Disease Note

PRESENCE OF *FIG MILD MOTTLE-ASSOCIATED VIRUS* AND *FIG LATENT VIRUS 1* IN TUNISIA

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A wide range of foliar symptoms including deformations, mosaic, chlorotic mottling, blotching, vein banding, clearing, feathering and chlorotic ringspots, as well as chlorotic ringspots on immature fruits were observed in Tunisian fig trees. The objective of this study was to survey fig orchards for the presence of *Fig mild mottle-associated virus* (FMMaV) and *Fig latent virus 1* (FLV1). Eighty symptomatic and symptomless fig trees located at Takelsa, Sousse, Sfax and Morneg were collected in spring 2012. Total nucleic acids were extracted from leaf tissue with the silica capture protocol (Foissac *et al.,* 2000) and used in RT-PCR with specific primers (i) FMMaV-s 5' AAGGGGAATCTACAAGGGTCG 3' and FMMaV-a 5' TATTACGCGCTTGAGGATTGC 3 for the amplification of a 311 bp fragment from the heat shock protein 70 homologue gene (Elbeaino *et al.,* 2010); and (ii) FLV1-s 5' CCATCTTCACCACACAAATGTC 3' and FLV1-a 5' CAATCTTCTTGGCCTCCATAAG 3' for the amplification of a 389 bp segment from the coat protein gene (Gattoni *et al.,* 2009). Results disclosed 12 FMMaV-positive samples (14%) in Takelsa (5%), Morneg (1%) and Sousse (9%) but not in Sfax while FLV-1 occurred in all surveyed areas (44%) with the highest prevalence in Takelsa (19%) followed by Morneg (10%), Sousse (9%) and Sfax (6%). FMMaV-infected plants showed mild mottling and leaf deformations comparable to those observed in Italy on accession Cal-1 (Elbeaino *et al.,* 2010). FLV-1 was detected in symptomless as well as in symptomatic trees. To the best of our knowledge, this represents the first record of FMMaV and FLV1 in Tunisia.

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Disease Note

DETECTION OF *FUSARIUM OXYSPORUM* f. sp. *DIANTHI* RACES IN IRAN

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Fusarium wilt disease of carnation is one of the most important diseases in all major carnation growing regions of Iran. This fungal disease is caused by *Fusarium oxysporum* f. sp. *dianthi* W.C. Snyder & H.N. Hansen. In 2011, an extensive sampling was carried out from carnation greenhouses in two Iranian provinces (Tehran and Markazi). Fungal isolates were identified as *F. oxysporum* based on morphological characters (Nelson *et al.,* 1983). Pathogenicity tests were performed by root dipping carnation cuttings of the susceptible cv. Rendezvous. Controls were included by dipping carnation cuttings in sterile distilled water. All inoculated plants developed wilt symptoms after 50 days of incubation at 28 to 30°C. Fifty isolates were selected randomly for further molecular characterisation by comparison with eight *F. oxysporum* f. sp. *dianthi* isolates from Italy (courtesy of Professor A. Garibaldi), which were used as reference for races 1, 2, 4 and 8. *F. oxysporum* f. sp. *dianthi* races were identified by PCR amplification of transposon insertions (Chiocchetti *et al.,* 1999). DNA was amplified using primers Ft3, R4.2, R8.1, R2.1 and IMP2 as described. Amplified fragments of 295 bp and 564 bp corresponded to races 1 (or 8, since the primers used do not allow discrimination between these two near-isogenic races) and to race 2, respectively. Of fifty isolates, 42 were identified as belonging to race 2 and two isolates were identified as race 1 (or 8). None of the tested isolates belonged to race 4. Six isolates did not generate any amplification by using the tested primers. To the authors' knowledge, this is first report of detection of *Fusarium oxysporum* f. sp. *dianthi* races in Iran.

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