

**RAMA UNIVERSITY, KANPUR, UTTAR  
PRADESH**

**Faculty of Agricultural Sciences & Allied Industries**



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**Course: Production Technology of Ornamental Crops, MAPs, &  
Landscaping ( HOR-221)**

## Lecture 4

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### Rose



#### Introduction:

- Top most cut flower in domestic and International market. Symbol of beauty, love and fragrance. Popularly known as queen of flowers.
- Great diversity in plant growth and flower colour, cultivated for cut and loose flowers, oil extraction, rose water, flavouring agent and drying purposes, hips of some rose species are rich in vitamin C, petals are used for preparing Gulkand and Pankhuri.
- It belongs to family Rosaceae and is originated from the Himalayan regions of Europe and north America.
- Varieties used for cut flower purpose: Christian Dior, Avon, Crimson Glory, Grand Gala, First Red, Dallas, E.G. Hill, Happiness, Confidence, picture, First Prize, Sonia, Kiss, Europe, Royal, Nobles, Pink, Aristocrat, Better Times, Raja Ram Mohan Roy, Mercedes, Jazz, Orange Delight, President Herbert, Golden Time, Golden Gate, Golden Rapture, Golden Giant, Aalsmeer Gold, Tushar, June Bride, Prestige, Vivaldi, Verselia, Florence.

#### Climate:

- Requires good light throughout the year. Temperature range of 15°C to 28°C

and 75% relative humidity is ideal for quality rose growing. High relative humidity may cause more incidences of disease and pest while lower relative humidity results in reduced size of leaves, flowers and stems.

**Soil:**

- Sandy loam to clay loam soil, deep and well drained soil rich in organic matter having pH

5.5 to 6.3. water holding and nutrient holding capacity of the soil should be good.

**Propagation**

**Cuttings:** Matured current season shoots are selected for cuttings. The cut ends are dipped in root inducing hormone and planted in beds. Usually miniature ,shrub ,climber and oil yielding roses are propagated by this method.

**Micropropagation:** High frequency clonal propagation from axillary buds and shoot tip culture produce large quantities of chosen variety in a short span of time.

**Budding:**

- The most common and preferred method in Hybrid Tea roses, done in February- March, dormant eyes on a scion of chosen variety are budded either by T or inverted T or I method of budding on a root stock, commercially used rootstock is *Rosa indica var odorata*.

**Cultural operations**

**Pruning:**

- Done during first week of October under north Indian conditions and in last week of June and again in last week of November under Bangalore conditions.

- However, in case of essential oil yielding varieties of *Rosa damascena*, pruning is done from last week of December to the beginning of January.
- The height of pruning varies from 30-45 cm from ground level.

#### **Pinching:**

- Part of terminal growing portion of stem is removed to promote axillary branching and to delay maturity of buds.

#### **Wintering:**

- In this operation, the root is exposed in first fortnight of October to provide rest to the plants for further quality flower production.

#### **Stem bending:**

- Five months after planting, the stems are bent out in such a manner that the angle between original and bent shoot is less than 90°.

#### **Manure and fertilizers:**

- In addition to the basal dose of well decomposed FYM (50 t/ha), rose requires 200-400 kg of N, 150 kg/ha of each P and K/ha.
- Nitrogen dose may be split into two, once at the time of pruning and the second dose after 20 days of pruning.
- The basal dose of fertilizers may also be supplemented with foliar feeding, consisting of 2 parts urea, 1 part dihydrogen ammonium phosphate, 1 part potassium phosphate and 1 part potassium nitrate using 3 g of this mixture/l of water after one week or 10 days till flowering.

#### **Diseases**

Fungal: Die-back, Black spot, Powdery mildew, Botrytis blight and Leaf blight.

Insect pests: Mites, Beetle, Scale, Thrips, Jassids, Mites, Mealy bugs, Aphids and

Nematodes.

**Harvesting:**

For distant markets, harvested at tight bud stage and for local markets, buds should be harvested at more advanced stage of opening.

**Grading and packaging:**

- After cooling, stems shifted to air-conditioned grading room. Healthy stems are sorted out in different grades according to the stem length, cultivar and condition of the flower.
- The graded stems are made into bundles of 20 each, tied loosely with rubber band and wrapped with 2 ply soft corrugated paper and precooled fibre board boxes.

**Yield:** Under open conditions, about 10-20 flower stems can be obtained in Hybrid Tea roses for cut flower purpose.