

**FIRST REPORT OF *Glomerella cingulata* CAUSING LEAF SPOT ON
Dieffenbachia seguine IN BRAZIL**

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Leaves of *Dieffenbachia seguine* showing necrotic spots were collected and studied at the Universidade Estadual de Santa Cruz, Ilhéus, Bahia. After isolation in Potato Dextrose Agar medium, microscopic characterization and pathogenicity proof were done. *Glomerella cingulata* (anamorph: *Colletotrichum gloeosporioides*) was considered the causal agent of the disease in this host. This is the first report of this fungus causing anthracnose in *D. seguine* in Brazil.

Key words: Anthracnose, Araceae, dumbcane, plant pathogen

Primeiro registro de *Glomerella cingulata* causando mancha foliar em comigo-ninguém-pode (*Dieffenbachia seguine*) no Brasil. Folhas de *Dieffenbachia seguine* apresentando manchas necróticas foram coletadas e estudadas na Universidade Estadual de Santa Cruz, Ilhéus, Bahia. Após isolamento em meio de cultura Batata-Dextrose-Agar, foram feitas a caracterização morfológica e as provas de patogenicidade. *Glomerella cingulata* (anamorfo: *Colletotrichum gloeosporioides*) foi considerado o agente causal da doença neste hospedeiro. Este é o primeiro relato deste fungo causando antracnose em *D. seguine* no Brasil.

Palavras-chave: Antracnose, Araceae, comigo-ninguém-pode, fitopatógeno.

Introduction

Dieffenbachia seguine (Jacq.) Schott (Araceae), known as dumbcane (local name: comigo-ninguém-pode), is originated from Amazonia and common in Brazil as ornamental plant in many homes especially by its distinctive leaf pattern (Rizzini, 1977). This plant is sold for use in religious rites in Bahia and some other Brazilian states. Despite economic importance as a tropical foliage plant, *Dieffenbachia* is a toxic plant, causing painful and serious injuries of mouth, throat and eyes, when ingested or rubbed, with possible corneal damage (Diógenes and Matos, 1999; Rocha et al., 2006; Reis, 2010; Fiocruz, 2011).

Materials and Methods

Several diseases occur in *Dieffenbachia* (Pataky, 2001; Alippi and López, 2009; Moorman, 2011), but few studies were made in Brazil.

In October 2010 symptomatic plants of *D. seguine* were observed at the *Campus* of Universidade Estadual de Santa Cruz (Ilhéus, State of Bahia, Brazil, 14°47'47.79"S and 39°10'19.68"W) showing necrotic leaf spots starting from the edges (Figure 1a-b). Symptomatic leaves were placed in moist chamber at the Laboratory of Plant Pathology and Nematology. The fungus was isolated from fragments of tissue of the spots borders placed on Potato Dextrose Agar

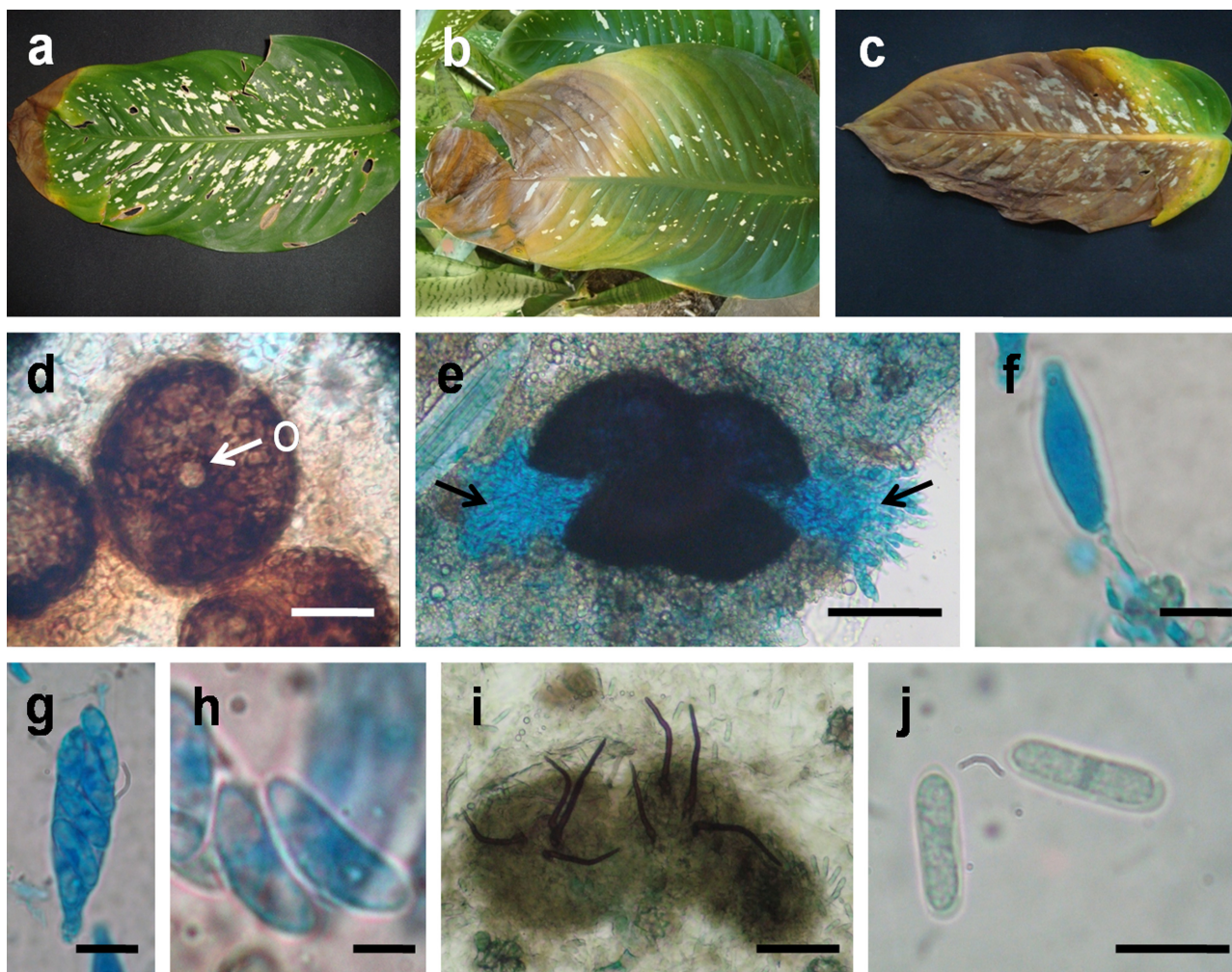


Figure 1. **a–c.** *Dieffenbachia seguine* showing leaf spot starting from the edges. **d.** Perithecium of *Glomerella cingulata* showing ostiolar opening (o, arrow). **e.** Hymenium seen from lateral fissure of Perithecia of *G. cingulata*. **f.** Young ascus colored with cotton blue. **g.** Mature ascus. **h.** Ascospores. **i.** Acervular conidioma of anamorph (*Colletotrichum gloeosporioides*) showing straight or flexuous setae. **j.** Conidia. Bars: d, i = 50 μm; e = 100 μm; f, h = 5 μm; g, j = 10 μm. Photos: M.E. Caliman and Jad. Pereira.

(PDA) in 9 cm diam Petri dishes and incubated in darkness at $\pm 25^{\circ}\text{C}$. After 48 hours pure cultures were obtained by transferring fragments of the growing colonies to new PDA plates.

The proof of pathogenicity was made in 10 detached leaves previously washed in sterile distilled water and sprayed with a suspension of 1×10^5 conidia/mL. The control leaves were sprayed only with sterile water. After inoculation the leaves were incubated in moist chamber at $\pm 25^{\circ}\text{C}$.

Results and Discussion

Typical symptoms were observed on inoculated *D. seguine* leaves three days after the inoculation. No spots were formed in control leaves. The teleomorphic and anamorphic stages were observed in symptomatic leaves collected in the field but only the anamorphic stage was produced in the inoculated leaves. The fungus formed PERITHECIA solitary or aggregated, spherical to subspherical, (138-) 150-210 μm diam; ostiole, single, central, circular, 9-20 μm diam periphysated. ASCI unitunicate, cylindrical to clavate, 46-60 \times 8.5-11 μm , rounded or slightly flattened at apex, paraphysate, 8-spored. ASCOSPORES slightly curved, allantoid, 13-17 \times 4-5 μm , aseptate, guttulate, hyaline, smooth. ACERVULAR CONIDIOMATA brown to black arranged irregularly, subepidermal, disrupting outer epidermal cell walls of host. SETAE present, brown to dark brown, smooth-walled, 1-2 (-3)-septate, (40-) 57-83 (-102) \times 3-5 μm (Figure 1c). CONIDIOPHORES hyaline 1-2-celled, unbranched or branched at the base, (14-)17-28 \times 4-6 μm ; conidiogenous cells discrete, enteroblastic, hyaline, smooth. CONIDIA one-celled, cylindrical, straight, hyaline, smooth walled, rounded at the ends, 11-19 \times 3-5 μm , (n = 20) (Figure 1d).

The pathogen was reisolated from inoculated leaves showing similar colony pattern of the original isolate.

After taxonomic examination the fungus was identified as *Glomerella cingulata* (Stoneman) Spauld. & H. Schrenk (Anamorph: *Colletotrichum gloeosporioides* [Penz.] Penz. & Sacc.). This is a common plant pathogen in tropical regions, causing anthracnosis in hundreds of crops (Sutton, 1992; Hyde et al., 2009). The teleomorphic stage of *Glomerella cingulata* has not been reported on *Dieffenbachia* in

Brazil in field conditions, but its anamorph was found causing leaf spot on *D. maculata* Sweet in the State of Pernambuco (Mendes and Urbem, 2011). Mendes and Urbem (2011) and Quezado-Duval et al. (2010) listed several fungi occurring on *D. maculata* and *D. amoena* Hort. ex Gentil, but not on *D. seguine*.

Exsiccate was deposited in the Herbarium CEPEC (BRAZIL: Bahia, Ilhéus, Campus da UESC, 02.V.2011, leg. M.E. Caliman and Jad. Pereira, on living leaves of *Dieffenbachia seguine*; CEPEC 2220).

Conclusion

This is the first report of *G. cingulata* on *D. seguine* in Brazil. This pathosystem was previously reported to the American countries of Cuba, United States of America and Venezuela (Farr and Rossman, 2011).

Acknowledgments

The authors thank the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for financial support and scholarships.

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