

Ramichloridium pini on lodgepole pine

Enquiries have been received from various locations in Scotland concerning shoot dieback of lodgepole pine caused by the fungus, *Ramichloridium pini*. This fungus infects young shoots early in the growing season. By spring of the following year, infected shoots are very visible with a cluster of yellow and brown needles at the shoot tips (right). Typically, this disease causes dieback of scattered shoots only. However, severe infections can kill trees.



Dutch elm disease

Dutch elm disease has been reported for the first time north of Inverness, with one confirmed case and further suspected cases on Wych elm (*Ulmus glabra*) in the Black Isle. The disease has been present for some time around Nairn, and recent, warmer summers may have aided the northerly spread of the elm bark beetle (*Scolytus scolytus*) which carries the fungus (*Ophiostoma novo-ulmi*) causing the disease. Affected branches have wilted, yellow and brown leaves (far right). The disease is confirmed by peeling the bark from affected twigs to reveal longitudinal streaks in the wood (near right).



Horse chestnut

Enquiries continue to be received concerning the poor health of horse chestnut, particularly in south-west Scotland. Affected trees may have bleeding cankers on stem and scaffold branches and/or yellowing and browning of foliage (near right). In some cases, leaf symptoms may be caused by the fungus, *Guignardia aesculi* (far right), which is not too damaging. However, some trees with stem cankers may be infected with the bacterium, *Pseudomonas syringae* pv. *aesculi*, thought to be responsible for the recent upsurge in cases of bleeding canker disease of horse chestnut.



Leaf spot of sycamore

The fungus *Cristulariella depraedans* causes light grey spots on the green leaves of sycamore, giving the impression that it has been covered with flecks of paint (see right; note: the black spots in the photo are Tar Spot, another common foliar disease of sycamore caused by the fungus *Rhytisma acerinum*). *Cristulariella depraedans* occurs infrequently but every so often there are epidemics when it becomes very widespread and causes moderate amounts of defoliation. Its development is favoured by cool wet summers so it is no surprise that this year has been one of the epidemic years. Though it can cause moderate defoliation, this occurs late in the season so does not result in serious damage.



Shoot browning of Wellingtonia

This condition has been widely reported in England this summer. Clearly, drought cannot be the cause this year, and a careful examination of the affected shoots revealed that only 2006 shoots did not flush this year. The terminal buds on these shoots were tiny and evidently not viable and this weak growth was very likely due to drought stress in 2006. It appeared that these unflushed shoots were being shut down by the tree and then shed during the summer, much in the same way that leaves are shed in the autumn. This type of shoot shedding is known as cladoptosis and it is a physiological response to weak shoots produced by stressed trees. Shoot shedding of unflushed weak shoots can also occur in other species, such as oak and yew.

