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Specific activities and gamma radiation hazard evaluation in rice cultivated soils in Nakhon Si Thammarat province

In this study, the specific activities of natural radionuclides in 22 rice cultivated soils collected from 5 districts in Nakhon Si Thammarat province, southern Thailand were measured. The measurements were conducted using a high-purity germanium (HPGe) detector and gamma spectrometer at Thailand Institute of Nuclear Technology (Public Organization). The specific activities of ^{238}U , ^{232}Th , and ^{40}K were in the ranges of 26.60-174.45, 47.71-168.98, and 149.69-701.33 Bq/kg with mean values of 82.49, 121.09, and 435.53 Bq/kg, respectively. The values of radium equivalent activity (R_{eq}), the external hazard index (H_{ex}), the gamma-absorbed dose rate (D) and the annual effective dose rate (AEDR) were also calculated in order to evaluate radiological hazards in rice cultivated soils in Nakhon Si Thammarat province.

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