

Table 1. Risk and monitoring period for anthracnose.

Flowering			Fruit drop		Golf ball			Colour break		Maturation	
Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul

Description

Anthracnose is caused by the fungus *Colletotrichum gloeosporioides*. It is a rind blemish that can appear as firm, brown to black spots or form a tear-staining pattern on fruit rind (Figure 1).

Life cycle

Colletotrichum gloeosporioides is present throughout the canopy and is abundant on deadwood. Foggy and moist conditions throughout winter provide ideal conditions for the fungus to develop with spores being spread by rain splash.

Post-harvest anthracnose development can occur when fruit is harvested late (over-mature) or held too long in storage. It can also occur in early season fruit after de-greening.

Damage

Anthracnose causes a superficial red–brown discolouration on fruit rind, often in a tear-staining pattern. It commonly invades citrus rind but typically only causes decay when the rind has been damaged by other factors such as cold (Figure 2), sunburn or physical injury. Symptoms can develop in the orchard or post-harvest.

Mid and late-season navel oranges are more prone to developing anthracnose symptoms than early season varieties.

Risk period: prolonged wet periods and significant rains later in the season increase the risk of spores spreading to fruit and infecting the rind.

Monitoring

Check for symptoms on fruit as part of your regular IPDM monitoring.



Figure 1. Tear-stained pattern caused by anthracnose.



Figure 2. Anthracnose after cold weather.

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Management and control

Chemical: applying a protectant copper spray before autumn rain will reduce anthracnose in the orchard. Consider applying a second copper spray if fruit will be harvested late in the season. Sprayers should be calibrated and checked regularly to ensure good coverage.

Cultural: there are several ways to reduce infection levels in the orchard and post-harvest.

In the orchard:

- Prune trees annually to remove dead wood (reducing the spore load), improve airflow, reduce humidity, and lower the risk of spores moving in rain splash.
- Remove debris from tools and sterilise pruning tools with bleach between blocks.
- If using sprinklers, ensure they are not too close to trunks and spray directly onto them, and keep trees well skirted to reduce leaf wetting. Drip irrigation may be a better option.

Post-harvest:

- Avoid picking immature fruit to reduce the need for de-greening.
- Do not pick, pack or de-green wet fruit.
- Reduce injury to fruit during and after harvest.
- Store fruit at optimum temperature.

More information

Donovan N and Creek A. 2017. Using copper sprays to control diseases in citrus, *Primefact 757*, NSW Department of Primary Industries, <https://www.dpi.nsw.gov.au/agriculture/horticulture/citrus/content/crop-management/orchard-management-factsheets/copper-sprays>

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