

GENETIC DIVERSITY ANALYSIS IN RICE (*ORYZA SATIVA* L.) LANDRACES OF NORTH EAST INDIA USING MORPHOLOGICAL AND RAPD MARKERS

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Abstract: Morphological and molecular characterizations of sixteen rice landraces of North East India were studied to observe genetic diversity and identification of superior genotypes for crop improvement program. Based on the relative magnitude of D^2 values, 16 genotypes were grouped into 3 clusters. Cluster I had the highest number of genotypes (9 genotypes), cluster II had 4 genotypes and cluster III had 3 genotypes. Cluster I showed the highest mean for plant height at maturity, cluster II for 1000 grain weight and cluster III for number of effective tillers/plant, number of filled grains/panicle and harvest index. 1000-grain weight showed the highest contribution towards divergence followed by plant height. In RAPD analysis some of the primers showed 100% polymorphism viz., AA-10, AA-14, OPA-02, OPA-04, OPB-03 and PRIMER-33. Overall percentage polymorphism revealed by RAPD primer was 77.75%. Dendrogram generated from the UPGMA cluster analysis divides the lines into two main clusters- cluster A and cluster B. Cluster A consist of 15 germplasm and Cluster B consist of 1 germplasm. Cluster A is further divided into two sub-clusters, 'a' and 'b'. Sub-cluster 'a' consist of 2 germplasm and sub-cluster 'b' consist of 13 germplasm. Principal coordinate analysis (PCoA) obtained for RAPD is in complete support of the conclusion drawn from the cluster analysis.

Keywords: Genetic diversity, Morphology, Rice

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