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Asian Soybean Rust: Incidence, Severity, and Morphological Characterization of *Phakopsora pachyrhizi* (Uredinia and Telia) in Argentina. M. A. Carmona and M. E. Gally, Facultad de Agronomía, UBA, Av. San Martín 4453 (1417) Argentina; and S. E. Lopez, Departamento de Biodiversidad y Biología Experimental, Facultad de Ciencias Exactas y Naturales. UBA, Argentina. Plant Dis. 88:000, 2004; published on-line as D-2004-0000-00N, 2004. Accepted for publication 8 September 2004.

Asian soybean rust (ASR), caused by *Phakopsora pachyrhizi*, is the most destructive disease of soybean (*Glycine max*) in many areas of the world. ASR was first detected in Argentina during 2002 in a limited area in the northern region of the country (1). During the 2004 growing season, *P. pachyrhizi* spread rapidly throughout most soybean growing areas of northwest and northeast Argentina. ASR was also found in some fields in Entre Ríos and Santa Fe provinces. In all areas, symptoms were expressed late in the 2004 season (growth stages R5.5 to R7) and yield losses were minimal. The objectives of this study were to quantify *P. pachyrhizi* infection in the canopy and to morphologically characterize the fungus from fields where it had been previously detected by PCR (2). Incidence (% of plants affected) and severity (% of leaf area affected, including chlorosis) were visually estimated for 10 plants arbitrarily collected (April 2004) from each of three fields located in Charata (Chacabuco), Chaco province (Sample 1, collected R6 stage), La Paloma (Moreno), Santiago del Estero province (Sample 2, R6 to R7) and Tolloche (Anta), Salta province (Sample 3, R5.5). Disease assessments were made for the lower, middle, and upper canopy from 15 leaves per plant. The number of pustules/cm² and uredinia/lesion were recorded from the undersides of central leaflets for each trifoliolate observed. Tissue sections were made to observe fructifications of *P. pachyrhizi*. Incidence of affected plants was 100 % in all fields. Disease severity for Sample 1 was 45% (range 30 to 60%) , 20% (10 to 30%) and 10% (5 to 20%), for the lower, middle, upper canopy, respectively; for Sample 2: 60% (30 to 80%), 40% (25 to 50%), and 25% (15 to 40%); and for Sample 3: 25% (10 to 50%), 15% (10 to 20%), and 10% (5 to 15%). The number of pustules/cm² for Sample 1 was 156/cm² (range 88 to 200); Sample 2: 172 (128 to 232); and Sample 3: 120 (72 to 232). The number of uredinia/lesion for Sample 1 was 6/lesion (range 1 to 15); Sample 2: 5.5 (1 to 13), and Sample 3: 2.8 (1 to 5). Two spore types were commonly observed: urediniospores and teliospores. Telia were found on infected leaves mixed with uredinia in every sample. Urediniospores measured 16 to 22 μ m (mean 18.5 μ m) x 25 to 30 μ m (mean 27 μ m). Teliospores measured 8 to 11 μ m (mean 9 μ m) x 19 to 27 μ m-long (mean 23.8 μ m). Spores sizes are in the range described by Ono et al. (3). This is believed to be the first report of epidemiological and morphological characterization of ASR in Argentina and the first report of the telial stage of *P. pachyrhizi* on soybean in South America.

References: (1) R. L. Rossi. Plant Dis 87:102, 2003. (2) SINAVIMO, Sistema Nacional Argentino de Vigilancia y Monitoreo de plagas. Roya de la soja: Resultados de la campaña 2003-2004. On-line publication. SENASA, 2004. (3) Y. Ono et al. Mycol. Res. 96: 825-850, 1992.