MYCOSPHAERELLA LEAF DISEASES OF EUCALYPTS

INTRODUCTION

Mycosphaerella leaf blotch is a serious disease of eucalypts grown in South Africa. A great number of *Mycosphaerella* species are associated with this disease. These include *M. juvenis*, found on juvenile leafs of *E. nitens*, and *M. lateralis* on leaves of the *E. grandis* x *E. saligna* hybrid. At least one of the *Mycosphaerella* species cause severe damage while others are apparently saprophytic. The species are distinguished from one another based on their morphology, growth in artificial media, and symptom expression. At the present time, it is not known which species are most virulent although it is suspected that *M. juvenis* is the most important pathogen. The disease can be identified by the presence of necrotic spots or patches on

HOST RANGE

A number of *Eucalyptus* spp. are highly susceptible to Mycosphaerella leaf blotch. *E. globulus* and certain provenances of *E. nitens* are highly susceptible to this disease. This has precluded the planting of *E. globulus* and susceptible provenances of *E. nitens* in areas of South Africa where climate favours disease development.

SYMPTOMS

Symptoms induced by the different *Mycosphaerella* species are variable although critical studies to link pathogen to symptoms have not been undertaken. Several of the described species only cause disease on leaves of a particular age. For example, *M. juvenis* only attacks

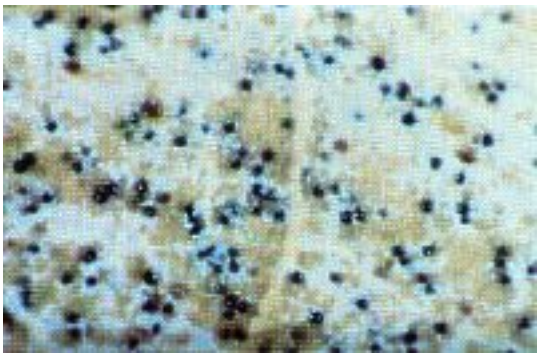
Asci containing eight two-celled ascospores.

MANAGEMENT STRATEGIES

Mycosphaerella leaf blotch is most serious on juvenile leaves of susceptible trees. Once adult leaves appear, usually within a year, the disease is of minor importance. Provenances of *E. nitens* with a high degree of tolerance to Mycosphaerella leaf blotch develop adult leaves rapidly and are not seriously

the leaves. The foliage is often crinkled or distorted. In severe cases, premature abscission of leaves occurs.

Blotches on eucalypt leaves.



Fruiting bodies (pseudothecia) found on the surface of leaf spots.

juvenile *E. nitens* leaves. Lesions can vary in colour from light to medium brown. Differences in lesion colour have been recorded between the upper and lower surface of leaves. Lesions can be angular to circular or irregular. They can be surrounded by margins which are often raised and darker than the centre of the lesion. These margins can vary in colour from yellow to red or red-purple. Several species have the ability to cause blotches through the coalescence of spots. These symptoms ultimately result in the distortion of the leaf lamina.

BIOLOGY

Pathogenic *Mycosphaerella* spp. are capable of infecting host tissue in the absence of wounds. The spores of the fungi are forcably ejected from the fruiting bodies, and are wind-borne. The spores are released when the relative humidity is high. Rain splash is also reported to disperse the fungus within a tree. Optimal temperature for infection varies from 15

affected. In *E. nitens*, New South Wales provenances fall into this category and are recommended for summer rainfall areas. Victoria provenances of this species and *E. globulus* are useful only in winter rainfall areas. Chemical control could be effective in plantations in the first year of growth and this is currently under consideration.

In severe cases, *Mycosphaerella* causes defoliation.

If you need any further information, please contact us.

to 20°C. Mycosphaerella leaf blotch is considered to be most serious in summer rainfall areas where wet warm conditions favour infection.

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