

Short Staple Variety Demonstration, Pinal County, 1990

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ABSTRACT

Short staple variety trials were conducted for three years at Prechel Farms near Coolidge Az. Six varieties were included in 1988, twelve in 1989, and eight in 1990. Results from the statistical analysis showed significant differences among varieties in each of the three tests. Lint yields ranged from 908 to 1313 lbs. lint acre⁻¹ in 1988, 2844 to 4827 lbs. seedcotton acre⁻¹ in 1989, and 695 to 1059 lbs. lint acre⁻¹ in 1990. Those varieties that were medium to short-season maturity types yielded higher than long season maturity types in the 1988 and 1990 seasons. The reverse was true in the 1989 season.

INTRODUCTION

This is the third year that a short staple variety demonstration has been conducted in Pinal County at Prechel Farms. Under favorable, relatively dry weather conditions, these tests are usually dominated by long-season, indeterminate-type cotton varieties. The last three years during which these tests have been conducted, have been uniquely different in terms of the weather conditions experienced, and the results of these three years of tests are expectedly mixed and reveal the way in which cotton varieties respond to these varying conditions.

MATERIALS AND METHODS

The experiment was arranged in a randomized complete block design with one main factor (varieties), and 4 blocks. Plots consisted of eight, 40inch rows, on 1300 ft. runs. The four middle rows, of each six row plot, were picked, and weights were recorded by use of under-wheel trailer scales. The planting dates were 5 May, 23 March, and 9 April for 1988, 1989, and 1990 respectively.

RESULTS AND DISCUSSION

Results of the statistical analyses for lint yield reveal significant differences, among varieties for each year 1988, 1989, and 1990, (Table 1, 2, and 3). In 1988, cold and wet weather conditions early in the season forced a replanting on 5 May, about a month after the first planting date. The delayed planting favored the short season varieties as we can see in Table 1. The 1989 season was typified by excellent weather conditions (relatively dry) throughout the year, which allowed the long season varieties to reach their full yield potential and out-perform the short and medium season varieties (Table 2). In 1990 high temperatures in late June followed by humid conditions and associated high night temperatures, caused substantial fruit loss due to stress-related abortion, and in addition a tendency for the plants to become excessively vegetative. It is apparent that this situation favored the medium to short season type varieties, possibly because they were able to establish a fruit set earlier in the season before high temperature weather conditions were experienced and also, because of their more determinate nature, they were perhaps less affected by the negative affects of increased vegetative growth tendencies.

Table 1. Means for cotton lint yields taken from Upland variety test at Prechel Farms, Coolidge, AZ, 1988.

<u>Variety</u>	<u>Yield</u> <u>Lbs. lint / acre</u>
DES 119	1313 A*
MN 235	1308 A
DPL 90	1223 B
DPL 77	1223 B
STV 115	983 C
STV 110	908 C

*Means followed by the same letter are not significantly different ($P \leq 0.05$) according to a Fisher's LSD.

Table 2. Means for seedcotton yields taken from Upland variety test at Prechel Farms, Coolidge, AZ, 1989.

<u>Variety</u>	<u>Yield</u> <u>seedcotton / acre</u>
STV 110	4827 A*
DPL 90	4812 A
S 1001	4597 AB
DPL 77	4582 AB
NK 311	4556 AB
DES 119	4282 BC
S 89	4176 C
STV 119	3994 CD
S 40	3806 DE
MN 235	3506 EF
S 35	3276 F
S 55	2844 G

*Means followed by the same letter are not significantly different ($P \leq 0.05$) according to a Fisher's LSD.

Table 3. Means for cotton lint yields taken from Upland variety test at Prechel Farms, Coolidge, AZ, 1990.

<u>Variety</u>	<u>Turnout (%)</u>	<u>Yield Lbs. lint / acre</u>
NK 311	34	1059 A*
DPL 50	35	1029 A
DES 119	32	996 A
DPL 90	33	988 A
S 1001	33	976 A
DPL X5816	33	970 A
STV 110	32	714 B
STV 115	33	695 B

*Means followed by the same letter are not significantly different ($P \leq 0.05$) according to a Duncan multiple comparison procedure.