

Scale insects

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Identification, Biology & Management

Small sap feeding insects common and widespread in Britain and northern Europe. In the UK a wide range of plants are attacked to include houseplants, greenhouse plants and many fruit and ornamental trees growing outdoors. There are more than 25 species of scale insect in the UK. The most widespread and troublesome scale species of trees include horse-chestnut, (*Pulvinaria regalis*) and beech scale, (*Cryptococcus fagisuga*).

Symptoms

Initial symptoms are yellowing foliage, weakened, stunted or distorted growth and sunken spots on the upper leaf surface that correspond to the position of scales below. Damage to plants results from the effects of feeding on young tissue, which weakens and distorts new growth making plants unsightly. Secondary effects result from fouling of the leaves and stems with honeydew which encourages the growth of a fungus known as sooty mold.

Causal Agents

More than 25 species of scale occur in Britain (Figure 1-2) that range in size from less than 1 mm to over 1 cm in diameter. Nymphs and mature females produce white, yellow or brown wax scales up to 5 mm long covering their bodies. Scale insects generally remain static on plants and feed by inserting their stylets into plant tissue. Males are 1-2 mm long with a single pair of wings. Females lay hundreds of eggs either under wax scales, coverings of woolly wax or under their bodies. Young nymphs known as crawlers hatch some weeks or months later and disperse over plants before settling to feed.

Figure 1: Wisteria scale



Figure 2: Euonomus scale



The large numbers of eggs or live young produced mean scale infestations can become excessive and damaging if left unchecked. A single female common soft scale can produce up to 250 live young, breeding all year round on protected crops. A single brown scale can lay up to 2,000 eggs that are protected under the parent's scale from May to July outside. Crawlers may be spread from plant to plant by wind and animal vectors.

Control

Insecticide treatments are most effective when applied to kill young crawlers before they have settled and begun to form their protective scales. The basic approach for treating most scale insects is a combination of spraying oil plus a synthetic pyrethroid based insecticide in autumn or spring. Timing of treatment is critical with sprays timed to coincide with the appearance of scale crawlers. In most UK outdoor tree species eggs hatch in late June to July. Soap or spray oil can also be used on growing plants and kill crawlers mainly by direct contact. Due to the non-persistent nature of these chemicals re-infestation may soon occur and repeat sprays at 14-21 days maybe necessary. Nitrogen fertilisation of scale infested plants should be delayed until control has been achieved. Winter washes based on spray oil plus an insecticide on dormant trees during Dec-Jan will kill overwintering scales and eggs.



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