RESEARCH LABORATORY TECHNICAL REPORT

BARTLETT TREE EXPERTS
SCIENTIFIC TREE CARE SINCE 1907

Beech Bark Disease

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Beech bark disease is a lethal problem occurring in American Beech (*Fagus grandifolia*) throughout much of the native range of this tree species. The disease is caused by a complex of two pests. First, a scale insect (*Cryptococcus fagisuga*) infests the trunk and feeds by inserting a long mouthpart into the phloem; and second, fungal pathogens (*Nectria coccinea* var. *faginata* or *N. galligena*) infect the feeding wounds caused by the scale, leading to canker formation which eventually kills the tree. The scale was first introduced to North America from Europe in Nova Scotia around 1890. It was first reported in Ontario in 1999. The current range includes Ontario and the Maritime provinces of Canada as well as U.S. states adjacent to the Great Lakes and several additional New England states.

Signs of the Disease

The first sign of this disease is the appearance of white, waxy material on the bark surface which is produced by the scale insect to protect itself while feeding and to protect eggs from predators. Once scale insects have created many feeding wounds, the fungus infects these sites. The red, spore-producing structures of this fungus are apparent on the bark and indicate that the lethal infection has occurred (Figure 1).

Figure 1: White waxy coverings of scales are the first sign of infestation (L), red fungal spore structures appear later (R)

Management

There are some treatments available that may limit scale populations and reduce chances of fungal infection when addressed early in the infestation. There is no control option available once the fungal pathogen has infected the tree. Some natural resistance has been found in the field which means some trees will not become infected or will survive with low levels of insect or fungal infestation. Please contact your Bartlett Arborist Representative to discuss treatment options.

Implications

In areas of heavy beech bark disease, upwards of 50% of the mature beech are likely to die. Dead and dying trees become susceptible to decay fungi and secondary borer insects and can become very brittle soon after infection. Infected trees should be evaluated for failure potential and risk, and removal may be warranted.

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