

Problems of protection and rational use of certain medicinal plants in the Namangan region

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Abstract: The article is devoted to the issues of effective use of medicinal plants in the Namangan region of the Republic of Uzbekistan in various sectors of the human economy, including medicine and food industry. The article also emphasizes that as a result of the increasing anthropogenic impact on medicinal plants, their habitats are shrinking, so serious attention should be paid to their protection.

Keywords: Plants, medicinal plants, natural resources, conservation, mountainous region, environmental problems, anthropogenic impact, etc.

Introduction:

Namangan region is the largest territory of the Fergana Valley of the Republic of Uzbekistan, with an area of 7.44 thousand km². This is 40.2% of the Fergana Valley and 1.6% of the country's territory (Ibrohimov and Madraximov, 1990). Namangan region is distinguished not only in Uzbekistan but also in the whole Central Asian region by its unique natural landscapes. In accordance with the resolution of Sh. M. Mirziyoev, the President of the Republic of Uzbekistan, "On measures for the protection, cultivation, processing and rational use of available resources of wild-growing medicinal plants" (CIS Legislation, 2021), the country has been carrying out consistent reforms in the field of protection of medicinal plants, rational use of natural resources, the establishment of plantations for the cultivation of medicinal plants and their processing.

Literature review:

As the use of medicinal plant resources and the state of their protection are developing more sustainably, a greater emphasis is being placed in today's research on their in-depth study. In this regard, Abu Ali Ibn Sino's "Laws of Medicine", K. Khojimatov's "Vitamin plants of Uzbekistan, Uzbek plants, fragrant plants of Uzbekistan and spices of Uzbekistan", U. Hasanov's "Origin of cultivated plants", K. Haydarov, K. Khojimatov's "Plants of Uzbekistan", K. Hojimatov, M. Olloyorov "Medicinal plants of Uzbekistan and their protection", "Ibn Sino about medicinal plants" "Healing herbs" by M. Nabiev, "Medicinal plants of Uzbekistan" by H. H. Kholmatov, Z. H. Habibov, N. Z. Olimkhodjaeva, A. Usmonkhodjaev, E. I. Basitkhanova, O. P. Prатов, A. Djabbarov's "Etymological modern encyclopedia of medicinal plants growing in Uzbekistan", "Oriental medicine", "Flora of Uzbekistan", "Plant resources," Technology of plant growing " by H. S. Yuldashev," Plant ecology " by I. M. Kultiasov, H. M. Ahunov, "Plant Biochemistry" by A. Imomaliev, A. Zikriyoev, "Medicinal plants of the Fergana Valley, their effective use and protection" by G. H. Hamidov, M. H. Mahmudov, R. S. Mahsudova, A. Khamidov's research on "Plant Geography" help to reveal the essence of the problem.

Analysis and results:

Today, the conservation and efficient use of plant biodiversity is also a pressing issue. The increasing scale of anthropogenic pressures on natural ecosystems is leading to a reduction in the range of plant species, especially medicinal species, which are rare components of nature, and a decrease in natural resources. Therefore, in the current rapidly changing and complex situation, the need for a comprehensive study of medicinal plants, which are considered to be sources of restoring the health of our people, is always relevant. Reducing the negative impacts on plants, ensuring their recovery processes, preserving them as a gene pool, their use in the national economy and the successful solution of other problems depends in many respects on research in this area.

As a result of the collection, use, biological properties, and regenerative potential of many species of medicinal plants from nature, their general condition is deteriorating. Pine, walnut, diamond, hawthorn, and briar gardens, which are important plant communities in our mountainous regions, serve as pastures for chaotic and unmanageable livestock. Continuous grazing of livestock in these areas is leading to the extinction of rare plant species. This also applies to plants that have been used medicinally since ancient times. For example, incense (*Peganum harmala* L.), which differs from other plants by its antiquity and healing properties. A herbaceous plant, reaching a height of 30-40 cm during the growing season, belongs to the family of incense. The root is dark brown, strong, reaching a depth of 2-3 meters and the stems are many-horned, curved, and hairless. The leaves are simple, gray-green. The leaves on the lower part of the stem are short-banded, while the upper ones are single-banded, arranged in a series on the stem. This plant can be found in the hills and lower mountains of the region, on rocky-gravel substrates, and as a weed among all crops and partly in the deserts of Central Fergana. All surface parts and seeds of the plant are harvested in May-June. Toxic alkaloids (charmin, charmalin, peganin, harmonin) are present in the chemical components from 1.5 to 6 percent, and in the seeds from 14 to 25 percent. Oil, dyes, and other substances were found in the seeds. In ethnobotany and folk medicine, incense is an important medicinal tool used since ancient times.



1-рasm . Исирикни вегетация давридаги ҳолати



2-рasm. Исирикни вегетация тугагандан кейинги ҳосил пишган ҳолати



3-рasm. Исирикни табобатда ва хонадонда ишлатилиш ҳолати

Figure 1: Incense (Soliyev and Nazarov, 2009)

Incense baths are used in rheumatoid arthritis, scabies, and other skin diseases, its decoction is used as a remedy for colds, neuralgia, malaria, and pain. During the outbreak of influenza, the spread of the disease is prevented when incense is smoked in buildings and homes. In modern medicine, the incense alkaloid Garmin is used in the treatment of complications left with epidemic encephalitis, as well as tremors, paralysis, and Parkinson's disease. The roots and seeds of the plant are included in the state pharmacopeia (Melinda, 2020). According to the characteristics of its preparation and use, take a teaspoon of crushed incense plant and pour boiling water over it. Infuse for two hours and strain and drink a tablespoon 2–3 times a day (White, 2018).

The incense is not eaten by livestock. But its natural resources are dwindling as the scattered steppes and abandoned lands are becoming less. It is necessary not to waste incense in nature protection organizations, forestry, and protected areas in our regions, but to use it sparingly (Soliyev and Nazarov, 2009). Another species of plant that is widespread in most parts of the region is the Ituzum (*Solanum nigrum* L.), a heat-loving, a dark green annual herbaceous plant belonging to the genus *Solanum*. Height 20 - 60 cm, the stem is sessile. The leaves are simple, banded, the plate is ovoid, and the edges are carved, very close and opposite to each other. The flowers are small, flowing, bisexual, forming a sessile inflorescence. There are five crown and cup leaves. The fruit is spherical, 3-4 mm in diameter, blue in color, dark purple when ripe, orange, and red, sometimes white and hanging. Ituzum blooms from May to late autumn, and the fruit begins to ripen in June and lasts until late autumn.

Ituzum is widespread in all regions of Central Asian countries, except the northernmost part of Europe. As a weed, it grows in gardens, in vegetable crops, among kinds of cotton, along ditches and canals, in meadows, around houses. According to the literal information, ripe raisins contain 352.2 mg percent vitamin C, 4.9 percent citric acid, and steroidal saponins.

Fruits and plants belonging to the family of alfalfa contain Solonin alkaloid, which has a negative effect on the body. The fruit of the Ituzum, which grows around the Mediterranean, is poisonous due to the high content of Solonin in the darker varieties. In our country the most common varieties of fruit red, yellow, or dark-colored are harmless. Ituzum is not liked by livestock. Even in the case of consumption, an accident does not occur. In order to determine the toxicity of Ituzum, veterinarians first fed 3 kg of Ituzum leaves and stem to horses, which are considered to be very sensitive to poisonous foods compared to other livestock, and then 1 kg of raw fruits is given. The experimental horses showed no signs of disease. But black cattle never approach and eat Ituzum.

Ituzum has been known to people since ancient times as an edible and medicinal plant. Due to the growth of culture, the rise of agriculture, and the proliferation of vegetable plant species, the widespread use of Ituzum has risen significantly from human memory.

The ripe fruit of the Ituzum is sweet, although it is a bit tacky. Therefore, in many places, fresh berries are eaten not only by babies but also by adults. The fruit of MDX is used by the population for food in many regions. Cook the fruit in boiling water, mince and add to pies. Its young leaves are also used as food. Ituzum is an edible plant as well as a medicinal plant. Dioskorid, the founder of the science of pharmacognosy, treated heartburn and stomach ailments with Ituzum. Ibn Sina (980-1035) also used Ituzum in the treatment of various diseases (Ibrohimov & Madraximov, 1990).

Ituzum is also used as a medicinal plant in scientific medicine. As a medicinal plant, it is included in the pharmacopeia of England, France, Portugal, Turkey, Venezuela, and several

other countries. Ituzum is also used in Indian and Chinese medicine. It is also part of a drug called Liv-52 from India, which is used for jaundice. In our country, it is not used in scientific medicine but is used in folk medicine. White filter paper, boiled for a few minutes in the juice of Ituzum fruit, has an indicative property, such as litmus (Hamidov et al., 1995).

Conclusion and Recommendations:

As a result of population growth in the Namangan region, land development and anthropogenic impact on naturally growing medicinal plants, the reduction of habitats of medicinal plant species, and their sharp decline in reserves are becoming one of the current local environmental problems. As a result of observations, incense (*Peganum harmala* L.) is a plant that grows on hills, and Ituzum (*Solanum nigrum* L.) is a plant that grows in fields, on roadsides. There is a need to protect and use some plant species with high medicinal properties.

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