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Faculty of Agriculture
Department of plant protection

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In the field of plant pathology

Evaluation of resistance to *Erwinia amylovora* in apple, pear and quince and the molecular tracing of the bacterium in resistant varieties

Supervisors
Dr. M. Salari
Dr. S.K. Sabbagh

Advisors
Dr. N. Panjehkeh
E. Zohour

By
Fatemeh Yardehnavi

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Abstract

Fire blight caused by *Erwinia amylovora* (Burrill, 1882), is one of very important disease of pome fruit in Iran. The disease damages the quince, pear and apple trees in some area of country. Using resistant varieties is one of the most effective methods of disease control. In order to evaluate the resistance of 16 apple, 6 pear and 2 quince cultivars, used the Index of Varietal Susceptibility (I.V.S). By daily inspection, were written the I.V.S for each cultivar in each interval (ie: 5, 12, 23 and 46 days after inoculation) and also cut a branch of each cultivar randomly at 50 cm below the shoot. Results showed only Red-Delicious, Khoje-Esfarayen, Khushe-Kharv, Oghaz-Shirvan and Morabbaei cultivars are resistant to fire blight. In next step, DNA of this resistant cultivars were extracted and a sequence of genomic DNA of bacteria were multiplied using bacteria specific primers that amplify one 1269bp faragment of bacteria genom. By running the PCR products on agarose gel, we trace the bacteria in resistant cultivars. According to the results, found that multiplication and systemic movement of the bacteria in resistant varieties occurred in different period of time. Also it showed the remaining of the latent bacterium in the distant symptomless region which can be dangerous after any damages.

Key words*:* *Erwinia amylovora*, Fire blight, Apple, Pear, Quince, Resistance, PCR