Ash dieback disease

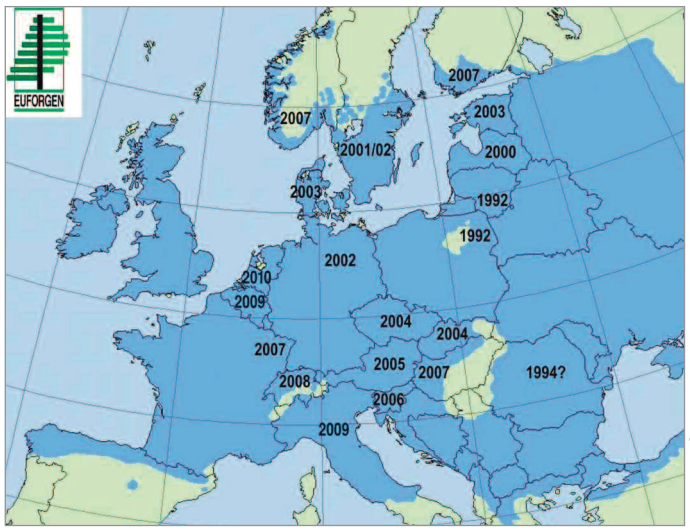
Ash dieback is a disease of ash trees caused by a fungus called *Chalara fraxinea*. The disease causes leaf loss and crown dieback in affected trees and it may lead to tree death. Ash trees suffering from symptoms likely to be caused by *Chalara fraxinea* are increasingly being found across Europe. These have included forest trees, trees in urban areas (such as parks and gardens) and also young trees in nurseries. The disease has not yet been found in the natural environment in Britain although it was recently intercepted in a consignment of infected trees sent from a nursery in the Netherlands to a nursery in the south of England. *Chalara fraxinea* is being treated as a quarantine pest under national emergency measures; it is important that suspected cases of the disease are reported.

A wilted shoot on an ash tree caused by the pathogen *Chalara fraxinea*.

Distribution

A number of countries in Europe have reported trees with ash dieback disease. Common ash (*Fraxinus excelsior*) is the most frequently affected species although *Fraxinus angustifolia* and the 'Pendula' ornamental variety of common ash have also been reported as hosts. Susceptibility of other ash species is unknown. Ash trees of all ages can be affected, but it has been reported that mortality is particularly common in saplings.

Distribution of common ash in Europe (blue shading) and date of first confirmed finding of *Chalara fraxinea*.



Courtesy of T. Kirisits

Symptoms to look out for

Symptoms of *Chalara fraxinea* can be visible on leaves, shoots and branches of affected trees. In severe cases, the entire crown shows leaf loss and dieback and there may also be the formation of epicormic shoots on branches and the trunk.

Foliage

Leaves can suffer from wilting and black-brownish discoloration at the leaf base and midrib (❶). Dieback of shoots and twigs is also very characteristic.

Branches and stems

Small lens-shaped lesions or necrotic spots appear on the bark of stems and branches and enlarge to form perennial cankers (❷). These cause wilting and dieback of shoots and branches, particularly in the upper crown. Underneath the bark lesions, the wood has a brownish to grey discoloration (❸) which often extends longitudinally beyond the bark necrosis.

Whole tree

Trees with withered tops and shoots are very characteristic. Heavily affected trees have extensive shoot, twig and branch dieback (❹) and often have prolific epicormic shoots. *Chalara fraxinea* has also been isolated from the roots of symptomatic trees, as well as from leaves, shoots and branch/stem lesions.

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How the disease spreads

Details of how *Chalara fraxinea* is spread are uncertain, but local spread may be via rain splash or even transmission by insects. Over longer distances the risk of disease spread is most likely to be via the movement of diseased ash plants. Movement of logs or unsawn wood from infected trees may also be a pathway for the disease.

How you can help

Given the recent interception of imported trees infected with *Chalara fraxinea*, we encourage practitioners who have been involved with recent imports to carry out inspections of their trees. If symptomatic trees are found they should be reported to one of the contacts below.

Other disorders of ash trees

There are a number of disorders of ash trees in Britain that may be mistaken for infection by *Chalara fraxinea*:

- A disorder also known as 'ash dieback' which has been known for many years in Britain and is widespread. Affected trees typically suffer from severe crown dieback but there may be recovery growth in the form of secondary shoots and 'epicormics'. The cause is thought to be mainly physical rather than biological. Large, mature trees are most often affected, and crown symptoms are most marked in trees adjacent to arable land where root disturbance is thought to play a part in the decline.
- Cankers on ash stems can be caused by the common fungal pathogen *Nectria galligena*, and the ash bark beetle *Leperisinus varius* can also cause bark necrosis.
- The activities of the ash bud moth *Prays fraxinella* in spring can also be mistaken for infection by *Chalara fraxinea* as the moth larvae mine into the base of shoots causing them to wilt and die.
- Frost and drought can cause similar damage in the form of dead shoots on ash trees.

Who to contact

Please report suspected cases of the disease to:

- **Forest Research Disease Diagnostic Advisory Service**
  T: 01420 23000; E: ddas.ah@forestry.gsi.gov.uk
- **Forestry Commission Plant Health Service**
  T: 0131 314 6414; E: plant.health@forestry.gsi.gov.uk
- **Fera Plant Health and Seeds Inspectorate**
  T: 01904 465625; E: planthealth.info@fera.gsi.gov.uk

For more information

For more information on *Chalara fraxinea* and other tree disorders, visit:

www.forestry.gov.uk/planthealth
www.forestry.gov.uk/forestresearch
www.defra.gov.uk/fera/plants/planthealth
www.eppo.org

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