

Abstract

This diploma thesis focuses on processes that structure desmid communities. Phylogenetic structure of communities helps to reveal those processes. Phylogenetic structures links ecology of communities and evolutionary history of species in those communities.

Totally I analysed 89 desmid communities. Most of them were phylogenetically structured, which agrees with the hypothesis that communities are structured by classical niche-related processes, such as competition and environmental filtering. Usage of environmental information showed the influence of pH on the community structure. Low pH acts as a strong environmental filter. Under the influence of this filter communities are composed of closely related species. In the absence of this filter communities are structured by competition. Localities with higher pH host communities of distantly related species – phylogenetically overdispersed. There was found no influence of conductivity and geographical distance on phylogenetic structure of desmids communities.

Key words: phylogenetic structure, desmids, Desmidiatales, environmental filtering, pH