AJPMHS
GLOBAL RESEARCH NETWORK

AMERICAN Journal of Pediatric Medicine and Health Sciences
Volume 01, Issue 09, 2023 ISSN (E): 2993-2149

Taxonomic Characteristics of Algae of the Amu-Bukhara Channel and Tudakul Reservoirs

Jumaeva Sh. B.
Bukhara State Medical Institute

Annotation: The main qualitative and quantitative characteristics of phytoplankton in the studied areas of the Amu-Bukhara channel and Tudakul reservoirs were studied and the occurrence of phytoplankton species of the Amu-Bukhara channel and Tudakul reservoirs was determined. The largest total amount of phytoplankton in water samples from both reservoirs is Chlorophyta, while the largest phytoplankton biomass is Bacillariophyta and Bacillariophyta

Keywords: surface water bodies, phytoplankton, hydrobiology, total abundance and biomass of phytoplankton.

In conditions of water scarcity under the influence of intensive anthropogenic impact in Uzbekistan, the rational use of water resources in the national economy is important. In this regard, constant monitoring, assessment of the variability of microbial, chemical composition, hydrobiological parameters of water bodies is of great importance [6].

Changes in the chemical and mineral composition of water affect the microbial composition of the water of surface (open) reservoirs. Pathogenic microorganisms transmitted by water, adapting to these conditions, change their biological properties [7].

Due to the vital activity of aquatic organisms, the chemical composition of water is formed, thereby determining its quality. The permanent microflora of reservoirs performs the function of a primary oxidizer or reducing agent of pollutants entering the reservoir [4].

An important part of aquatic ecosystems is aquatic biota, represented by a mosaic of interconnected biocenoses occupying all possible biotopes in watercourses and reservoirs: inhabit the water column (plankton), the thickness and surface of the soil (benthos), overgrow the surface of hard rocky substrates washed by water or settling on the surface of macrophytes and in the turf of water moss (periphyton). Their species composition and structure are entirely determined by climatic and landscape conditions prevailing in catchment basins or directly in river corridors and coastal zones of lakes [1, 2, 3].

Consequently, biocenoses can be considered as information systems that characterize the state of not only specific reservoirs, but also the surrounding natural complexes on the territory of which they are located [8].

Phytoplankton are microscopic plant organisms that float freely in the water column and perform photosynthesis, and are one of the important elements of aquatic ecosystems involved in the formation of water quality and productivity of the reservoir [9, 10, 11].

As is known, an important place in biomonitoring is occupied by the study of phytoplankton, since algae assimilate solar energy, accumulating it in the form of organic compounds during photosynthesis, while releasing oxygen necessary for the respiration of algae themselves and

other inhabitants of the reservoir [5]. The organic matter synthesized by them serves as an energy source for heterotrophic organisms - bacteria, animals. Therefore, the properties of the phytoplankton link of the ecosystem determines its state.

The abundance, biomass, taxonomic composition, and physiological activity of phytoplankton allow us to draw conclusions about the well-being of the reservoir or its crisis state [8].

The purpose of this research work was to study and evaluate the qualitative and quantitative composition of phytoplankton in the studied areas of surface reservoirs of the Bukhara region.

Materials and methods of research. The composition, abundance, and distribution of phytoplankton in the surface (open) reservoirs of the region we study (Bukhara region of the Republic of Uzbekistan) are due to different hydrological, hydrochemical conditions and anthropogenic impact.

We have studied the surface reservoirs of the Bukhara region - the Amu-Bukhara canal and the Tudakul reservoir, which are used for economic, drinking, cultural, household and irrigation purposes. The studies were conducted in the spring and summer of 2023. 27 samples taken from different places of these reservoirs were examined.

Research results and discussion. During the reconnaissance trip, phytoplankton samples were taken, in which 86 species, varieties and forms of algae were found: diatoms (Bacillariophyta) - 40 species; green (Chlorophyta) - 26 species; blue-green (Cyanophyta) - 19 species; Dinophyta - 6 species; Euglenophyta - 1 view.

The taxonomic structure of phytoplankton of reservoirs of the Bukhara region is presented in Table 1.

Table 1. Taxonomic structure of phytoplankton of the studied sections of reservoirs of the Bukhara region

Algae taxon	Amu-Bukhara Canal	Tudakul reservoir
Bacillariophyta (diatoms)	25	15
Chlorophyta (green)	10	16
Cyanophyta (blue-green)	8	11
Dinophyta (dinophyta)	-	6
Euglenophyta (Euglenaceae)	-	1
Total number of species	43	49

The dominant complex of phytoplankton communities of the studied sections of the Amu-Bukhara Canal and the Tudakul reservoir was represented mainly by producers. Among them, diatoms, green and blue-green algae achieve the greatest development and diversity, as well as dinophytic and eugenic algae with a low abundance (1-6 species) are noted.

Diatom (Bacillariophyta) and green (Chlorophyta) algae were detected more often in samples of the Tudakul reservoir than others - 15 (31.0%) and 16 (33.3%) species, respectively.

Blue-green algae (Cyanophyta) in the phytoplankton samples of the studied areas of this reservoir are poorly represented, only 11 species, which amounted to 21.43% of the total number of species. Widespread planktonic colonial and filamentous forms of algae of the genera Merismopedia, Microcystis, Gloeocapsa, Gomposphaeria and species of the family Oscillatoriacea prevailed.

Conclusions

In the studied reservoirs (Amu-Bukhara canal and Tudakul reservoir) The following types of algae are more often found in the Bukhara region: Bacillariophyta (40 species); Chlorophyta (26 species); Cyanophyta (19 species); less often - Dinophyta (6 species); Englenophyta (1 species).

It is proved that in the samples of phytoplankton of the Tudakul reservoir, planktonic freshwater-brackish forms b-mesosaprobic prevailed, brackish b- and b- and α-mesosaprobic algae species prevailed

list of used literature

1. Алматов Б.И., Нуралиев Н.А., Курбанова С.Ю. Посезонная динамика изменения микробного состава воды некоторых водохранилищ Узбекистана // Мікробіологічний журнал. - Киев, Украина, 2016. - Том 78. - №2. - С.95-102.
2. Гинатуллина Е.Н. 1, Жумаева Ш.Б.3, Сагдуллаева Б.О. 2, Назаров Ж.Э. Индикаторы экологического состояния питьевых и реакреционных водоистоисточников Узбекистана // Узбекский биологический журнал. Ташкент, 2020. 39-44 с.
3. Мустафаева М.И., Гафаров С.М. Биоэкологическая характеристика водорослей биологических прудов города Бухары // Ученый XXI века. -2016. -№ 5-4 (18). - С.15-17.
4. Жумаева, Ш. Б., Худойкулова, Н. И., Ахматова, Г. Р., & Махмудов, Ж. К. Медицинские и гигиенические характеристики условий труда предприятия деревообрабатывающей промышленности. Гигиена и Санитария, Москва, 2019. (12), 344-347 с.
5. Жумаева.Ш.Б. (2022). Количественный учет и качественная характеристика фитопланктона в водоемах бухарской области. Scientific progress, 3(1), 1132-1136.
6. Жумаева, Ш. Б. Глобаллашув шароитида ёшлар тарбиясининг ўзига хос жиҳатлари. *Science and Education*, *1*(Special Issue 1), 2020. 45-52.
7. Jumaeva Sh.B. Study and analysis of the microbiological composition of open reservoirs // Galaxy international interdisciplinary research journal. 2023. 539-541.
8. Jumaeva Sh.B. Taxonomic composition and physiological activity of phytoplankton in biological ponds of the Bukhara region // Journal of Natural and Medical Education. Year 2023. 2835-303X.
9. Jumaeva Sh.B., Nuraliyev N.A. Quantitative characteristics of microorganisms in the surface water basin of the bukhara region // JOURNAL OF NEW CENTURY INNOVATIONS. Volume – 8_ Issue-2_Iyul_2022. 70-75.
10. Жумаева, Ш. Б. Куйимазор ва Тўдакўл сув омбори сувўтларининг таксономик хусусиятлари // Образование наука и инновационные идеи в мире. 2023. 70-73 б.
11. Jumaeva Sh.B. Taxonomic composition and physiological activity of phytoplankton in biological ponds of the Bukhara region // Journal of Natural and Medical Education. Year 2023. 2835-303X.
12. Жумаева, Ш. Б. Куйимазор сув омбори сувўтларининг таксономик хусусиятлари // Лучшие интеллектуальные исследования. 2023.
13. *Жумаева Ш. Б.*[1], Субхонова Ш. Э.[2] Аму-Бухоро машина канали сувўтларининг таксономик хусусиятлари // World Scientific Research Journal. 2023.