

# 1999 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 four locations in 1999. The test sites include Yuma, AZ., Buckeye, AZ., Maricopa, AZ., and Safford, AZ.. Ten 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 DP 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 24 to 43 Upland cotton advanced strains representing ten seed companies were tested in 1999 at four sites in Yuma, AZ., 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 March 11, April 25, April 14, and April 19, 1999 at Yuma, 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, 1999.

The experiments were harvested on September 10, November 15, November 5, and October 29, 1999 at Yuma, Buckeye, Maricopa, and Safford 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, 50 bolls from 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 Yuma site ranged from a high of 1772 lbs./a (Stoneville [check] STV 474) to a low of 1122 lbs./A (UofA MAC 95). Final lint yields at the Buckeye site ranged from a high of 2202 lbs./A (Helena 9263) to a low of 1203 lbs./A (O&A OA-66). Final lint yields at the Maricopa site ranged from a high of 1968 lbs./A (Stoneville X9901) to a low of 958 lbs./A (AgrEvo ACSI IF 1000). Final lint yields at the Safford site ranged from a high of 1365 lbs./A (AgrEvo ACSI IF 1000) to a low of 779 lbs./A (Buttonwillow BR-S9906). Tables 2,3,4, and 5 summarize the lint yield/A and HVI based fiber quality data for Yuma, Buckeye, Maricopa, and Safford, respectively.

## **Acknowledgments**

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Table 1. Seed Companies and Varieties Submitted for the Low Desert Upland Cotton Advanced Strains Testing Program 1999.

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AgrEvo USA Company

ACSI IF 1000  
ACSI EXP0805  
ACSI EXP0858

Pure Genetics

VT-901  
VT-902

Buttonwillow Research

BR-S9901  
BR-S9902  
BR-S9903  
BR-S9904  
BR-S9906

Sure Grow Seed Company

SGX 95348  
SGX 9619  
SGX 96235

Delta Pine Seed

DPX 932001-5030  
DPX 932058-5003  
DPX 932058-5048  
DPX 932205-5017  
DPX 8C09

Stoneville Pedigreed Seed Company

X9901  
X9902  
X9903  
6M045

Germain's Cotton Seeds Inc.

GC-9810  
GC-9811  
GC-400BG

University of Arizona

MAC 13  
MAC 95

Helena Cotton Research

HCR 9220  
HCR 9257-3129  
HCR 9263  
HCR 9263-8  
HCR 9263-414  
HCR 9310  
HCR 7114-46

Arizona Cotton Growers Association

ACG-991  
ACG-992  
ACG-993  
ACG-994

O & A Inc.

OA-07  
OA-36  
OA-44  
OA-50  
OA-63  
OA-66  
OA-77

Test Checks

Delta Pine DP 5415  
Sure Grow SG 125  
Stoneville STV 474

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