Diseases Caused by Fungi and Fungus-Like Organisms

First Report of Leaf Spot Disease on *Cinnamomum camphora* (Camphor Tree) Caused by *Epicoccum poaeicola* in China

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Funding: This research was supported by Educational Commission of Jiangxi Province of China (GJJ170974 and GJJ190199) and Innovative research program for graduates of Jiangxi Agricultural University (NDYC2019-S010). Plant Dis. 106:1059, 2022; published online as <https://doi.org/10.1094/PDIS-04-21-0683-PDN>. Accepted for publication 15 September 2021.

As an important industrial, pharmaceutical, and evergreen shade tree (Singh and Jawaid 2012), the camphor tree (*Cinnamomum camphora*) has been coppiced in Jiangxi Province, China. From 2017 to 2020, we noticed many camphor trees with leaf spots, with an incidence estimated at 50 to 75%, which could severely inhibit leaf growth and reduce their biomass. A dark-green circle with a watery spot appeared on the infected leaves at the initial stage, and necrosis with formation of shot-spots surrounded by yellow halos occurred. Five leaves with typical symptoms were sampled and washed with tap water for ~15 min. Isolation and morphological analysis were performed following the method of Bao et al. (2019). Among 61 fungal isolates, 49 showed the same cultural characteristics. Colonies on PDA were villous and regular, and the reverse was scarlet at the edge of the colony, which was ~8.75 cm after 7 days of inoculation. Chlamydospores were aseptate, dark brown, smooth, in chains or solitary, ellipsoidal to ovoid, 4.8 to 9.6 × 4.8 to 11.1 μm. The pycnidia were produced on PDA and varied from 47.4 to 85.8 μm (mean 60.2 μm) × 38.6 to 66.8 μm (mean 49.7 μm) (*n* = 17). Conidia were hyaline, unicellular, elliptical to ovoid, 4.3 to 6.4 μm (mean 5.1 μm) × 2.3 to 3.3 μm (mean 2.8 μm) (*n* = 52). Pathogenicity tests of isolate XW-9 were carried out in the field. Ten

leaves were wounded with a sterilized insect needle and inoculated with mycelium plugs (7-mm diameter). Noncolonized PDA plugs served as the negative control. In addition, conidial suspensions (10⁵ conidia/ml) of isolate XW-9 were sprayed on surface-sterilized leaves, with a further 10 leaves being sprayed with sterile water as the control. Symptoms described in this study appeared in 100% of the mycelium-inoculated leaves and more than 80% of the conidium-inoculated leaves after 7 days postinoculation. No symptoms were seen in the controls. Three days after inoculation, brown spots resembling those observed in the field developed on the inoculated leaves, and some lesions turned into shot holes on the infected leaves. However, no symptoms were observed on the controls. The fungus was reisolated from the margins of the leaf spots and labeled P-XW-9A. The gene regions for ITS, LSU, *tub2*, *RPB2*, and *ACT* of isolates XW-9 and P-XW-9A were amplified and sequenced. The sequences of rDNA-ITS, LSU, *tub2*, *RPB2*, and *ACT* of XW-9 were GenBank MW142397, MW130844, MW165322, MW446945, and MW165324, respectively, and those of P-XW-9A were GenBank MW142398, MW130845, MW165323, MW446946, and MW165325, respectively (Aveskamp et al. 2009; Hou et al. 2020; Lumbsch et al. 2000). Phylogenetic analysis using concatenated sequences of ITS, LSU, *RPB2*, and *tub2* showed that isolates XW-9 and P-XW-9A formed a single clade with the reference strain of *Epicoccum poaeicola* CBS 987.95. Thus, XW-9 was identified as *E. poaeicola* based on its morphological and molecular characteristics. Significantly, the recovered isolate P-XW-9A also aligned with *E. poaeicola*, fulfilling the criteria for Koch's postulates. *E. poaeicola* was only reported as a fungal pathogen of *Phyllostachys viridis* in China (Liu et al. 2020). To our knowledge, this is the first report of leaf spot disease on camphor trees caused by *E. poaeicola* in China, and our findings will be useful for its management.

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The author(s) declare no conflict of interest.

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Keywords: leaf spot, *Cinnamomum camphora*, *Epicoccum poaeicola*

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