Observatree
monitoring tree health

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‘**Host of the month**’ is a series of information sheets and blogs that highlight a tree host and their associated priority pests and diseases that are best seen and recorded in that month. For February we’re looking at Lawson cypress (*Cupressus lawsoniana*), and *Phytophthora lateralis*.

Lawson cypress is named for Peter Lawson, a Scottish nurseryman who introduced the species to horticulture. It was introduced to the British Isles in 1854 from its native range in N.W. California and S.W. Oregon where it is known as the Port Orford cedar. The taxonomy/classification of the *Cupressaceae* is a rapidly evolving area of research and you may also see the scientific name of Lawson cypress given as *Chamaecyparis lawsoniana*. It is a member of the *Cupressaceae,* a family which contains 24 other Genera including *Cupressus, Juniperus*, *Thuja*, *Sequoia* and *Cryptomeria.* In common with many other members of the family Lawson cypress has scale-like leaves rather than needles.

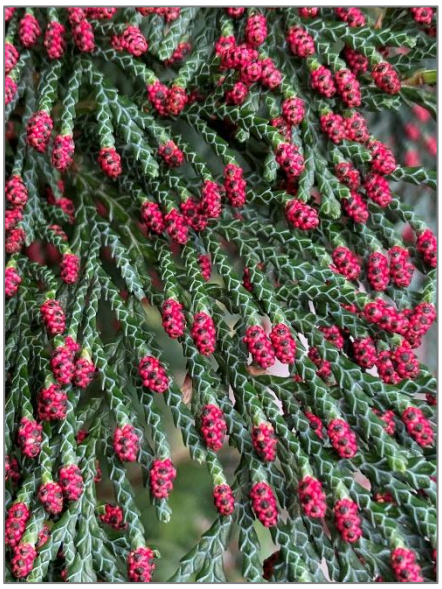

Figure 1: bright red male cones of Lawson cypress.

It is grown on a small scale as a forestry species in the UK in its native range it yields an extremely valuable rot-resistant and fragrant timber. Much of it is destined for Japan for use in the construction of temples and coffins where it has replaced the native Hinoki (*Cupressus obtusa*) as the historically preferred material. In the UK the species is much more likely to be encountered as an ornamental and there are many hundreds of named cultivars. There’s a wide variation in foliage colour and shape, and overall form of the tree which means some of the cultivars are so different from the wild type that they are barely recognisable as being the same species!

Of all the *Cupressaceae* found growing in the British Isles there are three very common and similar looking taxa which you’re likely to encounter: Lawson cypress, Western red-cedar (*Thuja plicata*), and Leyland cypress (*C.* x *leylandii* – a hybrid between Nootka (*C. nootkatensis*) and Monterey (*C. macrocarpa*) cypresses: the table below gives three quick ways to tell them apart.

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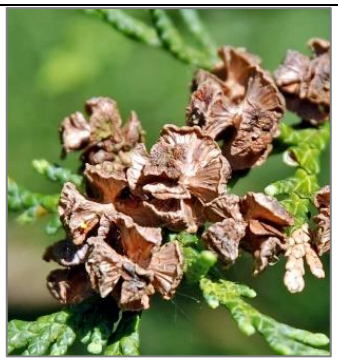
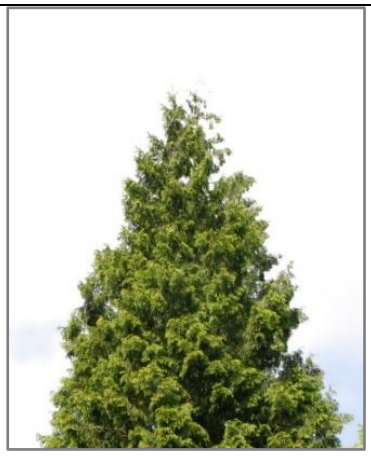
	Lawson cypress	Western red-cedar	Leyland cypress
Smell of lightly crushed foliage	Savoury (often dubiously referred to as 'parsley-like')	Sweet (Wrigleys juicy fruit gum, fruit-salad penny chews, fake pineapple)	Generic resinous/coniferous
Cones	 Roughly spherical, usually around 7-11mm in diameter (when scales are open).	 Tulip or vase-shaped, especially when immature	 Cones only on some cultivars, roughly spherical, 20-30 mm
Lead shoot at the very top of the tree	 Lead shoot 'lops over'	 Lead shoot straight	 Lead shoot straight

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If present the male (pollen) cones can also be useful, those of Lawson cypress are bright red (fig. 1), whereas those of Western red-cedar and Leyland cypress are pale yellow. In addition, if you look at a sprig of Lawsons foliage with light behind it you should see a series of spindle-shaped translucent resin glands not visible in the other two (fig. 2). You may need a x10 hand-lens to see this clearly but please don't use the sun as your backlight!

Figure 2: Back-lit translucent resin glands in the foliage of Lawson cypress.

Priority pathogen - *Phytophthora lateralis*

Lawson cypress is the key host for *Phytopthora lateralis,* an aggressive fungus-like pathogen that is thought to originate in Asia. It was first detected in the wider environment in the UK in 2010 in Scotland and probably arrived via infected plants. It is also present in North America where it is has devastated native populations of Lawson cypress, killing trees of all ages and destroying entire stands in some habitats.

The pathogen spreads via spores in soil or water, and primarily attacks the roots and leads to lesions, discoloration of foliage, dieback, and eventually tree death. Early signs include discoloration, initially with some yellowing, but quickly progressing to a reddish-ginger and finally a dull bronze as the tree dies (fig. 3). These symptoms are caused by tongue-shaped, dark coloured lesions in the phloem which cut off the supply of water and nutrients to the upper parts of the tree.

Other *Phytophthora* species can also infect Lawson cypress and result in the same symptoms above ground so definitive identification requires laboratory analysis using techniques including isolation, DNA extraction, PCR, and sequencing.

Figure 3: Early discoloration following initial infection (left) progresses to strong ginger coloration and eventually death (middle). Characteristic flame-shaped and cinnamon-coloured lesions beneath the bark of infected Lawson cypress (right). All © Crown copyright. Forest Research.

Lookalikes

Honey fungus (*Armillaria*) can present very similar symptoms so it's important to rule this out by checking below the bark at the stem/root collar. Honey fungus will show between the inner and outer bark as a mass of white fungal threads with a characteristic mushroom odour – see Honey fungus / RHS Gardening. For *P. lateralis* you should see large flame-shaped cinnamon-brown lesions (fig. 3).

Drought damage presents as gingery-red foliage evenly distributed on the inside of the tree which falls readily when touched (fig. 4).

Cypress Aphid (*Cinara cupressivora*) can occur on Lawson cypress, Leyland cypress, Western red-cedar, and Monterey cypress. It initially presents as patches of yellow-brown and dying foliage by late summer (fig. 4). See Cypress aphid / RHS Gardening for more information.

***Seiridium* canker** (aka *Coryneum* canker)**:** Foliage discoloration and death of scattered twigs and branches of Leyland and Monterey cypress only (fig. 4), Lawson cypress and Western red-cedar are not affected by this pathogen.

Figure 4: typical examples of damage due to drought (left), Cypress aphid (middle), and *Seiridium* canker on Leyland cypress (right).

Reporting

P. lateralis is no longer regulated except in the nursery trade but please report possible sightings via TreeAlert.

For more information and resources on this pathogen check the Observatree website.

Matt Parratt, Forest Research

Updated January 2024

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