

عنوان مقاله:

PHYSICOCHEMICAL CHARACTERISTICS, HEAVY METAL AND IONS IN SOIL AND VEGETABLE SAMPLES FROM WANDALI, KUSAR LOCAL GOVERNMENT, BORNO STATE, NIGERIA

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خلاصه مقاله:

Pollution and contamination of farm produce especially vegetables has greatly increase in recent years. Farmer engage in high application of agrochemicals with aim of improving crop yield and reducing hard labor during farming. This chemicals are usually applied without any professional advice, following application specification or having due knowledge on the danger of the chemicals to humans. This has led to a great increase in pollution of agricultural soil and consequently contaminated vegetable and plants through absorption from the soil. In this study, we investigated pollution of soil and vegetable by heavy metals and ions using Atomic Absorption Spectroscopy (AAS) and UV Visible Spectrophotometer. Results from this study show that leaves of vegetable possess the highest level of heavy metals and ions. Among the metals determined, Fe showed the highest concentration with values ranging from 23.02 $\mu\text{g/g}$ to 28.09 $\mu\text{g/g}$, while Pb indicates the least concentration with values ranging from 0.2 $\mu\text{g/g}$ to 0.8 $\mu\text{g/g}$. The concentration of ions was also found to be high with values as follows; Na^+ 10.921 $\mu\text{g/g}$ to 19.21 $\mu\text{g/g}$, K^+ 16.70 $\mu\text{g/g}$ to 37.11 $\mu\text{g/g}$, Ca^{2+} 4.94 $\mu\text{g/g}$ to 15.47 $\mu\text{g/g}$, NO_3^- 1.07 $\mu\text{g/g}$ to 5.05 $\mu\text{g/g}$ and SO_4^{2-} 7.52 $\mu\text{g/g}$ to 13.90 $\mu\text{g/g}$. Generally the concentration of these metals and ions in vegetables is in the order of leaves > stem > root, while the concentration in soil is in the order of 20-30cm, 10-20cm > 0-10cm. The concentration of these metals and ions were found to be higher than the recommended limit which signifies contamination of the soil and vegetables.

کلمات کلیدی:

Physicochemical Characteristics, Heavy Metals, Ions, Soil, Vegetables, Kwaya-Kusar, Borno State

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