©Institut für Biologie, Institutsbereich Geobotanik und Botanischer Garten der Martin-Luther-Universität Halle-Wittenberg

First spontaneous occurrence of *Euoidium longipes* on tobacco

Uwe BRAUN & Ulrike BRIELMAIER-LIEBETANZ

Abstract: Braun, U. & Brielmaier-Liebetanz, U. 2013: First spontaneous occurrence of *Euoidium longipes* on tobacco. Schlechtendalia **25**: 39–40.

Euoidium longipes is an anamorphic powdery mildew species relatively common on *Solanum melongena* (eggplant) and *Petunia* ×*hybrida* (*Solanaceae*). The ability of this species to infect *Nicotiana* sp. (tobacco) was hither only known from inoculation experiments. The present record documents the first spontaneous infection of *E. longipes* on tobacco in a greenhouse in Germany proving that this powdery mildew may cause natural infections on this host. Hence, *E. longipes* is a potential thread to cultivated tobacco under natural conditions.

Zusammenfassung: Braun, U. & Brielmaier-Liebetanz, U. 2013: Erstes spontanes Vorkommen von *Euoidium longipes* auf Tabak. Schlechtendalia **25**: 39–40.

Euoidium longipes ist eine anamorphe Mehltauart, die vor allem recht häufig auf *Solanum melongena* (Aubergine) und *Petunia* ×*hybrida* (*Solanaceae*) vorkommt. Die Fähigkeit dieser Art, *Nicotiana* sp. (Tabak) zu infizieren, war bisher nur im Infektionsversuch nachgewiesen worden. Der vorliegende Fund ist der erste Nachweis einer Spontaninfektion von *E. longipes* auf Tabak in einem Gewächshaus in Deutschland, der die Fähigkeit dieses Mehltaupilzes zu natürlichen Infektionen auf diesem Wirt nachweist. Folglich stellt *E. longipes* eine potentielle Gefahr für kultivierten Tabak auch unter natürlichen Bedingungen dar.

Key words: powdery mildew, *Nicotiana tabacum*, *Euoidium*, greenhouse.

Published online 24 Jan. 2013

Oidium longipes Noordel. & Loer. (Noordeloos & Loerakker 1989) was described as anamorphic powdery mildew on eggplant from the Netherlands. Later this species was also found in other European countries (Austria, Germany, Hungary, Switzerland and UK) as well as North America (USA, New Jersey), and *Petunia* ×*hybrida* proved to be an additional host (Whipps & Heleyer 1994; Braun 1995; Bolay 1998, 2005; Cunnington et al. 2005, Kiss et al. 2008). Based on a taxonomic reassessment of anamorphic powdery mildews (*Oidium* s. lat.) on generic rank, Braun & Cook (2012) reallocated *O. longipes* to the genus *Euoidium* Y.S. Paul & J.N. Kapoor. This species is well characterised and easily distinguishable from all other powdery mildew anamorphs on solanaceous hosts by having very long conidiophores with very variable arrangement and size of cells, ranging from a very long foot-cell followed by some shorter cells to shorter foot-cells followed by 1–2 cells of about the same size or much longer. The conidia are catenescent, chains have a sinuate edge line, and fibrosin bodies are lacking. *Solanum tuberosum* and *Nicotiana* sp. are two additional hosts of this species, but only proven in inoculation experiments (Cunnington et al. 2005, Kiss et al. 2008).

Golovinomyces orontii (Castagne) Heluta (≡ *Erysiphe orontii* Castagne), previously often identified as "*Erysiphe cichoracearum*" (s. lat.), is the most common causal agent of powdery mildew infections on *Nicotiana* spp. in Germany and worldwide (Braun 1995, Braun & Cook 2012) In 2012, spontaneous powdery mildew infections on tobacco 'Samsun' have been registered in a German greenhouse and proved to be caused by *E. longipes*. This is the first record of this species on *Nicotiana* in Europe and the first natural infection on this host at all. This observation shows that this anamorphic powdery mildew species is a potential thread to cultivated tobacco.

E. longipes on tobacco is characterised as follows: Mycelium amphigenous, mainly epiphyllous, effuse, thin, whitish; hyphae branched, 3–8 µm wide, septate, hyaline, thin-walled, smooth; hyphal appressoria solitary, nipple-shaped, 3–6 µm diam.; conidiophores arising from the upper surface of supporting hyphae, erect, straight, subcylindrical to somewhat increasing in width from base to top, very long, up to about 350 µm, size and arrangement of cells rather variable, either with a very long foot-cell, 60–160 × 8–14 µm, subcylindrical or somewhat increasing in width towards the apex, followed by 1–3 shorter cells, or with a shorter foot-cell, 40–70 µm long, following by 1–2 cells about as long as the foot-cell or much longer, up to about 120 µm, and up to 3 additional rather short cells resembling conidium initials; conidia catenescent, in

©Institut für Biologie, Institutsbereich Geobotanik und Botanischer Garten der Martin-Luther-Universität Halle-Wittenberg

short to rather long chains, ellipsoid-ovoid, doliiform to subcylindrical, (22–)25–35(–38) × 14–18(–20) µm.

Material examined: on *Nicotiana tabacum* L. (*Solanaceae*), Germany, Lower Saxony, Braunschweig, Julius-Kühn-Institute, Institute for Plant Protection in Horticulture and Forests, greenhouse, 29. Oct. 2012, U. Brielmaier-Liebetanz (HAL 2525 F).

Literature

Bolay, A. 1998: Les oïdiums de la tomate et de l'aubergine en Suisse. Revue Suisse de Viticulture et d'Arboriculture **30**: 373–378.

Bolay, A. 2005: Les Oïdiums de Suisse (Erysiphacées). Cryptogamica Helvetica **20**: 1–173.

Braun, U. 1995: The Powdery Mildews (*Erysiphales*) of Europe. G. Fischer Verlag, Jena.

Braun, U. & Cook, R. T. A. 2012: Taxonomic Manual of the *Erysiphales* (Powdery Mildews). CBS Biodiversity Series **11**: 1–707.

Cunnington, J. H., Lawrie, A. C. & Pascoe, I. G. 2005: Molecular identification of *Golovinomyces* (*Ascomycota*: *Erysiphales*) anamorphs on *Solanaceae* in Australia. Australasian Plant Pathology **34**: 51–55.

Kiss, L., Jankovics, T., Kovács, G. M. & Daughtrey, M. L. 2008: *Oidium longipes*, a new powdery mildew fungus on *Petunia* in the USA: a potential threat to ornamental and vegetable solanaceous crops. Plant Disease **92**: 818–825.

Noordeloos, M. E. & Loerakker, W. M. 1989: Studies in plant pathogenic fungi – II. On some powdery mildews (*Erysiphales*) recently recorded from the Netherlands. Persoonia **14**: 51–60.

Whipps, J. M. & Helyer, N. L. 1994: Occurrence of powdery mildew on aubergine in West Sussex. Plant Pathology **43**: 230–233.

Addresses oft he authors

Uwe Braun, Martin-Luther-Universität, Institut für Biologie, Bereich Geobotanik und Botanischer Garten, Herbarium, Neuwerk 21, 06099 Halle (Saale), Germany.
(E-Mail: uwe.braun@botanik.uni-halle.de und regine.stordeur@botanik.uni-halle.de)

Ulrike Brielmaier-Liebetanz, Julius-Kühn-Institut (JKI), Institut für Pflanzenschutz in Gartenbau und Forst, Messeweg 11/12, 38104 Braunschweig, Germany.
(E-Mail: ulrike.brielmaier@jki.bund.de)

©Institut für Biologie, Institutsbereich Geobotanik und Botanischer Garten der Martin-Luther-Universität Halle-Wittenberg

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: Schlechtendalia

Jahr/Year: 2013

Band/Volume: 25

Autor(en)/Author(s): Braun Uwe, Brielmaier-Liebetanz Ulrike

Artikel/Article: First spontaneous occurrence of Euoidium longipes on tobacco 39-41