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A Comprehensive Review of Berg-e-Sana Makhi (*Cassia angustifolia*) in Unani System of Medicine

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ABSTRACT

Cassia angustifolia, commonly known as Senna or Sana Makhi in the Unani system of medicine, is a medicinal herb with a rich history of use dating back to the 9th century. Initially utilized by Arab physicians for its potent gastrointestinal effects, Senna has since spread to various regions, including India, where it is known as Senna-e-Hindi. This herb, native to Sudan and Arabia, is now cultivated primarily in South India. Senna's therapeutic uses are vast, including its applications as a blood purifier, laxative, and treatment for skin conditions, asthma, and joint disorders. Senna consist of natural powerful laxative known as anthraquinone, which is approved by World Health Organization(WHO) and Food Drug Administrative(FDA). The leaves of the Senna plant, rich in essential oils and tannins, are also used to treat acne, wounds, burns, and other skin ailments. Moreover, Senna exhibits various biological activities, including antimicrobial, hepatoprotective, antioxidant, and antidiabetic effects. Despite its broad range of health benefits, prolonged use or high doses can lead to adverse effects such as abdominal discomfort, nausea, and liver toxicity. These concerns highlight the importance of moderation and appropriate dosage in utilizing Senna. Overall, Senna remains a valuable herb in traditional and modern medicine, with its diverse medicinal properties such as anti-infectious, anti-inflammatory, antioxidant, antidiabetic, anticancer, antihelmintic, antiplasmodial, antimutagenic, antitumor, and anticryptococous properties.

KEYWORDS: Cassia angustifolia,Senna, anthraquinones, Sennosides, Unani medicine

INTRODUCTION

Senna, famously known as *Sana Makhi* in the Unani System of Medicine, has been a renowned herbal remedy since the 9th century, with its introduction into medical practice attributed to Arab physicians. Initially, Arabian physicians utilized Senna for its powerful gastrointestinal action by steeping the leaves to make tea.[1]

Senna was first cultivated in Arabia, where it is referred to as Arabian Senna; later, it was also found in India, where it is known as *Senna-e-Hindi*. The plant is native to Sudan and Arabia and is now cultivated in South India, particularly in the Tirunelveli, Ramanathapuram, Madurai, Salem, and Tiruchirapalli districts of Tamil Nadu, as well as on a small scale in Andhra Pradesh and certain parts of Karnataka.

Senna is primarily used for therapeutic purposes as a blood purifier, to treat skin conditions, and to relieve constipation. The leaves, pods, and fruits of the Senna plant possess significant pharmacological effects. [2,3,4]

The United States Food and Drug Administration (FDA) has approved Senna Makki for over-the-counter use, and it is utilized for various digestive issues, including chronic constipation, haemorrhoids, and irritable bowel syndrome, as well as for weight loss and other health conditions like depression, asthma, eczema, and various skin disorders.[5] Senna leaves contain essential oils and tannins that aid in reducing skin inflammation. Their strong antibacterial properties allow them to be used in compresses for treating wounds and burns. Additionally, the acetone and ethanol compounds found in Senna can combat the microorganisms responsible for acne. Senna also helps to decrease sebum production while promoting cell regeneration and collagen synthesis.[1]

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BOTANICAL DESCRIPTION

Cassia angustifolia is a Unani herb popularly known as Senna, it is also known as Sana Makhi in Arabic.[6] Senna is annual leguminous herb cultivated extensively southern parts of country.[1] Senna is small herb grows to a height of about 2-3 feet.[7] The senna plant will tolerate moist, coarse gravelly soil and on alluvial loams in which it grows naturally with adequate drainage and pH varying from 7.0 to 8.2.[8,9] Cassia angustifolia requires warm winters and mild tropical climate which are free from frost to grow.[8]

Macroscopically, *Senna* plant is semi shrubby or shrubby habit of the family Leguminosae, 60-75cm high, found throughout the year, with height of 1.5-5m/2-3 feet, trunk diameter of 20cm and brown lenticellate bark.

Fig No.1: Berg-e-sana (Senna Flower, Leaves, & pod)[10]

The leaves are 1-2inch long, dull green, glabrous in colour, alternate, stipulate, paripinnate arrangement with 16-24 pairs of leaflets. The leaves of Senna have resemblance to that of leaves of *Henna*.

In Unani system of medicine usually leaves of herb Senna is used in the treatment of Skin diseases, Constipation as laxative, Asthma and Joint disorders.[11]

Flowers are bright yellow and irregular and large with axillary raceme inflorescence, 2-8 flowered.

Fruits are green or light brown and have legume which is 7-11cm long, 1.5cm wide, rectangular, long style base, thin and flat, undulated crimpled. It contains 12-20 dark brown seeds per fruit. Thick bluish colour of leaves are taken off by hands, dried in shades till the colour turn into yellowish-green, and then graded and packed into large bales.

Microscopically, the transverse section (T.S.) of the leaf displayed an isobilateral structure featuring paracytic stomata, non-lignified unicellular trichomes with warty walls, and a fibrovascular bundle surrounded by numerous calcium oxalate prisms. Additionally, it contained a 4-5 tier arrangement of palisade tissue and sclerenchyma.

TAXONOMICAL CLASSIFICATION OF SENNA [1,4]

Botanical Name	Cassia angustifolia
Kingdom	Plantae
Sub Kingdom	Tracheobionata
Division	Magnoliophyta
Class	Mabnoliopsida
Subclass	Rosidae
Order	Fabales
Family	Caesalpinaceae
Genus	Cassia
Species	Angustifolia

VERNACULAR NAMES[1,4,7,12,13]

Common Names: Senna, Indian Senna, Alexandrian Senna

English: Indian Senna, Tinnevelly Senna

Arabic: Sana Makki

Persian: Sana

Urdu: Sena, Barg-e-Sana

Hindi: Sanaya, Hindisana

Kannada: Nelavarika, Nilavaka, Chinnukki, Adapatiyan

HABIT AND HABITAT:

Indian Senna cultivated/Habitat mainly in Asian country like South-India and Pakistan.[1] Senna herb can be found in wide-ranging habitats, in distinct latitudes (1000-1400 meters) and continents such as America, Africa, and Oceania and to lesser extent in Asia, Pacificisland. It is also seen in all the tropical regions and grow well on wasteland, damp/moist uncultivated field areas, river banks, or the area with low-lying coastal region[9]and it is indigenous to Somaliland, Sudan, Arabia, Punjab and cultivated in Indo-Pakistan.[3,14]

COLLECTION:[3,7,8,]

The fully grown, thick bluish color leaves of the herb Senna are stripped off by hands, dried in shade for 4-10days by spreading out on a hard floor in a thin layer, without overlapping and in a frequent interval stirring the layer to ensure even drying. The leaves get dried in 4-10days, as indicated by a yellowish green color, then the pods and large stalks are separated by means of sieves and then the leaves are graded partly by means of sieves and partly by hand-picking into a whole leaves, whole leaves and half-leaves mixed and then packed into large bales. If stored properly and protected from sunlight, then Senna leaves retain their biological activity even after five years.

TEMPERAMENT:[6,11,15,16]

Haar-o-Khushk 1^0

Haar 2^0 Khusk 1^0

***Juz-e-Mustamil* (Part Used):**[1,3,4,6,16]

Leaves (Berg-e-Sana)

Fruits, Pods, and Stem

***Afa'al* (functions):**[2,6,15,16,17,18]

Jali (detergent)

Musaffi-e-Dam (Blood purifier)

Ishaal-e-Safra-o-Balgham (purgative for phlegm, yellow bile)

Munaqqi-e-Dimagh (brain scavenger)

Mufatteh-e-Sudad (deobstruent)

Daf-e-Qai (emetic)

Mukhrij-e-Deedan-e-Ama (anthelmintic)

Mushil-e-Akhlath-e-Salasa (concoctive)

Mulayyin (laxative)

Muqawwī-i-Qalb (cardiac tonic)

***Nafa-e-Khas* (Main Function):**[6,19]

Mushil-e-Akhlaat-e-Salasa

***Istemaal* (Uses):**[4,7,8,14,15,18,19]

Busoor (Acne)

Kalf (Melasma)

Bahaq (pityriasis)

Jarb (scabies)

Hikka (pruritus)

Zeeq un Nafs (bronchial asthma)

Qulanj (colitis)

Niqras (gout)

Waj-ul-Mufasil(arthralgia)

Waj-ul-Warik(coccydynia)

Shaqiqa (migraine)

Zaat-ul-Janab(pleurisy), Qabz (constipation).

Senna can fight with the microorganism that causes Acne as the leaves of Senna is a blood purifier.

The paste made from powdered leaves mixed with vinegar is applied to skin ailments to get rid of pimples.

It is said that the leaves of Sennahas strong Laxative effect and most commonly used in the treatment of chronic constipation by increasing the peristaltic movements of the colon.

In various diseases Senna leaves are used for the treatment of constipation, Loss of appetite, hepatomegaly, splenomegaly, malaria, jaundice and anemia.

A mixture of powdered seeds of Cassia angutifolia and Cassia fistula mixed with curd is useful to treat ring worms.

It is also used in irritable bowel syndrome, hemorrhoids, and weight loss.

It is helpful in premature greying of hair when Senna leaves and henna leaves grinded together and applied head mask.

***Miqdar Khurak* (Dosage):**

5-10gm

500mg-2gm

3-5 masha

***Muzir* (Adverse effects):**

Adverse effects of Berg-e-Senna (Cassia angustifolia leaves) are Nausea, restlessness, pain abdomen.

***Musleh* (Correctives):** [2,4,6,17]

Roghan-e-Badam

Gul-e-Surkh

Banafsha

HalelaZard

***Badal* (Substitute):**[2,4,6,17]

Turbud (Ipomoea turpethum)

Banafsha (viola odorata)

Halela Zard (Terminaliachebula)

***Murakkabat* (Compound Formulation):**[2,4,6,17]

Habb-e-Shabyar

Majoon-e-Musaffi-e-Khoon

Majoon-e-Ushba

Majoon-e-Musaffi-e-Azam

Sufoof-e-Chobchini

Sufoof-e-Mulayyin

Sufoof-e-Mushil

Sufoof-e-Lajward

Sufoof-e-Chutki

Sufoof-e-Sana

Itrifil-e-Ghududi

Itrifil-e-Shahatra

Itrifil-e-Ustukhuddus

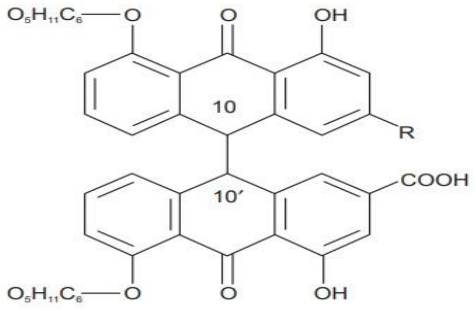
Qurs-e-Mulayyin

Laooq-e-KhayarShambar

CHEMICAL COMPOSITIONS

Senna leaves contains anthraquinone derivates, and two crystalline glucosides sennosides A & B reported in it, which are believed to be the chief laxative principles of Senna leaves. The other anthraquinone glucosides such as sennosides C, D, G, III and A1 has

also been isolated from Cassia angustifolia of which sennosides A&B are highly active.Small amount of other anthraquinone glucosides are also found such as Flavonoids, Steroids, Rhein, aloe-emodin, Kampferin, essential oil, iso-rhamnetin, Ca-oxalate 12%, chysophanol, 6-hydroxymusizin and tinnevellin.[1-4,7,8,11]



Glycoside	10 - 10′	R
Sennoside A	trans	COOH
Sennoside B	meso	COOH
Sennoside C	trans	CH_2OH
Sennoside D	meso	CH_2OH

Fig No. 2: Constituent of Senna[3]

SCIENTIFIC REPORTS:

Cassia angustifolia, or Senna, is widely recognized for its medicinal properties. Research highlights its diverse biological activities, including antimicrobial, hepatoprotective, antidiabetic, antioxidant, amoebicidal, and anthelmintic effects, as well as potential toxicity concerns.

Antimicrobial Activity: a study conducted by Morid Ahmadi et al, confirmed with the results that the extract of leaves of Cassia angustifolia has antimicrobial properties against pathogen.[20]

Hepatoprotective Activity: The methanolic extract of Cassia angustifolia leaves exhibits notable hepatoprotective effects against liver toxicity induced by carbon tetrachloride in rats. Results indicated a significant reduction in liver biomarkers, including total bilirubin and total protein levels, as well as SGOT and SGPT.[21]

Antidiabetic Activity: The study conducted by Jani DK et al, resulted the aqueous extract of Cassia angustifolia has shown considerable antidiabetic effects in rats with diabetes mellitus induced by a high-fat diet and low-dose streptozotocin.[22]

Antioxidant Activity: Studies on the antioxidant activity of both organic and aqueous extracts of Cassia angustifolia, showed that all extracts exhibited dose-dependent antioxidant effects, with the ethanol extract showing the most significant activity.[23]

Amoebicidal Activity: The research study conducted by Boonhok R et al., on Cassia angustifolia extracts have demonstrated amoebicidal activity against “Acanthamoeba triangularis” trophozoites.[24]

SAFETY AND SIDE EFFECTS

The Senna leaves as laxative is extremely useful drug and prolong use of Senna causes spasm. Senna is generally safe, well tolerated, can have adverse effect when used in high doses and for a long period use causes liver damage due to presence of anthraquinones glycosides.[9,11]

CONCLUSION:

The leaves of Sana Makki have been used since times unknown to treat wide range of diseases. Leaves of Sana have been used in many external and internal diseases. It has been subjected to phytochemical, experimental and clinical investigations and studies have been established its antibacterial, anti-inflammatory, anti-infectious, antimicrobial, hepatoprotective, antidiabetic, anticancerous, antihelminthic, antiplasmodial and antitumour. Many scientific studies have proved the medicinal properties of Sana.

However, further detailed clinical researches have to be conducted to explore the full therapeutic potentials of this drug in order to standardize the drug.

REFERENCES:

1) Khan MSA. A review on Senna: an excellent prophetic herbal medicine. World J Pharm Med Res. 2020; 6(7): 113-118.
2) Khare CP. *Indian Medicinal Plants*. New Delhi: Springer; 2007.127.
3) Evans WC. Trease and Evans' Pharmacognosy. 7th ed. Edinburgh: Saunders Elsevier; 2009.88-89,97,108,237-241.
4) Ramchander, Jalwal P, Middha A. Recent advances on senna as a laxative: A comprehensive review. J PharmacognPhytochem. 2017; 6(2): 349-353.
5) Naureen, Irum, Saleem A, Shahid A, Tasneem Q, Hassan A, Bibi A. Harmful and beneficial effect of Senna Makki in COVID-19. Haya: Saudi J Life Sci. 2022; 7: 13-18.
6) Nabi MG.*Miqzanulmufradat wa murakkabat*. New Delhi: Ministry of Health and Family Welfare, Government of India; 2007:149.
7) CCRUM. *The Unani Pharmacopoeia of India, Part 1, Volume 1*. New Delhi: Ministry of Health and Family Welfare; 2016.76-77.
8) Tripathi, Yogesh. (1999). Cassia Angustifolia, A Versatile Medicinal Crop. Forests Trees and Livelihoods. 10. 121-129.
9) Alshehri MM, Quispe C, Herrera-Bravo J, et al. A review of recent studies on the antioxidant and anti-infectious properties of Senna plants. Oxid Med Cell Longev. 2022
10) Anonymous: Senna Flower, Leaves and Podshttps://images.app.goo.gl/9E5Gdi971ppazrXh7https://images.app.goo.gl/LPiSBdFKB439jady5
11) hmad J, Viquar P, Kalam M, et al. Sanāmakkī (Cassia angustifolia Vahl.): Pharmacognostic, pharmacological and therapeutic profile–a review. 2023;10:556-561.
12) Nadkarni KM. Indian Metrica Medica, Vol 1. Mumbai: Bombay Popular Prakashan; 2000.284.
13) *Qarabadin Sarkari*. CCRUM.Ministry of Health and Family Welfare, Government of India; 2004.82.
14) Said HM. *Hamdard Pharmacopoeia of Eastern Medicine*. New Delhi: Sri SatguruPublications;. 406-407.
15) Ibn Hubal. Kitāb al-Mukhtārātfī'l Ṭibb-Vol-2. CCRUM, Ministry of Health and Family Welfare' G, India, editors. New Delhi, 2005.218.
16) Abdul HM. Bustan ulMufradath. Lucknow: The Unani Press; 1999.203.
17) Ghani N, KhazainulAdvia. New Delhi: Idara Kitab- Ul-Shifa; YNM;2011. 832-833.
18) Khan A. *Muhit-i Azam*. New Delhi: CCRUM; 2013.153-154.
19) Hakeem MH. Mufradāt-e-Azeezi. New Delhi: CCRUM, Ministry of Health and Family Welfare; 2009.115.
20) Ahmadi D, MojtabaviS, et al., Cassia angustifolia Vahl. Leaves: Determination of total phenolic and sennoside contents of different fractions in comparison with their α-glucosidase and tyrosinase inhibitory effects. *Iran J Pharm Res*. 2024;23(1).
21) Ilvarasan R, Mohideen S, Vijayalakshmi N, Manonmani G. Hepatoprotective effect of Cassia angustifolia Vahl. Indian Journal of Pharmaceutical Sciences 2001; 63 (6): 504-507.
22) Jani DK, Goswami S. Antidiabetic activity of Cassia angustifolia Vahl. and Raphanus sativus Linn. leaf extracts. Journal of Traditional and Complementary Medicine 2020;10(2):124-131.
23) Ahmed SI, Hayat MQ, Tahir M et al. Pharmacologically active flavonoids from the anticancer, antioxidant and antimicrobial extracts of Cassia angustifolia Vahl. BMC Complementary and Alternative Medicine 2016; 16 (1): 1-9
24) Boonhok R, Sangkanu S, Norouzi R. Amoebicidal activity of Cassia angustifolia extract and its effect on Acanthamoeba triangularis autophagy-related gene expression at the transcriptional level. Parasitology 2021;148 (9):1074-1082.

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