

GENTIANA OLIVIERI GRISEB (FLOWER OF GHAAFIS): A VALUABLE MEDICINAL HERB OF UNANI MEDICINE- A REVIEW

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ABSTRACT

Herbs origin drugs have played a vital role in the prevention and treatment of diseases and it becomes popular day by day due to its low cost and less side effect. *Unani* medicine is an oldest system of traditional medicines, in which 80% plant origin drugs are used. *Gule Ghaafis* (*Gentiana Olivieri* Griseb)) is very important drug which has been used in *Unani* medicine since centuries for its great medicinal values. In the last few decades, many works have been done on the phytochemistry and biological activities of the drug. This review describes about the *Unani* literature of the drug, like temperament, action, uses, formulations and dose of the drug followed by modern description like taxonomic classification, macroscopic and microscopic features, phytochemical studies, chemical constituent and

pharmacological action of the drug and its medicinal uses.

KEYWORDS: Ghaafis, Traditional medicine, Sharjrat-el-Baragith, Persian Gentian, Unani literature.

INTRODUCTION:

Gule Ghaafis is flowering top of *Gentiana olivieri* Griseb. Ghaafis mentioned in various Greek, Arabic, and Persian classical Unani literature was known to Arabs by the name *Shajaratul Baraghit* and *Shaukatel Muntineh* (now known as Ghaafis). Avicenna, Eastern Arabs and Persian adopted a plant called Ghafat as representative of Eupatoria of the Greeks having the foliage like that of the Agrimony still sold in Eastern countries under the name of Ghaafis identified as *Gentiana dahurica* Fisch^[1]. However, various market samples revealed Ghaafis as the flower top of *Gentiana kurroo* Royle^[2]. Furthermore, some renowned ethno botanist like Kritikar and Basu^[3] mentioned Ghaafis as *Agrimonia eupatoria* Linn. William Dymock has mentioned *Gentiana dahurica* Fisch Syn. *Gentiana olivieri* Griseb as Ghaafis. The Unani pharmacopeia of India has also accepted *Gentiana dahurica* Fisch Syn. *Gentiana olivieri* Griseb as Ghaafis. Therefore, there exists some controversy over the authenticity of Ghaafis but *Gentiana dahurica* Fisch has been identified as Ghaafis by experts and therefore, is included in Unani Pharmacopeia of India^[4]. The market sample procured by us has also been identified as *Gentiana olivieri* Griseb. Therefore, in following lines details of *Gentiana dahurica* syn. *Gentiana olivieri* Griseb have been given. *Gentiana dahurica* belongs to the family Gentianaceae^[3], found in western Himalaya, Baluchistan, Afghanistan, Persia, and Mesopotamia. Gentianaceae is a family of flowering plants comprising approximately 70-80 genera and 900-1200 species. The plants of the family are annual and perennial herbs or shrubs. They are native to northern temperate areas of the world. Plants belonging to genus *Gentiana* are very well-known for their pharmacological properties. They are intensely bitter and once upon a time were valuable remedy for digestive system ailments. The medicinal value is due to presence of bitter glycosides. Several pharmacological studies were carried out on medicinal plants belonging to gentianaceae before 1930. Extensive work was carried out on gentianine, an isoprene alkaloid commonly distributed among medicinal plants belonging to Gentianaceae. The alkaloid was reported to have diverse pharmacological activities ranging from anti-inflammatory to diuretic. Recently interest among potential medicinal plants of Gentianaceae has been revived and significant phytochemicals like amarogentin and swerchirin have been studied for drug development^[5].

Unani Description: Gule Ghaafis has an important place in Unani system of medicine, as it is used in various preparations. Gule Ghaafis is mentioned in ancient Greek literature as well as classical Arabic and Persian Unani literature. In Greek literature it is called Anatorus. In

Arabic it is called *Sharjrat-el-Baragith*, *Hasheesat-el-Ghaafis* ^[7]. In Persian Ghaafis is called as “Gul-e- Khalla” ^[8].

Vernacular Names: ^[1, 3, 4, 7, 8]

Arabic: Hasheesha Shulghafiz

English: Persian Gentian

Hindi: Ghaafis

Urdu: Ghaafis

Persian: Ghafat

Khurasan Hills: Bangera

Baluchistan: Agerphpanrai, Bhangira

Quetta Pishni: Agherpanrae

Greek: Eupatorion

India: Gul-i-Ghafis

Turkey: Afat

Scientific Classification: ^[9]

Kingdom: plantae

Unranked: Angiosperms

Unranked: Eudicots

Unranked: Asterids

Order: Gentianales

Family: Gentianaceae

Genus: *Gentiana*

Species: *Gentiana olivieri*

Botanical Description of the Plant :

This perennial herbaceous plant grows on limestone, marl, or clay slopes and grassy meadows at an altitude of 350–2300 m. Height of this plant is 10–30 cm from a basal rosette. Root stock is sheathed with a fibrous collar at apex. Seeds are brown, ellipsoid, and 0.8–1 mm long. Testa is thin reticulating ^[1, 3, 8, 10, 11]. Dark blue-purple flowers bloom on April–July. Flowers complete, bisexual, actinomorphic, dull brown coloured, pedicellate; pedicel cylindrical, 3.5 to 6cm long; calyx 5-partite, lobes equal; corolla funnel shaped, about 2cm long, erect and 5-partite, often with folds between lobes; stamens 5, attached at the middle of the lobes, alternate to corolla segment, include, filament linear, stigma bilobed, style

short, ovary superior, one celled, ovule many, odour not specific, taste bitter ^[1, 3, 12]. Fruit a stalked or sessile, oblong or ellipsoid; capsule dehiscing septically. Fruit three fourths of an inch long, one celled, containing numerous small seeds; calyx and corolla persistent ^[1].

Miza'j (Temperament): ^[13, 14, 15, 16, 17, 18, 19, 20]

- Hot 1 dry 2.

Miza'j of Usarae Ghaafis: ^[17, 21, 22]

- Cold and Dry
- Hot and Dry ^[20]

Af, al (Actions): ^[13, 17, 20, 21, 23, 25, 26]

- Mulattif (Demulcent), Muqawwi-e-Meda (Stomachic), Musaffi-e-Khoon (Blood Purifier), Mufatteh (Deobstruent), Mudirr-e-Baul (Diuretic), Mudirr-e-Haiz (Emmenagogue), Mudirr-e-Laban, Moarriq (Diaphoretic), Jali (Detergent), Mohallil-e-Waram (Anti-inflammatory)
- Dafa-e-Humma (Antipyretic), Qabiz (Astringent).

Istemalat (Uses): ^[13, 15, 17, 20]

- Jarb (Scabies) and Hikka (Itching): When it is used with infusion of shahitra and sikanjabeen internally and externally, Dau-l-salab (Alopecia): When it is used with infusion of shahitra and sikanjabeen both internally & externally, Dau-l-Haiya: When it is used with infusion of shahitra and sikanjabeen both internally and externally, Non Healing ulcers: When its powder is mixed with fat, Istisqa (Acities), Faqrudoom (Anaemia), Warm Jiger (Hepatitis), Warm Meda (Gastritis), Hummiyat Kahnah.

Mazarrat (Toxicity): ^[16, 17, 20, 26]

- For Tihal (spleen)

Musleh (Corrective): ^[6, 16, 18, 20, 26]

- Anisoon (*Pimpinella anisum*), Asaroon (*Asarum europium*), Afsanteen (*Artemisia absinthium*), Gulab (*Rosa damascena*).

Badal (Substitute): ^[6, 7, 13, 17, 18, 20, 26]

- Anisoon (*Pimpinella anisum*), Asaroon equal to Ghaffis, Half of Afsanteen (*Artemisia absinthium*), Revend (*Rheum officinalis*), Afsanteen (*Artemisia absinthium*), Afsanteen (*Artemisia absinthium*).

Miqdare Khurak (Dose): ^[17, 19, 20]

- 3-5gm, 6-10 gm, 4-10gm

Miqdare Khurak of Usarae Ghaafis: ^[20, 22]

- 2-3gm, 2-4gm

Murakabat: ^[6, 15, 27, 28, 29]

- Majoon Dabidulward, Qrse Ghaafis, Habbe Ghaafis.

Ethno-pharmacological Actions: *Gentiana olivieri* Griseb. is widely used as bitter tonic, stomachic, appetizer, antipyretic, anticonvulsant, antidiabetic, antihepatotoxic, antinociceptive, antiinflammatory, antiulcerogenic, sedative, antioxidant, antidepressant, and antianemic and for mental problems in the different regions of Turkey ^[8, 30, 31, 32, 33]. The plant is also used for diarrhea, common cold, stomachache, wound and ease of digestion in the Uzbekistan ^[31]. It is traditionally used in Ayurveda and Unani systems of medicines as anti-inflammatory, antidepressant, antiulcerogenic, gastroprotective and sudorific ^[11,30]. Antibacterial, antifungal, antihypertensive, toxicological, and diuretic effects of the plant were studied in Pakistan ^[8]. It is used in Persia as cure for ring worm of the scalp in children and the plant is used as a sudorific in Bluchistan ^[1, 10].

Phytochemistry ^[33]: Isoorientin was isolated from the flowering herbs of *Gentiana olivieri* Griseb. From the whole plants, three new bitter secoiridoid glycosides, olivierosides A (1), B (2) and C (3) were isolated together with the known compounds, gentiopicroside, sweroside, 6-*O*- β -D-glucosylgentiopicroside, swertiapunimarin, eustomoside, eustomorusside and septemfidoside ^[31]. Furthermore, several alkaloids, fatty acids, secoiridoids, triterpenoids (oleanolic acid (OA) and ursolic acid from flowers) and bioflavonoids were isolated from the plant. Oleanolic acid is ubiquitous triterpenoid in plant kingdom, medicinal herbs, and is integral part of the human diet. OA (oleanolic acid) is a main triterpenic acid reported in GOG flowers ^[19, 30]. The phytochemical screening of the plant extract using the different methods described the presence of flavonoids, tannins, coumarins, reducing sugars and terpenes **33**. The different active phytoconstituents of plants such as polysaccharide, lectin, peptides and flavonoids have been reported ^[32].

Pharmacological Studies: Intraperitoneal injection of the extract significantly prolonged the onset of seizures at doses of 200 and 750 mg/kg, but did not alter the incidence of PTZ-

induced seizures. Onset of PIC-induced seizures was delayed by the injection of the extract (1000mg/kg). Moreover, only 750 mg/kg of the extract protected 25% of the mice against PIC-induced seizures. Its extract (200, 750 and 1000 mg/kg) showed a significant protective effect against MES-induced seizures. In the Rota rod test, the ethanol extract (200 mg/kg, ip) induced disturbance in motor coordination ^[31]. Hepatoprotective effect of *Gentiana olivieri* Griseb. of biochemical tests were also confirmed by histopathological examination. Isoorientin exhibited significant hepatoprotective effect at 15 mg/kg dose ^[34]. Hypoglycaemic activity of *Gentiana olivieri* Griseb flowering herbs on oral administration were studied using in vivo models in normal, glucose-hyperglycemic and streptozotocin-induced diabetic rats. Isoorientin exhibited significant hypoglycemic and antihyperlipidemic effects at 15 mg/kg ^[35]. Antihypertensive effect of *Gentiana olivieri* Griseb in a clinical study of was conducted to evaluate its antihypertensive effect and to ascertain its safety and efficacy in human subject. Effective hypotensive was observed in all cases; with nil adverse effect ^[36]. Immunomodulatory activity of butanol fraction of *Gentiana olivieri* Griseb alcoholic extract of *Gentiana olivieri* Griseb and its fraction produced dose related increase in delayed type hypersensitivity response (37.50-78.87%) at the selected range of doses i.e. 50-200mg/kg ^[32]. Butanol fraction of *Gentiana olivieri* Griseb exhibited significant increase in carbon clearance at 100 and 200mg/kg in mice ^[32].

CONCLUSION:

From the above deliberation it is evident that Ghaafis (*Gentiana olivieri* Griseb) is a potent Unani herb used therapeutically since antiquity by the Unani scholars in various ailments which is now validated by ethno botanist, phytochemist, pharmacologist etc. through above cited in vitro and in vivo studies.

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