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The accumulation of transuranic elements of the Chernobyl emission by meadow vegetation of the zone Chernobyl NPP

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The Chernobyl accident was accompanied by release into the atmosphere of a large number of radionuclides with long half-life. As a result of exposure to biological objects most dangerous in the long term are included in the composition of the fuel particles transuranic elements (TUE-239, 240Pu, 241Am), are α -emitters. Radionuclides with different half-life and environmental features included in the terrestrial ecosystems in different ways and become widespread in the ecosystem.

To build realistic models of behavior of transuranic elements necessary to carry out a focused analysis of the features of the distribution of long-lived isotopes of radioactive elements in various types of ecosystems. As a result of this work was to study the behavior of long-lived radionuclides of the Chernobyl genesis in meadow phytocenosis.

To characterize the level and species specificity of the accumulation of 239,240 Pu and 241Am vegetation calculated rates of accumulation, are numerically equal to the ratio of specific activity of TUE in overground phytomass of plants and their concentration in soil (Bq / kg).

Fluctuation of values of specific activity phytomass of 239,240Pu was observed in range from 0,11 to 0,77 Bq / kg and 241Am - from 1,20 to 21,0 Bq / kg. Income TUE in plants depends on soil conditions, time of selection and climatic conditions. The experiments were conducted for several years, these have a very large scatter, but a number of peculiarities.

As a result, studies were identified vegetation types that are most active in the most actively absorb TUE. So, for 239,240Pu established a number - *Oenothera biennis* L. > *Helichrysum arenarium* (L.) Moench > *Vicia cracca* L.; for 241Am - *Koeleria gracilis* Pers. > *Oenothera biennis* L. > *Elytrigia repens* L. > *Lysimachia vulgaris* L. > *Cytisus ruthenicus* Fisch.

Biological characteristics and life cycle of plants will undoubtedly affect the value of radionuclide accumulation, but the spread of values of accumulation factor on one site within the same family has definite boundaries, characteristic of the family.

We found that the contribution of 241Am contamination of vegetation is predominant among TUE, which indicates its greater biological mobility than isotopes of plutonium.

This should be taken into account when deciding whether the use of forage resources in polluted in varying degrees, regions. The significant growth of 241Am activity requires consideration of this effect when calculating the dose for the public.

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