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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 plant 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, 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 distribute 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 (*Warne reham*), enteritis (*Warne amaa*), mastitis (*Warne pistan*), arthritis (*Waja 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 (*Ushr 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; *Portugese*– 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, Kashmir, 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].

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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, entire or three to five lobed, irregularly toothed at the margin, and thick. They are soft and velvety on both sides, due to a dense covering of stellate hairs. The pale pink, reddish pink, and rarely, white flowers bloom in August or September. The flowers are either axillary or in panicles with five sepals, five heart shaped petals and numerous stamens united into a tube with kidney-shaped and one-celled anthers. Flat, round 5-8 mm fruit breaks up into the mericarps, which are downy on the outside and have fine, branched and radiating ribs. Small to moderate size seeds are approximately 6 mm, usually brownish-black, kidney shaped with rugose, hairy at margins and somewhat compressed. It becomes mucilaginous when soaked in water [1, 2, 9, 14-17].

7. Adulteration

It can be adulterated with the root of hollylock, *Althaea rosea*. The root of *Althaea officinalis* are also found to be adulterated with roots of *Lavatera thuringiaca* Linn. The unpeeled roots of *Althaea officinalis* are sometimes used to adulterate belladonna [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, asparagine, 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, 11, 17].

8.2 Leaves

Mucilage, including a low molecular weight D-glucon flavanoids such as kaempferol and quercetin and diosmetin glucosides scopoletin, a coumarin polyphenolic acids including caffeic, syringic, vanilic, 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, riboflavine, 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 -toluenealdehyde, citral, terpeneol, β -sitosterol [17].

8.4 Flowers

Flowers contain mucilage and essential oil [11].

9. Propertis 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 (*Muzir Asrat*)

Khatmi may cause adverse effects on stomach [6, 19, 20, 23] 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], Saunf (*Foeniculum vulgare*) [3, 4, 6, 19, 23, 24], Zarishk (Berries of *Berberis vulgaris*) [3, 4]

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.) [25], Khubbazi (Fruits of *Malva sylvestris* Linn.) [3, 4, 6, 24], Neelofar (Flower of *Nymphaea lotus*) [4], Samagh-e-Arabi (Gum of *Acacia arabica* Wild) [4] and Tabasheer (Manna of *Bambusa arundinaceae*) [4].

9.5 Formulations (*Murakkabat*)

Arq Ambar [27], Arq Ma-ul-Laham Makoh Kasni Wala [27], Dayaqqooza [6, 22], Habb-e-Shahiqa [6], Qurs-e-Zat-ul-Janb [26], Dawa-ul-Misk Motadil Jawahar Wali [27], Itrifal Muqawwi Dimagh [27], Majun Muqawwi-wa-Mumsik [27], Laboob-e-Sageer [6], Laooq-e-Nazli [6, 22], Laooq-e-Khayarshamber [6], Laooq-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 [23], Sharbat-e-Aijas [22], Sharbat-e-Khashkhash [6], Triyaq-e-Nazla [6], Marham-e-Dakhilyun [6], Qairooti-e-Arad-e-Baqila [26], Qairooti-e-Babuna Wali [26], Qairooti-e-Karnab [26], Qairooti-e-Mamool [26], Zimad-e-Waram Kulya Qawi [26]

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 (*muzliq*), resolvent (*muhallil*), analgesic (*musakkin*), astringent (*habis*), Haemostatic (*habis-ud-dam*), desiccant (*mujaffif*) [4-7, 20, 21]

Seed: Expectorant (*munaffis-e-bulgham*), anti-catarrh (*man-e-nazla*), laxative (*mulayin*), divergent (*radi mawad*), cleanser (*jali*), demulcent (*mulattif*), concoctive of phlegm (*munjiz-e-bulgham*), emollient for stomach and organs (*murrakhi meda wa azalat*), diuretic (*mudir-e-baul*), emmenagogue (*mudir-e-haiz*) [4-7, 19-21, 25]

Leaves: Anti-inflammatory (*muhallil-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 (*nutool*) with decoction of seeds or leaves of Khatmi and its leaves paste are useful as resolvent in gout (*niqras*), arthritis (*wajaul mafasil*) and other types of hot inflammation^[3-7, 21].

Respiratory ailments

Joshanda (decoction) of seeds is beneficial in bronchitis (*warm-e-shoib*), catarrh and coryza (*nazla wa zukam*), cough (*sual*), haemoptysis (*nafs-ud-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-ur-riya*) and pneumonia (*zatul janab*).^[4, 6, 20, 21, 25]

Gastrointestinal tract

Joshanda or mucilage of seed is beneficial in intestinal obstruction (*sudah-e-amaa*), diarrhoea (*ishal*), dysentery (*zaher*), wound (*zaham*), enteritis (*warm-e-amaa*), gastritis (*warm-e-meda*), constipation (*Qabs*), thirst (*utash*), dysphagia (*usr-ul-bala*), intestinal colic (*qoolanj*), peptic ulceration (*qurooh-e-meda wa amaa*), flatulence (*nafakh*) and proctitis (*warm-e-miqad*)^[3-7, 21, 23]. Khatmi with suitable Mubarridat (refrigerant dugs) such as Luabe Behi-dana (mucilage of *Cydonia oblonga*), Luabe Ispagol (mucilage of *Plantago ovata*), Sheera Unnab (juice of *Zizyphus vulgaris*), Sheere Badiyan (juice of *Foenicu-lum vulgare*) are used to neutralize the side effects of purgatives (*Mushilat*) in intestines^[29].

Urinary disorders

Joshanda 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, 25], *Aabzan* (Sitz Bath) with decoction of Khatmi with suitable other *Musakkin wa Murakkhki* (sedative and emollient) drugs should be given to patient for a few period to relive 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-graecu*), etc. is given to the patient.

Gynecological disorders

Khatmi is beneficial for metritis (*warm-e-raham*) 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 Rasaut (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 Khyaar Shambar grind them in Aab-e-Makoh, Sabz and Aab-e-Kasni used in initial stage of *Iltehab-e-unq-ur-rehm* (Cervicitis) or it may also be used as pessary (*farjaza*)^[31]. Hot water extract of the plant is taken orally as an abortifacient 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-harrah* (hot humour) in *Shaqiq*a (Migraine) do *Nutool* (irrigation) with Khatmi and other advia-e-baaridah like, Neelofer (*Nymphaea nucifera*), Banafsha (*Viola odorata*), Barg -e-Kahu (*Lactuca sativa*), Gul-e-Surkh (*Rosa Damascus*) boiled in water^[34]. Khatmi is good for tremors (*Raasha*) and sciatica (*irq-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 (*bahaq*)^[5, 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 antiseptic. 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, aphrodisiac, 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, laxative, cleansing, demulcent, concoctive, diuretic, emmenagogue, anti-inflammatory, exhilarant, etc. though, very few studies has been carried out to validate its effects scientificlly. Hence, this review will help to conduct scientific studies in unexploited potencial of this plant to get the maximum benefits.

12. Conflict of interests

There is no conflict of interests

13. References

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