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THE DISTRIBUTION OF IONS Pb^{2+} IN THE WATER–SEDIMENT– PLANT SYSTEM IN RIVERS OF THE ZHYTOMYR POLISSYA

Regional pollution of small rivers by heavy metals (HM) entails a deterioration of water quality in medium and large rivers and poses a serious danger to the health of the population in many regions of Ukraine, increasing the risk of effects on the human body carcinogenic and mutagenic factors [3]. The deterioration of water quality has reached levels that lead to degradation of water ecosystems, reducing productivity of water bodies [2]. Therefore, constant monitoring of water quality of study level of pollution of the aquatic environment and bottom sediments of various toxicants, including ions HM is important and urgent for the preservation of species diversity and the optimal development of aquatic organisms.

One of the priority pollutants in surface water bodies remains in the HM, have toxic, mutagenic and carcinogenic effects on living organisms [3].

The aim of our study was to establish the content of ions Pb^{2+} in water, sediments and plants in small rivers of the Zhytomyr Polissya: Noryn (Ovruch, Zhytomyr region), Huyva (g. Andrushivka, Zhytomyr region), Ubort (Olevsk, Zhytomyr region).

The objects of study were samples of water and bottom sediments of the rivers Noryn, Ubort, and Central square, and representatives of higher aquatic vegetation, namely *Carex acuta* L., *Ceratophyllum demersum* L. and *Phragmites australis* (Cav.) Trin Ex Steud. With the aim of identifying sources of pollution with ions of Pb^{2+} was selling for the analysis of concentration of the toxicant in the two frames: target No. 1 – the beginning the city is on target No. 2 – 1 km outside the city.

Research methods. Sampling and analysis were conducted according to General accepted methods in Hydrobiology, hydrochemistry, and toxicology [1]. The determination of the elementary composition of HM was performed by atomic adsorption analysis on the spectrophotometer C115–1M.

The results of the research. The results of these studies showed that the content of ions Pb^{2+} in the three water samples exceeded the maximum permissible

concentration. The highest content of ion Pb^{2+} , relative to the background observed in the water, Noryn and the city Huyva, and the lowest, Ubort.

A similar case is the accumulation of ions of Pb^{2+} in the sediments and in the water, but the rate of accumulation of HM in the sediment is much higher.

Therefore, the state of water quality in the rivers of the Zhytomyr region for the content of heavy metals exceeds maximum permissible concentration of lead ions. The maximum value of ions of Pb^{2+} was recorded in *C. demersum* L. on the outskirts of the city Andrushivka, and the lowest – in *P. australis* in early city Olevsk. A high content of ions Pb^{2+} in water, sediments and plants caused by the placement in close proximity to water bodies in the factories, dumps and low clearance relief treatment facilities for household wastewater in cities.

LITERATURE

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