

Contamination Status and Ecological Risk Assessment of Heavy Metals in Wetland Soil, Federal University of Agriculture Abeokuta Nigeria

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Abstract

Wetlands are one of the most productive habitats globally, with socio-cultural and economic relevance. They are, however, at risk of heavy metal contamination. This study investigated metals distribution and potential ecological risk in wetland soils at the Federal University of Agriculture in Abeokuta, Nigeria. Soil samples were collected in March 2021 and analyzed using standard methods. Metal concentrations were compared with a reference, and the degrees of soil contamination were assessed using appropriate indices. Elevated levels of metals were found in topsoil samples compared to the reference. The contamination indices show moderate enrichments of Cu, Cr and Ni in topsoils and a possible moderate ecological risk due to Cd in the study site. Multivariate analysis of heavy metal data indicates that Cu, Zn, Cr and Cd in wetland soil are likely elevated due to contamination via surface water recharges into the wetland farm and agronomic activities.

Keywords: Wetland Soil, Abeokuta