



# Beech (*Fagus* spp.) pests

Beech trees are important components of many temperate woodlands, with mature trees capable of reaching over 40 m in height. They are also widely valued as ornamental trees in park and gardens, with multiple cultivars developed for landscape use.

Beech trees produce both male catkins and small female flowers in spring. These develop into fruits known as beech nuts (or mast) that fall from the tree in autumn.

The following pests can commonly be found in beech trees in Europe and North America.



## Beech Scale (*Cryptococcus fagisuga*)

### Background

Beech scale is a tiny, wingless insect often found in colonies within bark crevices. Its distinctive white, waxy covering makes infestations highly visible. As a sap-sucking pest of beech trees (*Fagus* spp.), heavy infestations can weaken trees, but the greatest impact comes from beech bark disease. This disease results from feeding damage by the insect combined with fungal pathogens (*Neonectria* spp.) entering through insect-created wounds, leading to dieback and, in severe cases, tree mortality.

It is widespread in Europe, and was introduced to North America, where it is invasive and continues to spread.

### Symptoms

- Conspicuous patches of wool-like white wax are visible in bark crevices and rough areas (Fig. 1a,b), protecting the tiny, oval, pale-yellow adult scale insects beneath (Fig. 1c).
- As populations increase, the waxy covering can expand until it completely covers sections of the main stem (Fig. 2).
- When feeding wounds are infected by the fungus *Neonectria* spp., cankers develop as the inner tissue is killed (Fig. 3a,b). Cankers may exude a red-brown liquid (Fig. 3c). In late stages of infection, red-orange fungal fruiting bodies develop on older lesions (Fig. 4).



Fig 1. a,b) Colonies of bark scale in bark crevices. c) Beech scale adults covered on white wax.



Fig 2. Beech trunk covered of white wax from scale insects.



Fig 3. Cracks and cankers in beech trunk caused by beech bark disease, c) canker exuding liquid.



Fig 4. Fungal fruiting bodies of *Neonectria* spp.

## Woolly Beech Aphid (*Phyllaphis fagi*)

### Background

The woolly beech aphid is a sap-sucking insect feeding exclusively on foliage and young shoots of beech trees (*Fagus* spp). Colonies produce distinctive white wax and sugary honeydew. Heavy infestations may cause leaf curling or distortion, but rarely cause significant damage.

The species is widespread throughout Europe and has been introduced to North America, Australia, New Zealand, parts of Asia, and the Middle East.

### Symptoms

- Wingless aphids are pale yellow-green, elongated and up to 2 mm long (Fig. 1a). Winged forms have a dark head and thorax (Fig. 1b).
- Colonies of sap-feeding aphids appear as white, woolly patches on the underside of leaves in late spring and early summer due to the wax they secrete (Fig. 2).
- Feeding might cause the leaf margins to curl downwards, forming a characteristic pseudo-gall (Fig. 3).
- Sticky honey secreted by aphids can be observed on the upper leaf surface and support the growth of black sooty mould (Fig. 4).

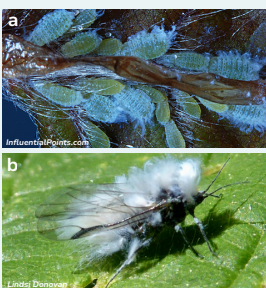


Fig 1. a) Wingless and b) winged forms of woolly beech aphid.



Fig 2. White, woolly colonies of aphids underside beech leaves.



Fig 3. Beech leaf margins curling downwards due to aphid feeding.



Fig 4. Black sooty mould on the upper surface of beech leaf.