Unani perspective of Khatmi (*Althaea officinalis*)

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**Abstract**

Khatmi (*Althaea officinalis*), commonly known as Marsh Mallow, is one of the important medicinal plants used in Unani medicine. Khatmi is a perennial plant with light brown coloured, long and thick root, ovate-cordate, slightly toothed leaves and pale pink or pale purple coloured flowers. Root, leaves, flowers and seeds are mainly used in medicine. All the parts contain mucilage. It is having emmollient, analgesic, astringent, haemostatic, expectorant, luxative, cleansing, demulcent, concoctive, diuretic, emmenagogue, and seeds are mainly used in medicine. All the parts contain mucilage. It is having emmollient, analgesic, astringent, haemostatic, expectorant, luxative, cleansing, demulcent, concoctive, diuretic, emmenagogue, astringent, haemostatic, expectorant, luxative, cleansing, demulcent, concoctive, diuretic, emmenagogue, anti-inflammatory and exhilarant properties. In Unani medicine, Khatmi has been used for several centuries to treat inflammatory disorders like metritis, enteritis, mastitis, arthritis, colitis, bronchitis, gastritis, etc. It also has been used for other ailments like catarrh, renal calculi, pityriasis, tremor, dysuria, dysentery, haemoptysis, whooping cough and many more. Though, this plant is used for many varieties of disease, very few actions of this plant have been proven scientifically. Hence, this review will help to conduct scientific studies in unexploited potential of this plant.

**Keywords:** Khatmi, *Althaea officinalis*, Marshmallow, mucilage, Unani

1. **Introduction**

Khatmi belongs to the family Malvaceae. It is native of most countries of Europe and is also distributed in the temperate and subtropical region of Asia and Europe [1, 2]. Actual Khatmi is *Althaea officinalis* but due to inappropriate practice of vernacular name in certain regions of India *Althaea rosea*, another species of genus Althaea is also known as Khatmi. In Unani medicine, Khatmi has been used for several centuries to treat inflammatory disorders like metritis (*Warmre reham*), enteritis (*Warmre amaa*), mastitis (*Warmre pistan*), arthritis (*Waaja ul mafasil*), etc [3-6]. It also has been used for other ailments like catarrh (*Nazla*), renal calculi (Sang e gurda), pityriasis (*Bahaq*), tremor (*Raasha*), dysuria (*Usr ul baul*), dysentery (*Zaheer*), haemoptysis (*Nafs ud dam*), whooping cough (*Shaheeqa*), etc. [4-7]. Recent studies carried out in this plant have proven its anti-tussive, anti-inflammatory, antiestrogenic, antimicrobial, immunomodulatory, antioxidant, antiurolithiatic, and cytotoxic activity [8]. The aim of this review is to reveal information related to Khatmi available in Unani literatures to promote further studies in this particular plant.

2. **Plant taxonomy**

Kingdom - Plantae plants; Division - Magnoliophyta; Class - Magnoliopsida; Order - Malvales; Family - Malvaceae (mallow family); Genus - *Althaea* L; Species - *Althaea officinalis* Linn; Synonyms – *Malva officinalis*.

3. **Vernacular names**

**Arabic** – Bazrul Khatmi, Kasirul Munfiyat; **Chinese** – Ke Zhi Gen; **Danish**–Altae; **Dutch**–Heemst; **English** – Marsh Mallow, Sweet Weed; **French** - Guimauve; **German** – Eibisch, Ibisch; **Greek** – Altaia, Hibiscos; **Hindi**– Khatmi, Khaira; **Italian** – Bismalva; **Persian–Tukhme Khatmi, Reshai e Khatmi; **Portuguese– Malvaisco; Roumanian –Nalba mare; **Russian** – Altei, Dikaya roja; **Spanish** - Malvavisco; **Swedish**–Altea; **Tamil** – Simaithuthi; **Turkish**– Hatmi, Herba malvae; **Urdu– Khatmi, Khitmi** [1, 2, 9-12]

4. **Habitat**

Khatmi is originated in countries adjoining the Caspian sea, Black sea and in the Eastern Mediterranean. This plant is native to Europe and Western Asia. Khatmi is found in North America along the eastern seaboard. It is also found in Delhi, Khasmir, Punjab, Uttar Pradesh, Rajasthan and also in Pakistan and Iran [1, 9, 10]. In India it is grown not only as ornamental plant but also for the medicinal purpose. It is a perennial plant grown in salt marshes, damp meadows and on the banks of tidal rivers and seas. In sandy soils, the mucilage in the root is reported to be higher than in clayey soils. The mucilage is maximum in autumn and winter, and minimum in spring and summer; increase in moisture reduces the mucilage [2, 11].
5. Cultivation, propagation and collection
Khatmi has always been used to be cultivated in gardens on account of its medicinal qualities. This can be grown from seed sown in spring or by stem cuttings. Marshmallow can thrive in any soil or situation but grows larger in moist than in dry land and could be cultivated in damp localities near ditches or streams. The leaves and flowers are picked when the flowers are blooming during summer. The root are harvested in the autumn but the plant must be two years old. The root should be made free from fibres and cork covering then dried immediately [10, 11, 13, 14].

6. Plant description
Khatmi is a perennial hardy and velvety plant with stems up to 3 to 4 feet high. Roots are 0.2 to 3 cm in diameter, long thick, tapering light brown in colour, strongly longitudinally furrowed, often spirally twisted; fracture, short, texture rough, internally yellowish white; odour, pleasant; taste, sweet and mucilaginous. The leaves are shortly petioled, roundish, ovate-cordate, 2 to 3 inches long, and about 1 1/4 inch broad, internally yellowish white; odour, pleasant; taste, sweet and mucilaginous. The leaves are either axillary or in panicles with five sepals, five and rarely, white flowers bloom in August or September. The fruit is brownish-black, kidney shaped with rugose, hairy at margins to moderate size seeds are approximately 6 mm, usually soaked in water [1, 2, 9, 14-17].

7. Adultration
It can be adultrated with the root of hollylock, Lavatera thuringiaca [1, 14, 16].

8. Parts used and its chemical constituents
8.1 Root
Marsh mallow root contains galacturonic acid, galactose, glucose, xylose rhamnose, polysaccharide althaea mucilage-O, asparaginene, betaine, lecithin and phytosterol. This also contains flavonoid glycosides kaempferol and quercetin; caffeic, chlorogenic, ferulic and syringic phenolic acids; tannins and calcium oxalates [1, 2, 9, 14-17].

8.2 Leaves
Mucilage, including a low molecular weight D-glucuron flavonoids such as kaempferol and quercetin and diosmetin glucosides scopoletin, a coumarin polyphenolic acids including caffeic, syringic, vanillic, p-coumaric, etc. are available in leaves. Presence of hydroxycinnamic acid is also reported. Stigmasterol, sitosterol, a saturated aliphatic ester also reported to be present. Marshmallow also contains calcium, phosphorous, riboflavin, niacin, vitamin C, carotene, zinc, iron, iodine and vitamin B complex [11, 12].

8.3 Seeds
Glucose, sucrose, galactose & mannose; oleic, linolenic, linoleic, palmitic and stearic acid; isobutylalcohol, limonene, phellandrene, γ-toluerealdehyde, citral, terpeneol, β-sitosterol [17].

8.4 Flowers
Flowers contain mucilage and essential oil [11].

9. Propretis of Khatmi in Unani
9.1 Temperament (Mizaj)
Cold1 and Wet1 [1, 3, 4, 18-20] Hot1 and Wet1 [5, 6, 21-23]

9.2 Adverse Effects (Musir Asrat)
Khatmi may cause adverse effects on stomach [6, 19, 20, 21] and lungs [4, 24].

9.3 Corrective (Musleh)
Following drugs have been recommended to be used along with Khatmi to prevent side effects. They are Honey (Shahad) [3, 4, 6, 19, 23, 24], Saungh (Fruits of Malva sylvestris Linn.) [3, 4, 6, 24, 25], Neelofar (Flower of Nymphaea lotus) [4], Samagh-e-Arabi (Gum of Acacia arabica Wild) and Tabasheer (Manna of Bambusa arundinacea) [6].

9.4 Substitute (Badal)
The following drugs are mentioned in the Unani text as substitutes for Khatmi. They are Behman Surkh (Roots of Centaurea behen Linn.) [23], Khubbabi (Fruits of Malva sylvestris Linn.) [3, 4, 6, 24], Neelofar (Flower of Nymphaea lotus) [4], Samagh-e-Arabi (Gum of Acacia arabica Wild) and Tabasheer (Manna of Bambusa arundinacea) [6].

9.5 Formulations (Murakkabat)
Arq Ambar [27], Arq Ma-ul-Laham Makoh Kasni Wala [27], Dawa-ul-Misk Motadil Jawahar Wali [23], Ifriril Muqawwi Dimagh [27], Majun Muqawwi-wa-Mumsik [27], Laboob-e-Sageer [6], Laoq-e-Nazli [6, 22], Laoq-e-Khayarshambher [6], Laoq-e-Sapistan [6, 23], Lauq Sapistan Khayar Shambari [27], Khamira Abresham Sada [27], Khamira Gawzaban Ambari [27], Khamira Gawzaban Ambari Jadwar Ood Saleeb Wala [27], Khamira Gawzaban Sada [27], Khamira Murakkab [27], Khamira Nazli Jawahir wala [27], Matbookh Nazla [27], Sharbat-e-Aijas [22], Sharbat-e-Khashkhash [6], Triyaq-e-Nazla [6], Marham-e-Dakhilyun [6], Marham-e-Dakhilyun [6], Marham-e-Dakhilyun [6], Marham-e-Dakhilyun [6], Marham-e-Dakhilyun [6], Marham-e-Dakhilyun [6], Marham-e-Molda-wa-azalat [21].

9.6 Therapeutic Dose (Miqdar-e-Khurak)
The therapeutic doses mentioned by various authors are as 4 – 7 g [4], 6 – 9 g [3], 5 – 7 g [6], 5 – 7 g [24] and 10 g [23].

9.7 Unani actions and uses
9.7.1 Actions
Root: Lubricant (muziq), resolvent (muhullil), analgesic (musakkin), astringent (habis), Haemostatic (habis-ud-dam), desiccant (mujaaff) [4, 7, 20, 21]

Seed: Expectorant (munaffis-e-hulgham), anti-catarrh (mun-e-nazla), laxative (mulayin), divergent (radi mawad), cleanser (jali), demulcent (mulatif), contraceptive (phlegm (munjiz-e-hulgham), emollient for stomach and organs (murrakkhi meda wa azalat), diuretic (mudir-e-baul), emmenagogue (mudir-e-hatz) [4, 7, 19-21, 25]

Leaves: Anti-inflammatory (muhullil-e-warm) [4, 7, 19-21]
Flowers: Exhilarant and tonic to heart (mufarreh wa muqawwi-e-qalb), Constipative (qabis) [28].

9.7.2 Therapeutic uses
Joint conditions
Irrigation (mutool) with decoction of seeds or leaves of Khatmi and its leaves paste are useful as resolvent in gout (nigras), arthritis (wajaul mafasil) and other types of hot inflammation [3-7, 21].

Respiratory ailments
Joshdana (decoction) of seeds is beneficial in bronchitis (warm-e-shoib), catarrh and corzya (nuzla wa zakam), cough (sual), haemoptysis (nafs-ul-dam) and asthma (dama) [3-7, 19, 21, 23, 25]. Its seeds are mixed in Qairuti (paste applied on chest) and massaged in conditions like pleurisy (zat-ul-riya) and pneumonia (zatul janab) [4, 6, 20, 21, 25].

Gastrointestinal tract
Joshdana or mucilage of seed is beneficial in intestinal obstruction (sudah-e-amaa), diarrhoea (ishal), dysenteray (zaheer), wound (zaham), enteritis (warm-e-amaa), gastritis (warm-e-meda), constipation (Qabs), thirst (utash), dysphagia (usr-ul-bala), intestinal colic (qoolan), peptic ulceration (guroooh-e-meda wa amaa), flatulence (nafakh) and proctitis (warm-e-miqad) [3-7, 21, 23]. Khatmi with suitable Mubarridat (refrigerant dugs) such as Luaab Behi-dana (mucilage of Zizyphus vulgaris) can be given to the patient. Application of lukewarm paste on warm-e-reham (paste applied on chest) and warm-e-amaa (juice of Zizyphus vulgaris) can be used to neutralize the side effects of purgatives (Mushilat) in intestines [29].

Urinary disorders
Joshdana or its mucilage of seed is useful in renal calculi (sang-e-gurda), burning micturition (sozish-e-baul), dysuria (usr-ul-baul) and cystitis (warm-e-masana) [4, 6, 7, 28], Aabzan (Sitz Bath) with decoction of Khatmi with suitable other Musakkin wa Murakkhi (sedative and emollient) drugs should be given to patient for a few period to relieve pain due to renal origin. In obstructive uropathy Huqna (Enema) with Luaab Tukhm-e-Khatmi and other Muzliq Luaab (lubricants mucilage) such as Luaab Katan (Linum usitatissimum), Luaab Hulbah (Trigonella foenum-graeceu), etc. is given to the patient.

Gynecological disorders
Khatmi is beneficial for metritis (warm-e-rahem) and mastitis (warm-e-pistan) [3-7, 21]. Application of lukewarm paste on pubic region made up of equal parts of Amaltas pulp (Cassia fistula L.), Khatmi flowers (Althaea officinalis L.) and Rasaat (Bark extract of Barberis asiatica Roxb.) and Gul-e-Babuna (Matricaria chamomilla L) by adding little water will relieves inflammation of the uterus (warm-e-reham) [30]. Zimad (paste) made with Aarid-e-Jau, Tukhm-e-Khatmi, Sandal Surkh, Maghaz-e-Faloos and Khiyaar Shambar grind them in Aab-e-Makoh, Szab and Aab-e-Kasni used in initial stage of Iltehab-e-unq-ul-rehm (Cervicitis) or it may also be used as pessary (farjaza) [31]. Hot water extract of the plant is taken orally as an abortificant and emmenagogue.

Brain and nerves
If Laqwa (facial paralysis) is due to yaboosat (dryness), massage the cervical vertebrae with Roghan-e-Khatmi [32]. In Melancholia predominance of sauda from the whole body is eliminated by enema with Chukhandar (beet root), Khatmi (Althaea officinalis), wheat husk, laxative with Roghan Banafsha (oil of Viola odorata) [33]. When there is dominance of akhlat-e-harragh (hot humour) in Shaqiqa (Migraine) do Natool (irrigation) with Khatmi and other adiva-e-haaraidah like, Neealofer (Nymphaea cucifera), Banafsha (Violo odorata), Barg-e-Kahur (Lactuca sativa), Gul-e-Surkh (Rosa Damascen) boiled in water [34]. Khatmi is good for tremors (Raasha) and sciatica (tq-un-Nisa) [4-5, 7].

Antidote
Khatmi seed with Roghan-e-Zaitoon (olive oil) and Sirka (vinegar) is used to treat animal poisoning [6]

Miscellaneous
Powder of Beekh Khatmi (Althaea officinalis), Beekh Jaosheer (Ferula galbaniflua) in equal part in the dose of 4.5 g daily is used in obesity [35]. Khatmi is also beneficial for toothache (waja-ul-asnaan) and pityriasis (bahag) [3-7].

10. Ethnobotanical action and uses
Althaea officinalis is beneficial for skin inflammation, ulcers, boils, abscesses, skin cuts and burns [10, 11, 36]. Infusion of the plant leaf, root and flower are taken orally as an expectorant, emollient for bronchial catarrh and as a gastric protective and externally as an anti-septic. The root, boiled with black pepper, is taken orally for asthma and hot water extract as an expectorant and externally as a demulcent. Decoction of the dried root, flower and leaf are taken orally for constipation, cough, asthma and sore throat. Hot water extracts of the dried flower, root and the dried leaf are used externally as an emollient. The dried leaf is used as a cicatrizant and infusion is taken orally to treat cystitis [37]. Althaea officinalis has also been used as antacid, antispasmodic, antitussive, aphrodiasiac, anti-inflammatory, demulcent, diuretic, emollient, expectorant, immune tonic, laxative, nutritive, rejuvenative and soothing. Marsh mallow’s demulcent qualities bring relief from bronchial asthma, sore throat, bronchial catarrh, pleurisy, dry cough, colitis, diverticulitis, irritable bowel syndrome, irritation of mucous membranes, as a gargle for mouth and throat ulcers, and gastric ulcers [8-11].

11. Conclusion
Khatmi is a versatile plant used widely in Unani medicine for the treatment of various diseases. It is having properties like emollient, resolvent, analgesic, astringent, haemostatic, desiccant, expectorant, luxative, cleansing, demulcent, cocconctive, diuretic, emmenagogue, anti-inflammatory, exhilarant, etc. though, very few studies has been carried out to validate its effects scientifically. Hence, this review will help to conduct scientific studies in unexploited potentiel of this plant to get the maximum benefits.

12. Conflict of interests
There is no conflict of interests

13. References
3. Hakeem MA. Bustan-ul Mufradat. Idara Taraqqi Urdu
12. Chopra RN, Nayar SL, Chopra IC. Glossary of Indian medicinal plants. Council of scientific and industrial research, New Delhi, 64.