

## **Abstract**

This study aimed to compare the mycorrhizal fungal communities inhabiting the roots of invasive *Pinus strobus* L. and native *Pinus sylvestris* L. We also compared carbon allocation into ectomycorrhizal fungal (EcMf) and other structures of the two pine species. The aim was to assess the influence of mycorrhiza on the invasive potential of *P. strobus* in the protected areas of National Park Bohemian Switzerland. The two field experiments were conducted on three locations of each species. We estimated the EcM extramatrical mycelium (EMM) production by measuring the ergosterol content in sterile sand filled mesh-bags. Next measured variables were: biomass of ectomycorrhizal and saprotrophic sporocarps, fine roots biomass and leaf litter biomass to compare the one season production of each measured variables. The results revealed a major difference in EcM sporocarps production, whereas on the *P. sylvestris* sites was the production 100% higher. Same results came from the fine roots measurements: *P. sylvestris* had a higher fine roots production, which may be also related with the production of EMM, which was about 60% higher as well. The EcMf species richness on the *P. strobus* root-tips was as high as the native pine, but the species composition was different. The *P. strobus* prefers EcMf species with different exploration types, when compared to the native pine. And this might be the clue to the mechanism of the *P. strobus* invasion - we hypothesise, that it allocates less photosynthates into EcMf structures and uses them for its own intensive apex growth.

## **Key words**

Mycorrhiza, *Pinus strobus*, species richness and assemblage of EcMf, invasive species, carbon cycle