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BIOECOLOGY AND SIGNIFICANCE OF SMALL FEATHER GRASS (ARISTIDA PENNATA TRIN.) AND LARGE SELIN (ARISTIDA KARELINA)

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Abstract:
Selin is a plant of sandy deserts and semi-deserts. In the deserts of Central Asia, it is often found on loose dunes and small sandy hills, along with calligonum and saksaul. Forms small sandy, micro and macro elevations in some plant communities where the plant cover of sandy deserts is disturbed by anthropogenic impact Five species of selenia grow in the steppes and deserts of the CIS countries. Although selenia does not produce much green mass, it can be used for green fodder and hay in the spring.

Keywords: Desert and semi-desert, forms a community, good sand collector, secondary vegetation cover, fodder reserve, anthropogenic, eats at will, food unit, grazing on a regular basis.

KICHIK (ARISTIDA PENNATA TRIN) VA KATTA SELIN (ARISTIDA KARELINA) O‘SIMLIGINING NING BIOEKOLOGIYASI VA AXAMIYATI

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Kalit so‘zlar: Cho‘l va chala cho‘l, jamoani tashkil qiladi, yaxshu qum to‘plovchi, ikkilamchi o’simliklar qoplamini xosil qiladi, yem-xashak zaxirasi, antropogen, chorva hush ko’rib yeydi, oziq birligi, chorvani zagon asosida boqish.

Ключевые слово: Пустыня и полупустыня, образует сообщества, хороший собиратель песка, вторичный растительный покров, кормовая база, антропоген, питается по желанию, кормовая единица, регулярный выпас.

Annotation:
Selin o‘simligi qumli cho‘l va chala cho‘l o‘simligi. O‘rta osiyoning cho‘llarida ko‘pincha o‘rnashmagan qumliklarda unchalik katta bo‘lmagan - qumli past-balandliklarda guzg’un va saksaul bilan biralikda o‘sadi. U Qqumli cho‘llarning o‘simlik qoplamlari antropogen ta’sirlar natijasida buzilgan ayrim o‘simlik jamoalarida unchalik katta bo‘lmagan qumli, mikro va makro tepaliklarni xosil qiladi. MDX davlatlarining chala cho‘l va cho‘llarida unnig 5 turi uchraydi. Selin ko'p miqdorda yashil massa xosil qilmaydigan o‘simlik bo‘lsada, undan baxorda ko‘k oziqa va pichan tayyorlash uchun foydalanish mumkin.

Аннотатция:
Селин растения песчаных пустынь и полупустынь. В пустынях Центральной Азии часто встречается на незакрепленных барханах, на небольших песчаных возвышениях, совместно с джузгуном и саксаулом. Образует небольшие песчаные, микро и макро повышениях в некоторых растительных сообществах, где растительный покров песчаных пустынь нарушен антропогенным воздействием. В степях и пустынях стран СНГ произрастает пять видов селина.Хотя селин не образует большого количества зелёной массы, но весной его можно использовать на зелёный корм и на сено.

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Introduction

Seline (*Aristida* L.) belongs to the division **Magnoliophyta**, class **Liliopsida**, order **Poales**, family **Aristidaceae**, and includes the species *Aristida pennata*. Seline (*Aristida* L.) is a plant typical of sandy deserts and semi-deserts. Depending on ecological conditions, it comprises both annual and perennial herbaceous forms.

In the deserts of Central Asia, it is most often found on unstable (mobile) sands, on relatively small sandy micro- and macro-relief elevations, forming plant communities together with **juzgun** and **saxaul**, such as juzgun–saxaul associations or communities consisting solely of seline. The vegetation cover of sandy deserts has been disturbed to varying degrees as a result of anthropogenic impacts, leading to secondary communities. In some plant communities, seline occurs singly, scattered across small sandy micro- and macro-elevations (Figure 1).

Globally, the genus *Aristida* comprises about 150 species. In the semi-desert and desert zones of the CIS countries, five species are found. Among them, two species—**Small Seline (*Aristida pennata* Trin.)** and **Large Seline (*Aristida karelina*)**, also known as *erek-seline*—are of considerable economic importance. Both seline species are relatively low-growing plants that do not produce large amounts of green biomass; however, they can be used in livestock farming as spring green forage and for haymaking. One hundred kilograms of dry hay contain approximately 34.5–50.1 feed units.

Small Seline (*A. pennata*) is a perennial herb growing singly on unstable, mobile sands of the southwestern part of the Kyzylkum Desert. It reaches a height of 35–50 cm, has long, narrow leaves, and a well-developed root system. The inflorescence is a panicle. Each panicle bears a single flower, which is bisexual, with three stamens and one pistil; the stigma of the pistil is feathery (Figure 1).

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Figure 1. Natural stabilization of mobile sands by the seline plant:.A — enlarged view of the flowering shoot of the plant;.1 — flowering shoot with three stamens;.2 — pistil stalk;.3 — feathery stigma of the pistil;.B — a single, independently growing seline tuft.

The leaves of **large seline** are larger, and its stems are considerably more rigid; its feed unit quality is significantly lower compared to small seline. It is an excellent sand-accumulating plant, as its root system penetrates deeply into the sand. When large seline is planted around settlements and along roadsides, it effectively prevents sand movement. Because its leaves are tough, livestock consume it poorly; however, in autumn, after periods of moisture and rainfall, animals readily graze on it. In production, its leaves are used to manufacture ropes, sacks, and paper, while its roots are used to produce brushes and coarse mats, which are employed in gold washing.

In the Republic, seline occurs naturally in the sandy massifs of the Kyzylkum Desert in areas affected to varying degrees by anthropogenic pressure, particularly in the northern part of Kuldjuktog, as well as in Auminzatog, Bukantog, and the less compacted sands of Mirzaqum. In the southwestern expanses of the Kyzylkum Desert, where observations were conducted, seline is mainly distributed on mobile sands formed as a result of inefficient pasture use. In many cases, severe damage to vegetation cover is observed around wells due to the indiscriminate cutting of juzgun, qandim, saxaul, and other shrubs by local

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populations for fuel. As a consequence, seline spreads within the resulting secondary plant communities.

In pasture agromelioration practices, seline is used in such areas to stabilize mobile sands. The green mass and hay of seline constitute good fodder for all types of livestock. Although seline does not form large forage reserves in pastures, it plays a crucial role in stabilizing mobile sands. Owing to its strong root system that spreads extensively, seline forms micro-elevations in sandy areas and develops into a continuous turf. In such areas, it is possible to harvest 0.5–1.0 centners of hay per hectare, while in desert regions its forage yield can reach 1.5–2.0 centners per hectare.

In desert pastures, excessive grazing has led to a yearly decline in plant productivity. Both small and large seline species are of great importance for the development of livestock farming in the Republic. At present, pressure on vegetation cover is increasing, and the area of low-quality, low-productivity pastures is expanding from year to year. As a result, within pasture plant communities, the proportion of species with low nutritional value and low productivity is increasing relative to highly nutritious plants. To prevent this situation, it is necessary to implement measures aimed at improving and increasing pasture productivity through the sowing of highly productive and nutritious perennial plants.

Significant achievements have been made in this field. For example, in Uzbekistan, the Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan has conducted extensive research on desert pasture vegetation, developed measures for improving degraded pastures, and proposed methods to prevent various forms of desertification, including approaches for improving low-productivity pastures on gypsum soils in desert regions. In restoring low-productivity or completely degraded pastures, it is advisable to use seline species along with wormwood, teresken, saxaul, astragal, qandim, cherkez, keyreuk, and chogon, among many other plant species (Figure 2).

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Figure 2..1 — Cherkez (*Salsola richteri*);.2 — Saxaul (*Haloxylon aphyllum*);.3 — Boyalish (*Salsola arbuscula*);.4 — Juzgun (*Calligonum leucocladum*);.5 — Small seline (*Aristida pennata*);.6 — Large seline (*Aristida karelina*).

As a result of our research, the current state of vegetation cover in the sandy deserts of the southwestern Kyzylkum was studied. Preventing the expanding scale of desertification and further developing the livestock sector in the country primarily require the conservation of vegetation cover, preservation of species composition, implementation of rotational (paddock-based) grazing systems, and the timely provision of shepherds with firewood and other fuel resources.

Conclusion

Effective use of the above-mentioned measures must become a pressing requirement of the present day. This is due to ongoing changes in the ecological situation, including a decrease in precipitation, reduction of river water levels, an increase in average air temperature, acceleration of natural glacier melting processes, growth in the concentration of various toxic gases in the atmosphere, an increase in household waste, population growth, and rising demand for housing and food. All these factors primarily intensify pressure on natural resources. As a result, it is essential to protect and preserve our fundamental

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wealth—green vegetation—and to maintain it in its current state for future generations.

References

1. Mutalov, K.A., Ramazonov, B.R., Zakirov, D.U. Protection and rational use of natural resources of the Southern Aral Sea region. Materials of the International Scientific and Practical Conference. Nukus, 2020, pp. 163–166.
2. Agzhigitova, N.I., Allanazarova, U., Kapustina, L.A., Mutalov, K.A. Transformation of desert pasture vegetation under the effect of anthropogenic pressure. Problems of Desert Development, 1995, pp. 62–63.
3. Mutalov, K.A. Phytomeliorative map of the Southern Kyzylkum. Agriculture of Uzbekistan, 1986, No. 5, pp. 30–31.
4. Mutalov, K.A. Anthropogenic changes in the vegetation of the Southern Kyzylkum. Abstract of the dissertation for the degree of Candidate of Biological Sciences, 1989, p. 236.
5. Artificial ecosystems of pasture purpose in the Southwestern Kyzylkum. Publishing House “Fan,” Tashkent, 1978, 199 p.

https://www.plantarium.ru/page/view/item/41986/part/1. html
https://www.google.com/search?q=SELIN+(Aristida+karelini)
http://agrolib.ru/rastenievodstvo/item/f00/s01/e0001837/index.shtml
ps://ru.wikipedia.org/wiki/%D0%A2%