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ECOLOGICAL ASSESSMENT OF SURFACE WATER QUALITY OF ROSTAVYTSIA RIVER

Purpose – perform ecological assessment of the surface waters of the Rostavytsia river within the Zhytomyr region.

Method. Environmental assessment of the surface water of the Rostavytsia river was carried out using the system of classification of standards for the assessment of surface water quality of Ukraine. On the basis of common environmental criteria, the methodology makes it possible to compare the quality of water at different sites of water bodies, in water bodies of different regions. The calculation of the ecological assessment of water quality was carried out within three blocks: block of salt composition (I1), block of trophic-saprobiological (ecological-sanitary) indicators (I2) and block of indicators of content of specific substances of toxic action (I3). The

results are presented in the form of a combined environmental assessment based on the final conclusions of the three blocks and based on the calculation of the integrated environmental index (IE).

Results. Comprehensive studies on changing the water quality of the Rostavytsia river were conducted within the Zhytomyr region during 2016-2017. The water quality of the river according to the final values of the integral indicators of water quality of the three blocks varies within the II and III quality classes. The total environmental indices (IE) for the mean and worst indices are 3,2 and 3,3 respectively. In general, the water quality along the main channel of the Rostavytsia river within the Zhytomyr region corresponds to the second class, 3 categories, 3 subcategories according to the average quality indicators and 3(4) subcategories by worst performance. The total values of the integral surface water quality indicators of the Rostavytsia river indicate their contamination by trophic-saprobiological components.

Scientific novelty. For the first time, on the basis of analytical studies and stock materials, an ecological assessment of the surface waters of the Rostavytsia river within the Zhytomyr region was carried out by three blocks of indicators: salt composition, trophic-saprobiological indicators and specific toxic substances. The integral ecological index is determined. The trends of pollutants accumulation in the surface waters of the Rostavytsia river have been established.

Practical significance. The conducted researches allowed to analyze and evaluate the ecological status of the surface waters of the Rostavytsia river within the Zhytomyr region, which will allow to establish ecological standards of water quality and on this basis to determine the main directions for improvement of water resources and to substantiate the system of recommendations aimed at improving the ecological status of the studied basin.

Key words: surface water, river, river basin, environmental assessment, water quality.

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