

Beech (*Fagus* spp.) pests

Beech Scale (*Cryptococcus fagisuga*)



Introduction

Beech scale (*Cryptococcus fagisuga*) is a tiny, wingless, sap-sucking insect that feeds on the sap of beech trees (*Fagus* spp.). This insect is typically found in colonies within bark crevices on the trunk and larger branches. It secretes a distinctive white wax making infestations highly visible on affected trees.

Beech scale is an invasive pest in North America. It was accidentally introduced from Europe to Nova Scotia, Canada, around 1890 and was first discovered in 1920. The insect is currently widespread in Europe, including the UK, and continues to spread in North America. Recent genetic studies suggest that populations may have originated from the Caucasus Mountain region in western Asia-southeastern Europe, where the oriental beech (*Fagus orientalis*) is its host.

While heavy infestations can weaken trees by extracting nutrients and causing physiological stress, the greatest threat posed by beech scale is its role in the development of beech bark disease. Beech bark disease results from the interaction between beech scale and pathogenic fungi, primarily *Neonectria faginata* and *Neonectria ditissima*. Feeding by the scale insect creates wounds in the bark that allow fungal spores to penetrate and infect the tree. The resulting disease can cause bark cankers, crown decline, reduced growth, and ultimately tree mortality. In public areas, trees may have to be removed for safety reasons.

Host

Beech scale attacks beech trees (*Fagus* spp.). Oriental beech (*F. orientalis*) is believed to be the native host. The primary host in Europe is European beech (*F. sylvatica*), including its cultivars, while in North America it commonly infests American beech (*F. grandifolia*).

Biology

The scale insect is microscopic (under 1 mm), oval-shaped and pale yellow. They produce and secrete a conspicuous white, woolly, wax [CM1] covering that protects themselves from desiccation.

The species reproduces parthenogenetically, meaning females can produce offspring without the need for males. Beech scale typically has one generation per year.

During early summer, each female lays clusters of up to 8 eggs beneath her protective white waxy covering. The eggs hatch in late summer, and the nymphs, known as "crawlers," disperse to new feeding sites by crawling or to new host trees being carried by wind. After settling in bark crevices on the trunk and branches, the nymphs insert their mouthparts and begin feeding. They overwinter as immature nymphs and complete their development the following spring, when they mature into adult females and begin the next generation. Huge populations of this insect can develop on a tree in 2-3 years.

Symptoms

For details of the symptoms, scan or click on the QR code to access the accompanying poster.



More information

- RHS: <https://www.rhs.org.uk/biodiversity/beechn-scale>
- Forest Pest Insects in North America: <https://www.forestpests.org/vd/300.html>
- C State: <https://content.ces.ncsu.edu/beechn-bark-disease>
- Forestry Commission Bulletin: <https://cdn.forestresearch.gov.uk/1987/03/fcbu069.pdf>

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Woolly Beech Aphid (*Phyllaphis fagi*)



Introduction

The woolly beech aphid (*Phyllaphis fagi*) is a sap-sucking insect that feeds on the leaves and young shoots of beech trees and hedges. Although woolly beech aphids can be conspicuous when present in large numbers, cause leaf distortions and produce honeydew which can encourage sooty mould growth, established trees rarely suffer significant or long-term damage.

As aphids are an important food source for a wide range of predators and parasitoids, control is rarely necessary. Where possible, populations should be tolerated and natural predators such as ladybirds, hoverflies, lacewings, earwigs, ground beetles and parasitoid wasps encouraged. Natural enemies often reduce aphid numbers later in the season without intervention.

The species is widespread throughout Europe, ranging from the Mediterranean to the UK and east to Turkey and the Caucasus. It also been introduced to North America, New Zealand, Australia, Asia (China and Korea) and the Middle East.

Host

Woolly beech aphids feed exclusively on beech trees (*Fagus* spp.). The primary host is European Beech (*F. sylvatica*) and its cultivars. It has also been reported in Oriental Beech (*F. orientalis*) and Japanese Beech (*F. crenata*).

Biology

The woolly beech aphid overwinters as eggs in beech buds and bark crevices laid in autumn. Eggs hatch in spring and for much of the spring and summer, colonies consist of wingless females that reproduce asexually, allowing populations to increase rapidly when conditions are favourable. During mid to late summer, winged forms are produced and disperse to colonise other beech trees.

A distinctive feature of this species is its white wax covering, which is secreted after each moult and may form long, filamentous strands on older aphids. The wax is believed to help protect them from honeydew contamination, predators, rain and moisture.

The honeydew that they produce attracts ants that may tend and protect aphid colonies.

Symptoms

For details of the symptoms, scan or click on the QR code to access the accompanying poster.



More information

- RHS: <https://www.rhs.org.uk/biodiversity/woolly-beech-aphid>
- Influential Points: https://influentialpoints.com/Gallery/Phyllaphis_fagi_Woolly_beech_aphid.htm

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