

SOIL ALGAE AND THEIR BIOLOGY

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ABSTRACT

Soil algae can live in any polluted environment, eliminate various salinity, pollution with organic and inorganic substances, participate in soil fertility and enrich the soil with nitrogen

Keywords: Soil algae, degrading, algocinosis, dominant species, subdominant species.

Taking into account the fact that the economy of the Republic mainly specializes in rural agriculture, the presence of many problems in the development of this sphere, including the negative effects of the environmental situation, it has become an urgent issue to increase the fertility of soils in various agroecosystems, improve the reclamation state.

Soil algae perform an important task in the further restoration of degraded soils. Violation of agrotechnical rules in soil treatment, as a result of the dumping of various waste into the soil environment, there is a high degree of salinity, contamination with organic and inorganic substances. In such conditions, the desired result cannot be achieved. The fact that soil algae can live in any polluted environment, eliminate various salinity, pollution with organic and inorganic substances in the same place, participate in soil dressing and have the property of enriching the soil with nitrogen, requires attention to the aspects of the soil related to soil algae.

The first data on the presence of algae in soils appeared at the end of the 19 century, in 1907 year F. Frich published a scientific work on his participation in the processes of soil dressing. Regular study of algae during the former Union m.M. The 1930s were started by Gollerbach. Since those times, many taxonomic articles, scientific research at the dissertation level have been published as their results monographs (Gollerbach, 1953; Zauer, 1956; Shtina, 1959; Bolyshev, 1968; Gollerbach, Shtina, 1969; Musaev, 1960; Tajiboev, 1973; Shtina, Gollerbach, 1976; Novichkova-Ivanova, 1980; Aleksakhina, Shtina, 1984; Hesen, 1985; Kabirov, 1991; Dubovik, 1998; Mamasoliev, 2019; Tokhtaboeva, 2019; Khusanova, 2019).

Algae participate in the formation of non-existent soils as a biological agent, a phototrophic organism (Davey, Rothory, 1993, Patova, 1998). In the bald soils of Central Asia, a lot of information is also given about their importance in size (Bolyshev, 1968; Novichkova-Ivanova, 1980).

In the formed soils, the role of algae in it increases even more. Organisms that can only be seen under a microscope tend to produce large amounts of organic matter due to their phototrophicity (Shtina, Gollerbach, 1976). Representatives of algae without macroscopic tumors are dressing up to 1 ton of organic matter in an area of 1 ha (Shtina, 1977). This figure increases 10 times (Kyrcu, 1974), up to 15 times (Fuller a Regers, 1952) on one hectare when the algae on the surface of the soils are "bruised" from their barking development. S.N. Dedish et al (1992) cited data suggest that the biomass of green and yellow algae, which causes the surface of the soil to "bruise", is up to 70-90% of the total mass of microorganisms in it. The proportion of algae in the dressing of an organic substance in the soil is determined according to its productivity (Markova, 1976, Kabirov, Minibaev, 1978), according to which the one-month yield of soil algae in Bashkortostan was 266.6 kg/ha.

Most cyanobacteria convert free nitrogen in the atmosphere, into molecular nitrogen. Nitrogen-absorbing cyanobacteria in soils activate processes in it, the organic substances that accumulate them

increase fertility (Musaev, 1960; Mezentseva, 1992). Therefore, there are proposals to put them in the soil (Umarova, 1983; Kannanetalu, 1992; Pankratova, 1994).

Algae in the soil are much more resistant to the ensermal conditions that have arisen. They appear after precipitation, as the first autotrophs in sediments brought by water (Gollerbach, Shtina, 1976; Garty, 1992; Johansen et al., 1993). Even in some areas of the arid region where the soil surface is heated to 60-700 C, they maintain their viability (Gollerbach, 1976).

The prevalence of algae in all places has taken into account a number of positive aspects of their environment, such as their resistance to adverse extreme conditions for themselves, the speed of their reproduction, etc. N. Vernadsky (1967) called "the flow of living matter along the surface of the earth." Algae, along with other organisms, are an organism in ecotism, providing its stability at the level of popularization (Kabirov, 1991; Dubovik, 1998; Mamasoliev, 2019).

The cases mentioned above are also important for processes that occur in soils in a natural way and as a result of anthropogenic impact. Steps have now been taken regarding the taxonomic survey of algae, which is its phototrophic part in the soils of our republic. Musaev(1960), Tajibojev(1973) from his leading qldirghers conducted preliminary research in this regard.

M.M.Gollerbach, E.A. In accordance with the classification of shtina (1969), the concept of "soil algae" is considered to be a complex of various ecological groups of algae, including surface and water crust and soil subsoil. The algae on the upper floor of the soil are combined into the above-ground phytosenoses. Soil algae are considered to be a structural part of sinusitis or phytosenosis, characterized by spatial and ecological aloxidation, and sinusoids in certain relationships with each other and the environment, which differ floristically from other phytosenoses (Novichkova-Ivanova, 1980).

The description of soil algae groups as a sign, criteria for soil algosinususes is presented in a number of works (Shtina, 1959; Gollerbach, Shtina, 1969; Shtina, Gollerbach, 1976; Novichkova-Ivanova, 1980; Kondakova, 1983) to the state of the system.

When characterizing algosinususes are the main signs, the following are accepted:

- 1) List of dominant and subdominant species;
- 2) The composition of the types of algae and the ratio of the interaction of different sections of algae in it;
- 3) The number of cells of algae, their biosystem.

In addition to these, we consider it necessary to take into account:

- a) Characteristics of the distribution of algae
- B) The influence of the seasons of the year and climatic changes on the distribution of algae;
- C) The degree of occurrence of the type of algae.

The composition of the dominant species determines algosinususion and is the main sign of cenological research.

АДАБИЁТЛАР

1. Исағалиев М.Т., Исомиддинов З.Ж. Суғориладиган сур тусли қўнғир тупроқлар морфологияси ва агрокимёвий хоссаларининг ўзгариши. NamDU. Ilmiy xabarlar –2020-8-сон 29-33 б.
2. Исомиддинов З.Ж., Исағалиев М.Т., Юлдашев Г.Ю. Биогеохимические особенности серо-бурых почв и лука. Научное обозрение. Биологические науки. Москва. №1. 2022. 22-27 с.

3. M Isagaliev, Z.Isomiddinov. Biogeochemistry of the onion (*Allium cepa* L.) in irrigated soils. Journal of Natural Remedies <https://jnronline.com/ojs/index.php/about/article/view/288>. Vol. 21, No. 12(2), (2021) 9-17 C.
4. Isomiddinov Z.J. Absolution Capacity of Irrigated Gray-Brown Fulvous Soils. International Conference on Multidisciplinary Research and Innovative Technologies <http://academiascience.org/> 2021. 267-268 pp.
5. Isomiddinov Z.J. ON ANALYSIS OF CHEMICAL ELEMENTS IN THE SOIL-ONION SYSTEM: <https://doi.org/10.47100/conferences.v1i1.1343>. RESEARCH SUPPORT CENTER CONFERENCES/ 2021/8/18
6. A.M.Gapparov, D.S.Toshpo'latova, X.V.Umarxonova. Phytochemical Study of the Plant *Convolvulus Pseudocanthabrica* Growing in Fergana Region. European Journal of Agricultural and Rural Education. 2021/5/9-10-11 C.
7. Артыков С., Халимова М, Ташпулатова Д. комнатные растения и экология жилища. МОЛОДЕЖЬ И НАУКА: ШАГ К УСПЕХУ. 2019. 138-140 с.
8. ДИЛРАБО СОБИРЖОНОВНА ТАШПУЛАТОВА, МОХИГУЛ РУСТАМОВНА ХАЛИМОВА. ФАКТОРЫ ВЛИЯЮЩИЕ НА ЧИСЛЕННОСТЬ ПЕРЕПЕЛКОК В ФЕРГАНСКОЙ ОБЛАСТИ. МОЛОДЕЖЬ И СИСТЕМНАЯ МОДЕРНИЗАЦИЯ СТРАНЫ 2016.148-150 с.
9. Дилрабохон Тошпулатова. OPPORTUNITIES FOR DEVELOPING CREATIVE ACTIVITIES OF STUDENTS IN BIOLOGICAL EDUCATION. O 'ZBEKISTON MILLIY UNIVERSITETI XABARLARI, 2022,[1/5] ISSN 2181-7324
10. ДИЛРАБО СОБИРДЖАНОВНА ТАШПУЛАТОВА, МОХИГУЛ РУСТАМОВНА ХАЛИМОВА. ПРОБЛЕМА ИСЧЕЗНОВЕНИЯ РЕДКИХ ВИДОВ РАСТЕНИЙ. Будущее науки-2017. 327-329 С.
11. Yusupov Ibragim Mirsaydaliyevich. HISTORY OF BIOINFORMATICS. INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & INTERDISCIPLINARY RESEARCH ISSN: 2277-3630 Impact factor: 7.429. 2022/7/1. 72-76 C.
12. Yusupov Ibragim Mirsaydalievich UMUMIY MIKROBIOLOGIYA 5110400-Biologiya o'qitish metodikasi DARSLIK Toshkent-2020 138-139 бетлар.
13. Ibragim Yusupov. METHODS OF DETERMINING THE MINERALIZATION OF THE SOIL. Конференции/ 2021/7/5.
14. Ibragim Yusupov. METHODS OF DETERMINING THE MINERALIZATION OF THE SOIL: <https://doi.org/10.47100/conferences.v1i1.1393> RESEARCH SUPPORT CENTER CONFERENCES 2021/8/18
15. Yusupov Ibragim Mirsaydalievich. SCIENTIFIC AND METHODOLOGICAL BASES OF ECOLOGICAL EDUCATION OF SCHOOLCHILDREN. INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & INTERDISCIPLINARY RESEARCH ISSN: 2277-3630 Impact factor: 7.429. 2022/6/19. 102-106 с.
16. Abdurakhim E Kuchboev, Eldor Kh Najmidinov, Muzaffar A Mukhamediev, Rokhatoy R Karimova, Kader Yildiz. Morphological and ecological features of some nematodes of the genus *Rhabdochona* in marinka obtained from Fergana Valley, Uzbekistan. Journal of Parasitic Diseases. 2021/12. 1084-1089 с.
17. М.Ж Мадумаров МОРФОЛОГИЧЕСКИЕ И ЭКОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ПАРАЗИТИЧЕСКОЙ НЕМАТОДЫ *ECHINURIA UNCINATA* У ДАФНИЙ. Современное состояние водных биоресурсов. 2021. 159-163 с.
18. Maqsadjon J. Madumarov, Abdurakhim E. Kuchboev, Hasanboy K. Abdunazarov, Oybek O. Amirov. Development of the parasite nematode *Echinuria uncinata* (Nematoda: Acuariidae) in the

- intermediate host *Daphnia magna*, in Uzbekistan. Egyptian Journal of Aquatic Biology & Fisheries. www.ejabf.journals.ekb.eg 2021.43-48 c.
19. Khasanboy Kholikhnazarovich Abdinazarov, Maksadzhon Jumanovich Madumarov, Saidkamol Makhhammadvalievich. Khaidarov. ZOOPLANKTON OF FISHING FISHERY OF FERGANA REGION. Scientific Bulletin of Namangan State University. 2020. 93-98 c.
 20. Maqsadjon J Madumarov, Abdurakhim E Kuchboev, Hasanboy K Abdunazarov, Oybek O Amirov. Development of the parasite nematode *Echinuria uncinata* (Nematoda: Acuariidae) in the intermediate host *Daphnia magna*, in Uzbekistan Egyptian Journal of Aquatic Biology & Fisheries Zoology Department, Faculty of Science, Ain Shams University, Cairo, Egypt. ISSN 1110 – 6131 Vol. 25(6): 43 – 48 (2021) www.ejabf.journals.ekb.eg.
 21. Usmonova Muxayyoxon, Usmonova Xilolaxon. KASB BU-HAYOT. Yosh Tadqiqotchi Jurnali. 2022/6/20. 327-333 б
 22. Mukhayohon Usmonova. PROFESSIONAL COMPETENCY BUILDING FUTURE BIOLOGY TEACHER. European Journal of Research and Reflection in Educational Sciences Vol. 2019. 7 c.
 23. Usmonova Muxayyoxon Sobirjon Qizi, Usmonova Xilolaxon Yuldashevna. O'SMIRLAR UCHUN KELAJAK KASBINI TANLASHDA INDIVIDUAL MAYLLARINI ANIQLASH. Ta'lim fidoyilari. OOO «Research and publications» 2022. 481-487 c.
 24. ОДИНА МАМИРОВАНА ТУРДИЕВА, СЕВАРА ХАЙРУЛЛАЕВНА ТОЖИБОЕВА, ШАХОДАТ АБДУЖАББОРОВАНА ТУРСУНОВА. О ПРЕДОТВРАЩЕНИИ УСТАЛОСТИ У ШКОЛЬНИКОВ. БУДУЩЕЕ НАУКИ-2015 422-426 c.
 25. Рузали Якубович Рузиматов, Гулямджан Маъмурович Махкамов, Сарвигул Рауфжановна Отажонова, Шаходат Абдужабборовна Турсунова. Промышленное развитие в Коканде, причины экологических проблем (1956-1975гг.). Высшая школа. 2017. 77-78 c.
 26. Otabek Axmedovich Qo'chqorov, Shuxratjon Erkinovich Otajonov, Xurshidjon Abduvohidovich Ma'murov/ Geografiya Ta'limida Geografik Axborot Tizimlaridan Foydalanish / Интернаука 2019. 66-68 c