

**Demeter, L, ÁP Molnár, K Öllerer, Gy Csóka, A Kiš, Cs Vadász, F Horváth, Zs Molnár (2021)
Rethinking the natural regeneration failure of pedunculate oak: The pathogen mildew hypothesis. Biological Conservation 253, 108928**

Reference: Demeter, L, ÁP Molnár, K Öllerer, Gy Csóka, A Kiš, Cs Vadász, F Horváth, Zs Molnár (2021) Rethinking the natural regeneration failure of pedunculate oak: The pathogen mildew hypothesis. Biological Conservation 253, 108928, URL: <https://doi.org/10.1016/j.biocon.2020.108928>
Short reference: Demeter et al. (2021)

First author: Demeter László

Research group: [Institute of Ecology and Botany, MTA Centre for Ecological Research](#)

Year: 2021

Abstract

Highlights

- Ecologists and conservationists often overlook the impacts of alien microorganisms.
- An alien microfungus impedes natural regeneration dynamics of a keystone species.
- Oak powdery mildew reduces shade tolerance and growth in seedlings and saplings.
- Proposed hypothesis explains the failure of natural regeneration of pedunculate oak.
- The alien microfungus threatens the rich biodiversity associated with oaks in Europe.

Abstract

Introduced pathogen microorganisms are important drivers of ecosystem change. This paper highlights the impact of the non-native pathogen mildew multi-species complex on the natural regeneration dynamics of pedunculate oak (*Quercus robur*). Pedunculate oak is a European keystone tree species, hosting a great amount of biodiversity, but its future role in (near-)natural forests is uncertain due to the lack of natural regeneration. We reviewed historical and recent ecological, pathological and forestry literature on topics related to the impact of mildew on

