



First report of sheath rot caused by *Fusarium proliferatum* on Pisang Awak Banana (*Musa* ABB) in China

Sui-Ping Huang^{1,2} · Ji-Guang Wei¹ · Tang-Xun Guo² · Qi-Li Li² · Li-Hua Tang² · Jian-You Mo² · Ji-Feng Wei³ · Xiao-Bing Yang⁴

Received: 19 November 2018 / Accepted: 20 May 2019 / Published online: 20 June 2019
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Keywords Pisang Awak banana · Sheath rot · *Fusarium proliferatum*

Pisang Awak banana (*Musa* ABB) is the second largest banana variety cultivated in China. A severe sheath disease of Pisang Awak banana with disease incidence of over 90% was observed in a plantation in Du'an County, Guangxi, China in 2017. Black punctiform lesions first appeared on the sheaths connecting petioles to stems. As lesions expanded, the leaves wilted and broke off near the base, causing the sheaths to die and rot away. Symptomatic plants had smaller stems and reduced yields. A fungus was consistently isolated from the surface-sterilized sheath samples. The isolate XJSF had abundant aerial white mycelia on potato dextrose agar (PDA). Microconidia on PDA were aseptate, club shaped, 4.25 to 8.57 × 1.7 to 3.21 μm (average 5.90 × 2.34 μm). Macroconidia on carnation leaf agar were slender, almost straight, 3–4 septate, 32.9 to 57.6 × 2.51 to 4.55 μm (average 44.53 × 3.57 μm). The internal transcribed spacer (ITS) of the ribosomal DNA sequences

(GenBank accession number MF083155) and the translation elongation factor 1-alpha (EF-1α) gene sequences (MF083156) (O'Donnell et al. 1998) were deposited in GenBank. BlastN searches showed 100% and 99% identity to *F. proliferatum* strains U34558 and AF160280.1, respectively. The fungus was therefore identified as *Fusarium proliferatum*, based on morphological (Leslie and Summerell 2006) and ITS and EF-1α sequences analysis. Pathogenicity tests were performed on the sheaths of healthy Pisang Awak banana plantlets with a conidial suspension (1 × 10⁶ conidia/ml) of the XJSF isolate according to the method of Huang et al. (2017). After three months, the whole sheaths of inoculated plants were rotted while only slight scars formed on the control plants. Fungi re-isolated from the lesions were identified as *F. proliferatum* based on morphology. To our knowledge, this is the first report of sheath rot on banana (*Musa* ABB) caused by *F. proliferatum* world-wide.

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s42161-019-00329-z>) contains supplementary material, which is available to authorized users.

✉ Jian-You Mo
mojianyou@gxaas.net

Sui-Ping Huang
361566787@qq.com

- ¹ College of Agriculture, Guangxi University, Nanning 530004, Guangxi, China
- ² Plant Protection Research Institute, Guangxi Academy of Agricultural Sciences, Nanning 530007, Guangxi, China
- ³ Department of Scientific Research Management, Guangxi College of Education, Nanning 530023, Guangxi, China
- ⁴ Iowa State University, Ames, IA 50011, USA

Acknowledgements This work was financed by the National Key R&D Program of China (Grant No. 2016YFC1202100), Science and Technology Major Project of Guangxi (Grant No. AA18118028) and Planned Project of Scientific Research and Technology Development in Qingxiu District, Nanning City (Award Number 2017040).

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Research involving human participants and/or animals The authors declare that no human participants and animals were involved in this study.

Informed consent Informed consent was obtained from all individual participants included in the study.

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