

Cellular changes in the blood and haemopoietic tissues of common carp exposed to sublethal concentration of ammonia

Carp, *Cyprinus carpio* L., were exposed to a sublethal concentration of ammonia NH_3 ($0.102 \pm 0.059 \text{ mg.dm}^{-3}$) during 3 weeks. The sensitivity of the blood picture and haemopoietic organs were evaluated. Ammonia intoxication resulted in erythroblastosis of circulating blood. Concurrently, a significant decrease in polychromatophilic erythroblasts in kidney and orthochromatic erythroblasts in spleen tissues were observed in exposed fish compared with controls. The relative proportion of erythrocytes in peripheral blood decreased and coincided with a highly significant ($p < 0.01$) increase of erythrocytes in spleen imprints of intoxicated carps compared with controls. Peripheral leucopenia, mainly lymphopenia as an intoxication response, was observed. In the pronephric cells significant differences in the proportion of young and adult eosinophils and the proportion of plasmocytes with vacuolized cytoplasm were found between those animals exposed to the toxic stress and the controls. Thus, the examination of haemopoietic organs has a great potential in carp health assessment.

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