

Article

Results of Monitoring Work in the Spring Season of Pastures Belonging to Different Ecological Types

Bekchanov Botir¹, Soliev Kholmurod²

1. Meadows, Head of the monitoring department, Soliev Kholmurod, Field Manager of the Karnab experience Guarding and desert ecology research institute.
2. Field Manager of the Karnab experience Guarding and desert ecology research institute

Citation: Botir, B. Results of Monitoring Work in the Spring Season of Pastures Belonging to Different Ecological Types. American Journal of Biodiversity 2026, 3(10), 14-18.

Received: 11th Jul 2026

Revised: 08th Aug 2026

Accepted: 08th Sep 2026

Published: 09th Oct 2026



Copyright: © 2026 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

Abstract: The article presents the results of monitoring work in the spring season of pastures belonging to different ecological types, namely, the yield of wormwood in wormwood-ephemeral (gypsum) pastures was 2.95 centners per hectare, harvested in wormwood pastures of sandy steppe pastures was 2.12 c/ha, and the yield in wormwood pastures of hill pastures was 3.27 c/ha, as well as A brief description of pastures belonging to different ecological types is also provided.

Keywords: pasture, hill, gypsum. ephemeral, sandy soil, tour, sample, plant species, pasture grass, plant species, type, monitoring, incroy, geobotany, transect, herbarium.

Introduction

Continuous monitoring of pastures of various ecological types by geobotanists and phytocenologists is important both from a scientific and practical point of view, and the scientific data obtained allow us to identify negative and positive situations in pasture ecosystems, determine measures for their effective use, and develop scientifically based recommendations for their ecologically safe use [1]. The steppe pastures of the republic are divided into 3 ecological types: wormwood-ephemeral (gypsum), hilly and sandy steppe pastures [2].

Research objective: The main goal of scientific research is to assess and monitor the geobotanical and phytocenological state of pastures belonging to different ecological types [3].

Research methods: Determining the productivity of desert pastures 's trastek, bistatishlov beryshda, ulubs were used for the obtained data [4]

Materials and Methods

Gypsley's shoes The main climatic and soil characteristics are similar to those of the deserts: a very arid continuous climate, the physical and water properties of the soil cover are very uneven, consisting of gypsum areas. The average annual precipitation varies within 79-110 mm, in some years - 150-230 mm. The largest gypsum desert in our republic is Ustyurt.

Thus, the Konimekh, Karnob, Malik Chul massifs, Nurota foothills, etc. are considered gypsum deserts. The main soil type of the territory is brown-gray soils. A characteristic feature of gypsum deserts is the presence of gypsum ($\text{CaSO}_4 + 6\text{H}_2\text{O}$) in the soil. The surface layer (20-80 cm) is covered with gypsum. In the layer of crystalline or amorphous gypsum, various rocks are then covered; their degree of salinization is different. Although gypsum itself does not have a negative chemical effect on

plants, it acts as a mechanical barrier to a certain extent, making their root system more accessible to the soil.

The main pasture types of the Gypsley grasslands are semi-shrubby and shrubby pastures. They consist of ephemeral and ephemeroid plants such as shubh, boyalich, kuyrovuk, titir, buurgen, chugon, kora sakhovul, kongirbosh, yaltirbosh, arpahon, seta, balik koz, donashur.

The annual feed reserves of gypsum steppe pastures fluctuate over the years within a range of 0.5 - 2.5 c/ha. Another characteristic of gypsum steppe pastures is the sharp variability of productivity over the years, as they are also characterized by the extreme scarcity of food reserves in the summer season.

Hill pastures: The Adir region accounts for 9.5 percent of the territory of the Republic of Uzbekistan, and pasture livestock breeding is considered the most productive sector of rural development in the region.

The natural and nutritional conditions of the hills are characterized by their relative convenience for the steppe regions of Karaksh. The average annual air temperature is slightly (13-15 °C): the warmest period is July (average 25-27 °C), the coldest is January (-30 °C), the annual precipitation is 250-350 mm. Most of it falls in the autumn-winter and early spring (March-April).

In the alpine pastures, a wide variety of plants can be grown. In years with high rainfall, the number of plant species increases and their productivity increases. On the contrary, in dry years, both plant diversity and productivity decrease sharply.

The vegetation of the steppe pastures consists mainly of ephemeral (with a short vegetation period) and ephemeroid (with a vegetation period in autumn and winter) plants. In other words, the vegetation of the steppe pastures consists mainly of associations of sedges and sedges, the productivity of which is closely related to the season. Many years of research indicate that the productivity of steppe pastures varies from 6.5 to 0.6 centners per hectare depending on the season. By summer, ephemeral plants wither, break and are blown away by the wind, and the amount of pasture feed decreases sharply. Thus, steppe pastures with ephemeral vegetation are considered to be coniferous pastures only in the spring and first half of the summer, and it is not possible to graze livestock on such pastures in the autumn and winter seasons. There are mountainous areas in the Samarkand, Kashkadarya, Jizzakh, Surkhandarya, and Navoi regions of our republic.

Sandy desert. - Most of the republic's desert areas are sandy deserts. The largest sandy desert in Uzbekistan is Kyzylkum. Geographically, it is a huge desert region located in the middle of the Amu Darya and Syrdarya rivers, at an altitude of 114-700 m above sea level.

Results

The climate of the sandy desert is extremely arid and sharply continuous with an average annual precipitation of 100-130 mm [5]. Most of the precipitation falls on the winter-spring seasons, varying from 38 mm to 243 mm over the years. In the north of the region, annual precipitation is less than 100 mm, and in the south it reaches 130-140 mm [6].

The average annual temperature is 14.7 °C. The coldest period (-23-31 °C) falls on January. Izgirin winds are frequent: winters are snowy and the snow cover does not last long; in the northern part, the opposite is true [7]. The highest warm temperature (42-48 °C) is recorded in July. The average annual relative humidity of the air is 45-47% [8]. In terms of the number of species of steppe plants, it is richer and more diverse than other deserts. It is also important that the vegetation consists of life forms - shrubs - white and black saxifrage, kandim, Circassian, red, rabbit bone, semi-shrubs (wormwood, singren, boyalich, teresken); annual and perennial herbs (ilak, kungirbosh, yaltirbosh, chitir and others) and plants [9]. The vegetation cover also includes monocarpic (seeding only once in its lifetime) species, annuals (sedges), and perennials (sedges, sedges, and sedges).

The relative advantage of sandy soils for plants is determined by the relatively favorable hydrophysical properties of the sand that makes up them. First of all, sandy soils have the ability to pass moisture well and retain it for a long time.

The annual feed reserves of sandy steppe pastures average 1.5-3.7 c/ha. They are suitable for use at any time of the year [10].

The productivity of wormwood fields in the wormwood-ephemeral pastures of Nurabad district of Samarkand region was determined by laying transects on an area of 50 m² [9]. In this case, the number of large wormwood bushes was 39, medium wormwood bushes was 34, and small wormwood bushes was 15. The height of the large wormwood bush was 22 cm, medium wormwood bushes were 20 cm, and small wormwood bushes were 13 cm. The dry mass of one wormwood bush was 25.6 grams in large wormwood, and the dry mass was 20.5 grams, The dry mass of the medium wormwood bush was 20 grams, the dry mass was 15.9 grams, the dry mass of the small wormwood bush was 10.4 grams, and the dry mass was 9.5 grams. When the productivity of worms was studied by converting it into one hectare. The yield of large wormwood bush was 1.59 quintals per hectare, the yield of medium wormwood bush was 1.08 quintals per hectare, and the yield of small wormwood bush was 0.28 quintals per hectare, so the yield of wormwood per hectare was 2.95 c/ha. Table 1 [11].

Table 1. Productivity of wormwood fields in wormwood-ephemeral pastures of Nurabad district, Samarkand region, c/ha. April 28, 2026

Unique features	Pasture on an area of 50 m ²		
	Large	Average	Maida
Stupid sony, the ceiling	39	34	15
Plant height, cm	22	20	13
Green mass of one bush, grams.	25.6	20.0	10.4
Dry weight of one bush of plant, grams.	20.5	15.9	9.5
Dry mass per 50 m ² area, grams.	799.5	540.6	142.5
Dry mass per hectare, c/ha.	1.59	1.08	0.28
Yield: 2.95 c/ha			

When studying the phytocenology of plants in hilly pastures, it was found that wormwood bushes in large clusters on an area of 50 m² were 24, on average

Table 2. Productivity of wormwood in the hill pastures of Nurota district of Navoi region, c/ha. April 29, 2026

Unique features	Pasture on an area of 50 m ²		
	Large	Average	Maida
Stupid sony, the ceiling	24	41	35
Plant height, cm	25	20	12
Green mass of one bush, gr.	35.1	15.7	9.8
Dry weight of one bush of plant, gr.	31.4	14.6	8.1
Dry mass per 50 m ² area, gr.	753.6	598.6	283.5
Dry mass per hectare, c/ha.	1.5	1.2	0.57
Yield: 3.27 c/ha.			

There were 41 wormwood bushes, 35 young wormwoods, and the growth of the plant species was 25 cm for a large bush, 20 cm for an average bush, and 12 cm for a young wormwood. Table 2 [12]. The dry matter mass of wormwood per hectare of area was 2.01 centners per hectare for an adult wormwood, 0.66 centners per hectare for an average wormwood, and 0.27 centners for young wormwoods. It was found that in the Adir pastures, the number of wormwood bushes per hectare was 37 thousand, and their dry matter yield was 2.95 centners per hectare [13].

Discussion

When the productivity of wormwood fields in sandy steppe pastures was determined in the spring, the number of large wormwood bushes per 50 m² area was 20, medium wormwood bushes 22, and small wormwood bushes 12 [14]. Their height was 42 cm for the largest, 34 cm for the average, and 13 cm for the small, the mass of one bush was 38 grams for the largest, 32.8 grams for the average, the mass of green matter in the average wormwood bush was 16.4 grams, the mass of dry matter in the small wormwood bush was 9.3 grams, and the mass of dry matter in the small wormwood bush was 8.2 grams [15]. Andy calculated that the large-scale hay yield per hectare is 1.31 c/ha, the medium-scale hay yield is 0.62 c/ha, the small-scale hay yield is 0.19 c/ha, and the total is $1.31+0.62+0.19 = 2.12$ c/ha. Table 3.

Table 3. Yield of wormwood in the Kumli Chul pastures of the Konimekh district of the Navoi region, c/ha. April 30, 2026

Unique features	Pasture on an area of 50 m ²		
	Large	Average	Maida
Stupid sony, the ceiling	20	22	12
Plant height, cm	42	34	13
Green mass of one bush, gr.	38.0	16.4	9.3
Dry weight of one bush of plant, gr.	32.8	14.6	8.2
Dry mass per 50 m ² area, gr.	656	312.2	98.4
Dry mass per hectare, c/ha.	1.31	0.62	0.19
Yield: 2.12 c/ha.			

Conclusions

According to the data obtained as a result of monitoring pastures of various ecological types in the spring season, it was noted that in the hill pastures, the number of wormwood bushes was 100 bushes per 50 m², and the pasture productivity was 3.27 quintals per hectare. In the sandy steppe pastures, the number of wormwood bushes was 54, the plant height was 34-42 cm, and the productivity was 2.12 quintals per hectare.

References

- [1] V. V. Alekhine *et al.*, *Methods of Geobotanical Research*. Moscow, Russia, 1925.
- [2] I. I. Granitov, "On the method of determining the amount of edible mass by season on the pastures of Uzbekistan," *Agriculture of Uzbekistan*, no. 5, 1962.
- [3] E. S. Krasnopolin, "On the methodology of calculations for determining forage reserves and capacity of Karakul pastures," *Karakul Sheep Breeding and Fur Farming*, no. 3, 1956.
- [4] N. L. Morozov, "Determination of pasture capacity taking into account seasonal dynamics of reserves, palatability and nutritional value of pasture forages," *DAN Turkmenkoy SSR*, Ashgabat, Turkmenistan, 1955.
- [5] M. I. Ruzmetov and R. A. Turaev, *Methodological Manual for Conducting Geobotanical Studies in Natural Pastures and Hayfields of Uzbekistan*. Tashkent, Uzbekistan, 2018, 156 p.
- [6] K. Khaitova, "Organization of pasture rotation in foothill pastures," *European Journal of Research Development and Sustainability*, vol. 2, no. 3, pp. 79–82, Mar. 2021.
- [7] G. T. Parpiev, Kh. K. Bagbekov, K. M. Hitova, and B. B. Khakimov, "The current status of mountain and desert pastures of Uzbekistan and ways to improve them," *International Journal of Biological Engineering and Agriculture*, vol. 1, no. 5, pp. 17–23, Nov. 2022, doi: 10.51699/ijbea.v1i5.371.
- [8] N. Ch. Namozov, "Properties of sandy desert soils and their efficient use (on the example of pastures of Forish district)," Ph.D. dissertation, Tashkent, Uzbekistan, 2018.

- [9] M. I. Ruzmetov and R. A. Turaev, "Organization of effective use of foothill pastures," *Scientific and Methodological Recommendation*, Tashkent, Uzbekistan, 2023.
- [10] M. I. Ruzmetov *et al.*, *Methodological Manual for Conducting Geobotanical Research in Natural Pastures and Hayfields of Uzbekistan*. Tashkent, Uzbekistan, 2022.
- [11] K. Khaitova, "The role of climate in the formation of mountain and foothill pastures," *European Journal of Research Development and Sustainability*, 2021.
- [12] K. Khaitova, "The current status of mountain and foothill pastures of Uzbekistan and ways to improve them," in *Proc. Int. Conf.*, 2021.
- [13] G. U. Khamroyeva and A. Rabbimov, "Qualitative indicators and yield of seeds of species and varieties of desert forage plants," *European Journal of Research Development and Sustainability*, vol. 2, no. 3, pp. 63–66, 2021.
- [14] Republic of Uzbekistan, "On pastures," Law of the Republic of Uzbekistan, May 20, 2019.
- [15] Cabinet of Ministers of the Republic of Uzbekistan, "On approval of the regulation on maximum permissible norms of use when grazing livestock in pastures and the procedure for maintaining pasture rotation," Resolution No. 689, Aug. 19, 2019.