

Table 5. Mean values of percentage germinating seeds and average electric conductivity obtained from seed analyzer model-610.

Seed Groups	Germinating Seeds (%)	\bar{x} electr. conduct. (microamps)
Nov. Imat.	99 a*	25.8
Oct.	98 a	25.2
Dec. Weath.	95 ab	29.8
Dec. Imat.	95 ab	28.1
Nov. Weath.	93 b	34.7
Jan. Weath.	92 b	34.2
Jan. Imat.	80 c	42.5

* Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's test.

Table 6. Rapid tests values obtained from sugar refractometer and electrical conductivity meter for the 7 seed groups.

Seed Groups	Elec. conduct. meter (u OHMS x 1000)	Refract. (%)
Oct.	1.6 a*	.46 a*
Dec. Imat.	2.4 b	.50 a
Nov. Imat.	2.5 b	.53 a
Dec. Weath.	2.9 b	.73 b
Jan. Weath.	3.5 c	.86 b
Nov. Weath.	4.1 d	.77 b
Jan. Imat.	5.3 e	1.2 c

* Values followed by the same letter are not significantly different at the .05 level by the Student-Newman-Keul's test.

Planting Seed Quality

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Three commercial varieties of upland cotton each with two qualities of seed were planted at three different rates at Marana, Phoenix and Safford Experimental Farms. One-hundred seeds of each seedlot were planted with a cone-planter in a random-block design with six replications. Each treatment was 30 feet in length. Bi-weekly counts of both alive and dead cotton seedlings were obtained.

The potential stand, days to 50 percent emergence and a value we call WET-50 were calculated (Table 1). WET-50 incorporates potential stand and seeding vigor into one value. The lower the WET-50 value, the greater the performance of the seedlot.

Warm spring temperatures at planting time provided good conditions for germination and early seedling growth (soil temperature table). As a result, few differences were observed. We did observe that seedlot number 2006 of DPL-70 had a lower percent final stand, higher ET-50 values and higher WET-50 values than other seedlots at each location it was tested.

Table 1. Field emergence parameters for 2 seedlots of each of 3 varieties evaluated at 3 locations and 3 planting densities.

Seed Lots	% Final Stand			ET-50			WET-50		
	55	115	230	55	115	230	55	115	230
	Seeds	Seeds	Seeds	Seeds	Seeds	Seeds	Seeds	Seeds	Seeds
DP-61 x 12 748	72.7	70.0	70.1	7.1	8.4	8.3	.35	.21	.10
DP-61 x 12 747	68.2	67.8	68.8	7.7	7.9	8.1	.41	.21	.10
DP-41 x 14 144	64.0	71.1	65.3	8.0	8.6	7.4	.46	.21	.10
DP-41 x 14 155	62.5	71.4	64.2	8.8	7.9	7.8	.53	.19	.10
DP-70 2632	71.5	76.7	72.3	6.9	5.8	6.8	.36	.13	.08
DP-70 2006	20.6	22.1	20.5	9.7	10.0	10.1	1.81	.80	.44

Marana

Seed Lots	% Final Stand			ET-50			WET-50		
	55 Seeds	115 Seeds	230 Seeds	55 Seeds	115 Seeds	230 Seeds	55 Seeds	115 Seeds	230 Seeds
DP-61 x 12 748	48.5	54.5	51.6	8.6	7.9	8.2	.78	.26	.15
DP-61 x 12 747	60.1	55.0	53.3	8.3	7.8	6.8	.50	.32	.13
DP-41 x 14 144	55.6	44.2	50.6	8.0	6.8	10.9	.57	.30	.29
DP-41 x 14 155	47.9	48.5	45.8	8.6	8.1	8.9	1.40	.32	.22
DP-70 2632	67.0	54.6	55.4	5.9	5.5	5.8	.32	.18	.09
DP-70 2006	7.7	5.3	8.3	13.8	14.5	17.8	8.60	6.95	2.55

Safford

Seed Lots	% Final Stand		ET-50		WET-50	
	115 Seeds	230 Seeds	115 Seeds	230 Seeds	115 Seeds	230 Seeds
DP-61 x 12 748	38.0	35.6	15.9	15.3	.81	.41
DP-61 x 12 747	34.8	39.0	15.5	15.6	.90	.38
DP-41 x 14 144	39.7	35.2	15.5	14.8	.69	.43
DP-41 x 14 155	36.1	39.4	16.2	16.3	1.09	.41
DP-70 2632	46.2	45.2	14.7	14.8	.69	.31
DP-70 2006	3.1	6.8	15.8	16.1	10.74	2.92

Mean Soil Temperatures °F - at Three Locations During Seed Emergence Studies in 1981

Days After Planting	Marana Exp. Sta.	Safford Research Farm	Phoenix CRC
	Planting Date		
	4-2	4-1	4-6
1	---	---	---
2	---	58.0	62.0
3	---	56.0	72.0
4	56.0	56.0	72.5
5	60.5	58.5	72.5
6	65.5	62.5	73.0
7	65.5	65.5	71.0
8	67.0	66.5	77.0
9	67.0	67.5	78.0
10	67.5	68.0	79.5
11	68.5	69.0	80.0
12	64.5	70.0	81.0
13	68.0	71.0	79.5
14	71.0	71.0	76.5
15	74.0	70.0	75.5
16	74.5	70.0	77.5
17	77.5	71.5	79.0
18	79.0	73.0	80.5
19	76.5	71.0	82.0
20	77.5	71.0	83.5
21	79.0	70.5	82.5
22	78.0	72.5	84.0
23	78.5	72.5	
24	74.5	75.5	