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Phytophthora spp.
in nurseries and forest stands

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Preface

In conditions of a warming climate, the existence of a global trade in the seedlings of trees and ornamental shrubs only increases the likelihood that new plant diseases hitherto present further south will become established in Poland. *Phytophthora cinnamomi* – a pathogen causing the decline and dieback of oaks in Spain and Portugal – is indeed also present today in Polish nurseries growing ornamentals, and was also reported in 2004 from adult pedunculate oaks growing in a tree stand near Warsaw.

Likewise, a phenomenon initially reported in Western Europe, but then also in Poland, is the mass dieback of alders, the disease in this case apparently spread along watercourses. The first such cases were noted in England and France in 1993, and the cause of the problem is now known to be *Phytophthora alni*, a species capable of producing phytophthorosis of the roots and trunk bases. Research work being carried out jointly by Poland's Forest Research Institute and the Institute of Pomology and Floriculture in Skierniewice is seeking to determine the sources of infection in this case, and the range of the disease within the country's state-owned forests, as well as to formulate possible recommendations for the limiting of the economic losses incurred.

At the IUFRO Conference organised in autumn 2004 at Freising (Germany), German scientists confirmed that a significant impact on the oak dieback phenomenon (being reported in particular from Bavaria and Saxony) was being exerted by the species *Phytophthora quercina* and *P. megasperma*, while a decline of beech stands occurring in northern Germany was attributable to *P. cambivora* and *P. citricola*. Young beeches replacing diseased old trees were found to succumb themselves in just 10–20 years. Furthermore, research on the sensitivity of beech to *P. ramorum*, the agent responsible for mass dieoffs of oak stands in California, suggests that this a further serious and real threat to the beech and red-oak stands on this side of the Atlantic. In Poland, *P. ramorum* is hosted by ericaceous plants (including the cowberry and heather that grow wild on the forest floor), as well as beech. While this pathogen has not in fact been noted from Poland's forests as yet, it has now been found on 3 kinds of oak and on beeches in the Netherlands and the UK, if so far only in park ecosystems where the trees stand close to rhododendrons.

The further and growing threat posed by *Phytophthora* spp. induced the Forest Research Institute and Institute of Pomology and Floriculture in Skierniewice to organise a first international conference on the matter in 2004, entitled "*Phytophthora* in forest nurseries and stands". This was made possible by funding from the European Commission within the PROFOREST Centre of Excellence ("Protection of Forest Resources in Central Europe") with cooperation with General Directorate of the State Forests and Polish Phytopathological Society. The PROFOREST at the FRI facilitated the invitation of key experts from Europe and the USA, who had the opportunity to give papers on their findings and hence provide a basis for further discussions and deliberations in the course of the Conference.

This special volume contains the fruits of that meeting, offering nothing more or less than a full review of current knowledge on the diseases of forest that pathogens of the genus *Phytophthora* are capable of inducing. Due to high importance of presented subjects for forestry, some of these papers have been translated to Polish and printed in "Leśne Prace Badawcze" (*Forest Research Papers*), Supplement N° 1, 2005 (with agreement of the authors).

Tomasz Oszako