

# Thorns and Roses: Navigating Challenges in Rose Cultivation and Marketing

D. Sarvessh<sup>1\*</sup>, C. Ravindran<sup>2</sup>, M. Keerthana<sup>1</sup>, C. Gopika<sup>1</sup>, K. Panner selvam<sup>1</sup> and S. Viswanath<sup>1</sup>

<sup>1</sup> Research Scholar, Department of Floriculture and Landscaping, HC&RI, TNAU, Periyakulam.

<sup>2</sup> Associate Professor & Head, H&FRS, TNAU, Kodaikanal. 624 10.

\*Corresponding Author: [sarvesshdevar005@gmail.com](mailto:sarvesshdevar005@gmail.com)

Roses belong to the genus *Rosa* and encompass a diverse range of species, hybrids, and varieties. Roses, often referred to as the "Queen of Flowers," have captivated the hearts of humanity for centuries with their exquisite beauty and enchanting fragrance. The cultivation of roses is an art and a science that requires careful attention to detail and a deep understanding of the plant's needs. This technical bulletin aims to provide a comprehensive guide for individuals interested in cultivating roses, whether for personal enjoyment, commercial purposes, or landscaping projects. They are cultivated for various purposes, including cut flowers, ornamental gardens, and the production of essential oils. Successful rose cultivation involves a combination of horticultural knowledge, proper site selection, soil management, pest and disease control, and post-harvest care.

## Area and distribution

Major production of cut roses in India are West Bengal, Karnataka, Gujarat, Chhattisgarh, Maharashtra, Uttar Pradesh, Tamil Nadu, Madhya Pradesh, Andhra Pradesh and Orissa. The production of rose showed a decreasing trend from 1982-83 to 2020-21. As per estimates of National Horticultural Board (NHB, 2021), roses are cultivated in 30,000 ha in open-fields and in 650 ha in polyhouses in India.

The estimated area under the cultivation of rose in Tamil Nadu is around 3080.51 Area in hectares with the production of 30805.09 tonnes per annum and the productivity is 10.00 tonnes/ha. The crop is cultivated mostly in Tamil Nadu in the districts of Ariyalur, Cuddalore, Dharmapuri, Krishnagiri, Pudukottai, Theni, Thiruvannamalai, Trichy, Thirunelveli, Tenkasi and Villupuram.

## Soil

Fertile loamy soil with pH of 6 – 7.

## Climate

Protected cultivation: Day temperature of 25 to 28°C and night temperature not below 15°C; relative humidity of 60-65%. Open field cultivation:

Moderately cooler places (like Hosur) and sub-tropical climatic conditions (foot hills) are suitable.



## Propagation

The Rose can be propagated by rooted cuttings or by budding on Briar root stocks in hills and on Edward Rose and *Rosa indica* in plains. One year old budded plants are planted in July - August.

## Preparation of Field

Prepare the soil by repeated ploughing. Roses can be planted on beds or ridges and furrows. One year old budded plants are planted. While planting, keep the budded portion 5 cm above the soil. Plant in such a manner that the budded branch is oriented towards the centre of the bed.

## Spacing

Protected cultivation: 40 X 15 cm (7 plants/m<sup>2</sup>)

Open field cultivation: 60 x 60 cm (27,777 plants/ha) to 60 x 75 cm (22,222 plants/ha)

## Time of transplanting

6–18-month-old budded plants may be planted during May-June. The soil should be loose and humid but not too wet nor muddy.

## Irrigation

- Protected cultivation: Drip irrigation with fertigation
- Open field cultivation: Irrigate once in 5 to 7 days depending upon the soil moisture.

## Manures and fertilizers

The best time to add organic manure is at the time of pruning. FYM, leaf mould and oil cakes are

good sources of nitrogen. It is better to apply fertilizers in a mixture such as 'rox mix'.

Rose Mix can be prepared as: Neem cake - 5 kg, Bonemeal - 5 kg, Ammophos - 2 kg, Sulphate of Ammonia - 1 kg, Superphosphate - 2 kg, Potassium Sulphate - 1kg. 100g of this mixture can be used per plant. The chelated compounds of iron, magnesium and manganese are available in the market under names like 'Sequestrene Plus' which are helpful in bringing out the full colour of flowers. In general, for each rose plant urea 20-30g, superphosphate 30-50g, Potassium Sulphate 20-30g and Cakes ½ kg to 1 kg, in two to three split doses is recommended.

### Cultural operations

**Training:** Early training is essential for plants under polyhouse conditions. Some of the first growth which consists of blind shoots must not be cut or bent, but left upright. Buds appearing at early stages are removed. The second growth will come to flower again in four to five weeks. By then, the plants will be 50 to 60 cm high, which is necessary to have enough growing speed in the plant and to have enough foliage for bending.

**Bending:** The first bending (basal formation) is done on 35th day after planting. The main shoot is bent down so that lateral branches grow. The second bending is done after 2 years to strengthen the plants.

**Shoot thinning:** Periodically remove unproductive shoots and water suckers.

**Pruning:** Pruning is followed only under open conditions during the months of March and October.

**Pinching:** Pinching is done to regulate flowering. Most of the commercial cultivars take about five and a half to six weeks from pinching to produce flowers during summer and about eight weeks during winter.

**Bud capping:** To regulate the shape of the buds. Some varieties should be covered with bud nets.

**Disbudding:** Varieties produce some side buds below the centre bud. These side buds have to be removed or disbudded. The disbudding must be done regularly and also as soon as possible in order to avoid large wounds in the upper leaf axil.

**Defoliation:** The removal of leaves is known as defoliation. It is done mainly to induce certain plant

species to flower or to reduce transpiration loss during periods of stress. Defoliation may be done by removal of leaves manually or by withholding water. The shoots are defoliated after pruning.

### Harvest

Harvest the buds at tight bud stage with 60-90 cm long stems at Early morning/late evening. Ensure that the foliage on the cut stem is healthy. Stage of harvest depends on variety /consumers demand. Flowers kept in water with preservatives and transported to cold store (2 to 4°C).

### Yield

1<sup>st</sup> year: 100-120 flowers/m<sup>2</sup>

2<sup>nd</sup> year: 200-240 flowers/m<sup>2</sup>

3<sup>rd</sup> year: 300-360 flowers/m<sup>2</sup>

### Post harvesting

- ✓ **Pre-cooling:** Pre-cooling is usually done for 6-8 hours in winter and 8-12 hours in summer.
- ✓ **Pulsing:** Treat the cut flowers with 2-4% sucrose solution for 3-4 hours. This improves the quality of the flowers.
- ✓ **Grading:** Flowers that are of uniform stem length and flower buds are developing, should be grouped together and kept in a separate container at the time of cutting.

### Value added products

Rose water, Rose oil, Rose concrete, Gulkand, Pankhuri, Rose attar, Rose otto, Rose Petal Jam, Rose syrup, Rose floral tea, Rose RTS, Rose Wine.

### Marketing

- **Auction Houses:** Many rose producers sell their flowers through auction houses, where buyers, including wholesalers and retailers, bid for the flowers.
- **Wholesale Markets:** Roses are also sold in wholesale markets, where bulk quantities are purchased by retailers or event planners.

### Distribution:

- **Wholesalers:** Wholesalers purchase roses in large quantities and distribute them to retailers.

- **Retailers:** Florists, supermarkets, and other retail outlets sell roses to individual consumers.
- **Online Platforms:** The rise of e-commerce has opened up opportunities for online flower delivery services, allowing consumers to order roses for delivery to their doorstep.

### Transportation

- **Cold Chain Logistics:** Roses are often transported using cold chain logistics to maintain the required temperature and humidity levels, preserving their freshness.
- **Road and Air Transport:** Roses are transported by road and, in some cases, by air to ensure timely delivery to various markets.
- **Last-Mile Delivery:** For online orders, a network of delivery services ensures roses reach consumers' homes or desired locations.

### Challenges

- **Perishability:** Roses are highly perishable, making efficient transportation and logistics crucial to maintain quality.
- **Seasonal demand:** Demand for roses is often seasonal, with peaks during events like Valentine's Day and weddings.

### Market trends

Keeping up with changing market trends and consumer preferences is essential for producers, wholesalers, and retailers. The success of the rose supply chain in India depends on effective coordination among farmers, distributors, and retailers, along with adapting to market dynamics and consumer preferences.

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