عنوان مقاله:

Research Article: Determination of selected macro and microelements in muscle tissue of freshwater fish in Iraq

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نویسنده:

M.H. Matloob - *Professor Assistant in Chemistry*

خلاصه مقاله:

The concentration of four major (Na, K, Ca and Mg), seven essential (Cu, Zn, Fe, Mn, Cr, Ni and Co) and three toxic (Cd, Pb and Hg) elements were determined in muscle of nine freshwater fish species (Mesopotamichthys sharpeyi, Luciobarbus xanthopterus, Luciobarbus grypus, Cyprinus carpio, Silurus triostegus, Planiliza abu, Leuciscus vorax, Luciobarbus schejch and Carasobarbus luteus), that were purchased from local fish markets in central Iraqi cities (Baghdad, Hillah and Karbala) during April and May ۲۰۱۷. Atomic spectroscopy and stripping voltammetric technique were used to analyze the samples after microwave digestion. The highest concentration found in mg kg-۱dry weight was that of potassium (۹۰۱۴-۱۰۸۷۹) followed by sodium (۹۹۹-۲۰۳۹), calcium (۷۹۷-۳۰۸۱) and magnesium (۱۲۰۶-۱۸۱۹). The essential elements, Cu, Zn, Fe, Mn, Cr, Ni and Co were found at comparatively lower concentrations of less than ۶۰ mg kg-۱ d.w., whereas average levels of the toxic elements Cd, Pb and Hg were generally very low ranging between ۰.۰۱۹ and ۵.۳۸۷ mg kg-۱ d.w. The average daily contribution of major and essential elements from fish to the Iraqi requirements were found to be ۰.۷-۳.۴% and ۰.۵-۱۲.۰% of the internationally recommended standards, respectively. Levels of the toxic elements Cd and Pb stayed behind permissible levels, while the level of mercury was above that level. Controlling agriculture and industrial effluents into the Euphrates–Tigris Basin of Iraq and proper sitting of pond waters to minimize the risk of contamination by heavy metals is highly recommended.

کلمات کلیدی:

Euphrates–Tigris Basin, Iraqi fish, Macro and microelements, Atomic spectroscopy, Stripping voltammetry