

## **PST15 - Zooplankton diversity in reference to water regime and fish state in small water bodies in an agricultural landscape**

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Human impact on the functioning of biocoenoses occurring in small water bodies located within field surroundings is not only restricted to the increase of the trophic state of water. In Poland, small water bodies are often used for the purpose of amateur fish production, mainly carp and crucian carp. In addition, in order to limit the growth of aquatic vegetation alien fish species to native fauna, such as grass carp, are frequently introduced into the ponds. Only water bodies which are astatic remain entirely free of such manipulations.

The aim of the study was to evaluate the zooplankton diversity in ponds of various water regime and varying levels of fish stocking (fish-free ponds; ponds with low fish stocking; ponds with high fish stocking) in six ponds situated in the same type of catchment area. Moreover, we aimed to establish the conditions responsible for maintaining the high diversity of zooplankton in field ponds that are subjected to varying degrees of fish stocking. The research material was collected from the open water zone, twelve times in 2009, covering the spring, summer and autumn periods.

A total of 133 zooplankton taxa was recorded. Rotifers (including 100 species) had the highest share in the total number of zooplankton species, while cladocerans and copepods were reported to have much lower richness (17 and 16 species respectively). The highest species diversity was attributed to fish-free ponds, which were also characterized by the highest variability of species throughout the examination seasons. Fish ponds, on the contrary, were characterized by lower species richness, with a high frequency of typically eutrophic taxa such as *Anuraeopsis fissa*, *Kreatella cochlearis* f. *tecta*, *Trichocerca pusilla*. However, despite the lower species richness recorded in the fish water bodies, these ponds were a source of species inhabiting different environmental conditions than occur in the case of natural fish-free ponds, which in turn contributed to the increase of overall zooplankton richness in the region-scale area.