FLORA

CANKER DISEASE IN *CORYMBIA CALOPHYLLA* (MARRI)

Trudy Paap

A decline in the health of marri trees throughout the south west has been observed over recent years. This is largely associated with a canker disease which leads to branch death, and in severe cases, tree death. Cankers are a symptom caused by the death of areas of bark and the cortex tissue below that, and are usually caused by ascomycete fungi invading through wounds or areas of stress. If the fungus is not excessively aggressive and the tree vigorously growing, it is able to produce a defence response that enables it to 'wall off' the diseased region. This prevents the damage from spreading around a branch or trunk, which otherwise effectively ring-barks the limb. However, if the tree is stressed, or the fungus causing the disease is highly pathogenic or aggressive, the tree may not be able to wall off the affected regions. In other instances, the diseased area is walled off, but with time, the fungus manages to penetrate this barrier, and reinvade. This situation leads to large target-like lesions being formed, as shown in the photo. Cankers such as these take years to develop, but ultimately result in tree death.

Work to date has not identified a disease-causing agent (pathogen) that would be capable of causing the severe damage we are witnessing. It is possible a recently introduced aggressive fungus that has not yet been identified is the cause. Alternatively, the marri decline may be driven by environmental stress. The decline currently occurring in a number of other eucalypt species, including *E. rudis* (flooded gum), *E. gomphocephala* (tuart) and *E. wandoo* (wandoo) supports this.

Remnant stands of trees on property and along roadsides, especially isolated trees, are under a range of stresses that are more severe than, or not experienced by, trees in their natural forest or woodland ecosystem.

Examples of these stresses include

- Exposure to extremes of weather (eg drought, flooding or wind)
- Changing water tables
- Salinity
- Soil compaction (stock trampling)
- Altered soil nutrient levels
- Old age
- Stock attack
- Mechanical injury to roots or trunk
- Herbicide injury
- Repeated defoliations - insect damage
- Repeated burning off

The disease is not limited to remnant stands of trees, as cankers are also causing tree death in State Forest. This raises worrying questions about the general heath of our forested areas.

If you have remnant marri trees on your property or in your area, take the time to have a good look at them and assess their current health. Bark splitting open, large amounts of gum oozing out, and dying back of branches are often clear indicators of canker disease. Currently there are no direct treatments or control measures for the disease. It is important that we gain an understanding of the extent of the disease, and the factors that are contributing. In the meantime, the best hope is to encourage recruitment (the growth of new seedlings), and to try and minimise environmental stresses on existing trees where possible.

Trudy Paap has just started a PhD on Marri Canker at Murdoch University, after doing her Honours thesis on this topic.
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