



Phytophthora multivora causing leaf spot on rhododendrons in Argentina

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Rhododendron is a genus belonging to the family Ericaceae and contains over 1000 species commonly known as rhododendrons and azaleas (Dimitri, 1978). *Phytophthora multivora* is a species that was described in Western Australia in 2008 but before that it was misidentified as *P. citricola* (Scott *et al.*, 2009). During the early spring of 2011, leaf spot symptoms were observed on rhododendrons in two gardens in Tigre (northern Buenos Aires province) and in containers in a nursery near Buenos Aires city. Leaf spots were dark brown to almost black, visible on both sides near the leaf tips and margins, while tissue death continued down the leaf along the midrib (Fig. 1A). The veins under the diseased area of the leaves presented a reddish tint (Fig. 1B). Some leaves became brown and died, while in others the infection remained as spots on leaves.

A *Phytophthora* species was consistently isolated from symptom-bearing leaf tissues on PARBH medium (Jeffers & Martin, 1986). Hyphal tips reaching the surface of the medium were transferred onto potato dextrose agar (PDA) without inhibitors for purification and identification. Sporangia were produced abundantly in non-sterile soil extract. The majority of them were semi-papillate and ovoid, limoniform, ellipsoid or obpyriform (Fig. 2). Sporangia with two papillae were occasionally formed (Scott *et al.*, 2009). Chlamydospores were not observed. Isolates were homothallic with plerotic oospores, $22.9 \pm 1.9 \mu\text{m}$ and paragynous antheridia (Fig. 3). The optimum growth temperature was $25 \pm 1^\circ\text{C}$ on V8A (Scott *et al.*, 2009) and the maximum growth temperature was $32 \pm 1^\circ\text{C}$. The ITS was amplified and sequenced (GenBank Accession No. JQ812127) and showed that it was identical to *P. multivora*, ex-type CBS 124.094 (FJ237517) by BLAST analysis (Altschul *et al.*, 1997). The isolate (ARod 110) was deposited in the culture collection of the Phytopathology Chair of the Faculty of Agronomy of Buenos Aires (FAUBA).

Due to the difficulty of performing pathogenicity tests in the field, detached leaves of *Rhododendron* spp., *Camellia* sp. *Viburnum tinus* and *Photinia fraseri* were inoculated in the laboratory with the ARod 110

isolate. The tests were performed by inoculating five detached leaves with a 5 mm mycelium plug taken from a seven-day-old PDA culture. Controls were inoculated with PDA discs. Leaves were incubated at 20-22°C under 12h light/12h dark cycle. All the inoculated leaves, except *Camellia* sp., developed necrotic lesions seven days after inoculation. *P. multivora* was re-isolated from infected tissue. Symptoms were not detected on the controls. These characteristics conformed to those of *Phytophthora multivora* Scott & Jung. To our knowledge, this is the first record of *P. multivora* causing leaf spot on *Rhododendron* in Argentina and in Latin America, and it may be a potential pathogen for *Viburnum tinus* and *Photinia fraseri*.

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Figure 1



Figure 2



Figure 3

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