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RESEARCH ARTICLE

Genetic diversity of Syrian pistachio (*Pistacia vera* L.) varieties evaluated by AFLP markers

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Abstract Pistachio (*Pistacia vera* L.) is a strategic nut tree species in the Middle East which holds comparative advantage over other fruit trees in view of its hardiness, income generation opportunities and benefits for the ecosystem. Yet pistachio cultivation depends on a very narrow genetic base, in spite of the existence of many varieties still marginally exploited. Syria is an important center of diversity for pistachio. A country wide ecogeographic survey in this country was carried out to determine the extent of pistachio genetic diversity and its use. As a whole, 114 accessions were collected from 37 farms to assess diversity at morphological and molecular level. Molecular evaluation was carried out using Amplified Fragment Length Polymorphism (AFLP) technique and performed using seven primer pair combinations. Results from the studies allowed the identification of 25 pistachio female varieties in Syria, some of which unique and described for the first time. Three groups of pistachio diversity were identified by cluster analysis which provides useful information about the distribution of genetic diversity in Syria for enhanced use and sustainable conservation.

Keywords AFLP · Genetic diversity · *Pistacia vera* L. · Syrian pistachio

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Introduction

Pistachio is cultivated over large areas around the world. According to FAO more than 400,000 ha are cultivated. Major producers include Iran, United States, Syria and Turkey (FAO 2006). Such cultivations are also speculated to be based on a very narrow genetic base (Maggs 1973; Tous and Ferguson 1996), making them vulnerable to pest or disease attacks and hence putting at risk the well-being of thousands of people who depend on this crop as a source of livelihood. It has been suggested that the reasons for low genetic diversity