SEASONAL ALGAE BIOMASSES OF LAKE KHADICHA (BUKHARA)

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Resume. Aquatic plant communities, which largely determine the ecological state of aquatic ecosystems and the quality of their waters, are the most important components in the biological monitoring system. Lake Khadicha is a unique natural body of water which is used for growing commercial fish. In recent years, due to heavy loads of abiotic and anthropogenic factors, the lake water has become highly saline.

Keywords: Lake Khadicha, algae, environmental factors, abundance, biomass.

Аннотации. Важнейшими компонентами системы биологического мониторинга являются водные растительные сообщества, во многом определяющие экологическое состояние водных экосистем и качество их вод. Озеро Хадича – уникальный природный водоем, используемый для выращивания промысловой рыбы. В последние годы из-за сильных нагрузок абиотических и антропогенных факторов вода озера стала сильно минерализованной.

Ключевые слова: озеро Хадича, водоросли, факторы среды, численность, биомасса.

Annotatsiya. Biologik monitoring tizimining eng muhim tarkibiy qismlari suv ekotizimlarining ekologik holatini va ularning suv sifatini ko'p jihatdan aniqlaydigan suv o'simliklari jamoalaridir. Xadicha ko'li - baliqlarini etishtirish uchun ishlatiladigan noyob tabiiy suv havzasi hisoblanadi. So'nggi yillarda abiotik va antropogen omillarning og'ir yuklari tufayli ko'l suvi yuqori darajada minerallashgan.

Kalit so'zlar: Xadicha ko'li, suvo'tlari, atrof-muhit omillari, miqdori, biomassa.

Research is being carried out on the algal flora of reservoirs in the Bukhara region and adjacent territories, and monitoring the ecological and sanitary condition of reservoirs [1], [2], [3]. The influence of external environmental factors on the biomass of algal algae in the algal flora of Lake Khadicha has been little studied; studies are mainly carried out on the bioresource potential of some dominant species. Lake Khadicha was formed in 1980 as a result of flood waters coming from the Kashkadarya channel. The pastures and the Saxons remained under water. The area of the lake is 12,300 hectares, length 18-20 km, the widest part is 8 km, the greatest depth is 10.8 meters, the average depth is 4.6 meters.

It has been established that the quantity and biomass of algae in the algal flora of Lake Khadicha changes under the influence of seasonal environmental factors of the water. In the spring months, cyanoprocaryotes were the leaders in the algal flora of the lake in terms of numbers, but diatoms clearly predominated in terms of biomass, accounting for 48.23%. The total biomass of green algae, which had a significant proportion in terms of quantity and biomass, was 32.56%.

Although the number of cyanoprocaryotes increased significantly in the summer, the amount of biomass increased by 3.4 mg/l compared to the spring due to the small size of the cells. At this time, the total biomass of diatoms was 55.00. Although the number and biomass of green algae have increased slightly, they have maintained their place. A significantly greater increase was observed in dinophytes. In autumn, a decrease in abundance and biomass was observed in all sections except golden algae. The smallest decrease occurred in dinophytes and euglena (Table).

Table

Quantity and biomass of algae by season of Lake Khadicha 2019-2021

Divisions	spring		summer		automn		average	
	1	2	1	2	1	2	1	2
Cyanoprocaryota	71,3	4,8	94,2	7,4	88,3	6,7	84,61	6,26
Dinophyta	0,3	0,6	0,7	1,7	0,6	1,4	0,53	1,23
Chrysophyta	0,1	0,1	0,3	0,2	0,3	0,2	0,23	0,16
Bacillariophyta	16,4	31,4	27,3	52,2	25,8	48,1	23,16	43,9
Euglenophyta	1	7	1,1	6,8	1	6,3	1,06	6,7
Chlorophyta	14,4	21,2	18,4	26,6	16,8	21,7	16,53	23,16
Σ	103,5	65,1	142	94,9	132,8	84,4	126,12	81,41

Notes: 1- quantity, mg/l; 2- biomass, mg/l

Statistical analysis of the research results showed that the total number of species of algal flora of Lake Khadicha is proportional to the increase in water temperature, and the correlation is quite high. Similar results were observed in other regions adjacent to the Bukhara region [4], [5] [6]. Temperature and water salinity have a weak correlation between external environmental factors and the total biomass of algae species in the algal flora of the lake. Khadicha. A relatively higher correlation was observed in water pH values.

In Lake Khadicha in May, the dominant species in terms of numbers were *Microcystis aeruginosa* Kutz. (Elenk.) и *M. elegans* A.Br. from the blue-green division. The first species was present in the phytoplankton throughout the biological season. Its maximum abundance (0.272 million cells/l) and biomass (0.014 mg/l) were recorded in May at the water surface. This species is found in plankton of various types of reservoirs of different geographical latitudes and is a β-mesosaprobe. from the blue-green division. The first species was present in the phytoplankton throughout the biological season. Its maximum abundance (0.272 million cells/l) and biomass (0.014 mg/l) were recorded in May at the water surface.

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