



Green coffee scale *Coccus viridis* (Green) [Hemiptera: Coccidae]

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Background

Green coffee scale, which has recently established in Western Australia, is considered to be an important pest of citrus and other fruit production. Green coffee scale belongs to the Hemiptera (sap-sucking bugs) order of insects and it is a member of the soft scale family, Coccidae. As green coffee scale is considered endemic to Western Australia, there is no need to report sightings of it to the Department of Agriculture.

Potential impact

Green coffee scale can be an important pest of citrus and other fruit in coastal and sub-coastal areas of Queensland. Although similar to the soft scale species already present in Western Australia, green coffee scale has two attributes which may favour an increased impact of it in the State. These include parthenogenic reproduction (males are not required for reproduction) and unlike most scale species, the adult is mobile.

Current and potential distribution

Green coffee scale is present in Queensland, New South Wales and the Northern Territory. The scale's range extends from the coastal and sub-coastal areas of Far North Queensland to northern New South Wales. In the Northern Territory, the scale can be found in northern coastal areas. Climate modelling indicates that most of Western Australia's irrigated horticultural production areas would be suited to the build-up and spread of this species.

Plants affected

Green coffee scale has an extensive host list spanning 57 plant families. Some common host plants for it include: avocado, camellia, citrus, coconut, coffee, fig, frangipani, gardenia, guava, hibiscus, litchi, mango, mangosteen, oleander and pineapple.



Figure 1. Adult green coffee scale surrounded by nymphs. Note the characteristic visible 'U'-shaped gut, eyespot and legs of the adult scale. Photo: Sonya Broughton

Identification

The adult scales are small insects (Figure 1), about 3 to 4 mm in length, which can be seen by the naked eye. Unlike most other soft scale species, the green coffee scale has well developed legs which enable it to move about the host plant. The nymphs (Figure 1), which are also known as crawlers, develop through multiple instars (stages) and are less than 1 mm in length when first produced. They are oval-shaped and mobile.

Although the green coffee scale can be confused with other soft scale species already present in Western Australia, it has distinguishing features which allow for a tentative identification. These include a pale yellow-green colour, a flattened profile, a visible gut and visible eye spots. However, a definitive identification involves slide-mounting a specimen to assess its microscopic characters.

Important Disclaimer

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Symptoms

Green coffee scale activity usually occurs on the underside of the leaf (Figure 2) and twigs. However, when infestation levels are high, the scale can be found on the upper leaf surface and on fruit. A useful indicator of activity is the blackening of the upper leaf surface (Figure 3) with sooty mould. Sooty mould is also produced by several other sap-sucking bug species.

A severe infestation of the scale can reduce photosynthesis in the leaves which reduces the vigour and productivity of the host tree. Sooty mould, also formed on the fruit, can increase production costs.

Natural enemies

There are two parasitic wasps present in the eastern states which periodically cause significant mortality to green coffee scale: *Coccophagus* near *rusti* and *Encarsia* sp.

The mealybug-eating ladybird *Cryptolaemus montrouzieri* preys on green coffee scale and is present in Western Australia.

The fungus *Verticillium lecanii* can cause significant mortality to green coffee scale in hot humid weather.

Management considerations

The control of green coffee scale elsewhere in Australia is similar to that for other soft scale species already present in Western Australia. That is, petroleum spray oils are applied immediately after the crawlers have emerged, and for green coffee scale, most crawlers have emerged by early to mid-November.

Ants attending green coffee scale can interfere with the scale's natural enemies and allow the scale population to build up. When a scale population is attended by large numbers of ants, the ants should be controlled.



Figure 2. Adult scales on the underside of a grapefruit leaf.
Photo: Michelle Pether



Figure 3. A heavy infestation of green coffee scale and associated sooty mould on grapefruit.
Photo: Sonya Broughton