

Seed Quality of Commercial Varieties

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Eighteen commercial upland varieties were planted at Marana and Phoenix Experimental Farms in 1981. All of the varieties were direct-seeded by cone planters in a randomized block design with eight replications. Lots of one-hundred seeds were evenly distributed in one row plots approximately twenty-seven feet in length. Bi-weekly counts of healthy emerging and dead cotton seedlings were recorded. To extrapolate the potential stand and rapidity of emergence to 50% of a stand (ET-50), the University computer system was employed. Minimum and maximum soil temperatures were also collected.

Varietal variations were significant at both Marana and Phoenix. Generally, Dunn seedlots had poor emergence, particularly Dunn 708. The total number of healthy seedling emerging did not dramatically differ for the other varieties. In addition, the potential seedling emergence and dead plants was significant among the varieties. Dunn seedlots produced lower populations of plants.

The expected number of days after planting for 50% emergence (ET-50) was calculated for each variety. The ET-50 differences were significant for both locations. DP-70 emerged to 50% of a stand in seven days. This compares with nine or ten days for other varieties.

Field Emergence Parameters of 18 Commercial Varieties Planted at Phoenix and Marana

<u>Phoenix</u>	Final Stand %	ET-50 ^{1/} Days	WET-50 ^{2/}
DP-7544 643	74.4	8.38	.23
DP-62	74.2	7.75	.21
McNair 235	72.0	8.75	.24
ST-825	72.6	8.22	.23
DP-90	72.1	8.22	.23
DP-70	70.6	5.92	.17
DP-55	70.1	8.37	.24
Dunn-219	68.7	8.34	.25
ST-506	68.3	8.52	.25
DP-61	67.6	9.35	.28
DP-41	65.4	8.91	.27
Dunn-120	63.4	8.18	.26
DP-120	61.6	9.84	.32
McNair-220	60.6	8.34	.28
Dunn 715-87	54.7	8.28	.30
Dunn-916	51.6	9.10	.35
Dunn-906	43.4	8.57	.41
Dunn-708	27.1	9.50	.72

^{1/}
A measure of rapidity of emergence and therefore seedling vigor. The lower the days to 50%, the greater the vigor.

^{2/}
Combines % stand and rapidity of emergence. The lower the number, the higher the quality of planting seed.

Marana

	Final Stand	ET-50	WET-50
DP-7544 634	74.4	10.4	.67
DP-62	74.2	8.7	.48
McNair-235	73.0	9.0	.38
ST-825	72.6	9.1	.46
DP-A299	72.1	9.2	.39
DP-70	70.6	6.9	.48
DP-55	70.1	9.8	.38
Dunn-219	68.7	11.0	.63
ST-506	68.3	9.4	.40
DP-61	67.6	10.6	.52
DP-41	65.4	9.3	1.06
Dunn-120	63.4	8.6	.38
DP-120	61.6	12.0	.58
McNair-220	60.6	8.7	.49
Dunn 715-87	54.7	9.9	.67
Dunn-916	51.6	11.8	1.03
Dunn-906	43.4	11.3	1.22
Dunn-708	27.1	11.8	1.32