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STUDYING OF THE CLIMATIC FACTORS THAT INFLUENCE ON THE GROWTH OF THE SAXAULIN THE SOUTHERN REGION

This article considers the technology of reproduction by monitoring the phytocenotic features, biomorphological and eco-biological conditions of saxaul in the southern region of Kazakhstan. As an environmental issue, the state of saxaul production in the southern regions of Kazakhstan is still not up to date. This is due to the lack of scientifically based agro technology for growing saxaul crops in the wild, the lack of forest seed base and special seeders for sowing saxaul seeds. Therefore, it is necessary to evaluate the existing cultivation technologies and reconsider the idea of saxaul as a plant that can grow in any forest conditions. The research was carried out in the laboratory conditions of the Department of Ecology and Chemistry of the Faculty of Natural Sciences. Geobotanical methods and agrotechnical research methods were used as scientific methods: control of seed planting material of black saxaul. For comparison with wild saxaul species, the expeditionary method, latent, virginal and generative development methods, control methods, and phenological research methods were used. Studies have shown that saxaul seeds can be grown in artificial and field conditions. As a result of the study, it can be predicted that the southern region has the opportunity to increase the number and scale of saxaul species. This fact provides a favorable ecological solution to the environment, that is, the problem of desertification and sand control. The seeds of the black saxaul were planted in laboratory conditions before the seedlings were ready to be transplanted into the natural area.

Key words: saxaul, desertification, salt marsh, ecological degradation, geobotanical methods, seed planting material, graysoil.

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Оңтүстік өңірдегі сексеуілдің өсуіне климаттық факторлардың әсерін зерттеу

Бұл мақалада Қазақстанның оңтүстік аймағында сексеуілдің фитоценодикалық ерекшеліктерін, биоморфологиялық және экологиялық-биологиялық жағдайларын бақылау арқылы олардың көбею технологиясы қарастырылған. Экологиялық проблема ретінде Қазақстанның оңтүстік өңірлерінде сексеуіл өндірісінің жай-күйі әлі күнге дейін өзекті емес. Бұл табиғатта Сексеуіл дақылдарын өсірудің ғылыми негізделген агротехникасының болмауына, сексеуіл тұқымдарын себуге арналған орман тұқымы базасы мен арнайы сепкіштердің болмауына байланысты. Сондықтан қолда бар өсіру технологияларын бағалау және кез-келген орман жағдайында өсуге қабілетті өсімдік ретінде сексеуіл туралы идеяны қайта қарау қажет.

Зерттеулер экология кафедрасы мен химия жаратылыстану ғылымдары факультетінің зертханалық жағдайында жүргізілді. Ғылыми әдістер ретінде геоботаникалық әдістер мен агротехникалық зерттеу әдістері қолданылды: қара сексеуілдің тұқымдық отырғызу материалын бақылау. Сексеуілдің жабайы өсетін түрлерімен салыстыру үшін экспедициялық әдіс, жасырын, виргинильді және генеративті даму әдістері, бақылау әдістері, зерттеудің фенологиялық әдістері қолданылды. Зерттеулер сексеуіл тұқымын жасанды және дала жағдайында өсіруге болатындығын көрсетті. Шағын зерттеу нәтижесінде оңтүстік өңірде сексеуіл түрлерінің саны мен ауқымын ұлғайту мүмкіндігі бар деп болжауға болады. Бұл факт қоршаған ортаға, яғни шөлейттену және құммен күресу проблемаларына қолайлы экологиялық шешім береді. Қара

сексеуіл тұқымдары табиғи ауқымға көшіруге дайын көшеттер өсірілгенге дейін зертханалық жағдайда отырғызылды.

Түйін сөздер: сексеуіл, шөлейттену, сортаң топырақ, экологиялық тозу, геоботаникалық әдістер, тұқымдық отырғызу материалы, сұр топырақ.

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Изучение влияния климатических факторов на произрастание саксаулов в южном регионе

В данной статье рассмотрена технология воспроизводства путем наблюдения за фитоценоотическими особенностями, биоморфологическими и эколого-биологическими условиями саксаула в южном регионе Казахстана. Как экологическая проблема, состояние производства саксаула в южных регионах Казахстана до сих пор не актуально. Это связано с отсутствием научно обоснованной агротехники выращивания посевов саксаула в дикой природе, отсутствием лесосеменной базы и специальных сеялок для посева семян саксаула. Поэтому необходимо оценить существующие технологии возделывания и пересмотреть представление о саксауле как о растении, способном произрастать в любых лесных условиях. Исследования проводились в лабораторных условиях кафедры экологии и химии факультета естественных наук. В качестве научных методов использовались геоботанические методы и агротехнические методы исследований: контроль семенного посадочного материала черного саксаула. Для сравнения с дикорастущими видами саксаула использовались экспедиционный метод, латентный, виргинильный и генеративный методы развития, методы контроля, фенологические методы исследования. Исследования показали, что семена саксаула можно выращивать в искусственных и полевых условиях. В результате небольшого исследования можно прогнозировать, что, южный регион имеет возможность увеличить количество и масштаб саксаульных видов. Этот факт дает благоприятное экологическое решение окружающей среды, то есть, проблемы опустынивания и борьбы с песком. Семена черного саксаула были высажены в лабораторных условиях до произрастания рассады готовых к пересадке в естественный ареал.

Ключевые слова: саксаул, опустынивание, солончак, экологическая деградация, геоботанические методы, семенной посадочный материал, серозем.

Introduction

The climate of the southern region determines the high values of the influx of solar radiation on its territory. The main component of the radiation balance is the total solar radiation. As we move from north to south, there is a significant increase in the arrival of total solar radiation. The region receives the greatest amount of solar energy during the period July-September. For the most part, the maximum solar solstice occurs in the month of the summer solstice – July. This season is characterized by small gradients of radiation fluxes and the predominance of relatively thin clouds of the upper and middle tiers. The total radiation, falling on the earth's surface, is partially absorbed, and the rest, reflected, returns to the atmosphere. The reflection coefficient depends mainly on the nature of the underlying surface. In winter, in the presence of snow, it reaches 70-80%, in summer it is significantly reduced to 20-30%. The main features

of atmospheric circulation are formed under the influence of the general planetary circulation, local radiation conditions, and the characteristics of the underlying surface. A very significant influence on the circulation processes of the atmosphere is exerted by the structure of its surface. Mountain ranges in the south, southeast have a certain impact on air currents on a global scale, being a natural barrier to the passage of cold air masses to the south. The influence of the mountains in the south and southeast on atmospheric fronts is obvious. Thus, fronts approaching from the north slow down their movement or become stationary. Annual rainfall varies from 230 to 340mm. The maximum also falls on the warm half of the year, when 65-80% of the annual precipitation falls. Average annual temperatures are positive (1°C). In general, the climate of the region is characterized by long hot summers, cold winters for these latitudes, large annual and daily temperature amplitudes, high air dryness, and low cloudiness.

For the warm half of the year, due to intense heat exchange between the underlying surface and the atmosphere, an intensive process of transformational drying and heating of the incoming air masses is characteristic, leading to the formation of continental local tropical air. The daily course of the wind is typically continental: calm prevails in the evening and at night, during the day the wind intensifies, reaching a maximum in the afternoon. The coldest month of the year is January with an average temperature of -5, -15°C. At the same time, even in the coldest months of winter, rare warming temperatures are possible, reaching 15-25°C on some days. The share of precipitation of the cold period is 30-54% of the annual amount. Dust storms are usually observed during the passage of cold fronts. The periods of greatest heat are associated with the development of thermal depression. A characteristic feature of the warm half-year is the high frequency of atmospheric droughts, against the background of moderately dry and dry wind-dry weather. The dry nature of the weather is determined not only by high temperatures, but also by low relative humidity, combined with a small amount of precipitation.

Winter is characterized by great instability and variability of the weather, especially in the southern part of the zone, where there are frequent changes of positive and negative temperatures. Summer is long, hot and dry, the weather is stable, it is dry and dusty, cloudless and has large daily amplitudes of air and soil temperature.

One of the biggest problems in the world today are the global warming, expansion of the ozone hole, the melting of the Arctic Ocean, the attraction of Aral water, the flight of its salt residues, and the ecology are the main problems of the global population. At the same time, it has a huge impact on the flora and fauna, climate, and environment of the biosphere. In order to preserve biodiversity, international environmental organizations are doing many work and preventive measures. In particular, the focus is on the technology of increasing forest areas, developing acreage in sandy, desert and semi-desert zones. In the desert region, efforts are being made to solve the problem by providing measures to preserve the biodiversity of the plant system. At the same time, work is underway to plant saxaul, which is resistant to hot climates, has the ability to protect against dust storms and preserve soil fertility. Not only our country, but also all over the world, including Central Africa, the United Arab Emirates, Mongolia, China, India, and Central Asia work is underway to create saxaul forests. In the desert and semi – desert region,

the main thing is vegetation and saxaul trees. It accounts for more than half of the total forest fund. In order to solve this problem in the country, on behalf of the Department of Ecology, geology and natural resources, it was discussed at a methodological scientific conference and proposed to plant seedlings. The efficiency of acclimatization of this plant is a protection of the desert zone and has the ability to hold firmly, without scattering sand (Samakova, 2004:203; Melokhova, 2007:124; Lawyer, 2005:25; Toktasynov, 2018:115; Thevs, 2013:22).

Saxaul is one of the important tree for the wilderness and desert region. The peculiarity of this plant is that it is very suitable for the ecological restoration and melioration of the desert. Since ancient times, people have used the trunks of saxaul to build settlements. People living in remote settlements use its ramification in everyday life, its energy value is close to the calorific value of coal, that is, it is characterized by thermal heat. Currently, in China this wood is categorized as small firewood. However, due to its biological features, several problems have been identified in its propagation and propagation: slow development rate, low level of artificial straight lines (<10%), and planting seedlings in non-irrigated conditions. Studies have shown that in a dry climate, sandy and stormy areas, in addition to nibbling by small jaguars, physiological stress ($t > 80^{\circ}\text{C}$) is caused by the burning of young shoots in contact with the ground (Wuherer, 2012:18; Yes-simbek, 2022:486; Sukachev, 1972:28,50; Baeshov, 2000:15).

Accordingly, this stress factor is ignored by forest protection organizations. Today, as a result of research in many ecological, desert and desert regions, a new floor cultivation technology is emerging. However, these technologies can be applied in regions with relatively high water levels, desert and desert areas, sandy hills and saline soils. As a result, it was proved that the annual growth of the plant and its growth in saline desert soil could be effectively improved. These technologies have been tested in the desert regions of Xinjiang, Mongolia, as well as in the provinces of Shanghai and Gansu of China (Azenov, 2009:8; Dedkov, 1978:177).

The plane tree is a shrub plant that grows in the desert. There are many types of saxaul; three of its types are widespread in our country: white (*Haloxylon persicum*), black saxaul (*Haloxylon aphyllum*) and zaysansaxaul (*Haloxylon ammodendron*). White plane tree grows in desert areas, on the sands, its height reaches 1.5-2.5 m, sometimes there are also large species of shrubs up to 5 m. Its

leaves are like scales, green, and the branches are used for food. This species is mainly food for camels, they feed on saxaulbushes at a height of 3 m and receive a fodder mass of up to 12 kg. In addition, sheep can eat dry leaves and bushes that have fallen to the ground. Saxaul has a high nutritional value, 100 kg of dry wood contains 4 kg of easily digestible protein and 52.0 food units.

Black saxaul is a large shrub plant, reaching a height of up to 7 m, with a strongly spreading trunk and branches. This species can form half-arid forests and spread by seed, and is common in the desert region of Central Asia. It grows well in sandy and clayey areas with high filterability, especially at a depth of 5-30 m. Occurs in areas of low energy shrubs, barren and barren areas. It is distinguished by high fodder productivity, increases the productivity of the pasture-forage mass of the adjacent territory in the form of pasture protection strips. Unlike white camels of this species, camels eat quickly and have a high forage mass (Rakhimova, 2022:287; Mathur, 2022:32; Liu, 2022:285; Shamsutdinov, 2021:19).

Zaysan ammodendron – grows in sandy and saline soil and has a branched trunk. Its branches are entwined with thin long green twigs that replace leaves, the lower part can decrease to small sizes. The flowers are small, inconspicuous, located on the neck of these scales, consisting of five pistils, five pistils and one pistil with 2-5 stigmas. The ovary contains one ovule, which develops into a seed with a spirally twisted fetus. Its wood is very hard, but brittle, not suitable for handicrafts, but excellent firewood is obtained from it. This type of sycamore grows very slowly, and regeneration after cutting takes a long time. There are other forms of saxaul marriage in Afghanistan, Iran, North Africa and Spain, but they are much less common.

The purpose of scientific work – in the course of achieving the goal, the timing of the growth of wormwood in the spring months was initially controlled according to the general control and counting method. The study of biomorphological features of seeds in the latent, virginal, generative and endogenous periods was carried out. First, the growth process of seedlings was measured by observing 15-45 rooted trees. Tree measurements were calculated based on their development and maturity in the phenological phase. The fodder mass of the saxaul product was cut agro technically and harvested.

The area of forests in the country is 30 million hectares, which 13 million hectares are considered forest. The main vegetation of this region is saxaul forests. Of the species found in our country,

the white-black type occupies about 7 million. The sandy zone includes 165 million hectares of the territory of Kazakhstan with a total area of 287 million hectares. In the southern region of Kazakhstan, a large area of Almaty, Zhambyl, Turkestan, Kyzylorda, Aktobe and Mangistau regions is a desert region, and the inhabitants of this region suffer from climatic conditions. Due to the migration of sand, the sand that has moved covers the villages (Zhao, 2021:2; Singer-Avitz, 2021:105; Li, 2021:72).

Despite restrictions and bans in place since 2004, the threat to saxaul remains. In addition, in order not to restore extinct species in the future, the most radical measures should be taken today. It grows mainly in vast desert regions from the Mediterranean to Central Asia, on sand dunes, salt marshes and rocky deserts of the Gobi. In the world, 11 types of saxaul have been identified intercourse. In China, only two species, *Haloxylon ammodendron* and *H. persicum*, are distributed over an area of about 120,000 km².

If we talk about special measures, then the responsibility for the sale of hemp trees should be transferred from the administrative level to criminal responsibility. If the desire for relic wood is taken at 250 MCI instead of 25 MCI, and with a few hundred extra hours of restoration work, cutting work and use should decrease. The proceeds can be used to buy seedlings and plant them in the place of the destroyed trees. It should be noted that work is in full swing to create a saxaul grove at the bottom of the dried-up Aral Lake. The plan for the next ten years is to plant about eight million seedlings in the salt desert, and by 2030 it is planned to plant 500,000 hectares of forest. In order to turn our city into a green city, we plan to plant and replant trees, as well as develop and harvest them in a short time. Because it is well known that saxaul is known as the fortress of the sandy desert. Its tree itself grows on average up to 12-15 meters in height. It comes from the greek word “galaxilon”, which means “salt tree”. This is because it protects the desert from sand and sandstorms.

The most effective climatic zones for the development of forests in the country are the southern region, such regions as Zhambyl, Almaty and Kyzylorda. It is necessary to select a product for sowing and sowing seeds, adjust the sanitary function without viruses, termites and pests (Shamsutdinov, 2020:3).

Let us focus on the general characteristic of this plant (Ubaydullayev, 2020:4): the roots are widely spread and develop well. Secondary roots penetrate deeply into the soil and spread for 10-15 meters.

The stems and leaf branches are single-branched, the base is flattened, and in the last years of life, it becomes brittle. The size of the stem is small and heavy, in this case it will sink in water. The flowers are two-lobed, small, and scaly. The leaves are divided into male and female. The male has six petals, the female has five petals. It grows and matures in the second and third months of spring and continues to bloom until mid-autumn (Burnside, 2020:1178).

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According to the Decree of the Government of Kazakhstan dated April 29, 1999 "On the protection of saxaul forests", a great contribution was made to the development of saxaul forests. This decree prohibits poaching and the private use of wormwood; this document ordered large-scale work in the southern and southeastern regions (Purayil, 2020:5).

The life span of saxaul forests may end much earlier than expected, and then the semi-deserts, which occupy 36 percent of the entire territory of the Republic of Kazakhstan, risk turning 64 percent of the region into lifeless sands and salt marshes.

The saxaul species *H. Persicum* is widely distributed mainly in the provinces of Northern Xinjiang, Inner Mongolia, Gansu and Shanghai. The distribution area in Xinjiang is 73.1% of the entire country and about 14.1% in Inner Mongolia. The distribution area in the provinces of Qinghai and Gansu is relatively small, with about 7.9% and 4.9% of the species distributed. Because the tree is resistant to drought, heat, soil salinity and wind resistance, this tree has a special place in Chinese desert forestry. Plane tree planting contributes to the conservation of biodiversity in the desert plains, provides suitable habitat for about 200 species of desert animals, plays an important role in sand movement and sand consolidation, slows down desertification, maintains regional ecological balance, and plays an important role. Indispensable role in the development of the national economy and its environmental safety.

For sustainable and rational use of forests, it is necessary to know the biological, physical and geographical features of forest communities. When classifying forests, all regularities and patterns of forest development, biological features of the forest area, climatic and soil conditions, etc. should be taken into account. According to V.N. Sukachev (Bao, 2020:3) for a more complete account of the

characteristics of the forest, it is necessary to use the methods of forest inventory and forest typology, and at a different level of forestry development, a certain is needed approach to typology.

Unites all classifications of saxaul forests and distinguishes three main categories: 1) ecotopic, where the focus is on environmental factors (ecotope), which in turn are divided into microclimatic and soil; 2) biocenoses, phytocenoses and zoocenoses; 3) an ecosystem that combines the foundations of the two previous classifications. Therefore, phytocenosis is a representative of all ecosystem properties of the forest.

The geobotanical concept of phytocenosis and the geobotanical approach to the classification of forests take into account such factors as a complete account of the species composition of the community involved in the exchange of matter and energy, which is an indicator of environmental conditions; establish a sinusoidal community structure; taking into account environmental factors, mechanisms of interaction of phytocenosis components. The plant association, which is the main taxonomic unit in phytocenology, is a floristic, ecological and phytocenological concept. The species *Desertiaborosa saxaul* belongs to the eucerophilic desert plants.

In the desert regions of southern Kazakhstan, about 40,000 hectares of black oak forests are grown annually. The main way to create forest plantations is to sow seeds. This method has a number of advantages, but also has many disadvantages. The productivity of the fields is not constant; the level of their localization depends on the weather and climatic conditions of each year. The level of land reclamation is often very low, resulting in the destruction of thousands of hectares of fields every year. White saxaul grows in the northern part of the desert, on hilly and ridged sands. In the Bakanas, plain, white saxaul grows on the tops of hills and ridges. The white saxaul formation consists of 10 communities that differ in their growth characteristics (Elmefregy, 2020:2782). The tops of the hills and ridges are characterized by shrub communities, and on the slopes of the hills, in depressions between coals and between ridges, herbaceous communities grow. Communities recommend the use of grass as a pasture in spring and autumn/winter. A mixed formation of saxaul grows in low sandy depressions and ridges of the Bakanas Triangle. On low sandy ridges (no more than 2-2.5 m), mixed alder forests are mainly common. The ridges consist of pulverized fine-grained gray mica sands, and sagebrush grows in dense silty sands underlain by clay soils.

The formation is characterized by a low degree of flight closure – 0.2-0.3 m, height – 1-2 m, as well as low productivity.

According to known information, the most common formation on the territory of Ile-Balkhash is black saxaul in the low-wave plain; in fact, black saxaul dominates in most of the entire massif. It is on this territory that forests cross the desert from southwest to northeast in the central part and reach the Karatal River. With the formation of groundwater, black saxaul spreads from 5 to 10 m in the lower parts of the area. The most common associations of this formation are black saxaul and keirey black saxaul type. Each of these communities accounts for 30% of the total area and there is a high level of preservation of the top of 0.5-0.7 cm. The height of the trees is up to 7 m, the circle of the level of return is up to 1 m, the upper part of the plant is up to 0.5-0.8 cm. On clay soils grows rare and rarely growing, and on sandy soils black saxaul dominates. Therefore, the smallest in terms of productivity and area is occupied by lichen black saxaul, and these belong to this dying saxaul (Lindqvist, 1958:14).

The purpose of this scientific work aimed at solving such relevant issues is to identify and increase the types of fertile grass in the desert and deserts in the southern region in order to determine the biological and environmental nature of the Saxsaul family, biodegradable and environmental, personal significance, in pastures in the southern region. The goal was to control the phytocynotic significance of the saxaul using phytocenological significance, the use of phytomelization and the natural state of this environment, the need for the environment.

Materials and methods

Selection research methods were used as the main research methods. Works on the selection inventory of saxaul forests, on the transfer of forest seed production to a breeding basis. B. Lindqvist in Sweden introduced the concepts of “plus”, “normal” and “minus” planting; “plus”, “normal” and “minus” tree and developed a methodology for their allocation [27]. These definitions are accepted in the international practice of forest breeding. The research was carried out in the laboratory conditions of the Department of Ecology and Chemistry of the Faculty of Natural Sciences. Geobotanical methods and agrotechnical research methods were used as scientific methods: control of seed planting material of black saxaul. Geobotanical methods were used as a scientific method: monitoring of phytocene

tics in the culture of saxaul types and phytocene (determination of natural conditions of saxaul), the phytoceneticques in the culture of saxaul in accordance with the climatic conditions in the southern region. Methods of agro-technical research: to determine the stages of growth and sowing of saxaul seeds, sowing and processing of seeds. Biomorphological types of saxaul family were considered a method of latent, virginally and generative development. Research methods were used through optimal processing and depth of optimal processing and control of sowing in the development of saxaul development, plant measurement, and perfection in the phenological phase time.

Black saxaul forests for thirsty regions of Kazakhstan are a regional plant. We also consider desert forest formations as a pasture ecosystem, as saxaul is more productive than other desert plants, only 85 tons/hectares in wooden reserves, as well as 2.5-7.5 kilometers/ hectares. In our understanding, the size of the ecosystem complies with a geobotanic understanding of the size of the plants as a taxonomic unit.

Saxaul forests of the South Balkhash region were studied using the two landfills and landscape-environmental profiles in the area of the Sary-Ishik-Atyrau region. This is a black landscape plant that makes saxaul trees for the desert, but not exceeding 0.4-0.5, it is often light forests with a clear long linear structure. Dominant black saxaul – *Haloxylon Aphyllum* height of 2 – 5 m, but large dimensions can reach 50-60 cm of 8 – 10 m and the thickness of the trunk. Saxaul performs asymilian and photosynthesis. Black saxaul in the classification of the form of life form of the Rounder – a phanerophyte; Serbryakova in the classification of bio morphs – Vertical geooxil, Bushkov B.A. – semi-shrub was divided into haloxerophilic. The black saxaul bond is a geliophite and reflected in lower-step plants and herpetobic animals, regardless of the transparency of the crown. The crown of saxaul generative tendents absorbs and reflects up to 30-50% of solar radiation flows, so the temperature of the open space is different, but also preserves the temperature of saxaul atmospheric moisture and accordingly. The number of parcels is not the same. Another difference in black saxaul is that seasonal branches are observed in the soil horizons, which leads to the appearance of the surface solidarity of the soil horizons, due to the large number of ashes of the plant. All of these features, we see the role of an environmentally friendly cenosis, such as other Saxsaul resorts. A number of associations,

their floristic, represents black saxaul formation and ecobiomorphcomposition also studied, with a volume of 0.25-0.5 hectares (fig.1).

Saxaul trees give seeds as they dry, which will allow the drought to plant more in Saudi Arabia. For centuries, millions of these trees have provided people with fuel and have been a mound of mounds, food and recreation in the heat of the Arabian fathers' Bedouin's desert. Saxaul roots are caught sandy and keep sandy storms.

Results and discussion

As a result of scientific research, the variety of the soil layer of the soil layer of the arid area, chemical and biomechanical composition of the diversity (tab.1). Interestingly, in different parts of the plant, different amounts of heavy metals can accumulate, which can be an environmental indicator of the environment. In this regard, this report identifies practical data on physiologically active substances in different parts of some wild plants collected in environmentally safe areas and in environmentally unfavorable areas and a number of metals. The territories of 90-100 km from the city

90-100 km were considered environmentally safe, and areas located within the city (20-30 km from the city) were considered unsafe (fig.2). The objects of study were chamomile and its various parts, comfrey root, gorse root, common yarrow.

In Table 1, it is observed that the increase in extractive substances increases increased by increased by increased by increased by the increase in extracts when switching to solvents and the maximum amount of extractive substances is obtained with water. Separate experiments showed that the explored vegetable raw materials could separate annins, sugar, inulin, C and B vitamins, water-soluble dyes, amino acids. It is noted that the amount of extractive substances in plants growing with diethyl esters, ethylacetat, isopropanol and water extractive substances in the areas where there is growing in adverse areas of the region. However, it should be noted that these differences are small, but they are exceeding the systematic error and not more than 5-6% of the determined value. Thus, the most environmentally friendly conditions for the growth of the above plants lead to an increase in the amount of physiologically active substances that are used in all solvents we use.

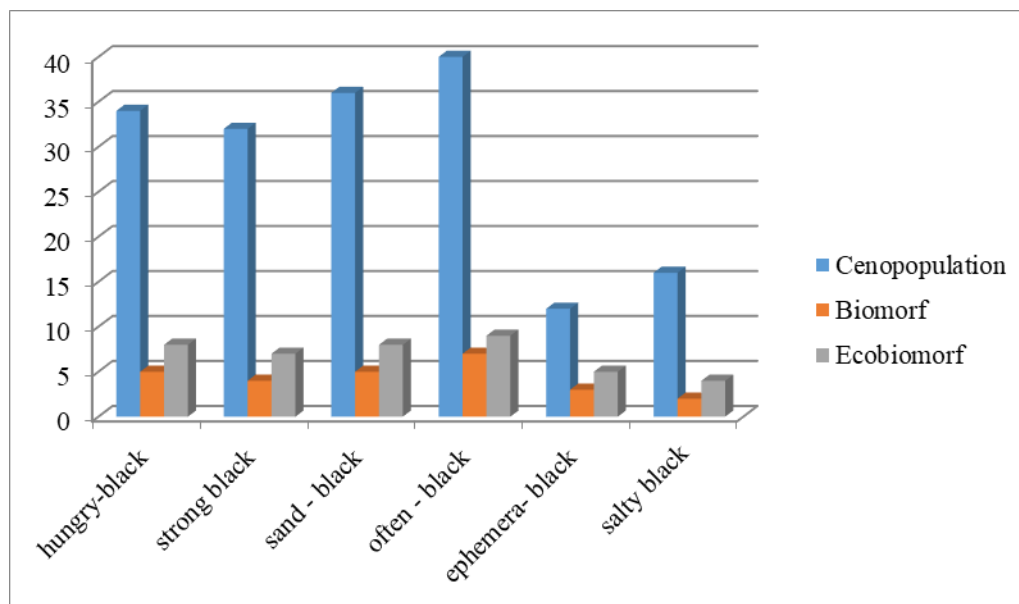


Figure 1 – Indicators of variety of black saxaul forests of black saxaul forests of the In the shauldir-Otrar region

Table 1 – Granulometric and micro-aggregate composition of gray soil

Templates	Horizons, cm	Fraction size, mm; their size, relative to dry soil %						
		?	3-1	1-0,25	0,25-0,05	0,05-0,01	0,01-0,001	?
T – 1	0-5	1,5	2,1	0,9	20,1	32,0	6,4	13,6
	5-20	2,0	6,3	1,0	23,8	30,0	5,7	12,0
	20-30	2,3	4,8	2,1	29,6	35,2	6,1	12,4
	30-40	2,8	2,1	1,8	37,2	34,1	7,6	11,2
	40-50	3,3	3,7	1,3	28,9	29,8	6,6	10,8
T – 2	0-5	5,0	3,2	5,0	33,4	28,1	10,6	14,3
	5-20	5,6	2,6	2,9	40,6	26,9	9,1	17,2
	20-30	1,8	1,7	3,3	30,0	21,4	7,8	17,4
	30-40	1,7	1,0	1,7	22,5	21,2	7,5	17,5
	40-50	2,0	2,0	1,2	18,7	20,5	4,4	20,2
T – 3	0-5	5,7	7,2	0,4	25,4	24,0	8,5	16,3
	5-20	8,5	6,6	0,3	22,2	23,6	8,2	20,3
	20-30	7,6	5,1	0,3	15,6	20,7	7,3	5,2
	30-40	6,4	4,7	0,2	17,8	15,4	5,4	4,9
	40-50	4,2	4,0	0,2	25,8	12,1	3,3	3,8

**Figure 2** – Saxaul of the southern region

Analyzing table 2, the associations of black saxaul forests can be grouped according to the prevailing existence of sub-life forms: shrub – glued

and molded black saxaul forests; semi-bushy – white soil wormwood and billing black saxaul; grass – ephemeral and juicy saline black saxaul.

Table 2 – The associations of black saxaul forests

№	A group according to the prevailing existence of life forms		
1	shrub – glued	black saxaul forests	In winter, the saxaul traps snow and this helps to feed groundwater, especially in the case of low-snow winters. This tree gives life to other grasses and shrubs, providing shade and soil moisture.
2	molded		
3	white	semi-bushy forests	they play a soil-protective, sand-protecting role and are used only for spring and autumn pastures
4	black saxaul		
5	ephemeral	grass	Camels, sheep, and goats feed on young and very nutritious shoots. The saxaul is a water scout, as it always appears where groundwater is close to the surface.
6	saline black saxaul		

The variety and relatively large number of cenopopulations included in the associated associations are determined by the development of mills of ephemeras, a short development cycle in spring. Ephemeras and ephemerids in high rating and ephemerids form sinuses under saxaul cover (salt plots). In case of overhead salts, salts are rinsed from upper horizons and the location of ephemeras in the ephemeral-black saxaul association remains normal. The saxaul crown dominates the most productive in terms of wood resources and industry – saline-saxaul association, one-year salary, in unresolved land, and ephemeras. The semi-bushy forests can be considered the rarest and the rarity characterized by a relief and low projection cover in semi-shrub and low projection covers, but their frequency is very high in their consideration. The forms of life, ecobiomorphs cover all the range from different and monocarps to the bushes. Not much stable species are used for the relevant associations; they are not used for classification and enrichment of environmental conditions in the landscape.

Conclusion

It was determined that the semen of the saxaul growing in many regions of the country can cultivate. Knowing the state of the seeds of Uzbekistan and

Kazakhstan, it is appropriate to organize basic arrangements equipped with specialized equipment and specialists with experience in the cultivation of landscaping materials. These seeds can be created based on self-sufficiency. Knowing the main fetus, knowing the need for annual seedlings, and in the spring it provides standard planting material. This will be much easier and more effective than the creation of small nurseries of each farm and without professional education.

Seeds should be collected from high-yielding plantations that grow from plus trees or soil and climatic conditions in areas related to areas of forest melioration.

Forestry activities provide for forest vaccinations in the first two sites, forming a dense edges and radial routes on the side of pollution for ventilation for well ventilation. Planted: karagash, poplar, willow, ash, maple, hood, currants, hoses, saxaul, intermediate, etc. Plant schemes are recommended for forest inventory for certain cultivation conditions.

Saxaul localization of desert and desert areas affects the environmental condition of the region and increases biodiversity of living organisms. Great to use nutrient grass in the Southern region in desert and deserts, gives it a positive impact on the climate, soil conditions, environmental development, allows you to protect against sandy and stormy.

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