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## **APPLICATION OF NEXT-GENERATION SEQUENCING IN SNP DETECTION IN PLANT BREEDING**

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### **ABSTRACT**

One of the main objectives of plant breeders is to improve existing cultivars which are deficient in one or more traits by crossing such cultivars with lines which possess the desired trait. In the last few years there has been rapid progress in the area of plant structural and functional genomics. Molecular markers are the most powerful genomic tools to increase the efficiency and precision of breeding practices for crop improvement. The development of high-density molecular maps which has been facilitated by PCR-based markers, have made the mapping and tagging of almost any trait possible. With the advances in next-generation sequencing (NGS) and high-throughput (HTP) genotyping methods, there is a shift in development of genomic resources including molecular markers in crops. Considering molecular markers application in molecular plant breeding and among them SNPs, as polymorphism and cost effective markers with applying new sequencing methods specially NGS, can be a successful path in crop advancement.

**KEY WORDS:** Next generation sequencing, SNP, Plant breeding



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