

QUESTION

Are winter-active fungal communities typical for habitat-specific?

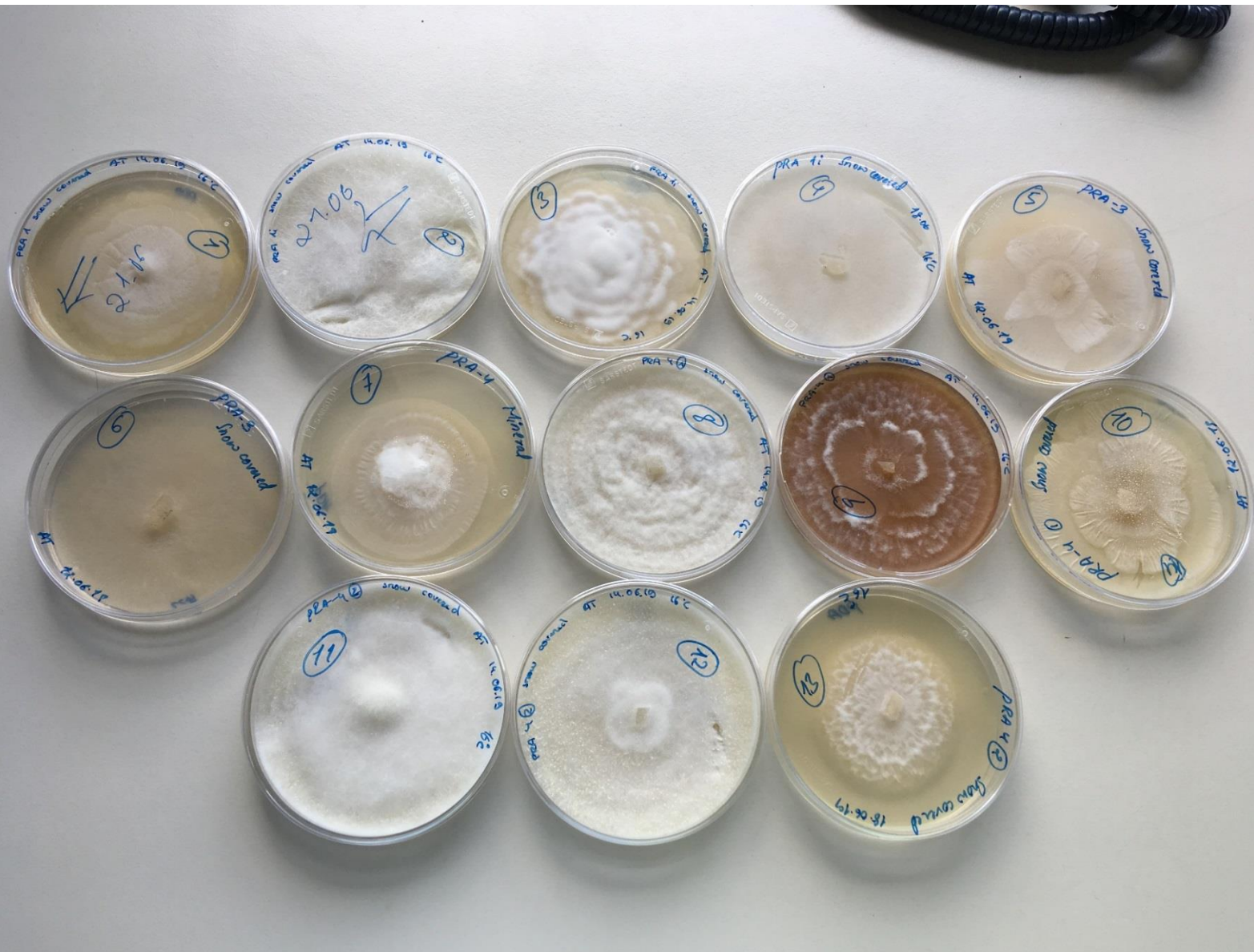
SAMPLING SITES

Barren primary successional ground Alpine dwarf shrub communities Subalpine forests (*Pinus cembra*)



Sample whole Soil core Meshbag

MORTIERELLA ISOLATES



DESIGN

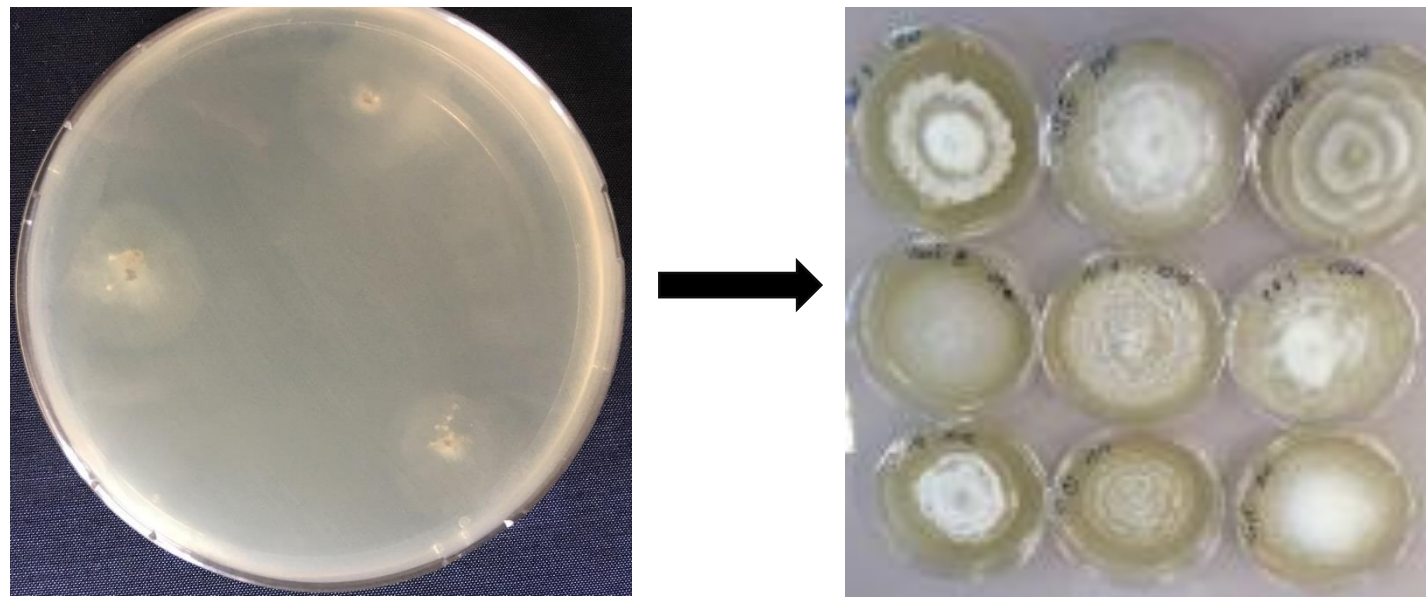
We investigated the cultivable diversity of the Zygomycete genus *Mortierella* in snow-covered soil in different habitats of the alpine region:

- barren primary successional ground close to a glacier tongue
- alpine dwarf shrub communities
- subalpine forests (*Picea abies*, *Pinus cembra*)

Cultivation and Isolation



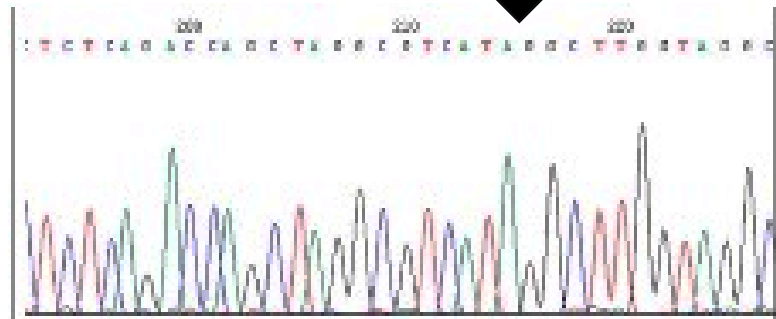
Meshbags and the soil from different habitats were plated on PDA to isolate the *Mortierella* species



Direct plating of soil on PDA and incubation at 10°C

Mortierella species

Direct colony PCR of rDNA ITS



FINDINGS

- *Mortierella* species were found in all snow-covered habitats
- Species composition was habitat specific: alpine habitats harbour clearly different species in comparison to forest habitats
- Most of the detected species grow during both summer and winter in their specific habitat

CONCLUSION

Habitat and soil characters might be the key factors shaping *Mortierella* communities in alpine regions

Figure right: Maximum Likelihood phylogram (log likelihood -8546.13) of 173 rDNA ITS sequences generated from 19 *Mortierella* species isolated from alpine (red) and forest (green) habitats. Maximum Parsimony bootstrap values (500 replicates) higher than 79% are shown above nodes (Moore RM et al 2018: doi:10.1101/106138)

