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RESEARCH ARTICLE

Combining ability studies for fibre quality traits in upland cotton (*Gossypium hirsutum* L.)

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SUMMARY

An investigation was carried out to assess the combining ability and nature of gene action in respect of seed cotton yield and its component traits in 54 new hybrids developed by crossing 9 lines with 6 testers of upland cotton in line × tester mating design in Randomized Block Design with two replications during *Kharif* 2010 at Main Agricultural Research Station, University of Agricultural Sciences, Dharwad. The variance among the lines (2.5 % span length and micronaire), testers and line × tester interaction (2.5 % span length, fibre strength and micronaire) were highly significant for the characters indicating predominance of non-additive gene action in genetic control of these traits. Magnitude of sca variance was higher than the gca variance for majority of the traits. The ratio of gca/ sca variance indicated preponderance of non-additive type of gene action, which is an integral component of the genetic architecture of different characters in the material used in cotton. L_1 and L_9 among the lines and T_1 and T_2 among the testers were identified as good general combiners indicating their ability in transmitting additive genes in the desirable direction to their progenies. Highly significant *sca* effects were observed in most of the hybrids for all the characters studied and good specific combiners for different characters involved parents with high × high, high × low, low × high and low × low general combinations.

Key Words : Combining ability, Upland cotton, Span length, Fibre strength

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