



## First report of *Lasiodiplodia pseudotheobromae* causing fruit rot of persimmon in Brazil

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Persimmon (*Diospyros kaki*) is widely cultivated in Brazil, mainly in the south and southeast regions of the country. Currently, persimmon in Brazil covers an area of 8,300 ha, which produces 182,000 tonnes of fruit. During 2015, irregular brown and soft lesions located under and surrounding the fruit calyx (stem-end) were observed in persimmon fruit collected in an experimental orchard in Piracicaba, Sao Paulo State, Brazil (Fig. 1). Disease incidence in sampled fruit (n=50) was around 10%. Lesions expanded rapidly and turned dark brown to black producing apparent and abundant white to grey mycelium on fruit postharvest.

Small pieces (2 mm) from the periphery of the lesion of diseased fruit were surface sterilised before transferred to potato dextrose agar (PDA). The plates were incubated at 25°C for two weeks. Colonies developed compact mycelium, initially white, becoming dark grey (Fig. 2). A plug of mycelium was transferred to 2% water agar (WA) containing sterilised pine needles to obtain pycnidia and conidia. Four weeks after incubation at 25°C pycnidia and conidia were observed on the pine needles. Conidia were ellipsoidal, initially hyaline, unicellular, becoming dark brown, and developing a thick wall, a central septum, and longitudinal striations. Conidia measured 25-31 µm long and 11-15 µm wide (n= 50). The colony and conidial morphology matched that of *Lasiodiplodia*. An isolate was purified by monosporic culture obtained from the germination of conidia placed onto WA.

Sequences of the rDNA ITS region, β-tubulin (BT), and translation-elongation factor 1α (EF-1α) gene were obtained using the primers ITS1/ITS4 (White *et al.*, 1990), Bt2a/Bt2b (Glass & Donaldson, 1995) and EF-F and EF-R (de Souza *et al.*, 2012) from a representative isolate (C1). The sequences were submitted to GenBank (ITS-KX058618, BT-KX058619, and EF-1α-KX711886). A BLAST search in GenBank showed

100% nucleotide identity with the sequences of ITS (NR111264) and BT (EU673111), and 99% identity with EF-1α (EF622057) from *Lasiodiplodia pseudotheobromae* A.J.L. Phillips, Alves & Crous.

Pathogenicity tests were done by inoculating six detached persimmon fruit (cv. Rama Forte). Mycelium discs of 8 mm were deposited in the middle portion of wounded fruit. Six fruit were inoculated with discs of sterile PDA as a control. Fruit were incubated in a moist chamber at 25°C. After eight days, the isolate caused lesions in all fruit. The fruit were covered by dark grey mycelia (Fig. 3) and the fungus was reisolated, fulfilling Koch's postulates. The *Lasiodiplodia* genus is considered to be cosmopolitan affecting several hosts such as avocado, grape, mango and papaya. This is the first report of *Lasiodiplodia pseudotheobromae* causing postharvest fruit rot of persimmon.

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Figure 1



Figure 2



Figure 3

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