Maria Medvedeva, Appli Micro Open Access 2018, Volume 4
DOI: 10.4172/2471-9315-C3-018

Ecological and microbiological studies of underground mine workings and soils of the Karelian Ladoga area

Bakhmet O N
Forest Research Institute – KarRC RAS, Russia

Currently, the problem in conservation of such a unique natural area as the Northern Ladoga area is relevant. Underground mining which exists in this area can also change the structural and functional organization of biogeocenosis. Soils directly or indirectly form a system of biochemical cycle of elements in both above ground and underground ecosystems. The latter becomes relevant in connection with their use in the creation of underground laboratories. The work was done in the Northern part of the Ladoga region of 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. In the course of field work, soil and ground-soil were selected for chemical and microbiological analyses. The number of microorganisms was determined by delusion method according to total bacterial number, abundance of fungi and actinomycetes. Determination of species composition of microbial cenosis of the soil was performed by molecular method GC/MS. The research was carried out using the equipment of the core facility of the Karelian Research Centre of the Russian Academy of Sciences. The investigated soils are quite acidic and litter of burozems accumulates upto 30% ash. There are all important ecologo-trophic groups with a wide range of numbers, high functional activity in the studied biotopes. Soils formed in this area may be one of the permanent sources of replenishment in microbial pool of underground mining ecosystems. However, low temperatures may have an inhibitory effect on microbial entry, whose numbers are low.

Biography

Bakhmet O N has completed her PhD from Moscow State University. She is Acting President in the KarRC RAS, Chief Research Associate in the Laboratory for Forest Pedology, Forest Research Institute KarRC RAS, Head of the Laboratory for Forest Pedology Forest Research Institute KarRC RAS, Head of the Department of Multidisciplinary Scientific Research KarRC RAS and Chief Research Associate in the Department of Multidisciplinary Scientific Research KarRC RAS. She has published more than 35 papers in reputed journals, more than 7 monographers.

obahmet@mail.ru

Notes: