

17. The assessment of *Nodularia spumigena* field sample using *Danio rerio* eggs

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Every summer coastal area of the Gulf of Gdańsk is affected by intensive blooms of *Nodularia spumigena*. This cyanobacteria produces nodularin, a hepatotoxic pentapeptide containing unique amino acid residue – ADDA. There is a strong evidence that nodularin can cause liver damage in mammals and fish and promote liver cancer. Also some incidents of dogs, ducks and fish death attributed to *N. spumigena* bloom have been recorded.

In July 2003 the concentration of nodularin in the Gulf of Gdańsk water was very high – 25000 µg dm⁻³. *Nodularia spumigena*, collected from the Gulf of Gdańsk on 17.07.2003, was freeze dried and used to investigate toxicity of the bloom to early life stages of *Danio rerio*.

Because of high fertility, well known life cycle and genetics, simple care and low costs of maintenance, *Danio rerio* is one of the most popular model aquatic organism for toxicity testing, genetical experiments or embryology.

Mortality of *Danio* eggs and larvae development in different extracts of *Nodularia* was tested. Methanol and water extracts purified by SPE procedure, with nodularin concentrations 0, 5, 50, 500, 5000, 50000 µg dm⁻³ were used.

Nodularia extracts influenced hatching success and larval development. Higher mortality, changes in embryos development and body malformations was observed in test media containing higher concentration of nodularin.

19. The influence of toxic cyanobacterial water bloom on the hematological indicators of silver carp (*Hypophthalmichthys molitrix* Val.)

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The aim of the presented work was to evaluate an influence of toxic cyanobacterial water bloom on blood indices of silver carp (*Hypophthalmichthys molitrix* Val.). Silver carps, the body mass 15,9-73,4 g, were used in the experiments. The experimental fish were exposed to natural populations of cyanobacterial water blooms (*Microcystis aeruginosa*, *M. ichthyoblabe* and *M. viridis*). Hematological indices showed changes of fish exposed to the cyanobacterial population in comparison with the control group. The results obtained from these experiments don't always correspond with literature sources. These data pointed to these hematological indicators that fluctuated in large interval. Toxicity and density of cyanobacterial water blooms had important role at individual hematological indices as well.