Available online on 15.03.2024 at ijmspr.com

International Journal of Medical Sciences and Pharma Research

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Ghafis (*Agrimonia eupatoria*): An In-depth Review of its Historical Context, Therapeutic properties, Ethnopharmacological applications, and Scientific research

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Article Info:

Article History:

Received 24 December 2023
Reviewed 09 February 2024
Accepted 27 February 2024
Published 15 March 2024

Cite this article as:

Mehraj N, Alam M, *Ghafis* (*Agrimonia eupatoria*): An In-depth Review of its Historical Context, Therapeutic properties, Ethnopharmacological applications, and Scientific research, International Journal of Medical Sciences & Pharma Research, 2024; 10(1):35-38

DOI: http://dx.doi.org/10.22270/ijmspr.v10i1.92

Abstract

Agrimonia eupatoria, commonly known as *Ghafis*, holds a significant role in traditional herbal medicine across different regions. This perennial plant, part of the Rosaceae family, has been used in Unani medicine for its various healing properties since ancient times. *Ghafis* is known for its abilities as a demulcent, stomachic, blood purifier, diuretic, emmenagogue, anti-inflammatory, and astringent agent. Traditionally, it has been employed to treat liver and spleen inflammation, fevers, ulcers, jaundice, wounds, and gastrointestinal disorders. Ethnopharmacological practices have also recognized its antioxidant, antimicrobial, and diuretic effects. Recent scientific studies have further explored its potential in managing diabetes, neuropathic pain, oxidative stress-related disorders, and protecting the liver. This review aims to provide an overview of *Ghafis*, covering its description, habitat, traditional uses, and recent scientific studies. *Ghafis* emerges as a valuable herbal remedy with ongoing relevance in herbal medicine and Unani pharmacotherapy.

Keywords: *Ghafis, Agrimonia eupatoria, Agrimony, Unani Medicine*

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Introduction:

Agrimonia eupatoria is a plant with a long history of use as a medicinal herb. It has been used to treat a variety of conditions, including asthma, bronchitis, dermatitis, and gastrointestinal disorders. In Europe, it is commonly used as a mild astringent for the treatment of throat and gastrointestinal inflammation. Bulgarian phytomedicine uses it to treat respiratory and gastrointestinal disorders, and Anglo-Saxon medical texts from the 10th century mention its use to treat bacterial infections and wounds. Agrimony has been shown to reduce hyperglycemia and improve lipid profiles in diabetic mice and to increase total antioxidant capacity in healthy volunteers.[1] *Agrimonia eupatoria*, also known as common agrimony, is a type of perennial plant. It grows to be 30-60 cm tall. It belongs to the Rosaceae family and is native to Europe, Asia Minor, and North Africa. [2]

Scientific Classification: [2]

Table 1

Super kingdom:	Eukaryota
Kingdom:	Viridiplantae
Phylum:	Streptophyta
Subphylum:	Streptophytina
Division:	Magnoliophyta
Class:	Magnoliopsida
Order:	Rosales
Family:	Rosaceae
Subfamily:	Rosoideae
Tribe:	Sanguisorbeae
Subtribe:	Agrimoniinae
Genus:	*Agrimonia*
Species:	*Agrimonia eupatoria*
Botanical name	*Agrimonia eupatoria* [3, 4]

Mutradifat (Vernacular names): [3, 4, 5, 6, 7, 8]

Table 2

Urdu:	*Ghafis*.
Arabic:	Ghafith, Hashishatul-*Ghafis*, Khafil, Shajaratulbaraghees, Shaukat-el-muntineh, Terfaq
English:	Agrimony, Church steeples, Cocklebur, Liverwort, Sticklewort
Farsi:	Gul kalli, Khila
Greek:	Eupatorion, *Ghafis*.

Botanical Description:

Agrimonia eupatoria is a tall, perennial herb that has a few branches and a hairy, cylindrical stem. Its leaves are leathery, pinnate, have serrated edges, and are covered in soft hairs. The plant produces hermaphrodite flowers with five petals that are arranged in thin, terminal spikes. It blooms from June to September and produces fruit that hangs downward and is surrounded by rows of soft, curved bristles. Its height ranges from 15cm to 150cm. [2, 9]

Ghafis (Agrimonia eupatoria)

***Mahiyat* (Morphological characters described in *Unani* Literature):** It is a thorny plant with long, broad, and hairy leaves resembling those of hemp, with a hollow and rough branch growing out of them; its flower is blue, resembling *Neelofar (Nymphea lotus)*, and all its ingredients are more bitter than *Sibr (Aloe)*. Its flower and its extract are more commonly used.[8]

Habitat: Agrimony is an herb native to Europe that grows in wet environments such as marshes, wastelands, and meadows. It is a common species in dry grasslands, particularly in the SE Czech Republic and Slovak Republic.[2] It is found in the Himalayan region from Kashmir to West Bengal at altitudes ranging from 900 to 3,000 meters. It can also be found in Arunachal Pradesh, Nagaland, Meghalaya, Uttaranchal and Sikkim.[4, 10]

Cultivation and Collection: *A. eupatoria* grows in a variety of habitats including meadows, pastures, lowlands, and mountains up to an altitude of 1500 meters. It can thrive in many types of soil, particularly clay, and can tolerate moist or moderately dry conditions. This plant can be found growing along slopes, roadsides, and in rocky areas, as well as in dry grasslands and arid forests.[9]

***Mizaj* (Temperament):** According to *Sheikh* the temperament of this drug is hot in 2nd degree and dry in 2nd degree.[153,155] Some scholars have described the temperament of *Ghafis* as hot in 1st degree and dry in 2nd degree.[6, 8]

***Miza'j of Usara-e-Ghaafis*:** Cold and Dry [5] Hot and Dry [8]

Af'al (Pharmocological Actions):

The pharmacological actions of *Ghafis* are as follows: [3, 5, 6, 7, 8]

Table 3

Mulattif	(Demulcent)
Muqawwi-e-Meda	(Stomachic)
Musaffi-e-Khoon	(Blood Purifier)
Mufatteh	(Deobstruent)
Mudirr-e-Baul	(Diuretic)
Mudirr-e-Haiz	(Emmenagogue)
Mudirre-Laban	(Galactogogue)
Moarriq	(Diaphoretic)
Jali	(Detergent)
Mohallil-e-Waram	(Anti-inflammatory)
Dafa-e-Humma	(Antipyretic)
Qabiz	(Astringent)
Muqawwi Kabid	(Liver Tonic)
Mushil Akhlat-e- Sokhta	(Purgative of dried humours)

Iste'malat (Therapeutic Uses):

It is therapeutically used for the treatment of following diseases: [3, 4, 5, 6, 7, 8]

Table 4

Awram-e-jigar wa Tihal	(Inflammation of Liver and Spleen)
Humma Ha'ad	(Acute fever)
Humma Kuhna	(Chronic fever)
Humma ruba	(Quartan fever)
Qurooh khabisa	(Non-healing Ulcer)
Yarqan	(Jaundice)
Istisqa	(Ascites)
Saufa	(Alopecia)
Qurooh	(Wounds)
*Sudade-e-Jigar wa Tih*al	(Hepatic and splenic obstruction)
Ishal	(Simple diarrhoea)
Usre Baul	(Dysuria)
Jarb	(Scabies)
Daussadaf	(Psoriasis)
IltihAb-i-Jild Huzazi	Seborrheic dermatitis

Ethnopharmacological Uses:

Agrimonia eupatoria has traditionally been used in folk medicine for its various medicinal properties. It has been used as an infusion, decoction, or tincture made from the aerial parts of the plant (leaves and flowers) for its antioxidant, anti-inflammatory, astringent, hypotensive, and diuretic effects. It has been primarily used to treat gastrointestinal tract diseases and has also been applied topically to the skin as a mild astringent and anti- inflammatory agent. *A. eupatoria* is also used in herbal mixtures to treat increased bile production, bile duct stones, gallbladder and liver pain, and has been reported to have a positive effect on relieving urinary tract disorders. In addition, it has been used for it diuretic and antidiabetic properties in pulmonary and coronary diseases.[9]

***Ajza-i-Mustamila* (Parts Used):** Flower and the extract of flower. [3, 8]

***Miqdar-e-Khurak* (Therapeutic Dose):** The therapeutic dose of *Ghafis* is 4.5g to 10g.[6]

The therapeutic dose of *Usara-e-Ghafis* is 2.2 gram to 4.5 *gram*.[6]

Tarkib-i-Iste'mal (Method of Use):

- The decoction of *Ghafis* (*Agrimonia eupatoria*) (16 grams) and *Mawez Munaqa (Vitis vinifera)* (228 grams) in 420 millilitres of water, if taken orally for 7 days on an empty stomach, can be effective in the treatment of *Istisqa-e-lahm*i (ascites). [6]
- *Ghafis*, when combined with alcohol, can aid in the healing of intestinal ulcers. [6]
- The powder of *Ghafis* is mixed with pig fat and applied to non-healing ulcers to aid in the healing process. [8]
- It can be used as a pessary for *Idrar-e-haiz* (menstrual bleeding). [6]
- An infusion of leaves can be used to treat jaundice.[10]

***Muzarrat* (Toxicities /Adverse effects):** *Tihal* (Spleen) [6]

***Muslehat* (Correctives):** *Anisoon (Pimpinella anisum)* [6]

***Badal* (Therapeutic Interchange):** *Asaroon (Asarum europium)* (in equal quantity)

Afsanteen (Artemisia absinthium) (in half quantity). [6]

***Murakkabat* (Compound Formulations):** [3, 11]

- *Habb-e-Ghaafis*
- *Majoon Dabidulward*
- *Qurse Ghaafis*

Chemical constituents:

The plant contains essential oils, flavones, and various other compounds in its rhizome and root sprout, such as vanillic acid, 1-taxifolin, ellagic acid, and agrimophol. The leaves of the plant contain hyperoside, luteolin, quercetin, and apigenin 7 glucoside.[10]

Scientific studies:

- *Agrimonia eupatoria* is a plant that has been shown to have various medicinal properties. Administration of a decoction or dried leaves in the diet of normal mice did not affect food and water intake, body weight, plasma glucose and insulin levels. However, it was found to reduce hyperglycemia and its associated symptoms, such as polydipsia and body weight loss, in diabetic mice.[12]
- The ethanol extract of the aerial parts of the plant was found to significantly protect rats from cisplatin-induced neuropathic pain.[13]
- *A. eupatoria* has also shown significant antioxidant activity and radical scavenging properties.[14]
- The hydroalcohol extract and a polyphenol-enriched fraction containing flavan-3-ols, flavonols, flavones, and phenolic acids, exhibited strong radical scavenging activity and potential antioxidant capacity against reactive species formed during inflammation.[15]
- The plant is also known to have diuretic and uricosuric activities and was found to be protective against chronic ethanol consumption-induced hepatotoxicity in rats.[16]
- The hydroalcohol extract of *A. eupatoria* demonstrated strong growth inhibiting activity against H. pylori and the aqueous extract of the aerial parts showed maximum inhibition of HBsAg release against hepatitis B virus.[17]
- The seeds of *A. eupatoria* have also been found to have antibacterial and radical scavenging activities in n-hexane, dichloromethane, and methanol extracts.[18]
- The methanol stems extract of the plant also significantly attenuated glutamateinduced oxidative stress in HT22 hippocampal cells.[19]

Clinical studies:

Agrimony tea, made from the plant *Agrimonia eupatoria*, has been found to have potential health benefits in humans. A study found that consuming the tea for one month significantly elevated the plasma total antioxidant capacity and lowered IL-6 (interleukin -6) levels in healthy volunteers. This suggests that agrimony tea may have the potential to improve markers of lipid metabolism, oxidative status, and inflammation in healthy adults. The study also found that the tea improved the lipid profile by increasing the HDL-C (high density lipoprotein cholesterol) level and the correlation between HDL-C and adiponectin levels.[20]

Conclusion:

In recent times, there has been a notable surge in the exploration of traditional herbal remedies as alternatives to conventional allopathic treatments, driven by concerns over their limitations and adverse effects. Within this landscape, *Ghafis* (*Agrimonia eupatoria*), deeply rooted in the traditions of Unani medicine, emerges as a compelling natural remedy with a centuries-old legacy of efficacy against various ailments.

Renowned for its multifaceted pharmacological properties, *Ghafis* has long been revered as a demulcent, stomachic, diuretic, and anti-inflammatory agent, among others. Its historical applications encompass the treatment of liver inflammation, fevers, ulcers, and dermatological conditions, reflecting its versatility in addressing diverse health concerns. Furthermore, *Ghafis* has garnered attention in ethnopharmacological circles for its antioxidant, antimicrobial, and diuretic attributes, amplifying its therapeutic allure.

Recent scientific inquiries have lent credence to *Ghafis's* medicinal prowess, validating its potential in managing conditions such as diabetes, neuropathic pain, and oxidative stress-related disorders. Clinical investigations have further underscored its benefits, including its capacity to enhance lipid metabolism and mitigate inflammation in healthy individuals.

With a burgeoning interest in natural and holistic healthcare modalities, *Ghafis* continues to captivate researchers and practitioners alike. Its integration into contemporary pharmacotherapy holds promise for the development of novel

herbal formulations with heightened efficacy and improved safety profiles. Moving ahead, continued exploration into *Ghafis's* biological mechanisms and chemical composition is imperative, paving the way for its expanded utilization in mainstream medicine and bolstering the evidence base supporting the therapeutic value of traditional herbal medicines.

Acknowledgement:

Authors are thankful to authors and editors of all those books and journals from where the literature for this review has been reviewed, discussed and cited.

Conflict of interest: None

Funding: None

Author contribution:

Data collection: Nida Mehraj

Drafting of manuscript: Nida Mehraj, Mahboob Alam

Critical revision: Nida Mehraj, Mahboob Alam

Abbreviation: HDL-C (high density lipoprotein cholesterol), IL-6 (interleukin -6)

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