

ABSTRACT

INVESTIGATION OF YIELDS, YIELDS COMPONENT AND LINT QUALITY TRAITS INHERITENCE IN SOME COTTON BREEDS

(*Gossypium hirsutum* L.x*Gossypium barbadense* L.)

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The study was carried out on the Nazilli Cotton Research Station fields during 2011 and 2012 cotton growing seasons. Claudia, Candia, Şahin 2000, BA 308, Naz 07 and Fantom (*Gossypium hirsutum* L.) were used as a female parents and Giza 45 and Avesto (*Gossypium barbadense* L.) used as a male parents. The selected cotton genotypes were crossed by line tester method in 2011. Hybrid combinations were compared in terms of yield, yield components and fiber quality parameters at F₁ generations. In combination, fiber quality properties, yield and hereditary and heterotic effects on yield components were examined.

Additive gene effects were highly significant for ginning out turn and plant height. Non-additive gene effects were highly significant for yields, number of bolls, sympodia per plant, fiber strength, micronaire, short fiber index, monopodia per plant, 100 seed weight, single boll weight, fiber length and fiber uniformity index.

Positive heterosis percentage was obtained in all hybrids for fiber length and fiber strength and in eight hybrids for micronaire. Standard heterosis values were positive and significant for fiber length, fiber strength and micronaire. The performance of all combinations for yield and fiber quality traits at F₁ generations showed that Claudia x Giza 45, Candia x Giza 45, Şahin 2000 x Giza 45, BA 308 x Avesto, Naz 07 x Giza 45 and Fantom x Avesto hybrid populations would be used for partial bulk selection in order to improve cotton lines having enhanced for fiber length with acceptable yield potentials.

Key words: Cotton, hybridization, line x tester, heterosis, general combining ability, specific combining ability, fiber quality parameters