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## Urban Soils Mycobiota of the Subarctic (Apatity, Murmansk region, Russia)

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The soils mycobiota of Apatity was first characterized. Significant differences in quantitative and qualitative parameters of urban soils fungal complexes of the Subarctic zone in comparison with zonal soils were revealed. It was shown that the biomass of fungi in the soil of the residential area of Umbric Leptic Entic Podzol (Arenic, Neocambic) is 0.18 – 0.20 mg/g, in the background forest soil Follic Leptic Albic Podzol (Arenic) – 0.31 mg/g. The smallest values (0.04 – 0.08 mg / g) are typical for areas with no vegetation and a densely compacted surface (playground - Leptic Entic Podzol (Arenic, Neocambic, Technic), unpaved pedestrian walkway – Umbric Leptic Entic Podzol (Arenic, Neocambic).

In the soils of recreational and forest areas, fungi were mainly in the form of mycelium (66-70% of the total biomass), while in the soils of residential and agricultural areas in the form of spores. Spores are mainly represented by small forms up to 3 microns. The amount of large spores is insignificant, but they were mainly detected in the soil of the residential area.

The number of copies of ITS rRNA genes of fungi in soils of different functional zones varies from  $4.0 \times 10^9$  to  $1.14 \times 10^{10}$  copies/g of soil, with the highest values in the natural Podzol of the forest zone and Podzol of the unpaved pedestrian walkway.

The number of micromycetes CFU in the upper soil horizon ranges from  $1 \times 10^3$  to  $9 \times 10^4$  CFU/g of soil, reaching maximum values in the soil of the Umbric Leptic Entic Podzol recreation zone (Arenic, Neocambic, Technic). The features of cultivated forms of micromycetes distribution on the soil profile in different functional zones were revealed: in the Podzol of the residential area, the maximum accumulation of fungi was noted in the lower horizons, while in the soil of the recreational, agricultural and forest areas, their maximum number was noted in the top horizon. However, the first two differed from the background one in the absence of a second maximum accumulation of micromycetes in the illuvial Bs horizon.

In general, urban soils were characterized by a low species diversity of micromycetes complexes and a specific structure significantly different from the background soils. The genus *Penicillium* is

characterized by maximum species diversity. *Trichocladium griseum* and *Penicillium dierckxii* dominate in the communities of microscopic fungi in the soil of the residential zone, *P. melinii* in the soil of the recreational areas and in the playground, in the soil of agricultural area Plaggic Entic Podzol (Arenic) - micromycetes of the genus *Fusarium*, and in the background forest soil - *P. decumbens*.