

# BEECH LEAF DISEASE



## WHAT IS THE THREAT:

Beech Leaf Disease (BLD) is a new disease of beech trees (*Fagus spp.*) that has been identified and observed in forest areas in Eastern USA and Canada. The cause of this disease remains to be confirmed, but a nematode species, *Litylenchus crenatae* n. sp., newly described from Japan on Japanese beech, is suspected to be involved in BLD. Some researchers believe that microbial pathogens, perhaps vectored by the foliar nematode, may be involved as well. Based on current knowledge, the nematode only infests leaf tissue, where it causes dark green, leather-like bands between the leaf veins. The damage appears to occur while the leaf tissue is in the bud.

## WHERE IS THE THREAT:

BLD has been contributing to the decline and mortality of American beech across Ohio, Pennsylvania, New York, Connecticut, and Ontario. BLD was initially discovered in Lake County, Ohio in 2012 and now affects at least 32 US counties and 7 Canadian counties. To date, BLD symptoms have been found on American beech (*Fagus grandifolia*), European beech (*F. sylvatica*), and Oriental beech (*F. orientalis*). Some reports suggest that the nematodes are being carried by non-flying arthropods (e.g. spider mites), which can assist with local spread. It is still unclear how the nematodes are moving long distances, but birds have been suggested.

## SYMPTOMS:

Early symptoms of BLD include dark-green striped bands between lateral veins of leaves and reduced leaf size. Banded areas usually become leathery-like, and leaf curling is also observed. As symptoms progress, aborted buds, reduced leaf production, and premature leaf drop lead to an overall reduction in canopy cover, ultimately resulting in death of sapling-sized trees within 2-5 years and of large trees within 6 years. In areas where the disease is established, the proportion of symptomatic trees can reach more than 90%. However, it is noted that some variability in susceptibility has been observed among beech trees.

## WHAT TO DO ABOUT IT:

Avoid moving beech trees from areas where there are known infestations. There is limited data on preventive or therapeutic treatments for BLD. Several products with nematicidal properties are being explored as potential options for management. Preliminary research data indicates that trees treated with TREE-age have significantly fewer nematodes compared to untreated checks.



Dark green leathery beech leaves



Symptomatic beech leaves as observed from underneath.



Beech Leaf Nematode

Reference:

[www.eppo.int/ACTIVITIES/plant\\_quarantine/alert\\_list\\_nematodes/litylenchus\\_crenatae](http://www.eppo.int/ACTIVITIES/plant_quarantine/alert_list_nematodes/litylenchus_crenatae)

Header Image: Kevin Lewis of Arborjet, Beech leaves: Kevin Lewis of Arborjet, Symptomatic leaves: Kevin Lewis of Arborjet, Nematode: The Bartlett Tree Research Lab

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