

HARVESTING AND POST-HARVEST MANAGEMENT

Roses should be harvested at the **tight bud** stage when one or two petals begin to unfold. The stage of harvesting depends on variety, distance to market place, climate and consumer preference. Roses cut too early may develop bent neck. Flowers should be cut in the morning or evening. They should be cut leaving 2-5 leaflet leaves on the stem. After cutting, they are immediately placed in hydrating solution to maintain turgidity.

After cut they are cooled or graded. Roses are stored at 2-3°C with a relative humidity of 90-95%. The flowers should be transported to cool rooms. Pre-cooling removes the field heat and improves the post-harvest life. The hydrating solution may be acidified with 300 ppm citric acid to improve the uptake of solution. The vase-life can be improved by using floral preservatives in vase solution. Aluminum sulphate and citric acid @ 300 ppm improve the vase-life. The flowers can be wet stored at 2-3 °C. After cooling the flowers are shifted to grading room. All the inferior stems and those infested with pests and diseases are removed. The flowers are sorted to different grades manually or by automatic graders Long stemmed varieties are graded from 40 cm onwards with a difference of 10 cm. The short stemmed varieties and Diseases affecting the crop are dieback, powdery mildew and downy mildew. Dieback: Old plants are more prone to this disease. The infection enters from wounds caused by mechanical means or insects attack. The infection spreads rapidly. Browning and rotting of inner stem portion occur in several cases. Powdery mildew: All the aerial plant parts are affected. White powdery growth appears on lower surface of the leaves. The infected leaves curl and get malformed. The infected flower buds fail to open. are graded from 40-65 cm with a difference of 5 cm.

POST HARVEST MANAGEMENT

Immediately after cutting the stem should be dipped in clean water up to the neck or base of the flower bud. The delay in keeping the cut flowers in water will leads to air entry and results in vascular blockage.

Pre-cooling

In a cold storage at the temperature of 4.4-7.2 °C the flowers have to be kept immediately after harvesting to remove latent heat which enhances the keeping quality of flowers. Then they have to be dispatched to market with maintaining cold chain. It should be transported to Airport by 'Refrigerated Van' and store them in cold storage at airport and directly shifted to refrigerated cargo frights. Usually pre-cooling is done for 6-8 hours in winter and 8-12 hours in summer.

Pulsing:

Treating of cut flowers with 2-4% sucrose solution for 3-4 hours. This intern makes the cut flower very hardy and turgid to improve the quality of cut flowers, also have lees neck bending.

Grades

The flowers which are in uniform stem length and developing flower buds should be grouped together at the time of cutting and kept them in separate container. For easy handling the basal foliage and thorns may be removed up to 20 cm at the time of cutting of the flowers. It is necessary to dispatch the flowers within 24-30 hours after harvesting.

Packing

The graded cut blooms have to be packed in corrugated cardboard boxes (CCB). The size of the boxes varies with the quality and quantity of roses to be packed. A box of 100cm length x 32.5cm width and 6.5cm height will accommodate 80 roses of 65-70cm long stem.

Yield

The yield depends as several factors viz., cultivars, plant density/unit area, flowering duration, pruning method, nutrition, other cultural operations adopted from time to time. On an average the outdoor rose cultivation produces about 60-80 flowers/m²/year. Plant density has much influence on total yield. Normally closure spacing yields more number of flowers than wider spacing.

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