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Studies on genetic diversity in rice (*Oryza sativa* L.)

CH Shalini and G.M. Lal

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ABSTRACT : The present investigation was conducted to examine the genetic diversity existing among 50 genotypes of rice, during *kharif*-2011 under randomized block design with three replications. The data was recorded for thirteen quantitative characters to obtain estimates of variability, heritability, genetic advance and genetic divergence. Significant differences were observed among the genotypes for all the characters studied. High estimates of GCV and PCV were observed for grain yield per plant, followed by harvest index and number of panicles per plant. High heritability coupled with high genetic advance was recorded for spikelets per panicle. Mahalanobis D^2 analysis revealed considerable amount of diversity in the material. The fifty genotypes were grouped into eight heterogenous clusters. Among these clusters, Cluster V and cluster VII had maximum number of genotypes (10 each). On the basis of mean performance genotypes HKR 06-59 and CR 2703 were found to be the best genotypes in Allahabad agro-climatic conditions. The characters such as grain yield, harvest index, number of panicles per plant and biological yield per plant should be given top priority for effective selection. The present investigation revealed that cluster II and III were most diverse to each other and the genotypes constituted in these clusters may be used as parents for future hybridization.

Key Words: Genetic diversity, cluster analysis, rice (*Oryza sativa* L.).