ISSN NO: 2770-0003
Date of Publication: 11-03-2022

# Cyanoprocariots and Water Weeds That Can Be Found in Soil

**Abdullayeva Gulnoza Komiljonovna**
Biology lecturer at Termez State Pedagogics University

**Annotation:** The cellular structure of cyanoprocariots and algae growing in the soil environment and their adaptation to external environmental factors, morphological features and reproduction are described.

**Keywords:** phototrophic cyanoprocaryotes, blue-green algae, genome, colony, heterocystic forms, ecosystem, phytogeographic.

Today, the world pays great attention to ensuring soil stability, assessing the ecological and sanitary condition of soil types and substantiating the role of soil microflora in the division of soils into different types. Accordingly, it is important to substantiate and put into practice the laws of formation of algoflora in soils under the influence of anthropogenic factors. In this regard, it is important to assess the current state of algae, especially in undeveloped soils, inventory, identification and protection of specific species.

Cyanoprokaryotes (Cyanoprokaryotes) are oxygen-photosynthetic prokaryotic organisms. For a long time, they belonged to algae and were called blue-green algae (Cyanophyta) in the botanical nomenclature. Cell structure: prokaryotic genome type, ribosome structure, cell wall biochemistry, and other properties led to the introduction of the term cyanobacteria. As part of a modern approach to the study of this unique group, it was found unreasonable to equate organisms with such an advanced type of metabolism with bacteria, and therefore the name "Cyanoprokaryota" was proposed. Cyanoprokaryotes are among the most complex and morphologically differentiated prokaryotic microorganisms. About 2.5 billion years on Earth (according to some data, even more than 3.2 billion years ago, they dominated the living organisms of the Earth for 1,500 million years. major producers of substances, but also in the development of the Earth's biosphere provided the transition to an oxygen atmosphere, which led to the Neoproterozoic revolution.

Morphologically, cyanoprocaryotes are a diverse and polymorphic group. The common features of their morphology are only in the absence of flagella and the presence of a mucous layer (a glycocalyx composed of peptidoglycan). At the top of the peptidoglycan layer is 2-200 nm thick, they have an outer membrane. The width or diameter of the cells varies from 0.5 μm to 100 μm. The simplest organized species are single-celled and spherical (e.g., Synechocystis). Also non-spherical species are considered simple: oval (Synechococcus), ellipsoidal, fusiform (Rhabdogloea), cubic (Chamaesiphon) [2].

A colony is formed due to the union of several cells through a common mucous layer. The shape of the colonies is also very variable, but often the colonies are very shapeless formations. The shape of the colonies depends on a number of important morphological features specific to the species. These features include, in particular, the number of cell division axes (this feature is also one of the most important taxonomic features). Most species of cyanoprokaryotes are characterized by a simple binary equal division with compression formation. In the presence of microplasmodesmata (tubes in the cell wall, due to which the cytoplasms of two cells are connected), it is possible to talk about more complex organized filamentous forms of cyanoprokaryotes in non-dispersed cells of the girl. Filamentous forms are divided into heterocystic and non-heterocystic. Heterocytic forms are subdivided into filamentous, which, according to the branching property of the filaments, are true branched and unbranched, or have a false branching. Some filamentous forms form multilayered structures in the form of complex multicellulars. For many generations and species, especially between filamentous forms, sliding motion (at speeds less than 1–6 (10) μm s-1) is characteristic. The global morphotypes of cyanoprokaryotes were the basis for the order system of J. Komárek, K. Anagnostidis [1]. All single-celled forms are combined in the order of Chroococci. The order of oscillatoriales includes species without filamentous heterocysts. Heterocystic filamentous forms are divided into true branched species (Stigonematales), non-branched and pseudo-branched species (Nostocales). The color of the cells is mostly blue-green or green, but can be brown, dark red, yellow, purple, almost black. It depends on the type, distribution, light intensity of the spectral maxima. Mucous membranes can also be

ISSN NO: 2770-0003
Date of Publication: 11-03-2022

pigmented. The known yellow pigment coatings - cytonemin and red-blue - are glyocapsins that have the ability to mask cell pigmentation. The light-producing pigments of cyanoprokaryotes are chlorophyll a and carotenoids, as well as phycobiliproteins (phycobilins) specific to this group - phycocyanin and allophycocyanin. Some species also have phycoerythrin, phycoerythrocyanin. Phycobiliprotein pigments form phycobilizomas on both surfaces of the double intracellular membranes (thylakoids) facing the stroma. Photosynthetic products are stored in the form of glycogen, rarely containing poly-beta-hydroxybutyrate. Other characteristic cellular additives: cyanophycin, polyphosphates, carboxylomas, gas bubbles.

Cyanoprocaryotes are able to live in a very diverse environment. They are found in land and aquatic ecotopes. There are specific species of marine (specific to saltwater basins), such as Aphanocapsa litoralis, Microcrocys marina, Chlorogloea tuberculosa, freshwater species (Woronichinia naegeliana, Microcystis flos-aquae, Limnothrix planctonika), as well as , may be terrestrial, soil-bounded species (Leptolyngbya foveolarum, Leptolyngbya edaphica). Among the cyanoprocaryotes are representatives of thermal springs: Fischerella thermalis, Cyanothece amethystina, Komvophoron jovis, Trichormus thermalis, as well as an extravagant group of endoliths. The initial stage of the biological cycle of nitrogen in an ecosystem - nitrogen fixation - is carried out only by prokaryotes. Molecular nitrogen is also capable of correcting 2/3 of cyanoprokaryotes. Geographical analysis of cyanoprocariota species today, it can be said, is in its infancy. The historically established view of the cosmopolitan distribution of the group and its many representatives significantly complicates the geographical analysis, as they are ignored in many published works on cyanoflora or algofloras. The difficulties encountered in defining a species for a particular element have a number of reasons. First, many cyanoprocarbons belong to hydrophytic organisms, their distribution is limited only to aquatic ecosystems, and they often have an intrazonal distribution scheme. Many terrestrial species can also be found in aquatic ecotopes, which affects the size of their range, covering large areas or important areas around the world. N.N.Voronixin (1950) suggested that the same species of algae in continental watersheds of different regions differ in the composition of taxa within the species. The range of species of terrestrial habitats has more precise contours, but the number of such cyanoprokaryotes is less than that of hydrophytes and aquatic cyanides. Second, cyanoprocarbons (especially terrestrial and aquatic-terrestrial species) are bounded by microns, in which belt-geographic conditions are flattened and narrow environmental factors are crucial. For marine species, phytogeographic linkages are much easier because there is a zonal zoning of the coastline of the World Ocean. To date, little work has been done to isolate and characterize the geographical elements of cyanoprocariotic flora. [4].

## References

1. Комаренко Л.Е., Василева И.И Пересноводные диатомовоые и сине-зеленые водоросли водоемов Якутии // - М. Наука, 1975.- С. 424-425.
2. Музаффаров А. М., Эргашев А.Э., Халилов С. Определитель сине – зеленых водорослей Средней Азии / Кн. 1.- Ташкент.: Фан, 1988. – С. 405-407.
3. Маюск. Н. П. Отдель зеленые водоросли Chlorophyta. / Водоросли Справочник. – Киев, 1989.- С. 408-448.
4. Попова Т.Г., Сафонова Т. А. Флора спровых растений Эвгленовые водоросли. Вып. 2. – Л.: Наукова думка, 1976. -238 с.
5. Фозилов Ш. М. Периодичность роста и формирования урожая у внутривидовых форм пшеницы //Интернаука. – 2019. – №. 45-1. – С. 18-20.
6. Musurmonovich, Fozilov Sherzod, Xandalova Sharofat Komiljonovna, and Samadov Amirxon Qudrat o'g'li. "Some Photosynthetic Indicators of Soybean Varieties." *Texas Journal of Multidisciplinary Studies* 5 (2022): 255-257.
7. Ergashovich K. A., Musurmonovich F. S. Some Characteristics Of Transpiration Of Promising Soybean's Varieties // The American Journal of Agriculture and Biomedical Engineering. – 2021. – Т. 3. – №. 05. – С. 28-35.
8. Xayitovna P. M., Faxriddinovich M. S. Cauliflower Growing Technology //Texas Journal of Multidisciplinary Studies. – 2022. – Т. 6. – С. 8-10.
9. Шарипов А. Э., Жураев И. Р. ХАЛҚ ТАБОБАТИДА ДОРИВОР ЎСИМЛИКЛАР //Интернаука. – 2020. – Т. 9. – С. 54.

**ISSN NO: 2770-0003**
**Date of Publication: 11-03-2022**

10. Шарипов А. Э., Дўсанов Р. Х. СУРХОНДАРЁ ВИЛОЯТИ ҲУДУДИДА ТАБИИЙ ҲОЛДА ЎСУВЧИ ДОРИВОР ЎСИМЛИКЛАР ФЛОРАСИ //Интернаука. – 2020. – №. 6-2. – С. 55-57.