ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 06,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

MEDICAL USE OF SALEP (ORCHIS MASCULA L.)

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Abstract;Orchis mascula L., commonly known as Salep, is a perennial plant belonging to the Orchidaceae family. Its tuberous root nodules have long been recognized in traditional medicine for their therapeutic properties. Rich in glucomannan, starch, mucilage, and bioactive compounds, salep exhibits a wide range of health benefits, including gastrointestinal support, immunomodulatory, sedative, and neuroprotective effects. This article provides a review of the medicinal applications of salep based on classical sources and recent findings from scientific databases. The findings confirm its historical and modern relevance in treating various ailments and underline its potential in phytotherapy and functional nutrition.

Keywords: salep, Orchis mascula, medicinal plant, polysaccharides, glucomannan, traditional medicine

Introduction

Orchis mascula L., also referred to as salep, is a herbaceous perennial plant of the orchid family (Orchidaceae), typically growing to a height of 30–40 cm. It flowers in vivid shades of purple during the spring and early summer months (May to June) and is commonly found in high-altitude mountain meadows across Europe and parts of Asia. Cultivation for medicinal use is possible under controlled conditions, making it a potential crop for herbal and pharmaceutical applications.

The plant produces two tuberous root nodules—one being older and shriveled, and the other fresh, plump, and biologically active. The younger nodule is regarded as the primary source of medicinal value. Root nodules from all salep species are considered therapeutically equivalent. These nodules contain a range of bioactive compounds, including starch, proteins, mucilage, and most notably, glucomannan—a water-soluble polysaccharide known for its high viscosity and gelling properties when heated. This characteristic contributes to its demulcent action, making it a popular ingredient in soothing preparations.

Despite its historical use in traditional medicine systems, such as Unani and Persian medicine, there is limited modern scientific literature summarizing its medicinal utility. The aim of this study is to compile and analyze available data on the pharmacological applications of salep, with emphasis on its functional properties and therapeutic value in contemporary healthcare.

Materials and Methods

To investigate the medical uses of Orchis mascula, an integrative literature review was conducted. Data were sourced from peer-reviewed publications indexed in **Scopus** and **Web of Science**. Search terms included: "salep", "Orchis mascula", "medicinal orchid", "glucomannan", and "traditional medicine". Both historical texts and modern scientific studies were included in

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the review. The inclusion criteria focused on clinical applications, pharmacological effects, and biochemical composition of the plant's root nodules.

No human or animal experiments were performed by the authors; the study is based on secondary data and existing literature to assess known medicinal applications and bioactive mechanisms.

Results and Discussion

Historical data and recent scientific findings affirm that the root nodules of Orchis mascula have been extensively used in Eastern medicine traditions, particularly in Persian, Indian, and Central Asian practices. The primary indications include:

- **Urogenital health**: Used as a remedy for prostatitis, prostate adenoma, and male infertility (impotence). The mucilage and phytoactive compounds may exert anti-inflammatory and hormonal modulatory effects.
- **Respiratory support**: Employed in the treatment of chronic bronchitis, tuberculosis, and other pulmonary disorders due to its mucilage content, which soothes the mucous membranes and eases cough.
- **Gastrointestinal health**: Salep helps regulate digestion and is beneficial in treating gastritis, dyspepsia, and irritable bowel syndromes. The glucomannan content acts as dietary fiber, promoting gut motility and healthy microbiota.
- **Immune modulation**: A beverage prepared from salep tubers boosts the immune system, owing to its high levels of natural polysaccharides. These bioactives stimulate immune cell activity and act as prebiotics.
- **Neuroprotective and sedative effects**: The B-group vitamins present in the root nodules support nervous system function. Salep exhibits a mild sedative effect and is traditionally used to alleviate symptoms of anxiety, insomnia, and nervous exhaustion.
- **Energy and nourishment**: The high starch content in salep provides rapid energy, making it suitable for recovery from weakness and convalescence. Historically, it was used as a nutrient-rich tonic for children and the elderly.

Its ability to form a thick gel when boiled in water is not only used for therapeutic teas and tonics but also as a base for traditional foods and desserts, especially in Middle Eastern and Turkish cuisine.

From a pharmacognostic perspective, salep's therapeutic efficacy is attributed largely to glucomannan, which has been shown in modern studies to lower cholesterol, stabilize blood glucose, and promote satiety. These properties position salep as a promising ingredient in functional foods and phytotherapeutic formulations.

Conclusion

Salep (Orchis mascula L.) has a long-standing history of medicinal use, particularly in Eastern medicine. Modern scientific data confirm its bioactivity, especially due to its rich polysaccharide and mucilage content. Its application in urology, gastroenterology, pulmonology, and neurology is supported both by traditional use and biochemical evidence. However, further pharmacological and clinical research is needed to fully validate its efficacy and safety for

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integration into modern medicinal systems. As interest in natural remedies and plant-based therapies grows, salep represents a valuable candidate for future drug development and nutraceutical applications.

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