

The Effect of Pre-germinating DP-90 Cotton Seed in Oxygen and Drying on Seedling Emergence and Lint Yield

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Summary

Partial pre-germination of Deltapine 90 seed under oxygen and then drying prior to planting tended to speed and increase emergence in two tests in 1985, but did not increase lint yield.

Seed of DP-90 upland cotton was pre-germinated (two treatments) in oxygen under pressure for a short time and then dried. We do not know the details of the treatments. The seed of the two treatments and untreated seed were planted in early season for stand counts and yield at Maricopa and Marana, Arizona in 1985. There were six replications at each location. Plots were 4 rows wide. Plots were 39 feet long at Maricopa and 35 feet long at Marana. Stand counts were made on one row per plot.

Stand was higher for treated seed at all counts at Maricopa, but the differences were not significant (Table 1). Treatment 3 had significantly higher stand than treatment 2 and the untreated check at the first count at Marana. At the final three counts at Marana, there were minor differences in stand among treatments and emergence was essentially complete at all three dates.

Lint yield of treatment 2 was significantly lower than the check at Maricopa. There were no significant differences at Marana. Treatment with oxygen under pressure appears to hasten seedling emergence. However, there was no benefit for lint yield with the very high quality seed and very favorable conditions for seedling emergence that existed in the spring of 1985.

Table 1. Percentage Stand at 4 Dates After Planting and Lint Yield in Two Tests of Deltapine 90 Cotton Partially Germinated with Oxygen Under Pressure, Dried, and Then Planted.

<u>Maricopa (3-28)</u>					
<u>Treatment</u>	<u>Days after planting</u>				<u>Lbs. lint/ acre</u>
	<u>12 days</u>	<u>14 days</u>	<u>19 days</u>	<u>28 days</u>	
	<u>% stand</u>				
1. Check	24	35	43	47	1760 _a
2.	32	44	56	57	1644 _b
3.	37	49	58	59	1699 _{ab}
Mean	31	43	52	54	1701
CV	48%	38%	43%	43%	8%
<u>Marana (4-2)</u>					
1. Check	37 _b *	73	74	72	871
2.	39 _b	75	75	72	878
3.	50 _a	73	72	68	831
Mean	42	74	74	70	860
CV	29%	19%	15%	17%	23%

* Means with a column in a test, followed by the same letter are not significantly different at the 0.05 confidence level according to Duncan's Multiple Range Test. If no letters are present, differences were not significant.