

# First report of *Colletotrichum gloeosporioides* causing anthracnose on *Blepharocalyx salicifolius* in Argentina

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**Abstract** Anthracnose symptoms were observed on *Blepharocalyx salicifolius* from Entre Ríos and Buenos Aires provinces, Eastern Argentina. *Colletotrichum gloeosporioides sensu lato* (teleomorph *Glomerella cingulata*) was identified as the causal agent based on disease symptoms, the morphological characteristics of the isolated fungus and pathogenicity tests. To our knowledge, this is the first report of *C. gloeosporioides* causing leaf spot on *Blepharocalyx salicifolius*.

**Keywords** *Glomerella cingulata* · *Colletotrichum gloeosporioides* · Anacahuita · *Blepharocalyx salicifolius*

*Blepharocalyx salicifolius* (Hum., Bompl. & Kunth) Berg in the Myrtaceae, locally known as Anacahuita, is a common perennial native tree from South America (Southern Brasil, Uruguay and Northeast Argentina). Anacahuita is a valuable ornamental and medicinal plant, which grows in coastal and mountain forests and is also found in the riparian zone of La Plata and in the

Delta, Buenos Aires province (Cabrera and Zardini 1978; Parodi 1979).

During spring 2010, severe foliar anthracnose was observed in production nurseries at the El Palmar area in Entre Ríos. Leaves with symptoms were also collected from a mature tree in La Plata, Buenos Aires province. Typical symptoms appeared as circular and irregular light brown lesions of 2–4 mm in diam., isolated and surrounded by a red halo (Fig. 1). In older lesions, black sub-epidermal acervuli with dark setae were observed (Fig. 2).

Samples from tissue adjacent to spots were collected and their surfaces were sterilised through washing for 30 s in 70% ethanol, followed by 1% sodium hypochlorite for 30 s, and sterile distilled water. These samples were plated in Petri dishes containing potato dextrose agar (PDA) and incubated at 25°C with a 12 h alternating light and dark cycle. After 10 days emerged fungal colonies were sub-cultured on PDA and pure cultures obtained using the single spore method.

Isolation from symptomatic tissues of plants from two origins consistently yielded greyish white abundant aerial mycelium, with acervuli containing slimy, salmon-pink masses of spores and dark setae. Conidia were straight, one-celled, hyaline, oblong, or cylindrical with rounded ends (10–14 × 4.0–4.5 μm). Scarce dark brown perithecia developed in 20-days-old cultures but not were observed in leaves tissues. Asci were not conspicuous and contained slightly curved ascospores (12–17 × 4–5 μm). The fungus was identified as *Glomerella cingulata* (Stoneman) Spauld. & Schrenk (anamorph: *Colletotrichum gloeosporioides sensu lato* (Penz.) Penz. & Sacc.) based in morphological and cultural characteristics (Sutton 1980). *Colletotrichum gloeosporioides sensu lato* is a species complex with broad genetic and biological diversity grouped together by similar conidial morphology and ITS sequences (Hyde et al. 2009; Damm et al. 2010). Pathogenicity of the fungus isolates was

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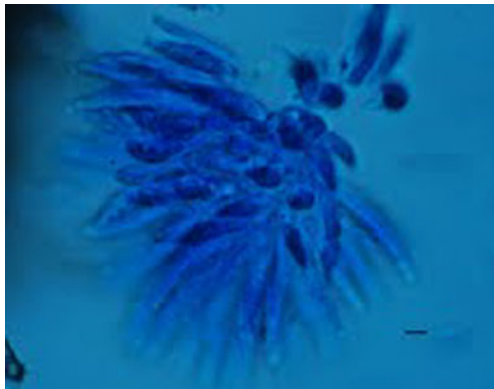
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**Fig. 1** Symptoms of anthracnose caused by *C. gloeosporioides* on *B. salicifolius*. Left, necrotic spots on leaves and right, acervuli



confirmed by inoculating non-wounded leaves of healthy branch plants with a conidial suspension ( $1 \times 10^6$  spores/mL) until run-off. Leaves of plants sprayed with distilled water were used as controls. Branches of plants were covered with plastic bags for 48 h. After 15 days, lesions similar to the original symptoms were observed on inoculated plants and *C. gloeosporioides* was successfully re-isolated from the lesions, fulfilling Koch's Postulates. Control plants sprayed with distilled water remained symptomless. A culture of the pathogen has been deposited in the Culture Collection of the Centro de Investigaciones de Fitopatología, Facultad de Ciencias Agrarias y Forestales, University of La Plata, as CG1.



**Fig. 2** *Glomerella cingulata* asci with ascospores. Bar=20  $\mu$ m

The fungus was cited as endophyte colonizing healthy leaf and bark of *B. salicifolius* in Uruguay (Bettucci et al. 2004). To our knowledge, this is the first report of *Glomerella cingulata* causing anthracnose on *Blepharocalyx salicifolius*.

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