

RESEARCH SUMMARY

Title: Breeding Cotton for Yield and Quality in Alabama

Project Number: 02-172-AL

Principle Investigator: David B. Weaver

A cotton breeding project was initiated at Auburn University in 2001 by making crosses among several well-adapted cultivars and germplasms. Our overall objectives were several: First to develop cotton germplasm with improved lint yield and fiber quality traits adapted to Alabama, second to study the genetic variability and heritability of various quantitative traits in cotton in early and late generations of inbreeding, and third to determine the effects of various inbreeding methods on the variance and heritability of those same traits. Traits of particular interest are lint yield, lint percentage, fiber weight per seed, earliness, and AFIS (Advance Fiber Information Systems) fiber quality traits, particularly those related to length, length uniformity, short fiber content, fiber maturity, and neps. After advancing through several generations of inbreeding, evaluation and selection, we were able to test 248 lines for the first time in multiple row, replicated plots at one location, either the Plant Breeding Unit at Tallassee or Prattville Experiment Field. Fiber quality analysis on these lines is still being conducted. Several of the lines showed excellent yield potential, however meaningful yield data cannot be obtained in only one year at one location. We plan to test these lines again for a second year, and then advance selected lines for testing in multiple environments.