



Reactivity of ectomycorrhizal communities of spruce and beech to recurrent years of severe summer drought

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We analyzed ectomycorrhizal community composition along with functional traits (enzyme activities, morphological traits) to identify mechanisms of drought adaptation in the ectomycorrhizal communities of the two tree species *Fagus sylvatica* and *Picea abies*. We show results from 4 consecutive years of experimental drought from the Kranzberg Roof Experimental Site (KROOF) next to Freising.

ECM community changes were detected upon repeated drought while community enzyme activities of seven extracellular enzyme activities remained remarkably stable in the surviving mycorrhizal communities but strongly declined – at the ecosystem level – upon repeated summer drought years because of the decline of vital fine roots. Overall, both tree species and their ectomycorrhizae show still an enormous drought resistance considering an extreme drought scenario of four consecutive summer droughts at the KROOF sites particularly at the functional level.