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EVALUATION OF SOME ELEMENTS OF SOIL USING X-RAY FLUORESCENCE TECHNIQUE, BLUE NILE STATE, SUDAN

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ABSTRACT

In this work, X-ray fluorescence technique was used to evaluate the soil concentration with some elements for 30 soil samples (0 - 10 cm in depth) from various locations to cover the Blue Nile State, Sudan. Concentrations of elements: Ferrous (Fe), Cobalt (Co), Nickel (Ni), Chrome (Cr), Titanium (Ti), vanadium (V), Tungsten (W) and Aluminum (Al). The results revealed that the high levels of Fe, Cr, W, Ni, V, Co, Ti and Al concentrations were 91.47, 72.8, 11.45, 4.62, 1.31,0.80 and 0.28 mg/kg from Agadi, Manza, Arkwet, Dareng, Elnsr East, Agadi and Dareng, respectively, while the lower levels were 1.05, 0,55, 0.25, 0.11, 0.06, 0.01 and 0.01 gm/kg from El Shaheed and some locations - Manza, Elgri, Elgri and Elgri respectively, and Aluminum Al ND in all soil samples. The average concentration of Fe, Cr, W, Ni, V, Co and Ti were 576.18, 103.400, 40.976, 4.440, 4.310, 0.07 and 0.01 gm/kg, respectively. The elements' concentrations were compared with the normal values and other studies in different locations from the world.

KEYWORDS: *X-Ray Fluorescence Technique, Industrial Plants, Concentration of Heavy Metals*

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