



Transfer Factor of Radionuclides from Soil to Plant in Natural and Radionuclides Polluted Soils of Iraq

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Abstract: This study was conducted to evaluate accumulation rates of uranium, thorium and potassium as natural radioactive elements in two areas of different human activities and to determine their accumulation in soil and associated crops samples. In the present study, natural radioactivity of U, Th and K in soil and Wheat crops by the Gamma ray spectroscopy and high-purity Ge (HPGe) detector was detected. The samples were collected from two places at Baghdad in Iraq. The overall mean transfer factor (TF) of uranium, thorium and potassium was 0.194, 0.089 and 0.324 respectively, as an average of each element in the six contaminated setting areas Al-Tuwatha. Similarly, the overall mean transfer factors for six selected natural setting areas Al Gherai'at were 0.082, 0.046 and 0.195 respectively. Accordingly, these results the overall mean TF of radionuclides ^{238}U , ^{232}Th and ^{40}K in contaminated soil setting area were 47% higher than that in natural soil sample setting areas. It can be conclude that the activity concentrations of these radionuclides in plants and their plant transfer factors seem to depend on the activity concentrations of the same radionuclides in corresponding soil.

Keywords: Activity Concentrations, ^{238}U , ^{232}Th , ^{40}K , Gamma Spectroscopy, Wheat
