

Abstract

Mycorrhizal mycelium may form a continuous network (common mycorrhizal network - CMN) and connect a number of plants or even entire community in an ecosystem. In the Plant World, CMNs have a number of important physiological and ecological consequences. The present work aims to create a review on current knowledge of CMNs and the associated Wood Wide Web. The next objective is to evaluate the results of individual observations and experiments that have been made on this topic.

The introductory chapters 1 and 2 describe the various types of mycorrhizal symbioses (i.e., arbuscular mycorrhiza, orchid mycorrhiza, ectomycorrhiza, ericoid and monotropoid mycorrhiza), their characteristics and ability to create CMNs.

The following chapters 3 and 4 describe ecophysiological consequences of common mycorrhizal networks such as maintaining stability of plant populations, invasive plants which exploit CMNs, plant communities and the hypothesis of meta-networks.

Mycorrhizal mycelium allows transfer of various substances between two plants. The transferred substances include mineral nutrients (especially nitrogen and phosphorus), but also carbon organic compounds, water, signal substances, etc.

The last part summarizes the knowledge on CMN, discusses the advantages and disadvantages of different experimental designs, etc. Knowledge of CMN is still relatively fragmented and respective experiments always deal with very specific problems. The CMN research improves our knowledge not only on plants and fungi, but also on processes and dynamics of whole ecosystems and their impact on processes at the global scale.