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CHANGE IN QUALITATIVE AND QUANTITATIVE COMPOSITION OF ALGAE AFTER ALGOLIZATION

Аннотация*: В статье приведены экофлористический анализ природного водорослевого населения водоемов, используемых в качестве биологических прудов – накопителей, отстойников.*

Ключевые слова: *пруд, водоросль, флора, альгофлора, сапробность, систематика, фильтрация, сезон*

Annotation:*: This article discusses the ecological- floral analysis of natural population of algal ponds used as biological ponds - reservoirs, clarifiers.*

Keywords: *pond, algae, flora, al'goflora, saprobity, systematic, filtering, season.*

According to our observations, algae from biological ponds of treatment facilities in Bukhara, representatives of all systematic groups of algae developing in a particular water body are involved to varying degrees in the processes of self-purification of wastewater. Even species of the same genus are characterized in different ways. This indicates the need for comprehensive and deep floristic studies of the natural algal population of water bodies used as biological ponds - storage ponds, sedimentation tanks and filtration fields[1].

In addition to scientific interest, such research is of purely practical importance, since the peculiarities and seasonal changes in the species composition of the algal flora can be used to enrich it with the most desirable species in this case. Before the beginning of algolation, we studied the species composition of the natural flora of algae and their distribution over bioponds, 120 species, varieties and forms of algae were identified that are characteristic of polluted water bodies[2].

With the development of introduced organisms in biological ponds, favorable conditions are gradually created for many accompanying species of hydrobionts. Some of the algae introduced gave active development in ponds. This contributed to a decrease in the content of organic compounds in water and gave impetus to an increase in the amount of oxygen dissolved in water. In the coastal parts, in all ponds, accumulations of filamentous algae, consisting of waters of the genera Stigeolonium, Cladophora, Spirogyra, and others, were often found. Along with them, sometimes blue-green, diatoms and other algae came across. Among them, Oscillatoria tenuis, O.sancta, Phormidium foveolarum lungbya aestuari, etc., stood out[3].

Thus, after algolization, the phytoplankton and phytobenthos groups were enriched in qualitative and quantitative terms in the biological ponds of the treatment plant in Bukhara. An increase in the species composition of algae to 357 taxa and their adaptation in bioponds made it possible to continue work on identifying the role of algae in wastewater treatment. Occurring algae are mainly composed of alpha-beta mesosaprobes. The content of dissolved oxygen in water is one of the important factors in the self-purification of water.

As the amount of dissolved oxygen increases, the self-cleaning process accelerates. In the spring, when the temperature of water and solar energy rises in biological ponds, an intensive development of phytoplankton is observed. As microalgae develop in water, the amount of dissolved oxygen increases to 3.0-4.0 mg / l. The amount of organic matter in terms of BOD5 decreases to 44.0-50.8 mg O2 / l. A decrease in the amount of mineral elements is observed.

In summer, the water temperature rises to 25-30 ºC. Under such temperature conditions and sunlight, the mass development of phytoplankton is observed in all bioponds. With the massive development of algae in wastewater, the amount of dissolved oxygen increases to 9-10 mg / l. The BOD5 value decreases to 11.4-15.2 mg O2 / l. The amount of ammonia, nitrites and nitrates is not observed, since algae absorb them for growth and development.

After algolization of bioponds, the number of phytoplankton increases significantly and the cleaning efficiency of algae in biological ponds increases.

On the basis of collected 520 algological samples of biological ponds in Bukhara and as a result of processing, 357 taxa of algae belonging to 5 taxonomic groups were identified; blue-green - 105, diatoms - 100, dinophytes - 10, euglena - 30, green - 112. The greatest occurrence is observed with the predominance of green algae, then blue-green and diatoms. A small number are euglena and dinophytes. As you can see, the species diversity of bioponds is great[4].

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