

DISEASE NOTE

**FIRST REPORT OF BROWN PATCH
OF *POLYGONATUM ODORATUM* CAUSED
BY *FUSARIUM OXYSPORUM* IN CHINA**

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Polygonatum odoratum (Mill) Druce is a herb used in China for treating diabetes mellitus and cardiovascular diseases. In June 2007, extensive attacks of a disease (brown patch) were observed in a *P. odoratum* field in Qingyuan (China). Brown streaks, first appearing on the abaxial leaf surface, soon extended to the adaxial surface and enlarged to dark brown patches. Isolations made from small pieces of leaf tissues plated on potato dextrose agar yielded white to pale-violet fungal colonies, producing macro- and microconidia. The macroconidia were thin-walled, 3-septate and measured 30-50×3-5 µm, whereas microconidia were 0-septate, elliptical, and were formed abundantly in false heads. The 5.8S subunit and flanking internal transcribed spacers (ITS1 and ITS2) of the rDNA gene were amplified from DNA extracted from single-spore cultures using the ITS1/ITS4 primers (White *et al.*, 1990) and sequenced. The ITS sequence was 99% similar to that of *Fusarium oxysporum* (accession No. EU520062), thus supporting, along with the observed morphological traits, the identification of the causal fungus as *F. oxysporum* (Leslie and Summerell, 2006). For pathogenicity tests (conducted twice) a conidial suspension of 1×10⁵ spores/ml was sprayed on ten 5-week-old plants, which were then covered with polythene bags and kept for 48 h at 26±1°C. Control plants were sprayed with sterile water. Typical symptoms developed on all inoculated plants after 15 days, and *F. oxysporum* was consistently re-isolated from symptomatic tissues and identified as previously described. Control plants remained symptomless. To our knowledge, this is the first report of *F. oxysporum* causing brown patch on *P. odoratum* in China.

Leslie J.F., Summerell B.A., 2006. The *Fusarium* Laboratory Manual. Blackwell Publishing, Ames, IA, USA.

White T.J., Bruns T., Lee S., Taylor J., 1990. Amplification and direct sequencing of fungal ribosomal RNA genes for phylogenetics. In: Innis M.A., Gelfand D.H., Sninsky J.J., White T.J., (eds). PCR Protocols: A Guide to Methods and Applications, pp. 315-322. Academic Press, New York, NY, USA.

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**FIRST REPORT OF *TOMATO RINGSPOT
VIRUS* ON TOMATO IN IRAN**

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During spring 2010, tomato plants from commercial fields in the Dezful area of the Khuzestan province (south-west Iran) that exhibited virus-like symptoms, i.e bushy growth, leaf distortion, mosaic, mottling, necrosis, stunting and yellowing, were indexed for the presence of viruses. Leaf samples were collected from symptomatic plants and tested by DAS-ELISA with commercial kits (Bioreba, Switzerland) to *Arabid mosaic virus* (ArMV), *Cucumber mosaic virus* (CMV), *Potato virus Y* (PVY), *Tomato yellow leaf curl virus* (TYLCV), *Tomato ringspot virus* (ToRSV), and *Tomato spotted wilt virus* (TSWV). Extracts from 18% of the tomato plants surveyed (19 of 106) reacted with antibodies specific to ToRSV. Mechanical inoculation with sap extracts from ToRSV-positive leaf samples induced chlorotic local lesions with systemic top necrosis in *Chenopodium amaranticolor*, necrotic local lesions followed by systemic ring pattern in *Nicotiana tabacum* and chlorotic lesions followed by chlorosis in *Cucumis sativus*. The presence of the virus was confirmed in the indicator plants by DAS-ELISA. As a further confirmatory test for the presence of ToRSV, total RNA from four symptomatic tomato plants was extracted using TRI-Reagent (Sigma, USA) and subjected to RT-PCR with ToRSV-specific primers (Griesbach, 1995). An amplicon of the expected size, approximately 449 bp, was obtained from symptomatic but not from healthy samples. This is the first report of ToRSV on tomato in Iran.

Griesbach J.A., 1995. Detection of tomato ringspot virus by polymerase chain reaction. *Plant Disease* 79: 1054-1056.

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