

Genetic Variability, Heritability, Character Association and Path Coefficient Analysis in Sugarcane (*Saccharum officinarum* L.)

N Vennela, D Adilakshmi, K Madhu Kumar, Ch S Ramalakshmi and G Ramesh
Department of Genetic and Plant Breeding, Agricultural College, Naira 532 185

ABSTRACT

Investigation on extent of variability, heritability, character association and path coefficient analysis were conducted in sugarcane. Analysis of variance revealed significant amount of variability for all the characters studied. Moderate variability and high heritability coupled with moderate genetic advance as per cent of mean was observed for cane volume and CCS yield indicating the predominance of additive gene action and hence, direct phenotypic selection may be useful with respect to these traits. Correlation studies revealed that cane yield was found to be significantly and positively correlated with number of millable canes at harvest, single cane weight and CCS yield, while number of millable canes, brix per cent, sucrose per cent, CCS per cent and cane yield with CCS yield at both phenotypic and genotypic level. Path coefficient analysis indicated that the germination per cent at 35 DAP, shoot population at 90 DAP, stalk population at 180 DAP, NMC at harvest, sucrose per cent, CCS per cent, cane length, single cane weight, cane volume and fibre per cent had high positive direct effect on cane yield at phenotypic level and shoot population at 90 DAP, stalk population at 120 DAP, NMC at harvest, brix per cent, purity per cent, CCS per cent, cane length, cane diameter, single cane weight and fibre per cent at genotypic level. Hence, emphasis should be given on those characters while making selection for improvement of cane yield in sugarcane.

Key words: Correlation, Genetic advance, Heritability, Path Coefficient Analysis, Sugarcane.