Studies on Variability, Heritability and Genetic Advance in Rice (*Oryza Sativa* L.) Hybrids

M Devi, D P B Jyothula, B Krishnaveni and V Srinivasa Rao
Department of Genetics & Plant Breeding, Agricultural College, Bapatla, A.P.

ABSTRACT

The present investigation was carried out with 20 genotypes of Rice (*Oryza sativa* L.) which consists of 15 hybrids and 5 checks to elicit information on the nature and extent of variability, heritability and genetic advance for yield, yield contributing traits and quality traits. The analysis of variance revealed significant differences among the genotypes for all the characters studied indicating the presence of sufficient genetic variability among them. The genotypic coefficients of variation for all the characters studied were lesser than the phenotypic coefficients of variation indicating the modifying effect of the environment in association with the characters at genotypic level. The genetic parameters revealed that moderate to high variability and high heritability coupled with high genetic advance as per cent of mean were observed for grain yield per plant (g), number of total grains per panicle and water uptake suggesting the predominance of additive type of gene action in controlling these traits with less influence by the environment and improvement of these characters is possible through direct phenotypic simple selection. The remaining characters under study *viz*., days to 50% flowering, plant height (cm), panicle length (cm), head rice recovery percentage, L/B ratio, days to maturity, hulling percentage and kernel elongation ratio has high heritability coupled with moderate to low genetic advance as percent of mean indicating the operation of both additive and non-additive gene effects in the inheritance of these traits. Hence improvement of these characters is possible through mass selection, progeny selection or any other suitable modified selection procedure for exploitation of the mixed effects of both non-additive and additive gene actions.

Keywords : *Genetic advance, Heritability, Quality parameters, Variability, Yield, Yield contributing traits.*