BIOLOGICAL FEATURES AND PRACTICAL USES OF UNGERNIA VIKTORIES

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Abstract. *This study describes the botanical characteristics, distribution, ecological features, and medicinal importance of Ungernia victoris, a perennial bulbous plant belonging to the Amaryllidaceae family. The species is mainly distributed in the foothill and mountainous regions of Central Asia, including Uzbekistan. It is well adapted to arid and semi-arid environments, with its active vegetation period occurring in early spring. Scientific studies have shown that the plant contains biologically active alkaloids, particularly galantamine, which is widely used in the treatment of neurological disorders. Due to the decreasing number of natural populations caused by overharvesting and environmental factors, conservation and artificial cultivation of this species are considered essential. Ungernia victoris is recognized as a valuable raw material for the pharmaceutical industry and an ecologically significant plant species.*

Keywords. *Ungernia victoris, medicinal plant, Amaryllidaceae, alkaloids, galantamine, pharmaceutical industry, foothill regions, ecological adaptation, conservation, natural populations.*

Ungernia victoris is a perennial bulbous plant belonging to the Amaryllidaceae family. It is one of the important representatives of the flora of Central Asia and is especially valued for its medicinal properties. Plants of the genus Ungernia are well known for containing biologically active alkaloids that are widely used in pharmaceutical production. Due to its chemical composition and therapeutic significance, Ungernia victoris holds a special place among medicinal plants. In addition to its pharmacological importance, this species is considered rare in certain

regions, which makes its conservation and scientific study particularly important. Members of the Amaryllidaceae family are typically bulbous plants, many of which are known for their ornamental and medicinal value. Ungernia victoris is native to Central Asia. It grows mainly in Uzbekistan, Tajikistan, and southern Kazakhstan. In Uzbekistan, it is commonly found in mountainous and foothill regions.The plant usually grows at altitudes between 800 and 2,000 meters above sea level. It prefers rocky, gravelly, and well-drained soils. Adapted to arid and semi-arid climates, it takes advantage of spring moisture for active growth. During the hot summer months, the aerial parts of the plant wither, while the underground bulb remains dormant and survives unfavorable environmental conditions.

Ungernia victoris is a perennial herb characterized by a well-developed bulb. The plant has a large underground bulb covered with protective outer scales. The bulb stores nutrients and ensures survival during dry seasons. The leaves are long, narrow, and strap-shaped, usually light green in color. They appear in early spring and are smooth in texture. The flowers are relatively large and arranged in an umbel-shaped inflorescence. Their color ranges from pale pink to light violet. Flowering typically occurs in late summer or early autumn.The fruit is a capsule containing several seeds. One of the most important features of Ungernia victoris is its rich content of alkaloids. The main biologically active compounds include: Galantamine, lycorine. Among these, galantamine is of particular pharmaceutical importance. It is widely used in modern medicine due to its effect on the nervous system. The medicinal value of Ungernia victoris is primarily associated with galantamine, an alkaloid that affects the central and peripheral nervous systems. Galantamine improves the transmission of nerve impulses by inhibiting acetylcholinesterase activity. In modern medicine, galantamine is also used in the management of neurodegenerative conditions associated with memory impairment. The extraction and processing of alkaloids from Ungernia victoris have contributed significantly to the pharmaceutical industry. Due to increasing demand for galantamine, Ungernia victoris has gained economic importance. However, wild populations have declined in some areas because of excessive harvesting. To

ensure sustainable use, researchers have been developing methods for cultivating the plant under controlled conditions. Successful cultivation requires well-drained soil, sufficient sunlight, and climatic conditions similar to its natural mountainous habitat. Establishing plantations can reduce pressure on wild populations and provide a stable raw material source for pharmaceutical production.Because of its limited natural distribution and high medicinal value, Ungernia victoris requires protection.

Conclusion

Ungernia victoris is a rare and medicinally important plant native to Central Asia. Its alkaloid content, particularly galantamine, makes it highly valuable in the treatment of neurological disorders. Despite its therapeutic significance, overharvesting has threatened natural populations, highlighting the need for conservation and cultivation efforts. Scientific research, sustainable harvesting,

and cultivation programs are crucial to maintaining the balance between pharmaceutical use and environmental protection. As a result, Ungernia victoris remains an important subject of botanical, ecological, and pharmacological studies.

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