Variability and Heritability Studies in Sugarcane (*Saccharum officinarum* L.)

P Borraiah, V Satya Priya Lalitha, Lal Ahamed M and V Srinivasa Rao
Department of Genetic and Plant Breeding, Agricultural College, Bapatla 522 101

ABSTRACT

An experiment was conducted at Sugarcane Research Station, Vuyyuru, Andhra Pradesh during 2015-16 season, with an objective to study the variability, heritability and genetic advance of eleven sugarcane genotypes (eight clones and three standards) for fourteen characters. The genotypic coefficients of variation for all the characters studied were lesser than the phenotypic coefficients of variation indicating the masking effect of the environment. Estimates of phenotypic and genotypic coefficients of variation were found to be moderate for single cane weight at harvest, per cent fibre at 10th month, CCS yield and cane yield indicating the presence of moderate variability for these traits in the genotypes studied. High heritability values coupled with high genetic advance as per cent of mean recorded for single cane weight at harvest, CCS yield and cane yield and high heritability and moderate genetic advance as per cent of mean values recorded for per cent juice sucrose at 10th month, per cent CCS at 10th month and per cent fibre at 10th month indicate the predominance of additive gene action in the inheritance of these characters. Non additive gene action was found to be predominant for shoot population at 120 DAP, stalk population at 240 DAP, length of millable cane at harvest, diameter of millable cane at harvest, per cent brix at 10th month and per cent purity at 10th month. Predominance of both additive and non additive gene actions were observed in the inheritance of number of germinants at 35 DAP and number of millable canes at harvest.

Key words: *Genetic advance, Heritability, Sugarcane, Variability.*