Studies on Genetic Variability, Heritability and Genetic Advance for Seed Cotton Yield and Quality Traits in Upland Cotton

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ABSTRACT

Forty genotypes of upland cotton of diverse origin were studied for genetic variability, heritability and genetic advance for yield, yield contributing traits including fibre quality characters. The analysis of variance revealed that sufficient variability was present in the material studied for all the 17 characters. The phenotypic coefficient of variation (PCV) was slightly higher in magnitude than genotypic coefficient of variation (GCV) for all the characters indicating the influence of environment. Higher heritability coupled with high genetic advance was observed for characters like number of monopodia plant^{-1}, number of sympodia plant^{-1}, number of bolls plant^{-1}, boll weight, seed index, lint index, micronaire, cellular membrane thermostability (RCI%), enzyme viability (EV) and seed cotton yield plant^{-1} indicating the preponderance of additive gene action and simple selection may be effective for the improvement of these traits. Plant height, 2.5 % span length and bundle strength showed high heritability and moderate genetic advance indicating the presence of both additive and non-additive gene actions. The other traits *viz.*, days to 50% flowering, ginning out-turn (%) , uniformity ratio and fibre elongation (%) showed moderate to high heritability and moderate to low genetic advance indicating the operation of non-additive gene action, making direct selection ineffective.

Key words : Cotton, GCV, Genetic advance, Heritability, PCV.