

Assessment of Heavy Metal Exposure in Soils of Ihwrekreka Communities, Delta State, Nigeria

Abstract

the most contaminating metals.

Lead was found to be the main contributor to the hazard index (HI)

with its concentration exceeding the permitted limits set by the WHO and the significantly higher than 1.

1. Introduction

These activities

ties have left the soil in the area barren and damaged agricultural services for survival

of heavy metals in soils for agricultural purposes from communities in the Niger

Materials and Methods

1.1. Sampling Area

The consequences of this pollution on the soil have been significant, leading to soil contamination

and damage to agricultural lands, which can affect the Sample Collection and Storage

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n-hexane after each sample was collected to prevent contamination.

then placed in Aluminum foils and labeled,

Sample Preparation and Analysis

elements in a single sample.

mixture of concentrated nitric acid and hydrochloric acid.

method was used to examine the metals potential carcinogenic risk in the soil. exposure to a particular chemical. ACRL of 1.00×10^{-6} means that there is a probability of one cancer case per 100,000 people in a given population.

Chromium (Cr) levels in the soil samples (PT1-PT24) from the Ihwrekreka community as detailed in Figure 2 shows that Cr is generally below the

issue, necessitating immediate attention and remediation measures.

potentially leading to the decline of certain species and overall biodiversity including skin and respiratory irritation, kidney and liver problems, pulmonary

Previous research has linked high Zn concentrations

neurological disorders,

concentra-tions in the body can impact multiple facets of the immune Cu on the local ecosystem, including plants, animals, and mi-croorganisms.

ase-ries of negative health effects, including lung, nose, sinus cancer, and It is important to

the local ecosystem, including plants, animals, and microorganisms (Grenni et al., 2018; Prata et al., 2021).

petro-leum polluted soils from Obiobi/Obrikom in the Niger delta

approx-imately 88.1% to the variability and correlations in the data

sug-gested that it may pose a risk to human health through various routes of expo-sure, including through contact with soil (Canfield et al., 2003).

tox-ic to humans in certain circumstances, and previous research has minim-ize these risks.

2. Conclusion

Fur-ther investigation is required to fully understand the potential impacts of envi-ronment and the implementation of appropriate remediation techniques to re-duce the heavy metals concentrations in the environment (Shen et al., 2022).

Bradt, H. (Ed.). (2005). *Heavy Metals in the Environment: Origin, Interaction and Remediation*. Elsevier. Page/Volume ?

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