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Basement data of the Terrestrial Radionuclide Level of Abuja Federal Capital Territory, (FCT), Nigeria

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ABSTRACT

A total of 30 samples were collected from six different locations from of Abuja Federal Capital Territory (FCT), the administrative capital of Nigeria which is situated in the central part of the country. The samples which were thor-oughly prepared following known dosimetry procedures were analyzed for 40K, 238U and 232Th by the method of Gamma ray spectrometry using NaI(TL) detector coupled to a multichannel analyzer. The activity concentrations in the top soils in these locations for 40K, 238U and 232Th range from 301 ± 26.52 to 928.84 ± 80.57 , Not detectable (ND) value to 27.68 ± 8.21 and 4.65 ± 1.46 to 22.48 ± 5.26 respectively. The average absorbed dose rate and the annual effective dose equivalent were found to be 40.33 nGyh^{-1} and $49.46 \text{ } \mu\text{Sv}$ respectively. The value of annual effective dose equivalent is low compared to the world average of $70 \text{ } \mu\text{Sv}$ specified by UNSCEAR for an outdoor effective dose, hence the chances of radiological hazards to the health of the populace are generally low.

KEYWORDS

Gamma Ray Spectrometry, Soil, Radionuclides, Abuja FCT, Nigeria

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