GENETIC ASSOCIATION AMONG YIELD AND FRUITING TRAITS IN F2HYBRID COTTON

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Abstract

Fruiting habits of different maturity cotton (Gossypium hirsutum L.) cultivars and the combining ability are of major importance to cotton breeders when developing new lines. F2 populations were generated by cross-pollinating an early maturing cultivar, DES119, with 3 late maturing cultivars, DP5415, DP90, and H1244, and one early maturing cultivar, SG501. In 1997, the parental lines and the F2 populations were grown in replicated field plots. Plant height was greater for F2 hybrids than the mid-parent when DES119 was crossed to late season cultivars and reduced when crossed to a short season cultivar (SG501). There were no differences for number of nodes. Late season F2 hybrids matured at a faster rate than the late season parent as denoted by fewer nodes above cracked boll. Lint yield on F2's was at least 46 kg/ha greater than the mid-parent for all populations. Lint percentage for F2 hybrids from DP5415 were much lower than the mid-parent, whereas DP90 F2 hybrids were equal to the mid-parent and H1244 F2 hybrids were greater than the mid-parent. The fruiting patterns of F2 populations with the late season cultivars were earlier than the mid-parents. Plant mapping data indicates an increase over the mid-parent for lint yield at nodes 8 through 11 for all F2 hybrids. Genetic analysis will be performed in the future.

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