



Cultivation and Extraction in Jasmine (*Jasminum spp.*): Extraction and Uses

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In this article gives a information about cultivation and extraction method in jasmine which has high economical value and improved the standard of farmer. It is a perennial plant once it planted yield is since 10-15 years. Purpose of cultivation jasmine is used for floral decoration, extraction of oil, garlands, used in perfumes and flavouring agents. And also helps to reduce stress and reduce food cravings, it's is cheaply available planting material and essential for every festival and function. so, it is commercially propagated.

Keywords: Solvent extraction, low boiling point, Dissolving solvent, soil application, deficiency.

Introduction

Jasmines constitute a group of fragrant flowers which are commercially grown in many parts of the country as dry land crop and leading states are Tamil Nadu and Karnataka. Jasmine contributes substantially to the national economy and annually more than 20 crores worth of jasmine flowers are produced and sold in India and also exported to neighbouring countries. Jasmine flowers are preferred for making special type of flower strings called veni, garlands, floral decorations, extraction of essential oil which is used in preparing high grade perfumes, colognes and flavoring.

Botany of Jasmine

Scientific name	:	<i>Jasminum spp</i>
Chromosome no	:	2n=26
Origin	:	China
Family	:	Oleaceae
Species	:	<i>Jasminum sambac</i> <i>J. grandiflorum</i> <i>J. auriculatum</i> <i>J. multiflorum</i>

Cultivation of Jasmine

Soil: Jasmine grows in well drained loamy soil, and its pH of 6.5 to 7.5, but it is not suitable for clay soil because of water stagnation.

Climate: Jasmine prefers mild winter, warm summer, and moderate rainfall and sunny days. It grows up to 1200 m above MSL and does best with annual rainfall of 800-1000 mm.

Propagation: Ground layering and semi-hardwood cuttings (10-20 cm) long.

Spacing: 1.2 × 1 m, (8333 plants/ha)

Varieties: Single mogra, Double mogra, Iruvatchi, Arka aradhana, Ramanatha puram local. These are presently cultivated varieties.

Pit size: 30×30×30cm

Season: June -November best season for planting.

Main field preparation: Use a tractor-drawn chisel plough to create a fine tilth in the root zone. This will also help with drainage during the rainy season. A few days before planting, pits are filled with FYM, fresh soil and coarse sand in the ratio of 2:1:1. Remove weeds by ploughing the field one or two times. You can also use chemical weed control or mulch to reduce the weed population. Irrigation should be given immediately after planting followed by weekly irrigation depending upon weather conditions. FYM @ 10 kg/pit is applied before planting. NPK @ 60:120:120 g/plant/year is applied in 2 equal splits during November (after pruning) and June-July along with 10 kg FYM per plant.

Solvent Extraction

Types

- **Batch extraction**
- **Continuous extraction**
- **Counter current extraction**

Solvent extraction is a chemical extraction technique that uses an organic solvent to separate and concentrate a desired substance from a mixture. The process involves

1. Selecting a solvent: The solvent should be able to dissolve the desired substance better than the other components in the mixture. It should also have a low boiling point so it can be easily evaporated after collection.

2. Mixing: The solvent is mixed with the mixture to selectively dissolve the desired substance.

3. Separating: The solvent is separated from the mixture through evaporation or filtration. Solvent extraction is a highly efficient technique that can be tailored to target specific compounds. The choice of solvent and process conditions can lead to higher purity better yield.

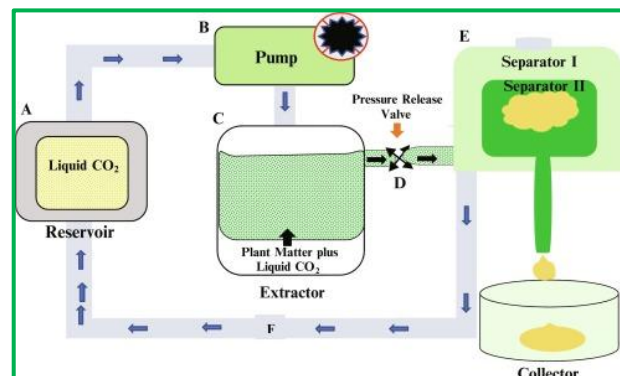
Pest and disease: A number of insect pest attack jasmine crop and cause considerable damage. Among them the most important ones are the bud worm (*Hendecasis duplifascialis*), leaf webber (*Nausinoe geometralis*) and the blossom midge (*Contarinia maculipennis*) and recently the mite (*Tetranychus urticae*) attack due to prevailing drought and hot weather. Among the different insect pests recorded, bud worm are known to poses a serious threat to flower production.

Budworm - *Hendecasis duplifascialis*

Damage symptom: *Hendecasis duplifascialis* larvae cause greatest injury to immature buds of *Jasminum sambac*. The larvae found inside the bud or in flower cluster feeding on buds. It feeds on the inner most petals of the closed bud in the initial stages, emerged through a circular hole made on the tubular portion of the corolla for tunneling into the other buds in the same shoot and pupates in the soil. The larvae makes tunnels of silk and excreta within an affected flower cluster, thus affecting the flower opening and flower buds may drop off and finally the flower buds changes into pinkish colour.

Control measures: Spray Thiochlorpid (Alanto) 240SC 1 ml/litre or Spinosad (Tracer) @ 0.5 ml/lit Spray Profenophos 25EC @ 2 ml/lit

Yellowing of leaves: It is caused by 3 factors viz., iron deficiency, nematode infection and root rot disease.



Alternaria leaf spot: Foliar application of Mancozeb @ 2.5 g/l or Azoxystrobin @ 1g/l
Soil application of *Pseudomonas fluoresces* @ 25 g/m² and foliar application of *P. fluorescens* @ 5 g/l at monthly intervals after planting.

Iron deficiency: It can be rectified by spraying Ferrous sulphate 5 g/lit at monthly intervals until the chlorotic symptoms disappear.

References

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