



**PHARMACOLOGICAL SIGNIFICANCE OF MEDICINAL HERB *Onosma
bracteatum* (Gaozaban): AN UPDATED REVIEW**

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ABSTRACT

Herbal medicine is generally accomplished form of medicine in the world as about 75–80% of the world's population, mostly depends upon herbal medicine. Use of herbal medicine for therapeutic purpose is reflected very non-toxic because of their lesser side effects. Gaozaban is one of the most important drugs used in Unani system of medicine. It has been first categorised by Dioscorides. Several species such as *Borago officinalis* Linn. *Trichodesma indicum* R. Br, *Onosma bracteatum* Wall, *Onosma hispidum* Wall and *Anchusa strigosa* J Labill are used under the name Gaozaban. Chemical constituents, therapeutic actions, pharmacological actions and uses of Gaozaban will be mentioned in this review.

Keywords: Gaozaban, Unani drug, pharmacological actions, phytochemical components, Treatment activities

INTRODUCTION

Gaozaban is an important drug of the Unani system of medicine and has been used in India from long time. Its leaves (Berg-e-Gaozaban), single seeded nutlets (Tukhm-e-Gaozaban) and flowers (Gul-e-Gaozaban)

are the three forms of crude drug that are sold in market. According to Unani literature it acts as Cardi tonic (*Muqawwie – Qalb*), Brain tonic (*Muqawwie- Dimagh*), Demulcent (*Mulattif*), Antidysentric (*Dafe-*

Zaheer), Expectorant (*Munaffise- Balgham*) and Lithotriptic (*Mufattite- Hissat*) and is recommended for (*Sualeyabis*) Cough, (*Zeequn Nafas*) Asthma, Melancholia (*Malekholia*), Palpitation (*Khafqan*),

Jaundice (*Yarqan*), Stomatitis (*Qula*), Gingivitis (*Warme- Lissa*), Kidney and bladder stones (*Mufattite- Hissatkulliyawamasana*) and Excessive thirst (*Atashe-Mufrit*).



Leaves



Flowers

TAXONOMICAL CLASSIFICATION

[1]

Kingdom	:	Plantae
Order	:	Boraginales
Family	:	Boraginaceae
Subfamily	:	Boraginoideae
Genus	:	<i>Borago</i>
Species	:	<i>officinalis</i>

VERNICULAR NAMES

- Arabic: Lisan-us- Saur [2] [3]
- Persian: Gaozaban [4]
- English: Borage [5]
- Gujarati: Bhonpathari, Galajibhi [3]
- Hindi: Gojiva [5]
- Urdu: Gaozaban [3] [4]
- French: Bourrache [6]

- German: Borretsch, Einjähriger Borretsch, Gurkenkraut [6]
- Italian: Boragine, Borandella [6]
- Portuguese: Boragem [6]
- Spanish: Borraja [6]
- Swedish: Gurkört [6]
- Unani Name: Gaozaban/ Lisan-us-Saur [5]
- Bengali: GojikaSak, Gojialata, Dadisha [3]
- Kannad Gojaba, ShankhaHuli [3]
- Tamil Kharaptra, Dharvipatra, Kozha [3]
- Malayalam Kozhuppu [3]
- Marathi Govjaban, Paatharee [3]
- Oriya Kharsah, kharapatra [3]
- Punjabi Kazban [3]
- Telugu Yeddunaluka [3]

DISTRIBUTION [3] [5] [7]

Gaozaban is found in Mediterranean region, Europe and Northern Asia and in India it is sparsely distributed in the North Western Himalayas from Kashmir to Kumaon at an altitudes of 3,500-4,500 m.

DESCRIPTION OF PLANT IN UNANI (MAHIYAT) [8] [9]

Gaozaban is a perennial, hirsute or hispid herb and it is grown in spring season. Leaves are alternate, wavy and more or less toothed. Roots are tapering. Fresh gaozaban is greenish and yellowish in colour while old gaozaban is greyish in colour.

MORPHOLOGY OF PLANT [7] [9]

Macroscopic: Stem- Cut pieces are available in 5.9cm long and 3.2 to 4.7 cm in diameter, flattened, erect, stout, rough due to white, hard, hispid hairs, cicatrices and longitudinal wrinkles, colour greenish-yellow, fracture short, odour and taste not characteristic.

Leaf: Lanceolate to ovate-lanceolate, 12-30 cm long, 1.5-3.5 cm broad, acuminate tubercle based hispid hairs present on both surfaces, greenish to light yellow on top and white beneath.

Flowers: Flowers bluish purple and turned dull brown in colour, corolla 5, gamopetalous, tubular or funnel shaped with wavy margins, stamens 5, epipetalous, stamen unequal in length, style bifid, characteristic pleasant odour and no taste.

Microscopic: Stem: Stem shows single layered epidermis, covered with thick cuticle, some epidermal cells elongated to form long, warty, tubercle-based unicellular hairs, cortex differentiated into two zones 5-7 layered. Outer collenchyma, 3-4 layered inner parenchymatous cells, consisting of thin walled round to oval cells, phloem composed of usual elements, phloem fibres absent, xylem consisting of usual elements, vessels mostly solitary or rarely 2-3 in groups having spiral thickening, fibres and tracheids having blunt tips and simple pits, xylem ray not distinct, pith consisting of round, thin-walled parenchymatous cells.

Leaf: Midrib: single layered epidermis with thick cuticle and long warty, tubercle-based unicellular hairs present on both surfaces, followed by 5-7 layers of collenchymatous and 3-4 layers of parenchymatous cortical cells, vascular bundle are situated centrally.

Lamina: isobilateral, single layered epidermis on either surface covered with thick cuticle, longwarty, tubercle-based, simple, unicellular hairs present on both surfaces, palisade parenchyma 2 layered, spongy parenchyma 8-10 layered, stomata are paracytic.

Flower: Corolla: T.S of corolla shows single layered epidermis with numerous hairs, vascular strands at regular intervals, 3 to 8 prominent vessels surrounded by a small undifferentiated cellular mass, rest of

the corolla region consisting of tangentially elongated parenchymal cells.

Style: Style shows bifid segments, glabrous with capitate stigma and rest of the style bears aseptate long hairs. T.S of style shows single layered epidermis with numerous hairs, central column of thick walled compact cells while the vascular strands run on both sides of the column with very small 6 to 8 vessels and parenchymatous cortex.

Pollen grains: Pollen grains are small, oval in shape with germ pores.

Chemical composition [3] [10]

Phytochemical constituents present in methanol extract, petroleum ether extract and hydroalcoholic extract are alkaloids, steroids, saponins, glycosides, terpenes, tannins flavonoids, shikonin, alkannin and ferulic, and vanillic acids.

MIZAJ (TEMPERAMENT): Hot ¹ and dry¹ [3]

Hot ¹ and moist ¹ [5] [11]

Cold ² and moist ² [11]

HISSA MUSTAMELA (PART USED):

Flowers [7] [8] [12]

Seeds [8]

Dried leaves [5] [8] [9]

MIQDARE KHURAK (THERAPEUTIC DOSE): 3-5g [9]

7g [5]

7-10g [8]

PHARMACOLOGICAL ACTIONS:

- Lithotriptic (*Mufattite- Hissat*) [7] [12]
- Antipyretic (*Dafe-Humma*) [7] [12]
- Tonic (*Muqawwi*) [7] [8] [9] [12] [13]
- Diuretic (*Mudirre-Baul*) [7] [12] [13]
- Astringent (*Qabiz*) [7] [12]
- Demulcent (*Mulattif*) [4] [5] [9] [12] [13]
- Expectorant (*Munaffise- Balgham*) [5] [9]
- Diaphoretic (*Muarriq*) [5]
- Cardiotonic (*Muqawwie-Qalb*) [5]
- Spasmolytic (*Dafe-Tashannuj*) [13]
- Laxative (*Mulayyin*) [3] [8]

THERAPEUTIC USES:

- Fever (*Humma*) [5]
- Palpitation (*Khafqan*) [3] [4] [5] [7]
- Asthma (*Zeequn- Nafas*) [5] [7] [14]
- Jaundice (*Yarqan*) [5]
- Cold and Catarrh (*Nazla Zukam*) [5] [9]
- Dry cough (*Suale- yabis*) [7] [14]
- Gingivitis (*Warme-Lissa*) [7] [14]
- Stomatitis (*Qula*) [7] [14]
- Excessive thirst (*Atashe-Mufrit*) [4] [14]
- Weakness of Heart (*Zofe- Qalb*) [3]
- Weakness of Brain (*Zofe- Dimagh*) [3]

PHARMACOLOGICAL STUDIES:

- Antidiarrheal Activity [15]
- Anti-asthmatic Activity [16]
- Antibacterial Activity [17]
- Antifungal Activity [17]
- Antimicrobial Activity [18]
- Antihypertensive Activity [19]

CONCLUSION

In the present scenario where the ailments becoming the world-wide concern, the health promoting properties of gaozaban can support to improve public health efficiently. It is used by Unani scholars from the ancient times in various ailments. *Onosma bracteatum* can be cast-off in the management of respiratory ailments. Understanding its health benefits, multi-utility based on the comprehensive literature review presented in Unani classical text and the scientific information predictable on its chemical constituents holds the key to recognise its commercial prospective as a foundation of a new group of botanicals.

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