Efficient identification of ornamental peach cultivars using RAPD markers with a manual cultivar identification diagram strategy

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Abstract. One of the most important uses of DNA markers is cultivar identification. However, no DNA fingerprint analysis strategy is available for making DNA markers helpful in practical plant cultivar identification, especially for the identification of a large number of cultivars. We developed a manual cultivar identification diagram strategy for efficient identification of plant cultivars, from which a cultivar identification diagram (CID) of genotyped plant individuals can be constructed manually. This CID could be used as a reference for quick identification of plant cultivars of interest. We used 11-mer RAPD primers to amplify DNA samples of 32 ornamental peach genotypes; all the cultivars were well distinguished by fingerprints from 6 primers. The utility of this CID was verified by identification of three randomly chosen groups of cultivars among the 32 ones that we selected. This CID generated will be useful for the identification of commercially important ornamental peach cultivars.

Key words: Ornamental peach; RAPD; Cultivar identification; Molecular markers