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Czech J. Genet. Plant Breed.

**Šimáčková K., Bárta J.,
Čurn V.:**

**Potato variety
identification by
molecular markers
based on
retrotransposon
analyses**

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1-10

We analyzed a set of twenty most grown potato (*Solanum tuberosum* L.) varieties listed in the Czech Variety List using the PCR-IRAP (Inter-Retrotransposon Amplified Polymorphism) method in order to distinguish fast and unambiguously the varieties. In total, 62 polymorphic alleles were amplified using the three primers P-Tst-1, P-Tst-3 and P-Tst-6. The recorded pattern of markers was stable and reproducible. The analyses were repeated three times and identical results were always obtained. The level of

polymorphism varied from 11% to 79% depending on the respective primer. All analysed varieties could be reliably distinguished after multivariate statistics have been applied to the data obtained by the PCO and UPGMA analyses. The best resolution of individual varieties was obtained if all three primers were evaluated as a complex. The use of retrotransposon-based markers appears to be suitable for the differentiation of large sets of potato samples and should be an eligible complement to other molecular markers used in potato variety identification such as Simple Sequence Repeats (SSR) and Amplified Fragment Length Polymorphisms (AFLP).

Keywords:

molecular markers; PCR- IRAP; *Solanum tuberosum*; variety identification

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