

EGU2020-10594

<https://doi.org/10.5194/egusphere-egu2020-10594>

EGU General Assembly 2020

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



Mycobiota in urban soils of Russian North

Inna Vaseneva¹, Elena Kuznetsova², and Fluza Khabibullina¹

¹Agrarian-Technological Institute, Peoples' Friendship University of Russia, Moscow, Russian Federation, inna.ibatullina@gmail.com

²Institute of Biology of Komi Science Centre of the Ural Branch of the Russian Academy of Sciences

Microbiological properties of urban soils were studied in Syktyvkar town (Komi Republic), in the taiga zone of Russia. Within the settlement, two different types of functional zones were compared: transport (roadside areas with limited influence of traffic and highway area) and recreation areas (parks). The soils of parks are man-changed urban soils, whereas the soils of roadside areas were mainly man-made or considerably disturbed. The investigated soils were formed on the cultural layer or buried soils and sediments of various genesis. The soil profiles included a humus-accumulative horizon in the top part, followed by an anthropogenically transformed part, underlain by a slightly modified parent rock.

The highest number of species was determined in the soils of recreational areas, including 33 species of microscopic fungi. Soils of the transport area contained 22 species. The higher number of species is associated with the development of specific for urban zone fungal complex and partial preservation of natural zonal species of fungi, mainly representatives of *Penicillium* genus. Non-typical for the taiga zone species from *Aspergillus* and *Fusarium* genera were frequently noted. Highway areas with intensive traffic were characterized by the dominance of dark-colored melanin-containing fungi, which are conditional pathogens for humans, and increasing presence of sterile mycelium – indicator of soil disturbance. Stenotopic species which are typical for undisturbed zonal conditions were rarely isolated.

Acknowledgements The experimental research was partly supported by Russian Science Foundation project № 19-77-30012.