

**TITLE:** A PROBABLE NEW GENUS OF ASTERINALES (DOTHIDEOMYCETES) ASSOCIATED WITH A NATIVE PLANT FROM THE BRAZILIAN CERRADO

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## **ABSTRACT**

The order Asterinales is characterized by epiphytic, biotrophic fungi, with superficial ascomata, opening by a longitudinal or star-shaped fissure at maturity; surface mycelium, haustorium present in several genera and composed by 2 families Asterinaceae and Parmulariaceae. Members of Asterinaceae are characterized by producing black colonies constituted of a brown mycelium on leaf surface. The objective of this work was to perform a survey of the fungi diversity associated to the native plants from the Brazilian Cerrado. Asexual morph (coelomycetous and hyphomycetous) has been observed in Asterinaceae. Symptomatic leaves were collected in the Floresta Nacional de Paraopeba, Minas Gerais, Brazil, photographed, herborized and examined under the Olympus SZX 7 stereomicroscope. Images and measurements were obtained through the OLYMPUS BX53 microscope equipped with digital camera (OLYMPUS Q-Color5™). The biometric data were based on 30 measurements of the appressoria, conidiogenous cells, conidia, hyphae, and lesions diameter. The fungus was shown to be a new Asterinaceae genus with epiphyllous colonies, circular to irregular, single to confluent, brown, 2–8 mm diam, causing brown leaf spots. Hyphae straight to slightly flexuous, brown, septate, 1.5–3.5 µm diam, smooth. Appressoria numerous, entire, globose to cylindrical, alternate to unilateral, unicellular, 3–6 × 4.5–6.5 µm, brown, penetration peg central on the appressorial cell. Conidiogenous cells cylindrical to elliptical, 4.5–10 × 3.5–6.5 µm, light brown to brown, smooth. Conidia multicellular (3–14-cells), brown, smooth, rounded ends, 18–85 × 4.5–7 µm, 2–13-septate, brown, smooth. Sexual morph not seen. Similar asexual reproductive structures has been observed in *Alysidiella*, *Blastacervulus* and *Asterostomula* species. However, the conidia of the new genus are formed in solitary phialides while conidia of *Alysidiella*, *Blastacervulus* and *Asterostomula* are formed in sporodochial, acervular conidiomata and pycnothyria respectively. Additionally, the appressoria cells are present in new genus, but have not been observed in *Alysidiella*, *Blastacervulus* and *Asterostomula*. Bayesian inference analysis using sequences from the LSU region and morphological comparisons suggests that the fungus collected is related to members of Asterinaceae, representing a different genus in this family. The new genus here studied will be proposed, according the International Code of Nomenclature for Algae, Fungi and Plants.

**Keywords:** Mycology; Phylogeny; Taxonomy

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