

Soil Contamination at Dumpsites: Implication of Soil Heavy Metals Distribution in Municipal Solid Waste Disposal System: A Case Study of Abeokuta, Southwestern Nigeria

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Soil distribution of heavy metals caused by municipal solid waste (MSW) deposition and its implications for MSW management system in emerging cities was investigated in Abeokuta, Nigeria. Results indicated that the highest concentrations of Cu, Cr, Mn, and Zn were observed at 0-40 cm while Pb, Fe, and Ni accumulated at depths below 40 cm. Soils affected by waste deposits from market and auto-mechanic sites showed high levels of Fe, Cr, Pb, Cu, Mn, and Zn. The accumulation of heavy metals in the soils was probably due to the formation of metal-organocomplexes. Therefore, source separation of MSW with proper management systems is proposed to improve the indiscriminate surface dumping practiced at present, while the use of wastes affected sites for cultivation should be discouraged.

Keywords dump sites, heavy metals, municipal solid waste, soil pollution