

Assessment of ^{238}U , ^{232}Th , ^{226}Ra e ^{210}Pb concentrations in soil samples collected at IPEN campus, São Paulo, Brazil

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Objectives

The aim of this study was to determine the activity concentration of the radionuclides ^{238}U , ^{226}Ra , ^{210}Pb and ^{232}Th in soil samples collected at IPEN campus, from June 2014 to June 2015 and verify if these activity concentrations can be influenced by the soil grain size and rainfall indexes.

Methodology

^{238}U and ^{232}Th determination – Instrumental Neutron Activation Analyzes, samples were irradiated in IPEN's reactor for 6 h.

^{226}Ra and ^{210}Pb determination - sequential radiochemistry procedure and the measurements in a low background gas flow proportional detector.

Results and Conclusions

^{232}Th and ^{210}Pb presented higher activity concentration when compared to the other radionuclides.

^{226}Ra and ^{210}Pb presented inverse correlation with rainfall indexes and ^{210}Pb also presented correlation with the soil fraction silt + clay, as the highest activity concentrations of ^{210}Pb were obtained in the majority of the samples with higher percentages of the fine fraction.