RESEARCH ARTICLE :

Study on genetic divergence in boro rice (*Oryza sativa* L.) germplasm

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SUMMARY : Genetic diversity among fifty genotypes of boro Rice from Directorate of Rice Research, India was evaluated using Mahalanobis D^2 statistic. The experimental materials were evaluated during *Rabi* 2013-14, Directorate of Rice Research Farm, ICRISAT Campus, Patancheru, Hyderabad. Situated at 17.53ºN latitude, 78.27ºE longitude and altitude of 545m above mean sea level. Based on 10 quantitative characters which includes days to 50% Flowering, Plant Height (cm),Number of tillers/ plant, Number of productive tillers/plant,Panicle length(cm), Number of filled grains/panicle, Number of unfilled grains/panicle, Days to maturity, Grain yield/plant(g) and 1000 grain weight(g). These genotypes were grouped into 10 clusters. Out of Ten clusters, cluster I was the largest comprising of 18 genotypes followed by clusters II with 15 genotypes, cluster IV with 10 genotypes, and cluster III,V, VI,VII,VIII, IX, X with one genotype each.The clusters III,V, VI,VII,VIII, IX, X were represented by single genotype indicating high degree of heterogeneity among the genotypes.Clusters VIII, IX, and X exhibited high values for most of the characters. The intra cluster distance was maximum ($D^2 = 38.68$) in cluster IV. The maximum inter cluster distance ($D^2 = 387.67$) was recorded between clusters VI and VIII. Cluster X recorded highest mean value for grain yield per plant and lowest mean value for panicle length(cm). Days to fifty per cent flowering (41.22%) followed by number of filled grains per panicle (30.61%) contributed maximum to total divergence.Based on the inter cluster distances, a hybridization between the genotypes (IC-70855) of cluster VI and cluster VIII (IC-145639), cluster VIII (IC-145639) and cluster X (IC-86143), cluster III (IC-67935) with cluster V (IC-145633), is suggested to generate promising segregants for grain yield would produce encouraging results.

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