European Journal of Agricultural and Rural Education (EJARE)
Available Online at: https://www.scholarzest.com
Vol. 3 No. 11, November 2022
ISSN: 2660-5643

RARE MEDICINAL PLANTS GROWING IN ZAMIN NATIONAL PARK AND THEIR CONSERVATION

Saqiev Kabiljon Bosimovich
Research Institute of Environment and Nature Protection Technologiesk.sakiev@bk.ru
Barakaev Saidrasul Maksudovich
Teacher of Jizzakh State Pedagogical University
Sattarov Muzaffar Eshtemirovich
Head of the National Collection of Microorganisms for Production at the Tashkent Research Institute of Vaccines and Serums,m_sattorov@mail.ru

Article history:

Received: 1st September 2022
Accepted: 1st October 2022
Published: 4th November 2022

Abstract:

In the article, the rarity, distribution level, and botanical characteristics of some unique medicinal plants growing in the Zomin National Nature Park are studied. In particular, proposals were made for their conservation, increasing the number of species and protection measures

Keywords: Zomin National Nature Park, rare medicinal plants, Red Book, Ungernia oligostroma, Aconitum thalassicum, Ferula sumbul.

In recent years, due to the increase of anthropogenic (as well as man-made) impact on nature, ecological changes, and the reduction of their area due to the cutting of trees in the areas occupied by forests, natural biodiversity has been damaged, many species of plants and animals are completely disappearing or their numbers are drastically reduced.

Zomin National Park is the first "first" national park established in the Central Asian region. Zomin National Park is a scientific-research institution operating in the field of nature protection, financed from the state budget. It is considered a scientific-methodical center in its geographical region.

Zomin National Nature Park is located on the northern slopes of the Turkestan mountain range, at an altitude of 1200 meters to 4033 meters above sea level. The allocated area is fully suitable for establishing a national park. When the national park was established, the total area was 24,110 ha, and now it is 23,894 ha [1].

Zomin National Nature Park is a place that naturally preserves the gene pool of valuable plants necessary for humans. Medicinal, aromatic, honey, cooking, food, decorative, building materials, and other groups of plants that have become important in human life are widespread.

At present, the impact of anthropogenic factors is causing the ecosystem to be stable, new species to be formed and existing species to decrease.

A number of anthropogenic factors affect the flora of Zomin National Nature Park. In particular, the people in the area and outside of it carelessly graze cattle, loss of natural reserves for the purpose of planting agricultural crops on mountain slopes, use for fuel, unplanned harvesting of large quantities for medicinal purposes, cutting of trees and use for road construction, natural disasters (floods, natural due to fire, climate failure and droughts) causes the decrease of flora [2].

From the observation work conducted in the area, it became known that rare medicinal plants are distributed in the upper hills and middle and upper parts of the mountains. We see that many plants are depleting due to the population living in the upper hill and lower mountain parts. The main reason for the decline of the medicinal plants of the Zomin National Nature Park is that they are collected in large quantities by the population as spices, medicine and fodder. According to the results, there are 107 species of medicinal plants distributed in the region, of which 11 species are rare, 5 species are included in the Red Book of the Republic of Uzbekistan (2019) [3].

Uzbekistan is included in the "Red Book", especially the rare species of syrachs and tulips have been preserved in this area [4].

Zomin National Nature Park useful plants according to their life form: 1-year herbs - 35, 2-year herbs - 10, perennial herbs - 23 and semi-shrubs - 8.

Distribution across regions: mountain forest, subalpine region has different types of plants, which shows that Zomin National Nature Park is rich in useful plants [5].

When we talk about unique types of medicinal plants in the researched areas, first of all, there may be plants that are unique for this territory (within the limits of their distribution area) or brought from another region and adapted to natural conditions. When the species were analyzed, it was found that rare and important plants such as Ungernia

oligostroma, Aconitum thalassicum, Ferula sumbul, which rarely grow in these areas, and secondly, endemic plants, apply not only to the territory of the National Park, to the entire Turkestan Range, but also to other territories. .

Below we provide information about the species of Zomin National Park included in the "Red Book" of Uzbekistan.

Figure 1. Aconitum thalassicum Popov

Rarity level 3. Endemic plant of the Tianshan and Pamir-Aloy ranges, which is decreasing in number and has a divided area. Brief description. It is a perennial herb up to 1.5 m tall. The rhizome is formed by joining the nodules side by side. Stems are simple, erect. The leaves on the upper part of the stem are unbanded, the rest are banded, and the leaf is divided into large toothed pieces up to the base. The flowers are located in the upper part of the stem, form a large spike, are blue. It blooms in June-July and bears fruit in July-August.

Distributed in Tashkent, Fergana, Jizzakh, Kashkadarya regions: Piskom, Chotkal, Kurama, Fergana, Turkistan, Zarafshan, Hisar ridges. It is also found in Tajikistan and Kyrgyzstan.

It grows in wet lands in the middle and upper parts of the mountains and around springs on the slopes. Sometimes it forms small patches on the banks of the spring.

Forms small balls located far from each other throughout its area. Grows from seed. It is used as a medicine in folk medicine.

It is grown in the FA Botanical Garden of the Republic of Uzbekistan.

It is grown in Chotkal, Zomin reserves and the National Park. Special attention should be paid to the study of the biological characteristics of this species and its cultivation.

Figure 2. Astragalus knorringianus Boriss

Rarity level 2. A rare, endemic species growing in the Western Pamir-Aloy.

5-7 cm long, gray-green, hairy, almost stemless perennial herb. The leaf is 2-5 cm long, and the tip and band are 5-15 mm long. The leaves are 7-9 pairs, pencil-shaped or lanceolate-pencil, 5-11 mm long, 0.5-1.5 mm wide, with a sharp tip, and the underside is thickly hairy. The flower stalk is 2-5 cm long. Flowers 2-3. The unripe pod is 7 cm long and 4 mm wide, with a short beak and covered with white downy hairs. It blooms in March-April and bears fruit in April-May.

It is distributed in the mountains of Nurota, Molguzar and Turkestan.

It grows on eroded bedrock and gravelly slopes in the middle part of the mountain.

It is very rare in nature. Grows from seed. It is shrinking due to the large amount of livestock grazing.

Nurota is protected in the state reserve.

Figure 3. Astragalus belolipovii Kamelin ex FO Khass.et N. Sulejm

Rarity level 1. Brief description of the rare species in Northern Pamir-Aloy. Stemless herb, 30-40 cm tall. The leaves are thornless, 20-30 cm long. Branched white hairy, 15-20 pairs of leaves. Longer than a rose. Shingles, 15-20 flowers, length 10-15 cm. The lower part of the calyx is blue, at first it is tube-shaped, then it becomes puffy, white hairy, 12-15 mm long, teeth 2-4 mm long. The flag is greenish-dark red in color, 25-30 mm long, rounded, the tip is carved, the wing is 25-30 mm long, slightly longer than the boat. Dukkagi is unknown. Distributed in the Zomin reserve in the Turkestan range (Jizzakh region). Grows in juniper groves. Grows from seed. I.V. Academician F.N. of the Academy of Sciences of the Republic of Uzbekistan by Belolipov. Planted and grown in the Botanical Garden named after Rusanov.

The land is protected in the state reserve.

Figure 4. Lonicera paradoxa Pojark

Rarity level 1. Very rare, isolated, relict endemic plant in Pamir-Aloy. Brief description. Branched shrub. The leaves are elliptic or inverted-ovate, lobed, 20 mm long, with short ciliate edges, short hairs on both sides. Flowers are located in leaf axils.

The fruit is soft, red, small. Seeds 4-5, discharge. It blooms in July-August and bears fruit in September.

It is distributed in the Oloy range (around the village of Shahimardan) and in the Turkestan range. It is also found in Tajikistan and Kyrgyzstan.

In the middle and upper parts of the mountains, it grows on stony-gravel slopes and sparse juniper forests. It is very rare in nature. Increase. It grows from seeds and rhizomes and is used as firewood. Livestock also suffers.

It is necessary to establish control centers and study the biological characteristics of the FA Botanical Garden of the Republic of Uzbekistan.

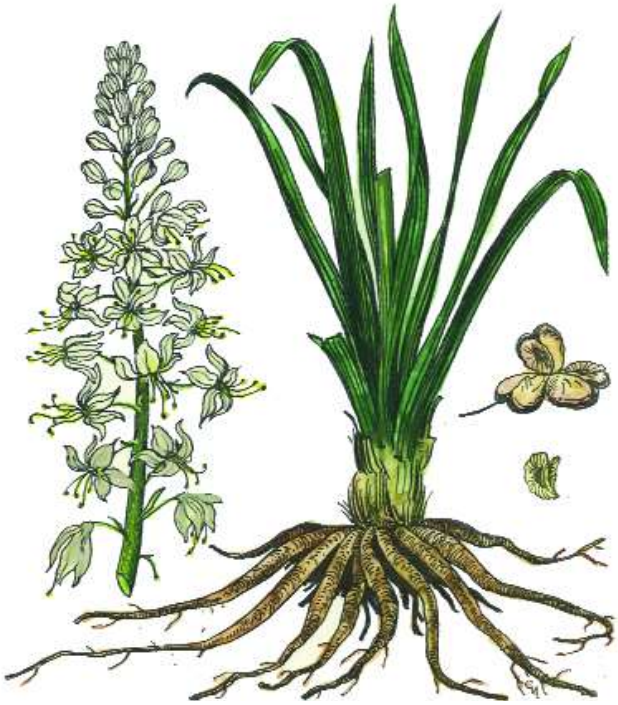

Figure 5. Eremurus lactiflorus O. Fedtsch

Rarity level 2. Declining, endemic plant in Western Tien Shan and Nurota. A perennial herb with a height of 45-100 cm. The rhizome is short, the pieces are thickened like a scutellum. The leaves are broad pendulous, 13-25 mm wide, smooth. Shingles are sparse, many-flowered, 15-30 cm long. Floral leaves are thin triangular-shaped. The lower band of flowers of shingili is 1.5-2 times longer than that of saffron. Cauliflower leaves are single-veined. The wings are uneven, shorter than the peduncle. The fruit is a bag-like, round, 3-lobed, smooth, 20-30 mm wide. It blooms in May-June and bears fruit in June-July. Tashkent and Jizzakh regions: scattered in the ridges of the Ugom, Piskom, Chotkal, Chirchik river basins and in the Nurota (Majrum, Parandas), Koytosh ridges (Omondara, Ustakhan). It also grows in Kyrgyzstan and Kazakhstan.

It grows on stony and gravelly slopes in the middle part of the mountain. Scattered in small balls and singly. 40,000-50,000 bush growths were found during the research conducted in Tashkent region. Increase. It reproduces from seeds and vegetatively. It is decreasing due to picking by the population, expansion of new lands and livestock. Planted in the FA Botanical Garden of the Republic of Uzbekistan. Existing balls in nature should be controlled.

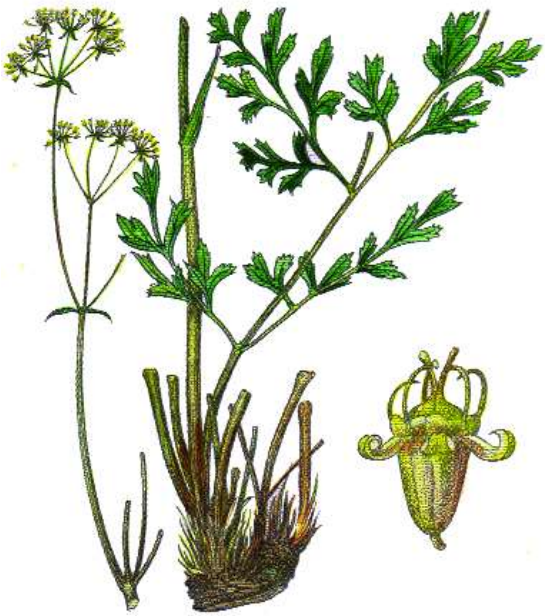

Figure 6. Ferula hyacinth (Kauffm.) Hook.f

Rarity level 2. Pamir - a rare, endemic plant in Aloy.

A perennial herb up to 60 cm tall. Stems are 2-5, thin, branched from the top. The leaves are hard, located in the throat of the root. The leaf is three-fold feathery cut, the tips are lanceolate or elongated. The flowers are yellow. Calyx leaves toothed. The fruit is small, 7 mm long, 4 mm wide. It blooms in June and bears fruit in July.

Nurota is also found in Tajikistan, distributed in the ranges of Turkestan, Zarafshan and Hisar.

It grows on stony slopes in the middle of the mountains, in thickets.

Finally, it is rare, it is found in masses. Grows from seed.

Its continuous collection by the local population as a medicinal and medicinal raw material is causing its decrease.

It was grown several years ago in the Botanical garden of Tashkent State University.

Hisar is protected in the state reserve.

Figure 7. Ferula fedtschenkoana Koso-Pol

Rarity level 1. A rare endemic species in Western Pamir-Aloy.

A generally glabrous perennial polycarp herb. The stem is single or several, thin, rarely purple, with shield-like branches in the upper part. The branches are in a row, the upper ones are opposite. The leaves are pale blue, soft, hairless, 5-fold divided (cut), tip narrowed, 10-20 mm long. Umbrella with 4-8 branches. The length of the umbrella is 8-10. The calyx is short-toothed. The flower is yellow, oval, 1.4 mm long. The fruit is oblong-oval, hairless, 6 mm long, 3.5 mm wide. Small flowering and fruiting in June.

Jizzakh, Kashkadarya, Surkhandarya regions: Hisar range (upper Kyzildarya), Turkestan and Molguzor ranges, outside Uzbekistan: Republic of Tajikistan.

Soz on the northern slopes of Arkhazors grows in soil-gravel areas.

Individually, 2-3 plants are suitable for an area of 10x10 m2.

It reproduces by seed. Not protected.

Figure 8. Tulipa affinis Botschantz

Rarity level 2. A rare, endemic plant in Northern Pamir-Aloy.

Perennial bulbous herb 15-25 cm tall. Onion is oblong-ovoid, 2-4 cm in diameter. The bark is papery, long, dark brown in color. The leaves are up to 3, bluish, slightly curved. The flower is single, red, black at the bottom, with a light yellow border. Pollen thread is black, the place where it joins the pollen grains is white. Anthers are black-purple. It blooms in April-May and bears fruit in June-July.

Spread. Jizzakh region: distributed in Turkestan (surroundings of the Zomin reserve) and the Nurota ridge (Koytash mountain). It is also found in Kyrgyzstan and Tajikistan. In juniper groves, it grows on sandy and stony slopes. Distributed individually. Propagated from seeds and bulbs. A lot of picking of flowers and grazing of livestock has led to the reduction of the area. Since 1957, it has been cultivated in the FA Botanical Garden of the Republic of Uzbekistan. Protected in Zomin and Nurota reserves.

Figure 9. Tulipa korolkowii Regel

Rarity level 2. A rare plant with an isolated area in South-Western Tien-Shan and Pamir-Aloy.

Perennial bulbous herb 10-20 cm tall. The onion is egg-shaped, 2.5 cm in diameter, the upper part of the inner part of the shell is hard. Leaves are 3, curved. The flower is single, red, black at the bottom. The lower part of the ski threads is black, and the upper part is red. Sometimes duster threads are black or red. Powder yellow. It blooms in March-April and bears fruit in June-July.

Distributed in Tashkent, Jizzakh, Samarkand, Kashkadarya and Surkhandarya regions: Kurama (Abjassay, Kendirdavon), Nurota, Kuhitang, Boysun, Bobotogda, Turkestan, Zarafshan, Hisar ranges. It is also found in Kazakhstan and Tajikistan. It grows on sandy and rocky slopes and rocky terrain. In nature, it is distributed in groups and individually. Propagated from seeds and bulbs. It is decreasing due to plucking of flowers and extraction of bulbs and livestock grazing. It has been cultivated since 1956 in the FA Botanical Garden of the Republic of Uzbekistan. It is necessary to take control of the bushes growing in nature and to pay more attention to cultivation.

Figure 10. Colchicum kesselringii Regel

Rarity level 3. A declining endemic plant in Central Asia.

Perennial bulbous herb. Tuganak onion is oblong-ovoid, 1-3.5 cm in diameter, the skin is rough, black-brown in color. Leaves are 3-6, pendulous. Flowers 1-4, white. The outer side of the petals has a dark purple line, pencil-shaped, blunt. Anthers are 2 times shorter than the anthers, and the anthers are thinner. It blooms in February and bears fruit in May-June. Tashkent, Navoi, Samarkand, Kashkadarya, Jizzakh, Surkhandarya regions: distributed in Western Tianshan (Kurama, Chotkal ridges), Pamir-Aloy (Turkistan, Zarafshan, Hisar, Nurota, Kokhitang ridges and Cho'lbayir mountains). It is also found in the republics of Kazakhstan, Tajikistan, and Kyrgyzstan.

From the foothills to the upper part of the mountain, small rock grows on the soil and gravel slopes. In nature, it occurs singly and in groups. Grows from seed. The mass harvesting of flowers is decreasing due to the mass grazing of livestock.

It has been planted in the FA Botanical Garden of the Republic of Uzbekistan since 1967. It is protected in Chotkal, Zomin, Surkhan, Nurota, Hisar nature reserves.

Figure 11. Eremurus robustus Regel

Rarity level 3. An endemic plant with a fragmented and shrinking range in Tien-Shan and Pamir-Aloy. Brief description. A large perennial herb 100-250 cm tall. The rhizome is short, ray-shaped, and the segments are thickened like a scutellum. The leaves are broad pendulous, 4-8 cm wide, smooth. Shrubs, multi-flowered, cylindrical, 35-120 cm long. Petals are triangular in shape. The band of flowers in the lower part of shingili is 1.5-2 times longer than that of saffron. Cauliflower leaves are single-veined, light pink in color. Changchilari is a little shorter than the gulkorkoni. The fruit is a round, smooth bag, 1.5-2.5 cm wide. It blooms in May-July, bears fruit in July-August.

Spread. Tashkent, Namangan, Jizzakh, Samarkand, Farqona, Surkhandarya, Kashkadarya regions: all the ridges of western Tianshan and Pamir-Aloy. It is also found in Tajikistan, Kazakhstan, and Kyrgyzstan.

Growing conditions. It grows on the rocky slopes in the middle part of the mountain. Grows singly and forming small balls.

There are about 100,000 species in the territory of Tashkent region.

It reproduces from seeds and vegetatively. It is decreasing due to picking by the population and buying livestock.

Since 1954, it has been grown in the FA Botanical Garden of the Republic of Uzbekistan.

Protective measures. Chotkal is protected in biosphere reserve. It should be propagated in botanical gardens.

Figure 12. Cousinia haesitabunda Juz

Rarity level 1. Very rare, endemic plant distributed in Western Pamir-Aloy.

A perennial herb up to 50 cm tall. Stem shallowly linear, tangled hairy, sparsely leafy. The leaves are few, long and lanceolate, the lower part is thickly hairy, finely cut, and the flesh is thorn-like. The leaves on the stem are small, sessile, half covering the stem. The basket is egg-shaped, 10-12 mm in diameter, hairless, many winding leaves, hard

leathery. The crown is yellow. The seed is inverted ovoid, almost four-sided. It blooms in May-June and bears fruit in June-July.

Dispersed in Jizzakh, Navoi regions: Molguzor, Nurota ridges.

It grows on the gravelly, fine rock soil slopes in the middle part of the mountains. Grows from seed. The exploitation of growing lands and the numerous grazing of livestock are the reasons for its decrease.

Figure 13. Cousinia dshisakensis Cult

Rarity level 2. Rare, endemic plant in Pamir-Aloy (Nurota and Molguzar ridges).

20-40 cm tall, biennial herb with arrow roots. The stem consists of single-headed branches. The leaves are lyre-shaped, broadly banded. The leaves on the stem are long, the edges have large serrate spines, the tip is also large spines, the upper side is tangled hairy, and the lower side is thick gray hairy. The basket is large, 2-2.5 cm in diameter. The corolla is slightly longer than the leaves, pink in color. It blooms in May and bears fruit in June. Spread. Navoi and Jizzakh regions: distributed on the northern slopes of the Nurota ridge and the western slopes of the Molguzar mountains. growing conditions. It grows on gravelly slopes and rocks in the middle and lower parts of the mountains.

The balls are sparsely tufted (up to 20 tufts per 1 ha), located far apart. Increase. Grows from seed. reasons for changes in the number and area of plants. Over-grazing of livestock has a negative effect on reproduction. There are probably natural reasons for its scarcity.

It has been planted in the FA Botanical Garden of the Republic of Uzbekistan since 1962.

It is necessary to establish a special control center for the protection of this species.

CONCLUSION.

In conclusion, it can be said that Zomin National Park is a place rich in medicinal plants. Here in the flora of our Republic there are many species that have not yet been identified and studied. So far, more than 600 medicinal plants have been studied in the flora of our Republic. In the future, new types of medicinal plants will be identified, their scientific aspects will be studied, and promising ways of their rational use will be developed.

Much work has been done to introduce many of the plants listed above. But Aconitum thalassicum from high mountain plants did not grow in new conditions. Based on the observations made in this area during the last 5 years, the following conclusions were reached:

- in recent years, Colchicum luteum population areas are improving and expanding in terms of quantity and quality. This is the 2nd status of this typeto 3must be replaced.

- Eremurus robustus natural population areas are sufficient, and when its resources are used productively and rationally, it is necessary not to include it in the next editions of the Red Book of Uzbekistan, and to create and plan ways to turn it into a crop to increase its industrially important reserves.

- Rheum maximowiczii growing areas are decreasing day by day. It is recommended that it be included in the Red Book of Uzbekistan to be published next to prevent and increase it.

REFERENCES:

1. Sattarov M., Saqiev Q., Abdug'abbarov Sh., Torakulova D., Mekhribonova S. Unique biological landscape and biodiversity of Zomin National Nature Park // Journal of Ecology Bulletin. No. 1 (1) 2022. T.: 17-21 p.
2. Book of registration of flora objects and other information // Zomin, 2020.
3. Red Book of the Republic of Uzbekistan, Tashkent, 2019.
4. N.S.Abdullaeva Mery po sokhraniniyu lesov v Zaaminsky National Nature Park // Materialy konferentsii molodyx uchenyx. Termiz: Izd-vo "Tafkkur",2016. S. 654-655.
5. Abdullaeva N.S.,Khodzhimatov O.K., Karshiboeva N.Kh., Yangibaeva Z.A. Gubotsvetnye Zaaminskogo natsionalnogo naturalgo parka // Bulleten Orenburgskogo nauchnogo tsentra UrO RAN (Electronic journal). 2017. No. 1. S. 1-7.