

1998 Low Desert Upland Cotton Advanced Strains Testing Program.

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Abstract

Upland cotton advanced strains and commercial check comparison varieties were evaluated in replicated field studies at three locations in 1998. The test sites include Buckeye, Az., Maricopa, Az., and Safford, AZ. Twelve seed companies submitted a maximum of five advanced strains entries per location. Three commercial check varieties were used at each site for comparison purposes and included DPL 5415, SG 125, and STV 474.

Introduction

Profitable cotton production in the low deserts of Arizona is becoming increasingly challenging due to rapidly rising input costs and stagnant cotton prices. As a result, Arizona producers are extremely interested in exploration of opportunities to increase yields and/or decrease production costs.. Variety selection is the first and most important decision a producer makes at season initiation. A major objective of these advanced strains evaluations is to provide independent data to participating seed companies relative to their strains performance under commercial production conditions at different locations. Information from these studies contribute to the database for breeder selection of varieties for possible commercialization based on performance under the low desert environmental conditions.

Materials and Methods

A range of 42 to 48 Upland cotton advanced strains representing twelve seed companies were tested in 1998 at three sites in Buckeye, Az., Maricopa, Az., and Safford, Az. Participating seed companies submitted entries of their choice at each respective test site (Table 1).

Plots ranged from two to six rows in width by location dependent on equipment configuration and were 38 feet long. Plots were planted using cone planters on April 16, April 22, and April 27, 1998 at Buckeye, Maricopa, and Safford respectively. In order to assure an adequate stand, a seeding rate of twenty five pounds per acre was used. After stand establishment was complete, all plots were thinned to a targeted uniform population of 40,000 plants per acre in May, 1998.

The experiments were harvested on October 29, December 4, and December 10 at Safford, Maricopa, and Buckeye respectively. Seed cotton yields were measured by mechanically harvesting the center two rows of each plot with a modified cotton picker and bagging attachment. Weights were measured using a tri-pod and a hanging electronic scale to weigh the seed cotton from each plot. Prior to mechanical harvest, all bolls on five plants in non yield rows were hand harvested. These sub-samples were ginned to determine percent lint. Final lint yields were then calculated on a per acre basis. Each fiber sample from the ginning process was submitted to the USDA Cotton Classing Office in Phoenix, Az. for grades and HVI fiber quality analysis.

Results

Final lint yields at the Buckeye site ranged from a high of 1905 lbs./a (Germaines 9707) to a low of 346 lbs./a (Hazera 66-08). Final lint yields at the Maricopa site ranged from a high of 1976 lbs./a (Sure Grow 890) to a low of 406 lbs./a (Hazera 195-08). Final lint yields at the Safford site ranged from a high of 1500 lbs./a (AgriPro 9257AZ) to a low of 1041 lbs./a (Az. Cotton Growers 981). Tables 2,3,4 summarize the lint yield/a, seed cotton yield/a., and tables 5,6,7 summarize HVI based fiber quality data for Buckeye, Maricopa, and Safford respectively.

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Table 1. Seed Companies and Varieties Submitted for the Low Desert Upland Cotton Advanced Strains Testing Program 1998.

<p><u>AgriPro Seeds Inc.</u> APX 7126 AZ APX 9263 AZ APX 9257 AZ APX 9240 AZ APX 9263-8 AZ</p>	<p><u>Phytogen</u> PSC 636 PSC 262 PSC 556 PSC 355</p>
<p><u>Buttonwillow Research</u> BR 9801 BR 9802 BR 9803</p>	<p><u>Olvey & Associates Inc.</u> OA-36 OA-66 OA-63</p>
<p><u>Germain's Cotton Seeds Inc.</u> GC 9726 BT GC 9741 RR GC 9707</p>	<p><u>Stoneville Pedigreed Seed Company</u> BG 4740 ST 6M021 STV 474 (Check)</p>
<p><u>Hazera Quality Seeds</u> VERED 66-08 195-08 151-08 175-08</p>	<p><u>Cotton Seed International</u> E0805 E0781 E0222 E1110 E0223</p>
<p><u>Paymaster Technology Corp.</u> PM 1210 PM 1266 PM 1560 BG PM 1440 PMX 9406-4109 PMX 9406-3959</p>	<p><u>Deltapine Seed</u> DP 9229 B DPX 9775 DP 655 B/RR DPX 458 B/RR DPL 5415 (Check)</p>
<p><u>Sure Grow</u> SGX 890 SGX 555 SGX 2591 SURE-GROW 125 (Check)</p>	<p><u>Arizona Cotton Growers</u> ACG 981 ACG 982 ACG 983 ACG 984</p>