

Short Report

ASSOCIATION OF *Candidatus* PHYTOPLASMA PRUNORUM WITH PLUM YELLOW LEAF STUNT IN IRAN

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(Received : 21.01.2014; Accepted : 11.06.2014)

Abstract

In Europe, chlorotic leaf roll of apricot (*Prunus armeniaca* L.), leptonecrosis of Japanese plum (*P. salicina* L.) and yellows and decline diseases of peach (*P. persica* L.), European plum (*P. domestica* L.) and almond (*P. dulcis* L.) have common aetiology and the single name 'European stone fruit yellows' (ESFY) is proposed for them (Seemüller *et al.* 1998a). European stone fruit yellows (ESFY), associated with '*Candidatus* Phytoplasma prunorum' is an important disease of *Prunus* spp. *Ca. P. prunorum* is phylogenetically related to apple proliferation (AP), pear decline (PD) and peach yellow leaf roll (PYLR) phytoplasmas. Plum trees showing symptoms of yellowing and leaf stunt were observed in August 2012 in several orchards in Mazandaran province, the south coast of the Caspian Sea. Ten symptomatic and two symptomless plants were collected for the identification of the disease causal agent.

Total DNA was extracted from 0.5 g of leaf midribs using the CTAB method (Murray & Thompson 1980). The dna samples were subjected to nested-PCR using primer pairs P1/P7 (Deng & Hiruki 1991), followed by R16F2n/R2 (Gundersen & Lee 1996) or fU5/rU3 (Lorenz *et al.* 1995). Following PCR with primer pairs R16F2n/R16R2 and fU5/rU3, amplified fragments of the expected size, 1200bp and 880bp, respectively were detected in symptomatic plants but not in symptomless plants. Two amplicons from each primer pair were purified and directly sequenced. The sequences were compared with those of the phytoplasma reference strains, using blast analysis. The sequences (GenBank Accession numbers KF739403, KF739404, KF739405 and KF739406) showed 99% similarity with those of '*Ca. P. prunorum*' (Accession NOs. AJ575108, AJ542545, AJ575111). To our knowledge, this is the first report of a '*Candidatus* *Phytoplasma prunorum*' (16SrX) strain associated with the yellowing and leaf stunt in plum trees in Iran.

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