

Pink wax scale

Ceroplastes rubens



Figure 1. Colony of pink wax scale on bay laurel in Japan (the white scales are a different species)
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Background

Ceroplastes rubens Maskell (Hemiptera: Coccidae) is a scale insect, commonly known as the pink or red wax scale, that occurs widely in tropical and subtropical regions. It has been detected on imported plant material on eight occasions in England; at airports, a commercial plant nursery and a botanical collection. It has been found on a cycad (*Cycas* sp.) imported from Thailand, 1984; longan (*Dimocarpus longan*) foliage from Thailand, 1999; *Rhaphidophora* sp. from the USA, 2002; kaffir lime (*Citrus hystrix*) foliage from Thailand, 2005; an unspecified aquatic plant from Thailand, 2007; and on *Aglaonema* sp. from Sri Lanka, 2011 (on three separate occasions). In each case, samples were collected by the Plant Health and Seeds Inspectorate and submitted to The Food and Environment Research Agency laboratory at Sand Hutton for identification. Control measures were taken when live scales were found on growing plants.

Geographical Distribution

Pink wax scale occurs widely in tropical and subtropical regions of the Americas, Africa, Asia, Australia and the Pacific. Its also extends into neighbouring warm temperate areas. It has been recorded from Egypt, The Netherlands and the UK, but these records are based on interceptions or transient outbreaks and there is no conclusive evidence that pink wax scale has become established in Europe or the Mediterranean region.

Host Plants

Pink wax scale is extremely polyphagous, occurring on hundreds of plant species assigned to at least 80 families. The most economically important host plants in the UK include the crop genera *Malus*, *Prunus* and *Pyrus*, although it is primarily a pest of tropical and sub-tropical crops. It also occurs on a huge range of ornamental plants grown outdoors and under protection in the UK, including plants belonging to the genera *Acacia*, *Acer*, *Aglaonema*, *Anthurium*, *Aralia*, *Buxus*, *Camellia*, *Citrus*, *Crataegus*, *Cycas*, *Cydonia*, *Dieffenbachia*, *Euonymus*, *Euphorbia*, *Fatsia*, *Ficus*, *Hedera*, *Hibiscus*, *Ilex*, *Laurus*, *Ligustrum*, *Magnolia*, *Malus*, *Monstera*, *Morus*, *Nerium*, *Olea*, *Pittosporum*, *Prunus*, *Pyrus*, *Rhododendron*, *Rhus*, *Rosa*, *Schefflera*, *Spiraea*, *Viburnum*, *Wisteria* and many others. It also feeds on *Pinus*, an important forestry crop.



Figure 2. Colony of pink wax scale in Australia
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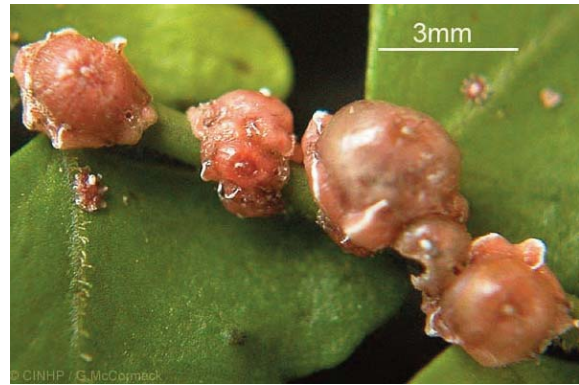


Figure 3. Colony of pink wax scales on *Ixora* in the Cook Islands
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Figure 4. Pink wax scale nymph in Australia
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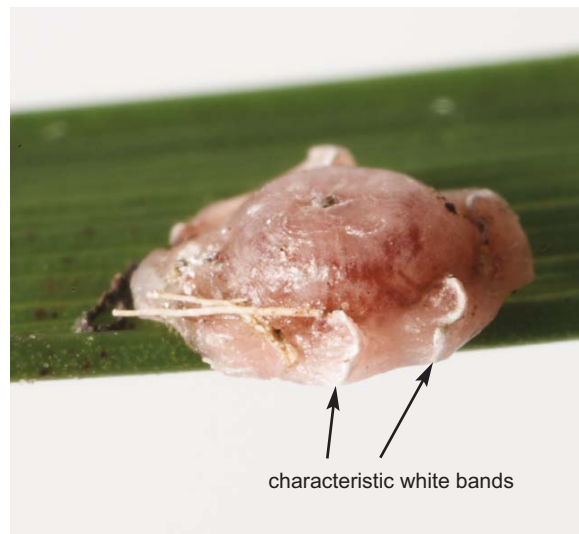


Figure 5. Pink wax scale adult female from Thailand
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Figure 6. Pink wax scale adult female on *Aglaonema* from Sri Lanka
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Figure 7. Pink wax scale male cover on *Aglaonema* from Sri Lanka
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Description

Adult females (Figs 1-4 and 6) are covered in a dense layer of watery wax which varies in colour from white (Fig. 6), cream (Fig. 2), pink (Fig. 4) to reddish (Fig. 1). It is strongly convex, longer than wide, and with two conspicuous pairs of white bands that extend dorsally from the anterior margin and half-way along the body (the bands are most conspicuous in Figs 1, 4 and 5); female wax cover length 3.5 to 4.5 mm. Adult female pink wax scales can usually be recognised in life by the presence of these white bands, particularly by the anterior bands which often almost touch each other. The nymphs are pinkish in colour with distinct white wax blocks, and the immature males (Fig. 7) form a whitish translucent, elongate, oval scale. Wax scales (*Ceroplastes* spp.) frequently occur in mixed populations (Fig. 1).

Pest Biology, Dispersal and Detection

Adult and nymph pink wax scales feed on the stems, twigs, and foliage, apparently preferring the upper leaf surface. Pink wax scale has two generations a year in Australia. The average number of eggs laid per female is about 300, although females have been recorded laying as many as 1,187 eggs. Females have four instars and males have five, although males (Fig. 7) are very rarely recorded. The first nymphal instars or 'crawlers' show a preference for settling to feed on new (current year) growth. They have a relatively low natural dispersal potential and often settle to feed within a short distance of their parent. Some of the crawlers may be dispersed over longer distances by air currents or be transported by other animals. Dispersal is likely to occur more rapidly and over longer distances with the movement of infested plants in trade.

Infestations of pink wax scale are readily detected by the highly conspicuous wax covers (Figs 1-7), which protect the scales from attack by predators and from injury and desiccation. The foliage is contaminated with honeydew excreted by the scales, which serves as a medium for the growth of sooty moulds, which can disfigure the plants. The scales may also be detected by the presence of ants, and less frequently wasps and flies, which feed on the honeydew excreted by the insects.

Economic Importance and Damage

Pink wax scale is a widespread pest of citrus, coffee, tea, cinnamon, mango, avocado and litchi. It is a major pest of citrus in Australia, Hawaii, Korea, China and Japan. Economic damage is caused directly through phloem feeding and indirectly through the promotion of sooty mould growth on the excreted honeydew, which lowers the market value of fresh fruit and can reduce photosynthetic efficiency and gas exchange, causing reduced growth. Large populations cause necrosis of the foliage, leaf loss, die back, and death of susceptible plants. It is a regulated pest in some countries where it has not already established.

Advisory Information

Pink wax scale occurs widely in tropical, subtropical and warm temperate areas. It is very unlikely to be able to overwinter outdoors in the UK due to climatic unsuitability, and therefore establishment will be restricted to protected ornamental plants. Even if it became established, however, it is highly unlikely to have any significant detrimental impact (the crops on which it is economically important, mainly tropical and subtropical fruits and spices, are not grown commercially in Britain) and there is no requirement to report findings of the scale to Fera.

Control measures are unlikely to be necessary unless severe infestations occur on individual plants. If the pest does become damaging, individual scales may be physically removed as the waxy scales are highly conspicuous, or infested parts of the plant may be pruned. Gardeners could use systemic insecticides such as those containing thiamethoxam or contact insecticides, such as those containing deltamethrin. Alternatively, products containing plant oils and extracts or fatty acids could be applied; as these are less likely to have an impact on beneficial arthropods. For professional use, products containing the systemic insecticide thiamethoxam (Centric available with extension of use 2230/2008), contact insecticides containing deltamethrin or physically acting products such as those containing petroleum oil or fatty acids should be effective. All treatments are most likely to be effective if applied when the so-called 'crawler' stage of the scale is present. Pesticide product labels should be read carefully and the instructions followed; their approval status should also be checked before application. Approvals can be checked on the Chemicals Regulation Directorate (<https://secure.pesticides.gov.uk/pestreg/ProdSearch.asp>). It is advisable to treat limited areas initially to check if pesticides are safe for the plants being treated.

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