

First report of *Guignardia endophyllicola* leaf blight on *Cymbidium* (Orchidaceae) in Brazil

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Abstract. Leaf blight caused by *Guignardia endophyllicola* is reported for the first time on *Cymbidium* (Orchidaceae) in Brazil.

Hybrids of *Cymbidium* are among the most important commercial orchids cultivated in Brazil. In June 2006, leaves of an undetermined *Cymbidium* hybrid showing severe necrotic symptoms were observed in an orchid nursery in Viçosa (State of Minas Gerais, Brazil). Leaf lesions initially were punctiform abaxially becoming circular, coalescing and leading to extensive necrosis. No fungal structures were found on diseased tissues; however, culturing of surface sterilised fragments of such necrotic tissue in V8 juice agar repeatedly resulted in pure dense blackish fungal cultures. These cultures later sporulated in culture and were further examined.

The fungus had the following morphology (VIC 30428): pseudothecia intermixed among pycnidia, unilocular, subglobose, solitary or in groups, black, with a stromatic wall composed of several layers of compressed dark brown cells; asci bitunicate (Fig. 1), subclavate to cylindrical, eight-spored; ascospores biserial, 13–17 × 3–5 µm, one-celled, fusiform-elliptical, broad in middle, hyaline, with a distinct mucilaginous appendages at both ends; pycnidia intermixed among pseudothecia, variable in shape, black, ostiolate; conidia one-celled, hyaline, obovate to pyriform, 9–14 × 5–7 µm, surrounded by a thick mucilaginous coat, with a hyaline apical appendage, 6–12 µm long. Material examined: VIC 30428, dried culture, Campus UFV, Viçosa, State of Minas Gerais, Brazil, M. Silva & O.L. Pereira, 10 June 2006.

The fungus fitted well within the description of *Guignardia endophyllicola*, a species previously known only as an endophyte of ericaceous plants (Okane *et al.* 2001). Nevertheless, its anamorph, *Phyllosticta capitalensis*, is a well-known fungal pathogen of the family Orchidaceae (Cash and Watson 1955; van der Aa and Vanev 2002). Mendes *et al.* (1998) did not record the occurrence of *P. capitalensis* in Brazil. However, in this country, *P. capitalensis* has been previously reported on the orchid genus *Stanhopea*, host in which the type species was described (Nag Raj 1993; van der Aa and Vanev 2002).

Mycelial plugs containing reproductive structures were taken from a 10-day-old culture growing on V8 juice agar and placed on healthy leaves of hybrid *Cymbidium*. The inoculated leaves were kept inside moistened plastic bags for 2 days and then in a greenhouse at 25°C. After 7 days, symptoms similar to those



Fig. 1. *Guignardia endophyllicola* on *Cymbidium* (VIC 30428). Bitunicate asci bearing one-celled, biserial, hyaline ascospores. Bar = 10 µm.

previously observed were detected (Fig. 2) and the fungus was reisolated from infected parts. The control leaves, on which V8 juice agar plugs were deposited, remained healthy.



Fig. 2. Necrotic (blight) symptoms on hybrid *Cymbidium* leaves inoculated with *G. endophyllicola*.

Despite the fact that *P. capitalensis* is regarded to be distributed all over the world on Orchidaceae (van der Aa 1973; Uchida 1994), this is the first report of this fungal species causing leaf blight on *Cymbidium* in Brazil and the first worldwide report of its teleomorph (*G. endophyllicola*) being associated with this orchid disease.

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References

- van der Aa HA (1973) Studies in *Phyllosticta* I. *Studies in Mycology* **5**, 1–110.
- van der Aa HA, Vanev S (2002) 'A revision of the species described in *Phyllosticta*.' (CBS: Utrecht)
- Cash EK, Watson AJ (1955) Some fungi on Orchidaceae. *Mycologia* **47**, 729–747. doi: 10.2307/3755582
- Mendes MAS, Silva VL, Dianese JC, Ferreira MASV, Santos CEN, Gomes Neto E, Urban AF, Castro C (1998) 'Fungos em Plantas no Brasil.' (Embrapa: Brasília)
- Nag Raj TR (1993) 'Coelomycetous anamorphs with appendage-bearing conidia.' (Mycologue Publications: Ontario)
- Okane I, Nakagiri A, Ito T (2001) Identity of *Guignardia* sp. inhabiting ericaceous plants. *Canadian Journal of Botany* **79**, 101–109. doi: 10.1139/cjb-79-1-101
- Uchida JY (1994) Diseases of orchids in Hawaii. *Plant Disease* **78**, 220–224.

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