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BIOECOLOGICAL PROPERTIES OF SOME SPECIES OF DESERT FORAGE PLANTS IN THE CONDITIONS OF THE KASHKADARYA HILLS

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Abstract

In the article, desert plants such as black saxovul, izen, tereskin, chog, which are considered desert plants, are studied in the conditions of the hills of Qamashi district of Kashkadarya region.

Keywords

water evaporation intensity, drought, water regime, vegetation, leaf blades, agrophytocenosis, haloxylon aphyllum, kochia prostrata, halothamnus subaphyllus, ceratoides ewersmanniana

Аннотация

В статье в условиях холмистой местности Камашинского района Кашкадарьинской области изучены пустынные растения, такие как саксовул черный, изен, терескин, чог, которые считаются пустынными растениями.

Ключевые слова

интенсивность испарения воды, засуха, водный режим, растительность, листовые пластины, агрофитоценоз, haloxylon aphyllum, kochia prostrata, halothamnus subaphyllus, ceratoides ewersmanniana

Introduction. The pastures of the Kamashi district of the Kashkadarya region are semi-desert, that is, steppe pastures, with a unique vegetation cover, and the productivity of pastures varies dramatically depending on the amount of precipitation in different years and the warm or cool spring. Especially in recent years, as a result of the frequent droughts, the shortage of feed in pasture livestock farming has increased, which has a negative impact on the efficiency of the sector. The basis of the vegetation cover of pastures is formed by ephemeral and ephemeroid grasses, which complete their vegetation in a relatively short period of time, and by the summer season, there is a shortage of pasture feed. Therefore, the creation of multi-component high-yield pasture agrophytocenoses in the region is

an urgent task, and in this regard, it would be advisable to widely use high-yield desert forage plant varieties created in our country.

The purpose of research Study of water evaporation indicators of desert nutritious plant varieties in Qamashi district of Kashkadarya region. Through the results of this study, identification of drought-resistant varieties in the establishment of pasture agrophytocenoses.

The sources of the research were the adir pastures of the Kamashi district, desert forage plant species: varieties of black saxaul - Haloxylon aphyllum - "Nortuya", of izen - Kochia prostrata - "Otavny", of castor - Halothamnus subaphyllus - "Jayhun" and of teresken - Ceratoides ewersmanniana - "Tolkin".

Research methods. In conducting the research, the intensity of water evaporation from plants was studied using the "rapid measurement" method of L. N. Ivanov and others;

Analysis of research results. Water evaporation intensity. The seasonal dynamics of the water evaporation intensity of the desert forage plant species: black saxaul - Haloxylon aphyllum - "Nortuya", izenna - Kochia prostrata - "Otavniy", chorion - Halothamnus subaphyllus - "Jayhun" and teresken - Ceratoides ewersmanniana - "Tolkin" varieties were studied in the morning, midday and evening of spring, summer and late summer (August), and the average daily indicators were determined.

Since photosynthesis occurs in plant leaves, the larger the surface area over which this process occurs, the greater the product produced as a result of photosynthesis. Therefore, the productivity of plants is inextricably linked to the total area of their leaves. There is a direct correlation between leaf area and above-ground phytomass indicators. The higher the degree of leafing of desert forage plants, the higher their productivity. The degree of leafing of the teresken changes throughout its ontogenesis, that is, in early spring this indicator is highest, with the onset of a drought period, plants lose part of their leaves, slowing down the process of water evaporation and, as a result, the degree of leafing decreases. However, the less leaves the teresken loses during the process of adaptation to drought, the more tolerant it is to adverse conditions, and selection work on this feature is effective. In addition, leaves are highly nutritious compared to other parts of the plant, and the higher the leaf fraction in the feed, the higher its nutritional value and elasticity.

The results of the study showed that the studied plant species have different water evaporation rates. All self-seeding species have high water evaporation rates in the spring (April) season. For example, the highest water evaporation rate (1019.8± 123.4 mg/h) was observed in the teresken plant, while the lowest, i.e. 305.2±29.5 mg/h, was recorded in the black saxaul plant. In the chorion this

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indicator was 409.3±36.5 mg/h, and in the izenda - 502.6±29.3 mg/h. By July, when the soil and atmosphere were at their peak, 1.0 g of black saxaul evaporated 429.7±26.8 mg/h of water per hour, which was a significant increase compared to April, while in terescens it was 534.8±36.8 mg/h, which was almost 2 times less than in April. During this period, in black locust this indicator was 403.4±23.5 mg/h, which was almost the same as in April, and in izenda it was 462.6±33.6 mg/h, which was a significant decrease compared to April. When this indicator was studied by the end of August, it was found that the intensity of water evaporation in all studied species slightly decreased.

(Table 1).

Seasonal dynamics of daily water evaporation intensity of plants, mg/h (water evaporation of 1.0 g mass for 1 hour, mg/h)

Plant type	April	July	August
Haloxylon aphyllum	305,2±29,5	429,7±26,8	321,6±23,3
Halothamnus subaphyllus	409,3±36,5	403,4±23,5	265,7±25,7
Kochia prostrata	502,6±29,3	462,6±33,6	321,6±32,1
Ceratoides ewersmanniana	1019,8±123,4	534,8±36,8	364,8±29,6

The water evaporation intensity was 321.6±23.3 mg/h in black saxaul, 265.7±25.7 mg/h in black castor, 321.6±32.1 mg/h in isen and 364.8±29.6 mg/h in terescens. Analyzing the data presented in the table, it can be said that all of the studied plant species, with the exception of terescens, have the property of saving water evaporation. In our opinion, the relatively high water evaporation intensity of terescens is due to the significant width of its leaf blades compared to other species. Probably, this is the reason why, on hot summer days, this plant sheds part of its leaves and thereby adapts to the external environmental conditions.

The overall dynamics of water evaporation intensity of black saxaul and castor plants are relatively stable. This indicates that they are well adapted to growing in these conditions. The Izen plant has an average indicator among plant species in terms of water evaporation intensity.

Conclusion: Among the studied plant species, black saxaul and castor can be included in the plant species that conserve water. The highest indicator of water evaporation intensity was observed in the teresken plant. Taking into account the amount of water in the tissues and the daily water deficit indicators, it can be said that the water regime of the studied plant species is normal for the conditions of the

foothills, which indicates that they are well adapted to grow in these soil and climatic conditions.

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