
 DEFOLIATION: None  
 HARVEST: First pick October 8, 1982. Second pick December 20, 1982.

SHORT STAPLE VARIETY DEMONSTRATION

Bob Barcello - Queen Creek                      Agent-in-Charge - Sam Stedman

| Variety | Turnout <sup>1/</sup><br>% | Lint<br>lbs./A |
|---------|----------------------------|----------------|
|         |                            |                |
| DP-90   | 34.0                       | 1100 a         |
| MN-235  | 33.0                       | 980 ab         |
| DP-62   | 33.4                       | 976 ab         |
| DP-61   | 32.9                       | 968 b          |
| DP-70   | 33.8                       | 932 b          |
| ST-825  | 32.2                       | 940 b          |

<sup>1/</sup> Turnouts based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C.V.: Yield = 6.5%

CROP HISTORY

PREVIOUS CROP: Cotton  
 PLANTING: April 16th at 12.5 lbs./A in 40" rows.  
 HERBICIDE: Treflan and Caporal in 10" band.  
 FERTILIZER: Broadcast 35-17-0 at 150 lbs./A. Sidedress Urea at 100 lbs./A.  
 IRRIGATION: Seven total irrigation with the last on Sept. 9th.  
 HARVEST: January 5, 1983.

SHORT STAPLE VARIETY DEMONSTRATION

Sun Harvest Farms - Tacna Agent-in-Charge - Don Howell

| Variety | Turnout <sup>1/</sup><br>% | Lint<br>lbs/A        | Average Price<br>Based on<br>Classing Grade | Value/Acre |
|---------|----------------------------|----------------------|---|------------|
| DP 62   | 35.9                       | 1543 a <sup>2/</sup> | .6027¢                                      | \$930      |
| DP 90   | 34.6                       | 1543 a               | .6023¢                                      | \$929      |
| DP 41   | 36.2                       | 1490 ab              | .5820¢                                      | \$867      |
| DP 61   | 33.8                       | 1464 ab              | .5847¢                                      | \$856      |
| DP 733  | 33.7                       | 1396 ab              | .6027¢                                      | \$841      |
| ST 506  | 31.1                       | 1354 ab              | .5967¢                                      | \$808      |
| ST 825  | 31.7                       | 1354 b               | .5942¢                                      | \$805      |
| DP 70   | 34.5                       | 1293 b               | .5912¢                                      | \$764      |
| GER 362 | 32.2                       | 1026 b               | .5727¢                                      | \$588      |
| GER 364 | 32.2                       | 895 b                | .5727¢                                      | \$513      |

<sup>1/</sup> Turnouts based on Commercial Gin Results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C.V.: Yield = 6.64%

CROP HISTORY

SOIL TYPE: Silty Clay Loam PREVIOUS CROP: Fall Lettuce  
 PLANTING: March 24th at 12 lbs/A in 40 inch rows.  
 HERBICIDE: Preplant application of Basalin at .75 lbs/A.  
 FERTILIZER: 32-0-0 at 75 lbs/A.  
 IRRIGATION: Pre-irrigation of 7 inches on Feb. 15th with 3 additional irrigations totalling 28.7 inches. Last irrigation on July 29th.  
 INSECTICIDE: Ten applications on 6-23, 7-2, 7-15, 7-25, 8-7, 8-12, 8-16, 8-20, 8-28, and 9-3 for pink bollworm, heliothis, and boll weevil.  
 DEFOLIATION: First application with Folex at 2 pints/A on Sept. 3rd and second application using Dropp at .3 lb/A with Paraquat at .25 pint/A on Sept. 20th.  
 HARVEST: October 19, 1982.



SHORT STAPLE VARIETY DEMONSTRATION

Mark Shawler - Vicksburg Agent-in-Charge - Don Howell

| Variety | Turnout <sup>1/</sup><br>% | Lint<br>lbs./A       |
|---------|----------------------------|----------------------|
| DPL 90  | 34.9                       | 1002 a <sup>2/</sup> |
| ST 825  | 33.3                       | 963 a                |
| DPL 70  | 33.7                       | 941 a                |
| DPL 120 | 35.0                       | 938 a                |
| DPL 733 | 32.7                       | 928 a                |
| DPL 61  | 32.9                       | 925 a                |
| DPL 62  | 31.8                       | 925 a                |
| ST 213  | 32.7                       | 884 a                |

<sup>1/</sup> Turnouts based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

C.V.: Yield = 5.84%

CROP HISTORY

PLANTING: April 30th at 11 lbs/A  
HARVEST: December 17, 1982

SHORT STAPLE VARIETY DEMONSTRATION

Carl Barton - Pearch (Cochise Co.) Agent-in-Charge - Larry Sullivan

| Variety              | Turnout <sup>1/</sup><br>% | Lint<br>lbs./A      |
|----------------------|----------------------------|---------------------|
| L-7                  | 36                         | 613 a <sup>2/</sup> |
| L-7(F) <sup>3/</sup> | 36                         | 541 ab              |
| Mn 220               | 33                         | 532 ab              |
| Mn 235               | 34                         | 492 abc             |
| ST 506 (F)           | 34                         | 437 bcd             |
| Mn 220 (F)           | 33                         | 425 bcd             |
| ST 506               | 34                         | 414 bcd             |
| Mn 235 (F)           | 34                         | 385 bcd             |
| ST 825               | 31                         | 349 cde             |
| ST 302               | 34                         | 340 cde             |
| ST 302 (F)           | 34                         | 296 de              |
| ST 825 (F)           | 31                         | 221 e               |

<sup>1/</sup> Turnouts are based on laboratory gin results.

<sup>2/</sup> Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's Test.

<sup>3/</sup> Each variety received a preplant fertilizer application of 11-53-0 at 225 lbs/A and zinc at 5 lbs/A. Petiole analysis showed an additional 50 lbs/A actual N was needed for all plots. This amount was applied in the irrigation water. Also plots were split and one half the rows received 3 additional applications of 50 lbs/A actual N totalling 150 lbs/A actual N. The fertilizer recommendation and Petiole analysis was provided by Dr. Paul Eberhardt, Agricultural Consultant.

CROP HISTORY

SOIL TYPE: Sandy Loam PREVIOUS CROP: Fallow  
PLANTING: April 24th at 20 lbs/A in 38" rows.  
HERBICIDE: Treflan at 1 1/4 pint/A double disc to incorporate.  
INSECTICIDE: Two applications for pink bollworm.  
HARVEST: December 6, 1982.

UPLAND VARIETY TRIAL

C. R. Farr

This 1982 trial reflects very unfavorable fall rains where first harvest occurred December 7, after most rain had fallen. Ground cotton was retrieved by two passes for an average 233 pounds of lint for six varieties. A third run collected 20% additional cotton indicating more than an average of one-half bale ground cotton on the entire test.

It is also interesting that the first three varieties in yield had less than 10 percent of yield in the second pick and the last three varieties had more loss to ground cotton.

Upland Variety Trial  
Arthur Rovey & Son, Buckeye

| Variety    | % Turnout<br>1st Pick | 1st Pick<br>Lint/Acre | 2nd Pick<br>Lint/Acre | Spindle Pick<br>Total/Acre | 2nd Pick<br>% of Total | Ground Cotton<br>Lint/Acre | Total<br>Lint/Acre |
|------------|-----------------------|-----------------------|-----------------------|----------------------------|------------------------|----------------------------|--------------------|
| DPL-90     | 34.6                  | 1161                  | 94                    | 1255                       | 8.1                    | 206                        | 1461               |
| DPL-41     | 34.4                  | 1099                  | 94                    | 1193                       | 7.9                    | 223                        | 1416               |
| ST-825     | 33.6                  | 1085                  | 111                   | 1196                       | 9.3                    | 202                        | 1398               |
| St-506     | 32.8                  | 966                   | 142                   | 1108                       | 12.8                   | 267                        | 1375               |
| DPL-62     | 33.9                  | 951                   | 165                   | 1116                       | 14.8                   | 254                        | 1370               |
| McNair-235 | 34.1                  | 954                   | 153                   | 1107                       | 13.8                   | 246                        | 1353               |

Crop history: cotton, Soil type: loam, Planted: April 16, Harvested: December 7, December 29, 1982, Plant population: DPL-90 - 44,000, DPL-41 - 41,950, ST-825 - 45,670, ST-506 - 47,700, DPL-62 - 41,950, McNair-235 - 45,100.

FLOWERING RATE PER 100 FT. ROW

| <u>Variety</u> | <u>July 13</u> | <u>July 27</u> | <u>August 5</u> |
|----------------|----------------|----------------|-----------------|
| DPL-90         | 100            | 44             | 45              |
| DPL-41         | 115            | 36             | 36              |
| ST-825         | 124            | 40             | 30              |
| ST-506         | 141            | 27             | 26              |
| DPL-62         | 114            | 52             | 54              |
| McNair-235     | 62             | 36             | 44              |

Summary of Short Staple Variety Trials  
1982  
Yield of Lint/Pounds per Acre

| VARIETY  | DUNCAN | MOJAVE<br>VALLEY | MOJAVE<br>VALLEY | PEARCE | QUEEN<br>CREEK | TACNA | THATCHER<br>PALMER | THATCHER | VICKSBURG |
|----------|--------|------------------|------------------|--------|----------------|-------|--------------------|----------|-----------|
| DPL 41   | 355    | 1246             | 1074             |        | 1100           | 1490  | 1224               | 1246     |           |
| DPL 55   |        |                  |                  |        |                |       | 1258               | 1139     |           |
| DPL 61   |        | 1162             | 1029             |        | 968            | 1464  |                    |          | 925       |
| DPL 62   |        | 1093             | 1197             |        | 976            | 1543  | 1320               | 1103     | 925       |
| DPL 70   |        | 1125             | 1029             |        | 932            | 1293  |                    |          | 941       |
| DPL 90   | 404    | 1440             | 1124             |        | 1100           | 1543  | 1190               | 1387     | 1002      |
| DPL 120  |        |                  |                  |        |                |       |                    |          | 938       |
| DP 733   |        |                  |                  |        |                | 1396  | 1240               | 948      | 928       |
| ST 213   |        |                  |                  |        |                |       | 1182               |          | 884       |
| ST 302   |        |                  |                  | 318    |                |       |                    |          |           |
| ST 506   | 797    | 1343             | 1105             | 426    |                | 1354  | 1261               | 1000     |           |
| ST 825   | 686    | 1138             | 987              | 285    | 940            | 1354  | 1291               | 1024     | 963       |
| MN 220   | 817    | 1061             | 1000             | 479    |                |       | 1197               | 1038     |           |
| MN 235   | 811    | 1093             | 1032             | 439    | 980            |       | 1222               | 988      |           |
| G 362    |        |                  |                  |        |                | 1026  |                    | 1186     |           |
| G 364    |        |                  |                  |        |                | 895   |                    |          |           |
| L-7      |        |                  |                  | 586    |                |       |                    |          |           |
| 1517-E2  | 797    |                  |                  |        |                |       |                    |          |           |
| 7209-107 | 718    |                  |                  |        |                |       |                    |          |           |