

THE INFLUENCE OF CADMIUM AND COPPER IONS ON MICROFAUNA OF ACTIVATED SLUDGE

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Abstract: The prevalence of heavy metals in wastewater is the cause of death of numerous organisms which take part in biological treatment of wastewater, that is why the aim of the study has been to assess the influence of cadmium and copper ions upon the microfauna of activated sludge. 5, 10, 50, and 100 mg/l of Cd²⁺ and Cu²⁺ were added into the samples of activated sludge and then, after 24 hours, the microscopic observations of activated sludge microfauna were carried out, and all changes concerning the amount of microfauna, functional groups, and species composition were determined. The results obtained allowed to find a high level of toxicity of Cd²⁺ and Cu²⁺ ions to activated sludge microfauna, which resulted in the changes in the value of the Sludge Biotic Index and classes of sludge, survivability of microfauna, and reduction in the number of taxonomic units. It was observed that Cu²⁺ ions are more toxic to activated sludge microfauna than Cd²⁺ ions in identical doses. Organisms sensitive to Cd²⁺ and Cu²⁺ ions have been found to be testate amoebae, *Aspidisca sp.* and *Epistylis sp.*, as well as organisms relatively sensitive to tested metals, which turned out to be ciliates of *Opercularia* and *Vorticella convalaria* genera.