

Study of Physical and Chemical Parameters in River Water of Lumbardh (Kosova)

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Abstract: Generally, the surface waters in our country are permanent polluted and is the matter of fact that our cities are yet without any treating equipment program of urban and industrial wastewaters. This research paper aims to research and analyse the degree of pollution in the river Lumbardh (length of 63 km) of Peja city from its source, during to its flow to the union of the river on the Drini i Bardh River. Based on the results of such studies, it will be possible to propose protection and detoxification measures of affected river waters and general protection and remediation of ecosystems. The considerable amounts of these environmental toxic chemical elements within our territory are continuously emitted in environment from any anthropogenic sources (utilization of agricultural land, use of pesticides, fertilizers, other agricultural preparations, exploitation of sand and gravel). Using Ultraviolet-Visible (UV-VIS) Spectrophotometry are determined mass concentrations of: NO_2^- , NO_3^- , NH_4^+ , SO_4^{2-} , PO_4^{3-} and Fe^{2+} in water. Also some physico-chemical parameters are determined such as: water temperature, electrical conductivity, pH, alkalinity, total hardness, temporary hardness, detergents, dry residue, total oxygen, etc. Our results show significant levels of some parameters and ecotoxic ions: Conductivity ($167\text{-}297 \mu\text{S m}^{-1}$), pH (7.69-8.50), Turbidity (2.71-14.8 NTU), Alkalinity (30.05-39.66), Dry residue ($140\text{-}249 \text{ mgdm}^{-3}$), Ca^{2+} ($2.004\text{-}3.406 \text{ mgdm}^{-3}$), NH_4^+ in total ($0.102\text{-}0.36 \text{ mgdm}^{-3}$), NO_2^- ($0.032\text{-}1.05881 \text{ mgdm}^{-3}$), NO_3^- ($0.6\text{-}7.4 \text{ mgdm}^{-3}$), Cl^- ($0.1021\text{-}29.77 \text{ mgdm}^{-3}$), SO_4^{2-} ($17\text{-}34 \text{ mgdm}^{-3}$) and PO_4^{3-} ($0.001\text{-}0.165 \text{ mgdm}^{-3}$). Results obtained by the box plot method will be helpy to determine the regions with anomalous physical and chemical parameters in river water. Our results are showing that river water of Lumbardh.

Key Words: river water, Lumbardh, physico-chemical parameters, UV-VIS spektrophotometry, anomalies, pollution assessment.

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