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Evaluation of genetic variability of bread wheat cultivars grown in Algerian semi-arid environment using SSR markers

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Abstract

The present study was conducted to understand the genetic variability of bread wheat's that grown in Algerian semi-arid environment. It was undertaken to examine the genetic diversity of ten bread wheat genotypes, using 16 microsatellite primer pairs (SSRs). SSR bands were scored across all genotypes and transformed into 0/1 binary matrix. The Polymorphism Information Content (PIC) ranged 0.13 to 0.70 respectively for the primer *WMC 24* and *WMC 50* with an average of 0.48 and 0.49 per primer pair. The similarity coefficient between cultivars ranged from 0.33 and 0.90 with an average of 0.63. Most of the genotypes showed a high degree of genetic similarity. The highest genetic distance value of 0.90 has been scored Angi4 and between Milan/S87230/babax. The lowest genetic distance value of 0.33 has been scored between Hammam1 and Attila2Pastor. The genotypes were clustered in four clear groups according to their origin, pedigree and characters similarities.

Keywords: Genetic variability, Semi-arid environment, Bread wheat, SSR markers.