

# Abstract

Species complex *Phytophthora alni* s. l. (Peronosporomycetes: Stramenopila) is a group of invasive pathogens of alder trees. It spreads mainly via water and causes root and collar rot often resulting in the death of attacked trees. Especially in riparian stands it often causes significant losses of alder and therefore remarkable changes of ecosystems and watercourses. The species complex is very polymorphic and divided into three species – *P. ×alni*, *P. uniformis* and *P. ×multiformis*. The most widespread in Europe and in the Czech Republic is the *P. ×alni* species. The aim of this thesis is to summarize information about *P. alni* complex (and especially of the most important taxon *P. ×alni*), to describe history of its spread and development of its area in Europe, genetic variability and inner structure of its populations, ecology and pathways of spread and, based of the known results, describe the current situation of the invasion.

**Key words:** *Phytophthora alni*, *Peronosporomycetes*, *Alnus*, pathogen, hybridization, area, riparian stands