



BARTLETT TREE

RESEARCH LABORATORIES

U.K. AND IRELAND



Plant Health Care Program



Beech Bark Disease

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Beech bark disease is a complex disease resulting from the interaction of sap-sucking insects, known as beech scale or *Cryptococcus fagisuga*, (Figure 1) and two species of fungi, *Nectria coccinea* var. *faginata* and *Nectria galligena* (Figure 2). Beech scales themselves do not threaten the health of beech trees, but the insects feed on the sap in the inner bark of the tree leaving exposed areas, making the tree susceptible to fungal colonization which causes their decline.

The white wax secreted by the beech scale is the first sign of the disease. Isolated dots of white "wool" appear on the bole of the tree on roughened areas of bark, beneath mosses and lichens, and below large branches. Eventually the entire bole of the tree may be covered by the waxy secretion as the insect population increases.

On some trees, a red-brown exudate called a slime flux or "tarry spot" oozes from dead spots. These dead spots are often the first symptom of *Nectria* infection, and frequently perithecia of *Nectria* later appear around them. The dead areas may extend into the sapwood.



Figure 1. Beech scale nymph (about 0.3 mm long).

Control: Plant protection products are limited and unlikely to achieve any great degree of control. Spray oils are most effective when applied to kill young crawlers before they have settled and begun to form their protective scales. The basic approach for most species: one spraying oil application plus one crawler spray per generation. Apply crawler sprays at start of egg hatch. Few biological controls for scales are available although ladybird beetle can be beneficial. Fully dormant woody species can be treated with spray oil in Dec-Jan to help reduce overwintering scales and eggs. Soil drench with an appropriate insecticide has been shown to be effective in controlling scale but not tested on beech bark disease. Beech scales can be controlled by manually scrubbing infested trees with a soft brush or by power washing the trees with a moderate-high pressure hose. Once the fungi infect the trees, there is at present no treatment.



Figure 2. Sexual fruiting bodies (perithecia) of *N. coccinea* var. *faginata* (about 0.3 mm in diameter).