Research of the Seasonal Changes of Natural Radionuclides' Accumulation in Plants

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The present work deals with research of the dependence of radio nucleids' accumulation rate in plants on the vegetation period ctages. Showings for accumulation of such natural radio nucleids like 40K, 232Th and 226Ra in Alhagi pseudalhagi, Zygophyllum L. and Argusia sibirica L. plants, researched by us, depending on the season were specified in June, when intensity of the biomass accumulation of the plant's vegetation period is high, and in October when it's low. The obtained results have shown presence of seasonal distinctions in the accumulation rates. The most notable fact is high accumulation rate of 40K isotope in all the plants in October. To be exact, in October, when the biomass accumulation process almost completes number of the isotope is higher at nearly 2 times than its number in June. It's interesting that at a final stage of the plant's development, unlike of 40K, 226Ra isotope, instead of increasing, on the contrary, decreases. And in number of thorium there haven't been registered appreciable changes depending on the season. It's hard to state any generalized opinion resting upon the obtained results. We can only suppose that the registered distinctions are specified by the dynamics of chemical potential created by roots of a plant. The showing depends on accumulation intensity and humidity dynamics of the biomass. From the results it issues that both seasonal, and logevial change dynamics of the radio nucleids in different plants is a process which depends on many factors. This, first of all, depends on chemical nature of the radio nucleids, landscape conditions, emerging kinetics of a form which can be appropriated by plants, fixation of the radio nucleids in the earth layer where are placed root systems of plant in non-metabolitic form etc. Change dynamics of a radio nucleid's number depending on the season also highly depends on specifics of a plant, their maturing conditions. Therefore experiments on revealing a certain appropriateness in this field and on constructing mathematicfl models corresponding to the processes, with account for the above-listed factors should be held in the identical soil climatic conditions.

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