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Abstract Details

Abstract Title

TOXIC EFFECTS OF WATER AND SEDIMENTS COLECTED FROM DANUBE DELTA BASED ON MICROBIOTESTS BATTERY RESPONSE

Abstract Text

In Romania the surface water and sediment control is based on physical, chemical and biological parameters. In Romanian rivers are present some industrial and natural chemical compounds, most of them at low concentrations, many of them raise considerable toxicological concerns. To assess the impact of toxic pollutants on aquatic life, the advanced analytical control of these should be completed with ecotoxicological studies that highlight the possible adverse effects on aquatic organisms. The aim of this paper is to present some preliminary results on the toxicological assessment of water and sediment from eleven sampling sites of Danube Delta. A microbiotest battery consisting of the species belonging to different taxonomic groups (green algae, planktonic and benthonic crustacean, rotifers and plants) was used. The data obtained from experimental studies have been integrated in a toxicity classification system of natural water according to Persoone et al. (2003) [1]. Most of water samples revealed effects lower than 50%. The sediment samples highlighted an acute hazard on growth inhibition of ostracods especially in summer and autumn. Slight differences in chemical compounds and toxicity effects were observed. The consumers *Daphnia magna* and *Heterocypris incongruens* were the most sensitive organisms. The results revealed differences in the surface water and sediment hazard classification. The water was classified in Class I - slight acute hazard in the Isaccea - Ivancea sector and the sediment in Class II - acute hazard in all monitored sector, considering the worst cases. The toxicity results were directly influenced by organism's sensitivity, sampling locations, season and climate change issues. Moreover, diversified toxic responses confirmed the need of microbiotests battery application in rivers pollution assessment. References [1] Persoone G., Marsalek B., Blinova B., Třeták A., Zarina D., Manusadžinas L., Nařezek G., Tofan L., Stepanova N., Tothova L., Kolar B. 2003. A practical and user friendly toxicity classification system with microbiotests for natural wastes and wastewaters. *Environ. Toxicol.* 18, 395-402.

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Presentation

Contribution proposed for: oral presentation

