

RESEARCH ARTICLE

Genetic divergence in upland rice (*Oryza sativa* L.)

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SUMMARY

Genetic diversity was assessed in 40 genotypes of rice for 12 quantitative characters including grain yield using Mahalanobis D^2 statistics. The D^2 values between all possible pairs of 40 genotypes ranged from 26.32 to 404.814. The results revealed that 40 genotypes were grouped into 8 clusters with substantial divergence between them. Cluster I was very large comprising 24 genotypes followed by cluster II with 10 genotypes, while clusters III to VIII were solitary clusters. The maximum inter-cluster distance was obtained between cluster VI and VII ($D = 20.12$) followed by those between cluster VII and VIII ($D = 18.56$) which may serve as potential parents for hybridization, whereas, minimum between cluster III and IV ($D = 5.13$). The highest intra cluster distance was recorded for cluster II ($D = 7.96$) and lowest for cluster I ($D = 6.62$). The genotypes in the cluster VI had lowest mean value (89.67) for days to 50 per cent flowering indicating their use in breeding program for development of early maturing varieties. Cluster VIII recorded high grain yield per plant showing its potential for yield improvement. The characters number of spikelets per panicle and days to 50 per cent flowering contributed maximum in the manifestation of genetic divergence. RDN-20, RDN-11, Phule Radha, RDN-18 and RDN-5 may serve as potential donors for future hybridization programmes.

Key Words : *Oryza sativa*, Genetic diversity, Cluster analysis, D^2 analysis

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