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БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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INITIATION OF THE SURFACE WATER MONITORING SYSTEM OF THE DNISTER RIVER BASIN ACCORDING TO SANITARY AND HYGIENIC INDICATORS

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Introduction. Undoubtedly, microbiological indicators of fecal pollution are one of the most important parameters for determining water quality. However, the use of these indicators to monitor the state of surface water in the river basins of Ukraine has not yet found proper application.

The aim of the study. The research data is aimed at starting the monitoring of the surface waters of the Dniester River based on the analysis of microbiological pollution.

Material and methods. Water samples were taken in the spring-summer and autumn-winter periods of 2023-2024, upstream, according to standard methods, in six points of the water area of the Dniester River. The identification and determination of microbiological parameters were carried out in the laboratory of the Department of Microbiology and Virology of the Bukovinian State Medical University (BSMU) within the framework of the Cooperation Agreement between BSMU and Khotynskyi National Natural Park (NNP). Lactose-positive coliforms, "coli-index" and "coli-titer" indicators were studied. These indicators are widely used to assess possible fecal pollution of the aquatic environment. Definition and classification of fecal matter was carried out according to Kavka (2006). The results of the research were analyzed statistically.

Results. As a result of the conducted research, it was established that there is an increase in microbiological pollution within the NNP downstream of the Dniester River, especially in the spring and summer period. Thus, in the area of dachas in the village of Hrushivtsi (item 2), there is significant microbiological contamination of water (more than 4 times). In the area of the mouth of the Surzh River (item 3), the level of microbiological pollution is minimal, and is 75% of the standards, which is most likely explained by the distance from populated areas and the dilution of communal discharges in a significant water volume. At the same time, our research shows a significant level of microbiological pollution of the waters of the Dniester River in areas of urbanized areas and places of anthropogenic load within Khotynskyi NNP. It was established that during the period (6 months) between the summer and autumn-winter water intakes, the number of E. coli bacteria increased 3.5 times at the upper point (item 6) of water sampling (outskirts of the village of Ruhotyn). In point 4 (near Anadoly village), the value of the above-mentioned indicator increased up to 20 times. So, in six months, the level of microbial contamination in all investigated water intake points increased from 3.5 to 20 times. The maximum increase in the number of bacteria of the E. coli group was recorded in points 3 and 4, where the maximum increase in the indicator of fecal coliforms took place. The Resolution of the CMU dated September 19, 2018 No. 758 (https://zakon.rada.gov.ua/laws/show/758-2018) and other subsequent normative documents detail the procedure for state monitoring of surface waters and specify the list of biological indicators of diagnostic monitoring. It should be noted that this list does not contain the definition of microbiological parameters, despite the fact that Directive 2006/7/EC of the European Parliament and the Council of February 15, 2006 provides for the determination of microbiological parameters during the surface water monitoring procedure. The adaptation of Ukrainian legislation to the requirements of the EU Water Directives will require the mandatory involvement of microbiological indicators in environmental monitoring.

Conclusions. The obtained results indicate a significant level of microbiological pollution of the waters of the Dniester River, especially in areas of urbanized territories and places of anthropogenic load, and indicate the need for constant monitoring of surface waters according to these indicators.

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