Bulletin of Environment, Pharmacology and Life Sciences
Bull. Env. Pharmacol. Life Sci., Vol 12 [9] August 2023: 74-81

Online ISSN 2277-1808
Journal's URL:http://www.bepls.com
CODEN: BEPLAD

ORIGINAL ARTICLE **OPEN ACCESS**

Phytosociological Research of *Biebersteinia multifida* Dc.

Islamova Zebiniso Bustonovna
Assistant teacher of the Department of Medical Biology and Hegetics, Samarkand State Medical University, Samarkand, Uzbekistan
E-mail: Zebo.oy@mail.ru

ABSTRACT
The article is on the study of biology and phytocenology of plants the first regional (Samarkand region, Republic of Uzbekistan) summary of the genus Biebersteinia. Phytocenology and bioecological features of the promising species Biebersteinia multifida DC.- Biebersteinia multifida are given. The site is located in one of the sayas of the Amankutan mountains, known as Kumbelsai, Takhta-Karacha pass, Alychabulaksai and Taksai (Samarkand city, Urgut district, Republic of Uzbekistan). The described site is located on the north-western slope of the mountains. The altitude is 1586, 1607.1637 m above sea level. The soil is fine-grained with an admixture of crushed stone. The general background of vegetation is green. The landscape is created by the wheatgrass-sedge-biberstein-mixed-grass association, Biberstein-bluegrass-eremurus-mixed-grass and bluegrass-sedge-biberstein-mixed-grass association together with Biebersteinia multifida DC- Biberstein multiparty.
Keywords: *Biebersteinia multifida DC. phytosociology, Amankutan, Samarkand city, Urgut district, Republic of Uzbekistan, chemical composition.*

Received 17.04.2023 Revised 14.05.2023 Accepted 22.07.2023

INTRODUCTION

Ecology and nature protection occupy one of the leading places among the most acute problems of our time. It is not by chance that it is called global, it has long crossed the state borders of individual countries and arouses the keen interest of the world community, especially the peoples of the Asian continent. The protection of flora and fauna and the environment has never been as important as it is today. The pace of development of industry, agriculture, population growth and general processes of urbanization have led to disturbances in the ecological balance, there is an extinction of flora and fauna.

These processes are observed in all countries of Central Asia, including in our republic and, in particular, the Samarkand region.

Environmental protection depends on every inhabitant of the planet. Everyone should take an active part in nature conservation. This is especially important in areas with a high population density, such as the oases of our republic and, including the valley of the Zaravshan River and the surrounding mountains. That is why today one of the main tasks is to educate the younger generation in the spirit of love for nature and through its knowledge to develop a sense of responsibility for the state of the world around us.

The Aman-Kutan tract is located 35-45 km southwest of Samarkand. It has always attracted the attention of travelers, naturalists and nature lovers. Since ancient times, a short and convenient way from Sogd to Bactria, from Samarkand to Kesh, from Zaravshan to the Kelif crossing over the Amu Darya passed through it.

This easily accessible mountain crossing was used in ancient times by Persians, soldiers of Alexander the Great, Arabs and Mongols. The famous travelers of the Middle Ages Abdulkasim ibn Haukal and ibn Batuta, the Ambassador of Spain Rui Gonzalez De Clavijo, visited the pass on the way from Samarkand to Kesh. Along this way, they arrived in the capital of the state of Amir Temur. Amankutan is a relatively small tract in the extreme west of the Pamir–Alai, at the junction of two massifs of a single Zeravshan ridge - the Chakylkalyan Mountains and the Karatepe Ridge. Their point of contact is the Takhtakaracha Pass, located at an altitude of 1675 m above sea level on the border with the southern regions of Uzbekistan. Now this picturesque tract is connected with Samarkand by a modern highway. Administratively, Amankutan is the western outskirts of the Urgut district of the Samarkand region.

Amankutan serves as a natural laboratory for studying the nature of Uzbekistan, in order to protect nature, it is necessary to know the laws by which it develops, to study the relationship of living organisms with

each other and with the environment. Amankutan is a unique natural monument, a cluster of many rare plants. Juno the magnificient, unique eremuruses, sailboats, numerous rare species of medicinal plants, as well as hawthorn, pistachio, juniper, Amankutan poplar and other plant species are found here.
On the territory of Amankutan and its surroundings there are a number of rare and endangered plants and animals listed in the "Red Book" of Uzbekistan.
The following plant species are included in the "Red Book": *Acanthophyllum gypsophiloides R, Inula helenium L, Helichrysum nuratavicum K, Allium stipitatum R, Allium suworowii R, Allium korolkowii R, Allium sewerzowii R, Rhinopetalum bucharicum R, Frit illaria olgae, Crocus korolkowii, Juno magnifica, Merendera robusta, Tulipa fosteriana, Tulipa greigii, Tulipa ingens, Tulipa micheliana, Tulipa turkestanica, Tulipa dasystemon, Corydalis sewerzowii, Polygonatum severzowii, Ferula sumbul, Astragalus knorringianus, Astragalus massagetova, Astragalus lasiostylus, Astragalus leptophysus, Astragalus terrae-rubrae, Cicer arietinum, Oxytropis pseudorosea, Hedysarum amankutanicum, Oenanthe silaifolia, Komaroviopsis anisosperma, Zeravschania regeliana, Elvendiya vaginata, Pseudoclausia zeravschanica, Lepidium olgii, Acantholimon maegaritii, Acantholimon nuratavicum, Acantholimon subavenaceum, Eulophia turkestanica, Paeonia hybrida, Pseudosedum campanuliflorum* etc. This is not a complete list of rare and endangered plant species growing on the territory of Amankutan.
The flora of Amankutan was formed in a particularly pleasant environment. Its durability was affected by the difficult mountain terrain, the special climate and the diversity of the soil cover, as well as human economic activity. If the rana tract was rich in forest consisting of juniper, maple, hawthorn, then in the recent past the forest was destroyed for economic needs and the woody vegetation was replaced by steppe plant associations that dominate to this day. In Amankutan, wormwood grass-wheatgrass formations are widespread, which cover the mountains from the sole to the watersheds. Astragalus, tipchak, scabiosa, grasshopper, wheatgrass, various cereals are typical representatives of the xerophytic flora. In the open spaces, they are joined by various types of ferula, flowering pyramids of eremuruses, blue sheaves of thyme, yellow bouquets of St. John's wort, bright red tulips, the eye-cutting blue of bluebells. On stony scree it is found, bibersteinia is multidivided.
For many years we have studied the phytocenological study of Biebersteinia multifida DC. the history of the study of this species in the Samarkand region. Phytosociology, biology of seed germination, temperature conditions of germination in laboratory and field conditions, as well as the survival of seedlings, the duration of seed viability, features of growth and development in culture conditions, the development and formation of the root system, flowering, fruiting and seed productivity, yield and chemical composition were studied.

MATERIAL AND METHODS

When conducting phytosociological studies , the following methods of work were used:
The description of vegetation, taking into account its floral composition, as well as the development of plants, height, abundance in natural habitats were carried out according to the Drude method generally accepted in geobotany. In the 6-point Drude scale, not numbers are given, but the following verbal designations:

1. Soc (Sociales) - plants close together, forming a background.
2. Cop3 (Copiosae3) - plants are very abundant.
3. Cop2 (Copiosae2) - there are many individuals.
4. Cop1 (Copiosae1) - there are quite a lot of individuals.
5. Sp (Sparsae) - plants are found in small numbers, scattered.
6. Sol (Solitariae) - the plant is found in very small quantities, rare specimens.

The designation Un (Unicum) is also often used - for those cases when the species is found on the site in a single copy. When using the Drude scale, it is inevitably necessary to combine the idea of the number of specimens of each species with the idea of coverage, i.e., the area occupied by it. Approximately, it can be assumed that in many cases the Soc mark (background) will correspond to the coverage of more than 90% of the plot area by individuals of this species, the Cop3 mark (very abundant) - 70%; Cop2 (abundant) - 70-50%; Cop1 (quite abundant) - 50-30%; Sp (scattered) - 30-10%; Sol and Un - less than 10%.
The object under study. The article is on the study of plant biology the first regional (Samarkand region) summary of the genus Biebersteinia. Phytosociology gy and bioecological features of the promising species Biebersteinia multifida DC are given.

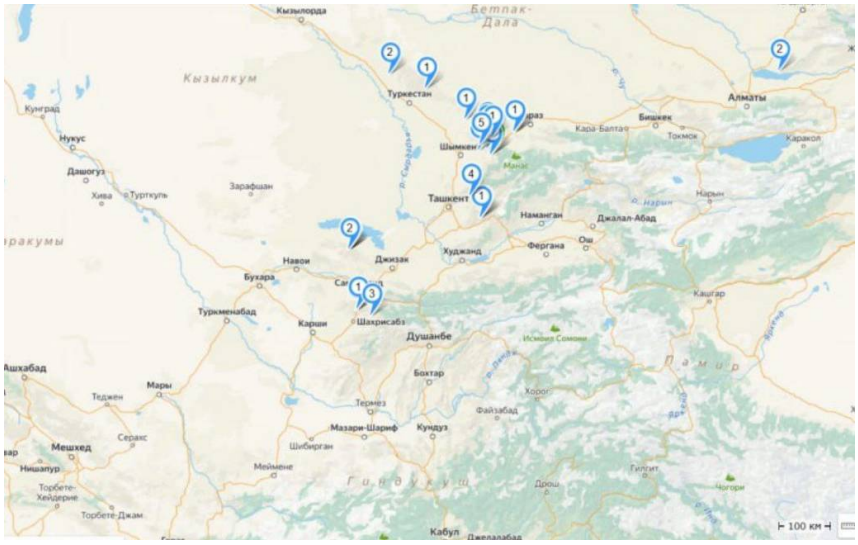

Figure 1. Geographical points of Biebersteinia multifida DC in Uzbekistan.

When introducing a plant into the culture, in addition to biology and ecology, it is necessary first of all to comprehensively study its brief genus history and systematic position.

The species we are studying, as mentioned above, belong to the genus Biebersteinia from the family Biebersteiniaceae.

Biebersteinia (Biebersteinia) is a genus of flowering plants of the Sapindocolor order. Previously, it was placed in the Geraniaceae family, but as a result of phylogenetic studies, it was isolated into the monotypic Biebersteiniaceae family [1;2].

The genus is named in honor of Fyodor Kondratievich Biberstein (German Friedrich August Freiherr Marschall von Bieberstein, 1768-1826) – Russian-German botanist and zoologist; traveler, researcher of the flora of the Crimea, the Caucasus; founder of sericulture in Russia.

Species of the genus are perennial herbaceous plants growing in the Caucasus, Siberia, and East Asia.

Species of Biebersteinia as a valuable medicinal plant are widely used in folk medicine. Scientists have found that the main chemical categories of Biebersteinia species include flavonoids, alkaloids, phenylpropanoids, terpenoids, essential oils and fatty acids. And also proved anti-inflammatory, analgesic, antibacterial, antioxidant, antispasmodic, hypotensive, hypoglycemic and anti-atherosclerotic effects of four types of Biebersteinia. [3:4;5;6]

Biebersteinia multifida DC. in the conditions of Uzbekistan, the Samarkand region in the Amankutane tract mainly grows in mountainous areas, at an altitude of over one and a half thousand meters.

Figure 2. Biebersteinia multifida DC.
(The beginning of flowering 29.03.2023 y)

RESULTS AND DISCUSSION

Bibersteinia is a multi-part perennial herbaceous plant that has a very strong aroma, 30-65 cm high with a thick tuberous branched root (Fig 1). The stems are thick, furrowed densely pubescent with spaced simple and black glandular hairs, at the base they are clothed with large brown scales. Stipules 1-1.5 cm long, broadly ovate, pointed, deeply toothed-notched, filmy, brownish. Petioles 1-1.5 cm long, pubescent. Leaf blades 12-25 cm long, 3.9-5.2 cm wide, thrice pinnately dissected into linear or lanceolate, pointed lobes at the top, pubescent with spaced simple hairs. Bracts up to 1.5 to, herbaceous, incised-toothed; bracts 4-8 mm long, herbaceous, lanceolate or ovate-lanceolate, long pointed.

The flowers of Biebersteinia multifida are actinomorphic, located on its tip in the inflorescence, they are arranged in a thick brush. Pedicels 1-2 cm long with fruits, extending to 3 cm. Sepals 4.9-7.3 mm long with fruits up to 12 mm, ovate, oblong - lanceolate, obtuse, of unequal width, densely pubescent with simple and glandular hairs. Petals 5-7.4 mm long, oblong-wedge-shaped, glabrous, serrated incised at the top, orange at the top, yellow at the bottom. The filaments of the stamens are glabrous. The leaves of the box are 4-5 mm long, 2.9-3.4 mm wide, semilunar, cellular - wrinkled, brown on the back and sides. Blooms in March-May. It forms 1 - 5 pieces of seeds. The diameter of one seed is 4.5-5.6 mm. It bears fruit in April-June. The plant reproduces naturally: seeds and root crops. Prefers poor (typical serozem) soil. The roots are thick and dense, light to dark brown in color. [1;2;7].

Biebersteinia multifida DC –grows in nature most often in the middle belt of mountains. In the Amankutan Mountains it rises to a height of 2000 m above sea level.

Table 1:The species composition of the wheatgrass- sedge- biberstein- mixed grass association

Name of plants	Tier	Abundance	Stages (phase)	Life form
Allium sarawshanicum Regel	4	Sol	blossom	perennial grass
Medicago tianschanica Vass.	4	Sol	vegetation, budding	perennial grass
Carex pachystilis J. Gay.	4	Cop 1	vegetation, blossom	perennial grass
Aegilops cylindrica Host.	4	Sp	vegetation, blossom	annual grass
Biebersteinia multifida DC.	3	Sp	blossom., fruiting.	perennial grass
Aeluropus litoralis (Gouan.) Parl.	2	Sol	blossom	perennial grass
Poa bulbosa L.	3	Sol	blossom., fruiting.	perennial grass
Thinopyrum intermedium Subsp.	3	Sp	blossom., fruiting.	annual grass
Trifolium pratense L.	5	Sol	blossom., fruiting.	perennial grass
Arctium Schmalhausenii Kuntze.	3	Sp	vegetation, budding	perennial grass
Plantago lanceolata L.	6	Un	blossom	perennial grass
Agropyron setuliferum Nevski	3	Cop1	vegetation., blossom.	perennial grass
Cichorium intybus L.	3	Un	vegetation, budding	perennial grass
Achillea biebersteinii E. Afon.	4	Un	blossom.	perennial grass
Alcea nudiflora Lindl	2	Un	vegetation	perennial grass
Bunium chaerophylloides (Bge et Schmalh.)	3	Un	blossom., fruiting.	perennial grass
Alopekurus arundinaceus Poir.	3	Sol	vegetation, budding	perennial grass
Hypericum perforatum L.	3	Un	vegetation	perennial grass
Bromus danthoniae Trin	4	Sol	blossom., fruiting.	annual grass
Avena sterilis subsp.	4	Sp	blossom., fruiting.	annual grass
Poterium polygamum W. Et K.	4	Un	vegetation, budding	perennial grass
Bromus danthoniae Trin.	4	Sp	blossom., fruiting.	annual grass
Bromus oxydon Schrenk	4	Sp	blossom., fruiting.	annual grass
Dactylis glomerate L.	3	Sol	vegetation, budding	perennial grass
Elymus hispidus (Opiz) Melderis	3	Sol	budding, blossom.	perennial grass
Festuca valesiaca Schleich.	3	Sp	budding, blossom.	perennial grass
Hordeum spontaneum C. Koch	4	Sol	blossom., fruiting.	annual grass
Leymus multicaulis (Kar. Kir.) Tzvelev	3	Sp	blossom., fruiting.	perennial grass
Phleum panikulatum Huds.	4	Sp	blossom., fruiting.	annual grass
Poa annua L.	4	Sol	blossom., fruiting.	annual grass
Polypogon fugax Nees ex Steud.	2	Un	blossom., fruiting.	perennial grass
Stipa caucasica Schmalh.	2	Un	blossom., fruiting.	perennial grass
Taeniaterum coput-medusae (L.) Nevski	4	Un	blossom., fruiting.	annual grass

Description of Biebersteinia multifida DC- Biebersteinia multifida. - 15.V.2021 The site is located in one of the sayas of the Amankutan Mountains, known as Kumbelsai, Takhta-Karacha pass (Urgut district). The described site is located on the north-western slope of the mountains. The height is 1637 m above sea level.

The soil is fine-grained with an admixture of crushed stone. The general background of vegetation is green. The landscape is created by a wheatgrass-sedge-biberstein-mixed-grass association.
The following plants are found in this wheatgrass-sedge-Bibersteinia-mixed grass association together with Biebersteinia multifida DC- Bibersteinia multidivided (Table 1).
Description of Biebersteinia multifida DC- Biebersteinia multifida. 15.M.2021 The site is located in one of the ceed Amankutan mountains, known as Dachshund (Surgut district). The described site is located on the north-western slope of the mountains. The height is 1586 m above sea level. The soil is fine-grained with an admixture of crushed stone. The general background of vegetation is green. The landscape is created by the Biberstein- bluegrass-Eremurus-mixed-grass association.
In this bibersteinia-bluegrass-eremurus-mixed grass association, together with Biebersteinia multifida DC- Bibersteinia multidivided, the following plants are found (Table 2).

Table 2: The species composition of the Bibersteiniaceae is a bluegrass-Eremurus-mixed grass association.

Name of plants	Tier	Abundance	Stages (phase)	Life form
1	**2**	**3**	**4**	5
Strigosella Africana (L.) Botsch.	4	Sol	vegetation, budding	annual grass
Arctium umbrosum (Bunge) Kuntze	1	Sp[1]	vegetation, budding	perennial grass
Hordeum bulbosium L.	2	Sol	vegetation	perennial grass
Eremurus olgae Regel	2	Sp	vegetation, budding	perennial grass
Galium aparine L.	3	Sol	vegetation	annual grass
Astragalus turkestanicus Bunge	2	Sp[1]	vegetation	perennial grass
Poa bulbosa L.	4	Sp	fruiting.	perennial grass
Bromus inermis Leyss	3	Sp	budding	annual grass
Equisetum arvense L.	4	Sol	spore - forming	perennial grass
Crataegus pontica C. Koch.	1	Un	vegetation, budding	Tree
Elytrigia trichopora Richt	3	Sp[1]	vegetation	perennial grass
Ranunculus sceleratus L.	3	Sp	vegetation	annual grass
Rumex acetosa L.	2	Sol	vegetation	perennial grass
Convolvulus arvensis L.	4	Sp	budding, blossom.	perennial grass
Salvia drobovii Botsch.	3	Sp	vegetation, budding	perennial grass
Hypericum perforatum L.	4	Sol	vegetation, budding	perennial grass
Tanacetum pseudachillea C.	3	Sp	vegetation, budding	perennial grass
Biebersteinia multifida DC.	2	Sp	blossom., fruiting.	perennial grass
Cichorium intybus L.	3	Sp	budding, blossom.	perennial grass
Centaurea squarrosa Willd	4	Sol	vegetation, budding	perennial grass
Euphorbia szowitsii Fisch. & C.A. Mey.	4	Sp	vegetation, budding	annual grass
Zizifora clinopodioides Lam.	4	Sp	vegetation	perennial grass
Cirsium lanceolatum Scop.	3	Sol	budding	perennial grass
Zizifora tenuior L.	5	Sol	vegetation, budding.	annual grass
Gentiana olivieri Griseb.	4	Sol	budding, blossom.	perennial grass
Turgenia latifolia (L) Hoffm.	4	Sp	budding, blossom.	annual grass
Stellaria alsinoides Boiss.	4	Sp	budding, blossom.	annual grass
Potentilla asiatica Juz.	3	Sol	budding, blossom.	perennial grass
Geranium divaricatum Ehrh.	4	Sol	vegetation, budding	perennial grass
Onosma dichroanta Boiss.	4	Sol	blossom., fruiting.	perennial grass
Rosa fedtschenkoana Regel	2	Un	vegetation, budding	shrub
Elaeosticta allioides L.	3	Sol	budding, blossom.	annual grass
Bunium intermulicum Korov.	3	Sol	budding, blossom.	perennial grass
Ferula kokanica Regel.	3	Sol	budding, blossom.	perennial grass
Primula fedtschenkoi Regel	4	Sol	budding, blossom.	perennial grass
Alyssum desertorum Stapf.	4	Sp	vegetation, blossom	annual grass
Lallemantia royleana (Benth.) Benth.	4	Sp	budding, blossom.	annual grass
Origanum vulgare subsp.	3	Sp	vegetation	perennial grass

Description. Biebersteinia multifida DC- Biebersteinia multifida. 15.M.2021 The site is located in one of the ceed Amankutan mountains, known as Alychabulaksay (Surgut district). The described site is located on the northeastern slope of the mountains. The height is 1607 m above sea level. The soil is fine-grained with an admixture of crushed stone. The general background of vegetation is green. The landscape is created by the bluegrass-sedge-biberstein and its mixed-grass association.
The following plants are found in this bluegrass-sedge- Bibersteinia -mixed grass association together with Biebersteinia multifida DC- Bibersteinia multidivided (Table 3).

Table 3: The species composition of the bluegrass-sedge- biberstein and its-mixed-grass association

Name of plants	Tier	Abundance	Stages (phase)	Life form
Carex pachystilis J. Gay.	4	Cop[1]	budding, blossom.	perennial grass
Poa bulbosa L.	3	Cop[1]	budding, blossom.	perennial grass
Hordeum bulbosum L.	2	Un	vegetation, budding	perennial grass
Asplenium trichomanes L.	5	Sol	spore - forming	perennial grass
Convolvulus arvense L.	4	Sp	budding, blossom.	perennial grass
Ephedra equisetina Bunge	1	Un	vegetation	Кустарник
Ferula kokanika Regel.	2	Un	vegetation	perennial grass
Juniperus pseudosabina Fisch	1	Un	vegetation	Tree
Allium stipitatum Regel	3	Un	vegetation	perennial grass
Biebersteinia multifida DC.	3	Sp	budding, blossom.	perennial grass
Arum Korolkovii Regel	3	Un	budding, blossom.	perennial grass
Ferula foetida Regel.	2	Un	vegetation, budding	perennial grass
Colchicum Kesselringii Regel	4	Sol	blossom., fruiting.	perennial grass
Colchikum luteum Baker	4	Sp	blossom., fruiting.	perennial grass
Gagea capillifolia Vved.	4	Sol	blossom., fruiting.	perennial grass
Tulipa fosteriana Irving	4	Un	blossom.	perennial grass
Scalugeria allioides Boiss.	4	Un	blossom., fruiting.	perennial grass
Plantago lanceolata L.	5	Un	budding, blossom.	perennial grass
Tulipa turkestanika Regel	4	Sol	blossom., fruiting.	perennial grass
Achillea millefolium L.	3	Sp	blossom., fruiting.	perennial grass
Ixiolirion tataricum (Pall.) Schult.	4	Sp	blossom., fruiting.	perennial grass
Potentilla transcaspia Th. Woy	3	Un	blossom., fruiting.	perennial grass
Tragopogon pseudomajor S. Nikit.	3	Un	blossom., fruiting.	annual grass
Crocus korolkovii Maw. Regel	4	Sol	blossom., fruiting.	perennial grass
Iris songorica Schrenk	4	Sol	blossom.	perennial grass
Eremurus olgae Regel	2	Sp	vegetation, budding	perennial grass
Allium Komarovii Lipsky	4	Un	vegetation	perennial grass
Ungernia oligostroma Popov	4	Sol	blossom.	perennial grass
Primula fedtschenkoi Regel	4	Sol	blossom.	perennial grass

Based on the literature data and the descriptions of the floral composition made by us, the species Biebersteinia multifida DC studied by us. as can be seen from the above sites, it can be concluded that plants occur in small numbers, scattered, (Sp-Sparsae).

CONCLUSION AND SUGGESTIONS

1. Abundance in natural habitats species composition (Table 1) wheatgrass-sedge-bibersteinia- mixed grass associations together with Biebersteinia multifida DC- Bibersteinia is divided in Fig-3 given in percentages.

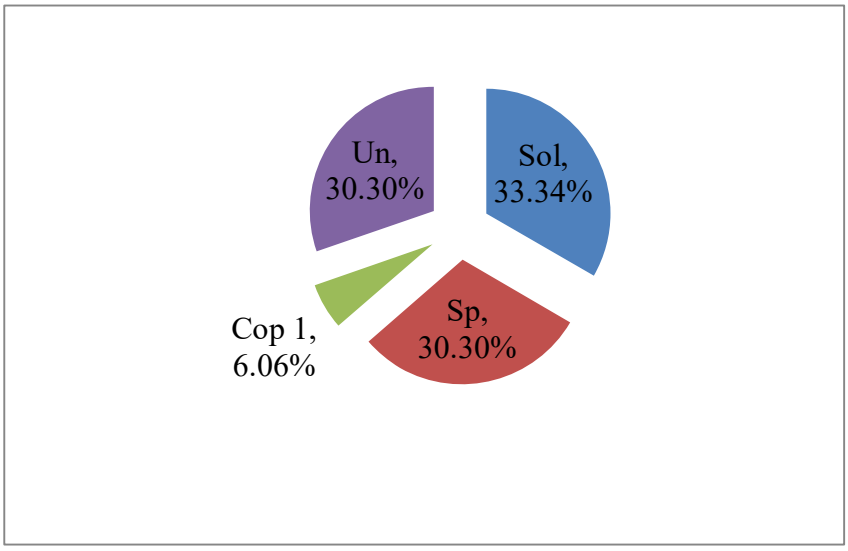

Fig 3. Species composition of wheatgrass- sedge- biberstein and evo and a mixed grass association

According to the analyses of Fig 3, one can see the vegetation cover of the wheatgrass-sedge-biberstein and its and the mixed grass association. Sol (Solitariae) - the plant is found in very small numbers, rare specimens 33.34%, Sp (Sparsae) - plants are found in small numbers, scattered 30.30%, Un (Unicum) species found on the site in a single specimen 30.30%, Cop1 (Copiosae1) - quite a lot of individuals 6.06%.
2. Abundance in natural habitats species composition (Table 2) Bibersteinia- bluegrass-eremurus-mixed grass associations together with Biebersteinia multifida DC- Bibersteinia is divided in Fig 4 given in percentages.

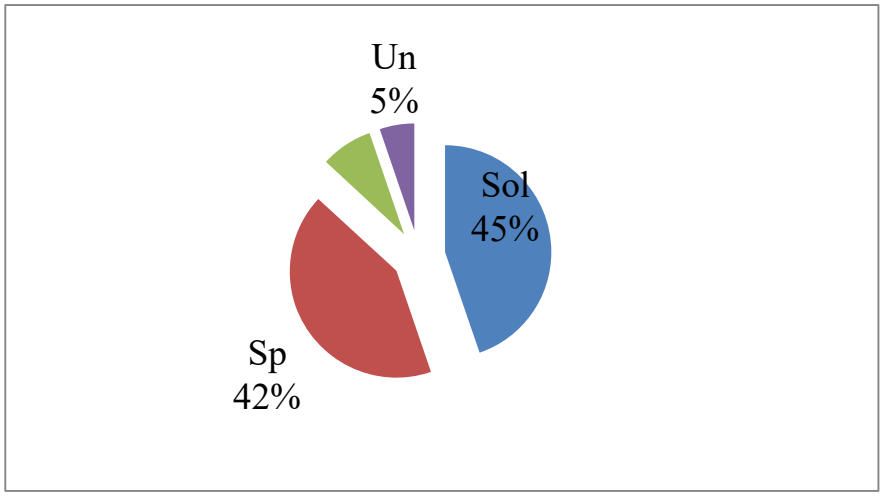

Fig 4. Species composition of the Bibersteiniaceae- bluegrass-Eremurusovo and mixed grass association

According to the analysis of Fig-4, one can see the Biberstein vegetation cover and its- bluegrass-eremurus-mixed-grass association. Sol (Solitariae) - the plant is found in very small numbers in rare specimens 45%, Sp (Sparsae) - plants are found in small numbers, scattered 42%, Un (Unicum) species found on the site in a single specimen 5%, Cop1 (Copiosae1) - quite a lot of individuals 8%.
3. Abundance in natural habitats species composition (Table 3) of bluegrass-sedge- bibersteinia-mixed grass associations together with Biebersteinia multifida DC- Bibersteinia is divided in Fig-5 given in percentages.

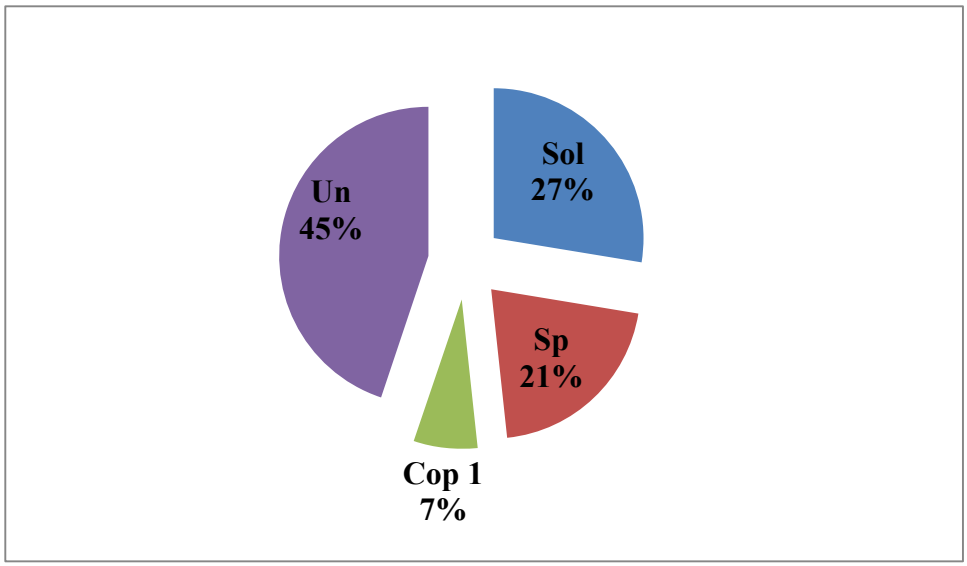

Fig 5. The species composition of the bluegrass-sedge- biberstein and its and diverse grass association

According to the analysis of Fig 5, you can see the vegetation cover of the bluegrass-sedge- biberstein and its mixed-grass association. Sol (Solitariae) - the plant is found in very small numbers, rare specimens 27%, Sp (Sparsae) - plants are found in small numbers, scattered 21%, Un (Unicum) species found on the site in a single specimen 45%, Cop1 (Copiosae1) - quite a lot of individuals 7%.

Since *Biebersteinia multifida* is a little-studied plant in Uzbekistan, the data obtained as a result of studying its biological and phytocenological properties will help the plant to carry out consistent reforms in the field of conservation of its natural resources, rational use of its natural resources, organization of plantations.

REFERENCES

1. Bustonovna I. Z. (2022). Studying The Biology Of Biebersteinia Multifida Dc //Thematics Journal Of Education. T. 7. – No. 4.
2. Bustonovna I. Z. (2022). Reasonable Use Of Medicinal Plants. Literature Review Part 2 //Asian Journal Of Pharmaceutical And Biological Research. T. 11. – No. 2.
3. Islamova Z. B., Mamurova G. N. (2023). Amount Of Vitamins Contained In Biebersteinia Multifida Dc // Innovations In Technology And Science Education. – 2023. T. 2. – No. 7. – Pp. 1298-1303.
4. Islamova Z. B. (2020). The Yild Of Beans Using Mineral Firtilizers And Nitrogen //Efficiency Of Using Innovative Technologies And Equipment In Agriculture And Water Management. Pp. 234-236.
5. Islamov B. S., Islamova Z. B. (2020). Biology Of Cousinia Umbrosa Bunge Seeds //Modern Science: Prospects, Achievements And Innovations. P. 39-47.
6. Islamova Z. B., Nazarova G. Kh., Matkarimova G. M. (2021). Biology And Agricultural Engineering Of Soybeans //European Research. Pp. 21-23.
7. Islamov B. Et Al. (2022). Estimate Of The Current Condition Of Populations Of The Lagochilus Olgae R. Kam.(Lamiaceae Lindl.) In Uzbekistan //American Journal Of Plant Sciences. T. 13. – No. 3. – Pp. 307-315.
8. Kh, K., Mukimov, T., Islamov, B., & Nurullayeva, N. (2020). Biological Features And Productivity Of Drought-Tolerant Fodder Plants Under The Conditions Of The Adyr Zone Of Uzbekistan. International Journal Of Scientific And Technological Research, 6(8), 34-38.
9. Maksudjanovna M. G., Bustanovna I. Z. (2020). First Cell Observations And Research //Archive Of Conferences. T. 1. – No. 1. – Pp. 142-143.
10. Matkarimova G. M., Nazarova G. Kh., Islamova Z. B. (2021). Dogwood Plants (Cornus Mas L.) - Healing Properties And Use // Innovative Development Of Science And Education. Pp. 11-13.
11. Muminov S. R., Islomov B. S., Tashpulatov Y. Sh. (2021). Aquatic And Coastal Plants Of The Samarkand Region And Their Use In Economic Industries // Bulletin Of Science. T. 4. – No. 4 (37). – Pp. 191-196.
12. Rahmonov, O., Zaurov, D. E., Islamov, B. S., & Eisenman, S. W. (2020). Resources Along The Silk Road In Central Asia: Lagochilus Inebrians Bunge (Turkestan Mint) And Medicago Sativa L.(Alfalfa): Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, And Uzbekistan. In Natural Products Of Silk Road Plants (Pp. 153-167). Crc Press.
13. Khozhimatov O.K., Islamova Z.B. (2022). Analysis Of Amino Acid Composition, Systematic Role And Importance Of Species Of The Genus Biebersteinia //Science And Innovation. No. Special Issue. – P. 395-401.
14. Islomov B.S., Hasanov M.A.(2020). Botany. Textbook. - Samarkand: Publishing House, 560- 568 .

CITATION OF THIS ARTICLE

Islamova Zebiniso Bustonovna. Phytosociological Research of *Biebersteinia multifida* Dc. Bull. Env.Pharmacol. Life Sci., Vol 11 [9] August 2022: 74-81