SELECTED HAEMATOLOGICAL AND BIOCHEMICAL PARAMETERS OF NILE TILAPIA (*OREOCHROMIS NILOTICUS*) REARED IN THE ENVIRONMENT WITH CYANOBACTERIAL WATER BLOOM

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The aim of this study was to evaluate the influence of toxic cyanobacterial water blooms on blood indices in the Nile Tilapia (*Oreochromis niloticus*). Experimental fish were exposed to natural cyanobacterial water blooms (consisting mainly of *Microcystis aeruginosa* and *M. ichthyoblabe*) which contained microcystins (total concentration of 1187 - 1211 μg/g DW, concentration in water 17.4 - 25.4 μg/l) for 28 days without additional feeding. In parallel, control groups of fish were also kept in another pond without apparent cyanobacterial bloom formation. The experimental and control breeding pond had the same water source. After exposure, fish were placed in dechlorinated potable water for the same period (i.e., 28 days). Haematological indices did not show significant changes in fish exposed to cyanobacteria in comparison with the control group. Statistical evaluation of the influence of cyanobacterial water bloom on biochemical indices of experimental fish showed a distinct increase of alkaline phosphatase ($P \leq 0.05$), total bilirubin ($P \leq 0.001$), creatinine ($P \leq 0.01$), lactate ($P \leq 0.01$) and urea ($P \leq 0.01$) when compared to controls. After transfer to the dechlorinated potable water the experimental group showed significantly lower values of phosphorus ($P \leq 0.001$), urea ($P \leq 0.01$) and cholinesterase ($P \leq 0.05$) and higher values of lactate ($P \leq 0.05$) and iron ($P \leq 0.05$) when compared to the control. It may be concluded that the stay of Nile Tilapia in the environment containing cyanobacterial water bloom influenced only some plasmatic indices. This modulation is to a much lesser degree when compared with the Common Carp and Silver Carp.

Keywords: microcystins, fish, haematology, cyanobacteria

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