EXPERIMENTAL STUDY OF THE EFFECTS OF SOME MODEL ENVIRONMENTAL ELECTROMAGNETIC BACKGROUND EMISSIONS ON MICROBIOTA

P.A. Kashulin[1], G.A. Yevdokimova[2], T.A. Ageyeva[2], N.V. Kalacheva[1]
[1] *Polar-Alpine Botanical Garden-Institute,*
[2]*Institute of the North Industrial Ecology Problems, Kola Science Centre of RAS, Apatity*

The current results of the further lab experimental research of plausible bio effects of some kind electromagnetic (EM) emission modeling some environmental EM fields of natural geocosmic origin are presented. Here we use the some genera of isolated local representatives of microorganisms and typical lab strains of bacteria and fungi sticking to theoretical prerequisites that the more lasting evolutionary development was under the uninterrupted influence of environmental EM background, the more grounds or probability for the acquiring of susceptibility to such factors was. The species of microorganisms were selected as follows: *Pseudomonas fluorescence, Bacillus licheniformis, Staphilococcus aureus, Toxotrichum concellatum, Aspergillus niger, Penicillium frequentans, Penicillium thomii, Phoma eupyrena, Thielaviopsis basicola, Trichderma koningii* etc. Here the results of study of two kinds of model factors are presented: in the first one is the modified natural magnetic field with "flip-flopped" vertical component using 3 pairs of rectangular Helmholtz rings loaded with stationary current to provide complete reciprocal conversion of the Earth's magnetic field component, the second one is toroidal emitter loaded with frequency of 7 Hz intermittent current with effective value changed within 100 mA. Only some of the species used showed explicit biological response which were registered after 72-150 h under the second kind field exposure, the most effect among bacteria in terms of population size growth was found in *Pseudomonas fluorescence.* The stimulation of sporulation was found in *Penicillium frequentans* and in *Trichoderma konignii* at the first phase of development, and the enlargement of biomass accumulation in *Phoma eupyrena* at the second phase. The preliminary results obtained allow one to select the most sensitive or susceptible microorganism species for the further elucidation the question of potential bio activity of the various EM factors.