Role of *Phytophthora pseudosyringae* in widespread dieback of *Nothofagus* plantations in Britain

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Since 2009 extensive dieback and mortality of *Nothofagus obliqua* associated with bleeding cankers on stem and branches has been observed in Britain. The casual agent of this disease was identified as *Phytophthora pseudosyringae*, based on morphological and ITS analysis. In 2011 a survey was undertaken to assess the frequency and type of *P. pseudosyringae* infections, the comparative susceptibility of *N. obliqua* and other different woody hosts, and the sporulation potential of *P. pseudosyringae* on *Nothofagus* foliage. Infections of *P. pseudosyringae* on *Nothofagus* appeared to be widespread in Britain with infected trees being found on at least three sites in England, two in Scotland and one in Wales. Additional symptoms such as twig blight and leaf necrosis suggested that aerial infection was occurring. Besides *N. obliqua*, also *Nothofagus alpina*, *Fagus sylvatica* and *Vaccinium myrtillus* were found to be infected. In pathogenicity tests *P. pseudosyringae* was shown to be an effective bark pathogen of *Nothofagus*, but with significant differences between the different woody hosts assayed. Susceptibility of foliage showed marked differences between the host species tested, with *N. obliqua* leaves proving to be highly susceptible. The high levels of sporulation observed on infected *N. obliqua* leaves suggests that *P. pseudosyringae* has the potential to sporulate heavily on foliage and spread from there to shoots, branches and stems. *P. pseudosyringae* on *Nothofagus* represents the third *Phytophthora* species causing aerial infection on forest trees in the UK and could have the potential to pose a serious threat to *Nothofagus* in its native southern hemisphere.

More new *Phytophthora* species from natural ecosystems in Western Australia

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In 2009 (Plant Dis. 93:215-223) we reported 11 apparently new *Phytophthora* species, designated P.sp.1-11, from natural ecosystems in Western Australia WA). Since then many of these species have been described: *P. multivora* (P.sp.4), *P. elongata* (P.sp.2), *P. constricta* (P.sp.9), *P. arenaria* (P.sp.1), *P. thermophila* (P.sp.3), *P. litoralis* (P.sp.11), *P. gregata* (P.sp.7), *P. fluvialis* (P.sp.8). P.sp.5 falls in the *P. cryptogea* species complex and P.sp.6 has been identified as *P.* taxon personii . Additionally we have described *P. gibbosa* and *P. amnicola.* Further sampling and continued molecular re-evaluation of the culture collection at the Department of Environment and Conservation's Vegetation Health Service (VHS) has uncovered more new species tentatively named P. aff. humicola, P. aff. rosacearum, P. aff. elongata, P. aff. arenaria, P. aff. captiosa, P. taxon. kwongan (=P.sp.10), P. taxon. casuarina. A large number of the new species are from ITS clade 6, sub-clade I and they have been isolated in remote natural vegetation. All known species and taxa in sub-clade I, with the exception of *P. humicola,* have been isolated in WA, perhaps illuminating a WA origin for this clade. Studies are currently underway to formally describe the new species in conjunction with large scale pathogenicity trials of these and the other newly described species.

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