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TULSI - A DEVINE MEDICINAL HOLY PLANT

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ABSTRACT

Nature has bestowed on us a very rich botanical wealth; the medicinal plants are widely used by the traditional medical practitioners for curing various diseases in their day to day practice. One of them is Tulsi which is known to us as early as Vedic period, in traditional systems of medicine, different parts (leaves, stem, flower, root, seeds and even whole plant) of *Ocimum sanctum* Linn (known as Tulsi in Hindi), a small herb seen throughout India, have been recommended for the treatment of many diseases. Eugenol (1-hydroxy-2-methoxy-4-allylbenzene), the active constituent present in *Ocimum sanctum* L., has been found to be largely responsible for the therapeutic potentials of Tulsi. Although because of its great therapeutic potentials and wide occurrence in India the practitioners of traditional systems of medicine have been using *Ocimum sanctum* L. for curing various ailment. This review article is to highlight the pharmacological action and its therapeutic role of Tulsi in dentistry. This article is to illustrate the value of this medicinal plant and to emphasize to make an effective use of this in various dental applications.

INTRODUCTION

Tulsi has been used for thousands of years in Ayurveda for its diverse healing properties. It is mentioned in the Charaka Samhita an ancient Ayurvedic medicinal herb. In recent times, the focus on the plant research has increased all over the world. Tulsi “The Queen Of Herbs” also known as Holy Basil, is a different plant from the pesto variety of Basil (*Ocimum basilicum*). Tulsi has been revered in India for over five thousand years, as a healing balm for body, mind and spirit, and is known to bestow an amazing number of health benefits. Some of Tulsi effects are quite immediate, while others develop gradually after weeks of regular use. Plants are one of the most important sources of medicines. The medicinal use of plants is very old.

The writings indicate that therapeutic use of plants is as old as 4000–5000 B.C. and Chinese used first the natural herbal preparations as medicines. In India, however, earliest references of use of plants as medicine appear in Rigveda which is said to be written between 3500–1600 B.C. Later the properties and therapeutic uses of medicinal plants were studied in detail and recorded empirically by the ancient physicians in Ayurveda (an indigenous system of medicine) which is a basic foundation of ancient medical science in India.¹

Traditionally, tulsi is taken in many forms: as herbal tea, dried powder, fresh leaf, or mixed with ghee. Essential oil extracted from Karpoora tulsi is mostly used for medicinal purposes and in herbal cosmetics, and is widely used in skin preparations. For centuries, the dried leaves have been mixed with stored grains to repel insects. Recently its use has been found in fighting fluorosis. The important advantage claimed for the therapeutic use of medicinal plants in various ailments are their safety besides being economical, effective and their easy availability.² Tulsi is rich in antioxidant and renowned for its restorative powers, Tulsi has several benefits³:

- Relieves stress
- Bolsters immunity
- Enhances stamina
- Provides support during cold season
- Promotes healthy metabolism
- A natural immuno-modulator

“Modern scientific research offers impressive evidence that Tulsi reduces stress, enhances stamina, relieves inflammation, lowers cholesterol, eliminates toxins, protects against radiation, prevents gastric ulcers, lowers fevers, improves digestion”. Tulsi has been tested against a variety of microorganisms like *Candida albicans* , *Staphylococcus aureus* , enteric

pathogens, Klebisella , *Escherichia coli* and proteus.⁴ Different parts of Tulsi plant e.g. leaves (fig. 1), flowers (fig. 2), stem, root (fig. 3), seeds (fig. 4) etc. are known to possess therapeutic potentials and have been used, by traditional medical practitioners, as expectorant, analgesic, anticancer, antiasthmatic, antiemetic, diaphoretic, antidiabetic, antifertility, hepatoprotective, hypotensive, hypolipidmic and antistress agents. Tulsi has also been used in treatment of fever, bronchitis, arthritis, convulsions etc. This plant has been evaluated pharmacologically for antimicrobial, immunomodulatory, anti-inflammatory, hypoglycemic, chemoprotective and analgesic activities.⁵

Mythology of Tulsi:

Tulsi in Sanskrit means “one that is incomparable”.⁶ Tulsi the mother plant of medicine is recognised thousands years ago by ancient Rishis to be India’s greatest healing herb. The Rishis of India saw tulsi is so good for health and healing that it is declared as a god in itself. Tulsi is supposed to be beloved of Lord Krishna, a reincarnation of Lord Vishnu. That’s why we found tulsi in every house of India and every temple have at least one tulsi plant in it’s proximity. In India two forms of Tulsi are common - dark or Shyama (Krishna) Tulsi (fig. 5) and light or Rama Tulsi (fig. 6).

Tulsi is most respectable and honored herb due to its importance in healing, religion, spirituality and culture. The another popular name of it is “Sulbha” as it is easily obtainable.⁷

Dental uses:

Anticariogenic properties:

Strep. Mutans is a micro organism which has been well implicated in causing dental caries actually it initiates the dental caries. In an in – vitro study the various concentration of the tulsi extract have been assessed against the strep. Mutans and concluded that the composition of tulsi extract 4% has a maximum antimicrobial potential.⁸

Toothache:

Tulsi can act as COX-2 inhibitor, like morden analgesics due to significant amount of eugenol. Tulsi leaves contains 0.7% volatile oil comprising about 71% eugenol and 20% methyl eugenol.⁹

Oral infection:

Tulsi leaves are quite effective in treating common oral infection. Few leaves chewed daily help in maintaining oral hygiene. The anti bacterial agents present in the plant is Carracrol and Tetpene.⁸

Apthous ulcerations:

Tulsi at a dose of 100mg/kg was found to be anti ulcer agent in a study. It possess antiulcerogenic as well as ulcer healing properties.¹⁰

Nutrients:

Tulsi contains Vit. A and C, calcium, zinc and iron. It also has small amount chlorophyll and many other phytonutrients. Deficiency of these nutrients has been associated with variety of oral diseases.¹¹

Periodontal disease:

Powder of dried tulsi leaves can be used for brushing the teeth. We can mix it with mustard oil to make a paste and used as tooth paste. This is very useful in halitosis cases.^{8,9}

Candidiasis:

The antifungal activity of essential oil of tulsi and its two main components i.e. eugenol and linalool have been investigated against some species of candida which causes candidiasis.¹²

Lichen planus:

Tulsi have an unique property of acting on skin and also bring about immunomodulation and its one of the treatment options in Ayurveda for treating lichen planus.¹³

Precancerous lesions:

Polypheno rosmarinic acid present in tulsi act as powerful antioxidant. So this property can therapeutically utilised in treating common oral precancerous lesion and conditions like leukoplakia and oral submucous fibrosis.^{14,15}

Pemphigus:

Tulsi help in boost the immune system and bring about immunomodulation which promotes the healing of blisters and sores, due to its immunomodulating properties it can be used in mucosal condition like pemphigus.¹⁶

Defluoredation of contaminated water by tulsi

Fluoride levels in drinking water in 196 districts of 19 Indian states are much higher than the maximum concentration of 1.5 parts per million (ppm) deemed safe. Poor people in these areas do need expensive gadgets to get rid of the contaminant anymore. All they need is a tulsi plant. Fluorosis, which causes dental and skeletal decay, is endemic in at least 25 countries across the world. According to estimates by Fluoride Action Network, a US-based non-profit, 25 million people are affected by fluorosis in India and another 66 million are at a risk. It's simple. All one needs to do is either boil or shake a handful of holy basil or tulsi leaves with water for a while. This is enough to decontaminate about 20 litres of water. To

test the efficacy of the method, we experimented with various water samples having different fluoride concentrations. When 75 mg of fresh leaves were added to 100 ml of water with a fluoride concentration of 5 ppm, nearly 95 per cent fluoride was removed in 20 minutes. Stems and dried leaves had a fluoride removal efficiency of 74 to 78 per cent for the same water sample. During a study in 2009, it was found that 24 per cent of water samples from Rajura tehsil in Chandrapur district have fluoride concentration higher than the permissible limit. Most fluorosis victims here were poor. This prompted researchers to work towards finding a fluoride removal method that is accessible even to those having little money. It was thought that a locally available plant is the best option. Due to their proven medicinal properties, tulsi leaves have been used since ages to consecrate drinking water during festivals. It was decided to experiment with the plant and see if it can remove fluoride from water. It's being planned to carry out the experiment on a larger scale. The method is safe and certainly better drinking untreated water.¹⁷⁻²¹

CONCLUSION

The medicinal plant 'Tulsi' which is regarded as the 'Queen of the Herb' because its medicinal properties and mythological value too. By this review, it is evident that Tulsi is a medicinal plant of great importance, due to its varied application in medicine. This review helps in establishing a scientific basis for therapeutic uses of the plant. However further studies are still required to explore other potential activities of this plant.



Fig. 1 Tulsi leaves



Fig. 2 Tulsi flowers



Fig. 3 Tulsi roots



Fig. 4 Tulsi seeds



Fig. 5 Krishna tulsi



Fig. 6 Rama tulsi

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