



**ASSESSMENT OF GENETIC DISTANCE AMONG THE INBRED LINES OF PEARL
MILLET (*Pennisetum glaucum* (L.) R. BR) USING SSR MARKERS**

SUMANTH M, SUMATHI P*, VINODHANA NK AND SATHYA M

Department of Millets, Centre for Plant Breeding and Genetics

Tamil Nadu Agricultural University, Coimbatore - 641003, Tamil Nadu, India

*Corresponding Author: E Mail: sumivetri@yahoo.com

ABSTRACT

Pearl Millet [*Pennisetum glaucum* (L.) R.Br.] is one of the staple food and fodder crop of the drought-prone semi-arid regions of Africa and Asia. Assessment of available genetic diversity and broadening genetic base of parental lines, for the development of commercial hybrids in pearl millet through the use of molecular markers will certainly supplement the conventional breeding programme. Keeping this in view, the present study was undertaken to evaluate genetic diversity among 42 inbred lines (22 maintainer lines and 20 restorer lines) of pearl millet with seventeen SSR primers. Of the primers surveyed, 14 were polymorphic and produced scorable, unambiguous markers which produced a total of 43 alleles. The maximum number of six amplified products was observed in the profiles of the primer PSMP 2069 which had highest PIC value (0.826). The dendrogram grouped the forty two genotypes of pearl millet into three main clusters which revealed considerable genetic diversity among the inbred lines. Among the three clusters, cluster II was the largest comprising thirty four genotypes which is further subdivided into five sub clusters. Out of 5 sub clusters in cluster II, the fifth sub cluster itself formed largest group comprised of 25 genotypes with 10 restorer lines and 15 maintainer lines. Of the maintainers evaluated, ICMB 88004 alone remained as a solitary individual apart and highly diverse which can be used for the new male sterile line development programme. Among the twenty restorer lines, PT 6065, PT 6243, PT 6066, PT 6064, PT 6033 and PT 6029 were highly