

DISEASE NOTES OR NEW RECORDS

Occurrence of *Pseudocercospora eustomatis* on *Eustoma grandiflorum* in Argentina*S. M. Wolcan*

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Abstract. The infection of *Eustoma grandiflorum* by *Pseudocercospora eustomatis* is reported for the first time in Argentina. Symptoms of the disease and characteristics of the pathogen are described.

Eustoma grandiflorum (Gentianaceae), known as lisianthus, prairie gentian and Texas blue bell, is native to the Midwestern and Southern prairie states in North America. It is cultivated worldwide, mainly for cut flowers but also as a flowering potted plant. Following improvement by selection and breeding in Japan, it was introduced into Argentina, where by the 1990s it was grown in several flower cropping areas, mostly in the outskirts of La Plata.

Some diseases of lisianthus caused by fungi and viruses were previously reported in Buenos Aires Province (Wolcan *et al.* 1996, 2001). Recently, a new fungal disease was observed for the first time in La Plata, on older leaves remaining as stubs after the first harvest of flowers. Later symptoms were also recorded on leaves arising from stubs and on young plants, reducing their aesthetic appearance and value. A description of the symptoms and associated fungus follows.

Leaf lesions at first circular, chlorotic, 0.5–2.0 cm wide, scattered or confluent, covered by olivaceous to dark grayish fungal colonies sometimes with a chlorotic halo (Fig. 1). Colonies amphigenous, 55–112 (average 83) × 42.5–87.5 µm (average 73), composed of stomata with conidiophores and conidia emerging through stomata. Conidiophores densely fasciculate, arising from stomata, emerging through stomata, straight or slightly curved, unbranched, usually geniculate, apex obtuse or rounded, 12.6–21.3 (average 16) × 4.5–5 µm (average 4.75), 0–2-septate, pale olivaceous (Fig. 2A). Conidiogenous loci unthickened, non-pigmented. Conidia formed singly, obclavate-subcylindrical, slightly sinuous, 27.5–100 (average 54.5) × 2.5–5.25 µm (average 3.6), 2–11-septate, subhyaline to pale olivaceous. Some terminal germinating cells form short secondary conidia by

microcyclic conidiogenesis, lateral, near the apex, 12.5–32.5 (average 18) × 2.5 µm, 0–3-septate, hila neither thickened nor pigmented (Fig. 2B).

Pathogenicity tests were conducted by the application of the inoculum suspension (10^5 propagules/mL) with the addition of a tensiactive solution, or water (controls) with a brush, on potted plants of *E. grandiflorum* cv. Echo. Inoculated plants were covered by plastic bags for 72 h and kept in a greenhouse at 17–23°C. Fifteen days after inoculation, translucent and chlorotic spots were observed on



Fig. 1. Leaf spots caused by *Pseudocercospora eustomatis* on upper and lower leaf surfaces of *Eustoma grandiflorum*. Line bar = 1 cm.

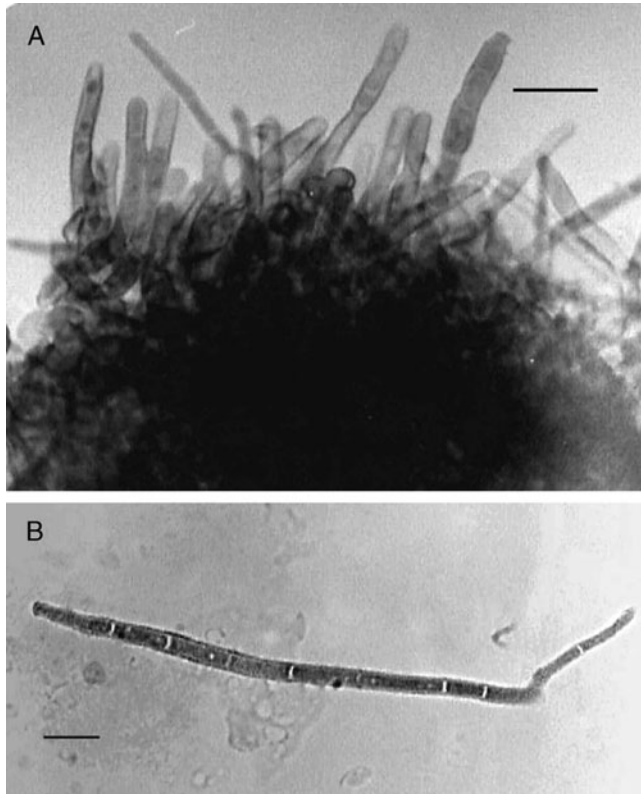


Fig. 2. (A) Conidiophores arising from the colony. Line bar = 7 μm . (B) Germinating conidia forming secondary conidia. Line bar = 5 μm .

the leaves. Eight to ten days later, lesions turned olivaceous to dark grey by the formation of fungal colonies resembling those observed in natural infections. The fungus that was re-isolated from these lesions was identical to that isolated from naturally infected plants.

The pathogen matched the description of *Cercospora eustomatis* (as '*eustomae*') Peck given by Chupp (1954), who also listed *Cercospora nepheloides* as

a synonym. Recently this fungus, together with 31 other species of *Cercospora* sp. complex, was re-examined and placed in *Pseudocercospora* genus by Braun (1999), who named this *P. eustomatis*. The Argentinean fungus was identified as *P. eustomatis* by U. Braun, Martin-Luther-Universität Institut für Geobotanik und Botanischer Garten, Halle (Saale), Germany (material deposited at HAL 1696 F).

Although commercial crops of *E. grandiflorum* are cultivated in many countries, the pathogen was known from the Dominican Republic and the USA on *Eustoma andrewsii*, *Eustoma russellianum* and *Eustoma silenifolium* (Chupp 1954; Crous and Braun 2003). This is the first report of this leaf-spot disease in Argentina on *E. grandiflorum*, although the pathogen was also included in a recent world listing of cercosporoid hyphomycetes (Crous and Braun 2003).

Acknowledgement

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