

Percent Final Emergence (continued)

| Seed Source |           | Safford  | CRC     | Marana  | Avg.    |
|-------------|-----------|----------|---------|---------|---------|
| Marana      | P-28      | 63.6 abc | 65.9 ab | 58.7 ab | 62.7 ab |
|             | P-29      | 70.3 c   | 77.3 b  | 67.4 ab | 71.7 b  |
|             | P-30      | 44.8 abc | 69.7 ab | 84.1 b  | 66.2 ab |
|             | S-4       | 54.1 abc | 72.0 ab | 58.7 ab | 61.6 ab |
| Avg.        |           | 58.2     | 71.2    | 67.2    | 65.6    |
| Texas       | P-28      | 39.2 abc | 70.5 ab | 54.0 ab | 54.6 ab |
|             | P-29      | 54.2 abc | 60.1 ab | 55.4 ab | 56.6 ab |
|             | S-4       | 46.3 abc | 61.2 ab | 45.0 a  | 50.8 ab |
|             | Avg.      |          | 46.6    | 63.9    | 51.5    |
| Texas       | P-28+AMP  | 56.7 abc | 70.5 ab | 54.8 ab | 60.7 ab |
|             | P-29+AMP  | 52.4 abc | 55.2 ab | 44.5 a  | 50.7 ab |
|             | S-4+AMP   | 39.9 abc | 34.1 a  | 58.0 ab | 44.0 a  |
|             | P-29+CAMP | 38.8 abc | 48.0 ab | 45.7 a  | 44.2 a  |
|             | Avg.      |          | 47.0    | 52.0    | 50.8    |

SEED QUALITY OF UPLAND COTTON

B.B. Taylor and R.G. McDaniel

The effect of adenosine-monophosphate (AMP) on emergence of five varieties of upland cotton planting seed was evaluated by planting an equal number of treated and untreated seed. The seeds were planted April 11 and 21 in Safford and Casa Grande, respectively. Emerged seedlings were counted twice weekly. Results are presented in table below.

Although the advantage of AMP as a seed treatment has been conclusively demonstrated in greenhouse and growth chamber tests, these tests and others conducted in 1975 have not demonstrated an advantage for the treatment in the field. It is believed that an organic chemical to act as a carrier is needed to bind the compound into the seed coat. Dr. R.G. McDaniel is currently studying various chemicals and evaluating methods of application that hopefully will prove successful.

Percent Seedling Emergence - Casa Grande

Sam Stedman and Jerry Minyard in cooperation with Delta and Pine Land Co.

| Date of Count | ST-213 | ST-213 AMP | DPL-16 | DPL-16 AMP | DPL-66         | DPL-66 AMP | ST-256       | ST-256 AMP | DPL-61 | DPL-61 AMP |
|---------------|--------|------------|--------|------------|----------------|------------|--------------|------------|--------|------------|
| May 5         | 33.0   | 30.7       | 29.3   | 27.1       | 26.2           | 25.5       | 26.3         | 24.0       | 22.0   | 24.0       |
| May 8         | 33.0   | 32.3       | 30.3   | 28.0       | 27.5           | 27.7       | 26.5         | 25.5       | 22.5   | 24.0       |
| May 13        | 57.6   | 57.6       | 55.1   | 48.5       | 51.8           | 50.0       | 49.5         | 47.5       | 45.7   | 46.7       |
| May 16        | 59.3   | 56.8       | 55.3   | 50.8       | 51.8           | 48.0       | 49.8         | 46.3       | 44.2   | 45.2       |
| Standard      |        |            |        |            |                |            |              |            |        |            |
| Germ. %       | 97.3   |            | 97.2   |            | 92.0           |            | 85.8         |            | 92.0   |            |
| Final Average |        |            |        |            | W/O AMP = 52.1 |            | W/AMP = 49.4 |            |        |            |

Percent Seedling Emergence - Safford Experiment Station

Fred Turner and Jim Pegelow

| Date of Count    | DPL-16 | DPL-16 w/AMP | DPL-61 | DPL-61 w/AMP | DPL-66         | DPL-66 w/AMP | ST-213 | ST-213 w/AMP | ST-256       | ST-256 w/AMP |
|------------------|--------|--------------|--------|--------------|----------------|--------------|--------|--------------|--------------|--------------|
| Apr. 24          | 21.7   | 18.9         | 13.2   | 12.8         | 24.5           | 24.9         | 22.8   | 23.5         | 8.6          | 12.6         |
| Apr. 28          | 49.8   | 36.8         | 38.7   | 40.4         | 42.7           | 40.9         | 36.6   | 50.3         | 25.9         | 31.2         |
| May 1            | 55.9   | 57.2         | 57.4   | 54.1         | 51.0           | 52.0         | 50.5   | 57.7         | 34.2         | 38.7         |
| May 5            | 55.3   | 55.2         | 55.7   | 51.9         | 44.4           | 47.9         | 49.3   | 56.8         | 32.9         | 38.5         |
| May 9            | 59.2   | 57.0         | 64.4   | 59.6         | 53.6           | 56.5         | 57.1   | 60.1         | 36.6         | 44.3         |
| May 22           | 60.1   | 55.5         | 63.0   | 61.2         | 52.0           | 59.5         | 57.0   | 58.4         | 38.9         | 46.7         |
| Standard Germ. % | 97.2   |              | 92.0   |              | 92.0           |              | 97.3   |              | 85.8         |              |
| Final Average    |        |              |        |              | W/O AMP = 43.8 |              |        |              | W/AMP = 44.1 |              |

Seed Treatment Trial  
Short Staple

Safford Experimental Farm - Fred Turner

| Variety | Treatment | Percent Turnout | Lint lba/S |
|---------|-----------|-----------------|------------|
| DPL-16  | none      | 35.6            | 862        |
| DPL-16  | W/AMP     | 35.2            | 758        |
| DPL-61  | W/AMP     | 35.7            | 901        |
| DPL-61  | none      | 35.4            | 798        |
| DPL-66  | W/AMP     | 35.4            | 810        |
| DPL-66  | none      | 33.5            | 784        |
| ST-213  | none      | 33.9            | 849        |
| ST-213  | W/AMP     | 34.6            | 810        |
| ST-256  | W/AMP     | 33.9            | 849        |
| ST-256  | none      | 33.5            | 836        |

Turnout percentages based on laboratory gin results.

CROP HISTORY: PLANTING DATE: April 11 with flex planters.  
IRRIGATION: Planted dry and irrigated up on April 14.  
HARVEST DATE: 10/28/75. PLOT SIZE: 4 row plots, each row 50' long, replicated four times.

SEED QUALITY OF PIMA COTTON

Pima S-4 planting seed representing two commercial lots produced in Arizona, two produced in New Mexico and one in Texas were planted in five locations in Arizona. Pima S-5 and P-28 treated with adenosine monophosphate (AMP) were compared at four locations. Emerged seedlings were counted twice weekly. Results appear in Table on following page.

These data were collected by: B.B. Taylor, Tucson; R. Cluff, Safford; C.R. Farr, Phoenix; A. Gill, Tucson; R.G. McDaniel, Tucson; J.H. Minyard, Phoenix; E.J. Pegelow, Tucson; D.W. Richardson, Phoenix; S. Stedman, Casa Grande; and F. Turner, Safford.