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Managing septoria spot in citrus

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Septoria spot of citrus is a fungal disease caused by the pathogen *Septoria citri*. The disease commonly occurs in inland irrigation areas on Washington navel oranges and grapefruit, but all commercial citrus varieties are susceptible. The disease mainly affects external fruit quality.

Disease source and spread

The fungus survives on infected twigs, in dead wood and leaves and in the leaf litter. Spores are spread to healthy leaves and fruit by splashing water. Infection occurs when the fruit is still green in late summer or autumn after cool, damp weather. The fungus remains dormant in the fruit until symptoms develop 5–6 months later as the fruit ripens, usually following a period of cold windy weather. Septoria spot is generally more severe during years of higher than normal rainfall. Low or rapidly changing temperatures are thought to predispose citrus tissue to the disease.

Small pits enlarge and coalesce to form sunken areas

Small pits consistent with Septoria infection

Symptoms

Septoria lesions may occur on fruit either on the tree or after harvest and consist of small depressions or pits (1–2 mm diameter) that extend no deeper than the flavedo (the outer part of the rind). The pits are initially light tan with a narrow green margin, turning a reddish brown as the fruit matures. Closely grouped back spots that are the fruiting bodies of the fungus (pycnidia) may form in the lesions and are just visible to the naked eye. Lesions may enlarge and coalesce to form large irregular brown to black sunken areas that extend into the albedo portion of the rind and occasionally

into fruit segments. Badly infected fruit quickly develop an off-flavour and fall prematurely.

Fruit symptoms may be confused with those of frost or cold injury. The disease is often more severe on the colder, more shaded sides of trees or around their skirts.

Leaf symptoms appear as raised, blister-like black spots (1–4 mm diameter) surrounded by a yellow halo. Over time the centre of the spots turn necrotic and pale brown. After leaf drop the spots turn brown with a dark margin and small black fruiting bodies (pycnidia) form inside the lesion. Infection may result in severe leaf drop in the lower part of the tree.

Control

Control is achieved by applying copper fungicides in mid-February to early March prior to autumn rainfall. Other management practices that may be used to reduce disease levels include tree skirting to improve air circulation, avoiding the use of overhead irrigation, using frost protection measures, harvesting fruit early and the removal and destruction of fallen leaves and fruit. Practices that promote good tree health and vigour will also reduce the economic impact of the disease in the orchard.

For more information on using copper sprays in citrus refer to the Citrus Fact Sheet, *Using copper sprays to control diseases in citrus* (NSW Department of Primary Industries, October 2004).

Further reading

Barkley, P 2004, 'Citrus Diseases and Disorders', NSW Agriculture.

Bertus, AL 1982, 'Septoria spot of citrus', *Agfact H2.AB1*, NSW Agriculture.

Menge JA 2000, 'Septoria spot', *Compendium of Citrus Diseases,* 2nd ed., eds LW Timmer, SM Garnsey, JH Graham, APS Press, pp. 32-33.

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