



OCIMUM TENUIFLORUM

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Ocimum tenuiflorum commonly known as Holy basil, *Tulsi* is an aromatic perennial plant in the family Lamiaceae. It is native to the Indian subcontinent and widespread as a cultivated plant throughout the Southeast Asian tropics.

Kingdom: Plantae

Clade: Angiosperms

Order: Lamiales

Family: Lamiaceae

Genus: *Ocimum*

Species: *tenuiflorum*

Tulsi is cultivated for religious and traditional medicinal purpose, and for its essential oil. It is widely used as a herbal tea. Commonly used in Ayurveda and has a place within the vaishnava tradition of Hinduism in which devotees perform worship involving holy basil plant leaves.

The variety of *O. tenuiflorum* used in Thai cuisine is referred to as Thai holy basil, it is not to be confused with Thai basil, which is a variety of *O. basilium*.

Morphology

Holy basil is an erect, many-branched subshrub, 30–60 cm (12–24 in) tall with hairy stems. Leaves are green or purple; they are simple, petioled, with an ovate, up to 5 cm (2.0 in)-long blade which usually has a slightly toothed margin; they are strongly scented and have a decussate phyllotaxy. The purplish flowers are placed in close whorls on elongate racemes.

The three main morphotypes cultivated in India and Nepal are Ram tulsi (the most common type, with broad bright green leaves that are slightly sweet leaves), the less common purplish green-leaved (Krishna tulasi) and the rare wild "vana tulsi".

Origin and distribution

DNA barcodes of various biogeographical isolates of tulsi from the Indian subcontinent are now available. In a large-scale phylogeographical study of this species conducted using chloroplast genome sequences, a group of researchers from Central University of Punjab, Bathinda, have found that this plant originates from North-Central India. The discovery might suggest the evolution of tulsi is related with the cultural migratory patterns in the Indian subcontinent.

Significance in Hinduism

Tulsi leaves are part in the worship of Vishnu and his avatars, including Krishna and Rama, and other male Vaishnava deities, such as Hanuman and some brahmanas. Tulsi is a sacred plant for Hindus and is worshipped as the avatar of Lakshmi. Traditionally, tulsi is planted in the centre of the central courtyard of Hindu houses or may be grown next to Hanuman temples.

The ritual lighting of lamps each evening during Kartik includes the worship of the tulsi plant, which is held to be auspicious for the home. Vaishnavas traditionally use Hindu prayer beads made from tulsi stems or roots, which are an important symbol of initiation. They have such a strong association with Vaishnavas, that followers of Vishnu are known as "those who bear the tulsi round the neck".

Tulsi Vivah is ceremonial festival performed anytime between Prabodhini Ekadashi (the eleventh or twelfth lunar day of the bright fortnight of the Hindu month of Kartik) and Kartik Poornima (the full moon of the month).

Uses

Ayurveda and Siddha

Tulasi (Sanskrit:-Surasa) has been used in Ayurveda and Siddha practices for its supposed treatment of diseases. Traditionally, tulasi is taken as herbal tea, dried powder, fresh leaf or mixed with ghee.

Thai cuisine

The leaves of holy basil, known as kaphrao in the Thai language, are commonly used in Thai cuisine for certain stir-fries and curries such as phat kaphrao- a stir-fry of Thai holy basil with meats, seafood or, as in khao phat kraphao, with rice. Two different types of holy basil are used in Thailand, a "red" variant which tends to be more pungent, and a "white" version for seafood dishes.

Insect repellent

For centuries, the dried leaves have been mixed with stored grains to repel insects.

Chemical composition

Some of the phytochemical constituents of tulsi are oleanolic acid, ursolic acid, rosmarinic acid, eugenol, carvacrol, linalool, b-caryophyllene. Tulsi essential oil consists mostly of eugenol b-elemene, b-caryophyllene and germacrene with the balance being made up of various trace compounds, mostly terpenes.

Bioinspired synthesis of highly stabilized silver nano particles using *O. tenuiflorum* leaf extract and their anti bacterial activity. Green synthesis of zinc oxide nano particles using *O. tenuiflorum* leaves, anti microbial property. Cholinergic basis of memory improving effect in this plant toxicity studies in zebra fish, corrosion of zinc in sulphuric acid.

Nutritional value

Contains vitamin C and A and minerals like calcium, zinc and iron as well as chlorophyll and many other phytonutrients.