# MEASUREMENT OF RADON AND RADON EXHALATION RATES IN SOIL SAMPLES FROM THE TRADITIONAL MAIN HALLS IN THE UNIVERSITY OF GHANA CAMPUS USING THE SEALED-CAN TECHNIQUE

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## ABSTRACT

Radon has been recognized as one of the health hazards for mankind because long-term exposure to radon increases the risk of developing lung cancer. This study aimed at determining the radon exhalation rates, the concentration levels of radon in soil samples, evaluating the contribution factors of radon concentration of soil samples and evaluating the health risks associated with soil radon concentration of the traditional main halls in the University of Ghana. In this study, the sealed-can technique was used to determine the radon exhalation rates in fifty (50) soil samples collected from different sites around the five (5) traditional main halls in the University of Ghana. The average soil radon concentration ranged from 166.26 - 222.20 $Bqm-^{3}$ with a mean of (189.96 ± 23.12) $Bqm^{-3}$. The average surface exhalation rate ranged from 10.94 - 14.62 $\mu Bqm-^{2}h^{-1}$ with a mean of (12.50 ± 1.52) $\mu Bqm-^{2}h^{-1}$. The average mass exhalation rate was (3.17 ± 0.39) $\mu Bqkg^{-}1h^{-1}$. A good positive correlation has been observed between the soil radon concentration and exhalation rates of soil samples.

Keywords: Radon, exhalation rate, University of Ghana, sealed-can, traditional

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