

MOLECULAR MARKERS: APPLICATION IN TREE IMPROVEMENT PROGRAMMES

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Abstract : A molecular marker is a nucleotide sequence corresponding to a particular physical location in the genome. Molecular markers are important tools for forest tree improvement. The most important markers are restriction fragment length polymorphisms (RFLPs), polymerase chain reaction- (PCR) based markers such as random amplified polymorphic DNA (RAPD), and fingerprinting markers. DNA markers can supplement isozyme markers for monitoring tree improvement activities such as estimating genetic diversity in breeding populations, germplasm identification, verifying controlled crosses, and estimating seed orchard efficiencies. Isozyme markers have been applied extensively during the past 15 years and have contributed significantly to tree breeding programs. Isozymes generally provide ample genetic information and are relatively inexpensive, rapid, and technically easy to apply, thus they should continue to play an important role in forest tree improvement.

Keywords : Molecular markers, RAPD, Tree improvement programmes

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