

An overview of Tulsi (Holy basil)

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Abstract : Tulsi (*Ocimum sanctum*) member of family (*Lamiaceae*) is the most significant medicinal plants mentioned in Ayurvedic creative writing for its medicinal and religious properties. The root, seeds, and leaves are majorly used due to its therapeutically properties. Tulsi, beside with other health profit is known to have antibiotic properties. Hence, “antiviral activity” of aqueous/ ethanol/ methanol and chloroform extract of powdered drugs was investigated against reasonably important viruses of “veterinary importance”, Single stranded RNA virus. As per Ayurvedic literatures tulsi is mentioned under Helminthiasis because it is an anti-microbial agent. The uses of this plant on a daily basis are a witness to Ayurvedic intelligence and provide an pattern of earliest information contribution solutions to present trouble. It have also be exposed to respond to metabolic-stress by homogenize of blood sugar, blood pressure, Cholesterol, and mental state through encouraging result on remembrance and perception act and by its anxio-lytic and edronax effect. This drug is a famous for house hold medication for many diseases such as injury, respiratory disorders, hepatic disease, viral infection, earache, back pain, hiccup, inflammation of the conjunctiva in newborns, stomach diseases, urinary disorders, seborrhea disease, a variety of toxicity and mental stress. In the present studies literature review is mentioned along with its Morphology, Phytochemistry, Pharmacognostical studies and various pharmacological activities and mainly anti-viral activity.

Keywords: *Ocimum sanctum*, Antiviral activity, Phytochemistry, Pharmacognostical & Pharmacological aspect and traditional uses.

1. INTRODUCTION

Ocimum sanctum is a significant sign of the brahminic spiritual ritual. While the term “Tulsi” tells the suggestion of the unparalleled one. Additional name, “Vishnupriya” expresses the one that delight Lord Vishnu. Cultivated in maximum of Indian houses and temples, its marvel has saturated our native society down the ages. In English it is called as Holy Basil and it’s botanical name is *Ocimum sanctum* and it’s family is *Lamiaceae*. Tulsi classified into two types- forestland and cultivated land. While having selfsame usage, it has dark coloured leaf. Tulsi is widely used in home remedy for for treatment of injury, respiratory disorders, hepatic disorders, viral infection, earache, spinal pain, hiccup, inflammation of the conjunctiva in newborns [1,2]. It also have ambrosial, appetiser, helps to relieving flatulence, helps to cure mucus irritation, inducing perspiration, diuretic, expectorator, alexiteric, anthelmintic and antipyretic properties [3]. Tulsi is maybe one of the most specimens of Ayurveda universal method to live the life come up to health. It’s taste is bitter [4].

Classification

Empire	Plantae/Plants
Alternate-empire	“Tracheophytes”
Division	“Magnoliophyta”
Sub- Division	Seed plant/Spermatophyte
Order:	“Lamiales”
Class:	“Magnoliopsida”
Family-	“Lamiaceae”
Genus:	“Ocimum”
Species:	“O. tenuiflorum”

Synonyms

- Sanskrit : Surasa, Krishna tulasi, Bana Tulasi
- Assamese : Tulasii
- Bengali : Tulasai
- English : Holy Basil
- Gujrati : Tulasei, Tulsi
- Hindi : Tulasii
- Kannada : Tulaseii, Shri Tulsi, Vishanu Tulsi
- Malayalam : Tulsii, Tulasae
- Marathi : Tulase
- Punjabi : Tulsi
- Tamil : Tulaesi, Thulasii, Theiru Theezaei
- Telugu : Tulasii
- Urdu : Raihana, Tulss

Morphology

Distribution	Grow upto 30 - 60 cm height [5].
Territory	Found throughout the Indis [5].
Habit	Annual herb[5].
Mool	Thin, wired, branches, hairs, soft, colour black to brown from external or dull and violet internal [5].
Tana	Stiff, greenly, wooded, branches are hairy, external colour pinkish-brown to black, internal colour dull yellowish, fracture: stringy and slightly aromatic odour [5].
Patra	Leafs are 2.5 to 5cm long 1.6 to 3.2 cm wide, elliptically egg shaped, dumb or acute apex, hairy on both sides. Petiole is thin, hairy; odour, aromatic[5].
Chaal	Colour: Greyish brown from outside and pale pink from inside, longitudinal cracks are present [5].
Pushpa	Purplish or crimson coloured, calyx elliptical or campanulated 3-4 mm bilipped, odour is aromatic, taste is pungent [5].
Phal	Four nutlets, each contains one seed, membranous, colour is dull brown or reddish with small black patches, odour is aromatic, taste is pungent[5].
Beej	Shape is oval, colour is brown, mucilaginous when soaked in water, odourless, taste is pungent [5].

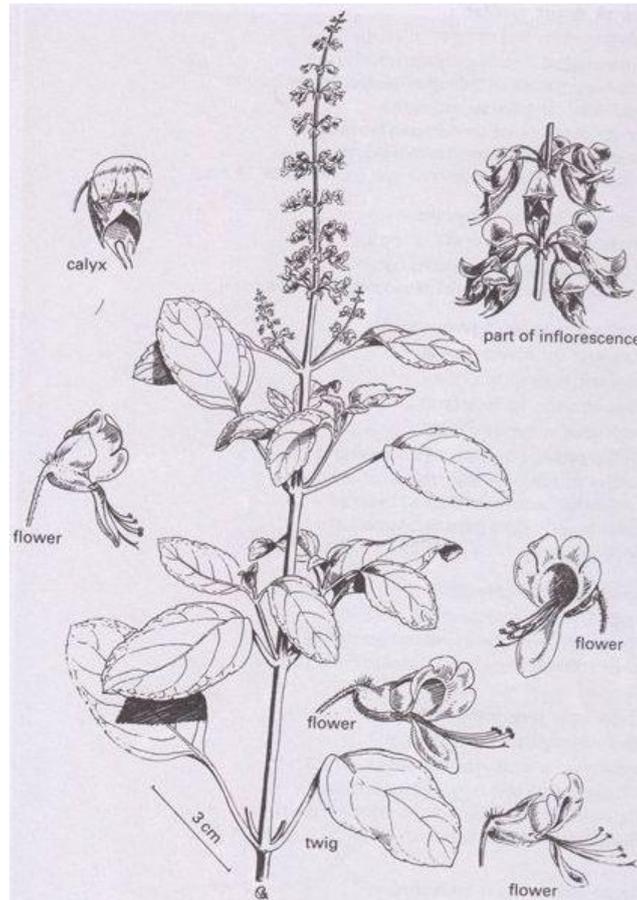


Fig.1: Plant parts [6]

Varieties of tulsi

Various types of tulsi which cultivated in different parts of the World, they are categorized in 2 groups [7].

A. Holy basil

It is known as Tulsi and is the most revered houseplant, in **India** it is associated with ayurveda and hindu religion as goddess of wealth, health and prosperity. This is further classified into 4 species [7]:

- *O. sanctum* (Rama-tulsi)
- *O. tenuiflorum* (Krishna-tulsi)
- *O. tenuiflorum* (Amrita-tulsi)
- *O. gratissum* (Vana-tulsi)

B. Mediterranean Basil

It is known as Sweet basil and is the most popular variety of basil which is found all over the world including Asia, Eurpe, America and Africa. It is most consumed herb worldwide and characterized in several further types [7]:

- Sweet basil (*O. basilicum*)
- Thai basil (*O. thyriflora*)
- Purple basil (*O. basilicum*)
- Lemon basil (*O. citriodorum*)

- Vietnamese basil (*O. cinnamon*)
- American basil (*O. americanum*)
- African blue basil (*O. kilimandscharicum*)
- Italian genovese basil (*O. basilicum*)

Phytochemistry

- Extract of fresh leafs and stem contains some antioxidants compounds like “cirsilineol”, “circimaritin”, “isothymusin”, “apigenin”, “rosameric acid”, and considerable properties of “eugenol”.
- The leaf has 0.7% “volatile oil” muster regarding 71% “eugenol” & 20% “methyl eugenol”.
- It’s oil have “carvacrol” & “sesquiterpine hydrocarbon caryophyllene”[8].

Properties or Actions

- Rassa : Kattu, Tiktaa, Kashya [5]
- Gunna : Laghau, Ruksh, Tikshn [5]
- Virya : Ushna [5]
- Vipak : Kattu [5]
- Karma: Depana, Hridya, Kaphahara, Rucya, Vatahara, Pittavardhini, Durgandhihara [5].

Medicinal properties

MEDICINAL PROPERTIES:

1,3,4

- Tulsi has antioxidant properties and reduces blood glucose levels, and blood pressure[9].
- It reduces lipid level. So, it is good for heart disorders [10].
- It builds the stamina and it is essential ingredient of herbal tea [9].
- It also used to treat gastric disorders, cough, common colds, malaria, and headaches [10].
- It’s extracted water is used as mouth wash to reduce tooth ache [9].
- It is used in the manufacturing of many skin ointments and cosmetics because it contains anti-bacterial activities [10].
- It’s oil shows stomach poisoning against “malarial larva”[10].
- It has immuno-modulatory properties [11].
- It acts as repellent for insect. So, it is widely used to store grains[9].
- A chemical present in tulsi known as beta-Ursolic acid, may used as a anti-fertility agent in future [10].

Traditional uses

- "The elixir of life" name given to tulsi because it promotes longevity [2].
- In Ayurveda & Siddha systems of medicine in which various parts of plant are used for prevention and cure of many diseases[2].
- The leafs are used enhance the memory [2].
- Chewing of leafs helps to treat ulcers and infections of mouth [2].

HEALTH BENEFITS OF TULSI IN OUR DAILY LIFE:

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□ Healing Power: The tulsi plant has many
Health benefits of Tulsi in our daily life

- **Fever and Common Cold:** The leafs are used in many types of fevers. In the duration of rainy season, when dengue and malaria fever is speeded all over the areas then its leafs are used as a prevalent method, as leafs are boiled with tea and given to patients [12].
- **Coughs:** It is a main ingredient in many Ayurvedic cough syrups and other kind of dosage forms because they help in release mucus in respiratory disorders [12].
- **Sore Throat:** Leafs of this plant are boiled with water and given to a patient with sore throat illness. This extract also used as a gargle [13].

□ Respiratory Disorder: The herb is useful in the

- **Respiratory Diseases:** Tulsi is very good herb to cure the asthma and other swasa diseases. Kwath of leafs with ginger and honey is very good and effective home remedy used for all kind of respiratory disorders and cold. This extract with the mixture of lavang and lavana shows instant aid in influenza [12].
- **Kidney Stone:** Tulsi shows a very good and effective result on the kidney. If patient has a renal stone, juice of leafs along with honey if it given for six months it will remove the stone through urinary tract [13].

isorder: Basil has a beneficial effect in

- **Heart Diseases:** Tulsi cure all types of heart diseases and the “weakness” of the heart. It helps to reduce the blood cholesterol level [12].

- **For Children's:** Common-Diseases of children's like common cold, high body temperature, loose stools and vomiting can be cured with juice of leafs. If blisters of chicken pox late in their appearance, tulsi leafs given with kesar will rush them [13].
- **Stress:** Tulsi leafs are observed as an stress booster agent [12].

- **Insect Bites:** Tulsi shows prophylactic or preventive and curative for insect tingle or bites. Intake of leaf juice and again given after some hours. Kalk of clean roots is used in case of insect bites [12].

- **Skin Disorders:** Application of tulsi juice can helps to treat the fungal infection and other types of skin disorders. It can also used to cure leucoderma [13].
- **Dental disorders:** Leafs dried under the sunlight and powdered, can be used in cleaning of teeth cure the teeth disorders. Some power if mixed with mustered oil to create a kalk and applied as dental cream. This also treat pyorrhoea and other teeth diseases [12].

Pharmacological Studies

Activity	Effect
Antioxidant	Polyphenol Rosmarinic acid is present in the Tulsi acts as anti-oxidant. It is safeguard of the cells of human body from breaking due to the resistance of “free radicals”. More oxidation in the body also had done the cell damage. This acid helps to decreases the development of excess oxidation[12,13].

Anti-bacterial	Carvacrol/terpene anti-bacterial chemicals is there in the tulsi. Sesquiterpene B-caryophyllene also a anti-bacterial agent. It helps to prevent the human body from Bacterium which may cause the various diseases [12, 14].
Anti-inflammatory	Rosmarinic acid present in tulsi shows a anti-inflammatory effect and anti-oxidant [15].
Adaptogenic	Tulsi is a good and rich source of Rasayana properties which helps to cure the common mood changing activity of body and shows the mental calm and clarity. Eugenol and caryophyllene are the mainly very important Rasayana properties present in the tulsi [12].
Immuno-modulator	Tulsi have outstanding immune-enhancing functions that bild the body against unfamiliar elements like bacteria, viruses, microbes, allergens etc. Thus, it helps to maintains the balance in the body[15].
Antimicrobial effects :- Anti-microbial effects	Essential oil present in it has anti-bacterial antiseptic and anti-viral properties. It inhibites the growth of E.coli, B.anthraxis, M.tuberculosis etc. Extract considerably cut down the cause of diseases, scientific indications and the bio-chemical frame work in sufferer with any kind of viral infections [12].
Anti diabetic effect Anti-diabetic effect	The result shows 17.6 % decrease in without meal blood sugar and 7.3% decrease in post-prandial blood sugar on treating with this drug as compare to the blood sugar levels while treating with placebo[16-20].
Antifertility effect	Ursolic acid has been investigated to own anti-fertility movement in animals. This result have been credited to its anti-estrogenic outcome which may be dependable for spermatogenesis in gents and non dependable effect on implantation of ovum in ladies [12].

Antioxidant - Porinic ac

CONCLUSION

Ocimum sanctum is a conventional plant used for the management of a largest variety of disorders such as anti-viral agent, antiseptic, reduce inflammation, anti-oxidant, anti-ulcer, injury, to cure diabetes mellitus, bacillary dysentery, loose motions, purgative, vermifuges, astringent, cure leprosy, prevent the formation of goitre, treat tumour, remedy for pest bite & venom, in indigestion and relieving flatulence. It have so many ancient value in treating number of disorders has been confirmed by a pharmacological screening of high range of plant part. The traditional uses are not warranted to justify because there is still a lack of clinical data for its value, and clinical trials. It also has a lot of secreted medicinal properties which can be again evaluated in the future.

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