

Evaluation of genetic diversity among six important Indian Holy Basil plants (*Ocimum* species) using RAPD Markers

Nand Kishor Sharma

Rajendra Agricultural University, India

Basils are valuable multipurpose medicinal plants which belong to the family Lamiaceae and is extensively versatile group consisting about 160 species. DNA markers are considered the best tools for determining genetic relationships/diversity as they are unlimited in number, show high polymorphism and are independent of environmental interaction i.e. highly heritable. RAPD technique has gained importance due to its simplicity, efficiency, relative ease to perform the assay and non-requirement of DNA sequence Information. The RAPD assay was performed to assess the genetic diversity among six *Ocimum* species viz. *O. americanum*, *O. basilicum*, *O. canum*, *O. killimandscharicum*, *O. minimum* and *O. sanctum*. The 18 decamer primers were tested but only 8 primers namely OPO-02, OPO-07, POP-12, OPO-17, OPO-19, OPA-03, OPA-08 and OPA-10 gave amplification. Out of 61 RAPD bands 56 were polymorphic. The combination of RAPD data and the simple matching coefficient grouped the species in clusters. The highest value of genetic similarity was observed between the *O. basilicum* and *O. minimum* (60%) and lowest was recorded between *O. basilicum* and *O. sanctum* (27%). The PCA (Principle Component Analysis) was also performed for their diversity assessment. The data derived from RAPD marker helped in a comprehensive understanding of the genetic relationship among *Ocimum* species. This result provides valid guidelines for collection, conservation and characterization of *Ocimum* genetic resources.

Biography

Nand Kishor Sharma has completed his M.Sc. (Agriculture Biotechnology) at the age of 24 years from Rajendra Agricultural University, Pusa and has created some biological useful Websites using JavaScript and HTML coding. He has published several research papers in National and International journals and has also presented some research papers in national conferences.

nkbiotech@yahoo.co.in