

# **Morphological and Molecular Diversity in Relation to Hybrid Performance in Fodder Pearl Millet**

**G Naga Raju and B L Bhardwaj**

National Institute of Plant Genome Research, J.N.U. Campus, NewDelhi-110067, India.

## **ABSTRACT**

The investigation with five male-sterile lines, eight pollinator lines, 40  $F_1$  crosses, which were generated through Line x Tester matings was conducted to assess the association of genetic diversity of parental lines with mean performance of hybrids, mid parent heterosis, better parent heterosis and sca effects. All the parental lines were screened to detect polymorphism in the form of RAPD markers.

Genetic diversity among the parental lines was determined by RAPD markers and morphological characters. The genetic distances so obtained were correlated with  $F_1$  mean performance and heterosis. Positive correlation was obtained between molecular marker diversity and  $F_1$  mean performance, heterosis over better parent but the value of correlation coefficient was found to be non-significant. In contrary, negative correlation was obtained between taxonomic distance and  $F_1$ - mean performance; better parent heterosis. This study clearly indicated that genetic-distance measures based on RAPDs may be useful for the grouping of parents, but not for predicting heterotic combinations in pearl millet.

**Key words :** Fodder pearl millet, Genetic diversity, Hybrids, RAPD.