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Assessment of microbocenosis of underground land and factors determining their structure (South Karelia, Ruskeala)

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Currently, interest in the study of caves is increasing. This is due to global change of climate, exploration of space, the threat of the third World war, as well as their use in the sphere of tourism. The latter is very important for Republic of Karelia, where the tourist infrastructure is developing very quickly. Microorganisms are the main component of biota underground. As you know, microbes of the air-soil-cave form a complex triad where all parts of them are interconnected. In this regard, one of the tasks of the investigation was to find the composition of microorganisms in soil located close to the cave. The research was carried out in Ruskeala Mountain Park situated in South Karelia. The work was carried out within the framework of the EU Project "Baltic Sea Underground Innovation Network" (BSUIN), one of the tasks of which was to assess the state of the biotic component of the underground ecosystem. Sampling points were located at different distances from the cave entrance. Microbial characteristics were determined by delusion method according to total bacterial number and abundance of fungi. The composition of the microbial community of soils was determined by chromate-mass-spectrometry on the composition of fatty acids. The research was carried out using the equipment of the core facility of the Karelian Research Centre of the Russian Academy of Sciences. Preliminary studies have shown a very high microbiological activity of soil, located close to the cave. The number of microorganisms varies from the entrance to the center of the cave. The number of microbes in air is low in the cave.

Biography

Maria Medvedeva has completed her PhD at Moscow State University M A Lomonosov. She is a Senior Research Associate in the Laboratory for Forest Pedology, Forest Research Institute KarRC RAS. She has more than 130 publications, co-author of five collective monographs: "Ecological and microbiological assessment of the state of soils in the city of Petrozavodsk" (2005), "Soil diversity and biodiversity in forest ecosystems of the middle taiga" (2006), "Formation of forest communities on technogenic lands of the North-West of the taiga zone of Russia" (2011), "Modern problems of environmental pollution and ways to solve them" (2012) and "Heavy metals in the soils of Karelia" (2015). She is the co-executor of BSUIN-project.

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