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Fungal communities inhabiting selected invasive plants in urbanized areas

ABSTRACT

Biological invasion is one of the greatest environmental challenges of the 21st century. Displacement of native taxa, economic losses and even threat to human health are just some of the effects of the expansion of alien species. The main aim of the research was to determine the mycobiota composition inhabiting three invasive plant species: *Acer negundo*, *Padus serotina* and *Spiraea tomentosa*, and to determine the pathogenicity potential of selected species of fungi isolated from the infected tissues. The research was conducted throughout 2017-2019 in three locations in Poland: in Wrocław, in Bory Dolnośląskie and in the Wigry National Park. Based on monthly field observations, the diversity and dynamics of disease symptoms appearance were determined. Strains isolated from green tissues and seeds were genetically analyzed, based on ITS fragments. Using GLMM models, the disease index, mycobiota of seeds and the biodiversity of fungi were analyzed in relation to climatic factors, air pollution and habitat conditions. In total 1980 colonies were isolated from parts of green plants (31 taxa), and 17,647 colonies from the spermosphere (51 taxa). New *Fusarium* strains have been identified causing dieback of the shoots of the ash-leaf maple in Europe. This is the first comprehensive study to identify the mycobiota of invasive plants in Poland and one of the first of such kind in Europe.