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# Mycobiota of peat-gleyic soils during the process of recultivation

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The experiments on the recultivation of oil-polluted soils and their self-rehabilitation were laid in 1995 at sites contaminated with oil in the area of Usinsk region, Komi Republic, Russia.
There were taken different plots for the experiment with various amounts of contaminant. The investigations continued some years after the contamination. At this point, the concentration of residual oil in these areas significantly decreased.
Microbiological activity increased 2-3 times in the most contaminated soil. We should note that the micromycets were marked only in the layer 0-5sm in contrast to background soil. There were 10 species of micromycets and most of them characterized as dark colored species, the dominants were Aspergillus fumigatus. Penicillium funiculosum, P. paxilli, P. lanosum, P. tardum, usual for contaminated anthropogenic soils.
The same highly oil-polluted soil, where recultivation was held, is characterized with the wider specter of different physiological groups of microorganisms. Micobiota is quite reach, it represents 20 species from 8 types. In the composition of micromycets 40% are the representatives of Penicillium, sterile mycelium presents as dark colored forms so as light colored ones. But the micobiota is still reach in micromycets typical for disturbed anthropogenic soils.
The most microbiologically active plot was a territory with low-contaminated self-recovered soil. The micobiota is represented of great amount of microorganisms and consists of 21 species, mostly formed with dark colored forms of sterile mycelium.
During the process of recultivation the structure of micromyctes changed: regrouping of species and increase of biodiversity. We assume that a process of self-purification started. However we should notice that activation of biological processes doesn't occur deeper than 0-5sm. At the same time the roots of high plants are seen till the depth 7-10sm, they also participate in the cleaning of oil polluted soil.
There was used a Zhakkar coefficient of similarity to show the difference of mycobiota structure of rehabilitated ecosystems. The greatest similarity was observed between the communities of soil micromycetes from recultivated area and the area with low pollution (42.8%), the smallest – mycobiota of a non-polluted and heavily contaminated soil (5.4%). Mikobiota of virgin soil is characterized with the richest biodiversity of micromycetes species; rates of similarity coefficient between the mycobiota of virgin soils and oil-polluted here have the lowest value.
In summary, we want to mark that micromycet complexes are changing in soils under the influence of oil pollution: first, a reduction in the diversity of fungal complexes in the soil, compared with the background, and secondly, there is an increase of dominant and often encountered species and reducing the number of rare species. There is also the appearance of fungi, which are typical for the more southern regions. Influenced by oil pollution the investigated soils become a sphere of accumulation of potentially hazardous to human species of micromycetes: Aspergillus fumigatus, Paecilomyces variotii, etc.