Czech Journal of GENETICS AND PLANT BREEDING

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Czech J. Genet. Plant Breed.

M., Kraic J.:

Enrichment of chickpea genetic resources collection monitored by microsatellites

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A set of 49 chickpea accessions maintained in the collection of the Genebank of the Slovak Republic was analyzed using microsatellite markers. The level of genetic diversity and the effectivity of new germplasm acquisition for the collection enrichment were evaluated. Five primer pairs used generated 50 different amplified alleles. Four of them, TA2, TA5, TR1, and TR7, containing a long TAA-tandem repeat, were polymorphic with 11 – 13 alleles per locus. A single fragment was obtained from all the accessions with the primer pair CATPER flanking a small microsatellite repetition in the mRNA

sequence of chickpea cationic peroxidase. The genetic diversity was expressed as a diversity index (DI) and polymorphic information content (PIC) with values in the range from 0.885 to 0.904 and from 0.972 to 0.991, respectively. Recently acquired new germplasm contributed 13 new alleles to the entire collection, i.e. almost 70% of microsatellite diversity originated from the recently acquired accessions. Remarkable is also, that one accession carries a unique allel, not present in the remaining collection. Microsatellite analysis revealed the importance of collecting missions for the enrichment of collections of genetic resources.

Keywords:

chickpea; *Cicer arietinum* L.; microsatellite; germplasm; acquisition

[fulltext]

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