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A COMPARATIVE STUDY OF THE DISTRIBUTION OF CYANOPROKARYOTES AND ALGAE IN SOILS

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Abstract: This article provides information on the analysis of biomorphs of cyanopkaryotes and algae. In addition, the importance of microalgae in soil formation and increasing its productivity, the economic efficiency of adding algae to soil and the results of research conducted on this basis today are described.

Keywords: Microalgae, agrochemical analysis, chlorella, cyanoprokaryote, chloroplast, chlorosis, photosynthesis.

Algae are the most amazing and useful products found in nature. Due to the fact that algae are very rich in unique useful substances, they also have a wide range of useful properties.

To date, microalgae have been found in the coldest region of the planet, from the glaciers of Antarctica, to lava flows that have just flowed out, and even in the layers of air with high humidity.

The world of algae is diverse on the surface of the earth, and plays a special role in the world of plants from a historical point of view and in the natural circulation of substances in nature.If we pay attention to the information presented in the literature, cyanoprokaryotes, greens, yellow-greens, and diamorphs are often found in the grass-pouzal soils of Russia. The number of species of algae decreased to the north and south of these soils: to the north, diatoms and blue-green algae decreased, and to the south, the number of green, yellow-green and diatom species decreased. At the same time, changes occur in separate systematic groups.

Changes are observed both in the distribution of soil microalgae in the mountain region and in their vertical distribution. As the elevation from 2,400 to 3,930 meters above sea level increases in the Western Pamirs, the diversity of microalgae changes due to changes in the soil and vegetation cover. At an altitude of 2,500 m in the Central Apennines, blue-greens constituted more species than others: 50% of blue-greens, 48% of diatoms and 2% of greens were found.

Today, in the world, great attention is paid to ensuring soil stability, evaluating the ecological-sanitary condition of soil types, and justifying the role of soil microflora

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in different types of soil.Accordingly, it is one of the urgent issues to substantiate and put into practice the laws of formation of algoflora in soils under the influence of anthropogenic factors. In this place, it is especially important to assess the current state of algae in uncultivated soils, inventory, identify specific species and protect them.

In our republic, special attention was paid to biologically increasing soil fertility and preserving soil microflora. In this regard, results are being achieved regarding the organization of the algae collection, the determination of the sources and extent of anthropogenic pollution of the soil, and their elimination.

In the Action Strategy for the further development of the Republic of Uzbekistan, the important tasks of "preventing problems that harm the environment, improving the state of soil reclamation" are defined. In the implementation of these tasks, the taxonomic composition of soil algoflora and the identification of leading species, their use in analyzing the state of soil fertility, and the creation of an electronic database of algoflora are of significant scientific and practical importance.

Cyanoprokaryote and eukaryote algae also have life forms (biomorphs) as in higher flowering plants. When they are viewed through a microscope, they have different appearances.Biomorphs of flowering plants have organs that serve to restore their body. Such an organ is absent in cyanopkaryotes and algae, which are named according to their appearance.

Taking into account the distribution of algae taxa along the profile of the soil section, we measured the sizes of the four most common species at the recorded time. We presented the obtained numerical data in the table below.

Horizon	Green Chlorococcum humicola	Green Chlorella vulgaris	Green Pleurococcus vulgaris	Yellow-green Botrydiopsis arhiza
A (0-5 sm)	20-22	10-12	10-12	25-27

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B (20-25 sm)	15-17	8-10	8-10	22-24
C (40-50 sm)	12-15	6-8	6-8	20-22

Algal cells (usually zygotes, encased in a shell) descend along the soil profile from the surface to the parent rock layer, with a certain reduction in size or slight changes in shape, for example, flattening to a sphere, sometimes not having a clear geometric shape (at the time we observed) along the soil profile. we believe that it happened because of a physical change in the environment in which this organism exists.

The morphology of the body structure is an important feature in systematics, and in ecology it is used as biomorphs, that is, life forms. In Evolution of Cyanoprkaryotes and Swats M.P. Masyuk (1991), S.P. The morphological structure recommended by Wasser et al (1989) is as follows.

1. *Ameboid structure*. Algae that do not have a hard polysaccharide-containing skin that gives their body a special shape, move because a simple animal like the amoeba produces a cytoplasmic growth plasmodium by flowing cytoplasm into it. A clear example is some species of the genus Chrysameba from the golden algae.

2. *Monad structure*. A cell has a specific shape. It usually looks different from one side of the body to the opposite side (maybe there is no difference). The side where the hinge is located is usually called the front side. The action of the khivchini in the form of a drill or a whip is carried out by following the cell. A clear example of this is the green algae Chlamydomonas.

3. *Hemimonad structure*. Algae with cells of the same or different lengths in different parts of the cell. An example of green algae is Pandorina.

4. *Coccoid structure*. Algae that have different cell shapes and are not characterized. All diatoms have a coccoid structure.

5. *Sarcinoid structure*. Algae that form a quadrilateral or more angular appearance by the arrangement of many cells spread over each other. Green Chlorosarcinia is an example.

6. *Palmelloid structure*. A structure surrounded by a mucous membrane in which the cell is clearly visible. Palmella, Coccomyxa is an example.

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7. *Simple needle-like structure*. A structure whose cells are joined together to form a simple thread. Cells in the thread differ in shape and function. This structure can be isopolar (both ends are similar), heteropolar (two ends are different). In some species, vegetative cells can be spherical, barrel-shaped, and differ in length and width. Ulothrix, Tribonema, Calothrix are examples of simple thread structure.

8. *Heterotrichal structure.* The central part with thread structure is thick, and the surrounding threads differ in size. An example of such a structure is the green Draparnaldia.

9. *Siphonal structure.* A structure that has a filamentous appearance, but is siphon-like because it is not divided into cells by a transverse wall. Yellow-green Vaucheria is an example.

10. *Flat (plate) structure.* It is a structure formed by the interconnection of one or two rows of cells. Green Prasiola is an example.

N. P. Masyuk (1981) and S.P. According to Wasser (1989), pseudoparenchymatous (false tissue, parenchymatous tissue) and special structures (higher plants) in the form of biomorphs (spores) were not recorded in the soils studied by us. These three groups of biomorphs are directly visible, large algae.

Microorganisms distributed in soils, including cyanoprokaryotes and algae, are also distributed along the profile. Taxa belonging to different biomorphs on the surface of the soil are washed away by various factors mainly under the influence of rain and move to its lower parts. The distribution of taxa along the soil profile during the vegetation period is single-celled, the size of the colony is small, the soil is especially protective, it is determined by experts (Shtina, Gollerbach, 1978, Gollerbach, Shtina 1969) that the soil goes down to 1.5 meters when it is not plowed, and more than 2 meters when it is plowed.

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