

Soil radon in the area of city Tbilisi

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As is known, more than half of the dose of population exposure to natural radiation is connected with radioactive gas radon. This gas constantly and everywhere allocates from Earth interior. A radon source are rocks (first of all uranium-containing), arising from which radon propagates in soil, whence gets to atmosphere, underground and surface waters, indoor air of premises. Studying of radon content in soil and creation of radon-dangerous maps is of great importance as from the geological point of view (the information on lying down rocks), and from the point of view of an estimation of population radiological danger.

In the present work it is given the part of results of complex researches of radon content in drinking (tap) water and surface sources depending on various factors, in particular, radon content in soil air that affect the radon content in underground and surface waters.

Researches were carried out in 7 locations in the outlying districts of city Tbilisi (in Tbilisi artesian basin) and 3 locations around city Mtskheta (in Kartli artesian basin) in the region of arrangement of sources of drinking (tap) water of Tbilisi.

As results shown, it is observed sufficiently big size of changing of radon concentration in soil air, in particular:

- in the territory of Tbilisi artesian basin – from 160 to 10520 Bq/m³ (average value of 3646 Bq/m³);
- in the territory of Kartli artesian basin – from 60 to 1925 Bq/m³ (average value of 888 Bq/m³).

Apparently from results, on the average values of soil radon in the territory of Tbilisi artesian basin is considerably greater than in the territory of Kartli artesian basin. This circumstance, apparently, is connected with big intensity of drainage development by underground waters (that limits migration of soil radon in soil) in Kartli artesian basin (where, as is known, the big stocks of underground and surface waters are located). In the territory of Tbilisi artesian basin the system of underground waters is developed more poorly, that facilitates migration of soil radon. The received results represent certain interest also for building of apartment houses, specifying on desirability of carrying out of special soil radon researches in places of prospective constructions.

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