

## **Genetic Diversity Analysis of Ginger (*Zingiber officinale* Roscoe.) Genotypes Using RAPD Markers**

### **ABSTRACT**

Ginger (*Zingiber officinale* Roscoe.) is an important spice crop in Bangladesh as well as in all over the world for its economical and medicinal values. A measure of the existing genetic diversity is essential for planning a meaningful breeding strategy. Moreover, assessment and characterization of genetic diversity of the available germplasm is important to know the source of gene for particular trait of interest. The present investigation was undertaken to assess the genetic diversity among eight ginger genotypes using RAPD markers. A total of 16 distinct DNA fragments ranging from 100–1000 bp were amplified by using three selected primers of which 10 (62.50%) were polymorphic. BARI ada-1 was more homogenous than others and Syedpuri was found less homogenous showing the low intra-variety similarity value (75.56). the genotype 'Syedpuri' was found as more diversified from the viewpoint of lowest intra-variety similarity index value, highest gene diversity, proportion of polymorphic loci and highest level of genetic variation. The cluster analysis indicated that the eight genotypes were grouped into two major clusters. 'Indian' alone formed the first major cluster while the second major cluster had seven genotypes and was divided into two minor clusters. China and Sherpuri genotype pair were very close to each other with the lowest genetic distance (0.03). On the other hand, Indian and Syedpuri pair was more distant to each other with the highest genetic distance (0.55). RAPD analysis revealed a considerable level of polymorphism among the studied genotypes. The genetic variation thus detected has significance for ginger improvement programs.