Study of Variability, Heritability and Genetic Advance in Elite Inbred Germplasm of Maize (*Zea mays* L.)

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ABSTRACT

The present study was carried out to assess the variability, heritability and genetic advance in forty nine elite inbred lines of maize at Agricultural Research Station, Peddapuram. Analysis of variance revealed significant differences among the genotypes for all the characters. Variability studies revealed that Phenotypic Coefficient of Variance (PCV) was higher than Genotypic Coefficient of Variance (GCV) for all the characters studied. The characters, anthesis silking interval recorded highest PCV (32.73) and moderate GCV (17.38) whereas, lowest PCV (5.10) and GCV (4.73) was recorded for days to maturity. The traits, days to 50 per cent tasseling, days to 50 per cent silking, days to maturity, plant height and ear placement height recorded a slight difference between PCV and GCV indicating less influence of environment on these characters. Whereas, traits like anthesis silking interval, kernels row^{-1}, cob yield plant^{-1}, grain yield plant^{-1} and protein content registered wide variation between PCV and GCV suggesting more influence of environment on the expression of these traits. High heritability (82.54) coupled with genetic advance as per cent of mean (27.29) was observed for ear placement height, indicated that preponderance of additive gene action in controlling this trait. Further, high heritability was recorded for the traits days to 50 per cent tasseling, days to 50 per cent silking, days to maturity and plant height. Though these characters are least influenced by the environment, selection for improvement of such character may not be useful. Whereas, the traits grain yield per plant and cob yield per plant exhibited higher genetic advance as per cent of mean indicating that these characters are governed by additive gene effects and selection would be effective for the improvement of these characters.

Keywords: *Genetic advance as per cent of mean, Heritability and Variability.*