

The Effect of Pregermination of Cotton Seed in Oxygen on Seedling Emergence and Lint Yield

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Seed of DPL 90 upland cotton and Pima S-6 pima cotton were each pregerminated for a short time in oxygen under pressure at two temperatures and then dried. The seed lots (as shown in Table 1) were planted in single row plots on the Maricopa Agricultural Center for emergence evaluation and in four row plots on the Safford Agricultural Center for emergence and yield evaluation. There were eight replications at Maricopa and five replications at Safford. The test at Safford was a randomized block with rows 36 feet long.

Treatments had no significant effect on stand in either test. Pregermination at the lower temperatures tended to hasten seedling emergence at Maricopa, but not at Safford. There was no effect of treatment on weighted days to 50% emergence.

The only differences in lint yield was between varieties. This difference was expected. Thus, the preplanting treatment was not beneficial to seedling emergence or lint yield.

Table 1. Percentage stand, days to 50% emergence and weighted days to 50% emergence of upland and pima cotton seed treated with oxygen under pressure, at two locations in Arizona in 1984.

<u>Variety and Temp of Treatment</u>	<u>Test Location and Planting Date</u>		
	<u>Maricopa 3/28/84</u>	<u>Safford 4/4/84</u>	<u>Lbs. lint/acre Safford</u>
	- - - - - % Stand - - - - -		
1. DPL 90 Control	44.3 a *	44.5 a	1232 a
2. DPL 90 53	41.8 a	52.3 a	1212 a
3. DPL 90 58	40.3 a	47.0 a	1257 a
4. S-6 control	49.0 a	68.6 a	726 b
5. S-6 55	47.2 a	50.5 a	569 b
6. S-6 60	44.2 a	58.5 a	663 b
Mean	44.3	53.6	
C.V.	19%	24%	
	- - ET 50 (Days) - -		
1.	17.1 a	24.8 a	
2.	16.7 a	25.4 a	
3.	17.7 a	25.0 a	
4.	14.1 bc	22.8 a	
5.	12.2 c	25.1 a	
6.	15.6 b	24.1 a	
Mean	15.8	24.5	
C.V.	11%	8%	
	- - WET 50 - -		
1.	0.80 a	1.32 a	
2.	0.83 a	0.99 a	
3.	0.91 a	1.20 a	
4.	0.58 a	0.69 a	
5.	0.52 a	1.03 a	
6.	0.98 a	0.88 a	
Mean	0.77	1.02	943
C.V.	45%	36%	16 %

*Means within a column, within an evaluation, followed by the same letter are not significantly different at the 0.05 confidence level according to Duncan's Multiple Range Test.