

## Tulsi: A Medicinal Herb for Oral Health

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### ABSTRACT

Herbal medications have been commonly used worldwide since centuries and have been acknowledged by clinicians and patients for their better remedial value & minimal side effects as compared to newer medicines. *Ocimum sanctum* Linn (Tulsi) is a well-known plant cultivated in Indian subcontinent. This paper reviews the therapeutic effect of this plant in treatment of several medical and oral disorders.

**Keywords:** Tulsi, *Ocimum sanctum* Linn, Periodontitis.

### INTRODUCTION

In dentistry, herbal medicines has gained importance for treating various oral lesions such as lichen planus, oral submucous fibrosis, leukoplakia, pemphigus vulgaris, aphthous ulcer, candidiasis, herpes virus and oral infections. It is also used in prevention of dental caries as well as in minimizing dental pain. It has various applications even in the field of Periodontics. Periodontitis is an inflammatory disease which occurs due to different periodontal pathogens leading to destruction of periodontal tissues. Herbal medicine has an active role in reducing periodontitis. These can be commercially used as a mouthwash, local drug delivery system in treating gingivitis, oral malodor, for faster surgical wound healing & suppressing inflammation around dental implants.

Tulsi is considered to be the most sacred plant and is often referred as the

“HolyBasil” in Indian subcontinent. There is recorded evidence regarding use of *Ocimum sanctum* (Tulsi) as an aromatic plant in Ayurveda. Belonging to the family Labiatae, it grows in tropical and sub tropical belts including India [1] and is commonly seen in the Indian fields. "Tulsi" in Sanskrit means "the incomparable one" and therefore known as the queen of herbs. [2] This plant has been examined pharmacologically for antimicrobial, immunomodulatory, anti-inflammatory, hypoglycemic, chemoprotective and analgesic activities. [3]

### ORAL BENEFITS OF TULSI:

#### Toothache

Tulsi contains significant amount of Eugenol (1-hydroxy-2-methoxy-4 allyl-benzene) hence it acts as COX-2 inhibitors similar to modern analgesics. *Ocimum sanctum* leaves contain 0.7% volatile oil consisting about 71% eugenol and 20% methyl eugenol. [4]

#### Oral infections

Tulsi leaves are quite effective in treating common oral infections. When chewed, tulsi leaves help in maintaining oral hygiene. Antibacterial agents namely carvacrol and terpene are present in this plant. Sesquiterpene b-caryophyllene also serves the same purpose. This constituent in FDA approved food additive which is naturally present in Tulsi. [5]

#### Anticariogenic agent

*Streptococcus mutans* is a causative microorganism significantly contributing to tooth decay. In an in-vitro study the various

concentrations of the Tulsi extracts have been evaluated against streptococcus mutans and hence concluding that the composition of Tulsi extract 4% has a maximum antimicrobial potential. [5]

### **Candidiasis**

The antifungal activity of the essential oil of *Ocimum sanctum* and its two constituents i.e. Eugenol and linalool have been studied against two species of *Candida* (i.e. *C. albicans* and *C. tropicalis*) which are known to cause oral candidiasis in a study and concluded that linalool is more promising and effective against *Candida*. [6]

### **Lichen planus**

*Ocimum sanctum* brings about desired immunomodulation & has distinctive property of acting on skin & blood tissue. It is considered as one of the treatment modalities in Ayurveda for Lichen Planus. [6]

### **Leukoplakia and oral submucous fibrosis**

Polyphenol rosmarinic acid is present in tulsi that can act as a powerful antioxidant. This antioxidant property is useful in treating common oral precancerous lesions and conditions. [7,8]

### **Pemphigus**

Ayurvedic treatment aims at boosting the immune system and promotes healing of blisters and sores. Due to its immunomodulating property *Ocimum sanctum* may find its potential use in treating immunologically mediated mucosal condition called pemphigus. [9]

### **Apthous ulcers**

*Ocimum sanctum* at a dose of 100 mg/kg was found to be effective antiulcer agent in a study. Anti-ulcer effect of *Ocimum sanctum* may be due to its cytoprotective effect rather than antisecretory effect. [10]

### **Nutrient**

Tulsi contains Vitamin A and C, calcium, zinc and iron. It also has chlorophyll and

many other phytonutrients. Deficiency of these nutrients has been associated with variety of oral diseases. [11]

### **Role of Tulsi in periodontal diseases**

Tulsi leaves dried in sun and powdered can be used for brushing teeth. [12] It can also be mixed with mustard oil to make a paste and used as toothpaste. Tulsi has also proven to be very effective in preventing halitosis. Its anti-inflammatory property makes it a suitable remedy for gingivitis and periodontitis, and it can be used for massaging the gingiva in these conditions. [13]

### **CONCLUSION**

Tulsi is a legendary herb which has been used for ages due to its religious and medicinal values. Several pharmacological studies have established a scientific basis for therapeutic uses of this plant. It can prove beneficial in treating oral diseases also because of its antibacterial, anti-inflammatory, ulcer healing, antioxidant, immunomodulatory properties. Future studies should be directed to explore and evaluate therapeutic significance of this miraculous plant in periodontal diseases.

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