

Genetic Variability and Relationships among Thirty Genotypes of Finger Millet (*Eleusine coracana* L. Gaertn.) Using RAPD Markers

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Ragi or finger millet (*Eleusine coracana* L.) is an important crop used for food, forage, and industrial products. It is distributed in tropical and temperate regions of the world. The germplasm identification and characterization is an important link between the conservation and utilization of plant genetic resources. Traditionally, species or varieties identification has relied on morphological characters like growth habit, leaf architecture or floral morphology. Investigation through RAPD (random amplified polymorphic DNA) markers was undertaken for identification and determination of the genetic variation among thirty genotypes of ragi of the family Poaceae. Thirteen selected decamer primers were used for genetic analysis. A total of 124 distinct DNA fragments ranging from 300–3000 bp was amplified by using selected random RAPD marker. The genetic similarity was evaluated on the basis of the presence or absence of bands. Cluster analysis was made by the similarity coefficient. It indicated that the 30 genotypes of ragi form two major clusters, first, a major cluster having only one genotype, *i.e.* Dibyasinha and a second major cluster having twenty-nine genotypes. The second major cluster again subdivides into two minor clusters. A first minor cluster has only three varieties, *i.e.* Neelachal, OEB-56 and Chilika. The genotypes Neelachal and OEB-56 exhibit a 86% similarity with each other and 80% similarity with Chilika. A second minor cluster has 26 genotypes and is divided into two sub-minor clusters. The first sub-minor cluster has only one genotype (VL-322). The second sub-minor cluster again subdivides into two groups. One group has one genotype and the second group again is divided into two sub-groups, one with 13 genotypes and the other with 11 genotypes. The highest similarity coefficient was detected in a genotype collected from southern India and the least from northern India. The genotypes of finger millet collected from diverse agroclimatic regions of India constitute a wide genetic base. This is helpful in breeding programs and a major input into conservation biology of cereal crop.

Key words: Finger Millet, Genetic Variation, RAPD Markers