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First Report of Crown, Root and Stem Rot Caused by Binucleate *Rhizoctonia* AG-R on *Mandevilla sanderi* Hybrid in Italy

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Mandevilla sanderi (Hemsl.), native to South America, has lately become widespread as an ornamental plant in Italy for its attractive red, white, or pink flowers. In July 2017, a new disease was observed on 2-month-old *M. sanderi* hybrid grown in ~20,000 pots in a commercial nursery in eastern Sicily, Italy. Initial symptoms appeared as brownish lesions at the crown and basal stem, and root rot. Successively, mature lesions turned dark brown. As a consequence, infected plants were often wilted. These symptoms were observed from more than 5% of plants in the nursery. Small sections of diseased tissues were surface disinfected for 1 min in 1.5% sodium hypochlorite, rinsed in sterile water, and placed on potato dextrose agar (PDA, Oxoid) amended with 100 mg/liter of streptomycin sulfate (Sigma-Aldrich), and then incubated at $25 \pm 1^\circ\text{C}$. A *Rhizoctonia*-like fungus was consistently isolated from affected tissues of plants. Fungal colonies were initially white and turned brown with age, producing irregularly shaped, brown sclerotia after 10 days. Hyphal cells of 20 isolates were binucleate (BNR) when stained with 1% safranin O and 3% KOH and examined at 400 \times (Bandoni 1979). Hyphal anastomosis was not used because it does not always provide accurate results (Sharon et al. 2006). The anastomosis group (AG) of three representative isolates (Di3ARM4, Di3ARM5, and Di3ARM6) was determined by sequencing the rDNA internal transcribed spacer (ITS) region using the primers ITS-1F and ITS4 (Gardes and Bruns 1993). These isolates of BNR (GenBank accession nos. MG263521, MG263522, and MG263523, respectively) exhibited 99% homology with *Ceratobasidium* sp. AG-R tester isolates (DQ885781, HQ269817, HQ269823). Pathogenicity tests were conducted on potted, healthy, 3-month-old plants of *M. sanderi* hybrid. Twenty-four potted seedlings were inoculated by placing 1-cm² PDA plugs from 5-day-old culture of Di3ARM4 isolate near the base of the stem. The same number of plants was treated with PDA plugs as controls. Plants were kept at $25 \pm 1^\circ\text{C}$ and 95% relative humidity on a 12-h fluorescent light/dark regimen. After 10 days, crown and stem rots appeared on 50% of *M. sanderi* hybrid inoculated by tested isolate of AG-R. These rots were identical with the symptoms observed on the plants in the nursery. After 3 weeks, 20% of plants died and all the plants showed symptoms within 1 month. Control plants were asymptomatic. Binucleate *Rhizoctonia* were reisolated from diseased plants and confirmed to be AG-R as previously described. BNR AG-R was recently reported in Europe on *Cistus salvifolius*, *Butia capitata*, and *Polygala myrtifolia* plants (Aiello et al. 2017), whereas *R. solani* has been reported on *Mandevilla* sp. in Florida (Alfieri et al. 1984). To our knowledge, this is the first report of binucleate *Rhizoctonia* AG-R causing crown, root, and stem rot on *M. sanderi* hybrid.