

Abstract

The symbiotic relationships often represent not only the permanent cohabitation of two organisms, but they can evolve and change over time. Many papers published so far focused on the the specificity of lichens, characterising both highly specific species and those that can establish a symbiosis with many algal genotypes. In this second case we can imagine the possibility of a photobiont exchange during the life of lichen – the dynamics of lichen symbiosis.

In this thesis I compared the occurrence and diversity of photobionts within the thalli of lichens growing on the disturbed localities and on the the localities without the disturbance. These two types of localities were similar to species richness of photobionts, but the disturbed localities dominated by the number of photobiont genera. These localities also reached a higher value of phylogenetic diversity. Conversely, non-phylogenetic analysis revealed the higher level of photobiont diversity on non-disturbed localities, where the core of diversity was formed by different lineages of *Trebouxia*. I have also found the lichens, which cooperate with different algae on disturbed and non-disturbed localities.

The photobiont distribution presented in this paper shows the possibility of photobiont exchange during the community succession. The explanation can lie in lower mycobiont specificity during the thallus formation with the possibility of future exchange. On the other hand, the photobionts detected in the first phase of lichen life could be more suitable for the substrate colonization, whereas the algal genotypes detected in mature lichens could be suitable for a permanent persistence of lichen thalli.

Key words

photobiont, lichen, symbiosis, dynamics, green algae, diversity, Chlorophyta