



# V МЕЖДУНАРОДНАЯ НАУЧНО-ПРАКТИЧЕСКАЯ КОНФЕРЕНЦИЯ

НАУКА И ОБРАЗОВАНИЕ В СОВРЕМЕННОМ МИРЕ:  
**ВЫЗОВЫ XXI ВЕКА**



НУР-СУЛТАН, КАЗАХСТАН 10-12 ДЕКАБРЯ



**Объединение юридических лиц в форме ассоциации  
«Общенациональное движение «Бобек»  
КОНГРЕСС УЧЕНЫХ КАЗАХСТАНА**

**«SCIENCE AND EDUCATION IN THE MODERN WORLD:  
CHALLENGES OF THE XXI CENTURY»**  
атты V Халыкаралық ғылыми-тәжірибелік  
конференция  
**ЖИНАҒЫ**

**МАТЕРИАЛЫ**  
V Международной научно-практической  
конференции  
**«НАУКА И ОБРАЗОВАНИЕ В СОВРЕМЕННОМ МИРЕ:  
ВЫЗОВЫ XXI века»**

**СЕКЦИЯ 3. БИОЛОГИЧЕСКИЕ НАУКИ**

**НУР-СУЛТАН – 2019**





УДК 378  
ББК 74.58  
С 30



**Международная редакционная коллегия:**

Х.Б. Маслов, Е. Ешім, Е. Абиев (Казахстан), Лю Дэмин (Китай),  
Е.Л. Стычева, Т.Г. Борисов (Россия)

**С 30**

**«SCIENCE AND EDUCATION IN THE MODERN WORLD:  
CHALLENGES OF THE XXI CENTURY»** материалы V Международной  
науч-прак. конф. (БИОЛОГИЧЕСКИЕ НАУКИ)/ сост.: Е. Ешім, Е. Абиев –  
Нур-Султан, 2019 – 148 с.

ISBN 978-601-332-366-4

**«SCIENCE AND EDUCATION IN THE MODERN WORLD:  
CHALLENGES OF THE XXI CENTURY»** атты V Халықаралық ғылыми-  
тәжірибелік конференция материалдары жинағына Қазақстан, Ресей, Қытай,  
Түркия, Белорус, Украина, Молдова, Қырғызстан, Өзбекстан, Тәжікстан,  
Түрікменстан, Грузия, Монғолия жоғары оқу орындары мен ғылыми  
мекемелердің қызметкерлері мен ұстаздары, магистранттары, студенттері  
және мектеп мұғалімдерінің баяндамалары енгізілді. Жинақтың  
материалдары жоғары оқу орнындары мен ғылыми мекемелердегі  
қызметкерлерге, оқытушыларға, мектеп және колледж мұғалімдеріне,  
магистранттар мен студенттерге арналған.

V Международная научно-практическая конференция **«НАУКА И  
ОБРАЗОВАНИЕ В СОВРЕМЕННОМ МИРЕ: ВЫЗОВЫ XXI века»**, включают  
доклады ученых, студентов, магистрантов и учителей школ из разных стран  
(Казахстан, Россия, Китай, Турция, Белорусь, Украина, Кыргызстан,  
Узбекистан, Таджикистан, Молдавия, Туркменистан, Грузия, Монголия).  
Материалы сборника будут интересны научным сотрудникам,  
преподавателям, учителям средних школ, колледжей, магистрантам,  
студентам учебных и научных учреждений.

УДК 378  
ББК 74.58

ISBN 978-601-332-366-4

© ОЮЛ в форме ассоциации  
«Общенациональное движение «Бобек», 2019







observed that the growth, development and productivity of the algae with succeeded suspension increased by 2.5-3 ts.in cotton and 5-6 ts. in the rice. Among the types of algae's particularly blue-green algae's contain a large number of A, E, and B vitamins, and only algae Spirulina-Spirulina synthesizes vitamin B 12. In addition, they are rich in phytohormones and nitrogen compounds, which are needed for the organism of animals.

Thus Khauz city Bukhara is of great importance for hydrobiological studies. Having kinds of gidrofit's may Geofund life for aquarium enthusiasts and pond fisheries. Many species are found almost throughout the year.

#### REFERENCES:

1. Акжигитова Н.И. Галофильная растительность *Halophyta*. Растительный покров Узбекистана. В 4-х т. – Ташкент: Фан, 1973. Т.2. – С. 211-302.
2. Гранитов И.И. Растительный покров Юго-Западных Кызылкумов. В 2-х т. – Ташкент: Наука, 1964. Т. 1. – 335 с.
3. Закиров К.З. Флора и растительность бассейна реки Зерафшан. В 2-х т. – Ташкент: АН УзССР, 1955-1961. – 654 с.
4. Майлун З.А. Тугайная растительность *Potamophyta*. Растительный покров Узбекистана. В 4-х т. – Ташкент: Фан, 1973. Т.2. – С. 303-375.
5. Мельникова Р.Д. Псаммофильная растительность *Psammophyta*. Растительный покров Узбекистана. В 4-х т. – Ташкент: Фан, 1973. Т.2. С. 4-80.
6. Момотов И.Ф. Гипсофильная растительность *Gypsophyta*. Растительный покров Узбекистана. В 4-х т. – Ташкент: Фан, 1973. Т.2. – С. 81-191.

#### ECOBIOLOGICAL IMPORTANCE OF PLANTS IN HUMANS' AND ANIMALS' LIFE

**M.B.Togaeva, B.F.Aripov**

Teachers of Agronomy and biotechnology faculty,  
Bukhara State University

**Annotation:** We interact with plants in our day-to-day lives. However, many of us have never taken time to understand or appreciate the significant roles that plants play in our lives. This article highlights the importance of plants. There are many reasons why plants are important for us but here we have presented 10 most important reasons.

**Key words:** plant, animals, agro culture, day-to-day, T-DNA, Gilbertiodendron maximum, Oberholzeria etendekaensis, transform, watering, pollute.

**Introduction:** Agrobacterial transformation is a main method of creation of transgenic plants under laboratory conditions. It is based on regeneration of whole plants from cells transformed with vectors based on T-DNA of agrobacteria. In addition, natural plants are described that contain T-DNA in their genomes and have been vertically transferring it throughout generations over millennia. This DNA was called cellular T-DNA (cT-DNA), and plants containing it are referred to as naturally transgenic ones. Since evolution involves manifold acts of such plant transformation, the latter appears to play important roles. This review analyzes the significance and feasible functions of cT-DNA in the evolution. Roles of cT-DNA in control of plant morphogenetic reactions and in that of processes related to plant-microbe interactions are also discussed.

By scanning through several plant databases, including the the Plant List, the International Plant Names Index and the World Checklist of Selected Plant Families, the team





found that 391,000 vascular plants are currently known to science. Moreover, about 2,000 new plant species are discovered or described every year. Many of these newly described are already on the verge of extinction.

In 2015, for example, scientists described *Gilbertiodendron maximum*, a critically endangered giant, heavy tree weighing about 105 metric tons, that is found in the Cameroon-Congolian African rainforest. Researchers also described *Oberholzeria etendekaensis*, a succulent shrublet, which is not only a new species but a whole new genus. It is also a rare species, known only from a single locality with 30 individuals in Namibia.

According to the report, Australia, Brazil and China are the top three sources for many of the new species discovered every year. In fact, the report notes that Brazil is home to more seed plants than any other country in the world, and the knowledge of its flora is growing at a “record-breaking” pace.

We share space with nearly 400,000 plant species. But so far, only about 31,000 of these species have at least one documented use. These include uses for food, medicine, recreation, genes, poisons, animal feed, and building material.

The future looks bleak for many species, the report warns. Based on the best available estimate, scientists say that 21 percent of all plant species — or one in every five plant species — is likely threatened with extinction. The biggest threats are large-scale destruction of habitat for agriculture, such as for oil palm plantations, logging, livestock farming as well as residential and commercial. Mangroves and tropical coniferous forests have been most affected by the rampant land cover change, researchers found.

Climate change, too, is a threat, but a small one currently. However, it is likely to grow into a bigger threat in the coming years, researchers say.

“I suspect we won’t actually see the full impact until 30 years down the line as it takes so long for plants, especially trees, to produce their offspring,” Willis [told the Guardian](#).

Some areas in the world still have a large diversity of plants, including several unique species. But only a few of them are actually legally protected, the report notes. Overall, researchers identified 1,771 important plant areas in the world that need urgent conservation action.

The results are sobering. But there are still plenty of information gaps that need to be filled, scientists say.

“To have effect, the findings must serve to galvanise the international scientific, conservation, business and governmental communities to work together to fill the knowledge gaps we’ve highlighted and expand international collaboration, partnerships and frameworks for plant conservation and use,” Willis said.

We obviously can’t live without plants, but sometimes they cause us problems. Many plants are weeds. Weeds are plants that grow where people don’t want them, such as gardens and lawns. They take up space and use resources, hindering the growth of more desirable plants. People often introduce plants to new habitats where they lack natural predators and parasites. The introduced plants may spread rapidly and drive out native plants. Many plants produce pollen, which can cause [allergies](#).

Almost all people and animals rely on plants for food. Plants are also sources of several nutrients that are needed by man, for example, vitamins and proteins. Plant roots absorb minerals from the soil. When the plants are consumed, people get these minerals which usually have great nutritional value and are important for life and metabolic processes that occur naturally in the body.

It is estimated that rice, maize and wheat plants provide more than half of the food intake globally. Plants are considered to be at the bottom of the food chain because they convert inorganic molecules into organic matter, providing food for the other organisms.

There are several plants that have medicinal value. Research in this area is still ongoing as plants with medicinal value continue to be discovered. For example, quinine is a drug that we get from the Cinchona plant, and it has antimalarial activity.

Herbal extracts from several plants including Aloe Vera have been shown to promote





overall body health. The Neem tree, which grows in the tropical regions of the world, has activity against over forty diseases and infections. Eating vegetables has also been shown to prevent obesity, cancer, and cardiovascular diseases. It has been estimated that twenty-five percent of prescription drugs are direct plant products or derivatives.

Plants are the habitat or natural home of several animals, which otherwise would not exist. This is one of the reasons why plants are essential. Some of the animals whose habitat is plants are tourist attractions and others play an indispensable role in the ecosystem.

Plants also support the lives of insects, worms and other organisms. Destruction of plants should, therefore, be avoided because it can lead to the extinction of a lot of endangered species. Plants play a very important role in regulating the climatic conditions on the planet so as to ensure they are conducive for human life. For example, plants consume carbon dioxide and in turn release oxygen into the atmosphere through the process of respiration.

Oxygen is the part of the air that human beings need for metabolic processes in the body, and plants help to maintain sustainable levels of oxygen in the environment. On the other hand, the reduction of the levels of carbon dioxide by plants is beneficial since an increase can lead to the greenhouse effect and global warming.

In drought-stricken areas, forestation, which is the increase of forest cover, has been shown to increase rainfall. Plants also decrease pollutants in the environment, which is in turn good for the climate. For these and other reasons, plants are very important in fighting climate change.

Plants provide a lot of industrial products. Examples are furniture and papers from trees, linen from cotton, and perfumes, rubber and cosmetics from several other plants.

A lot of other industrial products are derived from plants, for example, plastics, soaps, shampoos and lubricants. The past two decades have seen the cropping up of industrial tree plantations around the world. These are areas where trees are grown purely for commercial and industrial purposes. Canada is one of the biggest wood exporters in the world, producing 31 billion kilograms of wood annually.

Plants have aesthetic value, as they add beauty to the environment. It is common to see gardens being planted in homes and public places to make the general appearance of the place more attractive. The Hanging Gardens of Babylon are a major tourist attraction and they have been named as one of the Seven Wonders of the World.

Plants and trees have also provided some of the most scenic, awe-inspiring and captivating landscapes in the world. Additionally, flowers from various plants are used on special occasions because of their beauty.

Plants prevent soil erosion which is the removal of the top layer of soil by agents such as wind and flowing water. This is because the roots of plants hold the soil together, preventing it from being eroded.

Plants, especially trees, also reduce the speed of the wind, which is a major agent of erosion. Landslides, mudslides and similar catastrophes are also less likely to occur in areas with ample vegetation.

When plants die or when their leaves fall off, they decompose and add nutrients to the soil. Plants also conserve moisture in the soil by providing shade. All in all, the presence of plants is associated with an increase in soil quality.

Plants are a source of fuels. Examples of such fuels are ethanol from corn and sugarcane, biodiesel from vegetable oils and green diesel from various plant sources. Some of the advantages of bio-fuels include their renewability and relatively cheap cost. The use of bio-fuels is also environment-friendly since greenhouse emissions are low, and they are associated with a low carbon footprint. Plants play a significant role in the water cycle. Water from below the earth's surface is brought to the atmosphere through a process known as transpiration that occurs in plants.

It is also important to note that plants detoxify water and support marine ecosystems by adding oxygen to water and providing food to marine life.

The presence of plants usually has therapeutic effects. Studies have shown that the







presence of plants reduces stress and anxiety while improving mood. It is, therefore, no wonder that people really enjoy hiking and going for retreats in forested areas.

Exercise in areas that are rich in plant life has been proved to be more beneficial for physical and mental well-being compared to exercise done indoors or in several other environments.

The importance of plants in our lives cannot be underestimated, and therefore, there is a great need for the conservation of the plants. Indeed, plants are a very significant component of the ecosystem and experts have concluded that we could not exist without them. The benefits of plants are seen in all spheres of human life including socioeconomic benefits and benefits for the environment.

Plants are everywhere around us, but how do plants grow and what makes plants grow? There are many things plants need to grow such as water, nutrients, air, water, light, temperature, space, and time. Let's take a look at the most important factors for growing healthy plants. **Water and Nutrients** Like humans and animals, plants need both water and nutrients (food) to survive. Most all plants use water to carry moisture and nutrients back and forth between the roots and leaves. Water, as well as nutrients, is normally taken up through the roots from the soil. This is why it's important to water plants when the soil becomes dry. What helps plants grow besides water and nutrients? Fresh, clean air and healthy soil. Dirty air caused by smoke, gases, and other pollutants can be harmful to plants, limiting their ability to take in carbon dioxide from the air for making food (photosynthesis). It can also block out sunlight, which is also necessary for healthy plant growth. Healthy soil is extremely vital to plants. In addition to essential nutrients found in soil (from organic matter and micro-organisms), soil provides an anchor for plant roots and helps support the plants. **Light and Temperature** Plants also need sunlight to grow. Light is used as energy for making food, a process called photosynthesis. Too little light can make plants weak and leggy looking. They will also have fewer flowers and fruits. Temperature is important too. Most plants prefer cooler nighttime temps and warmer daytime temperatures. Too hot and they may burn, too cold and they will freeze. **Space and Time** Space is yet another factor to consider when growing plants. Both the roots and foliage (leaves) need room to grow. Without enough room, plants can become stunted or too small. Overcrowded plants are also more likely to suffer from diseases since airflow may be limited. Finally, plants require time. They do not grow overnight. It takes time and patience to grow plants, some more so than others. Most plants require a particular number of days, months, or even years to produce flowers and fruit. Plants are incredibly important for providing habitats for a huge number of different species. A good example of this is the English oak.

This species supports more life than any other native tree. It provides habitat for hundreds of insects and food for birds and mammals such as deer and badger. It supports fungi, lichens and even bats. Bat species will roost in old woodpecker holes or under loose bark and then feed on the insects in the tree canopy.

Native wildlife depends on native plant and tree species like the English oak - without them they wouldn't be able to sustain themselves.

A range of chemical pollutants can cause problems to health in industrial and urban environments. It has been increasingly shown that the presence of green spaces in these areas can be vital in acting as a sink for these pollutants, therefore improving air quality.

Any green space has the capability of reducing air pollution. Woodland planted in the right areas near urban and industrial environments would be particularly effective due to the increase in surface area able to absorb the pollutants.

Plants and trees are incredibly important for maintaining good soil condition. Their roots and the microorganisms that live around their roots hold the soil together, reducing the likelihood of soil erosion. When leaves fall from the trees and when plants die, they decompose, fertilising the soil and enabling other plants to grow and thrive. Carbon dioxide (CO<sub>2</sub>) is one of the main greenhouse gases that contributes to climate change. Plants take in CO<sub>2</sub> and release oxygen through the process of photosynthesis. This CO<sub>2</sub> is used as building blocks for new tissue such as their trunk, branches, leaves, and roots acting as carbon stores.





When forests are cut or burnt, the huge amounts of carbon that has been stored in plant tissue and the soil is released into the atmosphere. This is why it is so important to protect these habitats, especially ancient primary forests containing native species that have had little human disturbance in that past.

#### REFERENCES:

1. Cavalier-Smith, T. (1981). "Eukaryote kingdoms: Seven or nine?". *BioSystems*. 14 (3–4): 461–481.
2. Lewis, L.A.; McCourt, R.M. (2004). "Green algae and the origin of land plants". *American Journal of Botany*. 91 (10): 1535–1556.
3. Kenrick, Paul; Crane, Peter R. (1997). *The origin and early diversification of land plants: A cladistic study*. Washington, D.C.: Smithsonian Institution Press.
4. Adl, S.M. et al. (2005). "The new higher level classification of eukaryotes with emphasis on the taxonomy of protists". *Journal of Eukaryote Microbiology*. 52 (5): 399–451.

УДК 631.461

#### АКТИВНОСТЬ МИКРООРГАНИЗМОВ В ЗАГРЯЗНЕННЫХ ПОЧВАХ

**Искакова Баглан Аскаровна**

Научный руководитель – Тыныкулов Марат

Магистрант факультета естественных наук ЕНУ им. Л.Н.Гумилева

г. Нур-Султан, Казахстан

**Аннотация.** Аналитические обзоры показывают, что потери нефти в результате аварийных проливов составляют более 3% от годовой добычи нефти. Нефть, попадая на поверхность земли и впитываясь в грунт, загрязняет подземные воды и почву, в результате чего плодородный слой земли не восстанавливается в течение длительного периода времени. Существенную помощь в решении вопроса очистки территории от нефти могут оказать биологические средства.

**Ключевые слова:** загрязнение почв, тяжелые металлы, микроорганизмы углеводорода.

Широко обсуждаются вопросы, способствующие росту и повышению устойчивости воздействия отходов на микроорганизмы, образовавшихся в результате техногенных процессов, наносящих вред окружающей среде в последние годы. По данным Всемирной Организации Здравоохранения, 80% заболеваний доказывают, что происходит загрязнение окружающей среды и 70% токсичных веществ поступают в организм человека через пищу, а также вызывают тревогу для человечества.

В местах загрязнения техногенными отходами собираются металлы и дифференцируются здесь. Растения нижних стадий доводят содержание органических веществ в почве до благоприятного состояния всасывания растений. Снижение их количества и активности приводит к питанию растений и снижению плодородия почв. При воздействии техногенных загрязнений на почву особую опасность для микробиоценозов представляет слабая миграционная способность и накопление в слое гумуса с высокой активностью и распространенностью растений низшей стадии.

Почва-активный геохимический экран, который удерживает в себе часть загрязняющих элементов. После этого, часть поглощается растениями, другая добавляется в подземные воды и с ветром поднимается в атмосферу и загрязняется

