http://dx.doi.org/10.19261/enece.2022.ab13

MONITORING THE CONTENT OF THIOLS IN THE RIVER RAUT (PERIOD OF THE YEARS 2019-2021)

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The Raut River is the main right tributary of the Dniester River on the territory of the Republic of Moldova and has a total length of 286 km [1]. In turn, the Dniester River represents the main source of drinking water supply for the large cities located along its course [2]. The water of the Raut directly influences the quality of the waters of the Dniester river after the discharge of the tributary near the village of Ustia, Dubasari district. This shows the importance of protecting the Raut River as a living environment and the continuous monitoring of its ecological state.

The ecological well-being of natural waters is ensured by the presence of active forms of dissolved oxygen, called oxidative equivalents, especially hydrogen peroxide, which together with reducing equivalents, of which thiols are also a part, form the redox balance of the waters [3]. The redox state of the water can be estimated by the content of hydrogen peroxide or by the content of reducing equivalents. Thus, the purpose of the research is to determine the content of thiols in the waters of the Răut River during the years 2019-2021.

The content of thiols in the water samples taken was determined by the Ellman method [4]. The annual averages of thiol content varied within 10^{-5}-10^{-6} M, the highest concentration being observed in 2019 ($1.25 \cdot 10^{-5}$ M), and the lowest in 2021 ($1.82 \cdot 10^{-6}$ M), while the average for the year 2020 is $5.42 \cdot 10^{-6}$ M. Compared to other data on the content of thiols in surface waters, the recorded values are high [5]. Taking into account that thiols are also of natural origin, their concentration must undergo a seasonal variation, reaching maximum values in summer when the biological activity is maximum and, respectively, in autumn and spring, minimum concentrations. Thus, natural seasonal variation was recorded only during 2021. In summer, the content of thiols was maximum ($2.43 \cdot 10^{-6}$ M), and in spring and autumn, the content was minimum ($1.52 \cdot 10^{-6}$ M).

Therefore, the thiol compounds were determined during the entire monitoring period, the concentration of which varied within the limits of 10^{-5}-10^{-6} M, being characterized as high contents for surface waters. The lack of natural seasonal variation of thiols in the years 2019 and 2020, with the maximum concentrations in autumn, indicates the pollution of the river especially with degradable organic substances.

Acknowledgements. This research was supported by the *research project: 20.80009.5007.27*.

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