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Disease Note

Diseases Caused by Fungi and Fungus-Like Organisms

***Bipolaris oryzae* Causing Brown Leaf Spot on *Echinochloa crus-galli* in Southern Brazil.** T. E. Kaspary,¹ C. Bellé,^{2,†} C. A. G. Rigon,³ L. Cutti,³ G. Casarotto,³ M. Gallon,³ and A. Merotto Junior³ ¹Instituto Nacional de Investigación Agropecuaria, La Estanzuela, 70000, Colonia, Uruguay; ²Departamento de Solos, Centro de Ciências Rurais, Universidade Federal de Santa Maria, 97105-900, Santa Maria, RS, Brazil; and ³Departamento de Fitotecnia, Universidade Federal do Rio Grande do Sul, 91540-000, Porto Alegre, RS, Brazil. T. E. Kaspary and C. Bellé contributed equally to this work. Plant Dis. 0:1, 2019; published online as <https://doi.org/10.1094/PDIS-11-18-2057-PDN>. Accepted for publication 31 December 2018.

Barnyardgrass (*Echinochloa crus-galli* [L.] P. Beauv.), a member of the family Poaceae, is an important weed in rice production with widespread herbicide resistance (Heap 2018). In addition to yield loss from competition, barnyardgrass may be an alternative host of pests and diseases of rice. In January 2018, symptoms of leaf spots were observed on *E. crus-galli* in Porto Alegre, Rio Grande do Sul state, Brazil. Diseased plants exhibited leaves with brown, often small, elliptical, and necrotic spots. Lesions were surrounded by a diffuse chlorotic margin, and larger lesions had tan centers. The incidence of the disease was up to 85%, and the severity ranged from 50 to 75%. Leaf lesion samples were surface disinfested (70% ethanol for 45 s, 1% NaClO for 1.5 min, rinsed three times in sterile water, and dried on sterilized filter paper), placed on potato dextrose agar (PDA) medium, and incubated at 25°C. Colonies on PDA were initially gray, with unevenly distributed mycelium resulting in a fluffy appearance, and becoming dark gray with age. Conidiophores were brown, straight, cylindrical, and multiseptate. Conidia were brown, curved, ellipsoidal tapering to rounded ends, and measured 60.1 to 85.4 µm (length) × 20.2 to 31.0 µm (width), mean ± SD = 75.2 ± 3.5 × 23.5 ± 1.2 µm, length/width ratio = 3.2, with 4 to 10 septa ($n = 100$). To further confirm the identification, the internal transcribed spacer (ITS), glycerol-3-phosphate dehydrogenase (GPD), and translation elongation factor 1-alpha (EF1-α) genes were amplified with polymerase chain reaction, as described

by Manamgoda et al. (2014). The obtained DNA sequences were submitted to GenBank (accession nos.: ITS, MH920540; GPD, MH921828; and EF1-α, MH921829). BLAST searches indicated 99 to 100% identity with sequences of *Bipolaris oryzae* (Breda de Haan) Shoemaker (ITS, MG448606, JF693908, and MH857291; GPD, MG458233, LT715776, and LT715776; and EF1-α, KT163402, MF431724, and MG458234). To confirm Koch's postulates of the *B. oryzae* isolate, six plants of *E. crus-galli* were inoculated with a suspension of 1×10^6 conidia/ml. A set of six noninoculated plants was considered as controls, with only distilled water applied. All plants were enclosed in plastic bags and incubated in a growth chamber at $25 \pm 2^\circ\text{C}$ for 24 h with a 12-h photoperiod. At the end of the 24-h period, plastic bags were removed. At 5 to 6 days after the inoculation, leaves displayed symptoms similar to those observed in the field, whereas controls remained symptomless. A fungus was reisolated from inoculated leaves that had the same morphological and molecular traits as the initial isolates. Based on the morphological characteristics and sequence analysis, the fungus was identified as *B. oryzae* (Manamgoda et al. 2014). *B. oryzae* has previously been reported from other hosts in Brazil including *Oryza sativa*, *Triticum aestivum*, and *Brachypodium distachyon* (Kaspary et al. 2018; Manamgoda et al. 2014). Rice plants (cultivars BRS Querência and Puita Inta CL) were also inoculated with an isolate of *B. oryzae* from *E. crus-galli* using the same methods as described above. Brown leaf spot symptoms developed, indicating that this isolate is pathogenic on rice. The current report highlights the relevance of *E. crus-galli* as a host for *B. oryzae* that could be important for studies about the pathogen-host interaction in cereal crops. To our knowledge, this is the first report of *B. oryzae* causing leaf spot of *E. crus-galli* in Brazil.

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The author(s) declare no conflict of interest.

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