# QISHLOQ XO‘JALIGIDA SIANOBAKTERIYALARNING AXAMIYATI.

**2nd stage graduate student of Andijan Institute of Agriculture and Agrotechnologies Tolibjonova Zilola Xalimjon qizi**
**Student of Andijan Institute of Agriculture and AgroTechnology**
**Arabjonov Sherozbek Muzaffarjon o‘g‘li**
**Student of Andijan Institute of Agriculture and AgroTechnology**
**Abduraximov Paxlavon Sherzodbek o‘g‘li**

**Abstract:** Every year, more than 100 hectares of land in Uzbekistan become saline and the soil fertility decreases. To solve these problems, it is necessary to multiply cyanobacteria using new technologies and increase soil fertility by creating new stamps. This article provides information on the importance of cyanobacteria in agriculture.

**Key words:** Cyanobacteria, Cyanophyta, blue-green algae and Nostoc muscorum**.**

Approved by Decree No. PF-6159 of the President of the Republic of Uzbekistan dated February 3, 2021 "On the further development of the system of knowledge and innovation in agriculture and the provision of modern services" "In 2021-2025 in agriculture in the concept of priority development of the system of knowledge and innovations" "Effective use of land and water resources, increasing the productivity of agricultural crops, creation of new varieties, selection, development of seed production and nursery, introduction of scientific achievements into production, republic It is determined that the development of science based on conceptual directions such as specialization of regions for the cultivation of certain agricultural crops and food products is an urgent task" [1].

Cyanobacteria are photosynthetic prokaryotic organisms that are able to colonize many habitats under different environmental conditions and are therefore widely distributed throughout the world [33]. They can directly or indirectly increase the growth rate of plants: directly, biologically active growth hormones such as phytohormones (auxins, gibberellins and cytokinins) by producing stimulating substances and indirectly, cyanobacteria prevent plant diseases caused by one or more pathogenic microorganisms.

Cyanobacteria are one of the important groups of organisms with important ecological, industrial and biotechnological importance.

Nowadays, cyanobacteria have gained the attention of researchers due to their various potential applications in medicine, such as food and feed pharmaceutical industry, soil conditioning, biopolymers, bioadhesives, and bioenergy. Due to the wide spectrum of bioactive compounds, cyanobacteria have antiviral, antibacterial, antifungal and anticancer effects. Several strains of cyanobacteria are also rich in food additives. The ability of cyanobacteria to fix nitrogen and purify the soil has attracted researchers. Recent studies have shown that cyanobacteria have the ability to break down environmental pollutants and are also being used as a promising source of alternative energy. Cyanobacteria are also limited by bloom production, which affects nutrient availability and utilization by phytoplankton plants.

Today's agricultural practices face many problems related to the use of synthetic fertilizers and pesticides, intensive tillage and over-irrigation to meet food demand. In particular, it has an impact on the environment, public health, soil fertility and increasing the price of agricultural products.

Some cyanobacteria have the ability to dissolve soil phosphate, since phosphorus (P) is the second most important nutrient for plants and microorganisms after nitrogen.

Nitrogen-fixing cyanobacteria increase nitrogen content in natural desert soils by fixing nitrogen and assimilating it into plant-available forms.

Cyanobacteria also influence the availability of phosphorus, the second most important nutrient for plants, because they have the ability to convert unusable forms of inorganic phosphorus into usable forms through biological processes. In agriculture, cyanobacteria are mainly used as biofertilizers due to their role as nutritional additives.

Several studies have been conducted on cyanobacteria as biocontrol agents, with the activity of cyanobacteria extracts inhibiting Aspergillus and mycelial growth due to methanol, acetone, diethyl ether, ethyl acetate, ethanol and methyl chloride extracts.

Cyanobacteria have been reported in the literature to produce metabolites with various biological activities, such as anti-phytopathogenic, anti-fungal, and anti-viral activity. Cyanobacteria produce biologically active substances with antibiotic and toxic activity against plant pathogenic microorganisms. because extracts of Nostoc species inhibit the growth of significant phytopathogenic fungi. In addition, Nostoc endophytum and Nostoc muskurum species have been found to be important in the biological control of soybean root rot disease (Rhizoctonia solani), wilt disease. The use of these properties helps to obtain ecologically clean and high yields in agriculture without pesticides.

It is also important that these bacteria can be used to obtain bio energy.

Due to the rapid growth of the world's population, the global demand for fuel energy is constantly increasing. The intensive use of fossil fuels worldwide is depleting them and bringing them closer to the point of exhaustion due to their unsustainable and non-renewable nature. Thus, biofuels are now a growing possibility worldwide as an alternative to fossil fuels. Thus, the beneficial properties of cyanobacteria-produced biofuels are renewable and contribute significantly less to environmental pollution and global warming.

Cyanobacteria also play an important role in the biological treatment of wastewater, by accumulating organic and inorganic toxic substances as well as radioactive materials in their cells and by developing several detoxification

mechanisms, they self-degrade urban, industrial and agro-industrial wastewater. It is called "phytoremediation" by cleaning it.

## REFERENCES:

1.Toxik Cyanobacteria in Water 1999: A guide to their public health consequences, monitoring and management, World Health Organization.

2.Subashchandrabose Ramakrishnan, Megharaj B, Venkateswarlu M, Naidu K, R. (2013) Mixotrophic cyanobacteria and microalgae as distinctive biological agents for organic pollutant degradation. , Environ. Int

3.R B Dixit, M R Suseela. (2013) Cyanobacteria: potential candidates for drug discovery. , Antonie van Leeuwenhoek 103, 947-961.

4.Singh S, Kate B, U C Banerjee. (2005) Bioactive compounds from cyanobacteria and microalgae: an overview. , Crit. Rev. Biotechnol 25, 73-95.