



OCIMUM SANCTUMLIN (TULSI) A REVIEW ON MEDICINAL USE

AJAY NAVIK^{1*}, ADITYA GUPTA², JAYANT KUMAR MAURYA³,

1. Research Scholar, Ashok Singh Pharmacy College Maharoopur Jaunpur U.P. 222180

2. Assistant Professor, Department of Pharmacology Ashok Singh Pharmacy College Maharoopur
Jaunpur U.P. 222180

3. Principal, Ashok Singh Pharmacy college Maharoopur Jaunpur U.P. 222180

*Corresponding Author: **AJAY NAVIK**

Abstract:

This healing plant is a member of the Lamiaceae family and the botanic name is *Ocimum Sanctum*. Tulsi is commonly utilized for its many medicinal characteristics and is referred as the 'Queen of herbs'. Every component of the tulsi is useful, encompassing the seeds and leaves. Tulsi is also known as the the founder of alternative medicine and the matchless. Tulsi may be found in India, Malaysia Thailand, Sri Lanka, Bangladesh, Burma, China, Southwest Asia. This subshrub is upright and has several branches, 30-60 cm high, with straightforward, hair like stems, fresh leaves They have a powerful fragrance. Indigenous to the tropics worldwide, It is extensively grown for its therapeutic properties. Within the conventional medical system, It has been suggested to use different sections of tulsi to treat malaria, diarrhea, bronchitis, skin diseases, dysentery, arthritis, eye diseases and insect bite, Its therapeutic efficacy has led to its widespread cultivation. Within the conventional medical system.

Keywords:, Tulsi, pharmacological activity, and *Ocimum Sanctum*.

Introduction:

Tulsi is known botanically as *Ocimum Sanctum*., sometimes called as holy basil, It belongs to the Lamiaceae family. Tulsi, sometimes recognized as the "queen of herbs," has several therapeutic benefits when used in herbal remedies. The two forms of Tulsi that are almost identical are Green (also known as Ram Tulsi) and Black (additionally called Krishna Tulsi). Tulsi, or Saint Basil, is a significant traditional symbol when taking the hind religion into account. Another name for Tulsi is Vishnupriya, which signifies a follower of Lord Vishnu. Tulsi is a common household item that is revered by all Indians. Because of the various medicinal properties of turmeric, Ayurveda has used it for thousands of years. Every component of the plant, including the seeds, leaves, and so on functions. Tulsi is regarded as a popular energiser and increases stamina. Magnificent Basil's stem has a variety of components that it clears away, which may combine bodily, and characteristic development. Generally, Tulsi is consumed in a variety of shapes as

domestic developed, dried, powdered, blended with butter or honey, and a contemporary leaf. The fundamental component of tulsi is eugenol, This indicates that Tulsi is a COX-2 inhibition, because it follows different instructions given by different people and takes into consideration. Hinduism holds that a person's family is inadequate in the event that it is in their backyard, there are no tulips. In the Indian subcontinent, tulsi is revered as a divine or glorious herb. Due to its nutritional, medicinal, and mystical qualities, tulsi grows in every Indian home.



Fig *Ocimum sanctum* Linn

Tulsi is also known as Mother of natural drug and One of a kind. It is thought to be able to keep the family and home safe. It is consumed with tulsi leaves, as well as wood, tea, and beads to create garlands—beads that help focus the mind during meditation and foster chanting, which unites the mind and energy. It's accepted that the found of Lord Rudra in the flower top, of There is Lord Bramha in the roots and of The leaves and trunk of the holy tree are home to Lord Vishnu.

Classification:

Several species belong to the genus *Ocimum*.

- TULSI (*Ocimum Sanctum* Linn).
- RAM TULSI (*Ocimum Grtissium*).
- DULAL TULSI (*Ocimum Canum*).
- BAN TULSI (*Ocimum Bascillicum*)
- *Ocimum Kilimandschricum*
- *Ocimum Americanum*

Classification:

- Binomial name - *Ocimum sanctum* Linn
- Division- Magnoliophyta.
- Kingdom- Plantae.
- Class- Magnoliopsida.
- Order-Lamiales family-(Lamiaceae)
- Genus- *Ocimum*.
- Species- *Sanctum*

The Indian Traditions and Legends Around Tulsi:

Tulsi means "one who is extraordinary or unique" in Sanskrit. A thousand years ago, the ancient Tulsi considered Tulsi to be among the most remarkable healing plants. They declared the plant to be a deity after realizing how beneficial it was for healing and well-being. The plant tulsi has a rich history. Ruler Krishna, who is said to be a reincarnation of Master Vishnu, is said to have loved Tulsi. At that point following that, To ensure that every household and sanctuary had at least one Tulsi shrub nearby, Tulsi was established as one of the eight priceless items in every Vedic religious ritual. The majority of Indian homes still have tulsi plants on their patios these days, which, because of its historical importance in religion, otherworldly existence, healing, culture, and enhancing analgesia, is the most highly esteemed plant.

Genus *Ocimum*: *Ocimum Sanctum* Linn, often known as tulsi:

The *Ocimum* class of plants is fundamental due to its beneficial potential and membership in the lipped family. Examples of *Ocimum* species are *Ocimum americanum*, *Ocimum gratissimum*, *Ocimum basilicum*, *Ocimum micranthum*, *Ocimum Sanctum* Linn, and, *Ocimum canum*, *Ocimum kilimandscharicum*, *Ocimum camphora*, . This species, which possesses important medicinal qualities, evolved in rather different places of the planet. Tulsi is the Hindi name for *Ocimum Sanctum* Linn, while Heavenly Basil is the English name. India is home to the upright, delicate hair shrub known as tulsi.¹⁰ *Ocimum*'s ordered history includes a questionable circumscription. The annual and perennial herbs and shrubs that are native to the tropics and subtropics of Africa, Central America, Asia, and South America range in number from 30 to 160. *Ocimum*'s several species and forms vary in their growth, tendency, and fragrance makeup, causing concern over Basil's true botanical nature. The following species—*O. tenuiflorum* L. Linneaus , *O. americanum* L., *O. basilicum* L., *O. least* L., *O. gratissimum* L, and *O. africanum* Lour. in 1753—are highly developed because to its medical and commercial worth, shown *Ocimum*, and classified into five species. Paton and Bentham estimate that *Ocimum*, *Gymnoeum* Benth, and *Hierocymum* Benth contain around forty different plant species. *Ocimum*, *Hiantia* Benth, and *Gratissima* are the three subsections that Bentham separated *Ocimum* into according to their calyx, morphology, and segment. Two groups of Basil Taxa were separated by Pushpangadan: The basil plants assemble, include herbs that are annual or occasionally perennial and have ellipsoid, black, containing mucilaginous seeds with a crucial chromosomal count of $x = 12$, as well as the *Sanctum* bunch, which is made up of long-lasting.

Morphology:

Tulsi are known for their branching stems, which are frequently purple in color³⁵–70 cm tall, somewhat oblong, dressed in fine flowing hairs. Tulsi cross-sections range from 1.7 to 3.3 cm. wide, 2.5–5 cm extended, intensely rough perhaps an elliptical, circular, serrated edges; all sides of the pubescent on the surface, glandular flecked, bottom

intense or roughlength, narrow, petioles 1.3–2.5, bushy. The blossom develops into a trichome inflorescence, in clusters of 15-20Cm. Bracts are long and broad and 3 mm wide, broadly l clapped; calyx slender, pubescent, bilabial, lower lip is larger than the upper lipI.e. The 4mm purple corolla has a pubescent top lip on the back and is bilabiate. Rods are pulled out, thin strands, and the top match could be a tiny member made up of a display compartment toward the bottom. The almonds are silky. pale yellow paired with a dark scarf, 1.26 mm in length and distinctly ellipsoid. The seeds have a brown tone. The Lamiaceae family consists of Tulsi, which has its place in the genera of basil. Perennial and perennial, tulsi is an aroma herb that grows all over the world. The vegetation is made mostly of green growths that have a powerful smell. Raceme-arranged flowers have a purplish look in tight bunches. Basically two forms of morphology are developed in Nepal and India: leaves that are both purple and green. The taste is sharp, with a strong aroma.

component of chemical:

Tulsi comprises profoundly complicated chemical makeup that includes numerous supplements and naturally dynamic composites. Because of the botanical character and characteristic biological intricacy, the institutionalization of the dynamic an element of tulsi is exceptionally difficult. The most well-known dynamic element of Tulsi takes off the origin of basic lubricate, i.e., both ursolic and eugenol corrosive. The principal ingredients distinguished and extricated are only the ursolic from Tulsi corrosive. Both male and female rats and mice are affected by the compound's antifertility effects. Ursolic corrosive inhibits spermatogenesis, diminishes sperm count, and possesses anti-estrogenic properties. The diverse sections of the tulsi plant donate eugenol by the process of extraction prepare, and it may be a Phenolic component and critical component within the fundamental lubricant.

Table 1.1 chemical component present in Tulsi

Class of chemical Constituents.	Chemical component
Fatty alcohols.	2-hexyl-1decanol, octyl acetate,
Organic acids.	Chicoric acid.
Fatty acids.	Citronellic acid, stearic acid, linolenic acid, palmitoleic acid.
Ketones.	2-hydroperoxyheptane,
Aldehydes	citral, citronellal, perilladehyde.
Ester.	Hexyl acetate.
Alcohols.	1-octanal, quinic acid, menthol, safrole, carveol, verbenol.
Phenolic.	Vanillin, ellagic acid,
Monoterpenoids	Neral, geranyl acetate, linalool, geraniol, fenchone, verbenone.
Diterpenoids.	Phytol, phytene,
Sesquiterpenoids.	Humulene, B-bisabole, B-famesene.

Triterpenoids.	Verbascoside.
Phenylpropanoids.	Cinnamic acid, ferulic acid, vicenin.
flavonoids	Vicenin, vitexin.
Dialkyldisulfides.	2-methyl-7-octadecyne.

Advantages of *Ocimum tenuiflorum*:

Apigenin exhibits neural development in Tulsi fortifying movement. Aromatherapy wounds in Bisabolol mending, anti-sewlling, antibacterial, anti-inflammatory, and anti-tumour movement. Borneol has creepy crawly repulsive movement because of the fundamental lubricant in Tulsi. Coffee corrosive too has anti-tumor, antioxidative, and antifungus movement. The nearness of caleamine appears skin care movement. Tulsi is additionally utilized as an contraceptive, sunblock cream, and medication demonstrative owing to the nearness of Aesculetin.

The drawbacks of tulsi:

Tulsi overuse and its consequences items influences the regenerative wellbeing between the two guys and females. The impacts among them are moo mass in testicles, Sperm death and cause a lessening in sperm tally. It is additionally watched the existence of an antiestrogenic movement. The side impacts in females cause withdrawal, which leads to premature birth in pregnant ladies. It moreover influences nursing. Female too watch spasms, spinal pain, loose bowels, dying, etc. The logical thinks about incorporate the intense side impacts of Tulsi, which is led harming, dentistry issues due to lead, hypoglycaemia, drawn out dying times lean blood etc. It is hepatotoxic.



Fig: Different type Tulsi leaf of *Ocimum Sanctum* plant

The Daily Health Advantages of Tulsi:

1. Regenerative Power:

The Tulsi plant has several healing qualities. The clears out are a nervo stimulant additionally hone recall. They facilitate the bronchial tube's normal discharge of mucous and calcareous debris. The clears out fortify the abdomen and actuate bountiful perspire. The plant's seed are mucilaginous.

2. Colds and Fever:

The basil is suitable for numerous body heat. In the middle of a stormy weather period, when dengue fever and stomach problems are most common widely prevalent, gentle take-offs, bubbled alongside tea, act as a prevention in opposition to these diseases. In severe fevers, the temperature is reduced by a decoction of combed out infusion bubbled use cardamom powder added sugar, and combined in half a liter of water and drainage. Tulsi leaf juice can be utilized for reduce fever. Extricate of Tulsi takes off in new give water every two to three hours. In between, one can give tastes of cold water. In children, each is viable in lowering the temp.

3.Coughs:

Tulsi is essential component of numerous Ayurvedic hack expectorants and syrups. It makes a difference to get moving bodily fluid in both asthma and bronchitis. Gnawing Tulsi clears out soothes cold and flu.

4. Pain in the throat:

A soothing drink for sore throats may be made by adding basil to bubbling water. This water is additionally useful as a swish..

4. Inhalation Illness:

The herb is valuable in treating respiratory disorders. A mixture of the cleared alongside nectar and gingerly is a successful treatment for asthma and bronchitis, flu, colds and flu. A mixture of decoction, clove and table salts provides quick relief in the event that flu. They ought to be bubbled in a pint of water until half-the water is clear and included at that point..

6.Kidney Stone:

The kidneys are enhanced by the presence of basil. In the case of renal stones, honey, and basil juice are removed, and if used regularly for six months, they shall be expelled via the genital system.

7. Cardiovascular Disease:

Basil features a useful influence in cardiac infection and the emergence of the flaw from them. It diminishes blood fat level.

8. Illnesses of Children:

Typical paediatric problems such as hacking cold, body heat, loose bowels and spewing respond favorably to the basil juice that takes off. In case chicken pox pustules form slowly, but when they are removed with saffron, they emerge quickly.

9. Tension

Basil takes off are respected as an an "adaptogen" or anti-stress agent specialist. Later ponders have appeared that the takes off bear noteworthy protection in opposition to stretch. In fact, healthy individuals can chew 12 slices of basil two times every day. to anticipate push. It decontaminates blood and makes a difference avoid a some common components.

Tulsi Used as Traditional Indian Ayurvedic Medicine:

Concurring to Natural India, a company devoted to natural agribusiness and economic advancement, Among the characteristics that give the tulsi plant its potent restorative Herb is what it capacity to decrease push. Tulsi is copious in fundamental lubricant and cancer prevention agents, which are massively successful in decreasing the impact of stretch. Tulsi possesses differing mending attributes. In spite of the fact that customarily utilized by Indians or Hindus: presently else are utilizing it as well realizing its gigantic restorative attributes. One of tulsi's qualities is that it functions as an adaptogen. It equalizations distinctive forms within the physique and possesses amazing offer assistance in stretch administration. The extricates of Tulsi has been around utilized in conventional Indian Traditional Medicine medicine of pharmaceutical. It is additionally utilized within the unani framework of medication. Traditional Medicine cures for typical colds, migraines, stomach jumbles up, irritation, diseases, cardio malady, harming, and jungle fever create utilize of the Tulsi plant. Tulsi works on the anxious framework and reinforces it. It reinforces the cardio. It serves as a starter and advances absorption as well. It encourages the emission of stomach related proteins and anticipates bloating. Possessing cleansing qualities, Tulsi decontaminates the blood of whatever poisons that may be show in it. Ponders have too appeared the Tulsi to be successful in decreasing blood glucose range and the management of diabetes. It has too been demonstrated to be successful in diminishing fat range. Its ability to combat germs and parasites makes it appropriate for fighting irresistible maladies of different sorts. Later discoveries have shown that the Tulsi can give security due radioactivity harming. It has moreover been demonstrated that Tulsi has hostile to carcinogenic qualities.

Tulsi medicinal property as per ayurveda:

- Tulsi has anti-inflammatory properties because it undermined vata. So its outside application on swollen region makes a difference to diminish swelling and torment.
- Tulsi cures in numerous skin clutters. It is proficient in skin rashes, creepy crawly chomps and tingling. Trees of this plant are successfully utilized in ring worm contamination moreover leukoderma.
- New juice of Tulsi clears out is utilized in nasya karma. This method makes a difference to ease migraine and maladies of head and neck. Tulsi clears out act as nerving tonic.
- Extricate of Tulsi clears out utilize to diminish skin break out, pimples and scars.
- As per Ayurvedic, courses of action of Tulsi are important in acid reflux, intestinal parasites and clogging.
- Trampled takes off of Tulsi are greatly effective in fever, hack, bronchitis and other restorative issue of lungs.

- Tulsi utilizes as a cardiac tonic and decontaminates blood.
- Seeds of Tulsi are effective in rash ejaculation.

Tulsi In Modern Medicine:

The investigate on cutting edge medication demonstrates that Tulsi might have been an compelling treatment for conditions like ulcers, tall cholesterol, Type-2 diabetes, corpulence, and compromised/ smothered resistant frameworks (from maladies like cancers and Helps). Plant societies say the conventional employments of Tulsi in Ayurveda could be due to a few natural properties in numerous assortments of Tulsi, such as the basic oils containing an antiinflammatory compound called eugenol, and different acids with antioxidant and antiinflammatory properties that might back the claims of Tulsi being a treatment for so numerous conditions, agreeing to Ayurveda.[10]

Pharmacological Activities:

1. Action Against Microbes:

Within the Tulsi, the assessment of the antibacterial movement of leaf extracts and nearby stream water combined with diverse focusses uncovers that the concentrated treated water appeared further successful antibacterial action at 15 to 16 hours compared to the alternative extreme focus. After fourteen to sixteen hours, the extricate appears almost 95–98% of antimicrobial action after being cleaned with water. The least bacteria conc, (MBC) was watched through the concentration of the extract. With the assistance of the swath plates strategy, it can be examined that the Cells of bacteria were concentrated at repressed slowly for one hour.

2. Anti-stress Activity:

Stretch could be a unavoidable clutter where most people endure habitually. It is portrayed as singles ' mental, physical, and behavior reactions As soon as they get a lack in harmony among their insufficiencies and their capacity to extinguish them. Push responds because neurotransmitter like serotonin, norepinephrine, and dopamine are necessary.

3. Anti-Cancer Activity:

The examination appears that within the exploratory creatures, the new takes off of Tulsi possessed been appeared to improve insusceptibility and have characteristics that prevent cancer. The lessening of nitrous oxide has been made by methanolic extricate of *Ocimum* assortments, driving to maintain cancer prevention exercises. Tulsi has demonstrated diminish the frequency of benzo (a) pyrene initiated 3-methyl di-methyl amino azobenzene and neoplasia initiated hemorrhages in test creatures. Besides, the antitumor movement of tulsi has compared in detail to the culturing of human fibrous sarcoma cells.

REFERENCE

1. Bhooshitha AN, Abhinav Raj Ghosh, Chandan HM, Nandhini HS, Pramod BR, KL Krishna., Review on Nutritional, Medicinal and CNS Activities of Tulsi (*Ocimum. Sanctum*), Journal of pharmaceutical science and research, 2020;12(3):420-426.

2. Deepika Gulati, Priyanka, Minakshi Pal, Nidhi, Ikbal. In vitro studies of the *Ocimum sanctum*: Tulsi, Medicinal herb., American journal of pharmatech research. 2015;5(6)
3. Dr. Umme Amarah, Dr Laxmikanth Chatra, Dr Prashanth Shenai, Dr Veena K. M., Dr Rachana V. Prabhu and Dr Vagish Kumar., Miracle Plant -Tulsi., World Journal of Pharmacy and Pharmaceutical Sciences, 2017;6(1), 2017:1567-1581.
4. Ashok Kumar Sah, M. Vijaysimha, Md. Mahamood., The Tulsi, Queen of Green Medicines: Biochemistry and Pathophysiology – A Review., International Journal of pharmaceutical science review and research, 2018;50(2):106- 114.
5. KP Sampath Kumar, Debjit Bhowmik, Biswajit, Chiranjib, Pankaj and KK Tripathi Margret Chandira., Traditional Indian Herbal Plants Tulsi and Its Medicinal Importance Research Journal of Pharmacognosy and Phytochemistry. 2010;2(2):103-108.
6. Mahesh V. Bawage, Sohel Jafar Shaikh, Shyamlila B. Bavage, Nandkishor B. Bavage., preparation and standardization of Tulsi leaf tablet (*Ocimum Sanctum* Linn.), International Journal of Innovative research in technology.2021;8(3)
7. Puri, Harbans Singh (2002). *Rasayana: Ayurvedic Herbs for Longevity and Rejuvenation*. CRC Press. pp. 272– 280. ISBN 9780415284899.
8. Biswas, N. P.; Biswas, A. K.. "Evaluation of some leaf dusts as grain protectant against rice weevil *Sitophilus oryzae* (Linn.)". *Environment and Ecology* (Vol. 23) ((No. 3) 2005): pp. 485–488.
9. Effect of *Ocimum sanctum* Leaf Powder on Blood Lipoproteins, Glycated Proteins and Total Amino Acids in Patients with Non-insulin-dependent Diabetes Mellitus. *Journal of Nutritional and Environmental Medicine*. V. Rai msc, u. V. Mani msc phd ficn and u. M. Iyer msc phd. Volume 7, Number 2 / June 1, 1997. p. 113 – 118
10. Palla Ravi, A Elumalai, M Chinna Eswaraiah, Raju Kasarla. A review on Krishna Tulsi, (*Ocimum tenuiflorum* Linn.), *International journal of research in Ayurveda and Pharmacy*.2012;3(2):291-293
11. <https://m.indiamart.com/proddetail/krishna-tulsi20419941048.html>18/11/21 9:50 AM 13.
<https://www.healthline.com/health/food-nutrition/basilbenefits> 19/11/21 1:52 PM
12. Bhateja Sumit, Arora Geetika. Therapeutic benefits of Holy Basil (Tulsi) in general and oral medicine: A Review. *Int. J. Res. Ayur. Pharm.* 2012; 3(6):761-764 DOI: 10.7897/2277- 4343.03611
13. Ajit K Shasany. The Holy Basil (*Ocimum sanctum* L.) and its Genome., *Indian Journal of History of Science*, 51.2.2 (2016) 343-350.
14. Sai Krishna. G, Bhavani Ramesh.T and Prem Kumar P., “Tulsi” - the Wonder Herb (Pharmacological Activities of *Ocimum sanctum*)., *American Journal of Ethnomedicine*, 2014;1(1):089-095.
15. Singh N, Hoette Y, Miller R. *Tulsi: The Mother Medicine of Nature*. 2nd ed. Lucknow: International Institute of Herbal Medicine; 2010. pp. 28-47.
16. Mohan L, Amberkar MV, Kumari M. *Ocimum sanctum* linn. (TULSI)-an overview. *Int J Pharm Sci Rev Res*. 2011;7:51-3