

Assessment of Cadmium Levels in Soil and Vegetables Grown Along Kubanni Stream Channels, Zaria, Kaduna State

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Abstract : Quantitative determination of cadmium levels in soil and vegetables grown along Kubanni stream channels were seasonally analyzed for a period of two years using Atomic Absorption Spectrophotometer (AAS). Results revealed cadmium concentrations ranging from 1.00 - 3.50 mg/Kg for the year 2013 and 1.31 - 7.15 mg/Kg in 2014 for the soil samples while the vegetables (carrot, lettuce, onion, spinach, cabbage, tomato and okro) had concentrations in the range of 0.20 - 6.10 mg/Kg in 2013 and 0.60 - 5.60 mg/Kg in 2014 respectively. Statistical analysis showed no significant difference in cadmium levels across the locations and seasons for soil and vegetable analyzed. Pearson correlation results for cadmium concentrations between the year 2013 and 2014 revealed negligible ($r = 0.002$) relationship for soils while low ($r = 0.395$) relationship was obtained for vegetable and these were attributed to heavy application of fertilizers and nature of wastewater use for irrigation. Cadmium levels for both soil and vegetable exceeded the maximum allowable limit set by Standard Organization such as FAO and WHO.

Keywords : cadmium, level, soil, vegetables

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