

WATER QUALITY ANALYSIS AND HEAVY METAL MEASUREMENTS OF TOR DOURONENESIS SP AT KADAMAIAN RIVER AND TUARAN RIVER

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ABSTRACT

Kadamaian river flowing in Kota Belud district serves as the main source of water supply other than the water resources provided by the state government. The river also provides food resources such as fish. This study was conducted to assess the water quality of Kadamaian river by comparison with Tuaran river which is located closest to the Kadamaian river on the west coast. The water quality was assessed by the number of faecal coliform bacteria and E. Coli together with the measurement of heavy metals (Cd, Pb, Fe, Cr, Cu, Zn) in fish tissue samples collected from the BOMBON area in that place. Gills and muscle tissue samples from a species of freshwater fish (*Tor douronensis*) were analyzed by (Inductively Coupled Plasma Atomic Emission Spectroscopy) ICP-OES to measure the concentrations of heavy metals such as Iron (Fe), Cadmium (Cd) Plumbum (Pb), Chromium (Cr), Copper (Cu) and Zinc (Zn). Results shows that the number of colonies of faecal coliform and E. coli was higher at Tuaran river compared to Kadamaian river, while the highest concentration of heavy metals in fish was Zn followed by Fe, Cd, Cr, Cu and Pb in both rivers and tissues. In conclusion, the water quality in Kadamaian river is better than Tuaran river and international standard confirms that the two rivers are at a good level. On the other hand, the concentration of heavy metals in some fish sampels in Kadamaian river and Tuaran river has exceeded the allowable limit by WHO (World Health Organization). Therefore, water quality assessment is very important to evaluate the possible risk of fish consumption as fish constitute an important part of community diet.

