Iran. J. Plant Path., Vol. 46, No. 2, 2010: 47-48

REACTION OF STONE FRUIT CULTIVARS TO ALMOND WITCHES' BROOM PHYTOPLASMA *

M. ABBASIAN[1] and M. SALEHI[2]**

(Received : 31.12.2010 ; Accepted : 7.7.2010)

Abstract

Almond witches' broom (AlmWB) is an economically important disease in Iran and Lebanon. It is caused by *Candidatus* Phytoplasma phoenicium, a pigeon pea related (16SrIX) phytoplasma. Graft inoculation was used to study the reaction of stone fruit cultivars to AlmWB phytoplasma. Two years after inoculation, apricot (cultivars Asefi and Talkh), nectarine (cultivar Red), peach (cultivars Zaferani , Elberta and Shaftalou), plum (cultivars Santa Roza and Shiro), prune (cultivars Sadi and Barghan) and sour cherry (cultivar Schattenmorele) showed little leaf, internode shortening, leaf rolling, yellowing, witches' broom and stunting. Incubation period in plants varied from five months in nectarine and peach to nine months in apricot. Growth expression of infected scions on stone fruit cultivars showed direct relationship with disease severity and inverse relationship with incubation period. Nested-PCR using P1/P7 followed by R16F2n/R16R2 primer pairs confirmed phytoplasmal infection of all symptomatic cultivars. Nested-PCR also showed that Meshki cultivar of sweet cherry and Holandi cultivar of prune (asymptomatic cultivars) were infected with AlmWB phytoplasma. Restriction fragment length polymorphism analysis of nested-PCR product (1.2 kbp) using *AluI*, *HinfI* and *RsaI* enzymes showed that phytoplasmas detected in almond and other stone fruits are identical. This is the first report of apricot, cherry, sweet cherry, Shaftalou, plum and prune as experimental hosts of *Ca*. Phytoplasma phoenicium in Iran. Transmission of this phytoplasma to peach and nectarine was previously reported.

Keywords: Phytoplasma, Almond witches' broom, Stone fruits, Cultivar reaction.

See persian text for figures and tables (Pages ۱۵۳-۱۶۰).

*: A Part of MSc. Thesis of the First Author Submitted to College of Agricultural and Natural Resources, Islamic Azad University, Branch of Science and Research, Tehran, Iran.

**: Corresponding Author, Email: salehi_abarkoohi@yahoo.com

1. Former MSc. Student of Plant Pathology, College of Agriculture and Natural Resources, Islamic Azad University, Branch of Science and Research, Tehran, Iran.
2. Res. Asist. Prof. of Plant Pathology, Agricultural and Natural Resource Research Center of Fars, Zarghan.

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