



Department
for Environment
Food & Rural Affairs

Plant Pest Factsheet

White peach scale

Pseudaulacaspis pentagona



Figure 1. *Pseudaulacaspis pentagona* male tests and first instars on *Catalpa bignonioides*

Background

Since 2006 several outbreaks of the non-native plant pest *Pseudaulacaspis pentagona* (Targioni Tozzetti) (Hemiptera: Diaspididae) have occurred in England (Cornwall, Devon, Gloucestershire, Kent and Oxfordshire), on peach (*Prunus persica*) trees grown under protection. In addition, several *Catalpa bignonioides* trees grown outdoors in Kent were damaged by an infestation of *P. pentagona*, commonly known as white peach scale or mulberry scale. The *Catalpa* trees had been imported from Italy approximately 4 or 5 years previously and this was the first known occurrence of *P. pentagona* breeding and overwintering outdoors in the UK. It seems likely that the *Catalpa* and *Prunus* plants were infested with *P. pentagona* when they were first imported, as the insect does not occur in Britain, has a low natural dispersal potential and can take several years before the populations become large enough to cause detectable damage. Action was taken in all known cases to control/eradicate the pest.

Pseudaulacaspis pentagona has been previously intercepted on imported plant material on many occasions in England and Wales, most commonly on peach and kiwi fruit.

Statutory measures have been taken twice on UK commercial plant nurseries, against infested lilac (*Syringa*) plants imported from France in March 2007, and against infested dogwood (*Cornus*) plants imported from Italy in February 2009.

Geographical Distribution

Pseudaulacaspis pentagona originates from eastern Asia and has spread widely to all warmer regions of the world. It was accidentally introduced to Italy in the nineteenth century and within Europe it now occurs in Azerbaijan, Bulgaria, France, Georgia, Germany, Greece, Hungary, Italy, Macedonia, Malta, Netherlands, Portugal, Russia, Serbia and Montenegro, Spain, Sweden, Switzerland, Turkey and Ukraine. In the past 20 years it has spread northwards in Europe, perhaps as a result of climate change. In colder countries it is restricted to glasshouses.

Host Plants

Pseudaulacaspis pentagona is one of the most polyphagous scale insect species in the world, being recorded from well over 100 plant genera, including numerous crop and ornamental plants. The following list includes only some of the host genera of commercial significance in the UK: *Buddleia*, *Camellia*, *Capsicum*, *Catalpa*, *Celtis*, *Clematis*, *Cornus*, *Cucurbita*, *Euonymus*, *Ficus*, *Fraxinus*, *Geranium*, *Hedera*, *Hibiscus*, *Hydrangea*, *Ilex*, *Juglans*, *Ligustrum*, *Magnolia*, *Malus*, *Morus*, *Nerium*, *Pelargonium*, *Philadelphus*, *Piper*, *Pittosporum*, *Populus*, *Prunus*, *Pyrus*, *Rhamnus*, *Rhus*, *Ribes*, *Rubus*, *Salix*, *Solanum*, *Sorbus*, *Syringa* and *Vitis*.

Description

Adult female scale covers (Figs 2 and 4) are convex, circular to oval, dull white with a sub-central yellow spot (shed skins), 2.0 – 2.5 mm in length. The body of the adult female is yellow (Fig. 3). They are often obscured beneath bark flakes on tree trunks (especially mulberry) or beneath the epidermis on fruit (especially kiwi). The male cover (test) (Fig. 1) is smaller, felted, white, elongate, often ridged with a terminal yellow spot (shed skin), 1.0 -



Figure 2. *Pseudaulacaspis pentagona* adult female scale cover on *Syringa*



Figure 3. *Pseudaulacaspis pentagona* adult female scale with cover removed to reveal the insect



Figure 4. *Pseudaulacaspis pentagona* adult females on *Prunus persicae*



Figure 5. *Pseudaulacaspis pentagona* adult females and swarming first instars on *Catalpa bignonioides*



Figure 6. *Pseudaulacaspis pentagona* colony covering the bark of *Catalpa bignonioides*



Figure 7. *Pseudaulacaspis pentagona* adult male



Figure 8. Mulberry tree in Budapest, Hungary exhibiting dieback due to an infestation of *Pseudaulacaspis pentagona* © C. Malumphy



Figure 9. Mulberry branches killed by a heavy infestation of *Pseudaulacaspis pentagona* © C. Malumphy

1.5 mm in length. The male tests often occur in conspicuous masses (Fig. 6), occasionally smothering the bark and turning it white (they are often described as looking like snow). The adult males (Fig. 7) are winged and mobile in order to locate a mate.

Biology

Each female lays between 100 and 150 eggs, depending largely on host plant species. Male eggs are orange and female eggs are white. The eggs hatch three or four days after being laid and the first instars (Fig. 6) actively swarm over the host, searching for a suitable feeding site. The females have three instars and males five. There are between one and four generations per year, depending upon climate, although in the UK one is most likely. In the USA a generation is completed in 36 to 40 days during the summer at an average temperature of 25°C and in 80 to 90 days during the winter. The adult females over winter and can survive temperatures as low as -20°C although there is high mortality at such temperatures.

Dispersal and Detection

Like other diaspidids, the main dispersal stage of *P. pentagona* is the mobile first instar (Fig. 6), which can disperse up to 1 m, but are distributed across much greater distances by wind, flying insects and birds. Ornamental plants can be important in facilitating the spread of this pest because plants from infested consignments will be dispersed between numerous private and public gardens.

Economic Impact

Pseudaulacaspis pentagona is one of the most important armoured scale insect pests in the world. It removes sap from the host plant, which reduces vigour. Foliage of infested trees may become sparse and yellow. Fruit size may be reduced and premature fruit drop is likely to occur, especially if scale feeding is accompanied by other stresses. Heavy infestations can result in the drying out and death of twigs, branches, and even large mature trees if left unattended. Young plants can die very quickly after infestation.

Pseudaulacaspis pentagona has caused major problems in areas where it was accidentally introduced in the absence of its natural enemies. The efficiency of natural enemies is reduced in urban areas by pollution, and lack of alternative hosts and overwintering sites; consequently, *P. pentagona* can cause severe damage to ornamental plants in towns and cities. In the southeastern USA, *P. pentagona* is a serious pest of *Prunus* spp. (especially peach) and *Pyrus* (pear) where infestation can become significant. In the northeastern USA it is a very destructive pest, especially on flowering cherry, mulberry, peach and other deciduous fruit trees. Heavy outbreaks have occurred on ornamental plants in Hungary where infested *Morus* trees exhibit dieback and can be killed after a few years (Figs. 2 & 3). The pest has also caused significant damage in France, Greece, Italy and Switzerland. In cooler countries, such as Sweden, it is a pest of plants in glasshouses.

Advisory Information

Infested hosts can be trimmed/pruned to remove infested parts, which can then be burned. Chemical options are available but the waxy covering of the organism affords it some protection. Repeated application of chemical insecticides over more than one season may be required to control the pest. Sticky tape erected with its stickiness facing outwards on the trunk and branches can help to optimise spray timings. In the spring, the best time to spray is when the very young larvae ('crawlers') are active and these have a dusty appearance on the tape. For professional use, insecticides containing acetamiprid, deltamethrin or petroleum oil would be effective, for home and garden situations, products containing natural plant extracts could be used. Always read and follow the instructions on pesticide labels and off-label approvals before use. Some products are only approved for a restricted range of crops. It is advisable to treat a limited number of plants initially in order to test for any impact on the plants.

Suspected outbreaks of white peach scale or any other non-native plant pest should be reported to the relevant local authority:

For **England and Wales**, contact your local **APHA Plant Health and Seeds Inspector** or the **PHSI Headquarters**, Sand Hutton, York. Tel: 01904 405138
Email: planthealth.info@apha.gsi.gov.uk

For **Scotland**, contact the **Scottish Government's Horticulture and Marketing Unit**:
Email: hort.marketing@gov.scot

For **Northern Ireland**, contact the **DAERA Plant Health Inspection Branch**:
Tel: 0300 200 7847 Email: planthealth@daera-ni.gov.uk

For additional information on UK Plant Health please see:

<https://secure.fera.defra.gov.uk/phiw/riskRegister/>

<https://www.gov.uk/plant-health-controls>

<http://www.gov.scot/Topics/farmingrural/Agriculture/plant/PlantHealth/PlantDiseases>

<https://www.daera-ni.gov.uk>

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