

عنوان مقاله:

Concentration, distribution and risk assessment of trace elements in different soils in Kurdistan region of Iraq

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خلاصه مقاله:

Soils in and around urban areas in Kurdistan region of Iraq may accumulate potentially toxic elements (PTEs) from various contamination sources including municipal waste disposal and waste water used for irrigation. The main objective of this study was to estimate level and identify sources of trace elements in Kurdistan region of Iraq and to quantify health risks associated with potentially toxic elements in contaminated soil. to achieve this goal the concentration of ۲۱ trace elements were estimated using inductively coupled plasma mass spectrophotometry (ICPMS) after HF digestion. About ۱۱۸ soil samples were taken in seven different urban and peri-urban soils in Sulaymanyah province. The results showed that the soils are calcareous (pH ۷.۵ - ۸.۱۸) and classified as silty loam, sandy or silty clay with total organic matter (LOI) contents between ۱.۴ and ۵.۴۷%. Waste water irrigated soils seem not to be contaminated with trace elements. In contrast, the waste-influenced soils have greater concentrations of Cr, Cu, Zn, Cd and Pb. Enrichment factors (EFs) showed that there was typically no enrichment in trace elements above expected background concentrations except at the municipal waste disposal site (HALW). Hazard indices (HI) calculated for the trace elements was lower than one, indicating that the health risks through the exposure route is negligible and within world-wide acceptable limits.

کلمات کلیدی:

Kurdistan, trace elements, urban soil, health risk assessment, enrichment factor

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