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NATURAL RADIOACTIVITY MEASUREMENTS IN SOIL AND DATES SAMPLES FROM GROVES OF THE SHATT AL-ARAB IN BASRAH GOVERNORATE

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ABSTRACT

Natural radioactivity of (^{226}Ra , ^{238}U , ^{232}Th , ^{40}K), in Soil and Dates samples calculated from shatt Al-arab in Basra govermente were measured using gamma ray spectroscopy with NaI (TI).

The results showed that the specific activity of (^{226}Ra , ^{238}U , ^{232}Th , ^{40}K (Bq/kg)) in Soil ranges from (1.02, 0.27, 0.45, 219.19) Bq/kg to (11.21, 2.73, 2.77, 389.51) Bq/kg and Dates ranged from (0.58, 0.21, 0.36, 140.20) Bq/kg to (6.57, 1.74, 2.58, 273.66) Bq/kg respectively. The radium equivalent in Soil samples ranged from (11.84) to (40.4) Bq/kg and in Date samples ranged from (13.41) to (25.37) Bq/kg. The annual effective dose equivalent AEDEin in Soils samples ranged from (0.01) - (0.09) $\mu\text{Sv/y}$ and for Date samples ranged from (0.03) to (0.07) $\mu\text{Sv/y}$. The results of the internal and external hazard index in Soil and Dates samples were all lower than the value of the global limit.

Keywords: Soil and Dates radioactivity, Sodium iodide NaI(Tl) , activity concentrations, Effective Radium.