DISEASE NOTE

FIRST REPORT OF VERTICILLIUM WILT, CAUSED BY *VERTICILLIUM DAHLIAE*, ON *RUDBECKIA HIRTA* IN ITALY

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At the end of summer 2011, symptoms of vascular wilt and stunting were observed on *Rudbeckia hirta* (black-eyed Susan) plants grown in a private garden near Biella (northern Italy). Symptoms were yellowing of external leaves and brown or black streaks in the vascular tissue of roots, crowns, and leaves. *Verticillium dahliae* (Pegg and Brady, 2002) was consistently and readily isolated onto PDA from symptomatic vascular tissue disinfected in 1% NaClO. Dark microsclerotia, irregular in shape, and 37 to 102 µm, developed in association with hyaline hyphae after 10 days of growth at 23±1°C and 12 h photoperiod. Hyaline, elliptical, single-celled conidia measuring 3.0-7.5×2.3-3.6 µm (average 4.5×2.7 µm) developed on verticillate conidiophores. The ITS region of rDNA was amplified using primers ITS1/ITS4 and sequenced (Altschul *et al*., 1997). The 518 bp amplicon (GenBank accession No. JX276654) showed 98% homology with *V. dahliae*. Healthy, 20-day-old *R. hirta* plants were inoculated by roots immersion into a conidial suspension (1.0×10^6 CFU/ml). Non-inoculated plants served as controls. Plants were grown in pots (2 liter volume) in a steam disinfested potting mix (black and white peat), and maintained in a glasshouse at 20-22°C. First symptoms and vascular discolorations were observed 20 days after inoculation. Non-inoculated plants remained healthy. The pathogenicity tests were carried out twice. *V. dahliae* was consistently reisolated from inoculated plants. To our knowledge, this is the first report in Italy of *V. dahliae* on *R. hirta*.

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DISEASE NOTE

FIRST REPORT OF *COTTON LEAF CURL BUREWALA VIRUS* INFECTING *RICINUS COMMUNIS*

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Castor bean (*Ricinus communis*; family Euphorbiaceae) is cultivated for the production of oil and as an ornamental plant throughout tropical regions. Leaf samples from castor bean plants with leaf curl and vein thickening were collected from areas around Okara (Pakistan) in 2011. PCR amplification using diagnostic primers showed the presence of a begomovirus and subsequently the specific primer pair (BurNF 5'-CCATGGTTGTGGCAGTTGATTGACAGATAC-3'; BurNR 5'-CCATGGATT CACGCACAGGGGAACCC-3') was used to amplify and clone the whole genome of the virus. The complete nucleotide sequence was determined to be 2,759 nt (accession No. HE985227). Alignments showed the highest levels of nucleotide sequence identity (98.8%) with *Cotton leaf curl Burewala virus* (CLCuBuV; accession No. JF416947). The virus in castor beans lacks on intact C2 gene, as is typical of CLCuBuV in cotton (Amrao *et al*., 2010). An amplification product of *ca.* 1.4 kb was obtained in PCR with primers for betasatellites (Briddon *et al*., 2002) and the complete nucleotide sequence of a clone was determined to be 1373 nt (HE985228). The sequence showed 96.3% nucleotide sequence identity to the recombinant Cotton leaf curl Multan betasatellite (CLCuMB; JF502389). This is the first report of CLCuBuV and its betasatellite infecting castor bean, showing this plant species as an alternate host of the virus.

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