First report of leaf blight on peanut caused by *Nigrospora sphaerica* in China

Xiaoyu Liu¹ · Fengyu Yu¹ · Dengqiang Fu¹ · Weibo Yang¹

Received: 24 December 2019 / Accepted: 1 April 2020 / Published online: 20 April 2020
© Società Italiana di Patologia Vegetale (S.I.Pa.V.) 2020

Keywords *Nigrospora sphaerica* · Leaf blight on peanut · China

Nigrospora sphaerica (Sacc.) E.W. Mason is a seriously damaging pathogen causing leaf blight on a few plant species. In July 2018, a leaf blight of unknown etiology was observed on peanut (*Arachis hypogaea* Linn.) leaves in Wenchang, China. Initial symptoms included circular brown spots, 2 mm in diameter, surrounded by yellow haloes, gradually developing into circular or elliptical necroses of up to 6 mm in diameter. Symptomatic tissues were surface-sterilized with 70% ethanol for 30 s and 0.1% HgCl₂ for 60 s, washed three times in sterile water and put on PDA at 25 °C. After 5 days at 25 ± 2 °C, the fungus developed flat, white and light-to-dark grey colonies, with white-to-dark brown septate branched hyphae. Conidia typical for *Nigrospora* were black, one-celled (10.2–14.6 µm), and borne singly at the tips of conidiophores. The internal transcribed spacer (ITS) region of the rDNA was sequenced using ITS1/ITS4 primers and accession No. MK482388 was 99% identical to *N. sphaerica* accession Nos. MG669225.1 and HQ608063.1. For pathogenicity testing, a conidial suspension (10⁶ conidia ml⁻¹) from a 7-day-old culture of *N. sphaerica* was used to inoculate ten leaves of yue-you 7 peanut cultivar, followed by incubation in a controlled environment chamber at 25 °C with 70–80% humidity. As a control, ten leaves of yue-you 7 peanut cultivar were

inoculated with sterile distilled water. Two weeks after inoculation, symptoms were observed only on the leaves inoculated with conidia and the fungus was consistently re-isolated. *Nigrospora sphaerica* was observed on blueberry in Argentina, sugarcane in China, and tea in India (Cui et al. 2018; Dutta et al. 2015). To our knowledge, this is the first report of *N. sphaerica* on peanut.

Acknowledgments This study was supported by the Key Research and Development Project in Hainan Province (ZDYF2018100).

References

- Cui YP, Peng AT, Wu B, Lin JF, Song XB, Li ZL (2018) First report of *Nigrospora* leaf blight on sugarcane caused by *Nigrospora sphaerica* in China. Plant Dis 102(4):824. <https://doi.org/10.1094/PDIS-07-17-1060-PDN>
- Dutta J, Gupta S, Thakur D, Handique PJ (2015) First report of *Nigrospora* leaf blight on tea caused by *Nigrospora sphaerica* in India. Plant Dis 99(3):417. <https://doi.org/10.1094/PDIS-02-14-0196-PDN>

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Xiaoyu Liu
liuxiaoyu06120210@163.com

¹ Coconut Research Institute of Chinese Academy of Tropical Agricultural Sciences/ Hainan Peanut Research Station Of National Peanut Engineering Technology Research Center, Wenchang 571339, China