

## **ON THE MECHANISM OF CHEMICAL SELF-PURIFICATION OF VARIOUS WATER SYSTEMS OF THE LOWER DNIESTER BASIN**

**Borodaev Ruslan**

*Moldova State University, Chisinau, Republic of Moldova*

E-mail: [borusiv@mail.ru](mailto:borusiv@mail.ru)

Identification of the participation of iron and copper in redox processes that occur in natural aquatic ecosystems allows us to make an assumption about the presence or absence of free radicals OH, intensively oxidizing organic substances of autochthonous and allochthonic origin, which is the essence of the mechanism of radical chemical self-purification. The presence of such a self-purification channel along with biological, can ensure the ecological prosperity of aquatic ecosystems and a high level of biodiversity of flora and fauna [1].

To identify the presence of a chemical self-purification channel in aquatic ecosystems of the Lower Dniester basin (small rivers, Dniester, reservoirs), a correlation and regression research method was used based on a database, including concentrations of various forms of metal migration and quality indicators of natural water.

The study carried out suggests that the oxidation of dissolved organic matter in the small rivers Ichel and Raut takes place by an ion-molecular mechanism, without the formation of free radicals. The migration of the studied metals is dominated by mineral forms, the dynamics of migration is of a pronounced seasonal nature.

In the segment of the Dniester from Dubasari to Vadul-lui-Voda, a change in the nature of the forms of migration of metals from mineral-organic to organic has been revealed. At the Vadul-lui-Voda cross-section, considerable involvement of copper in the processes of chemical self-purification was established. Iron, apparently, accumulates in bottom sediments and does not play a decisive role in the intensification of the radical processes of chemical self-purification in the studied segment of the Dniester.

The priority role of iron in the intensification of radical processes of chemical self-purification has been identified for the aquatic ecosystems of the reservoirs Ghidighici and Danceni. Copper, apparently, as a necessary trace element is accumulated by intensively developing biota of reservoirs.

As a result of the study, it is possible to conclude about irreversible problems with the ecological prosperity of the waters of Ichel and Raut, on the establishment of the Dniester cross-sections, where chemical self-purification processes are not intensive and about the greatest contribution of iron to the processes of chemical self-purification of reservoirs.

### ***References:***

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