

Background to *Ceratocystis platani* on plane

Canker stain disease is caused by the fungus *Ceratocystis platani* and is considered the most serious disease to affect *Platanus occidentalis*, *P. orientalis* and their hybrid *P. x acerifolia* (London plane). Although present in the USA and Europe, *C. platani* is considered indigenous only to North America.

Ceratocystis platani was introduced into Europe, in the Naples area in southern Italy, during World War II. It appears to have arrived in infected wood from the USA used to package military supplies. Following its discovery in Italy, the disease has gradually spread to other European countries and is now present in Greece, France, Spain, Switzerland and Armenia. In many European countries *Platanus* is an important feature street tree, often seen in parks and avenues.

Symptoms

First visible symptoms tend to be sudden wilting of the foliage on a single branch (A), leading to more extensive dieback of the crown. In thin-barked trees, sunken lesions can be conspicuous by orange/purple discolouration at the margin (E), with thicker bark the only external signs of cankering may be vertical cracks (F). As bark is pared away, leopard-like dots (brown to dark violet) are revealed in the outer wood; cross sections through infected branches show spindle-shaped, bluish-black discoloration in the wood which extends radially into branches/stems (B-D). Trees 30-40 cm diameter can be killed quickly (2-3 years) but with larger, vigorous trees it may take 4-7 years

Spread

Spores or the mycelium of *C. platani* infect via wounds in the bark of branches or stems, or through root contacts between neighbouring trees. It can be spread by infected plants and also through the movement of infected wood or contaminated soil. Stem and branch infections commonly occur through use of contaminated pruning and planting tools. Once established, the extension growth of the fungus may be more than 1 m per year; even the heartwood is invaded. Spores are produced on the surface of dead wood.

Control

Ceratocystis platani is a quarantine organism so there is an obligation to report suspect trees. As it can persist in infected wood, removal and burning of all infected material is the safest form of control. No effective chemical treatment appears is available but some hybrid clones have been identified that show disease resistance. The most effective precautions include careful disinfection of pruning tools and new plant stock should come from disease free areas and be checked carefully.

What to do

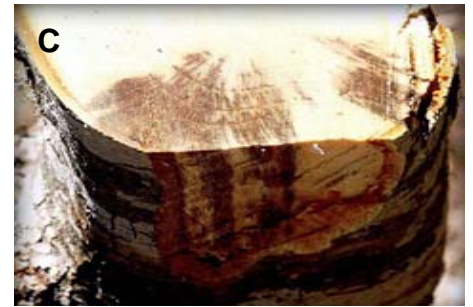
Any suspect trees can be reported through the Forestry Commission TreeAlert online reporting tool (<http://www.forestry.gov.uk/treealert>). Please supply photos of the symptoms, full details of the location of affected tree(s), contact details and, if possible details of the age of the tree (mature or recent planting) and any other relevant factors such as recent wounds and soil disturbance around trees.

Alternatively contact Forest Research Tree Health Diagnostic Advisory Service
<http://www.forestry.gov.uk/fr/ddas>

Symptoms associated with *Ceratocystis platani* on plane



A: Affected tree showing sudden wilting of foliage in the crown



B-D: Cross-sections of infected branches and stems showing brownish to blue-black stain in the wood



E: Sunken lesion on thin barked tree with orange/purple margins; F: cracking of bark associated with infection on a thicker barked tree; G: brownish discolouration of bark with characteristic 'leopard-spotting'