



# First report of *Epicoccum latusicollum* causing root rot on *Nicotiana tabacum* in China

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Tobacco is the important commercial crop in Yunnan province (China). In May 2019, a root rot disease was observed on 10–15% of tobacco plants in Dehong, Yunnan, China. The symptomatic plants that showed brown to black rot on tobacco shank and root were collected. The infected tissues from the symptomatic roots were incubated on PDA after surface sterilization at 25 °C for about 7 days. Three isolates were recovered from diseased plants and the morphological characteristics of the fungal isolates were studied. Fungal colonies on PDA were villiform and brownish; conidia ellipsoidal, aseptate, ( $4.3 \pm 0.7 \times 2.4 \pm 0.5 \mu\text{m}$ ), pycnidia brown ( $128 \pm 40 \mu\text{m}$ ). Isolated fungus was identified as *Epicoccum* species. The identity of isolate was confirmed by sequence analysis of rDNA-ITS, TUB, and RPB2 of strain HH12 (Accession Nos. MN622807, MN623288, and MN623287) using the primers ITS1/ITS4, Btub2Fd/Btub4Rd and RPB2-5F/RPB2-7cR, respectively (White et al. 1990; Woudenberg et al. 2009; Reeb et al. 2004). The resulting sequences were aligned with sequences retrieved from GenBank and the resulting sequences shared 100% similarity with that of *Epicoccum latusicollum* (MH824373 and MH824403), while the RPB2 gene sequences were 99% identity to *E. latusicollum* Supplementary Fig. 1. Pathogenicity tests were conducted at 25 °C by inoculating fungus-containing PDA discs on the stems of five 45-day-old plants and three control plants inoculated with sterile PDA discs. Only the inoculated stems became brown necrotic after 5 days and showed typical brown

necrosis symptoms 10 days post inoculation Supplementary Fig. 2. The experiments were repeated three times and obtained similar results. Morpho-molecular identity of re-isolated fungus corresponded to *E. latusicollum*. To the best of our knowledge, this is the first report of *E. latusicollum* causing root rot on *Nicotiana tabacum* in China. The identification of *E. latusicollum* on *Nicotiana tabacum* could provide relevant information for root rot prevention in tobacco leaf production.

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## References

- Reeb V, Lutzoni F, Roux C (2004) Contribution of RPB2 to multilocus phylogenetic studies of the euascomycetes (Pezizomycotina, fungi) with special emphasis on the lichen-forming Acarosporaceae and evolution of polyspory. *Molec Phylogenet Evolut* 32:1036–1060
- White TJ, Innis MA, Gelfand DH, Sninsky JJ (1990) PCR protocols: a guide to methods and applications. Academic Press, San Diego
- Woudenberg JHC, Aveskamp MM, de Gruyter J, Spiers AG, Crous PW (2009) Multiple *Didymella* teleomorphs are linked to the *Phoma* clematidina morphotype. *Persoonia* 22:56–62

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