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# REGULARITIES OF DEVELOPMENT AND STUDY OF FLORISTIC COMPOSITION OF ALGAE

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**Annotation**: The hydrochemical composition of pond water, which plays a major role in the development and formation of algae flora, has been clarified; as a result, it has been established that the pollution of ponds with organic, mineral and toxigenic substances increases from municipal and industrial wastewater. This changes the species composition of the water. An ecological and sanitary assessment of biological ponds is given based on the species composition of algae. Comparative analyzes of the algal flora of biological ponds of treatment facilities in the city of Bukhara with a similar flora of ponds in Uzbekistan and a detailed study of the algae flora of biological ponds of treatment facilities of the city of Bukhara are given.

**Keywords**: algal flora, indicator role, saprobity, hydrochemistry, wastewater, biological pond, algae biomass, pond, wastewater.

**Abstract:** The hydrochemical composition of pond water, which plays a major role in the development and formation of algae flora, has been clarified, as a result, it has been established that pollution of ponds with organic, mineral and toxigenic substances increases from municipal, industrial effluents. Due to this, the species composition of water changes. Ecological and sanitary assessment of biological ponds based on the species composition of algae is given. Comparative analyzes of the algoflora of biological ponds of the purification facilities of Bukhara with the analogous flora of the ponds of Uzbekistan and a detailed study of the algae flora of biological ponds of the purification facilities of Bukhara are given.

**Keywords**: algoflora, indicative role, saprobicity, hydrochemistry, effluents, biological pond, algae biomass, reservoir, waste water.

The algal flora of individual artificial reservoirs of Central Asia, the composition of the phytoplankton of the Khauzs, canals in the vicinity of Old Bukhara were originally described in the works of A.I. Kiselev (1926, 1930, 1931) and indicated 600 species of algae belonging to the surveyed reservoirs. E.I. Kiseleva (1931,1939) studied the vegetation of reservoirs in the vicinity of Old Bukhara. According to Kiselev, the following types of algae are mainly characteristic of the reservoirs of Bukhara: Pediastrum duplex, P. simplex, P. clatharatum, Tetraedron costatum var. palatinum, T. limneticum, T. lobatum, T. trigonum, Kirchneriella botryoides,

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Ankistrodesmus falcatus, A. longissimus, Scenedesmus opoliensis, S. quadricauda, Crucigenia emarginata, C. rectangularis, Coelastrum microsporum, C. reticultum, Selenastrum gracile, Actinastrum hantzschii , Dictyosphaerium pulchellum.

The basic patterns of distribution and development of algae in various water bodies of Central Asia were studied by A.M. Muzafarov. The results of many years of research by the author were published in the monograph “Flora of algae in water bodies of Central Asia” (1965).

According to Muzafarov (1958), a systematic list of the algae flora of mountain reservoirs of Central Asia includes 812 species and varieties: pyrophytes 2, golden 4, red 5, charophytes 6, euglenoids 11, blue-green 158, green 171, diatoms 469. Of these, 269 taxa are new for Central Asia.

For natural and individual artificial reservoirs of Central Asia, the author lists 2807 taxa, of which 8 are red, 22 are golden, 31 are charophytes, 35 are heteroflagellates, 42 are pyrophytes, 107 are euglenophytes, 590 are blue-green, 806 are green, 1160 are diatoms (Muzafarov, 1965).

As you can see, a lot of work has been done to study the flora and vegetation of reservoirs in Central Asia, but many of them do not provide comprehensive information about the algal flora of artificial reservoirs in Central Asia.

Complete information about the floristic composition of algae from the treatment facilities of Bukhara and the patterns of their development is missing to this day.

The hydrochemical composition of pond water, which plays a major role in the development and formation of algae flora, the ecological and sanitary assessment of biological ponds based on the species composition of algae, and research results make a significant contribution to the knowledge of the algal flora of reservoirs in the Bukhara region. The data obtained can be used in compiling a guide to algae in water bodies of Central Asia.

For improvementwater quality, specific biological methods for treating wastewater from municipal and industrial enterprises are recommended.

The treatment facilities of Bukhara are located on the 2nd left bank terrace of the Zerafshan river valley, in2.8 kmsouth of the border of the city of Bukhara and is located 180-200 meterssouth of the Kagan-Ashgabat railway. B 480-750 metersto the west of the wastewater treatment plant sites there is a collector named after. Sakovich. The site has the shape of a rectangle, stretched from north to south. The terrain of the site is calm with slight dips from northeast to southwest.

Ground elevations range from 215.1 to213.6 m. The overall slope of the site from northeast to southwest is 0.00014. The site is a desert, highly saline area composed of alluvial deposits of Quaternary age from: gray loams, fine-grained water-saturated sand, sandy clay and small rounded pebbles of crystalline rocks. Groundwater is highly mineralized. Salinity is sulfate-chloride. Depth of groundwater 1.20-2.20 m. There are

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artificial ditches on the site, with a total length of1530 m, with middle section0.7 m2, as well as the location of buildings and structures. The area of the site has key wire fencing. The basis for the development of a master plan for the site of the Bukhara sewerage treatment plant is: a technological diagram for the placement of buildings and structures on the site and an altitude diagram for water for structures related to the technology of sewerage treatment work.

The city's sewerage is carried out by a system of gravity collectors, the main of which are Western, Central, and Southern. Wastewater treatment is fully biological in artificially created conditions (in aeration tanks) with additional treatment in bioponds.

Discharge of purified and disinfected wastewater is carried out into the Parallel collector through the Sakovich collector. The system is designed for a prospective flow rate of 200 thousand m3/day.

The oasis is characterized by a sharply continental climate with high dryness in summer and relatively cold winter.

The average annual temperature throughout the territory ranges from 13.8-15.10C, the coldest month of the year is January, the hottest is July. The average January temperature throughout the oasis varies between 0.6-1.80C. The average temperature in July reaches 29.1-30.10C, increasing as it approaches the desert strip. Absolute minimums, falling mainly in December and January, range from 14 to 180C. The summer months are characterized by high temperatures with an absolute maximum of up to 450C; the annual temperature range seems to be very significant.

Atmospheric precipitation occurs during the winter-spring period, during which about 85% of the annual amount falls. They do not exceed 114-132 mmon average over a long-term period.

The phytoplankton of bioponds is one of the most important producers of organic matter, on the basis of which subsequent links of organic life develop. The role of phytoplankton in the general cycle of consumer substances, abundance, distribution throughout the reservoir, seasonal periodicity of development and their production capabilities.

In the works of a number of authors, an analysis was carried out about the predominant algae in the studied water bodies.

The dynamics of the development of dominant species and their numbers and biomass, as well as saprobic species and their indicator role in water self-purification and the scientific results taken can be used when writing textbooks and books for students on the course of algology, hydrobiology, ecology and environmental protection.

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