

## ABSTRACT

In this diploma thesis, I deal with the influence of the sampling site on water quality in natural bathing lakes (Hostivar reservoir, Seberak pond and Vyzlovka pond) in this. I have established that hygienically significant kinds of phytoplankton may differ in terms of water quality especially where there are cyanobacteria constituting water bloom. Surface water bloom may be moved by wind to the lee side of the water body (*Microcystis* sp.).

*Aphanizomenon flos-aquae* water bloom floating in water column can be affected by wind and by water flow (which may be partly affected by wind as well). With the prevailing fibrous *Planktothrix agardhii* which does not constitute water bloom the concentration of chlorophyll-a and cyanobacterial cell abundance in individual sampling sites are similar although the concentration of chlorophyll-a is about  $200 \mu\text{g}\cdot\text{l}^{-1}$ .

*Microcystis* sp. and *Scenedesmus* sp. survive under eutrophic conditions in competition.

From the microbiological perspective, water quality can differ within a single sampling site in places at a distance of less than 100 m. Microbial contamination can be caused by bathers, water birds, farm animals and probably by the removing of microorganisms from sand, mud and sediments on the beach or shore. Rain episodes probably increase the abundance of *E.coli* in the whole area by means of overland flow washing fertilized arable soil, horse feces, mud and sediments from the forests.