

Combining Ability Analysis and Gene Action for Seed Cotton Yield and Fibre Characters in Upland Cotton (*Gossypium hirsutum* L)

K Bayyapu Reddy, V Chenga Reddy, M Lal Ahamed, T C M Naidu and V Srinivasa Rao
Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 101

ABSTRACT

A study was conducted with forty five intra-hirsutum hybrids along with their parents for combining ability for seed cotton yield and its component traits. The analysis of variance for combining ability revealed that, the variance due to SCA variances were higher than GCA variances for all the characters except for days to 50 % flowering and 2.5% span length indicating the predominance of non-additive gene action. The estimates of GCA effects revealed that the parents NDH 1938 and RAH 1004 were found to be best general combiners for yield and fibre quality traits in desired direction. The crosses, NDH 1938 × RAH 1004, L 770 × G COT 16 and NA 1325 × MCU 5 recorded high *per se* performance (241.2, 185.5 and 172.73 g) and significant positive SCA effects (60.99, 49.79 and 30.48) for seed cotton yield plant⁻¹ respectively. These hybrids were also recorded high *per se* performance and significant positive SCA effects for number of bolls plant⁻¹, boll weight, lint yield plant⁻¹.

Key words: *Combining ability, Fibre quality, Gene action, Seed cotton yield.*