



Development of a novel and efficient strategy for practical identification of *Pyrus* spp (Rosaceae) cultivars using RAPD fingerprints

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ABSTRACT. Accurate and reliable cultivar identification of crop species is essential to guarantee plant material identity for purposes of registration, cultivar protection and production. To facilitate identification of plant cultivars, we developed a novel strategy for efficient recording of DNA molecular fingerprints in genotyped plant individuals. These fingerprints can be used as efficient referential information for quick plant identification. We made a random amplified polymorphic DNA (RAPD) marker analysis of 68 pear cultivars. All pear genotypes could be distinguished by a combination of eight 11-mer primers. The efficiency of the method was further verified by correct identification of four cultivars randomly chosen from the initial 68. The advantages of this identification include use of fewer primers and ease of cultivar separation by the corresponding primers marked on the cultivar identification diagram. The cultivar identification diagram can efficiently serve for pear cultivar identification by readily providing the information

needed to separate cultivars. To the best of our knowledge, this is the most efficient strategy for identification of plant varieties using DNA markers; it could be employed for the development of the pear industry and for the utilization of DNA markers to identify other plant species.

Key words: Pear; RAPD; Cultivar identification; Molecular markers