Pathogen of the month – October 2007

OCT07

Fig. 1. *Mycosphaerella cryptica* on *Eucalyptus globulus*; insert, 24 hour germination pattern of *M. cryptica* (a). *M. nubilosa* on juvenile *E. globulus;* insert 24 hour germination pattern of *M. nubilosa* (b).

Mycosphaerella leaf *Disease*

Disease: *Mycosphaerella* Leaf Disease (MLD) / *Mycosphaerella* Leaf Blotch (MLB) / Crinkle Leaf Disease
Name: *Mycosphaerella cryptica (Cook) Hansf.* (anamorph: *Colletogloeopsis nubilosum* (Ganap. & Corbin) Crous & M.J. Wingfl.) and *M. nubilosa* (anamorph unknown)
Classification: K: Fungi: P: Ascomycota; C: Loculoascomycota, O: Dothideales, F: Mycosphaerellaceae.

MLB is a serious disease of *Eucalyptus* sp., particularly *E. globulus* and *E. nitens*, the two most important eucalypts to the plantation industry in Australia. Although over 60 species of *Mycosphaerella* have been recorded from eucalypts the two most common causal agents of severe blight are *M. cryptica* and *M. nubilosa* .

The pathogen: Ascomycete fungus, spread by rain and wind. Ascospores hyaline and septate. Produces slow growing, dark green colonies. More than one *Mycosphaerella* sp. can be found on a single lesion. Prefers wet, mild conditions.

Key features: Infected leaves have necrotic, variably sized, irregular, light brown-red- grey lesions with raised margins. Lesions are covered with small black pseudothecia which are amphigenous when infected by *M. cryptica* and found only on the abaxial side when infected by *M. nubilosa*.

Control: Fungicides can be used but are generally uneconomical. The application of phosphorus has been shown to reduce disease incidence.

Eradication efforts: none

Host Range: *M. cryptica* has been reported from over 50 *Eucalyptus* species, including many species native to Western Australia. *M. nubilosa* is more limited in host range with only 7 *Eucalyptus* spp. reported as hosts. Both species cause more serious damage and defoliation to juvenile leaves. *M. cryptica* can cause severe blighting of adult leaves. The damage caused by *M. nubilosa* on adult leaves is limited and rare.

Impact: Range from a reduction of photosynthetic area to premature loss of leaves and shoot tip death. Severe epidemics can result in an almost complete defoliation of juvenile leaves, although death of the host is rare. The resultant reduction in growth can be significant even at moderate infection rates.

Distribution: *M. cryptica* is only found in Australia and New Zealand. *M. nubilosa* is found in Australia, New Zealand, South Africa and Iran.

Further Reading:

Park (1988) *Transactions of the British Mycological Society* **91**, 261-266.
Carnegie, Ades (2002) *Australian Mycologist* **21**, 53-63.

Key Contacts: Kate Taylor, Murdoch University, Ph: 08 9360 2871; Paul Barber, Murdoch University, 08 9360 2605