

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

T. Kirisits^{a*}, M. Matlakova^a, S. Mottinger-Kroupa^a, E. Halmschlager^a and F. Lakatos^b

^aInstitute of Forest Entomology, Forest Pathology and Forest Protection (IFFF), Department of Forest and Soil Sciences, University of Natural Resources and Applied Life Sciences, Vienna (BOKU), Hasenauerstrasse 38, A-1190 Vienna, Austria; and ^bInstitute of Silviculture and Forest Protection, University of West Hungary, Sopron, Ady E. str. 5, H-9400 Sopron, Hungary

Narrow-leafed 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, afforestations 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 & Holdenrieder, 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 northwest Hungary. In spring 2009 the fungus was also commonly detected on affected narrow-leafed ash seedlings in a nursery in Lower Austria.

Colonies on malt extract agar (MEA) were cottony, white, orange-brown or fulvous brown, with grey sectors in areas associated with phialophore production. Pseudoparenchymatous stromata formed occasionally after prolonged incubation. Micromorphological characteristics of two Austrian isolates (CBS Accession Nos. 123139, 123140) were as follows: phialides 16.3 (13.7–18.3) µm × 4.7 (3.9–6.1) µm at the base and 2.6 (2.2–3.0) µm at the collarette; conidia 3.3 (2.7–3.9) × 2.2 (1.5–2.7) µm; first-formed conidia 6.3 (5.5–7.7) × 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 discolor-

ation 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; Halmschlager & 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.

Acknowledgements

We thank the BMLFUW ('Lebensministerium'), the governments of Lower Austria, Carinthia, Salzburg, Burgenland, Upper Austria and Styria as well as the ÖBfAG for funding.

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*E-mail: thomas.kirisits@boku.ac.at. Accepted 12 June 2009 at <http://www.bspp.org.uk/ndr> where figures relating to this paper can be viewed.

Plant Pathology (2010) 59, 411

Doi: 10.1111/j.1365-3059.2009.02165.x

Dischloridium gloeosporioides on Annona muricata: a new pathogen in Brazil

B. A. Halfeld-Vieira* and K. L. Nechet

Embrapa Roraima, BR 174, km 08, CP 133, 69301-970, Boa Vista-RR, Brazil

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 surveyed presented symptoms in high severity. Microscopic examination revealed an association with a fungus that displayed amphigenous fructification, predominantly on the abaxial leaf surface, and stromata 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, 1–5 septate, and unbranched. Conidiogenous cells were monophialidic 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 (10³ 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. mutilum* and *H. virginicum*. Therefore, this is the first report of *D. gloeosporioides* in Brazil.

Acknowledgements

The first author thanks the Brazilian agency CNPq for a research fellowship (proc. 303081/2007-4).

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*E-mail: halfeld@cpafrr.embrapa.br. Accepted 18 June 2009 at <http://www.bspp.org.uk/ndr> where figures relating to this paper can be viewed.