

Studies on Genetic Variability, Heritability and Genetic Advance in Upland Cotton

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ABSTRACT

Forty genotypes of upland cotton (*Gossypium hirsutum* L.) of diverse origin were studied to observe their genetic variability, heritability and genetic advance in yield, yield contributing and fibre quality characters along with some physiological characters. The analysis of variance revealed that sufficient variability was present in the material studied for all the 21 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 observed for characters like plant height, number of sympodia plant⁻¹, boll weight, lint index, ginning out turn, leaf area index at 120 DAS, crop growth rate at 60-120 days and seed cotton yield plant⁻¹ indicating the preponderance of additive gene action making selection effective. Seed index, uniformity ratio, micronaire, fibre elongation and specific leaf weight at 120 DAS showed high heritability and moderate genetic advance indicating presence of both additive and non-additive gene actions. The characters, 2.5 % span length and relative water content at 60 DAS had shown low heritability and low genetic advance making direct selection ineffective.

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