



Forest Threats

Eucalyptus scab and shoot malformation (ESSM)

Tree Protection Co-operative Programme

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Fungal diseases

Eucalyptus scab and shoot malformation (ESSM)

Elsinoe necatrix N.Q. Pham, Marinc. & M.J. Wingf. and *Elsinoe masingae* Jol. Roux, N.Q. Pham, Marinc. & M.J. Wingf.

SYMPTOMS

Elsinoe necatrix and *E. masingae* cause indistinguishable disease symptoms.

Young leaf and shoot tissues are most severely affected. Small necrotic spots that are up to 1 mm in diameter appear on infected tissues, which are circular or irregular, brown to black in colour and sometimes surrounded by a chlorotic (yellow) halo. As infection develops, the spots become reddish brown to black at their centres with slightly raised, diffuse, tan to grey, scab-like margins. Spots can be scattered or concentrated where rainwater accumulates on the leaf surface. This eventually leads to deformation of the leaves, causing curvature usually on one of the leaf lobes. The scab-like spots commonly dry and drop from the unaffected tissue causing a shot-hole appearance (Pham et al. 2021).

On severely affected trees, lesions can coalesce, leading to girdled, crinkled and distorted shoots and leaves. Once the leaves are infected, the damage to the tissues is permanent, and the infected tissues do not recover. On more susceptible clones, secondary symptoms include a “feathering” effect, resulting in loss of apical dominance; abnormal elongated branches with short internodes, and the production of epicormic shoots. Severely affected clones usually die after a number of successive infection cycles (Pham et al. 2021).

BIOLOGY

Very little is known regarding the life cycle of *E. necatrix* and *E. masingae*. The disease is most obvious on young trees in the first year or two of growth and infects actively growing young leaves, young shoots and buds. Moisture is crucial for the disease development and spread. Disease symptoms typically appear shortly after the onset of rain and trees begin to recover at the onset of dry periods. Trees growing in cooler (higher altitude) areas are usually most severely affected. *Eucalyptus* genotypes differ in their susceptibility to infection with some genotypes showing evidence of tolerance.

