

Genetic diversity of some pistachio cultivars in Kerman province as revealed by ISSR marker assay

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Abstract

Pistachio is one of the most important horticultural plants, growing in Iran with a high nutritional and economical value. In this study the amount of genetic variation of 22 pistachio cultivated genotypes from Kerman province including Ohadi Rafsanjan, Ohadi Zarand, Ohadi Sirjan, Sabz Peste Nooghi, Kalle Ghoochi Rafsanjan, Kalle Ghoochi Zarand, Fandoghi Riz, Akbari Sirjan, Akbari Rafsanjan, Akbari Zarand, Badami Zarand, Badami Sirjan, Badami Ravar, Sirizi, Hasanzadeh, Hasani, Gholamrezaei, Momtaz Zarand, Momtaz Tajabadi, Seifoddini, Male Sirjan and Male Rafsanjan was determined using the ISSR-PCR technology. Five ISSR primers were used to detect the DNA profiles variability among the cultivars. These primers amplified 100 bands, out of which 58 were polymorphic. Cluster analysis using UPGMA revealed three main genetic clusters and there were genetic relationships among pistachio cultivars. The similar genotypes which collected from different regions were placed in the same groups. Also the results showed the highest genetic similarity among Ohadi Zarand, Ohadi Sirjan and Ohadi Rafsanjan cultivars. These results represent the efficiency of ISSR markers to evaluate genetic relationships of the pistachio cultivars studied here.

Keywords: Pistachio, ISSR, UPGMA, genetic relationships.

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