Diseases Caused by Fungi and Fungus-Like Organisms

First Report of Leaf Spot and Stem Canker on Watermelon Caused by *Paramyrothecium foliicola* in Mexico

I. Cruz-Lachica, Luis A. Osuna-García, I. Márquez-Zequera, J. M. Tovar-Pedraza and R. S. García-Estrada[†]

Centro de Investigación en Alimentación y Desarrollo, A.C. Culiacán, 80110, México

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Watermelon is an important vegetable crop in Mexico and produced on 358,105 ha, with nearly 1.5×10^6 t. In September 2019, brown, irregular shape to round lesions with concentric rings were observed on the leaves and stems of watermelon plants in Sonora State. The surface of the lesions contained abundant cup-shaped sporodochia covered by masses of olive-green to black conidia. Edge sections of symptomatic tissues were cut from the leaves, disinfected in 70% ethanol for 1 min, and subsequently washed twice with distilled water. Disinfected tissue samples were transferred to PDA medium and incubated at 27°C for 15 days. White colonies were observed with sporodochia arranged in concentric rings with a characteristic of greenish-black masses of conidia. Spore masses stained with lactophenol blue were examined microscopically. Conidia were nonseptate and rod-shaped with rounded ends that measured $6.65 \pm 0.54 \times 1.56 \pm 0.25$ μm ($n = 100$). The characteristics of the fungus were similar to those reported for *Paramyrothecium foliicola* (Rennberger and Keinath 2020). Molecular identification was performed on a representative isolate. RNA polymerase II second largest subunit (RPB2), calmodulin (CmdA), and β -tubulin (B-tub) genes were amplified and sequenced with the primer sets RPB2-5F2/RPB2-7cR,

CAL228F/CAL737R, and Bt2a/Bt2b, respectively. These sequences were submitted to GenBank with the accession numbers MW116070 for RPB2, MW116071 for CmdA, and MW116072 for B-tub. BLASTn analysis of the sequences demonstrated 99.34 to 100% identity with *P. foliicola* (accession nos. MN398043, MN593713, and MN398138). Koch's postulates were verified on 15-day-old watermelon seedlings and mature fruits. One point of each of 10 watermelon seedlings and six points of each of five fruits were marked for inoculation. A plug of mycelium obtained from a monospore pure culture (grown for 15 days in PDA) was applied to each point without wounds. PDA medium only was included as the control. The pathogenicity tests were repeated twice. Treated seedlings and fruit were kept in plastic bags at 27°C for 15 days. The first symptoms appeared 4 days after inoculation on the seedlings and 3 days after inoculation on the fruits. At the end of the test, the symptoms were similar to those observed initially in the field. The pathogen was reisolated from lesion edges, and the morphological characteristics of the pathogen were determined to correspond with those of the inoculated fungus. Control seedlings and fruits remained healthy. *P. foliicola* has been reported to cause leaf spot disease on wild rocket and basil (Matić et al. 2019) and, recently, on watermelon in South Carolina (Rennberger and Keinath 2020). To the best of our knowledge, this report is the first to describe *P. foliicola* causing leaf spot and stem canker on watermelon in Mexico.

References:

Matić, S., et al. 2019. Phytopathology 109:1053.
Rennberger, G., and Keinath, A. P. 2020. Plant Dis. 104:2242.

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[†]Indicates the corresponding author.
R. S. García-Estrada; rsgarcia@ciad.mx