

Potential of molecular markers in plant biotechnology

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SUMMARY

During the last few decades, the use of molecular markers, revealing polymorphism at the DNA level, has been playing an increasing part in plant biotechnology and their genetics studies. There are different types of markers viz., morphological, biochemical and DNA based molecular markers. These DNA based markers are differentiated in two types first non PCR based (RFLP) and second is PCR based markers (RAPD, AFLP, SSR, SNP etc.), amongst others, the microsatellite DNA marker has been the most widely used, due to its easy use by simple PCR, followed by a denaturing gel electrophoresis for allele size determination, and to the high degree of information provided by its large number of alleles per locus. Despite this, a new marker type, named SNP, nucleotide polymorphism, is now on the scene and has gained high popularity, even though it is only a bi-allelic type of marker. Day by day development of such new and specific types of markers makes their importance in understanding the genomic variability and the diversity between the same as well as different species of the plants. In this review, we will discuss about the biochemical and molecular markers their advantages, disadvantages and the applications of the marker in comparison with other markers types.

Key Words : Molecular markers, Plant biotechnology, Genet, Polymorphism, Isozymes, Polymerase chain reactions (PCR).

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