



A brief review on – Medicinal Properties Of Tulsi

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Abstract - Basil (*Ocimum gratissimum*), commonly known as tulsi, is considered a sacred plant and is worshipped in India. It belongs to the Lamiaceae family. It is an important medicinal plant with many pharmacological properties. Antitumor and anticancer effects have been reported in in vitro experiments. It is also recommended in the treatment of bronchitis, bronchial asthma, diarrhea, dysentery, fever and other diseases. For thousands of years, doctors and pharmacists have used medicinal plants to prevent and treat many diseases. Tulsi is called "The Queen of Herbs" and "Mother Nature's Medicine". It is considered a deity in the Indian subcontinent. *Ocimum sainttum* Linn. (Lamiaceae or Lamiaceae) contains 30 species and is found in tropical and subtropical regions. The leaves and flower stalks are used to obtain essential oil. It is reported that *O. sainttum* oil contains five fatty acids (stearic acid, palmitic acid, oleic acid, linoleic acid and linolenic acid). It is a good source of beta-carotene, calcium, vitamin C and also contains estradiol, linalool, eugenol, methylpiperol and small amounts of Methyl cinnamate tannins, camphor, flavonoids, triterpenes: uric acid. It is also used in bronchitis, stomach pain and hepatitis diseases. tannins, camphor, flavonoids, triterpenes: uric acid. It is also used in bronchitis, stomach pain and hepatitis diseases. Studies have shown that basil leaf extract contains many metabolites such as carbohydrates, tannins, flavonoids, saponins, glycosides, terpenoids, fatty acids and phenols Through quantitative analysis, it was found that Tulsi leaves contain phenols ranging from 1.6% to 7.6%. Thus, the alkaloid and flavonoid contents range from 0.91% to 1.28% and 1.56% to 2.24%, respectively. Three compounds were identified as the main components through GC-MS analysis of the methanol extract, namely eugenol, benzene, α -farnesene and cyclohexane, 1,2,4-trivinyl

- Introduction - Tulsi (*Ocimum sainttum L.*), popularly known as holy basil in English and Tulasi in Sanskrit, is a very popular food and medicinal herb from the family Lamiaceae, native to the Indian subcontinent and has been used in Ayurvedic medicine for over three thousand years. Tulsi is widely known as the "solution of life" in the Ayurvedic tradition for its healing properties and has been used in the treatment of many health problems. Tulsi leaf extract is indicated in the Indian Materia Medica to treat bronchitis, infections and fever. It is considered a ubiquitous tree in India. It is considered a tree found everywhere in India. It is a member of the Lamiaceae family and is an aromatic plant. It is a very interesting subshrub, erect, between 30 and 60 cm high, with four trunks and simple, inverted green leafy leaves. Tulsi plays an important role in our daily lives and is revered as the ruler of all things. It is the most famous plant of India and the Hindu tradition holds it in high esteem. Many Hindu stories describe the importance, benefits and uses of Tulsi. The erect, fragrant Tulsi shrub can grow to a height of 3 to 5 feet. It is often found on the edges of reserves and in gardens. It has a rich aroma and a strong taste. It is the only plant that can store CO₂ for long periods of time. It releases air in the morning, which is good for people with breathing problems.

Tulsi leaves are widely used in the preparation of Ayurvedic medicine. It is known to prolong life. Extracts obtained from this plant are often used in the treatment of many diseases such as cold, itching, stomach ulcers, heart disease, migraine, stomach ache, kidney disease, heart disease, etc. Tulsi, the Indian basil, also helps in cleaning the environment. a. Prevention of influenza is important. It is said that when the Victoria Farm was established in Bombay (now Mumbai), the workers suffered from the heat in the forest and were bitten by mosquitoes. Some Hindu leaders, after observing the condition of the workers, suggested growing Tulsi plants in the nursery. Their suggestion was approved. According to the statement, there are two types of Tulsi: Vanya (wild) and gramya (plant). Although used for the same purpose, the leaves of the former are darker in color. Tulsi is a well-known remedy for many diseases such as wounds, bronchitis, hepatitis, cold, earache, backache, hiccup, eye disease, infections Stomach, genitourinary diseases, skin diseases,

etc. Multiple drug overdose, psychosomatic stress disorders. Diuretic, expectorant, litholytic, anthelmintic and antipyretic.

- Advantages and Disadvantages

- Advantages -

1.Helps the body fight infections like colds, flu, and cough.

2. Acts as a natural expectorant, relieving symptoms of asthma, bronchitis, and sinus congestion
3. Reduces cough and soothes throat irritation
4. Known as an adaptogen, Tulsi helps reduce stress and anxiety by regulating cortisol levels.
5. Promotes mental clarity and relaxation.
6. Possesses antimicrobial properties that help prevent bacterial, viral, and fungal infections.
7. Reduces cholesterol levels and supports healthy blood pressure.
8. Supports blood sugar control, making it beneficial for managing diabetes.

- Disadvantages -

1. Tulsi contains compounds that might inhibit the absorption of iron, posing a risk for those with anemia.
2. The strong flavor of Tulsi may not appeal to everyone and could cause aversion when included in therapeutic doses



- Chemical Constituent -

Common Name – Tulsi

Scientific Name- *Ocimum tenuiflorum*

Family- Lamiaceae



Tulsi is called Holy Basil in India, where it is mentioned in the Bible. The chemical composition of Tulsi is very complex, containing many nutrients and biologically active substances. The standardization of the active ingredients of basil is a complex process due to its botanical origin and inherent biochemical complexity. The nutritional and pharmacological properties of all plants in their natural form according to traditional use are the result of the combination of many different phytochemicals. In *O. sanctum*, 1,8-cineole from India, 1,8-bisabolene from India, eugenol, methyleugenol from Nigeria, isoeugenol from Nigeria, eugenol from India, have been found

- Medicinal Properties of Tulsi -

1. Tulsi has strong antibacterial properties and is effective against many bacteria, fungi and viruses.

2. Anti - Inflammatory Tulsi helps in reducing inflammation in the body, which is beneficial in controlling diseases like arthritis and other illnesses.

3. Tulsi is rich in antioxidants that help fight oxidative stress and protect cells from damage caused by free radicals.

4. Tulsi is known as an adaptogen, which means it helps the body adapt to stress by regulating cortisol levels and supporting brain balance.

5. Respiratory Health It is effective in treating respiratory diseases like asthma, pneumonia and cough. 6. Immune Modulation

Tulsi improves the immune system and enhances the body's ability to fight diseases.

7. Tulsi helps control blood sugar levels by improving insulin sensitivity, hence is effective in controlling diabetes.

8. Tulsi helps lower cholesterol and blood pressure and supports heart health.

9. Tulsi improves digestion, reduces indigestion, relieves problems like indigestion and loss of appetite. Healthy skin and hair

10. Its antibacterial and anti-inflammatory properties make it an excellent treatment for acne and other skin conditions. Pain Reliever

11. Tulsi acts as a pain reliever, helping to relieve headaches, muscle aches, and other minor discomforts. Detoxification

12. Tulsi is a natural detoxifier that helps cleanse the liver and kidneys, supporting overall detoxification of the body.



- Mechanism of action -

1. Different types of basil plants contain various substances including flavonoids, triterpenoids, saponins and tannins. The volatile oil found in its leaves is eugenol. 2. Some components play an important role in controlling and treating diseases by regulating various activities. Below is how basil works to treat diseases; On the other hand, the antioxidant activity of Tulsi plant can increase the ability of free radicals. The plant also protects cells from damage by scavenging free radicals.

3. Waste management is one way to eliminate our free radicals. Antimicrobial resistance is a major public health issue that needs to be addressed. Natural compounds play an important role in inhibiting or killing bacterial growth by disrupting bacterial cell walls.

4. Tulsi has been shown to have anti-gonococcal activity against β -lactamase-producing methicillin-resistant *Staphylococcus aureus* isolates and multidrug-resistant *Neisseria gonorrhoeae* strains

5. (Alma troodi SA et al., 2020), mitochondrial permeability, cytochrome c release, and reduced levels of the anti-apoptotic protein bcl-2 contribute to eugenol-induced cell apoptosis.

6. With its non-polar structure, it contains various amounts of eugenol, luteolin, ursolic acid, and oleanolic acid. Experimental studies have shown that eugenol and luteolin have anti-inflammatory properties in vitro.

7. It has been shown in various studies to activate apoptosis and inhibit cell proliferation, angiogenesis and metastasis. Luteolin inhibits cell survival pathways such as NF- κ B, phosphatidylinositol 3' kinase (PI3K)/Akt, and 8. X-linked inhibitor of apoptosis protein (XIAP), while promoting apoptotic pathways, including activation of the tumor suppressor genes.

- Medicinal Uses -

Boosts Immunity: Rich in antioxidants and essential oils, Tulsi strengthens the immune system.

Respiratory Health: Eases cough, asthma, and bronchitis symptoms by clearing the airways.

Stress Relief: Contains adaptogens that reduce stress and anxiety.

Digestive Health: Aids digestion and alleviates stomach issues like acidity or bloating.

Antibacterial & Antiviral: Fights infections and prevents diseases caused by pathogens.

Anti-inflammatory: Reduces inflammation and supports joint and muscle health.

- Conclusion -

To this day, no herb compares to the potency and healing properties of *Ocimum sanctum* (Tulsi) is revered in Hinduism as a holy plant in India. Because of the herb's health advantages, our forefathers in India required that every household plant a Tulsi tree. Due to its multiple health benefits, Tulsi components must be isolated and characterised in terms of their chemical properties and bio-pharmacological actions. This plant has been found to have a wide range of medicinal characteristics which suggests it can be utilised to treat a wide range of conditions. Future research should focus on sacred basil as a potential treatment for a number of diseases.

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