ABSTRACT

COMPARISON OF INTERSPECIFIC AND INTRASPECIFIC HYBRID POPULATIONS FOR YIELD, YIELD COMPONENTS AND FIBER QUALITY PARAMETERS AT F_2 AND F_3 GENERATIONS IN COTTON

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The study was conducted at Adnan Menderes University Agriculture Faculty Experiment fields during 2010 and 2011 years. Aşkabat 100, Aydın 110, Sealand 542 (*G. barbadanse* L.), GW Teks, TAM 94L 25 (*G. hirsutum* L.) were used as a female parent and Carmen, Şahin 2000, SG 125 (*G. hirsutum* L.) were used as a male parent. The selected cotton genotypes were crossed by line tester method in 2006. F_1 generation was grown in 2007 and single boll collected from each plants and bulked to develop F_2 and F_3 generations. Parents and 15 hybrids were planted on one row with 6 m long in 2009 and 2010 for F_2 and F_3 generations respectively. The experimental design was randomized block design with four replications. Hybrid combinations were compared in terms of yield, yield components and fiber quality parameter at F_2 and F_3 generations. The performance of all combinations for yield and fiber quality parameters at F_2 and F_3 generations showed that Aşkabat 100 x SG 125, Aydın 110 x SG 125, TAM94L 25 x Carmen and TAM94L 25 x SG 125 hybrid populations would be used for individaul plant selection in order to improve cotton lines having improved fiber length with acceptible yield potentials. The results also indicated that GCA of parents would not give enough information to estimate hybrids performance at later generations, and that the mean performance of F_1 and F_2 hybrids for intraspecific and the mean performance of F_1, F_2 and F_3 hybrids for interspecific could be used to determine the best hybrid populations for further single plant selection.

Key words: Cotton, interspecific and intraspecific hybrid populations, yield, fiber quality parameters