



SDG15: Life on Land

15 LIFE ON LAND



1. As a part of the "Green City" campaign, on November 1, 2021 Bukhara state university under the leadership of the Youth Union Bukhara City Council Chairman Anvar Sobirov, the leader of the primary organization of Bukhara State University, Feruz Karimov, together with the youth leaders of the university's faculty and young volunteers, honored the "Bukhara" shopping complex in the city of Bukhara, took part in the planting of saplings in the "Old and Eternal Bukhara" complex. During the process, on the basis of various landscape-design requirements suitable for the climate of Bukhara, unique and large-sized saplings and decorative tree seedlings were planted, giving the city an appearance.



Planting trees

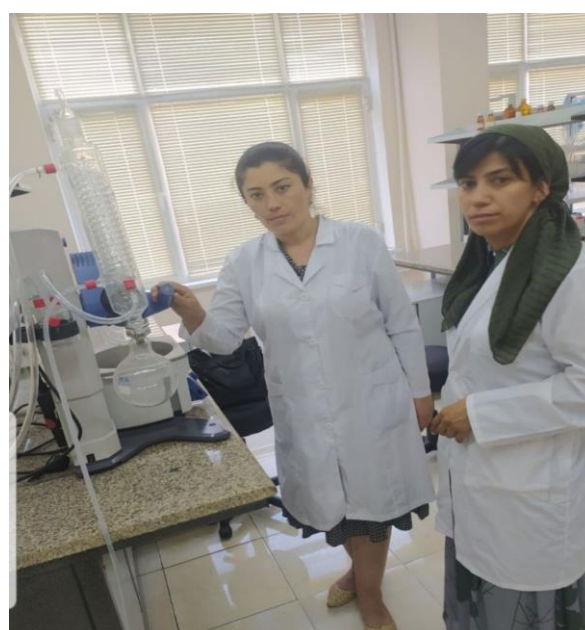
On September 11, 2021, the chairman of the Central Council of the Ecological Party of Uzbekistan, Narzullo Oblomurodov, visited the university in order to familiarize himself with the activities of the Bukhara State University. During the meeting with the rector of BuxDU, Obidjon Khamidov told about the reforms that were carried out in higher education, the role of the Ecological Party, environmental protection, rational use of natural resources and creation of comfortable living conditions for the population, further strengthening of the cooperation between the party and the university development issues.



Meeting with the chairman of the Central Council of the Ecological Party of Uzbekistan

Source: <https://telegra.ph/Ozbekiston-Ekologik-partiyasi-Markaziy-Kengashi-raisi-Narzullo-Oblomurodov-hamda-BuxDU-rektori-Obidjon-Xamidov-ortasida-suhbat-b-09-11>

Students of Bukhara State University, Faculty of Agronomy and Biotechnology are conducting an internship together with the teachers of the Department of Soil Science, at the National University of Uzbekistan in Tashkent.



Internship at National University of Uzbekistan

2.

A green area established in the territory of the Faculty of Agronomy and Biotechnology of Bukhara State University:

In the conditions of Bukhara region, cotton and grain and other agricultural plants are severely damaged not only by soil salinity, but also by other unfavorable environmental factors such as drought, water shortage, hot winds and high temperature. For example, often in the summer months there is a lack of water in the soil (soil drought), high air temperature (45-50°C) and low relative humidity (10-20), hot winds, (atmospheric drought) and other unfavorable factors cotton, grain and has a negative impact on the yield weight and quality of other crops.

One of the urgent problems is to reduce the negative impact of dust, dust and salts entering the region due to strong dust storms and winds.

Based on the soil and climatic conditions of the region, the following fast-growing trees can be recommended for planting in the region:

1. Mirza poplar
2. Baqa poplar
3. Blue poplar
4. Californian poplar
5. White poplar

In the Laboratory of Ecological Physiology under the Departments of Biology and Ecology of Bukhara State University, the physiological and adaptive resistance characteristics of the above poplar species to stress factors were studied on the basis of experiments, and the following conclusions were obtained:

1. The morphobiological and physiological properties of poplar plants against salinity, drought, high temperature and strong winds were studied on the basis of laboratory, vegetative and field experiments.
2. On the basis of the received scientific results, the biological, ecological and other features of the establishment of poplar hedgerows were studied, and the positive aspects of the effect of biologically active substances that accelerate their growth were mutually evaluated.

3. The properties of the poplar tree in reducing soil salinity, blocking strong harsh winds, protecting from harmful and toxic sand particles, purifying the atmosphere from polluted air due to the large size of the leaf surface, supplying a large amount of oxygen to the air, and reducing soil salinity have been scientifically proven.

3.



Types of poplars grown in Bukhara state university campus

Bukhara state university in order to support land ecosystems through education to maintain existing plants and animals has currently been growing greens and vegetable.

The main objects of growing agricultural crops in a greenhouse and ensuring food safety:

- Greenhouse for vegetable crops
- Greenhouse for poly products
- Greenhouse for greens and medicinal plants.



BSU greenhouse

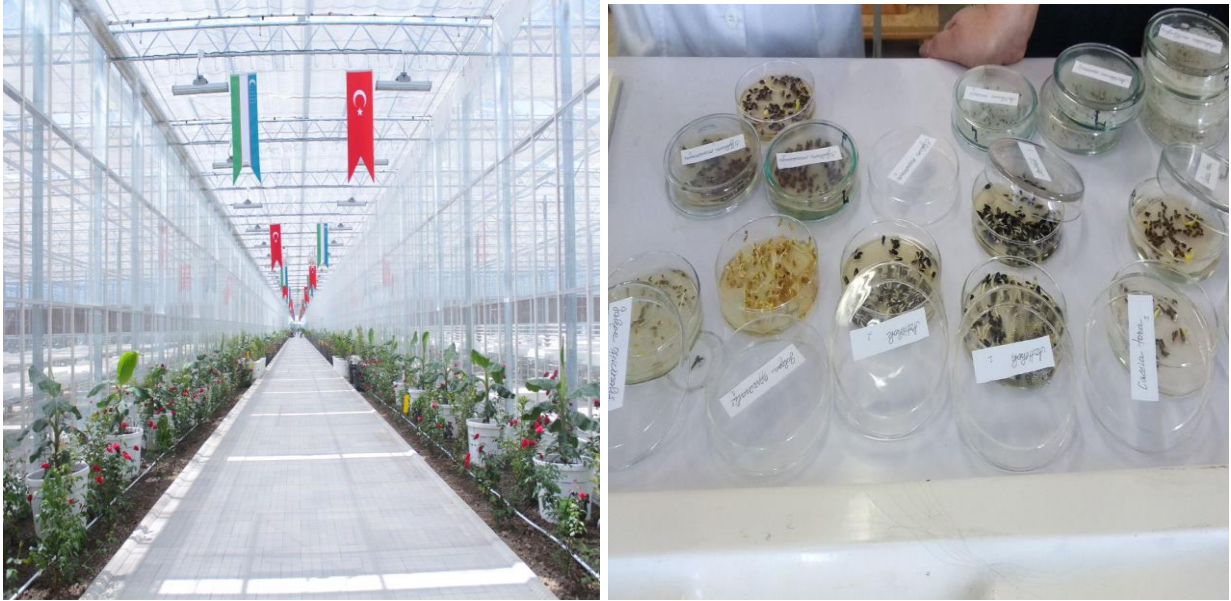
There is fish tank built for the facility for growing natural food for fish farms. In this case, chlorella is grown as a natural food and algalized in ponds where fish are raised. As a result, fish productivity increases and the sanitary condition of ponds improves.



Tank for fish

4.

Bukhara State University, that is, the Faculty of Agronomy and Biotechnology has been collaboratively working with the enterprise "BUKHARA-VARNET" in Bukhara district. Students from BSU can go and have lessons there, besides, they are having their internships in this area too.



BUKHARA-VARNET enterprise greenhouse and lab

The Faculty of Agronomy and Biotechnologies and Chemonics International Inc. made mutual agreement based on the attraction of the necessary equipment for the faculty.

6.

Teachers and professors at Bukhara state university of the Department of Biotechnology and Food Security of Bukhara State University conduct research on wastewater treatment in the Bukhara region. Since 2019, employees of this department have been conducting wastewater treatment deals for various organizations, such as Buxoro Suvoqava, Kagan Hen plant. An aeration tank is used for purifying polluted water, and higher aquatic plants such as *Pistia stratiotes* and *Azolla filiculoides* are used for biological purification purposes as well.



5.



Bukhara State University teacher, chemist scientist Matluba Amonova has created an effective method that allows to improve the process of wastewater treatment in dyeing and finishing plants.

- It is known that during the time of the former union, only 10-15 percent of the cotton fiber grown in our republic has been processed, - says M. Amonova.-After independence, especially in the last five years, 65-70 percent of the fiber grown is not processed. According to the head of our state, by 2021, it is planned to produce one hundred percent of raw materials as semi-finished or finished products. In terms of numbers, 250-300 tons of water is used to produce 1 ton of finished product. Dyeing of spool yarn, washing, bleaching and dyeing of the fabric and subsequent washing of the fabric with various solutions produce very large amounts of suspended particles, tar, SFM, dyes, organic and inorganic substances, which cause severe water pollution. This causes great damage to the environment. Therefore, chemical treatment of wastewater in this area is one of the urgent issues of the day and night.

In the traditional method, mainly activated carbon, sulfuric acid and aluminum sulfate are used. However, the high cost of activated carbon causes a sharp increase in the cost of wastewater treatment. The composition of the cleaning composition proposed by the researcher is based on local raw materials. It is

cheap and effective. When it was tested, it was observed that the efficiency of wastewater treatment of textile enterprises increased to 97%.

The scientific significance of the research results is that a scientific foundation has been created for the creation of the theoretical foundations of wastewater treatment with the "sorber-coagulant-flocculant" system based on bentonite, aluminum sulfate, sodium hydrosulfite and polyacrylamide. Navbahor mine bentonite was used as a cleaning ingredient, polyacrylamide, sodium bisulfite and aluminum sulfate were used as flocculants. This method makes it possible to achieve annual economic efficiency of more than 97 million sums in one textile factory.

- The cost of a traditional composition for cleaning one ton of wastewater is 6 kilograms, which is 7,665 sums when it comes to money, - says the researcher. produces an average of 55,000 tons of products, i.e., cloth, in return for the use of composites offered by us, and receives a profit of 97,130,000 sums.

The efficiency of the new method is also confirmed by the documents drawn up by the administrations of the limited liability company "TSK" and the limited liability company "Image Textile". Reference No. /3-1945 was also received.

In addition, the inquisitive scientist recently took part in the 3rd republic competition "100 best innovative projects of women of Uzbekistan" with this discovery and won the award in the nomination "The most effective innovative project (in the priority areas of science and technology)".

