



## Editorial - May 2013: Tracking the advance of devastating diseases of trees and shrubs

The discovery of ash dieback (*Chalara fraxinea*) in several parts of the UK in 2012 prompted debate about the circumstances surrounding its arrival but also focused attention more generally on the state of plant pathology and biosecurity in the UK and EU. The British Society for Plant Pathology (BSPP) had already been producing evidence of the decline of human resources involved in plant pathology (<http://www.bspp.org.uk/news.php?id=54>). This helped politicians focus on the importance of a topic on which they had already been briefed (Wentworth, 2011). As a resource for this debate, a Virtual Issue\* of *Plant Pathology* has appeared with new and reprinted articles on relevant topics. This Editorial's contribution focuses on *New Disease Reports* (NDR) on emerging or spreading diseases of trees and bushes. The emphasis is on Europe with limited attention paid to reports from other parts of the world.

The benchmark for present purposes is the review by Brasier (2008), in which pathogens already known to science (Brasier's Table 2) are distinguished from those new to science when the disease was first described (Brasier's Table 1). Table I of this editorial records *Phytophthora* species (Oomycetes) and Table II fungal, bacterial and viral pathogens, respectively, in relation to this benchmark. The most salient features of Table I are the diseases caused by *P. ramorum* on many different hosts in UK and the Balkans. Equally significant, however, are the 12 species of *Phytophthora* not included in Brasier (2008). Some of these species are characteristic of warmer climates (*P. boehmeriae* and *P. palmivora* reported from South America) but of potential significance in Europe. Olive which is grown commercially in SW England has already been reported to be affected by the introduced olive leaf-spot pathogen, *Pseudocercospora cladosporioides* (Henricot *et al.*, 2009). Not surprisingly given that NDR is a journal of choice for these purposes, many of these reports were first reports for the country and/or host in question.

Table II records 11 species of fungal pathogens, two bacterial pathogens and one virus of trees or bushes from the archives of NDR. This includes, for the UK, ash dieback (Bakys *et al.*, 2009), bleeding canker of horse chestnut (*Pseudomonas syringae* pv. *aesculi*; Steele *et al.*, 2010) and (sweet) chestnut blight (*Cryphonectria parasitica*). Pathogens featuring in Brasier (2008) not reported in NDR are *Discula destructiva* on dogwood (*Cornus* spp.) and fireblight of pome trees (*Erwinia amylovora*) but both these introductions pre-date the start of NDR as part of *Plant Pathology* in 2000. *Erysiphe platani* is present in UK (not reported in NDR).

NDR does not claim to be the only internationally recognised outlet for reporting new and emerging plant diseases nor does it claim

comprehensive coverage. For example, *EPPO Reporting Service* is of particular interest, indexing a wide range of publications including NDR. However, NDR has utility as a resource for risk assessment and horizon scanning, especially given the changing distribution of pests and host plants (cultivated or not) due to climate change. For the UK and NW Europe, (more) diseases of olive and blueberry and bilberry (*Vaccinium* spp.) may be on the horizon as well as *Thielaviopsis populi* on poplar (Table II). A pathogen covered in the special *Plant Pathology* issue to look out for is *Phytophthora obscura* (Grünwald *et al.*, 2012). To reflect the need for more focused information on disease distribution, NDR has introduced 'Follow-up Reports' (<http://ndrs.org.uk/article.php?id=027002>) so that spread or indeed eradication may be recorded.

\*Available at [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1365-3059/homepage/virtual\\_issue\\_-\\_emerging\\_diseases\\_of\\_trees\\_and\\_their\\_management.htm](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-3059/homepage/virtual_issue_-_emerging_diseases_of_trees_and_their_management.htm)

### References

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Wentworth 2011 Invasive Tree Pests and Diseases - POST Note POST PN 394 [<http://www.parliament.uk/business/publications/research/briefing-papers/POST-PN-394>].

Table I. *Phytophthora* spp. as pathogens of trees and bushes reported in *New Disease Reports*

Species	Host	Year report received	Status in Brasier, 2008	NDR Volume, Page
<i>P. alni</i>	<i>Alnus</i> spp. (alder)	2007	Table 2	15, 30
<i>P. alni</i>	<i>Alnus glutinosa</i> (common alder)	2009	Table 2	20, 23
<i>P. austrocedrus</i>	<i>Juniperus communis</i> (juniper)	2012	Not included	26, 2
<i>P. boehmeriae</i>	<i>Albizia leonardus</i> (black wattle)	2006	Not included	13, 23
<i>P. cinnamomi</i>	<i>Phoradendron</i>	2009	Referenced in	16, 7
	<i>Mycophaena</i> (pearl)	2008	referenced in	16, 7
	<i>Prunus serotina</i> (black cherry)	2008	referenced in	16, 7
	<i>Populus alba</i> (white poplar)	2008	referenced in	16, 7
<i>P. cinnamomi</i>	<i>Quercus agrifolia</i> (oak)	2011	Table 1	15, 31
<i>P. citricola</i>	<i>Alnus</i> sp. (alder)	2003	Not included	7, 29
	<i>Fraxinus excelsior</i> (ash)	2009	Not included	24, 12
<i>P. corymbosa</i>	<i>Castanea sativa</i> (sweet chestnut)	2010	Not included	20, 31
<i>P. ramorum</i>	<i>Quercus</i>	2010	Not included	22, 13
	<i>Salix</i> spp. (willow)	2005	Not included	12, 23
	<i>Ulmus</i> spp. (elm)	2006	Not included	14, 16
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2012	Table 2	26, 18
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2008	Not included	15, 32
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2009	Table 2	15, 26
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2011	Table 1	24, 8
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2012	Not included	6, 16
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2013	Not included	2, 3
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2014	Not included	23, 3
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2015	Not included	24, 7
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2016	Not included	25, 14
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2017	Not included	26, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2018	Not included	27, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2019	Not included	28, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2020	Not included	29, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2021	Not included	30, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2022	Not included	31, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2023	Not included	32, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2024	Not included	33, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2025	Not included	34, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2026	Not included	35, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2027	Not included	36, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2028	Not included	37, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2029	Not included	38, 1
<i>P. ramorum</i>	<i>Thuja occidentalis</i> (hemlock)	2030	Not included	39, 1

\* Identified in species lists

\*\* Olive grows commercially in SW England as well as in southern Europe.

Figure 1

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Figure 2

Table II. Non-oomycete, bacterial and viral pathogens of trees and shrubs reported in *New Disease Reports*

Species	Host	Year report received	Status in Brasier, 2008	NDR Volume, Page
<i>Campylobacterium</i>	<i>Prunus</i> spp. (cherry)	2009	Not included	8, 35
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2009	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2010	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2011	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2012	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2013	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2014	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2015	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2016	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2017	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2018	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2019	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2020	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2021	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2022	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2023	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2024	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2025	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2026	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2027	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2028	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2029	Not included	13, 23
<i>Erwinia amylovora</i>	<i>Malus domestica</i> (apple)	2030	Not included	13, 23

\* Present in UK

\*\* NDR did not report occurrence in Europe as already widespread.