

## **Ash Dieback**

*Hymenoscyphus fraxineus*. The fungus was previously called *Chalara fraxinea*, affects the vascular system of ash trees, inhibiting the tree's ability to draw nutrients up into its upper branches. Young ash trees are killed very rapidly by the disease. Older trees often resist the disease for longer periods but succumb with prolonged exposure.

## **Importance of Ash in the UK**

The common ash (*Fraxinus excelsior*) is one of our most important and prolific native tree species. The species accounts for 12% of broadleaved woodland in Great Britain and is commonly found in parks, gardens and hedgerows. They grow in a wide range of soils and climatic conditions, fulfilling roles in terms of amenity and ecosystem services, whilst providing valuable habitats for a wide range of species. There are 955 species associated with ash trees, of which 45 are believed to have only ever been found on ash.

## **Impact of the Disease**

Thought to have originated in eastern Asia, ash dieback can be found in most parts of the UK. The disease is particularly destructive of our native, common ash. Trees are infected in the summer by airborne spores from fruit bodies occurring on the central stalks of fallen leaves – moist conditions favour the production of fruit bodies. Infection leads to dead branches throughout the crown. Not all ash trees will die as a direct result of ash dieback infection. A tree may be weakened so it becomes susceptible to other pests or diseases, and some trees will survive infection.

Whilst there is no evidence of full resistance to the disease, research and experience in Europe indicates that up to 5% of the ash population may be genetically tolerant to ash dieback. This natural tolerance in some trees provides an opportunity to maintain ash in the UK because the tolerance may be inherited. The climate, site conditions and local tree cover appear to play a large role in the extent to which trees are affected by the disease. Local fragmentation of tree cover has been found to be an important factor with isolated trees, trees growing in open areas or trees in hedges far less affected than those in a forest environment. It has been shown that these trees will be subjected to a different microclimate with higher canopy temperatures, which are unfavourable to development of the disease. Host density has also been found to be important for disease development, with ash at a low density far less affected by ash dieback.

## **Biosecurity Measures**

There is no cure for ash dieback, but good biosecurity practice should always be followed, whether working in woodlands, in parks or open spaces, or in residential gardens. By doing so, you will help reduce the risk of introducing and spreading tree pests and diseases. There are no restrictions on the movement of ash timber, branches or leaves, but a plant health order made in 2012 prohibits all imports of ash

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seeds, plants and trees into GB, and all inland movements within GB of the same material. The 2012 plant health order can be found online.

### **Conclusion**

Scientists say there is new hope in the fight against ash dieback. A study has identified the genes that give trees resistance to ash dieback, which arrived in the UK in 2012 and has now spread to almost every part of the country. The discovery suggests that trees could now be bred that are unaffected by the epidemic. In the UK, this means 70 million trees could be lost, which would cost the economy £15bn, according to an analysis published this year. In a bid to halt this seemingly unstoppable disease, scientists have been studying the DNA of hundreds of ash trees. A small number of trees are showing some natural resistance to ash dieback - and the researchers have identified the parts of their genome that are helping this fight back. It may not be the end of the species!