Chalara fraxinea associated with dieback of narrow-leaved ash (Fraxinus angustifolia)

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Narrow-leaved ash, Fraxinus angustifolia is an ecologically and economically important tree species in floodplain forests in southern Europe and some parts of central Europe. In recent years, afforestation of this species along the river March near Hohenau/March in eastern Austria (province Lower Austria) have been severely affected by dieback and tree mortality. Symptoms included shoot and twig dieback, necrotic lesions and cankers in the bark as well as discoloration of the wood. In 2008 Chalara fraxinea, the anamorphic stage of Hymenoscyphus albidus (Kowalski & Hold-errieder, 2009) was consistently isolated from small necrotic lesions on shoots of diseased F. angustifolia saplings in this area and from diseased seedlings from a nursery near Kapuvár in northwestern Hungary. In spring 2009 the fungus was also commonly detected on narrow-leaved ash seedlings in a nursery in Lower Austria.

Colonies on malt extract agar (MEA) were cottony, white, orange-brown or fulvous brown, with grey areas in sectors associated with phalophore production. Pseudoparenchymatous stromata formed occasionally after prolonged incubation. Micromorphological characteristics of two Austrian isolates (CBS Accession Nos. 123139, 123140) were as follows: phialides 16 (13–18.3) μm × 4.7 (3.9–6.1) μm at the base and 2.6 (2.2–3.0) μm at the collarate; conidia 3 (2.2–3.9) × 2.2 (1.5–2.7) μm, first-formed conidia 2 (1.5–2) × 2.2 (1.8–2.8) μm.

In May 2008, 20 potted, two-year-old F. angustifolia seedlings were wound-inoculated with C. fraxinea isolate CBS 123140. Inoculum consisted of autoclaved F. excelsior phloem (approximately 10 × 4 × 2–3 mm) that had been placed for 15 days on C. fraxinea cultures on MEA. Within three months 55% of the plants showed wilting of leaves and dieback. Necrotic phloem lesions (mean length = 7.7 cm) and wood discoloration developed on all seedlings inoculated with C. fraxinea, but none on any of the 20 control seedlings. The fungus was re-isolated from 60% of the C. fraxinea-inoculated seedlings but not obtained from any of the control plants. This is the first definitive report of C. fraxinea from a host other than F. excelsior. On the latter ash species this fungus has been causing severe dieback in Europe (Kowalski, 2006; Halmschlagher & Kirisits, 2008; Szabó, 2009). The detection of C. fraxinea in forest nurseries may suggest that diseased plants for planting are an important pathway for accelerating the spread of this emerging pathogen.

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Dischloridium gloeosporioides on Annona muricata: a new pathogen in Brazil

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Soursop (Annona muricata), in the family Annonaceae, is a fruit tree indigenous to central and northern South America. In Brazil, it is commonly cultivated in the north and northeastern states for commercial exploitation of fruits and pulp. Over five million fruits are harvested each year in Brazil. During a survey of plant diseases in October 2007 in Pacaraima (Roraima State), trees of A. muricata were observed exhibiting necrotic dark brown circular leaf spots, 0.7–3.0 cm wide, frequently with concentric circles. All plants presented symptoms in high severity. Microscopic examination revealed an association with a fungus that displayed amphibogenous fruit-rotation, predominantly on the abaxial leaf surface, and stroma 21–83 μm in diameter. Conidia were solitary, short subcylindrical to ellipsoid, 10–21 × 2.6–5.2 μm, base rounded to subtruncate, hyaline, smooth, and non-septate. Conidiophores in fascicles were erect, 63–101 × 2.6–5.2 μm, brown, smooth, 1–3 septate, and unbranched. Conidigenous cells were monophaehalid and inconspicuous, 7.8–34 × 2.6 μm. Based on these features, the lesion-associated fungus was identified as Dischloridium gloeosporioides (Schubert & Braun, 2005). A specimen was deposited at the herbarium of the Universidade Federal de Viçosa (VIC 30548).

To perform Koch’s postulates, 30-day-old soursop plants cultivated in the greenhouse were sprayed with a conidial suspension (10^6 conidia per mL) until runoff. After inoculation, plants were covered with plastic bags for 48 hours to simulate a dew chamber and kept in a greenhouse. Control plants were sprayed only with water. Two weeks after inoculation, leaf lesions developed only on the inoculated plants from which the pathogen was re-isolated.

Previously denominated Cladosporium gloeosporioides, D. gloeosporioides has a known restricted distribution being reported only in the United States and associated with plants belonging to the genus Hypericum (Saccardo & Sydow, 1899; Schubert & Braun, 2005). It is reported to cause lesions on leaves and stems of H. stans (= Ascyrum stans), H. mutis-ium and H. virgincum. Therefore, this is the first report of D. gloeosporioides in Brazil.

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