ABSTRACT

Levels of Cr, Fe and Pb in the soil of Mairuwa irrigation farm in Funtua, Nigeria collected from the dam’s bank through to the highway at the other end, after application of dumpsite humus, were determined in the rainy and dry seasons of two planting years using atomic absorption spectrophotometry. The level of all the metal ions was highest at the highway side followed by the points at the middle of the farm and least at the dam’s bank. The ranking of the metal levels for all the locations was Cr < Pb < Fe. The metal levels were generally lower during the rainy season. Levels of Fe and Pb in the dry season were significantly different from those of the rainy season (P < 0.05). Location of the sampling point had a significant effect on the amounts of Cr and Pb in the soil samples. The levels of Fe and Pb in the farm soil studied were elevated by the application of dumpsite humus sourced from an abattoir. The highway environment led to increase in the content of Pb and Cr in the farm soil. The application of dumpsite humus may pose a slightly increased risk of heavy metal loading to the soil; however this increased risk must be balanced against other benefits.

Keywords: Dam, heavy metals, soil, dumpsite humus, spectrophotometry

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