CHEMISTRY JOURNAL OF MOLDOVA. General, Industrial and Ecological Chemistry. 2025, 20(2), 7-14
ISSN (p) 1857-1727 ISSN (e) 2345-1688
http://cjm.ichem.md
https://doi.org/10.19261/cjm.2025.1341

FLUORIDE TRENDS IN THE DNIESTER RIVER AND DUBASARI RESERVOIR OVER 2011–2024 PERIOD

Nina Bagrin *, Elena Zubcov, Lucia Biletchi, Natalia Borodin

Institute of Zoology, Moldova State University, 1, Academiei str., Chisinau, MD 2028, Republic of Moldova
**e-mail: nina.bagrin327@gmail.com*

Abstract. The paper presents data on fluoride concentrations in the Dniester River and Dubasari reservoir, the waters of which are used for multiple purposes, including use as a source of drinking water. Water samples were taken seasonally from 2011 to 2024. The concentration of fluoride ions was determined photometrically using an acidic solution of zirconyl chloride and alizarin red S. Fluorides ranged from 0.05 to 1.07 mg/L in the Dniester sector from Naslavcea (entry point of the river into the territory of the Republic of Moldova) to Dubasari reservoir, and from 0.05 to 0.93 mg/L downstream of the Dubasari dam. They varied from 0.02 to 0.95 mg/L in the reservoir waters. Mean annual concentrations of fluorides in the entire Dniester River, including the Dubasari reservoir, oscillated from 0.15±0.07 to 0.81±0.10 mg/L during the study period. Concentrations below 0.5 mg/L were recorded in 76.6% of analysed water samples. Higher concentrations were observed during periods of low waters, when the river was predominantly supplied by groundwater. In most cases, due to the modified regime of the Dniester resulting from the river regulation, no clear seasonal dynamics were recorded.

Keywords: fluoride ion, surface water, Dniester River, Dubasari reservoir.

Received: 8 July 2025/ Revised final: 3 October 2025/ Accepted: 6 September 2025