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SURVEYS ON SOIL ALGOFLORA IN UZBEKISTAN

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ABSTRACT
To date, little research has been conducted on soil algae in Uzbekistan. The main part of the research is the study of their taxonomic structure, geographical distribution of diversity and ecological features. The first research began in the 1960s, and to date only a handful of scientists have conducted research in Uzbekistan. In the study of soil algoflora, the identification of algae found mainly in irrigated lands and their rapid development was observed. Due to the diversity of soil, plant density and microclimate conditions in different regions of Uzbekistan, it is recognized that groups of soil algae are distributed in different numbers.

KEYWORDS: algoflora, taxon, class, order, family, genus, species, Cyanophyta, Chlorophyta, Bacillariophyta, Xanthophyta.

INTRODUCTION
Particular attention is paid to the identification of soil algae diversity in the world, the assessment of their biological activity and their involvement in the production of productive species. In this regard, the distribution characteristics of algae depending on soil types and its agrophysical indicators, the dynamics of algae flora as a result of cultivation of agricultural lands, the methods of propagation of cost-effective algae species in soil horizons based on biotechnological methods are being improved.
Despite extensive research on the algae flora of water bodies in Central Asia, including Uzbekistan, little is known about the taxonomic composition, geographical distribution and ecological characteristics of soil algae. At present, the species and varieties of total algae in the terrestrial algae flora belong to 8 divisions.
Typically, soil algae are food for ammonifiers, oligonitrophils, phosphorus-producing bacteria, micromycetes, and actinomycetes to promote their development. The algae cell secretes the following organic substances: organic acids, soluble polysaccharides, fatty acids and substances with lipoid action, soluble polypeptides, amino acids and substances with high biological activity. The algae cell is used by bacteria. The essence of the interaction of bacteria, fungi and algae is, first of all, that algae deliver mucus and cell-derived carbohydrates and other energy substances to heteratrophic organisms. Therefore, under natural conditions, they attach to the cell surface and mainly to the mucous membrane and colonial mucus as a constant companion of algae. More precisely, metabolites of nitrogen-fixing bacteria are used by aquatic cells. Therefore, in soil conditions, algae are stimulators of microbiological activity of the soil. As a result, the growth of microorganisms by soil algae, which is important in increasing soil fertility, is enhanced.
If we look at the history of the study of soil algae, the main part of the research is the study of their taxonomic composition and diversity. The main thing is that the species composition of soil algae, their geographical distribution and ecological properties are relatively little studied, which is of scientific and practical importance in the study of soil algae.

WORKING
The first studies on soil algoflora were conducted in the 1960s by K.Yu. It was conducted by Musaev and studied soil algae in various irrigated lands of Tashkent region. In this study, 190 species and varieties of algae were identified. Of these, 71 species and subspecies indicated that they belonged to blue-green algae. In addition, the quantitative development characteristics of the dominant algae have been shown to depend on the plowing of the soil, its soft state, the amount of moisture, the quality and quantity of fertilizers. He observed the rapid development of blue-green algae in areas where cotton was grown, where constant plowing and irrigation were available. In the 1960s, he discovered that 45 species and varieties of blue-green algae were distributed in the mountainous regions of Central Asia. These include Cylindrospermum majus, C. stagnale, Anabaena cylindrica, Oscillatoria brevis, O. amoena, Phormidium molle, Ph. tenue, Ph. uncinatum, Ph. autumnale, Ph. foveolarum, Nostoc punctiforme, N. punctiforme for. species such as

populorum, N. commune, Microcoleus vaginatus, Plectonema boryanum have been shown to play an important role in increasing soil fertility [1].

In 1964, Umarov Sh.U identified 121 species of Cyanophyta, 6 species of Xanthophyta, 14 species of Bacillariophyta and 35 species of Chlorophyta in Kibray district of Tashkent region, specializing in various agricultural soils.

Tadjibayev Sh.J. listed 160 species and forms in the soils of Tashkent region, including 63 species of blue-green, 57 species of green, 18 species of yellow-green, 17 species of diatoms, 4 species of euglena and 1 species of pyrrophyte. Studies have shown that dark gray soils are characterized by a higher number of algae than other soils, with a predominance of blue-green algae [3].

In 1975, Ormanov Z. identified a total of 106 species of irrigated lands in Zangiota district of Tashkent region, including 49 species of Cyanophyta, 12 species of Xanthophyta, 12 species of Bacillariophyta, 30 species of Chlorophyta, 3 species of Euglenophyta [4].

In his research by Zokirov T.S, he found that as the humus reserves in the soil decrease, so does the carbon. In order to increase carbon reserves, it is necessary to apply organic fertilizers to the soil and alternate planting. Agrochemical examination of the soil allows to determine the growth and development of plants as well as the activity of microorganisms living in the soil. Soil contains a number of chemical elements that are extremely necessary for plants and other organisms [5].

Khusanova O.G. identified the diversity of soil algae distributed in the soil surface layers of the steep regions of the Fergana Valley and substantiated the distribution characteristics. At the same time, there were 177 species belonging to the Suanophyta division of the soil algoflora, which accounted for the bulk of the total algoflora, i.e., 71.66%, for their survival even in different climatic conditions. The rare occurrence of Bacillariophyta (31 species; 12.60%), Chlorophyta (24; 9.76%) and Xanthophyta (15; 6.09%) subspecies has scientifically substantiated changes in soil composition and air temperature [6].

Mamasoliev ST Taxonomic, bioforms of soil algae in Andijan. According to him, a total of 155 species of soil algae have been identified, which belong to 57 genera, 32 families, 15 order, 11 classes and 6 divisions. In addition, the number of species is divided into systematic categories. When studying the systematic composition, he gave information about the polymorphic families Phormidium, Chlamydomonada, Navicula [7].

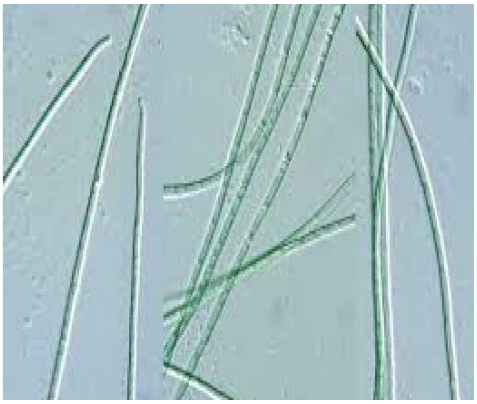
CONCLUSION

Due to the diversity of soil, plant density and microclimate conditions in different regions of Uzbekistan, groups of soil algae are distributed in different numbers.

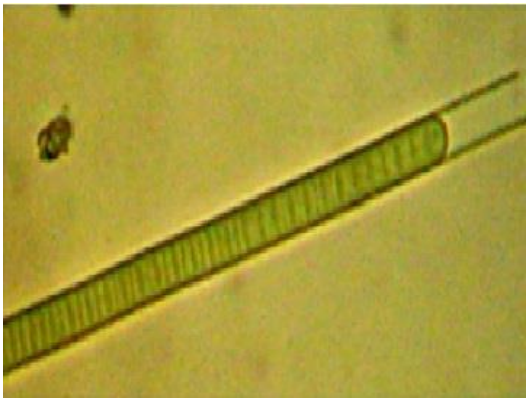
As a result of scientific research, it was found that the species and subspecies of the Cyanophyta division are dominant, and include Schizothrix, Microcystis, Gloecapsa, Nostoc, Oscillatoria, Phormidium, Microcoleus, Oscillatoria, Nostoc, Phormidium, Lyngbya, Nitzschia, Navicula explained by its high survival in climatic conditions (Figures 1,2,3 and 4). Experiments have shown that cells of this genus are resistant and retain moisture for a long time.

1-picture. Calothrix elenkinii Kossinskaja

2-picture. Phormidium tenue Gomont.



3- picture. Schtzothrix lutea Fremy



4-picture. Oscillatoria lemmermannii Voloszynska

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