

Tulsi :

Botanical Name: *Ocimum sanctum*

Family: Lamiaceae

Useful part : Leaves.

**INTRODUCTION:** The Indian Himalaya is home to more than 8000 species of vascular plants of which 1748 are known for their medicinal properties. Tulsi is one of those wonderful and amazing plants. There are 160 species of in the genus (*Ocimum*) broadly dispersed over the warm region of the globe. *Ocimum sanctum* (Krishna tulsi), *Ocimum gratissimum*(Ram tulsi), *Ocimum canum*(dulal tulsi), *Ocimum basilicum*(Ban tulsi), *Ocimum killimandscharicum*, *Ocimum americanum*, *ocimum camphora* & *Ocimum mirantham* are examples of known important species of genus *Ocimum* which grows in different parts of world and are known to have medicinal properties. Several medicinal properties have been attributed to the Tulsi plant not only in Ayurveda and Siddha but also in Greek, Romannand and Unani system of medicine. Tulsi an excellent herb for lifting the heaviness of fevers, cough & cold etc. Tulsi is a prophylactic shrub growing to about 75 cm. It is commonly found near temples & home & is worshiped daily by Hindus.

*Ocimum tenuiflorum*, commonly known as **tulasi** (from [Sanskrit](#)), or **holy basil**, is an aromatic [perennial](#) plant in the family [Lamiaceae](#). Geographical source In India, the plant is grown throughout the country from Andaman and Nicobar islands to the Himalayas up to 1800 meters above the sea level. It is widely cultivated throughout the [Southeast Asian tropics](#). It is native to tropical and subtropical regions of Asia, Australia Malaysia, West Africa and the western Pacific. It is an agricultural and [environmental weed](#).

*Tulasi* is cultivated for religious and [traditional medicine](#) purposes, and also for its [essential oil](#). It is widely used as an [herbal tea](#), commonly used in [Ayurveda](#). It has a place within the [Vaishnava](#) tradition of [Hinduism](#), in which devotees perform worship involving the plant or its leaves.

- **Morphology:** *Ocimum sanctum* L. (Tulsi) is an erect, much branched sub-shrub 30-60 cm tall. The Roots of the *Ocimum sanctum* plant are Thin, wiry, branched in appearance; hairy, and soft in nature, The stem is erect, herbaceous, woody, branched by appearance; hairy, sub-Quadrangular in nature, externally purplish-brown to black, the odour of stem is faintly aromatic. Leaves are simple opposite green or purple, 2.5-5 cm long, 1.6-3.2 cm wide, hairy, oblong, obtuse or acute, entire or serrate. The *Ocimum sanctum* flower is purplish or crimson coloured, small in close whorls; The fruit consist of a group of 4 with one seed, Seeds of Tulsi are rounded to oval; brown,



*Ocimum tenuiflorum*: (Black) Krishna tulsi

*Ocimum Sanctum*: Ram tulsi

- Chemical Constituents:

Literature survey revealed in *O. sanctum* the presence of methyl eugenol,  $\beta$ -caryophyllene, eugenol,  $\beta$ -elemene, methyl chavicol, and linalool. In other species, *O. gratissimum* is a well known plant used in the Indian herbal medicine. The flowers and the leaves of this plant are rich in essential oils, so it is used in the preparation of teas and infusions. The volatile oil of *O. gratissimum* contains mostly thymol and eugenol those are probably responsible for antimicrobial activity. *O. kilimandscharicum* is known as kapur tulsi. extract of leaves contains camphor, in the leaves camphor (32%), [eucalyptol](#) (19%),  [\$\alpha\$ -bisabolene](#) (17%), eugenol (14%), germacrene (11%) and  $\beta$ -bisabolene (11%). In tulsi essential oil consists mostly of eugenol (70%)  [\$\beta\$ -elemene](#) (11%),  $\beta$ -caryophyllene (8%), and [germacrene](#) (2%), with the mostly [terpenes](#).

- Traditional And Medicinal Uses:

1. Traditional Uses that Ayurveda and Siddha systems of medicine for prevention and cure of common cold, headache, cough, influenza, earache, fever, colic pain, sore throat, bronchitis, asthma, hepatic diseases, malarial fever, as an antidote for snake bite and scorpion sting, flatulence, migraine headaches, fatigue, skin diseases, wound, insomnia, arthritis, digestive disorders, night blindness and diarrhoea. The leaves are good for nerves and to sharpen memory. Holy Basil is so good for boosting up the immune system. It protects from nearly all sorts of infections from viruses, bacteria, fungi and protozoa. *Ocimum sanctum* used in various purposes such as leaves, flowers, stem, root, seeds etc. are expectorant, analgesic, anticancer, hypolipidemic and antistress agent. It also plays a significant role in treatment of fevers, arthritis, convulsions, bronchitis etc, in traditional medical practices.

2. Medicinal Uses: Eye care:- The leaf juice of *Ocimum sanctum* along with triphala is used in ayurvedic eye drop preparations recommended for glaucoma, cataract, chronic conjunctivitis & other painful eye disease.

Malaria Fever: Decoction of the root of tulsi plant is given is given as a diaphoretic in malarial fevers. Ayurvedic preparations containing *Ocimum sanctum*, *Allium sativum*, *Piper nigrum* & *Curcuma longa* have been shown to possess antimalarial activity against *Plasmodium vivax* & *Plasmodium falcifarum*.

Heart tonic: Affinity of *Ocimum sanctum* for rasa dhatu helps to increase circulation through the heart where there is congestion from high vata and kapha eugenol.

4. Skin care: In case of ring worm or other skin related diseases such as leucoderma paste of tulsi leaves is applied on the affected area to cure these ailments. In case of chicken pox tulsi leaves are taken with saffron to explore the disease.

5. Anticancer activity: - tulsi plants are used as a potential source of anticancer and antitumor properties.

6. Antidiabetic activity: - *O. sanctum* has been reported to possess very good anti diabetic properties. The anti-diabetic activity of hydroalcoholic extract to be significant at the dose levels of 250 and 500 mg/kg body weight.

7. Antibacterial activity: - Antibacterial activity of the aqueous, alcoholic, chloroform extract and oil obtained from leaves of *Ocimum sanctum* were studied against *E.coli*, *P. aeruginosa*, and *S. aureus*.

8. Anti fertility activity: Local women as well as the Ayurvedic physicians have been reported to use the leaves of Tulsi for antifertility effect. In males, Tulsi leaves reduce spermatogenesis by retarding sertoli cells activity.

9. Mosquitocidal activity: Mosquitocidal activity of Tulsi was investigated using its eugenol and triglyceride on fourth instars *Aedes aegypti* larvae. larvae which came in contact with seeds became firmly attached to it and died due to drowning of larvae.

10. **Insect repellent:** the dried leaves have been mixed with stored grains to repel insects.

**Significance in Hinduism:** [Tulasi in Hinduism](#) a sacred plant for [Hindus](#), particularly the [Vaishnavite](#) sect. It is worshipped as the [avatar](#) of [Lakshmi](#), and is often planted in [courtyards](#) of Hindu houses or temples to [Hanuman](#). The ritual lighting of lamps each evening during [Kartik](#) includes the worship of the *tulsi* plant. Vaishnavites are also known as "those who bear the *tulsi* around the neck". [Tulasi Vivaha](#) is a ceremonial festival performed between [Prabodhini Ekadashi](#) and [Kartik Purnima](#).

## **ARDUSHI:**

Botanical Name : *Adhatoda vasica*

Family: Acanthaceae

Useful parts: Leaf, root, flower

**Adhatoda** commonly known as **Malabar nut, adulsa**, adhatoda, vasa, vasaka, is native to [Asia](#). *Adathoda* means 'untouched by goats' in Tamil. The name derives from the fact that animals like goats do not eat this plant due to its extreme bitter taste. The plant's native range is Afghanistan, Indian, Bangladesh, Pakistan, Nepal, and SriLanka, Myanmar and Vietnam. It is used as a traditional medicinal plant.

Morphology : A dense glabrous shrub up to 0.5 to 1m. an perennial shrub. Stem: Herbaceous, erect, branched, Leaves: alternate, simple, opposite, elliptic or elliptic-lanceolate, acuminate. leaves 8-9 centimeters in length by four wide and borne on short [petioles](#). Flowers: white, in dense spikes, white; bracts ovate, calyx deeply five-lobed; stamens glabrous. Fruits: four seeded capsules with a solid base. Seeds: glabrous. Flowering and fruiting between February to May.

**Chemical constituents :**

aminophylline, isoprenaline, Vasicinone, Vasicine (peganine), vasicinine, beta-sitosterol, Kaempferol, beta- sophoroside, luteolin, adhatodic acid, Carotene, vasakin, vasicinol, vasicinone, vit-C, vasicol, vasicinol, vasicinolone, adhatodine, adhavasine, anisotine, vasicolone, vasicolinone etc.



**uses :** *External uses :* Paste is anti inflammatory , antibacterial & analgesic

**Internal uses:** **The flower** – Balances Kapha and Pitta. It is bitter, coolant and pungent, chronic respiratory tract infections, colds and coughs, skin disorders, fever, cardiac tonic, throat, asthma, diabetes, bleeding disorders, jaundice and liver disorders. The herbs useful in bleeding disorders, Vasa is the best.

**Dosage :** Leaf juice 10-20 ml; root decoction 50-100 ml; flower juice 10-20 ml

**Side effects:** People with diabetes should use this medicine with care, because it helps to reduce blood sugar levels. It is safe to use in children above 1 year of age. It is best to avoid in pregnancy. Can be used in lactation, under medical supervision.

**AADU :**

Botanical Name : *Zingiber officinale*

Family: Zingiberaceae

Useful parts: Rhizome (underground stems)

**Habitat & Distribution :** All over India, Srilanka, Nepal

**Ginger** (*Zingiber officinale*) is a [flowering plant](#) whose [rhizome](#), ginger, is widely used as a [spice](#) and a [folk medicine](#). It is an [herbaceous perennial](#) that grows pseudostems about one meter tall, bearing narrow leaf blades. Ginger has been used in [traditional medicine](#) in China,

India and Japan for centuries, and as a modern [dietary supplement](#). Ginger may offer benefits over placebo for nausea and vomiting during pregnancy.

**Morphology:** It grows up to 1 metre high. The leaves grow in an alternate manner and are long and glabrous, 10-30 cm long elongate in nature. It produces white and pink clusters of flower buds that grow into yellow flowers on maturity. Traditionally, the rhizome is gathered when the stalk [withers](#); it is immediately [scalded](#), or scraped, to kill it and prevent [sprouting](#). Flowering and fruiting during July-September. Propagation Ginger is vegetatively propagated from small sections of the rhizome, called sets.

***Chemical composition :***

geraniol and neral; and sesquiterpenes, beta-sesquiphellandrene, betabisabolene,

ar-curcumene and alphasgingiberene, gingerols, shogaols, curcumene, beta-boürbornene, d-borneol, citral, d-camphene, citronellol, geraniol, gingerol, a- & beta- Zingiberenes, zingiberol, zingerone, gingerols, paradol, gingerenone A, ginger glycolipids A, B, & C; gingerdiol; gingerone B & C

***Properties :*** antiemetic, hypocholesterolaemic, anti-inflammatory, antispasmodic, expectorant, laxative, circulatory stimulant, diaphoretic, antipyretic, analgesic, hypotensive and hepatoprotective.



**Farming:** The farmland in which they are to be planted must be thoroughly dug or ploughed by the farmer to break up the soil. After the soil is sufficiently ploughed, water channels are made 60–80 feet apart to irrigate the crop. The next step is planting the rhizome seed. In India, planting the irrigated ginger crop is usually done in the months between March and June as those months account for the beginning of the monsoon, or rainy season. Once the planting stage is done, Mulching is done by applying mulch (green leaves for example) to the plant beds directly after planting and again 45 and 90 days into growth. After mulching comes hilling, which is the stirring and breaking up of soil to check weed growth, break the firmness of the soil from rain, and conserve soil moisture. In India, farmers must irrigate their ginger crops every two weeks at the least between September and November (when the monsoon is over) to ensure maximum yield and high quality product.

The final farming stage for ginger is the harvesting stage, harvesting must be done eight to ten months after planting. After soaking them in water, the outer skin is scraped off with a bamboo splinter or wooden knife by hand as it is too delicate a process to be done by machinery. The whole dried rhizomes are ground in the consuming centres. Fresh ginger does not need further processing after harvest.

**Chemical Compositan:** Raw ginger is 79% water, 18% [carbohydrates](#), 2% [protein](#), and 1% [fat](#). In a reference amount of 100 g raw ginger supplies 333 kilojoules (80 kilocalories) of [food energy](#) and moderate amounts of [potassium](#), [magnesium](#) and [manganese](#), but otherwise is low in [micronutrient](#) content.

**Uses:** Ginger is a fragrant kitchen spice used worldwide, whether for meals or as a folk medicine. Ginger can be used for a variety of food items such as vegetables, candy, soda, pickles, and alcoholic beverages. Young ginger rhizomes are juicy and fleshy with a mild taste. They are often [pickled](#) in [vinegar](#) or [sherry](#) as a snack or cooked as an ingredient in many dishes. They can be [steeped](#) in boiling water to make ginger [herb tea](#), to which [honey](#) may be added. Ginger can be made into candy or [ginger wine](#). Gingerol and shogaol have been shown to suppress gastric contractions. Both fresh and dried rhizomes suppress gastric secretion and reduce nausea, vomiting, Irritable bowel , diarrhoea, fever, cough, asthma, flatulence, colic, colds ,influenza, and migraine.

HALDAR:

Botanical Name : *Curcuma longa*

Family: Zingiberaceae

Useful parts: underground stems (rhizomes)

Turmeric belongs to the same genus (*Curcuma*) as many other economically important species, narrow-leaved turmeric (*C. angustifolia*), and wild turmeric (*C. aromatica*).

**Turmeric** or *Curcuma longa* is a [perennial](#), [rhizomatous](#), [herbaceous plant](#) native to the [Indian subcontinent](#) and [Southeast Asia](#) that requires temperatures between 20 and 30 °C and high [annual rainfall](#) to thrive.

The rhizomes can be used fresh, but they are often boiled in water and dried, after which they are ground into a deep orange-yellow shelf-stable spice powder commonly used as a [coloring](#) and flavoring agent in many [Asian cuisines](#), especially for [curries](#) ([curry powder](#)). Turmeric powder used in [Ayurvedic medicine](#), Curcumin, a bright yellow chemical produced by the turmeric plant, is approved as a [food additive](#) by the [World Health Organization](#), [European Parliament](#), and United States [Food and Drug Administration](#). The greatest diversity of [Curcuma](#) species by number alone is in [India](#), at around 40 to 45 species. [Thailand](#) has a comparable 30 to 40 species. Other countries in tropical Asia also have numerous wild species of [Curcuma](#).

**morphology:** Turmeric is a [perennial herbaceous plant](#) that reaches up to 1 m tall. It has highly branched, yellow to orange, cylindrical, aromatic rhizomes. Leafy shoots bear up to ten alternate distichous leaves. An upright herb with large, oblong leaves that are dark green on the upper surface and pale green underneath 76 to 115 cm (30–45 in) long and rarely up to 230 cm (7 ft 7 in). At the top of the inflorescence, its yellow-white flowers grow on a spike-like stalk and have small, brown seeds. Turmeric only reproduces via its underground stem (rhizome).

Chemical composition : Turmeric powder is about 60–70% [carbohydrates](#), 6–13% water, 6–8% [protein](#), 5–10% [fat](#), 3–7% [dietary minerals](#), 3–7% [essential oils](#), 2–7% [dietary fiber](#), and 1–6% [curcuminoids](#). The golden yellow color of turmeric is due to curcumin.

[Phytochemical](#) components of turmeric include [diarylheptanoids](#), a class including numerous curcuminoids, such as [curcumin](#), [demethoxycurcumin](#), and [bisdemethoxycurcumin](#). Some 34 essential oils are present in turmeric, among which [turmerone](#), [germacrone](#), atlantone, and [zingiberene](#) are major constituents.



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**Uses:** Turmeric is one of the key ingredients in many Asian dishes, imparting a mustard-like, earthy aroma and pungent, slightly bitter flavor to foods. It is used mostly in savory dishes, but also is used in some sweet dishes, such as the Lebanese cake [sfouf](#). Most turmeric is used in the form of [rhizome](#) powder to impart a golden yellow color. It is used in many products such as canned beverages, baked products, dairy products, ice cream, yogurt, yellow cakes, orange juice, biscuits, popcorn, cereals and sauces. It is a principal ingredient in curry powders. Although typically used in its dried, powdered form, turmeric also is used fresh, like ginger.

Turmeric is used widely as a spice in South Asian and Middle Eastern cooking. In South Africa, turmeric is used to give boiled white rice a golden color, known as *geelrys* (yellow rice) traditionally served with [bobotie](#).

**Traditional uses :** [Khandoba](#)'s newer temple in [Jejuri](#), where devotees shower turmeric powder (*bhandara*) on each other. In [Tamil Nadu](#) and [Andhra Pradesh](#), as a part of the Tamil–Telugu marriage ritual, a dried turmeric tuber tied with a string is used to create a [Thali necklace](#). In western and coastal India, during weddings of the Marathi and Konkani People, turmeric tubers are tied with strings by the couple to their wrists during a ceremony, *Kankana Bandhana*. In many Hindu communities, turmeric paste is applied to the bride and groom as part of pre-wedding festivities known as the haldi ceremony. Turmeric makes a poor fabric [dye](#), used in Indian clothing, such as [saris](#) and [Buddhist monks' robes](#). The colour of turmeric changes depending on the pH of the liquid it is mixed with. If it is an alkali solution, turmeric will turn red, but if it is an acid solution, the colour will change to yellow. It is used in [chemical analysis](#) as an [indicator](#) for [acidity](#) and [alkalinity](#).

**Beauty and cosmetics :** Turmeric extracts have been used to dye creams. Traditionally, women would rub turmeric into their cheeks to produce a golden glow.

**Cultural :** The bright, orange-yellow rhizomes of turmeric have auspicious connotations in India. Yellow and orange are both colours in Hinduism and so turmeric dye is very popular during the Hindu festival Holi, which people celebrate by covering themselves with bright dyes.

**Health :** Turmeric has been shown to have anti-cancer, anti-bacterial, anti-fungal, antioxidant and anti-inflammatory properties. There has been much interest in the use of turmeric for conditions such as irritable bowel syndrome, rheumatoid arthritis, and Alzheimer's disease. Some studies suggest it may have cholesterol lowering effects and it is considered to improve liver function. It has also been used as an antiseptic and general tonic and applied externally to wounds and insect bites. In Ayurvedic medicine, turmeric has been used to counteract ageing processes. In Unani medicine, it has been used for conditions such as liver disorders and dysentery and has been applied externally for ulcers and inflammation. In India, Pakistan and Bangladesh, some traditional medicines reputed to alleviate asthma and coughs have been prepared from turmeric rhizomes.