EVALUATION OF CULTIVAR BY RACE STOCK F2 HYBRIDS

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Abstract

Cotton *Gossypium hirsutum* L. improvement programs depend on genetic variation within and among germplasm accessions. Variation has been found for agronomic and fiber traits in the primitive race stock accessions of cotton. The purpose of the current study was to evaluate cultivars, race stock accessions and their F2 hybrids. Five cultivars, Deltapine 50, DES 119, Stoneville 474, Deltapine 90, and SureGrow 125 were crossed to fourteen-race stock accession derived lines. The fourteen day neutral lines were developed from single F2 plants with superior fiber properties from the following race accessions; T75 (one line), T1388 (2 lines), T239 (10 lines), and T237 (one line). Cultivars, accession derived lines and their F2 hybrids were evaluated in field plots in 1998 and 1999. Cultivars produced more yield, had larger bolls and greater lint percentage than the accession lines. Boll size for the F2 hybrids was equivalent to the cultivars: however, lint percentage was significantly lower. Many of the F2 hybrids produced yields equal to the cultivars. Fiber results (1998 only) showed the cultivars to have lower micronaire, higher elongation and weaker fibers than the accession lines. The mean performance of the F2 was close to the mid-parent for all fiber traits studied. Results indicate that race accession derived lines can provide useful genetic variation for cotton improvement programs.

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