



## **Assessment of Radionuclides and Trace Metals in Soil of an Active Designated Municipal Waste-Dumpsite in Ado-Ekiti, Nigeria**

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**Abstract:** Radiological studies and trace metals analysis were performed on soil samples collected randomly from Ado Ekiti municipal waste dumpsite using gamma and x-ray spectrometry. Control samples were collected at a reference site located at about 4 km to the dumpsite. The results show mean concentration of  $551.93 \pm 154.71$  Bq/kg for  $^{40}\text{K}$ ,  $33.93 \pm 1.11$  Bq/kg for  $^{238}\text{U}$  and  $61.69 \pm 21.84$  Bq/kg for  $^{232}\text{Th}$  at the dumpsite. The mean concentrations of the radionuclides at the control site are comparable to their corresponding values at the dumpsite. It can then be assumed that the radioactivity level at the dumpsite has not been enhanced due to waste disposal. Ecological risk assessment of potentially toxic metals shows that the dumpsite has low ecological risk factor. Most of the trace metals measured in the soil samples from the dumpsite show progressive increment compared to the control site. Efforts therefore should be made to constantly monitor the trace metal accumulation at the dumpsite to prevent environmental pollution.

**Key word:** *Natural radionuclides; trace metals; municipal waste; dumpsite; dose*

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