

# Ash dieback disease

Ash dieback is a disease of ash trees caused by the fungus *Chalara fraxinea*. The disease causes leaf loss and crown dieback in affected trees and often leads to tree death. Ash trees showing symptoms of *Chalara fraxinea* are now widespread across Europe and in 2012 it was detected for the first time in Britain – initially in a consignment of infected trees sent from the Netherlands to a nursery in the south of England, but later in trees planted in the natural environment. Surveys have now confirmed the presence of ash dieback disease at more than 150 locations in England and Scotland, including established woodlands. *Chalara fraxinea* is being treated as a quarantine pest under national emergency measures; it is important that suspected cases of the disease are reported.

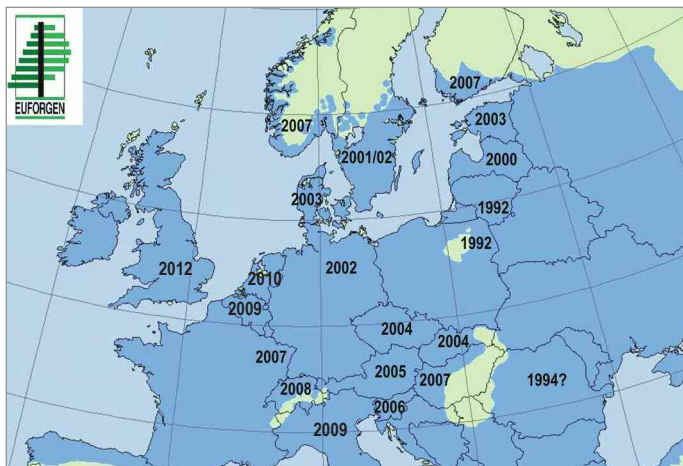


An ash tree infected with *Chalara fraxinea*, sometimes known as *Hymenoscyphus pseudoalbidus* (which describes another life stage).

## Distribution

In Britain, most of the outbreaks of ash dieback disease in the natural environment are confined to East Anglia and Kent, although a small number of outlying cases have been confirmed in northeast England and Scotland. Common ash (*Fraxinus excelsior*) is the most frequently affected species but *Fraxinus angustifolia* is also highly susceptible. In contrast, *Fraxinus ornus* and certain Asian ash species such as *Fraxinus mandshurica* are considered more resistant. In common ash, trees of all ages can be affected but 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 the disease can be visible on leaves, shoots, stems and branches of affected trees. In severe cases, the entire crown shows leaf loss and dieback, which is often associated with the formation of epicormic shoots on branches and the trunk.

### Foliage

Leaves typically show wilting and black-brownish discoloration that extends into the midrib and leaf stalk (❶). The shrivelled leaves remain attached to shoots if these are girdled quickly.

### Branches and stems

Lens-shaped lesions centred on a dead side shoot are often visible on stems and branches (❷). As the lesions girdle, wilting and dieback of shoots and branches, particularly in the upper crown, may be seen. Underneath the bark lesions, the wood is often strongly stained (❸) with the stain often extending longitudinally beyond the dead bark.

### Whole tree

Severely affected trees suffer extensive shoot, twig and branch dieback (❹) and often have prolific epicormic shoots. *Chalara fraxinea* can be isolated from roots, as well as leaves, shoots and branch/stem lesions. Root-attacking fungi such as honey fungus can hasten the death of woodland trees affected by ash dieback.



Courtesy of T. Kirisits



Courtesy of T. Kirisits



Courtesy of T. Kirisits



## How the disease spreads

Leaves are normally only infected by the airborne spores of the fungus. Spores are produced on fallen ash leaves and shoots in the litter layer usually between June and September in the year after infection. The spores appear to be able to disperse over tens of kilometres. Over longer distances the risk of spread is likely to be via the movement of diseased ash plants. Movement of logs from infected trees may also be a pathway for spread although the risk of this is considered low.

## How you can help

- You can report suspect trees via the Forestry Commission Tree Alert page at: [www.forestry.gov.uk/treelert](http://www.forestry.gov.uk/treelert)
- You do not need to take any particular action if you own infected ash trees, unless served with a Plant Health Notice.
- You can help to slow the spread of ash dieback disease by locally burning, burying or composting fallen ash leaves.
- You can check out [www.forestry.gov.uk/biosecurity](http://www.forestry.gov.uk/biosecurity) for advice on good working practices for biosecurity.

## 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 sporadic but widespread disorder also known as 'ash dieback' has previously been identified in Britain but the cause is thought to be mainly physical rather than biological. Affected trees typically suffer from severe crown dieback but there may be recovery growth in the form of secondary shoots and 'epicormics'. 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 their decline.
- Cankers on ash shoots, branches and stems can be caused by the common fungal pathogen *Nectria galligena* or the bacterial pathogen *Pseudomonas savastanoi* pv *fraxini*. The ash bark beetle *Leperisinus varius* can also cause bark necrosis.
- The activities of the ash bud moth *Prays fraxinella* can be mistaken for infection by *Chalara fraxinea* in spring when its 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.

### For more information on ash dieback disease

Visit our website at [www.forestry.gov.uk/chalara](http://www.forestry.gov.uk/chalara) for the latest information on the outbreak, a distribution map of confirmed disease locations and images of symptoms.

You can also download our free **Tree Alert** app to your smartphone or tablet via the App Store and Google play.

### For information on other tree pests and diseases

- **Forestry Commission (Plant Health)**  
[www.forestry.gov.uk/pestsanddiseases](http://www.forestry.gov.uk/pestsanddiseases)
- **Forest Research (Disease Diagnostic Advisory Service)**  
[www.forestry.gov.uk/fr/ddas](http://www.forestry.gov.uk/fr/ddas)
- **Fera (Tree Health and Plant Biosecurity Action Plan)**  
[www.fera.defra.gov.uk/treehealth](http://www.fera.defra.gov.uk/treehealth)