NON-IONIZED AMMONIA POLLUTION LEVEL OF THE SMALL RIVERS WATERS IN THE CENTRAL REGION OF REPUBLIC OF MOLDOVA

Maria SANDU[1], Anatolie TĂRÎȚĂ[1], Galina DRAGALINA[2], Elena MOȘANU[1], Raisa LOZAN[1]

[1]*Institute of Ecology and Geography, Republic of Moldova*

[2]*State University of Moldova*

In order to maintain fish life, the Council Directive of 18 July 1978 on the quality of freshwater, which must be protected or improved provides that non-ionized ammonia in salmon and cyprinid waters may be in concentrations of ~ 0,005 mg/dm^3 (indicative) and ~ 0,025 mg/dm^3 (obligatory). It presents a danger for aquatic biological diversity in concentrations from 0,03 to 2 mg/dm^3 NH3 depending on the species and age. This conditions also are specified in Chapter II (Specific substances to be introduced into surface waters, pt. 8) of the Republic of Moldova Government Decision no. 802 of 9 October 2013.

The study includes evaluation of non-ionized ammonia in the water of some portions of the Dniester and Prut river tributaries, which crosses the central region of the Republic of Moldova. In river Raut (upstream of Balti town and downstream of Varvareuca village), Ciulucul Mare, Ciulucul Mic, Camenca (Gura Camencii village) the ammonia concentration in different years (1981-2019) was low, but in the Raut river water, downstream of the town Orhei at 50C was of 0,029-0,35 mg/dm3 and at 150C - 0,065-0,528 mg/dm^3.

The calculation of the NH3 content in the water from the left tributaries of the Prut river that crosses the central region of the Republic of Moldova at a temperature of 50C and 150C shows high values in the water of the Garla Mare river, Medeleni village - Catranac village (0,394-0,818 mg/dm3), r. Garla Mica, liman (0,141-0,327 mg/dm3), r. Delia, s. Parlita (0,84-1,78 mg/dm^3), r. Narnova, Nisporeni city and Leuseni village (0,27-0,73 mg/dm^3), Lapusna river, Voinescu village (0,277-0,65 mg/dm^3).

Thus, in the water of different years (1981-2019) on many portions of the Dniester and Prut river tributaries, which crosses the central region of the Republic of Moldova, the concentration of ammonium (NH3 + NH4+) was high, and depending on the pH and temperature the calculated non-ionized ammonia content exceeded the value of 0,025 mg/dm^3.