

Mentha × piperata L.

Family: Lamiaceae

Various names

Common/Trade names: Peppermint, Menthol

Sanskrit name: Paparaminta

Hindi : Piperment, Pudna, Vilaiti-Pudina

Popular name/s in the southern region

- *Andaman & Nicobar Islands:* Not reported
- *Andhra Pradesh :* Pudeena, Pudina
- *Karnataka:* Pudina Soppu
- *Kerala:* Karppooru-Tulasi
- *Lakshadweep:* Puthina
- *Puducherry:* Puthina
- *Tamil Nadu:* Puthina
- *Telangana:* Pudeena, Pudina



Distribution

Peppermint (*Mentha × piperita*) is a hybrid mint, a cross between watermint (*Mentha aquatica*) and spearmint (*Mentha spicata*). Indigenous to Europe and the Middle East, is now widely spread and cultivated in many regions of the world. It is occasionally found in the wild with its parent species.

Description

Perennial ascending herb growing to 60-80 cm in height; stems 4-angular, purplish. Leaves opposite, lanceolate-oblong, sharply toothed; petiole is about 5 mm. in length. The leaf varies from 2-5 × 15 cm. The leaf surfaces, mainly lower side is covered with dense hairy growth of glandular hairs. Flowers are borne in axillary and terminal whorls, purplish in colour. The flowers are small with corolla measuring 4-5 mm, calyx 2-3 mm narrowly deltoid and acuminate, pale purple or pink, seed setting absent.

Uses

The leaves on distillation yield an essential oil, containing high (75-80%) menthol content. It is used in combating cold, used as an ingredient in cough drops and related pharmaceuticals, dentifrices, cosmetics, mouth washes, scenting of tobacco products and flavouring of beverages.

Agro-ecological requirements:

Mint can be cultivated both in tropical and sub-tropical areas. The mean temperature between 20-30°C during major part of the growing period and rainfall between 1000-1100 mm is best suited. Well drained loam or sandy loam soils rich in organic matter having pH between 6 -8.2 is ideally suited for cultivation. It can also be cultivated on both red and black soil. In case of acidic soil having pH less than 5.5, addition of lime is recommended.

Cultivation

Planting-stock production: Mint can be propagated vegetatively through stolons and runners. The plants are propagated by 8 to 10 cm long stolons (underground stems) during early spring season. About 400-450 kg stolons are required for planting at 40 to 60 cm spacing in one hectare.

Improved varieties: CIM-Indus, Madhuras, Pranjali, Tushar, Kukrail (developed by CSIR-CIMAP).

Field Planting: The crop is planted during January to February. Field shall be ploughed and harrowed thoroughly and divided into beds of suitable size to facilitate irrigation and make it free from weeds. The stolons sprout in about 2 to 3 weeks when planted in February. Generally the planting should be done early depending upon ground temperature.

Manuring/fertilization: Based on plant/soil analysis, apply well-rotten farmyard manure/compost at the time of planting. The crop requires intensive weeding and this is the most expensive cultural operation which contributes to a higher yield of the crop.

Irrigation: Ten irrigations are given during summer season at intervals of 10-12 days, whereas another 4-6 for autumn crop harvested in late October. A minimum water of about 100 mm is required to obtain good crop yield. Water logging during rainy season should be avoided by providing adequate drainage.

Pests and diseases: Cutworms (*Agrotis flammatra*) can damage the plants at the collar region of young plants during spring season. Hairy Caterpillar (*Diacrisia oblique*) eats the under-surface of the leaves. Red Pumpkin Beetle (*Aulocophora foevicollis*) feeds on the growing leaves and buds. The caterpillar of Mint Leaf Roller (*Syngamia abruptalis*) folds the leaf in the form of a roll and feed inside the leaf tissue during August-September. The edges of the leaves are held together with silk-like filaments.

During rainy season, stolon rot occurs on the underground parts; the infected stolons show brown lesions which enlarge and turn black, resulting in a soft decay. *Fusarium* causes wilt disease, the affected plant leaves turn yellow, curled and finally dry. Leaf blight cause loss of foliage during summer season. For controlling diseases, better to follow 3-year-crop rotation with rice, wheat and mint.

Harvesting and post-harvest processing

The crop planted through stolons in January and February, is harvested twice i.e. in June and October months. The first crop is harvested after 100-120 days of growth and the second harvest in about 80-90 days following the first harvest. The plants are cut 10 cm above the ground by means of a sickle on bright sunny days, since harvesting on cloudy or rainy days decrease the menthol content in the oil. The fresh herbage at harvesting stage contains 0.5 to 0.68% of oil and is ready for distillation after wilting for 6-10 hrs.

Yield

The average yield is 20 tonnes of fresh herbage per hectare in two harvests, which in turn, yields around 250 kg of oil in a year.

Economics of cultivation

Cost of cultivation: ₹ 90,000 per hectare

Market Price: *Mint oil* - ₹ 1,200 per liter (as on Aug 2019)

Quantitative standards

- *Foreign matter*: Not more than 2 %
- *Ash*: Not more than 15 %
- *Acid-insoluble ash*: Not more than 1.5 %
- *Ethanol-soluble extractive*: Not less than 4.5 %
- *Water-soluble extractive*: not less than 7 %

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