

Fighting *Phytophthora* infections in shrubs and trees

Phytophthora (from Greek, meaning 'the plant destroyer') is a genus of water moulds that cause tremendous economic and environmental damage globally. They can infect many different tree species, but in the UK it is the impact that this disease has had on larch trees that has been making headlines since it was first reported in England in 2009. In other countries trees and shrub species such including oak, fir, bilberry and rhododendron also fall prey to *Phytophthora*. There is currently no method to treat the infection, and so trees are felled which show signs of infection and clearing zones produced to try and slow the spread of infection, but it can often be too late.

This new research is taking a different approach to diagnosis; one which could potentially allow diseased trees to be identified before they become symptomatic and start passing on the infection. The way in which different genes are expressed in plants (and animals) can alter in response to different sources of stress; such as environmental stress or disease. By controlling which genes are regulated, an organism can become better adapted to a given environment.



Separate projects with larch and bilberry will be testing samples for different markers on the plants' DNA to identify which are produced in response to *Phytophthora* Infection. This will enable a method for screening trees and other plants for early infection to be developed. This approach will also make it possible to test saplings for resistance, and to then cultivate those, in order to prevent infection in the future.

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