

STUDY OF MEDICINAL PLANTS IN THE MOUNTAINOUS REGION OF BOYSUN

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Abstract: This article analyzes the diversity of medicinal plants in Boysun district, one of the mountainous regions of Surkhandarya province, their adaptation to ecological conditions, and their ancient use in traditional medicine. During the research, major medicinal plant species found in the region (such as flax, harmala, castor bean, dandelion, licorice, wormwood, and others) were studied in terms of their biological structure, chemical composition, pharmacological properties, and practical significance. The article provides information about the health benefits of these plants, traditional remedies based on them, and the possibilities of their use in modern medicine. Moreover, traditional and scientific approaches to the collection, drying, storage, and use of medicinal plants are compared, emphasizing the importance of preserving ecological balance and the genetic resources of plants. Due to the unique geographical and climatic conditions of Boysun district, many of the plants found here belong to rare species not found in other regions. Taking into account these features, the article also explores the possibilities of studying medicinal plants on a scientific basis, promoting them widely, and turning them into an economically beneficial direction.

Keywords: Boysun district, medicinal plants, traditional medicine, pharmacological properties, ecological balance, biological diversity, mountainous region flora, chemical composition of plants, traditional healing methods, plant gene pool, nature conservation, medical application.

Introduction.

Uzbekistan is rich in a diverse range of plant species, particularly in mountainous regions, where medicinal plants are abundant both in quantity and quality. Among these

regions, Boysun district of Surkhandarya province is renowned for its unique natural conditions, clean environment, and rich flora, making it a habitat for numerous medicinal plant species. These plants have been widely used in traditional medicine since ancient times and continue to retain their significance today. Currently, there is a growing global demand for natural remedies, especially those that are environmentally friendly and non-harmful to the human body. This trend further emphasizes the importance of studying medicinal plants. In the Boysun region, various medicinal plants such as *Peganum harmala* (harmal), *Taraxacum* (dandelion), *Glycyrrhiza glabra* (licorice), *Artemisia* (wormwood), *Linum* (flax), *Thymus serpyllum* (wild thyme), *Mentha* (mint), *Pistacia vera* (pistachio), and *Ocimum basilicum* (mountain basil) are commonly found. These plants serve not only to support the health of the local population but also as valuable resources for scientific research. The collection, drying, storage, and application methods of the medicinal parts of these plants—such as leaves, flowers, roots, and seeds—are enriched with the longstanding experience of local communities. This article discusses in detail the biological and ecological characteristics of medicinal plants found in Boysun district, their pharmacological importance, their role in traditional medicine, and the potential for use in modern medical practices. Furthermore, it addresses issues related to the conservation of the gene pool of medicinal plants, the need for scientific study, and the importance of passing this knowledge on to future generations. Through this article, the relevance of thoroughly studying Boysun's natural resources and applying them in practical life is highlighted.

Main Body.

The Boysun district is located in the southern part of the Republic of Uzbekistan, within the mountainous region of Surkhandarya province. It is distinguished by its unique natural and climatic conditions, as well as its rich diversity of flora and fauna. These factors have made the area a natural habitat for many rare medicinal plants. The relatively low level of environmental pollution, clean air, and diverse soil types on the high mountains and slopes create favorable ecological conditions for the growth of medicinal plants. Biological and Pharmacological Properties of Medicinal Plants. Among the medicinal plants commonly found in the Boysun region are *Peganum harmala* (harmal), *Glycyrrhiza glabra* (licorice), *Artemisia absinthium* (wormwood), *Ocimum basilicum* (mountain basil), *Taraxacum officinale* (dandelion), and *Linum usitatissimum* (flax). Each plant has its own unique biological structure, chemical composition, and therapeutic properties. Licorice (*Glycyrrhiza glabra*) – The root

contains glycyrrhizin, which is widely used in the treatment of cough, bronchitis, and stomach disorders. Wormwood (*Artemisia absinthium*) – Used as a remedy for digestive issues and internal inflammation. Dandelion (*Taraxacum officinale*) – Possesses hepatoprotective and diuretic properties, beneficial for liver health. Mint and Mountain Basil (*Mentha* and *Ocimum basilicum*) – Mainly used as calming and antispasmodic agents, and in the preparation of aromatic herbal teas. These plants contain various active compounds such as alkaloids, flavonoids, saponins, essential oils, tannins, organic acids, and others, the pharmacological significance of which has been confirmed through scientific research.

Use in Traditional Medicine. The people of Boysun have long used medicinal plants in their daily lives. For example, dandelion leaves and roots have been prepared as herbal infusions to treat liver diseases, and licorice root decoctions have been used for respiratory ailments. Wormwood and harmal have traditionally been burned to purify the air and repel pests indoors. This knowledge has been passed down through generations for centuries.

Culture of Harvesting and Storage. Proper harvesting, drying, and storage of medicinal plants directly affect their healing properties. For instance, flowers should be collected after morning dew has evaporated, and leaves should be harvested during dry weather. Roots are best collected in autumn after the plant's vegetation period ends. During the drying process, maintaining the correct temperature and ventilation is crucial; otherwise, the active compounds in the plant may degrade.

The Need for Scientific Research and Conservation. Today, many species of medicinal plants around the world are at risk of extinction. In Boysun district as well, certain plants such as mountain basil and licorice are decreasing due to overharvesting and ecosystem changes. Therefore, it is essential to study, classify, cultivate artificially, and conserve these plants. In this regard, scientific research conducted in collaboration with the Academy of Sciences of Uzbekistan, the Institute of Plant Resources, local universities, and ecological organizations is of great importance.

Economic and Medical Potential. The medicinal plants of Boysun hold great potential not only in terms of medicine but also from an economic perspective. Based on these plants, biologically active supplements, natural cosmetic products, and food additives can be developed. If this sector is developed on a scientific and industrial basis, it will not only create employment opportunities for the local population but also increase the region's export potential.

Conclusion:

The Boysun district is one of the richest and most unique natural regions of Uzbekistan, and the medicinal plants growing there serve as an extremely valuable scientific and practical resource for national traditional medicine, pharmacology, and biological sciences. Research shows that the medicinal plants found in Boysun are distinguished by their ecological purity, rich chemical composition, and wide-ranging therapeutic properties. These plants have been successfully used in traditional medicine for centuries and today also hold significant potential for use in modern medical practice. Studying medicinal plants and utilizing them on a scientific basis contributes to fully realizing their medical potential, as well as to their conservation and sustainable development. Moreover, processing medicinal plants opens up opportunities for economic gain, job creation, and increased export capacity. Therefore, conducting in-depth scientific research on Boysun's medicinal plants, ensuring their protection, artificial cultivation, promoting proper usage practices among the population, and integrating them into the economy are among the most urgent and important tasks.

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