

MINTS



Japanese Mint (*Mentha arvensis*)



Pepper Mint (*Mentha piperita*)



Spear Mint (*Mentha spicata*)



Bergamot mint (*Mentha citrata*)

Plant Profile

Family : *Lamiaceae; Labiatae*
English name : Mint
Indian name : Pudina, Putiha (Sanskrit)
Pudina (Hindi & Kannada)
Putina (Tamil)
Podina (Telugu)

Species : *Mentha arvensis* (Japanese mint)
M. piperita (Peppermint)
M. spicata (spearmint)
M. citrata (Bergamot mint)

Uses

- **Cosmetics, Culinary purposes, Flavouring and Perfumery**
- Mints, the evergreen herb (foliage), on distillation yield essential oils containing a large variety of aroma-chemicals in varying composition. These oils and their aroma-chemicals in pure form command a large and world-wide demand in trade.
- By and large, Japanese mint, peppermint, spearmint and bergamot mint are extensively cultivated for their oil and aroma-isolates like menthol, carvone, linalyl-acetate and linalool for use in pharmaceutical, food flavour, cosmetics, beverages and allied industries.
- In recent years, a number of minor constituents of these oils have also come to generate demand for several uses.

SOIL

- Medium to fertile deep soil, rich in humus is ideal
- The soil should have good water holding capacity but water logging should be avoided.
- A pH range of 6-7.5 is ideal.

CLIMATE

- Japanese mint can be grown in all tropical and subtropical areas under irrigation. However, it does not tolerate damp winters which cause root rot.
- Pepper mint and spear mint cannot be grown profitably in tropical and subtropical areas, specially with very high summer temperature (41⁰C) and the ideal yield is obtained only in humid and temperate conditions like Kashmir and hills of UP and HP.
- Open sunny situation without excessive rains during the growing period are congenial for good growth and development of the oil.
- Bergamot mint can be grown even in temperate climate, when it gives higher yields.

VARIETIES

Japanese mint: CIMAP-MAS-1 and CIMAP-Hybrid-77, Shivalik, EC-41911, Gombi, Himalaya, Kalka, Kosi, Gomati, Damroo, Sambhav, and Saksham

Spearmint : CIMAP-MSS-1, CIMAP-MSS-5 and CIMAP-MSS-98, Punjab spearmint-1, Ganga, Neerkalka

Bergamot mint : Kiran

Pepper mint : Kukrail, Pranjali, Tushar

INPUTS

S.No.	Materials		Per acre	Per hectare
1.	Stolons (kg)		160	400
2.	Farm Yard Manure (t)		16	40
3.	Fertilizers (kg)			
	<i>Spearmint</i>	NP ₂ O ₅ K ₂ O	48 20 16	120 50 40
	<i>Japanese Mint</i>	NP ₂ O ₅ K ₂ O	64 20 16	160 50 40
	<i>Pepper Mint</i>	NP ₂ O ₅ K ₂ O	50 20 16	125 50 40
	<i>Bergamot Mint</i>	NP ₂ O ₅ K ₂ O	48 20 16	120 50 40

CULTIVATION

Propagation

- Mints are propagated through the creeping stolons, suckers or runners.
- Stolons are obtained from previous years planting.
- One hectare of well established mint produces enough planting material for ten hectares.
- Best time for obtaining stolons is during the months of December-January.

Planting

- In the plains, planting is done during winter months, whereas in temperate climate, planting is done in autumn or spring from last week of December to 1st week of March or from 1st week of January to 3rd week of February.
- Late planting always gives poor yield.
- Mints require thoroughly ploughed, harrowed fine soil. All the stubbles of weeds should be removed before the crop is planted.
- The stolons are cut into small pieces (7-10 cm) and planted in shallow furrows of about 7-10 cm deep at a distance of 45-60 cm from row to row manually or mechanically.
- Stolons are planted half way down on inner side of the ridges.

IRRIGATION AND INTERCULTURE

- Water requirement of mints is very high. Depending on soil and climatic conditions the crop is irrigated 6-9 times before the first monsoon.
- The crop requires three irrigations after monsoon.
- Japanese mints require fifteen irrigations to get maximum yield.
- Weed growth causes about 60 per cent reduction in herb and oil yield. Hence, mints require weeding at regular intervals in the early stages of crop growth.
- Sinbar is effective as a post-emergence herbicide. Spray @ 1 kg per hectare.
- Organic mulch with combination of 0.5 kg oxyfluorfen herbicide per hectare and weeding or Pendimethion herbicide at 1 kg per hectare and weeding has been found to give excellent weed control throughout the crop growth.

PLANT PROTECTION

Major diseases: Rust, powdery mildew and stolon rot

Major insects : Leaf roller, pyralid hairy caterpillar and termites

Schedule

- * Rust can be controlled by spraying 0.2% wettable sulphur or karathane.

- * Stolon rot can be controlled by spraying of 0.2% Dithane M-45 and 0.1% brassicol.
- * Leaf roller can be controlled by spraying systemic insecticide like monocrotophos at 0.2%.
- * Hairy caterpillar can be controlled by application of 5% dipterex.
- * Termites can be controlled by soil application of 3% heptafan @ 50 kg per hectare before planting.
- * Nematodes can be effectively controlled by soil application of fenamiphos @ 11.2 kg per hectare.

HARVESTING AND YIELD

- Generally the crop is harvested 100-120 days after planting when the lower leaves start turning yellow. Further, harvesting should be done in bright sunny weather.
- Harvesting consists of cutting the green herb by means of sickle 2-3 cm above the ground.
- A second harvest is obtained 80 days after the first harvest and the third after about another 80 days.
- The first crop is ready by the end of June and the second in September or October.
- A good crop can give as high as 48000 kg of fresh herb per hectare. However, the average yield from three cuttings is 20,000 to 25,000 kg which in turn may yield about 50-70 kg oil per hectare.



Different types of Mint Oil