

DISEASE NOTES OR NEW RECORDS

Cercospora apii s. lat. on lettuce in Australia

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Abstract. *Cercospora apii* emend. (s. lat.) is reported for the first time on lettuce (*Lactuca sativa*) in Australia.

During a 2005 survey for plant diseases in the Northern Territory, a leaf spot on lettuce (*Lactuca sativa*) was found. The fungus sporulating on the leaf spots was identified as *Cercospora apii* emend. (Crous and Braun 2003) and a description of the specimen is given below. The features of the specimen were measured in lactic acid.

Cercospora apii Fresen. emend. Crous & U. Braun, *Mycosphaerella* and its anamorphs: 1. Names published in *Cercospora* and *Passalora*: 35 (2003), on *Lactuca sativa* (Figs 1 and 2)

Leaf spots, mostly rounded, up to 5 mm in diameter, brown or with a grey centre, sometimes surrounded by a yellowish halo, occasionally confluent and forming large patches. Mycelium internal. Fruiting amphigenous. Stromata absent to rudimentary, composed of several swollen hyphal cells, medium brown. Conidiophores solitary or mostly in small fascicles of 2–9, arising from internal hyphae or mostly from stromata, erect, basal part cylindrical and upper fertile part slightly geniculate-sinuous, unbranched, 30–220 × 3–5 µm, 0–7 septate, pale olivaceous, smooth. Conidiogenous cells integrated, terminal and intercalary, sometimes only terminal, conidiophores sometimes reduced to conidiogenous cells, 20–66 µm long, multilocal or occasionally unilocal, sympodial, conidiogenous loci conspicuous, situated at small shoulders caused by sympodial proliferation of the conidiogenous cells, or at the apices of the terminal conidiogenous cells, loci subcircular, thickened and darkened, 1.5–2 µm wide. Conidia solitary, acicular, occasionally obclavate-cylindrical or cylindrical, 48–340 × 3–4.5 µm, 3–31 septate, hyaline, smooth, thin-walled, base truncate, not attenuated, thickened and darkened.

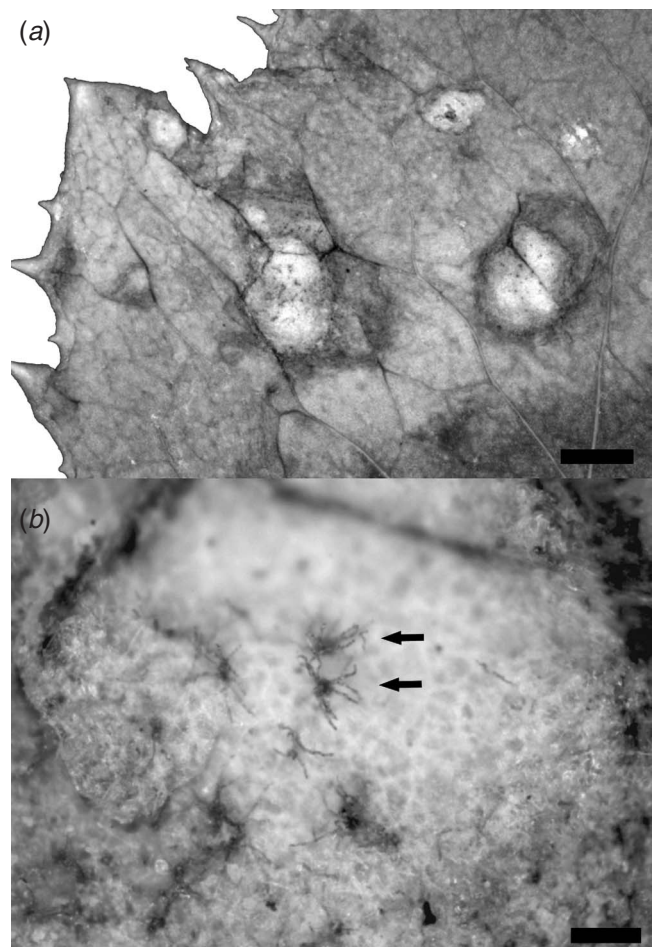


Fig. 1. *Cercospora apii* s. lat. on lettuce (BRIP 47220). (a) Small lesions on leaf. (Bar = 1 mm). (b) Detail of lesion with fructification of *C. apii* (arrowed) (Bar = 100 µm).

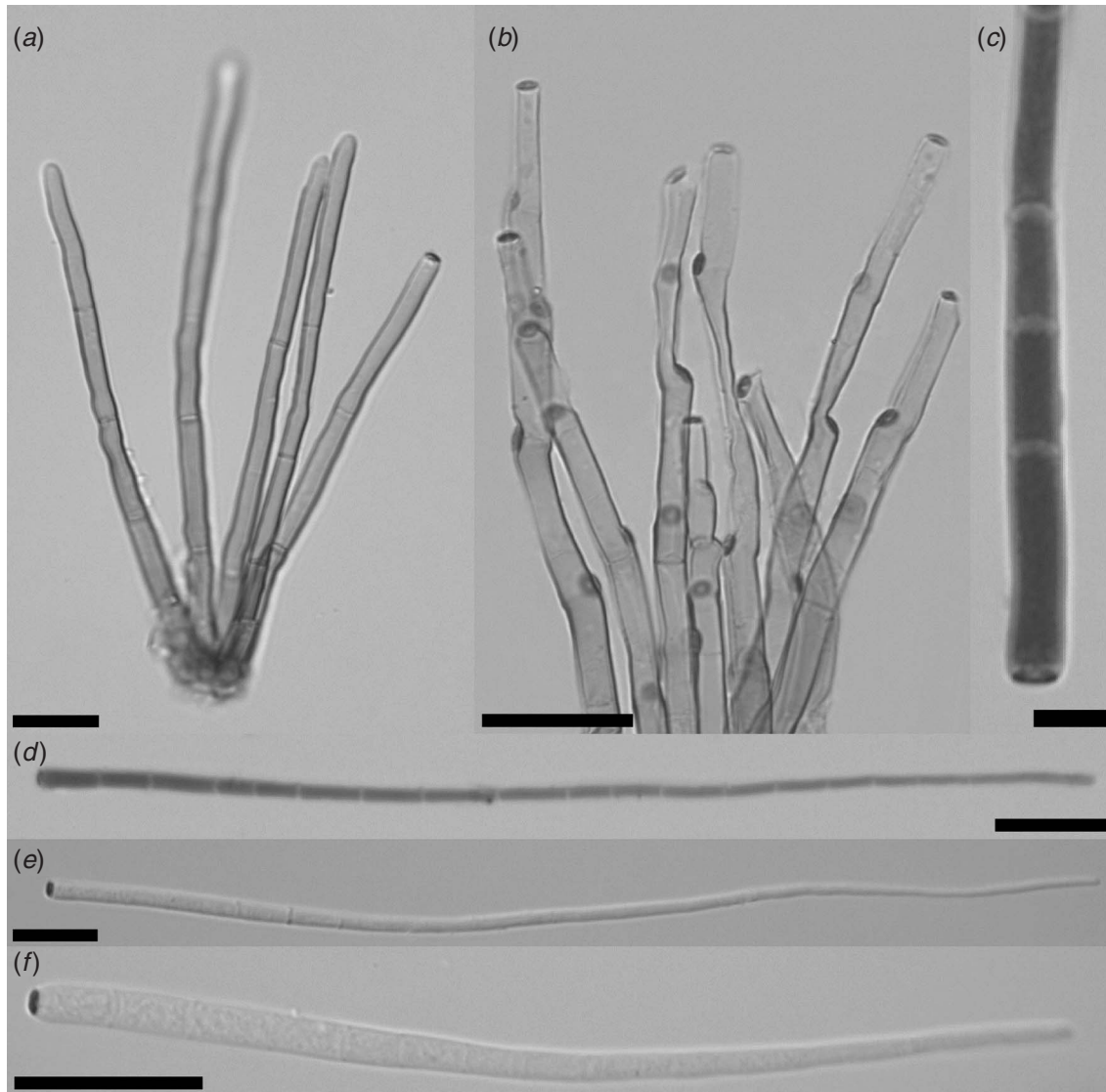


Fig. 2. *Cercospora apii* s. lat. on lettuce (BRIP 47220). (a, b) Conidiophores (Bar = 20 μ m). (c) Base of stained conidium (Bar = 5 μ m). (d–f) Conidia (Bar = 20 μ m).

Material examined: Australia – On *Lactuca sativa* L., Borroloola, Northern Territory, Oct. 2005, P.M. Stephens (BRIP 47220).

The genus *Cercospora*, introduced by Fresenius in 1863, had over 1800 species when monographed by Chupp (1954), who proposed a very broad concept for this genus, including 1419 species. Under his concept, more than 3000 names have already been published in *Cercospora* (Pollack 1987). Other taxonomical treatments have redefined and narrowed the genus. Recently, Crous and Braun (2003) emended the genus, which now is referred to as *Cercospora* s. str. As diagnostic features, this genus has pigmented conidiophores; planate, conspicuous, thickened and darkened conidiogenous loci (scars); scolecosporous and hyaline

conidia. These authors recognised 659 species as belonging in *Cercospora* s. str.

In their review of cercosporoid hyphomycetes fungi, Crous and Braun (2003) emended the species *Cercospora apii*, which now is a compound species, referred to as *C. apii* s. lat., comprising 281 cercosporoid hyphomycetes taxa, occurring on an extremely wide range of hosts, being morphologically variable and indistinguishable from each other and from the *Cercospora* on *Apium graveolens*. According to these authors, only two species of *Cercospora*: *C. apii* s. lat. and *Cercospora lactucae-sativae* Sawada, have been found on lettuce. According to Shin and Kim (2001) and Crous and Braun (2003), *C. lactucae-sativae* has been described under seven illegitimate or invalid names,

namely *Cercospora longissima* Traverso, *C. longissima* Cugini ex Sacc., *C. lactucae* Welles, *C. latucae* J.A. Stev., *C. longispora* Cugini ex Traverso, *C. lactucae-indicae* Sawada and *C. ixeridis-chinensis* Sawada.

C. lactucae-sativae is close to *C. apii* s. lat. (Crous and Braun 2003). Both species are morphologically similar. According to the descriptions of the *C. lactucae-sativae* presented by Welles (1923), Chupp (1954), Mathur *et al.* (1964), Ellis (1976), Hsieh and Goh (1990) and Shin and Kim (2001), the circumscription of *C. apii* s. lat. includes *C. lactucae-sativae*. However, an investigation of the possible synonymy between these two species is beyond of the scope of this study.

Simmonds (1966) reported the occurrence of *C. lactucae-sativae* on lettuce in Queensland. A search of the cercosporoid fungi on *Lactuca* in the Australian Plant Pest Database (<http://www.planthealthaustralia.com.au>, verified 11 April 2006) found only one specimen identified as *C. longissima* (BRIP 4432), collected in Queensland in 1934. This specimen was re-examined but no fructifications of cercosporoid fungi were found. This appears to be the first report of *C. apii* s. lat. on lettuce in Australia.

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