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USING INDICATOR SAPROBIC ALGAE TO DETERMINE THE WATER QUALITY PARAMETERS OF THE SHOHIMARDONSOY RIVER

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Abstract

The results of our algological research conducted in the Shahimardonsoy and Marg'ilonsoy rivers showed that during the period from 2009 to 2016, a total of 312 species and varieties of algae were identified, of which 77 species are indicator-saprob algae. These algae belong to 4 divisions, 8 classes, 9 orders, 16 families, and 34 genera, including 77 species and varieties, which make up 24.68% of the total number of species and varieties (312) identified in the river.

Keywords

algoflora, taxonomy, environment, reading, species and species boundaries, variant, form, indicator

Our algological scientific research carried out in the Shohimardonsoy–Marg'ilonsoy showed that a total of 312 species and varieties were identified during the years 2009–2016, of which 77 were indicator–saprobic algae.

These algae belong to 4 divisions, 8 classes, 9 orders, 16 families, 34 genera, and include 77 species and varieties, making up 24.68% of the total number of species and varieties (312) recorded in the river (see Table 7.2.1).

Table 7.2.1

Taxonomic composition of indicator–saprobic algae of the Shohimardonsoy–Marg'ilonsoy

№	Algae Division	Taxonomic units and their number								Total number of species and varieties, %
		sinflar	tartiblar	oilalar	turkumlar	turlar	variasiyalar	formalar	Jami tur va tur xillari	

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1	Cyanophyta	1	1	1	2	2	-	-	2	2,60
2	Bacillariophyta	2	3	7	22	54	7	-	61	79,22
3	Euglenophyta	1	1	1	2	2	-	-	2	2,60
4	Chlorophyta	4	4	7	8	12	-	-	12	15,58
Total:		**8**	**9**	**16**	**34**	**70**	**7**	**-**	**77**	**100%**

Of the 77 indicator–saprobic species and varieties, 13 are xenosaprobic, 18 oligosaprobic, 35 beta-mesosaprobic, 10 alpha-mesosaprobic, and 1 polysaprobic algae.

Among all algae, diatoms take the leading position, with 237 species and varieties. Of these, 61 are indicator–saprobic (54 species and 7 varieties), making up 79.22% of the total. They are followed by green algae (12 species, 15.58%), blue-green algae (2 species, 2.60%), and euglenoid algae (2 species, 2.60%).

In the algoflora of the Shohimardonsoy–Marg'ilonsoy, the 61 diatom indicator–saprobic algae belong to 2 classes, 3 orders, 7 families, and 22 genera.

A taxonomic analysis of the indicator–saprobic species and varieties of diatoms showed that within the class Centrophyceae, order Discoidales, family Coscinodiscaceae Kuetz., 3 genera and 6 species were identified.

In terms of the number of indicator–saprobic species and varieties, the class Pennatophyceae is dominant. Within this class, 55 species and varieties belonging to 2 orders, 6 families, and 19 genera were recorded.

A taxonomic analysis of green algae revealed 12 indicator–saprobic species and varieties, belonging to 4 classes, 4 orders, 7 families, and 8 genera.

Within the division Chlorophyta, the classes Ulothrichophyceae (4 species), Protococcophyceae (3 species), and Siphonocladophyceae (3 species) have the highest number of indicator–saprobic species, while the class Conjugatophyceae (2 species) is represented by fewer taxa (see Table 7.2.2).

Table 7.2.2

Number of indicator–saprobic algae of the Shohimardonsoy–Marg'ilonsoy

№	Algae Division	χ	õ		β		α		P	Total number of saprobic species and varieties, %	
		turlar	turlar	variatsiya	turlar	variatsiya	turlar	variatsiya	turlar		
1	Cyanophyta	-	-	-	-	-	2	-	-	2	2,60
2	Rhadophyta	-	-	-	-	-	-	-	-	-	-
3	Chrysophyta	-	-	-	-	-	-	-	-	-	-

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4	Bacillariophyta	13	13	1	24	2	6	1	1	61	79,22
5	Pyrrophyta	-	-	-	-	-	-	-	-	-	-
6	Euglenophyta	-	-	-	2	-	-	-	-	2	2,60
7	Chlorophyta	-	4	-	7	-	1	-	-	12	15,58
Total:		**13**	**17**	**1**	**33**	**2**	**9**	**1**	**1**	**77**	**100**
			18		**35**		**10**				

Among the indicator–saprobic algae of the division Cyanophyta, 2 species and varieties belonging to 1 class, 1 order, 1 family, and 2 genera were identified. Within the division Cyanophyta, the class Hormogoniophyceae is dominant in terms of the number of species. In this class, 2 species and varieties belonging to 1 order, 1 family, and 2 genera were studied.

From the division Euglenophyta, we identified 2 indicator–saprobic species and varieties, belonging to 1 class, 1 order, 1 family, and 2 genera.

No indicator–saprobic species were found in the remaining divisions.

Of the 77 indicator–saprobic species and varieties, 13 are xenosaprobic, 18 oligosaprobic, 35 beta-mesosaprobic, 10 alpha-mesosaprobic, and 1 polysaprobic algae (see Table 7.2.2).prob va 1 ta polisaprob suvo‘tlari hisoblanadi (7.2.2 - jadvalga qarang).

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