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Radioactive Elements in Soils of Siberia (Russia)

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In the course of long-term research a great deal of information on the content of natural and artificial radionuclides in soils of the Siberian regions has been obtained and summarized (Altai and Krasnoyarsk Territories, Altai Republic, Buryatia, Yakutia, Khakassia, Irkutsk, Novosibirsk, Tomsk Oblasts and a number of other Siberian regions). The content level of U(Ra), Th and K in soil of studied areas is within the range of values obtained for soil of other areas of Russia and the world and defined, first of all, by radioactivity of parent rocks. The authors have studied the total level of specific activity for 137Cs most completely in soils of different Siberian regions. The maximum density of such sites with global fallouts (nuclear air explosions in Novaya Zemlya, Lop Nor, Semipalatinsk etc.) is typical for the areas of Altai Territory and Buryatia Republic. Elevated level of radiocesium (to 1000 and more than Bq/kg) is characteristic for the sites adjacent to the area of NFP (Seversk, Zheleznogorsk). Our data obtained in determination of plutonium in soils of different Siberian regions excess remarkably its background accepted for Siberia. Particularly high accumulation levels of Pu in soil were observed in the zones of NFP operation (Seversk, Tomsk Oblast; Zheleznogorsk, Krasnoyarsk Territory, in the sites of accidents fallouts at underground nuclear explosions in Sakha Republic (Yakutia). Abnormally high ratio of 238Pu/239,240Pu in soils of Sakha republic, Aginsk Buryatia Autonomous District, Krasnoyarsk Territory has engaged our attention.