Department for Environment Food & Rural Affairs

Plant Pest Factsheet

Globose scale

Sphaerolecanium prunastri

Figure 1. Ornamental cherry tree (left) killed by a huge population of globose scale *Sphaerolecanium prunastri* (right) in an urban environment in Montenegro © C. Malumphy

Background

Globose scale or plum lecanium, *Sphaerolecanium prunastri* (Fonscolombe) (Hemiptera: Coccidae) is a scale insect native to southern and central Europe which appears to be expanding its geographical range northwards, possibly in response to climate change. A huge population of globose scale was found near the centre of Brussels, Belgium, infesting mature ornamental cherry trees (*Prunus cerasifera*) planted along a street, during May 2016. This is the first time that the scale has been recorded from Belgium and it appears to be its most northerly record in Europe. Globose scale feeds mainly on *Prunus* (e.g. cherries, plum and peach), and rarely on other plants. In southern Europe, population outbreaks regularly occur which can completely encrust branches causing stunting, drying out, dieback, and occasionally plant death (Fig. 1). Since Globose scale is now found in Belgium there is a potential risk that it could establish in parts of southern England and have an impact on ornamental and orchard *Prunus* spp.

Geographical Distribution

Sphaerolecanium prunastri is native to subtropical areas of the Palearctic but in recent decades it has been found in more temperate areas and has been introduced to North America. It occurs widely in the Mediterranean, southern and central Europe, the Middle East, and parts of Central and Far East Asia. In North America it occurs in the North East of the USA (Maryland, New Jersey, New York and Pennsylvania).

Host Plants

Sphaerolecanium prunastri is polyphagous, being recorded on plants assigned to nine genera in five families, including *Carpobrotus*, *Elymus, Ficus, Malus, Prunus, Pyrus, Rhamnus* and *Rubus*. However, it exhibits a strong preference for *Prunus* spp., including *P. avium* (wild cherry), *P. cerasifera* (ornamental plum), *P. cocomilia* (Italian plum), *P. domestica* (common plum), *P. dulcis* (almond), *P. persica* (peach), *P. salicina* (Japanese plum), *P. scoparia* (wild almond), and *P. spinosa* (blackthorn or sloe). It is usually found exclusively feeding on *Prunus* despite other potential host plants being in the vicinity.

Description

Adult females show a wide variation in colour, largely dependent on maturity. Young adult females are bright yellow (Fig. 2) but quickly develop longitudinal rows of black spots that may coalesce (Fig. 3). They subsequently turn red then reddish-brown and older females become a very dark, shiny, drab brown, and are very finely punctate (pitted) (Figs 1, 5 and 6). Dead females may remain attached to the host for years and may turn black. Mature females are about 3.5 mm across. Immature males produce a translucent-wax protective cover (called a test), and they often occur in separate dense groups, giving the infested bark a whitish tinge (Fig. 7). The adult males are much smaller than the females, bear a single pair of wings, and look like small flies.

There are soft scales native to the UK that occur on *Prunus*, for example European fruit lecanium, *Parthenolecanium corni* (Bouché), but these are smaller and far less convex.

Biology

Globose scales infest the main trunk and branches. They have one generation per year and over winter as second instar nymphs. Females develop through four, and males through five stages. Adults occur at the end of April and early May in central Europe; they were observed in the third week of May in Belgium. Each female lays up to 3000 eggs in late June, which hatch after a few hours. The first instars settle to feed on the bark (in contrast to the first instars of most soft scales that settle on the foliage). Globose scale is usually kept under control by a complex of hymenopteran parasitoids. Globose scale colonies are often attended by ants.

Figure 2. Globose scales on ornamental cherry trees in Brussels covered in honeydew © C. Malumphy

Figure 3. Young adult female globose scale © C. Malumphy

Figure 4. Young adult female globose scale turning red © C. Malumphy

Figure 5. Mature female globose scale © C. Malumphy

Figure 6. An ornamental cherry branch smothered in mature female globose scales © C. Malumphy

Figure 7. Immature male globose scales can give the bark a whitish tinge © C. Malumphy

Dispersal and Detection

Like other soft scales, the main dispersal stage of Globose scale is the mobile first instar, which can disperse naturally up to 1 m, but are distributed across much greater distances by wind, flying insects and birds. The sale and distribution of ornamental plants can be important in facilitating the spread of this pest, since such hosts could be planted in private and public gardens.

Economic Impact

Globose scale is a frequent pest of peach and plum in central Europe. Populations can develop rapidly due to the high fecundity of the females, which can completely encrust branches causing stunting, drying out, dieback, and occasionally plant death. It also eliminates copious quantities of sticky honeydew which contaminates foliage, fruit, lower branches and the ground. The honeydew serves as a medium for the growth of black sooty moulds which can reduce photosynthesis and gas exchange of the infested plant. It is often stressed trees that suffer large attacks of globose scale. Blackthorn and ornamental cherries can provide reservoirs of scales that continually re-infest orchards.

Advisory Information

Globose scale appears to be expanding its geographical range northwards in Europe in association with climate change. It may be able to establish in parts of southern England and is a potential pest of plum, peach and ornamental cherries. Infested hosts can be pruned to remove infested parts, which can 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. Sticky tape erected with its stickiness facing outwards on the trunk and branches could help to optimise spray timings. In the spring, the best time to spray is when the very young larvae (‘crawlers’) are active and these would 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. When using any plant protection products, read and follow the conditions on the pesticide label and off-label documents. If treating a variety for the first time, it is advisable to treat a limited number of plants initially as a test of phytotoxicity.

Suspected outbreaks of globose 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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