PRELIMINARY ZOOPLANKTON INVESTIGATIONS DURING POLLUTION EXPERIMENT IN THE LAGOON OF STRUNJAN, NORTH ADRIATIC

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Our research makes a part of interdisciplinary investigation of experimentally polluted natural ecosystem in the Lagoon of Strunjan, North Adriatic. The experiment was carried out in two basins, 63 m^2 each, one receiving 300 l of domestic sewage daily, the second serving as a blank. Both basins were equipped by pipes to provide water exchange between basins and the main lagoon. The details are described in the collective work of MBS, Portorož (Malej et al., 1978). The purpose of our experiment was to determine the effects of municipial waste waters on the environment and its communities.

In the frame of this interdisciplinary research zooplankton standing crop, taxonomic structure, and their seasonal dynamics were studied.

Zooplankton samples were obtained by filtration of 50 l of seawater four times during 24 hours sampling cycle through a mesh of 120 µ.

Results

Lagoonary zooplankton community is characterized by a lower species diversity due to great and quick environmental changes that prevent the survival or reproducing of nontolerant species. In our coastal waters (Gulf of Triest) 31 species of Copepoda and 11 species of Medusae were found, while in the experimental basins only 16 and 3 species were registrated, respectivelly. Cladocera were the only group rappresented in the experimental basins with all species found in the coastal waters. During our experiment zooplankton community in the polluted basin showed some regressive modifications since some organisms found in the blank basin were not detected in the polluted one: Sarsia gemmifera, Muggiaea kochi, Ctenocalanus vanus, Clytemnestra sp., Sapphirina sp., Corycaeus sp., Oikopleura longicauda, Oikopleura fusiformis. Unfortunately, the control of the seawater inflow was not performed and it would

be possible that some of these organisms were transported into the clean lagoon. On the other side some tolerant species Penilia avirostris, Acartia clausi, Oithona sp. were more abundant in the polluted basin.

Though in the first phase of our experiment the biomass and abundance of plankton organisms raised, later inhbitory effects of pollution prevailed.

Bibliography

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