

The ecological preferences and distribution of *Cladonia coccifera* group is the topic of the first part of this thesis. The field research as well as the historical research has shown that *Cladonia pleurota* is the most common species, whereas *C. metacorallifera* is the rarest species in the Czech Republic.

Phylogenetic relationships within *Cladonia coccifera* group were cladistically examined with ITS regions and partial β -tubulin gene. The analyse resulted in two incongruent trees. Incomplete lineage sorting and recombination were considered to be the main reason accounting for the incongruencies. The analysis has also shown that species distinguished morphologically and chemicaly (*C. borealis*, *C. carneola*, *C. metacorallifera*) are monophyletic. In opposite, the status of species with identical chemical characteristics (species containing zeorin - *C. coccifera*, *C. deformis*, *C. diversa* and *C. pleurota*) was not confirmed and requires further study.