First report of *Fusarium moniliforme* var. *anthophyllum* affecting *Dieffenbachia picta* var. *tropic* in Buenos Aires, Argentina

H. E. Palmucci^{A,C} and D. Barreto^B

^AFacultad de Agronomía, Universidad Nacional de Buenos Aires, Avenida San Martín 4453, (1416) Buenos Aires, Argentina.

^BIMyZA, INTA, De los Reseros y las Cabañas, (1712) Castelar, Buenos Aires, Argentina.

^CCorresponding author. Email: palmucci@agro.uba.ar

Abstract. This is the first report of *Fusarium moniliforme* var. *anthophyllum* affecting foliage plants of *Dieffenbachia* in Argentina. It appears to be the first report of the isolation and description of the causal agent of this disease on this host in the world.

The genus *Dieffenbachia* (Araceae) is an ornamental herbaceous plant native to Central and South America. The different varieties are mainly used in interior landscaping in Argentina. In the summer of 2002, commercial greenhouses of *Dieffenbachia picta* var. *tropic* located in the vicinity of Buenos Aires were affected by a new disease with low prevalence and high incidence. The symptoms included water-soaked lesions on leaves, petioles and stems. The lesions on the leaves were irregularly shaped, at first yellowish green and darkening, with reddish-purple borders extending up to 2 cm. The stems were affected after the leaves fell off. Water-soaked areas with dark margins extended along the stem.

Samples of affected tissue, 3–5 mm in diameter, from leaves, petioles and stems were surface disinfected by immersion in a 2% sodium hypochlorite for 2 min and then rinsed several

Fig. 1. Conidia of *F. moniliforme* var. *anthophyllum* at (a) 63× magnification and (b) 40× magnification.

times in sterile distilled water. The pieces of surface-sterilised tissue were placed on the surface of 2% potato dextrose agar

Fig. 2. Disease symptoms on (a) a leaf and (b, c) stems of *Dieffenbachia picta* var. *tropic* after inoculation with *Fusarium moniliforme* var. *anthophyllum*.

(PDA) acidified to pH 6.5, and sucrose nutrient agar (SNA). Fungal cultures were maintained at $25 \pm 2^\circ\text{C}$ during the first 48 h and then placed under near ultraviolet light (Philips tubes TL 40/08) with a 12-h photoperiod at $22 \pm 2^\circ\text{C}$. The isolated fungus was characterised after 10 days' growth based on spore shape, size, septation and culture morphology. Pure cultures formed white farinose colonies with a light orange tint of the media. Abundant microconidia of three morphologic types were observed: allantoids with an average area of $8 \times 2.4 \mu\text{m}$ (1-septated), $6.8 \times 2.7 \mu\text{m}$ (0-septated) and $3 \times 3 \mu\text{m}$ (round) (Fig. 1). Chlamydospores were not found. A few 3-septate macroconidia were found. Morphologic, biometrics and cultural characteristics allowed us to identify *Fusarium moniliforme* var. *anthophilum* (A. Braun) Wollenw as the cause (Booth 1977, Gerlach and Nirenberg 1982). The teleomorph was not observed. A culture of this pathogen is kept in the culture collection of the Agronomy Faculty (Buenos Aires).

Pathogenicity tests were carried out using conidia washed from 10-day-old cultures grown on SNA medium adjusted to 10^6 conidia/mL. Small wounds were applied to some plants with a sterile needle. Inoculum was applied until runoff onto *D. picta* var. *tropic* plants grown in pots. Inoculated plants were covered with polyethylene bags and maintained at $22 \pm 2^\circ\text{C}$ with 98% relative humidity in darkness for 48 h, returned to the greenhouse and maintained at $23 \pm 2^\circ\text{C}$ with a 12-h light/dark cycle (fluorescent light). Control plants were

inoculated with sterile distilled water. Disease symptoms developed first in the wounded plants 4 days after inoculation (Fig. 2) and later in the uninjured inoculated plants. The fungus was reisolated from the inoculated plants. Control plants remained healthy.

F. moniliforme var. *anthophilum* was determined to be the causal agent of the water soaked lesions on *D. picta* var. *tropic* in greenhouses. The fungus may cause root rot, dry rot, crown rot, chlorosis, wilt and death of plants. Leaf spots are less frequent. A disease caused by *Fusarium moniliforme* and *F. solani* was reported in the plant genera *Caladium*, *Chamadorea*, *Codiaeum*, *Dieffenbachia*, *Disygotheca*, *Dracaena*, and *Saintpaulia*. This is the first report of *F. moniliforme* var. *anthophyllum* affecting foliage plants of *Dieffenbachia* in Argentina.

References

- Booth C (1977) '*Fusarium*. Laboratory Guide to the Identification of the Major Species.' (CMI: Kew, UK)
- Gerlach W, Nirenberg H (1982) 'The Genus *Fusarium* – A Pictorial Atlas.' (Mitteilungen aus der Biologischen Bundesanstalt für Land- und Forstwirtschaft: Berlin)

Manuscript received 5 March 2006, accepted 15 January 2007