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# DISEASE NOTES OR NEW RECORDS

## First record of *Mycosphaerella lateralis* on *Eucalyptus* in Australia

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### Abstract

*Mycosphaerella lateralis* was isolated from diseased eucalypt leaves in Queensland and Western Australian plantations. This is the first report of the species outside of Africa.

In Australia, *Mycosphaerella* Johanson species cause significant levels of disease in eucalypt plantations (Park and Keene 1982). Mycosphaerella leaf blotch (MLB) is characterised by necrotic lesions on leaves, and when severe, leads to defoliation and stunting of tree growth.

*Mycosphaerella lateralis* Crous and M.J. Wingf., previously recorded only in Africa (Crous 1998), was recently isolated from diseased eucalypt leaves from experimental plantations near Gympie, Queensland (Queensland Forestry Research Institute, Gympie) and in plantations at Esperance in Western Australia. The Queensland isolates were identified on *Eucalyptus globulus* subsp. *maidenii*, and *E. grandis* x *tereticornis*. Western Australian isolates were collected from *E. globulus*. Necrotic lesions and pseudothecia were examined microscopically and single-ascospore cultures established on malt-extract agar (MEA) according to Crous (1998).

*Pseudothecia* amphigenous, black, becoming erumpent, globose, 45–65 µm wide × 60–80 µm high, containing, 8-spored, bitunicate *asci* 40–60 × 7–10 µm. *Ascospores* multiseriate, guttulate, straight to slightly curved, medianly 1-septate, septum not constricted, 10–16 × 3–4 µm; type 'I' ascospore germination as per Crous (1998). The anamorph *Dissoconium lateralis* formed and was characterised by 1-septate, obclavate, primary conidia, 20–30 × 3–4 µm. The cultures grew 15–25 mm/month on MEA at 25°C in the dark and were even-edged with cream aerial mycelium, brown reverse. The characteristics observed agree with the description in Crous (1998).

Sequencing of the ITS 1–5.8s–ITS 2 region of the rDNA was conducted for the suspected isolates of *M. lateralis*, along with other *Mycosphaerella* species from Western Australia and authenticated isolates of *M. lateralis* from Africa. *Mycosphaerella cryptica*, *M. nubilosa*, *M. marksii* and *M. lateralis*, differentiated morphologically, were also clearly separated by ITS sequence. There were no base dissimilarities between the African and Australian isolates of *M. lateralis*, further indicating that the Australian isolates are conspecific with the African isolates.

Authenticated isolates of *M. lateralis* are held in the culture collection of the Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria, South Africa (CMW 825, 1232, 1233). Recently identified Australian isolates of *M. lateralis* were lodged with Agriculture WA herbarium at South Perth, Western Australia (WAC9883, 4, 5).

Although *M. lateralis* has been isolated from necrotic lesions on eucalypts in Africa and now in Australia, nothing is known about its pathogenicity. The importance of *M. lateralis* in causing MLB on eucalypts is currently being evaluated through trials at Murdoch University.

### References

Crous, P.W. (1998) – *Mycosphaerella* spp. and their anamorphs associated with leaf spot diseases of *Eucalyptus*. APS Press, Minnesota, USA.

Park, R.F. and Keene, P.J. (1982) – Leaf diseases of *Eucalyptus* associated with *Mycosphaerella* species. *Transactions of the British Mycological Society* 79: 101-115.

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