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STUDY OF NITROGEN FORMS IN SEASONAL DYNAMICS AND KINETICS OF NITRIFICATION AND DENITRIFICATION IN PRUT AND NISTRU RIVER WATERS

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Abstract

The presence of nitrogen in its reduced forms serves as an indicator of natural aquatic system degradation. The excessive concentrations of nitrogen in reduced forms (NH_4^+ , NO_2^-) found in the sections of the the Shireutsi (of the Prut River) and the Olaneshti (of the Nistru River) prove that these sites are areas to focus efforts on improving water quality. Laboratory simulations indicate a good environmental buffer action of natural waters to potential pollution in Sculeni and Ungheni sections of the Prut River and downstream of Naslavcea and Tiraspol (Nistru River), as well as in sites most affected by pollution with wastewater from Frasinesti (of the Prut River) along with Lencautsi, Cosautsi and downstream of Bender (the Nistru River). Overcoming the maximum allowable concentration (MAC) level for the nitrate ion in water from wells is an index of pollution of the land areas where pollutants can leach into and pollute groundwater. Of the 12 wells from which water samples were collected over three years (2010-2012), only two wells, in the Cuhneshti and Cobani villages showed MAC level compatible with drinking water quality.

Key words: Moldovan rivers, nitrogen forms, organic compounds, oxidation, seasonal dynamics

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