

Field Identification Guide

Plane wilt



Photograph: Panos Topelas, FRIA, Greece

Plane wilt

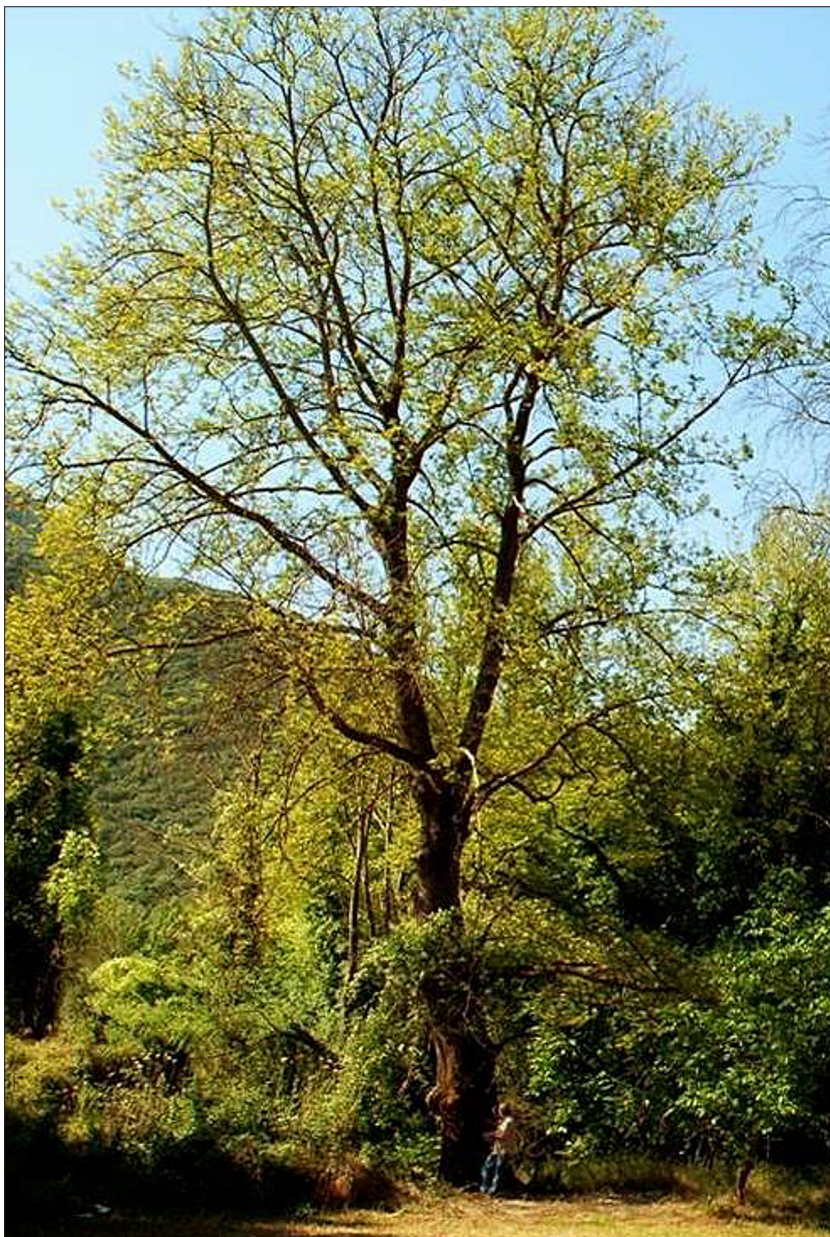
Plane wilt (also known as canker stain of plane) is a serious disease of plane trees (*Platanus* spp.) caused by the ascomycete fungus *Ceratocystis platani*. This disease affects the water-conducting vessels of plane trees causing wilting of the leaves and staining of the wood. The disease is usually fatal, with young trees of a diameter of 30–40 cm being killed within 2 to 3 years after infection and older, more vigorous trees within 4 to 5 years.

Species affected	The main hosts for this pathogen are the Oriental plane (<i>Platanus orientalis</i>), which is highly susceptible to the disease, the American sycamore (<i>P. occidentalis</i>), which is relatively resistant, and their hybrid, the London plane (<i>P. x acerifolia</i>), which is of intermediate susceptibility.
Signs and symptoms	One of the main indicators of the disease is a sudden wilting of the leaves as the pathogen blocks up the water transport systems of the tree. Often the wilting initially occurs on just a single branch but becomes more extensive over time. Infected trees also tend to have a sparse, thin crown with leaves that are discoloured and yellow. The disease also causes cankers on the bark, particularly on trees with thin barks. The cankers are typically sunken lesions with orange and purple streaking around the periphery. The cankers may be difficult to see on thicker-barked trees; however, vertical cracks may be visible to indicate the presence of the disease. Beneath the bark, the lesions are apparent as dark brown to violet spots of dead tissue in the inner bark. These lesions can extend 2.0–2.5 metres/year longitudinally. The wood may also be stained a bluish-black colour in a ‘flame-like’ pattern as the pathogen moves within infected branches and stems towards inner parts of the tree.
Timing	Look for the discoloration and sudden wilting of the leaves any time that the tree is in leaf although these symptoms tend to be more pronounced in the summertime when the water demand of the tree is at its highest. The bark lesions and vertical cracks can be present on the bark all year round but in some cases they may be easier to see during winter when the leaves are absent.

Biosecurity	<p>Human activity is the main cause of spreading of plane wilt. This fungus is a wound pathogen that enters and invades exposed healthy tissue via pruning and any other activity causing the bark or roots of the tree to become damaged. For this reason, it is important to fully disinfect pruning/sampling tools before and after contact with each tree. The pathogen produces survival spores on the surface of infected, dead wood. These can persist in wood, sawdust and soil for several months. Therefore it is imperative that all sawdust and wood debris is removed from clothing and that boots are washed clean of soil and other debris on site. It is important to disinfect footwear on arrival at and before leaving a site. Keep vehicles on hard tracks and ensure that they are kept clean so that they are easier to disinfect when necessary. The disease can also spread through water so pruning/sampling or other invasive contact should be restricted to periods of dry weather.</p>
Reporting requirements	<p>If you find this disease, please report it through Tree Alert (https://treealert.forestresearch.gov.uk).</p> <p>In Northern Ireland please report via the TreeCheck website (www.treecheck.net) or phone app, or by emailing planthealth@daera-ni.gov.uk</p> <p>For traded plants and any non-tree hosts please email planthealth.info@apha.gov.uk (England & Wales), or hort.marketing@gov.scot (Scotland).</p>

Based on information available in October 2016.

Signs and symptoms



Photograph: P. Tsopelas & N. Soulioti, FRIA, Greece

Sparse, discoloured (yellowing) leaves of a plane tree affected by plane wilt.

Signs and symptoms



Photograph: P. Tsopelas & N. Soulioti, FRIA, Greece

A tree that has been killed by plane wilt.

Signs and symptoms



Photograph: P. Tsopelas & N. Soulioti, FRUA, Greece

Wilting and death of the foliage in discrete parts of a plane tree with other areas remaining healthy.

Signs and symptoms



Photograph courtesy of Forestry Commission / James Roberts

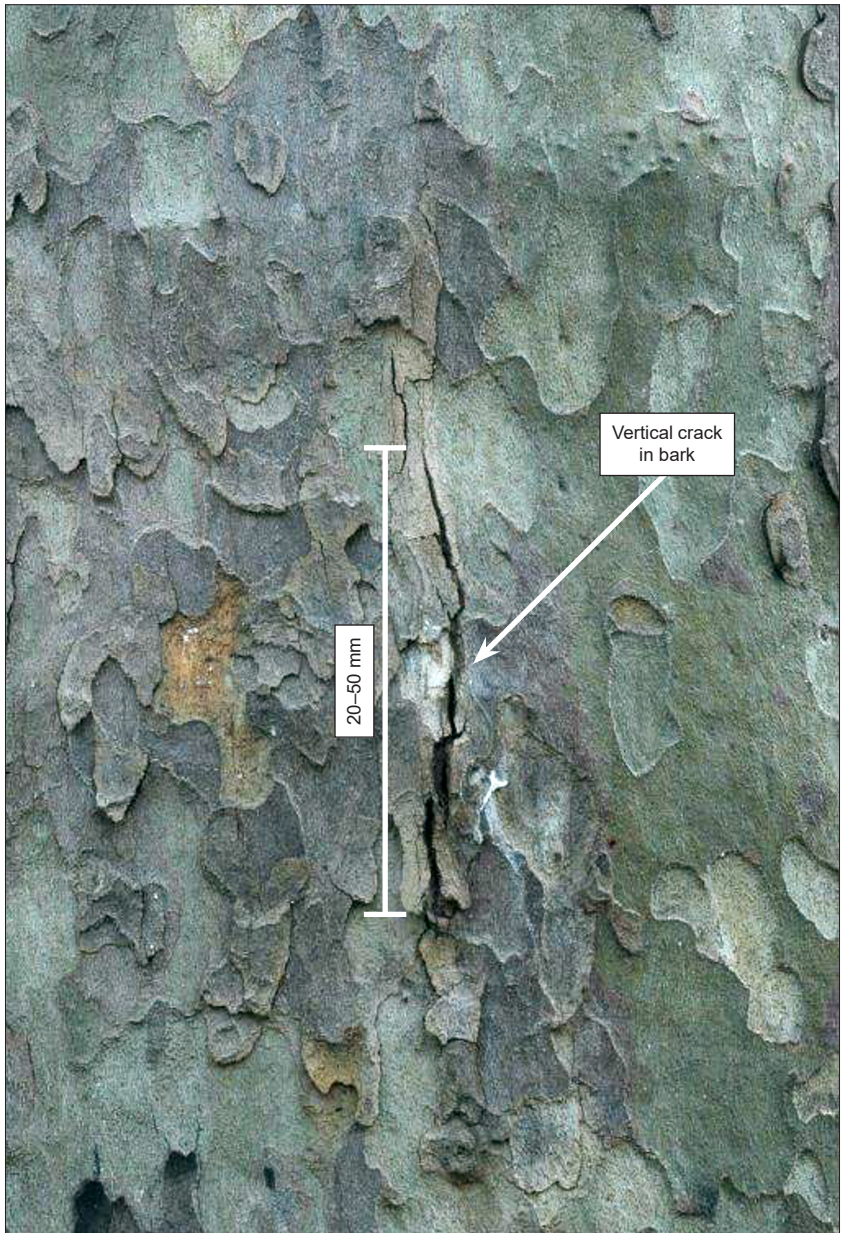
Wilting and death of the foliage and branches in discrete parts of a plane tree with other areas remaining healthy.

Signs and symptoms



Orange and purple streaking occurring around the margins of a lesion caused by *C. platani*.

Signs and symptoms



Photograph: Thomas Cech, BFW, Austria

Vertical cracks may be visible on the bark in areas overlying lesions.

Signs and symptoms



Healthy and dead bark of a plane tree affected by plane wilt. The horizontal scrapings (made for investigative purposes) are green in living bark and brown in dead bark.

Signs and symptoms



Photograph: Nicola Luchi

Dark spotting and streaking under the bark of a plane tree caused by *C. platani*.

Signs and symptoms



Photograph: P. Tsopelas & N. Soulioti, FRIA, Greece

'Flame'-shaped lesions of *C. platani* extending towards the centre of the tree.

Look-alike signs and symptoms



Photograph courtesy of Forestry Commission / Suzanne Sandisi-Frey

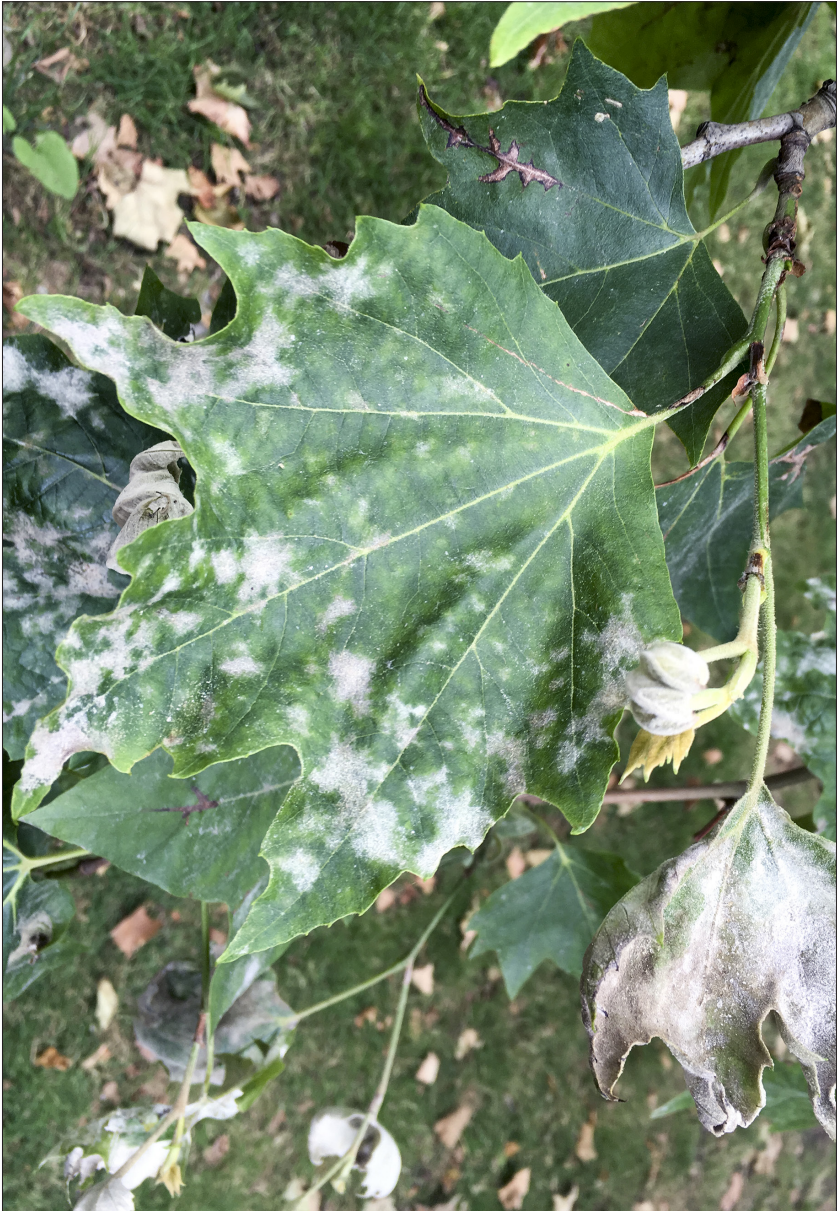
Early foliar symptoms of anthracnose (*Apiognomonia veneta*) on plane.



Photograph courtesy of Forestry Commission / Ana Perez-Sierra

Anthracnose on plane. Frost and salt damage can also cause symptoms that are similar, such as dieback and poor flushing.

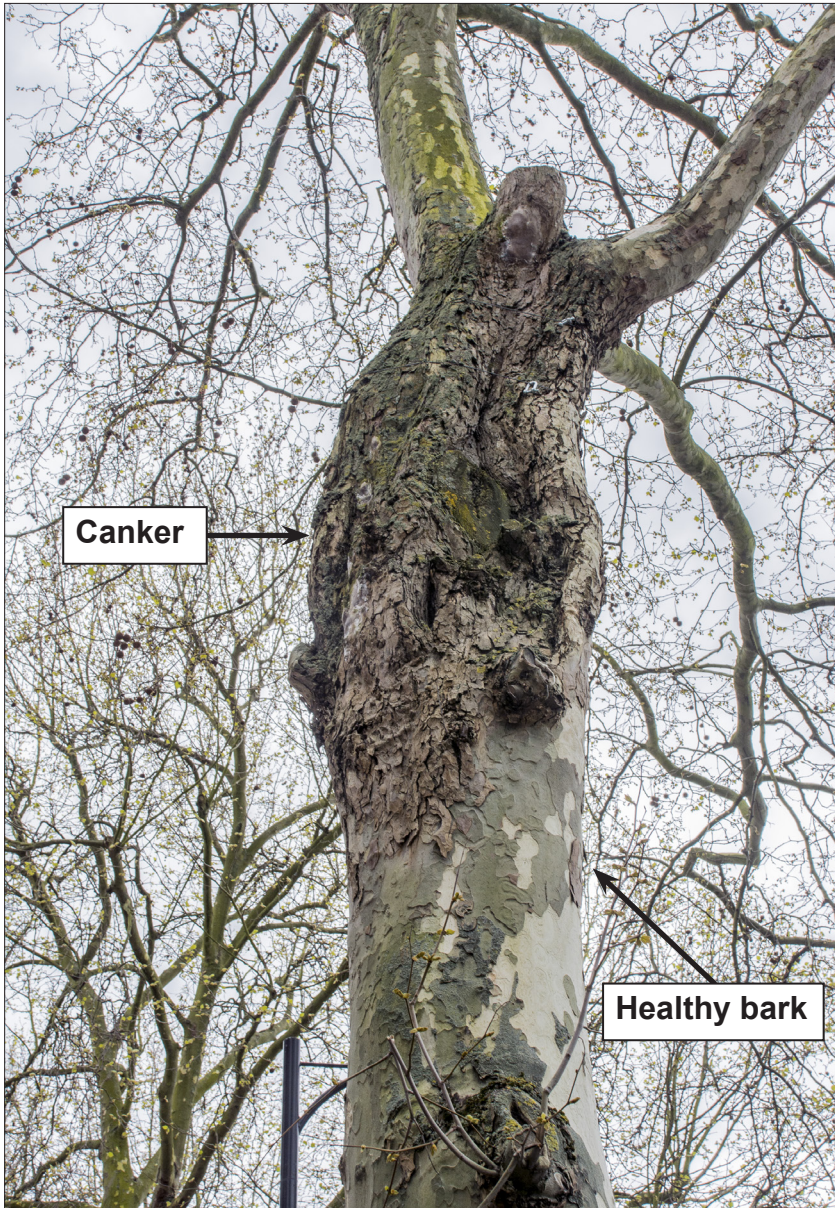
Look-alike signs and symptoms



Photograph courtesy of Forestry Commission / Ana Perez-Sierra

Plane powdery mildew (*Erysiphe platani*) causes the symptoms shown above and also can cause a yellowing of the leaf tissue.

Look-alike signs and symptoms



Photograph courtesy of Forestry Commission / Alex Lewis

A canker caused by a *Fomitiporia* sp. (a decay fungus) on the bark of a plane tree.

Look-alike signs and symptoms



Fruiting bodies of a *Fomitiporia* sp. (a decay fungus) on a plane tree.

Look-alike signs and symptoms



Photograph courtesy of Forest Research / Glenn Brearley

Massaria disease (*Splanchnonema platani*) can also cause lesions on plane trees – but these tend to be on the upper side of branches only, not on the trunk. These can appear as orange streaks. The outer bark often comes away on its own revealing the orange lesion below. When present, the bark will also have an orange hue. Some areas of the lesions may be blackened with spores.

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Observatree aims to create a tree-health early-warning system using citizen science.

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This booklet forms part of a set that supports Observatree volunteers when out looking for priority pests and diseases. It supplements face-to-face training and is not intended as a full or detailed description. It will also be useful for others who have some knowledge of the particular pest or disease and understand how to look for these. Further information is available online from the websites listed below:

www.observatree.org.uk

www.forestresearch.gov.uk/tools_and_resources/fthr/pest-and-disease-resources/

www.gov.uk/guidance/prevent-the-introduction-and-spread-of-tree-pests-and-diseases

<https://planthealthportal.defra.gov.uk>