

Getting to know *Botryosphaeria* stem blight

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Fungi associated with stem blight in Australia include *Neofusicoccum parvum*, *N. australe*, *N. oculatum*, *N. macroclavatum*, *Lasiodiplodia theobromae*, *L. pseudotheobromae* and *Botryosphaeria dothidea*.

Disease cycle and cause

The fungi enter the host plant through wounds and can also enter through natural openings such as growth cracks, leaf scars, lenticels (stem pores) and root-to-root contact.

These fungi can survive in infected wood and leaves of blueberry and other woody hosts where they produce spores that are dispersed by air or water-splash and that can infect new shoots, stems, branches and buds.

However, the fungi often remain latent, on and in healthy plant tissue without causing any disease symptoms until the plant becomes stressed. Certain environmental conditions or plant stresses can help these fungi to become pathogens that initiate disease.

Biotic or abiotic stresses from a variety of sources such as water stress, over-fruiting, nutrient deficiency, herbicide damage, hail or wind damage and even insect damage can make plants more susceptible to stem blight, which can develop into severe symptoms including cane dieback and plant death.

Stem blight is favoured by high relative humidity (>85%), rainfall and a wide range of temperatures (5–35 °C) as well as plant stress and injury, e.g. drought or storms.

Symptoms

Infection usually begins in the branches. Symptoms include reddening leaves (Figure 1), necrosis of one or more branches, and a characteristic ‘flagging’ appearance of a dead branch with leaves still attached. A pale brown–grey discolouration can be seen inside infected branches (Figure 2). In severe cases, the infection progresses into the base of the plant, resulting in systemic branch dieback over a period of weeks or months, eventually killing the plant (Figures 3 and 4). Raised black fruiting bodies can occur on infected stems.

Management

No one product or practice can prevent stem blight from causing damage. It can be difficult to manage and requires an approach that integrates good horticultural inputs with effective insect and disease management.

- Source clean, disease-free planting material when establishing a new block or orchard
- Avoid any activities which might stress or injure the plants
- Ensure good irrigation and nutrition practices
- Practice strict orchard hygiene measures
- The best control is achieved by pruning out infected plant parts and removing them from the orchard
- Prune at least 15–20 cm beyond diseased (discoloured) wood to prevent the infection spreading
- Prune during dry periods to reduce spread
- Disinfect tools between plants, especially if cutting through a diseased branch
- Cutting at an angle when pruning can promote water run-off

Application of fungicides to protect pruning wounds may reduce infection. However, wounds can be susceptible to infection for up to 2 months, so repeated application is necessary. Currently permitted fungicides can be found on the APVMA website.



Figure 1. Reddening leaves caused by stem blight
Photo Credit: Rosalie Daniel



Figure 2. Discolouration seen inside infected branches with stem blight
Photo Credit: Melinda Simpson



Figure 3. Plant dieback due to stem blight
Photo Credit: Rosalie Daniel



Figure 4. Internal vascular discoloration of stem blight disease in the crown
Photo credit: Melinda Simpson