

## ABSTRACT

The original aim of my diploma thesis was examination of fixed samples of cladocerans from the *Daphnia longispina* species complex from reservoirs Vír and Vranov for the presence of 4 groups of microparasites: microsporidia, oomycetes, the protozoan *Caullerya mesnili*, and the yeast *Metschnikowia bicuspidata*. The next aim was to determine the effect of parasites on *Daphnia* fecundity, and determination of their spatial and temporal distribution within reservoirs. From the total number 4452 of examined *Daphnia* females, however, only 56 individuals were infected. This number was not sufficient for the planned analyses. As I recorded for all examined individuals the clutch size, I thus dealt to a large extent with an alternative issue: the temporal and spatial variation of, and the influence of environmental factors on *Daphnia* fecundity. Both studied reservoirs are characteristic by canyon-shaped profile that allows formation of environmental gradients on the horizontal as well as vertical axis. The results confirm that reservoir identity, season, and location within the reservoir (or gradient of food supply) have all significant effects on fecundity.

During my work I have encountered difficulties associated with determining microparasites from fixed zooplankton samples. The appendix section of my thesis thus deals also with the issue of fixation of zooplankton, and in particular recognizing microsporidia infection from fixation artifacts. I discuss (dis)advantages of various fixing agents, provide a detailed description of healthy and infected water fleas, and summarize methodological recommendations for working with fixed samples in order to study microparasites.

**Key words:** *Daphnia longispina* complex, *Daphnia* fecundity, microparasites, environmental gradients, canyon-shaped reservoirs, fixation of zooplankton, microsporidia.