Abstract

Rhododendron tomentosum is an evergreen shrub with a high content of secondary metabolites, particularly essential oils with antimicrobial effects. Diversity of endophytic fungi in this species and their possible adaptation to growth in the essential oil environment is not much explored.

Therefore, the first aim of this thesis was to reveal the diversity of endophytic fungi colonising leaves of *R. tomentosum* on seven localities in the Czech Republic and one in Estonia. I isolated and determined (using comparison of ITS1 and ITS2 rDNA with the sequences from GenBank and morphological signs) 37 species of endophytic fungi. Among them the ubiquitous species colonising the most of the plants as endophytes were dominant.

The second aim of my thesis was to explore whether the essential oil from *R. tomentosum* influences its endophytic fungi. The hypothesis that the strains obtained from *R. tomentosum* would be adapted to growth in the environment of the essential oil was postulated. I supposed that they would grow better on mediums with different concentrations of these chemical compounds added, in comparison with strains of the same species obtained from different substrates. Within four of seven species tested, the strains obtained from *R. tomentosum* grew better, but also on the medium without the chemical compounds. The most of the strains tested (from *R. tomentosum* and also from different substrates) were markedly inhibited only by the highest concentration of chemical compounds added into the medium. I confirmed the initial assumption only for *Desmazierella acicola*. Within this species, both of the strains grew comparably on the medium without the chemical compounds and the strain not obtained from *R. tomentosum* was more susceptible to chemical compounds added.