



ANALYTICAL CHARACTERIZATION OF THE BLACK SEA COAST LAKES

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Abstract

This work presents original results concerning analytical characterization of some surface waters by applying modern methods. The studied lakes (Istria, Nuntași, Corbu, Tașaul, Siutghiol, Tăbăcărie, Agigea, Belona, Techirghiol, Tatlageac, Neptun 1, Neptun 2, Limanu and Comorova) are located in the central and southern part of the Romanian Black Sea coast and represent ecosystems contaminated by the anthropic influences.

Concentrations of 15 macro and microelements: Al, B, Cd, Cr, Cu, Fe, Mn, Mo, Ni, P, Pb, Sb, Ti, Zn and Zr, were determined by inductively coupled plasma - atomic emission spectrometry (ICP-AES) technique.

Concentration of element in the analyzed lake water ranged as follows: Al 41.1 - 3025, B 225 - >7000, Cd <0.1 - 6.6, Cr 0.7 - 49.4, Cu <0.1 - 107.9, Fe 22.3 - 2759, Mn 10.5 - 174.9, Mo <0.1 - 13.9, Ni <0.3 - 20, P 42.2 - 589.7, Pb 5.4 - 230, Sb <0.3 - 32.6, Ti <0.1 - 122.7, Zn <1.0 - 118.0 and Zr <2.0 - 210 μg/L.

Determined concentrations for Cadmium and Copper have in some lake water higher values than the accepted limits of the Romanian standard (3 respectively 50 μg/L). Zn concentration of eight lakes is higher than 30 μg/L (the accepted limit) and Pb concentration is higher than 50 μg/L (the accepted limit) in almost all analyzed lake waters, except three of them: Comorova, Corbu and Nuntași.

It was also determined the organic dissolved substances as COD-Cr by the molecular absorption spectrometry in visible and as COD-Mn by titrimetric method.

Obtained quantitative results of the above-mentioned parameter show those ecological restoration efforts are necessary.

Keywords: ICP-AES, microelements in surface water, Black Seaside lakes, CODCr, CODMn

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