Diseases Caused by Fungi and Fungus-Like Organisms

First Report of Basal Rot Caused by *Sclerotinia sclerotiorum* on *Calibrachoa hybrida*

N. P. Borrelli,^{1,2} M. L. Papone,¹ M. V. Moreno,³ S. Stenglein,³ S. Stancanelli,¹ E. R. Wright,^{4,†} J. C. Hagiwara,¹ and M. C. Rivera^{1,4}

¹ Instituto de Floricultura, Instituto Nacional de Tecnología Agropecuaria, 1686, Buenos Aires, Argentina

² Cátedra de Protección Vegetal, Facultad de Agronomía Universidad de Buenos Aires, 1417, Buenos Aires, Argentina

³ Laboratorio de Biología Funcional y Biotecnología (BIOLAB) CICBA, INBIOTEC CONICET, 7300, Buenos Aires, Argentina

⁴ Cátedra de Fitopatología, Facultad de Agronomía Universidad de Buenos Aires, 1417, Buenos Aires, Argentina

Funding: Funding was provided by Agencia Nacional de Promoción Científica y Tecnológica (PICT 2016-2589), INTA140, and Universidad de Buenos Aires (UBACYT 20020160100066BA). Plant Dis. 104:3254, 2020; published online as <https://doi.org/10.1094/PDIS-04-20-0767-PDN>. Accepted for publication 8 July 2020.

Calibrachoa (Solanaceae) is a plant genus typical of open environments that occurs in both the Pampas and the high-altitude grasslands of southern Brazil (Fregonezi et al. 2012). Calibrachos (mini petunias) are hybrids developed from native germplasm, with increasing importance in the ornamental plant market. During October 2019, basal rot was observed in plants of *Calibrachoa hybrida* cv. INTA 06575 grown in a propagation greenhouse in Hurlingham, Buenos Aires. Symptoms included darkening and withering of leaves (incidence 10%). White mycelial mats containing sclerotia of 2 to 8 mm in diameter were evident on the base of the wilted plants and the nearby soil surface. Pieces of symptomatic stem tissues were surface disinfested in ethanol 70% for 1 min, sodium hypochlorite (20 g of Cl/liter) for 1 min, washed with distilled water for 1 min, and placed on potato dextrose agar (PDA) plates. The plates were incubated in the dark for 5 days at 23°C, and individual colonies were transferred to new plates of

PDA to obtain pure cultures. The colonies developed white cottony mycelium and a ring of large black sclerotia at the periphery of the plates. No teleomorph was observed. Based on the morphology of the colony, sclerotia, and microscopic observations, the pathogen was identified as *Sclerotinia sclerotiorum* (Lib.) de Bary (Mordue and Holliday 1976). A representative isolate was deposited in the Entomopathogenic Fungal Culture Collection of Argentina, CEPAVE, as CEP 785. Genomic DNA was extracted according to the method of Stenglein and Balatti (2006), and the internal transcribed spacer (ITS) region of rDNA was amplified with the primers ITS1/ITS4 (White et al. 1990). The resulting sequence was deposited in GenBank (accession no. MT177216), and the BLASTn search showed 100% of identity with those of *S. sclerotiorum* (e.g., MG931017, KX781301). The pathogenicity of the isolate was confirmed by placing 10-mm² agar plugs obtained from a 7-day-old culture grown on PDA on the stem bases of 12 healthy 2-month-old potted calibrachos. Those segments were wrapped with moistened sterilized cotton (Choi et al. 2017). Four plants with sterile PDA plugs served as controls. Each plant was placed inside a polyethylene bag, and all of them were kept in a growth chamber at 20°C. All the inoculated plants had their leaves discolored after 5 days and wilted after 13 days. *S. sclerotiorum* was consistently reisolated from rotten stem bases, thus fulfilling Koch's postulates. Control plants did not develop symptoms. To our knowledge, this is the first report of *S. sclerotiorum* causing basal rot on *C. hybrida* (Farr and Rossman 2020) in Argentina and in the world.

References:

- Choi, I. Y., et al. 2017. Plant Dis. 101:1953.
Farr, D. F., and Rossman, A. Y. 2020. Fungal Databases, Syst. Mycol. Microbiol. Lab., ARS, USDA. Retrieved April 6, 2020, from <https://nt.ars-grin.gov/fungaldatabases/>.
Fregonezi, J. N., et al. 2012. Bot. J. Linn. Soc. 171:2013.
Mordue, J. E. M., and Holliday, P. 1976. Descriptions of Pathogenic Fungi and Bacteria. No. 513. CMI, Kew, U.K.
Stenglein, S. A., and Balatti, P. 2006. Physiol. Mol. Plant Pathol. 68:158.
White, T. J., et al. 1990. Page 315 in: PCR Protocols: A Guide to Methods and Applications. Academic Press, San Diego, CA.

The author(s) declare no conflict of interest.

Keywords: *Sclerotinia sclerotiorum*, *Calibrachoa hybrida*, basal rot

[†]Indicates the corresponding author.
E-mail: wright@agro.uba.ar (E.R.W.)