A New *Ophiodothella* Species Associated With Leaf spots on *Annona squamosa* in Brazil

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ABSTRACT

A new species of *Ophiodothella, O. annonae* (Phyllachoraceae, Ascomycetes) is described and illustrated. The fungus causes brown lesions on leaves of *Annonae squamosa*, which can fall off prematurely, and is characterized by fusiform, slightly curved, biguttulate ascospores with a conspicuous central concentration of cytoplasm. This is the first species of *Ophiodotella* found on leaves of Annonaceae in Brazil.

Additional keywords: Ascomycete, Phyllachoraceae, *Ophiodothella annonae*, taxonomy.

RESUMO

Uma nova espécie de *Ophiodothella* causando manchas foliares em *Annona squamosa* no Brasil

A nova espécie de ascomiceto *Ophiodothella annonae* (Ascomycetes: Phyllachoraceae) é descrita e ilustrada. O fungo causa manchas foliares em *Annona squamosa*. Folhas infectadas exibem lesões arredondadas de coloração marron-clara e com bordos enegrecidos, podendo cair prematuramente. O fungo apresenta ascósporos ligeiramente curvos, fusiformes, bigutulados e com uma concentração de citoplasma na região central. Esta é a primeira espécie de *Ophiodothella* encontrada em folhas de Annonaceae no Brasil.

Palavras-chave adicionais: ascomiceto, Phyllachoraceae, *Ophiodothella annonae*, taxonomia.

A severe leaf spot disease, caused by an *Ophiodothella* species, was detected during 2004 on *Annona squamosa* L. in the municipalities of Cascavel and Pacajus, in Ceará State (Brazil). The disease occurs mainly during the rainy season, from February to June, with incidence peaking in May. The infection appears first as small brown lesions scattered on the leaf blade. Under high humidity, lesions often coalesce, reaching up to 20 mm. Lesions are subcircular, pale brown with dark brown margins, usually showing ruptured central tissues, with 15 to 90 clypei (Figure 1). Premature leaf fall may occur in severely infected plants.

Fungi occurring on *Annona* in Brazil and South America have been reported by Viégas (1961), Mendes *et al* (1998) and Silva & Minter (1995). This article reports the occurrence of a new species of *Ophiodotella* on *Annona squamosa* in Brazil.

Infected leaves of *Annona squamosa* collected in the municipalities of Cascavel and Pacajus were placed in plastic bags and taken to the Plant Pathology Laboratory of Embrapa Agroindústria Tropical, in Fortaleza, State of Ceará (Brazil). After initial microscopic examination, duplicates were sent to the Plant Pathology Laboratory of CEPLAC, in Bahia State (Brazil). Sections of infected leaf tissues were cut using a freezing microtome and placed on slides containing a drop of lacto-fuchsin or lacto-cotton blue.

Taxonomy

Ophiodothella annonae Bezerra, F. Freire & D.M. Andrade **sp. nov.**

Laesiones ad 20 mm diam., brunneae, coalescentes, amphigenae. *Conidiomata* ad 224 μm diam., subglobosa vel depressa, nigra. *Cellulae conidiogenae* 9.6-12.8 x 2.0–2.4 μm, cylindricae sed leniter angustatae. *Conidia* 11.2-15.2 x 0.8-1.2 μm, cylindricae vel filiformia, aseptata, hyalina.

FIG. 1 - Lesions on leaf of *A. squamosa* caused by *Ophiodothella annonae*.

Partes denigrate 200-272 µm diam., uniloculatae. *Asci* 68-80 x 11.2-12.0 µm, cymbiformes, tenuitunicati, brevistipitati, apparato apicale praediti, octospori. *Paraphyses* 0.7-1.0 µm diam., ramosae, tenuitunicatae. *Ascosporae* 30-40 x 4.0-4.3 µm, fusiformes, curvatae, imbricatae, hyalinae, laeves, aseptate, intus 2-guttulatae.

HOLOTYPUS: CEPEC col. micol. 393, in foliis vivis *Annonae squamosae* (Annonaceae), Preaoca, Cascavel, Ceará, Brasil, 04° 84'' 50.5' S; 38º 22' 1.8'' W; altitude 45 m, 13/05/2004, leg. Francisco C.O. Freire.

Anamorph: *conidiomata* suglobose or flattened, dark brown, slightly erumpent, 120–224 µm wide, with a flat ostiole, mainly epiphyllous. *Conidiogenous cells* simple or branched at the base, tapering towards the apex, forming a palisade, 9.6–12.8 x 2.0–2.4 µm, subhyaline to light green, *Conidia* filiform, 11.2–15.2 x 0.8–1.2 µm, hyaline, smooth, 1-celled (Figure 2).

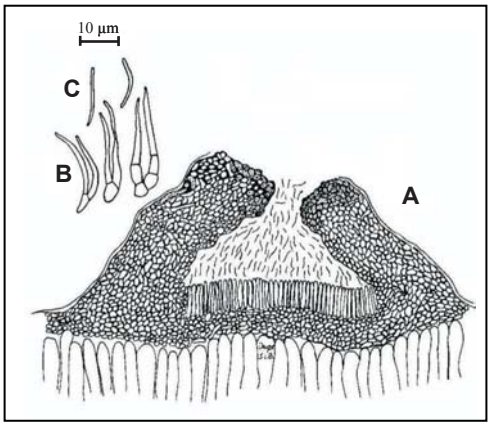

FIG. 2 - *Ophiodothella annonae*. **A.** section through conidioma; **B.** conidiogenous cells; **C.** conidia.

Teleomorph: *clypei* scattered, isolated, occasionally coalesced, mostly concentrated in lesion centers, black, slightly raised, 56–80 µm thick close to ostiole, thinner towards the margins, formed from host cuticle and epidermis plus fungus tissues and embedded in an amorphous melanized material. Perithecia subglobose to subpyriform, immersed, 137-214 µm wide, 239–289 µm high, ostiole inconspicuous, walls 20–30 µm thick, composed of subhyaline cells, *textura angularis*. Asci broadly cymbiform, unitunicate, thin-walled, evanescent, 8-spored, short-stalked, 68–80 x 11.2–12 µm, apex obtuse with a subapical inconspicuous ring. Paraphyses filamentous, branched, septate, 0.7–1.0 µm diam. Ascospores fusiform, hyaline, slightly curved, tapering gradually towards ends, 30–40 x 4–5 µm, 1-celled, thin and smooth-walled, biguttulate, with a conspicuous central concentration of cytoplasm (Figure 3).

The species *Ophiodothella paraguariensis* (Speg.) Höhn. occurs on *Rollinia* (family Annonaceae) in Paraguay. However, it differs from *O. annonae* in having larger clypei (260–320 µm), narrower perithecia (80–220 µm), and narrower, filiform, multiguttulate and longer (40-45 x 2–2.5 µm) ascospores (Hanlin *et al*., 1992).

Holotype: Brazil: Preaoca, Cascavel, Ceará, 04º 84'50.5''S, 38º 22'1.8''W; altitude 45 m, 13/05/2004, leg. Francisco C.O. Freire (CEPEC col. micol. 393 – Holotype).

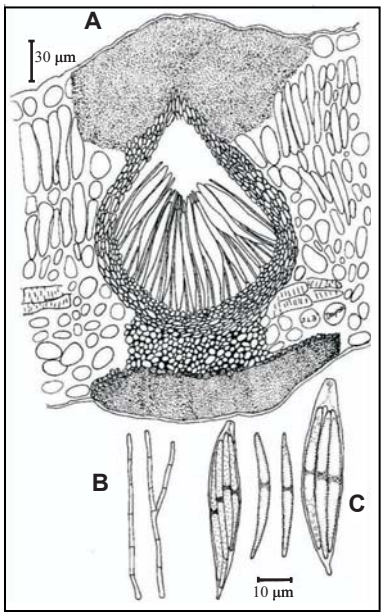

FIG. 3 - *Ophiodothella annonae*. **A.** section through ascoma; **B.**. branched paraphyses; **C.** asci and ascospores.

Etymology: the epithet is derived from the host genus, *Annona*.

Distribution: Brazil; known only from the type locality.

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