Table 2. Seed cotton yields of Amplify-treated Deltapine 62 cotton at two field locations in 1982.

TREATMENT	MARANA	SAFFORD
1. Controls	334 ± 27	324 ± 39
2. Amplify D, recommended rate	389 ± 27	295 ± 29
3. Amplify D, low rate	376 ± 33	329 ± 34
4. Amplify liquid, recommended rate	364 ± 25	324 ± 37
5. Amplify liquid, low rate	378 ± 25	322 ± 30

Data are means of pooled groups of three controls and three treatments, ± the mean standard error for groups within each pool. Each of the three controls, and the three groups within each treatment category represents the mean of random one meter areas picked within each of eight rows comprising that treatment. The four treatment pools of Table 2 represent a total of 120 separate one meter samples for each field location.

Planting Seed Quality

D.L. Kittock and B.B. Taylor, Agronomists; C.J. Cain, Graduate Assistant

Summary

High and low quality seed of DPL 61 and DPL 62 were planted at Phoenix, Marana, and Safford (only DPL 62) at three planting rates and at fairly early planting dates. Low quality seed reduced stand, but not seriously, and reduced lint yield slightly. Light colored seed of DPL 61 reduced lint yield more than did just a poor lot of DPL 62. The best planting rate varied among locations.

****

We used four lots of seed in these tests. They were high quality and low quality seed of DPL 61 and DPL 62. Seed of DPL 62 consisted of high quality and low quality lots. DPL 61 had a high quality seed lot and a low quality lot that consisted of hand picked light colored seed out of a high quality lot as the low quality lot (hand picking courtesy of Deltapine and Land Co). There were six treatments per test with three seeding rates of each quality seed. Both DPL 61 and DPL 62 tests were grown at the Cotton Research Center and the Marana Experimental Farm. Only DPL 62 was grown at the Safford Experimental Farm. Planting rates at Phoenix and Marana were 6, 13, and 20 pounds of seed per acre. At Safford, planting rates were 10, 20, and 30 pounds of seed per acre.

Planting dates were 1 April at Phoenix, 7 April at Marana, and 5 April at Safford. Plots were four rows wide with the center two rows harvested for yield. Plots were 40 feet long at Phoenix and Marana, and 36 feet long at Safford. Harvest was 16 November at Phoenix, 5 November at Marana, and 7 December at Safford. Stand counts were made on yield rows after harvest.

Low quality seed produced fewer plants at all locations. The stand difference was significantly lower for low quality DPL 61 at Phoenix and Marana (Table 1). Differences in stand between low and high quality DPL 62 seed was significant only for the high seeding rate at Safford. Lint yields were also lower from low quality seed at all locations. High quality DPL 61 seed produced significantly more lint than low quality DPL 61 at the low planting rate at Phoenix and medium planting rate at Marana. Differences in lint yield between the high and low quality DPL 62 differed significantly only for the medium seeding rate at Safford. The effect of planting rate on lint yield varied with locations with the lowest rate giving the highest lint yield at Phoenix and the highest seeding rate giving the highest lint yield at Marana and Safford. We believe the different response to seeding rates at the three locations can be explained by tall plants at Phoenix, medium plants at Marana, and short plants at Safford. Low quality seed of DPL 62 caused minor average lint yield reductions at the three locations, 1.0 to 3.6 %. Average yield reductions from low quality DPL 61 (light colored seed) in contrast were 4.4 and 8.5 % at Phoenix and Marana, respectively. At least part of that decrease is due to lower stand.

Table 1. Lint yield and final plant population of DPL 61 cotton planted at two locations and DPL 62 planted at three locations in Arizona. There were three planting rates of two seed qualities in each test.

Qual.	Lbs planting seed/acre		Lbs lint/acre			Thousand plants/acre		
	Phx & Mar	Safford	Phoenix	Marana	Safford	Phoenix	Marana	Safford
			DPL 61					
Lo	6	10	1343b[1/]	805d	—	14e	14e	—
"	13	20	1413ab	930bc	—	27d	31c	—
"	20	30	1352b	968ab	—	46b	47a	—
Hi	6	10	1465a	847cd	—	17e	22d	—
"	13	20	1452a	1051a	—	40c	39b	—
"	20	30	1380ab	1056a	—	54a	53a	—
C.V.			5%	9%		10%	15%	
			DPL 62					
Lo	6	10	1393a	748b	947b	18c	16c	31d
"	13	20	1354a	929a	1028b	36b	35b	48c
"	20	30	1379a	933a	1167a	50a	48a	64b
Hi	6	10	1466a	855ab	998b	20c	18c	27d
"	13	20	1417a	888a	1125a	36b	37b	55bc
"	20	30	1286a	952a	1135a	51a	51a	77a
C.V.			7%	12%	5%	7%	8%	16%
Summary								
DPL 61			1401a	943a	—	33b	35a	—
DPL 62			1382a	883a	1067	35a	34a	50
Lo quality			1372a	885a	1047a	32b	32b	48a
Hi "			1411a	942a	1086a	36a	37a	53a
6 or 10 lb/acre			1417a	814b	972b	17c	18c	29c
13 ot 20 " "			1409a	950a	1077a	35b	36b	52b
20 or 30 " "			1350a	978a	1151a	50a	50a	70a

1/ Values within a group followed by the same letter are not significantly different at the .05 level by Duncan's new multiple range test.

Seedling Emergence Studies on Upland and Pima Cotton in Arizona in 1982.

B. Brooks Taylor, Agronomist; D. L. Kittock, Agronomomist; C. Cain, Graduate Assistant; and J. Malcuit, Technician

Summany

Seventeen varieties of upland cotton were tested for germination, percent emergence, and speed of emergence in 1982. Field plantings were made early in the planting season at Phoenix, Marana, and Safford. Eight 100 seed replication of each variety were planted in each test. Similar tests for 12 pima cotton strains were planted at Phoenix and Safford. Germain strains generally performed best and DPL 41, 61, and 90 were poorest. There was considerable variation in emergence and speed of emergence among pima strains with Pima S-5 and Pima S-6 being intermediate. Pima cotton on an average required fewer heat units to emerge than upland cotton.

* * * *