

ABSTRACT

MSc. Thesis

DETERMINATION OF INCIDENCE OF THE FIG MOSAIC DISEASE IN FIG ORCHARDS AND NURSERIES OF AYDIN PROVINCE, AND CHARACTERIZATION OF THE CAUSAL AGENT WITH SEROLOGICAL METHODS, HOST RANGE AND TRANSMISSION BY PLANT SAP

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Turkey is the leading country in dry fig (*Ficus carica*) production and tree population in world. In Turkey, Aydın Province is ranked first in dry fig production with a rate of 61 %. Fig mosaic which is economically important disease, occurs wherever figs are grown in the world. It causes mosaic, yellowing, chlorotic spotting and deformation on leaves and chlorotic lesions on fruits. Presence of the fig mosaic disease is caused by a viral agent has been reported in the orchards and nurseries of Aydın Province in the previous studies. The objectives of this study are to determine, severity and incidence of exhibiting mosaic symptoms in orchards and nurseries of Aydın Province, and transmission of causal agent by plant sap it's host range and serological reaction to some other viruses. In 2006, out of 2.745 fig trees examined for the presence of mosaic symptoms in İncirlioiva, Germencik and Nazilli counties 2.181 were infected. In addition it was found that disease severity in 442 trees was 80 % and more. In 2006, 41.898 certified seedlings were examined in nurseries of the Aydın Province and 22.534 of them exhibited mosaic and deformation symptoms. It was found that disease severity of 772 seedlings was 80 % and more. These plants were heavingly infected showing stunting and leaf deformation.

Transmission with plant sap and host range of causal agent were studied by testing on 11 plant species. Out of 1.291 test plants, only 26 exhibited various symptoms. Necrotic local lesions were observed in *Nicotiana rustica*, *Nicotiana glutinosa* and *Datura stramonium*. In *Lycopersicon esculentum* and *Capsicum annum*, systemic discoloration and chlorotic local lesion were produced. Necrotic local lesion and leaf deformation were seen in *Cucumis sativus*. It was known that Potyvirus Group is related to mosaic disease agent serologically; therefore, in serological studies, Potyvirus Group antisera was tested on 180 leaf samples by using PTA-ELISA. Samples were also tested by DAS-ELISA for Plum pox virus antisera and TAS-ELISA for Beet yellows virus antisera that were tested first in this study. As a result the causal agent gave positive reaction against only Potyvirus Group antisera; however, the reaction was low in absorbance.

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Key Words :

Ficus carica, fig mosaic, incidence, severity, sap transmission, host range, ELISA (DAS, TAS, PTA)