

Universal rice primer based molecular characterization reveals high level of genetic variation in crop-wild relatives of rice

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ABSTRACT: Analysis of genetic variability and classification of wild-relatives of cultivated rice is important for the conservation, management and gainful utilization of these valuable genetic resources in crop improvement programmes. To understand the genetic relationship and extent of variation among the wild rice accessions, we had analysed the 48 accessions belonging to three species of wild rice, *Oryza nivara*, *O. rufipogon* and *O. officinalis* including two cultivated varieties of *O. sativa* spp. *indica* collected from six different states of India using ten universal rice primers (URP). A total of 211 marker bands were amplified with an average of 21.1 bands per primer. Genetic similarities amongst 48 accessions of wild rice were estimated using Jaccard's similarity coefficients, which ranged from 0.025 to 0.720 with an average of 0.307. A high level of genetic variability was observed between the accessions of wild rices analyzed in this study. The dendrogram constructed based on Jaccard's coefficients of similarity grouped the accessions into three main clusters. The cluster-I consisted of *O. nivara* accessions, whereas the cluster-II contained *O. nivara*, *O. rufipogon*, *O. sativa* spp. *indica* and *O. sativa* f. *spontanea*. Two accessions of *O. officinalis* collected from Kerala were highly divergent from the rest of the 46 accessions of *Oryza* species.

Key Words: Wild rice, *Oryza* spp., accessions, URP, molecular characterization, genetic variation.