Disease Note

First report of rust caused by Coleosporium campanulae on Campanula rapunculoides in Italy

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Creeping bellflower (Campanula rapunculoides L.) is a popular flowering plant commonly used in parks and gardens in northern Italy, belonging to Campanulaceae. In August 2016, plants of Campanula rapunculoides grown in a garden located near Biella (Latitude: 45°36’00”N, Longitude: 8°03’00”E) showed leaf chlorosis followed by the appearance of orange pulvulent rust pustules irregularly distributed in the abaxial surface of leaves. Orange uredinia were circular to elliptic, 0.2 to 0.45 mm in diameter. Orange urediniospores were catenulate, ovoid or ellipsoid, ranging from 14.3 to 16.4 μm in length by 30.8 to 34.4 μm in width. Teleutospores were not observed. The morphological characteristics of the fungus corresponded to those of the genus Coleosporium (Cummins, 1978). The Internal Transcribed Spacer (ITS) region of rDNA from urediniospores was amplified using the primers ITS1/ITS4 and sequenced. The 420 bp product was sequenced (GenBank Accession No. KY296542) and showed a 99% similarity with Spacer (ITS) region of rDNA from urediniospores was amplified using the primers ITS1/ITS4 and sequenced. The characteristics of the fungus corresponded to those of the genus Coleosporium (Cummins, 1978). The Internal Transcribed Spacer (ITS) region of rDNA from urediniospores was amplified using the primers ITS1/ITS4 and sequenced. The 420 bp product was sequenced (GenBank Accession No. KY296542) and showed a 99% similarity with Coleosporium campanulae (KP017555). Pathogenicity was confirmed by spraying an urediniospores suspension at 1 × 10⁵/ml on three plants of C. rapunculoides grown in 3 l-pot. The same number of control plants were sprayed with sterile water. Plants were kept at 20°C to 23°C for 5 days in a dew chamber. All inoculated plants developed typical rust symptoms with the uredinia appearing after 10 days. Although C. campanulae is reported in several European countries on different spontaneous native plants including the campanula host genus (Helfer, 2013), this is, to our knowledge, the first report of C. campanulae on cultivated C. rapunculoides in Italy.


Disease Note

First report of Tomato spotted wilt virus infecting pepper in Ecuador

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Pepper (Capsicum annum L.), a member of the family Solanaceae, is native of South and Central America. In April 2015 mosaic and necrotic symptoms were observed on leaves and stems of pepper plants in the Imbabura province of Ecuador. Based on the type of symptoms, infection by a tospovirus was suspected. Symtomatic pepper samples were screened by TAS-ELISA using specific antibodies to Tomato spotted wilt virus (TSWV) (Agdia, USA), a member of the genus Tospovirus, family Bunyaviridae transmitted by thrips in a persistent and circulative manner. The presence of TSWV was ascertained by RT-PCR using total RNA isolated from ELISA-positive samples with the RNeasy Plant Mini kit (Qiagen, USA). DNA fragments of ca. 800 bp were amplified using degenerate universal tospovirus primers (Chu et al., 2001). A PCR product was custom-sequenced (Macrogen, South Korea) and the sequence was deposited in GenBank as accession No. KT590401. Sequence analysis (BioEdit v. 7.05) of the TSWV isolate from Ecuador with other TSWV isolates showed 97.3% and 95.3% maximum identity at the nucleotide and amino acid levels, respectively. A phylogenetic tree based on nucleotide sequences constructed using MEGA version 4.1 revealed a clustering with TSWV-Chrysanthemum from South Korea (KP772268), TSWV-Pepper from South Korea (HM581940), TSWV-Leonurus sibiricus from South Korea (KM076651) and TSWV-Tree tomato from Ecuador (KP772268). To the best of our knowledge this is the first report of the occurrence of TSWV on capsicum in Ecuador.