

## DISEASE NOTE

**FIRST RECORD OF POME FRUIT  
VIRUSES IN SYRIA**

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A survey was conducted in Syria to evaluate the sanitary status of pome fruit trees. General symptoms of virus diseases were observed: i.e. chlorotic ring spots on pear leaves, chlorotic to green pale areas on apple leaves. Some trees showed symptoms of malformation and size reduction of leaves with chlorotic line patterns. Leaf samples from 754 apple, 44 pear or 14 quince plants were collected during the spring and early summer of 2003 and 2004 from the main cultivation areas of pome fruits in Syria in the following governorates: Damascus, Al-Qunaitara, Al-Swida, Homs, Hama, and Latakia. All samples were tested by DAS-ELISA (Clark and Adams, 1977) for *Apple mosaic virus* (ApMV), *Apple chlorotic leaf spot virus* (ACLSV) and *Apple stem grooving virus* (ASGV) using commercial kits by Bioreba (Reinach, Switzerland). ACLSV was found in 186 apple samples (24.7% infection); ASGV was found in 24 apple samples (3.2% infection), mainly from the coastal region (Latakia). ApMV was found in only 2 apple samples (0.3% infection). The three viruses were found only in apple. Pear and quince trees were apparently not infected with any of the tested viruses. This is the first report of pome fruit viruses in Syria.

Clark M.F., Adams A.N., 1977. Characteristics of the microplate method of enzyme-linked immunosorbent assay for the detection of plant viruses. *Journal of General Virology* **34**: 475-483.

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## DISEASE NOTE

**STEM ROT OF *TRACHELLIUM  
CAERULEUM* AND *CRASPEDIA GLOBOSA*  
CAUSED BY *SCLEROTINIA  
SCLEROTIUM* IN ARGENTINA**

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*Trachelium caeruleum* (Fam. Campanulaceae; “throatwort”, “traquelium”) and *Craspedia globosa* (Fam. Asteraceae; “Billy Buttons”, “drumsticks”, “craspedia”) are two relatively new ornamental crops cultivated as cut flowers in the outskirts of La Plata (Buenos Aires Province). They can be used in both fresh and dry arrangements, and the plants are also used in landscapes. During spring 2004, plants growing in plots in commercial greenhouses showed sudden wilt and stem rot symptoms, more often in the second half of growth. Initial symptoms included black stem necrosis and grey or brown discoloration of leaves. As stem necrosis progressed, it appears a white mildew like fluff on or in the stem in which black and irregular sclerotia were developed. Infected plants wilted and died, and the losses were more important when the plants density and the humidity were high. The isolations obtained from sclerotia on PDA, produced cultures with mycelium and sclerotia characteristic of *Sclerotinia sclerotiorum* (Lib.) de Bary. For pathogenicity tests cross inoculation were conducted. Inoculum consisted in rice kernels infested with mycelium of isolates from traquelium and craspedia separately. Five g of inoculum were mixed with the upper soil level around the stems of potted mature plants of both ornamentals. For each ornamental, ten plants were inoculated with each *Sclerotinia* isolate and another ten which received sterile kernels served as controls. The plants were covered with plastic bags during 48 h and were kept at 18-20°C. All inoculated plants showed wilting after 8 to 12 days while controls remained healthy. *S. sclerotiorum* was recovered only from inoculated plants. Previous reports of these ornamentals as hosts of this pathogen were not found. This is the first report of *S. sclerotiorum* on *T. caeruleum* and *C. globosa* in Argentina.

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## DISEASE NOTE

NEW RECORD OF *ACIDOVORAX AVENAE* SUBSP. *CATTLEYAE* ON ORCHID IN ITALYM. Scortichini<sup>1</sup>, D. D'Ascenzo<sup>2</sup> and M.P. Rossi<sup>1</sup><sup>1</sup> C.R.A. - Istituto Sperimentale per la Frutticoltura, Via di Fioranello, 52, I-00040 Ciampino aeroporto, Roma, Italy<sup>2</sup> Regione Abruzzo, Servizio Fitosanitario Regionale, Via Nazionale, 38, I-65012 Villanova di Cepagatti, Pescara, Italy

Pot-grown plants of orchid (*Phalaenopsis* hybrid) cv Alice Girl with leaf spot symptoms were observed in a commercial glasshouse near Pescara (central Italy). Leaves bore circular-elliptical spots, sometimes with a water-soaked appearance, that turned blackish forming cavities in the parenchyma. Some leaves died. Tissue from lesion margins was ground in a mortar containing sterile saline, 0.1 ml aliquots of serial ten-fold dilutions were plated on nutrient agar and incubated at 25-27°C for three days. The resulting cream-coloured colonies were analysed in biochemical and pathogenicity tests and by SDS-PAGE of whole-cell protein extracts. All isolates accumulated poly-β-hydroxybutyrate, did not produce fluorescent pigments on medium B of King *et al.* (1954), hydrolysed starch, utilised L-arabinose, D-galactose and ethanoalamine as carbon source and caused a hypersensitivity reaction in tobacco cv White Burley. In addition, they showed the same protein profile as a reference strain (PD3516, Wageningen) of *Acidovorax avenae* subsp. *cattleyae* (Pavarino) Willems *et al.*

Pathogenicity tests were made according to Stovold *et al.* (2001). *Phalaenopsis* plants were covered with plastic bags 12 h before and for 24 h after inoculation. Leaves were wounded with a sterile syringe and inoculated by wiping with a cotton wool swab impregnated with the bacterial suspension (1-2·10<sup>7</sup> cfu ml<sup>-1</sup>). All isolates tested reproduced the original symptoms. Re-isolations yielded the same colony type as in the primary isolation. We conclude that the causative agent of the disease was *A. avenae* subsp. *cattleyae*. To our knowledge this is the first record of this disease of *Phalaenopsis* hybrid in Italy since its discovery by Pavarino in 1911. Other hosts of this pathogen are *Cattleya*, *Cypripedium*, *Dendrobium*, and *Ornithocephalum*.

King E.O., Raney M.K., Ward D.E., 1954. Two simple media for the demonstration of pyocyanin and fluorescein. *Journal of Laboratory and Clinical Medicine* **44**: 301-307.

Stovold G.E., Bradley J., Fahy P.C., 2001. *Acidovorax avenae* subsp. *cattleyae* (*Pseudomonas cattleyae*) causing leafspot and death of *Phalaenopsis* orchids in New South Wales. *Australasian Plant Pathology* **30**: 73-74.

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## DISEASE NOTE

*DIPLOCERAS HYPERICINUM* CAUSING LEAF BLIGHT AND STEM DIEBACK ON *HYPERICUM PERFORATUM* IN TURKEYH.M. Aksoy<sup>1\*</sup> and C. Çırak<sup>2</sup><sup>1</sup> Faculty of Agriculture, Department of Plant Protection, University of Ondokuz Mayıs, 55139 Kurupelit, Samsun, Turkey<sup>2</sup> Faculty of Agriculture, Department of Agronomy, University of Ondokuz Mayıs, 55139 Kurupeli, Samsun, Turkey

*Hypericum perforatum* L. is an herbaceous perennial plant that has received considerable interest worldwide. It is commonly known as St. John's wort and use of crude extract of this plant as an antidepressant is very popular today (Biffignandi and Bilia, 2000).

We observed the disease symptoms with yellowing leaves and stem dieback from *H. perforatum* plants growing wild in campus area of Ondokuz Mayıs University, Samsun, in 2004. The fungus was isolated from surface-disinfested tissue onto potato dextrose agar (PDA) in Petri plates. The plates were incubated at 24-25°C under 16 h of fluorescent light and 8 h darkness for 2 to 3 days. Mycelial tips from edge of the growing colony were transferred onto PDA in Petri plates and the plates were incubated at 24-25°C for one week. Conidial suspension was used to inoculate 3-month-old plants. Control plants were treated with only sterile-distilled water. The pots were incubated 24-25°C, 90% humidity with 16 h light: 8 h dark cycle. The treatment was set up according to 3 replications and repeated 2 times concurrently. Beginning the 5th day after inoculation, inoculated plants exhibited leaf spots similar to those originally observed followed by stem dieback. Identification of *Diploceras hypericinum* (Ces.) Höhn was based on the morphology of conidia on light microscope. Mycelia of *D. hypericinum* were whitish, conidiophores short and simple, conidia cylindrical, a little curved, 3 septate with two shoots out of ends 15.4×3.5 µm (Barnett and Hunter, 1998). This is the first report of *D. hypericinum* causing leaf blight and stem dieback of St. John's-wort in Turkey.

Barnett H.L., Hunter B.B., 1998. Illustrated genera of fungi. 2nd Ed. APS Press, St. Paul, MN, USA.

Biffignandi P.M., Bilia A.R., 2000. The growing knowledge of St. John's wort (*Hypericum perforatum* L.) drug interactions and their clinical significance. *Current Therapeutic Research* **61**: 389-394.

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## DISEASE NOTE

**FIRST REPORT OF *PHIALOPHORA* CAUSING LEAF AND STEM BLIGHT ON COMMON GARDEN PETUNIA****G. Polizzi<sup>1</sup> and A. Vitale<sup>1</sup>**

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In spring 2002 and subsequently in 2003 numerous petunias (*Petunia x hybrida* Hort. Vilm.-Andr.), cv Lime and Mini Purple, exhibited a new leaf and stem disease in a greenhouse in eastern Sicily. Tiny and black leaf spots without specific arrangement surrounded by a yellow strip ("green islands") were the main symptoms observed. Pin point lesions involving also stems often caused plant death. Isolations from symptomatic tissues consistently yielded on PDA and PCA colonies, white to buff at first, becoming buff-greenish glaucous above and olivaceous gray. The fungus was identified by conidiphores, conidia, cell phialides (with collarettes) morphology as genus *Phialophora* (Ellis, 1993). Only a tentative identification as *Phialophora fastigiata* (Lagerberg & Melin) Conant (IMI 389703) was performed by CABI Bioscience UK Centre as the conidia and conidigenous cells are somewhat smaller than expected. Pathogenicity tests were performed on 6 young plants of cultivars 'Mini Purple' and 'Lime' inoculated with a conidial suspension ( $10^5$  conidia ml<sup>-1</sup>) and incubated in moist chamber at 25±2°C for 72 hours. After this period all plants inoculated showed typical lesions on leaves, petals, calyx and stems and pathogen was always reisolated from affected plants.

This is the first report of *Phialophora* sp. causing leaf spot and stem lesions on common garden petunia in the world.

Ellis M.B., 1993. *Dematiaceous Hyphomycetes*. Commonwealth Mycological Institute, Kew, Surrey, England.

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## DISEASE NOTE

**FIRST RECORD OF *COLLETOTRICHUM COCCODES* ON POTATO IN MALTA****A. Porta-Puglia and D. Mifsud**

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In April 2005 black dot symptoms were observed in a field at Qrendi, Malta, on plants of potato (*Solanum tuberosum* L.) cv Derby at tuber maturation growth stage. Affected stems appeared prematurely wilted, and abundant sclerotia were present on their base and on the roots. *Colletotrichum coccodes* (Wallr.) Hughes (Porta-Puglia, 1986) was constantly isolated from crowns and roots. Colonies of one isolate, grown on potato dextrose agar (PDA), were suspended by a blender in sterile tap water (concentration:  $2.1 \cdot 10^6$  CFU ml<sup>-1</sup> on PDA). Six potato tubers ('Derby', at incipient germination) and the roots of 6 tomato seedlings ('Thomas', growth stage: 5 leaves) were soaked into the fungal suspension for 10 min and successively transplanted in 16 cm diameter plastic pots containing a mixture (1:1:1 w/w/w) of soil, sand and peat. Twenty-five ml of fungal suspension were distributed on the soil in each pot after planting. Control plants (6 per host) were treated in the same way with sterile tap water. The plants were kept under glasshouse conditions (22±5°C) and regularly watered. The inoculated plants showed growth reduction, yellowing and wilting. When pulled up 2 months after inoculation root and crown rot were present on all of them. Wilting, crown lesions and growth reduction were more severe on tomato. Typical black dots (sclerotia) were present on the diseased tissues of both hosts. *C. coccodes* was re-isolated from roots, crowns and stem bases of all the inoculated plants previously washed and surface disinfested with sodium hypochlorite (2% active Cl, 5 min treatment). No symptoms were present on control plants and attempts to isolate the pathogen from them failed. This is the first record of *C. coccodes* on potato in Malta.

Porta-Puglia A., 1986. *Colletotrichum coccodes* (Wallr.) Hughes. In: Smith IM, Dunez J., Lelliot R.A., Phillips D.H. and Arher S.A. (eds). *European Handbook of Plant Diseases*, pp. 330-331. Blackwell, Oxford, U.K.

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## DISEASE NOTE

## FIRST REPORT OF THREE FILAMENTOUS VIRUSES FROM CHERRY IN SERBIA

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For assessing the sanitary status of stone fruit tree collections from Serbia, 86 sweet cherry and 44 sour cherry cultivars were indexed in *Prunus serrulata* cv Kwanzan. After 2-3 months in a controlled environment greenhouse, leaf deformation and epinasty, suggestive of infections by *Cherry green ring mottle virus* (CGRMV) were induced by eight (6 sweet and 2 sour) accessions and a quick decline was induced by 37 other sources. Inoculation with the rest of the cultivars did not elicit any visible reactions. Total nucleic acids were extracted as described by Foissac *et al.* (2001) from 44 cultivars, selected among those inducing either epinasty (8), or quick decline (16), or no symptoms (20) in the indicator. RT-PCR was done using the following sets of primers: (i) GRM8316 and GRM7950 that amplify a 366 bp DNA fragment from CGRMV; (ii) NEG1U and NEG1L that amplify a 400 bp DNA fragment from *Cherry necrotic rusty mottle virus* (CNRMV); (iii) ERMUP and ERMLO that amplify a 341 bp DNA fragment from a virus associated with European rusty mottle disease (ERM) (Rott and Jelkmann, 2001). Sixteen of the 44 tested accessions proved to be infected by at least one of the above viruses, four by one, ten by two, and two by all three viruses. The most frequent combination was CGRMV+CNRMV. RT-PCR showed that seven of eight cultivars that indexed positive in *P. serrulata* by inducing deformation and epinasty were infected CGRMV, which indicates a high level of reliability for woody indexing for this virus. CNRMV and ERM virus were not associated with any particular symptom in Kwanzan. This is the first report of CGRMV, CNRMV and the new elongated virus associated with ERM in Serbia.

Foissac X., Svanella-Dumas L., Dulucq M.J., Gentil P., 2001. Polyvalent detection of fruit tree Tricho, Capillo and Foveaviruses by nested RT-PCR using degenerated and inosine containing primers (DOP RT-PCR). *Acta Horticulturae* **550**: 37-43.

Rott M.E., Jelkmann W., 2001. Characterization and detection of several filamentous viruses of cherry: adaptation of an alternative cloning method (DOP-PCR), and modification of an RNA extraction protocol. *European Journal of Plant Pathology* **107**: 411-420.

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## DISEASE NOTE

## FIRST REPORT OF ALMOND LEAF SCORCH IN TURKEY

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In early June 2005, almond trees (*Prunus amygdalus* L.) with chlorosis of the tips and margins of the leaves, necrosis of the yellow areas, and rolling of the blades were observed in several orchards of Şanlıurfa (southern Turkey). Diseased plants had a scattered distribution. The symptoms observed resembled very much those of almond leaf scorch (Purcell, 2002) a disorder induced by the xylem-limited bacterium *Xylella fastidiosa* (Wells *et al.*, 1987). Symptomatic leaf samples were therefore tested by DAS-ELISA for the presence of *X. fastidiosa* and of a few common *Prunus* viruses, i.e. *Prunus necrotic ring spot virus* (PNRSV), *Prune dwarf virus* (PDV), and *Plum pox virus* (PPV), using commercial kits (Loewe Phytodiagnostica Biochemica, Germany). ELISA was done following the directions supplied with the kit, dispensing in each well 200 µl of extracts from leaf petioles. Negative controls (symptomless trees) were included. Of 27 symptomatic samples from seven different almond orchards, 23 gave a positive response to *X. fastidiosa* but none reacted with antisera to PNRSV, PDV and PPV. When tests were repeated from other diseased trees at the end of July, 12 of 30 samples were again ELISA-positive. When fragments from petioles and main veins of symptomatic leaves collected in July from ELISA-positive trees were processed for thin sectioning and observed under the electron microscope, bacterial cells ca. 2×0.3 µm in size were profusely present in xylem elements. No bacteria were seen in symptomless controls. These data seem to substantiate the likelihood that *X. fastidiosa* is associated with scorched almond trees in southern Turkey. The only extant record of *X. fastidiosa* in the Mediterranean area is from Kosovo, where the bacterium was found in grapevines (Berisha *et al.*, 1998).

Berisha B., Chen Y.D., Zhang G.I., XU B.Y. and Chen T.A., 1998. Isolation of Pierce's disease bacteria from grapevines in Europe. *European Journal of Plant Pathology* **104**: 427-433.

Purcell A.H., 2002. Almond leaf scorch. In: Teviotdale B.L., Michailides T.J., Pscheidt J.W. (eds.). Compendium of nut crop diseases in temperate zones, pp. 31-32. American Phytopathological Society Press, St. Paul, USA.

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