

# *Bellulicauda dialii* on *Dialium guianense* (Leguminosae) in Brazil

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## ABSTRACT

This is the first report of *Bellulicauda dialii* on *Dialium guianense* leaves, and the second record of this fungus, previously known only from Africa (Sierra Leone).

**Additional keywords:** Coelomycetes, Caesalpinioideae, Fabaceae, forest pathology.

## RESUMO

### *Bellulicauda dialii* em *Dialium guianense* (Leguminosae) no Brasil

*Bellulicauda dialii* é relatado pela primeira vez em folhas de *Dialium guianense*. Trata-se do segundo registro dessa espécie fúngica, anteriormente conhecida apenas do Continente Africano (Serra Leoa).

**Palavras-chave adicionais:** Coelomicetos, Caesalpinioideae, Fabaceae, patologia florestal.

*Dialium guianense* (Aublet) Sandw. [Leguminosae (Caesalpinioideae)], is a native tree to Central and South America (Lewis, 1987; Lewis & Owen, 1989). The wood of this species is used for multiple purposes and the fruits are consumed mainly for their fleshy edible mesocarp and commonly found for sale in street markets in some cities in the states of Bahia and Espírito Santo (Lorenzi, 1998). In February 2002, during a survey of the mycobiota associated with some members of Leguminosae in the Parque Estadual do Rio Doce (PERD), municipality of Marliéria, state of Minas Gerais, a foliicolous fungus was observed attacking *D. guianense* at Lagoa dos Patos (Trilha da Mumbaça). Infected leaves were collected, photographed and dried for deposit in herbarium. Isolation from fresh material was attempted on VBA medium (Pereira *et al.*, 2003) both directly and indirectly followed by incubation in the dark for 48 h at 25 °C and later submission to 12 h near ultra violet radiation/ 12 h dark (Leach, 1962) in plastic petri dishes at 25 °C. Observations and measurements were made from dried herbarium specimens. Sections were cut using a freezing microtome (Leitz Kryomat), adjusted to a thickness of 30 µm, mounted in lactophenol, and observed and photographed with a light microscope (Olympus BX 50).

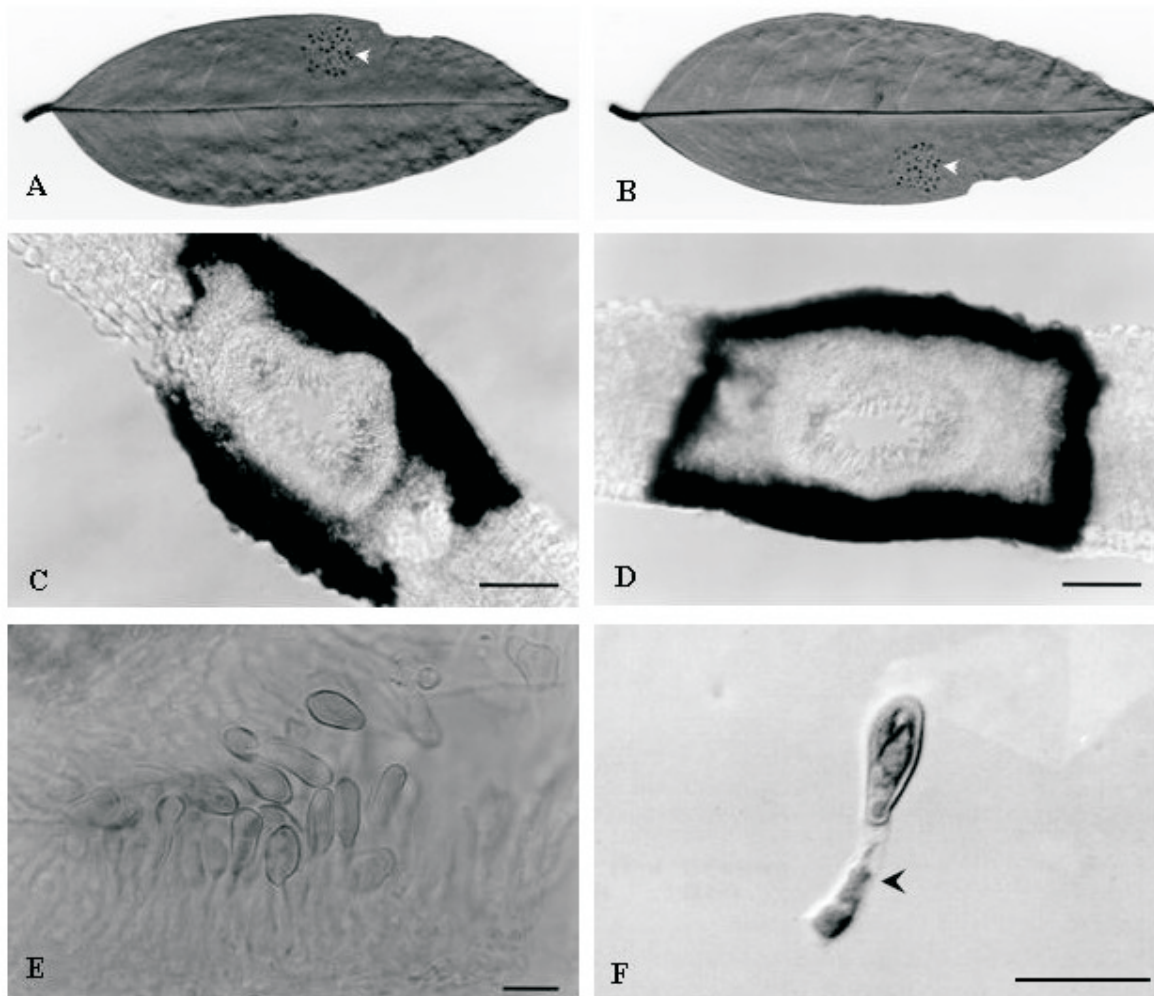
The fungus was identified as *Bellulicauda dialii* (Sydow) Sutton, which had been reported on *D. angolense* Oliver and *D. guineense* Willd only from Sierra Leone (Africa) (Sutton, 1980). The genus *Bellulicauda* Sutton was based on *Diachorella dialii* Sydow, and then excluded from the genus *Diachorella* (Sutton, 1967). The genus is still monotypic (Nag Raj, 1993).

Morphological features of the fungus (VIC 26563):

**Lesions** poorly delimited, amphigenous, consisting of groups of conidiomatal stromatic clypei (Figure 1A, B), with no sign of necrotic tissue surrounding the fruit-bodies, similar to small tar-spots caused by *Phyllachora* spp. on some leguminous hosts, **Mycelium** immersed, branched, septate, pale brown, 3.5-5.0 µm diam, **Conidiomata** stromatic, amphigenous, scattered, discrete, immersed, roughly oval, gregarious, 350-700 X 175-225 µm diam. (Figure 1C). **Locule** irregularly convoluted, ostiolate, **Conidiomata wall** with “textura globulosa”, consisting of dark brown thick-walled cells, forming a black stroma, 25-50 µm wide, in the upper and lower epidermis, gradually merging with pale brown, thin-walled cells lining the conidiomatal cavity. In some cases, the stromatic clypeus extends laterally to the conidioma, completely surrounding it (Figure 1D) (a previously unreported morphological feature for this fungus). **Ostiole** slightly papillate, circular, up to 20 µm diam. **Conidiophores** arising from the inner cells of the walls, cylindrical, aseptate, unbranched, hyaline, smooth, invested in mucus (Figure 1E), 9.0-15.5 X 3.0-5.0 µm. **Conidiogenous cells** holoblastic, ampulliform to subcylindrical, hyaline, smooth. **Conidia** ellipsoid, aseptate, 10-13 X 4.0-7.0 µm, base truncate, apex obtuse, pale brown, thick walled and smooth with part of the conidiogenous cell attached to the base, with an intervening septum, appearing as a cellular, hyaline, subcylindrical, unbranched frill (Figure 1F).

The attempt to isolate *B. dialii* in culture was unsuccessful suggesting that this fungus is biotrophic.

The complete geographic distribution of *B. dialii* remains unknown but this new record from Brazil suggests that this fungus has a wide distribution accompanying the host genus distribution.



**FIG. 1** - *Bellulicauda dialii*. Poorly delimited leaf lesions composed of black stromatic conidiomata in the upper (A) and lower (B) leaf surfaces (arrowheads). Cross section of leaf showing the stromatic conidioma partially (C) and completely (D) surrounded by a thick black stromatic clypeus. Partial sectional view of conidial hymenium invested in mucus (E). Mature thick walled ellipsoid conidia with a basal thin-walled elongated frill (arrowhead) (F). [Bars = 70  $\mu$ m (C, D); 10  $\mu$ m (E, F)].

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