

# Ocimum tenuiflorum L.

**Synonyms:** *Ocimum sanctum* L.  
*Geniosporum tenuiflorum* (L.) Merr.

**Family:** Lamiaceae

## Various names

**Common/Trade name:** Tulsi, Holy basil

**Sanskrit names:** Ajaka, Amrita, Apetaraksasi

**Hindi names:** Baranda, Kalatulas

## Popular name/s in the southern region

- *Andaman & Nicobar Islands:* Baranda, Kalatulas
- *Andhra Pradesh:* Krishnatulsi
- *Karnataka:* Sritulasi, Tulashi
- *Kerala:* Krishnathulasi, Thulasi
- *Lakshadweep:* Thulasi
- *Puducherry:* Alangai, Ari, Ceccai
- *Tamil Nadu:* Alangai, Ari, Ceccai
- *Telangana:* Krishnatulsi



## Distribution

*Ocimum tenuiflorum* is globally distributed in the tropical region of Asia and Africa. Within India, it is grown in pots or on pedestals at Hindu homesteads and temples and frequently found run wild throughout up to 2,000 m in the Himalayas.

## Description

Subshrubs; branchlets hirsute with reddish-purple hairs. Leaves simple, opposite 1.3-3 × 0.6-2 cm, elliptic-oblongate, obtuse at both ends, margin coarsely serrate, puberulous; petiole to 2 cm long, covered with reddish-purple hairs. Racemes to 11 cm long, generally simple, occasionally branched at base. Calyx purplish, c. 3 mm long, campanulate; lobes 5, upper lip ovate, acute, lower lip hispid without. Corolla reddish-pink, to 4 mm long, tubular-campanulate; tube c. 2 mm long, dotted with sessile oil glands. Seeds c.1.5 mm long, dark brown.

## Uses

Leaves, flowers, root, and stem are used by traditional medical practitioners as expectorant, analgesic, anti-cancer, anti-diabetic, antifertility, hepatoprotective, anti-asthmatic, anti-emetic, hypotensive and anti-stress agent. Used for pooja in temples and religious ceremonies.

## Agro-ecological requirements

Tulsi is sufficiently hardy and it can be grown on any type of soil except highly saline, alkaline or water logged conditions. However, sandy loam soil with good organic matter is ideal. The crop has a wide adaptability and can be grown successfully in tropical and sub-tropical climates. However, it prefers warm climate with a temperature range of 25 0 C to 35 0 C and annual rain fall between 80- 120 cm for good growth and yield.

## Cultivation

### **Planting-stock                      production:**

Propagules could be raised from seeds and terminal branch cuttings.

**Seed propagation:** For propagating through seeds, they are to be sown in the nursery beds. For planting in one hectare, about 300 gm of seeds are required. The nursery should be located preferably in partial shade with adequate irrigation facilities. Soil is worked up to a depth of about 30 cm. Well rotten farm yard manure is applied to the soil and prepared to a fine



tilth and seed beds of 4.5 × 1.0 × 0.2 m size are prepared. As the seeds are minute, the required quantity of seeds are mixed with sand in the ratio of 1:4 and sown in nursery beds, 2 months in advance of the onset of monsoon. Seeds germinate in 8-12 days and seedlings are ready for transplanting in about 6 weeks at 4-5 leaf stage.

**Vegetative propagation:** Tulsi can also be propagated by vegetative method using terminal cuttings with about 90-100 % success when planted during October-December months.

*Improved varieties:* CIM-Ayu, CIM-Angana, CIM- Kanchan (developed by CIMAP, Lucknow).

**Field planting:** Six weeks old seedlings with 4-5 leaves are transplanted at a spacing of 40 × 40 cm/ 40 × 50 cm/ 50 × 30 cm to get high herbage and oil yield.

**Manuring/Fertilization:** At the time of land preparation, apply well-rotten farmyard manure/compost at the time of planting as basal dose based on plant/soil analysis.

**Irrigation:** Irrigation is provided twice a week till one month so that the plants establish themselves well. Later, it is given at weekly interval depending upon the rainfall and soil moisture status.

**Pests and disease:** Tulsi is not prone to serious pest/disease except some minor pests like leaf rollers. Diseases such as powdery mildew can be controlled by spraying with 0.3% wettable sulphur. Likewise seedling blight and root rot can be controlled by adopting phytosanitary measures.

## Harvesting & Post-harvest processing

The first harvest can be done after 90 days of planting and subsequent harvests at every 75 days interval. The crop is harvested at full bloom stage by cutting the plants at 15 cm from ground level to ensure good regeneration for further harvests. The yield and oil content is more in plants harvested during sunny days.



## Yield

On an average, Tulsi gives about 10 tonnes of fresh herbage per hectare per year. The herb contains about 0.1- 0.23 % oil and about 10-20 kg of essential oil per hectare. Irrigated Tulsi gives higher herbage yield (up to 20 tonnes herbage and oil yield up to 40kg per hectare).

## Economics of cultivation

Cost of cultivation: ₹ 18,000 per hectare.

Market price: *Whole plant* ₹ 50-110/kg (as on June 2019)

## Quantitative quality standards for cleaned salable leaves (acceptable limits) (w/v)

- *Foreign matter*: Not more than 2%
- *Ash*: Not more than 17.7%
- *Acid-insoluble ash*: Not more than 2.8%
- *Ethanol-soluble extractive*: Not less than 8%
- *Water-soluble extractive*: Not less than 19%

**Note:** The farmers are advised to adopt suitable practices so as to meet the quality parameters and standards of the buyers.