

Genetic diversity assessment of cereal cyst nematode resistant wheat genotypes using different molecular marker systems

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Abstract

Investigations were conducted to estimate the genetic diversity of wheat germplasm. Random Amplified Polymorphic DNA (RAPD) and Simple Sequence Repeats (SSRs) were employed for this purpose. Six cereal cyst nematode (CCN) resistant wheat genotypes viz., TD-1, SD-8006, Marvi-2000, Moomal-2002, Inqilab-91 and Bhattai were found to be genetically diverse on the basis of RAPD analysis using 14 deca-mer primers. Inferences have indicated that the most diverse genotype was Moomal-2002 as compared to the rest of the genotypes studied and the most effective loci to screen diversity was found to be OPA-09. Forty six SSR primers performance expressed that the genotype (Marvi-2000) was the most diverse and it was also identified as the most resistant genotype against CCN. It is therefore recommended to introduce Marvi-2000 in the breeding program for wheat improvement against CCN.