

## DISEASE NOTE

### FIRST REPORT OF CITRUS BENT LEAF VIROID IN THE UNITED ARAB EMIRATES

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Citrus species are among the three top fruit trees in the United Arab Emirates (UAE), with a combined total production of 12230 tons in 2011. Leaf samples were collected from four lemon (*Citrus lemon* L.) and five sweet orange (*C. sinensis* (L.) Osbeck) groves located in Al-Ain (south east of Abu Dhabi, UAE). Sampled trees showed weakened growth, but no typical symptoms of viroids and were tested for the presence of viroids by multiplex RT-PCR using two sets of primers specific for *Citrus exocortis viroid* (CEVd) and *Citrus bent leaf viroid* (CBLVd) (Al-Harhi *et al.*, 2013). Testing disclosed the association of CEVd with 15 of 16 lemons in four groves, and with 18 of 18 sweet oranges in five groves. CBLVd was detected in six of 16 lemons in three groves and in five of 18 sweet oranges in three groves. To sequence PCR products, simplex RT-PCR was carried out with each primer set and two positive samples for CEVd and two for CBLVd. Amplifications produced fragments of the expected size, 371 bp for CEVd and 234 bp for CBLVd. PCR products were purified and sequenced by Macrogen (Korea). CEVd sequences from the UAE were identical to each other and shared 99% nucleotide similarity to CEVd isolate CEVd-XNM-XY (GenBank accession No. DQ431993), while the CBLVd sequence was identical to that of CBLVd isolate 201-1-2 Uy (accession No. AF428053). Sequences of both viroids from the UAE were deposited in GenBank (accession No. pending) This is the first record of CBLVd in the UAE. Presence of citrus viroids in Al-Ain, the most important agricultural area in the UAE, necessitates a larger scale study to characterize their distribution, pathogenicity and economic impact.

Al-Harhi S.A., Al-Sadi A.M., Al-Saady A.A., 2013. Potential of citrus budlings originating in the Middle East as sources of citrus viroids. *Crop Protection* **48**: 13-15

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### FIRST REPORT OF APPLE COLLAR ROT INCITED BY *SCLEROTIUM ROLFSII* IN TUNISIA

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*Sclerotium rolfsii* Sacc. [teleomorph *Athelia rolfsii* (Curzi) Tu et Kimbrough] is a soil-borne polyphagous phytopathogenic fungus characterized by prolific growth and ability to produce persistent sclerotia. In Tunisia, *S. rolfsii* has already been reported on potato (Daami-Remadi *et al.*, 2007) and olive (Boulila, 2001). In spring 2012, a sudden death of 2-year-old apple trees (*Malus domestica*) cv. Royal Gala grafted on MM106 rootstock was observed in an orchard near Tunis showing leaf chlorosis, root and collar rot. Isolations from necrotic wood on PDA medium, yielded consistent white fungal colonies, producing only sclerotia and no fruiting bodies or spores. Based on morphological characteristics, the fungus was tentatively identified as *Sclerotium* sp., then confirmed by sequencing the ITS region of rDNA. The obtained sequence (accession No. KF021301) matched the sequence of *Athelia rolfsii* (ATCC 201126). A pathogenicity test was performed on 2-year-old grafted apples of cv. Royal Gala in a glasshouse at 25-28°C and 80% relative humidity. Mycelial plugs of *S. rolfsii* were inoculated into the basal stem of 10 plants, whereas an equal number of non inoculated plants served as controls. Symptoms like those observed in the field developed in inoculated plants, but not in the controls, 35 days post inoculation. *S. rolfsii* was consistently re-isolated from infected wood tissues fulfilling Koch's postulates. Apple collar rot (ACR) was originally described as apple southern blight in the USA and has also been reported in India, China, Israel and Italy (Corazza *et al.*, 1999). To our knowledge this is the first report of ARC in Tunisia. The Tunisian Apple industry is mostly grown on MM106 rootstocks, and therefore, ACR represents a serious threat.

Boulila M., 2001. Le dépérissement de l'olivier issu de boutures herbacées en Tunisie. *Bulletin OEPP/EPPO Bulletin* **31**: 111-117.

Corazza L., Belisario A., Forti E., 1999. First report of root and collar rot by *Sclerotium rolfsii* on apple trees in Italy. *Plant Disease* **83**: 695.

Daami-Remadi M., Jabnoun-Khiareddine H., Ayed F., Hibar K., El Mahjoub M., 2007. First Report of *Sclerotium rolfsii* causing atypical soft rot on potato tubers in Tunisia. *Tunisian Journal of Plant Protection* **2**: 59-62.

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