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Complexes of potentially pathogenic microscopic fungi in anthropogenic polluted soils

This study was undertaken to investigate the species diversity and structure of potentially pathogenic (opportunistic) fungal complexes in podzolic soils polluted by fluorine, heavy metals (Cu, Ni, Co), oil products (diesel fuel, gas condensate, mazut). Lists of potentially pathogenic fungi isolated from soils are made specifically for north-western part of Russia (Kola Peninsula). The majority of studied fungi species belong to the following genera: *Penicillium*, *Aspergillus*, *Mucor*, *Lecanicillium* and *Phoma*. *Penicillium miczynskii* was identified as the most stable type of fungus with respect to all studied types of oil products. *Mucor hiemalis* was identified as the most sensitive type. An increase of 15% portion of potentially pathogenic fungi as compared to the background soil in zones of aluminum and copper-nickel plants was revealed. The results indicate an increase of 20–25% of potentially pathogenic fungi in pollution of soil with oil products. The structure of fungal complexes was observed to have changed in the polluted soils and the species number and frequency of occurrence of potentially pathogenic fungi were also increased. Strains of fungi isolated from contaminated soil show a greater degree of pathogenicity (based on protease, amylase, hemolytic activity) compared to strains isolated from pure soil.

Biography

Maria Korneykova is a Mycologist, has completed her PhD from Komarov Botanical Institute Russian Academy of Sciences, Saint Petersburg. She is the Acting Head of Laboratory of Microorganisms Ecology of Institute of the Industrial Ecology Problems of the North of Kola Science Centre of Russian Academy of Sciences. She has published more than 15 papers in reputed journals. She has 15 years of experience in ecology of fungi, air mycology, soil mycology, opportunistic fungi and their effect on human health.

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