

Using microcosms for the estimation of the indigenous bacteria ability to form biofilms

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It was shown that in model microecosystems under unfavorable conditions microbial communities are able to form biofilms. The system of microcosms on the base of water samples from Shira and Shunet lakes (the Republic of Khakassia) taken in different seasons was made. The comparative analysis of the presence of the strains destructing mono- (phenol) and polycyclic (naphthalene) aromatic hydrocarbons in spring and autumn samples was carried out. In Shunet lake with high level eutrophication strains able to degrade phenol and naphthalene present permanently. In oligotrophic ecosystem of Shira lake phenol-degrading bacteria were revealed only in spring. It was shown that plasmid-containing strains destructing naphthalene dominated in microcosms on the base of water samples from metalimnion. In biofilms formed in microcosms on the base of water samples from hypolimnion strains containing plasmid of naphthalene degradation were not revealed. Studying of these processes in microcosms allows making prediction estimations of bacterial cenosis survival in water ecosystems exposed to anthropogenic impact.