

## Diseases Caused by Fungi and Fungus-Like Organisms

**First Report of *Oxalis conorrhiza* as Alternate Host of *Puccinia sorghi*, Causal Agent of Common Rust of Maize.** F. A. Guerra, Universidad Católica de Córdoba-Unidad Asociada a Conicet, CP:X5016DHK, Córdoba, Argentina; E. Brücher, R. L. De Rossi, M. C. Plazas, and G. D. Guerra, Facultad de Ciencias Agropecuarias, Universidad Católica de Córdoba, Argentina; and D. A. Ducasse, Facultad de Ciencias Agropecuarias, Universidad Católica de Córdoba, and IPAVE-CIAP Instituto Nacional de Tecnología Agropecuaria (INTA), Argentina. *Plant Dis.* 0:1, 2015; published online as <http://dx.doi.org/10.1094/PDIS-05-15-0506-PDN>. Accepted for publication 10 July 2015.

A high genetic variability has been recognized in *Puccinia sorghi* in Argentina (Gonzalez et al. 2011), although its origin remains unclear since the different reported alternate hosts (*Oxalis corniculata* L., *O. stricta* L., *O. bowiei* Herb. ex Lindl.) have never been detected with this disease in the region. In the spring of 2013 and 2014, the spermogonium and aecial stages of a *Puccinia* sp., were observed on *O. conorrhiza* Jacq. (syn. *O. cordobensis* R. Knuth) in Córdoba Province, in central Argentina. Those structures were found in 22 sampling sites, under natural infections, in a radius of 175 km of Córdoba City. *O. conorrhiza* is a bulbous perennial plant native to South America in the Oxalidaceae family, with a low, moderate growth habit. It is distributed in several provinces of central Argentina. *O. conorrhiza* can usually be found in alluvial flatlands, riverbanks, wasteland, roadsides, pastures, as well as farmlands. The confirmation of the *O. conorrhiza* species was carried out by the ACCOR Herbarium of the National University of Córdoba, Argentina. On approximately one-third of the leaves of each infected plant, ampulliform, subepidermal, amphigenous spermogonia, arranged in small clusters of

0.5 mm were observed. Spermogonia containing spermatia and receptive hyphae were golden yellow to orange yellow with abundant nectar exuding. Those in the center of the lesion are surrounded by annular groups of aecia, formed exclusively on the abaxial surface of the leaves. Aecia were orange, cylindrical short, with irregular opening at the apex. To determine the causal organism, aeciospores were inoculated in sweet corn plants. Fifty aeciospores from disease samples were suspended per ml of sterile water and sprayed on 5 sweet corn plants. As a negative control, 5 plants were inoculated with sterile water. All plants were kept in the dark at saturated humidity for 24 h at 24°C. After that, the plants were kept at 25 to 27°C and 70 to 80% humidity with a photoperiod of 16 h light. Seven days after inoculation, typical symptoms of corn common rust were observed: orange uredia with abundant urediospores production. At 21 days, typical teleutospores were observed. The rust matched the morphological characteristics of *P. sorghi* Schwein (Lindquist 1982). DNA from aeciospores from *O. conorrhiza* was extracted with NucleoSpin Plant II kit. A fragment from the 28S subunit regions rRNA gene was amplified and sequenced with primers Rust1 and F36 (Kropp et al. 1995). BLAST analysis of 28S sequence data (GenBank Accession Nos. HQ412650.1, GU057994.1, and AY114291.1) showed 99% identity to *P. sorghi*. To our knowledge, this is the first report of *P. sorghi* isolated from *O. conorrhiza* worldwide. The report contributes to an improved understanding of variability of *P. sorghi* which will be useful for exploring appropriate disease management, epidemiology, and breeding strategies.

*References:*

- Gonzalez, M. del P., et al. 2011. *Trop. Plant Pathol.* 36:195.  
Kropp, B. R., et al. 1995. *Weed Sci.* 43:467.  
Lindquist, J. C. 1982. Colección Científica Vol. 20. Royas de la República Argentina y Zonas Limítrofes, Instituto Nacional de Tecnología Agropecuaria, Buenos Aires, Argentina.