

AMYLOLYTIC AND CELLULOSOLITIC BACTERIA ON THE MOLDAVIAN SECTOR OF THE DNIESTER AND PRUT RIVERS IN 2019 – 2022

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The analysis of the long-term dynamics of any indicator of the biocenosis state is always of great scientific and practical interest. The aim of the presented work was to study the spatial and seasonal dynamics of the abundance of amylolytic and cellulolytic bacteria in the Dniester and Prut rivers for 2019-2022 in order to identify long-term average trends. Sampling was carried out during the vegetative period of the year (spring-summer-autumn) at the stations presented in Fig. 1 - 2. After data processing, it was found that the number of amylolytic bacteria in the Dniester River varied in the range from 0.08 to 1.76 thousand cells/ml. The clear trend of the maximum number of this physiological group of bacterioplankton is recorded at Erjova station, located in the upper sector of the Dubossary Reservoir on the Dniester River (Fig. 1, a). In the Braniste-Giurgiulesti sector of the Prut River, the number of amylolytic bacteria varies within a narrow range: 0.50-0.97 thousand cells/ml (Fig. 1, b).

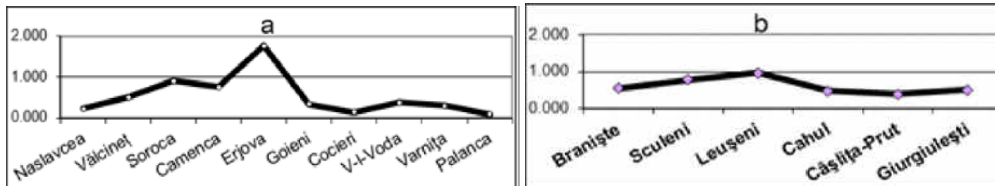


Figure 1. Spatial dynamics of amylolytic bacteria abundance (N , thousand cells/ml) in the spring season 2019-2022 in the rivers Dniester (a) and Prut (b)

The spatial dynamics of cellulolytic bacteria in the Dniester River over the analysed period shows a trend characteristic for point pollution of the water body (Fig. 2, a): peaks of values can be caused to the inflow of un-normatively treated wastewater into the river (Soroca and Varnița stations) or secondary contamination - the dying off of aquatic vegetation (Cocieri station in the Dubossary Reservoir). In the Prut River, a insignificant increase of cellulolytic bacteria abundance is registered in the Sculeni - Cahul sector (Fig. 2, b).

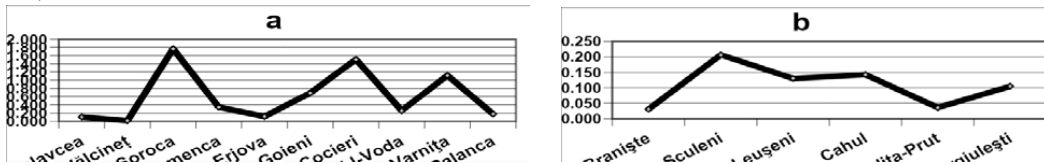


Figure 2. Spatial dynamics of cellulolytic bacteria abundance (N , thousand cells/ml) in the summer season 2019-2022 in the rivers Dniester (a) and Prut (b)

In both rivers, the pronounced interannual abundance fluctuations of these physiological groups of bacteria are periodically observed, which noticeably changes the average long-term indicators (Fig. 3).



Figure 3. Interannual dynamics of amylolytic bacteria abundance (N , thousand cells/ml) in the rivers Dniester (Soroca station) and Prut (Braniste station)

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