

Lecture VI : Commercial cultivation of rose

Layout and preparation of Beds

The plan of rose garden and design of the beds should be simple and formal or informal. Rose beds may be of various designs, depending upon the preference of the grower. However rectangular beds are advantageous for maintenance. The width of the bed should be such that operations like weeding, hoeing forking, cutting of flowers, etc. can be done from both the sides of the bed without stepping in the bed. The width should be 1.2-1.6 m and the length depends on the size of the garden, preferably not exceeding 6m each.

LAND PREPARATION

Preparation of soil is the key of success with roses. It should be rich, porous and well drained. The initial preparation of rose beds should preferably be started during summer season so that the soil gets exposed to hot sun and air and during the monsoon it gets a chance to settle down before planting. Grasses any perennial weeds should be removed along with their roots, knots, rhizomes, etc. by deep digging. The soil should be pulverized; gravels, stones, brick pieces and other foreign materials removed and exposed to sun for at least a week. Land should be thoroughly prepared. Pits or trenches are to be made and basal dusting with Malathian has to be done. The pit / trench should be filled with soil and FYM mixture (2:1). In Trench system, trenches of about 2.5 feet width and between trenches 2-3 feet with any convenient length with 1 – 1.5 feet depth.

PLANTING METHOD

There are two types of planting systems are commonly followed in rose production, viz, Pit system: 45 cm³ (Length x Breadth x Depth) and Trench system 60 – 75 cm wide, 30-45 cm depth and convenient length.

SPACING

It varies from types of roses, soil to soil and place to place and purpose of planting. Favorable time of planting is June to October where winters are severe, planting can be done in autumn or spring. Planting distance is 75 × 75 cm and 60 × 60 cm with flood irrigation facility or 30 × 30 cm, 45 × 30 cm and 45 × 45 cm in single, double or triple row system in drip irrigation facility

PLANTING TECHNIQUE

This operation should receive very careful attention and to do this job well there are few operations / steps have to be attended for preparation of planting materials. Remove all immature, dead, inward growing or diseased shorts. Remove all the suckers growing below the point of bud union. Reduce the possibility of loss of moisture by removing some leaves including dried and yellow ones. If the rose plants are procured with shriveled bark, immerse the plants in water for 24 hours to plump up. Before planting the plants should be immersed in 0.1 % Blitox solution (i.e. 1.0 g In 1 liter of water) to lessen the risk of attack of fungi. Planting should be done in thoroughly prepared beds or trenches or pits. At the time of planting the soil should not be too wet or too dry. The plant should be planted at a proper depth by keeping the bud union 2.5 – 5.0 cm above the soil level. The gap in the hole is to be filled with the soil which was dugout and pressed properly to anchor the plant firmly. Then the soil around the stem should be rammed firmly by treading over with feet. This will press out air pockets in the soil which will help the roots coming in contact with the soil particle and intake of water and nutrients through the rootlets. The beds after planting thoroughly have to be irrigated immediately.

IRRIGATION

Adequate soil moisture is very much essential throughout the vegetative and flowering stages of roses. Water logging condition is not good for rose cultivation. The frequency of irrigation depends on stage of growth, soil texture/ media climate and type of production-field or pot culture. Normally the lighter soil requires more frequent irrigation than heavy soils. In general water the rose beds once in a week or 10 days in winter and twice a week during the summer season. Drip irrigation is ideal for roses. High concentration of salt in water is harmful to the rose plant which results in chlorosis; tip burning and reduction in flower yield and stem length.

MANURES AND FERTILIZER

Rose is a nutrient loving plant. The dosage of nutrients varies from soil types and climate as well. Basic manuring with bulky organic matter has to be done before planting. After establishment as well as immediately after pruning both organic and inorganic manures have to be applied. Supplementary manuring should be done after the first flush of blooming is over and there is a pause for the next flush. It was reported that monthly application is better for healthy growth and flowering. The recommended fertilizers dose for rose is 10/ 10 / 15 g of N/P/K per plant after each pruning. Along with this 100 g of rose mixture (complex) has to be given. First dose – 15 days after pruning (when the new growth has started), Second dose – After the first flush is over, and third dose – After second flush is over, before the spring blooming. FYM – 05-10 kg / bush. The fertilizers should be applied 20 – 25 cm away from the stem.

MULCHING

For mulching well decomposed garden compost, FYM, peat straw, saw dust, ground or whole corn cobs, Black polythene sheets (0-18 mm thickness).

WEEDING

Weeds pose very serious problems in rose cultivation. The weeds not only consume water and nutrients but also act as hosts for a number of diseases and pests. Manual method is effective, if it is done properly and frequently. However, chemical method is economical, convenient and efficient in eradicating weeds by one or two applications. 2, 4-D @ 2 kg in 1600 liter water per hectare (before flowering) controls broad leaved weeds and Nitrofan @ 9 lb ai / acre gave 95% control of weeds.

WINTERING

Wintering is an operation before pruning of roses. The aim of which is to withhold or curtail the supply of water to the bush for the period of 3-7 days depending upon weather and age of plant. Resulting sap flow is reversed to the roots from the weak shoots which are to be pruned. The soil round the roots is removed to a depth of about 15 cm to expose the sunshine up to 3 days. Consequents to this the leaves turn yellow and drop. Some of the weak branches also dry up. Proper care should be taken during this operation. It may be harmful due to excessive exposure of sunlight.

PRUNING

Pruning is done during late October to early November in West Bengal, November end to early December in Chennai, March- April in the hills and twice a year during June and November in Bengaluru and Pune. The pruning of *Rosa damascena* is generally done from December to mid-January for obtaining early flowering and higher flower yield. A paste of Bordeaux mixture or copper oxychloride should be applied to the cut ends to prevent diseases

The rose bushes are pruned once a year during second or third week of October in the Northern Plains. After about 6 to 7 weeks of pruning, the plants start flowering. The time of

flowering can be adjusted according to the date of pruning. In the old hybrid tea bushes, previous season thick shoots are pruned up to half the length, keeping about 5 or 6 eyes on each stem. A slanting cut is made a little above an eye which is facing outwards. The *Floribundas* are pruned moderately. The *climbing* and *rambling* roses do not require any pruning except the removal of unhealthy dead and interlaced twigs.

The *Polyantha* roses are pruned lightly, whereas the *Miniature* are generally not pruned. Hard pruning of *Hybrid Tea* and *Floribunda* keeping only 3 to 4 shoots with three or four eyes from the base is practiced for obtaining exhibition blooms.

THINNING

Removal of the undesirable growth like inward growth, weak stems, blind shoots, crowded growth.

DE-SUCKERING

The operation of removal of suckers from root stock i.e. the shoots produced below the bud union on rootstocks is called de-suckering.

BENDING

In protected cultivation bending is followed to produce high grade flowers. All weak shoots are bent down to fill any area void of foliage and thus attain a desirable leaf area index to optimize photosynthetic potential and facilitate the transport of sugar to the developing shoots. The shoots which arise on dormant buds following knuckle cuts are generally more vigorous and produce high quality and superior grade flowers. This vigour may be attributed to the fact that cane diameter is larger at knuckle and since weak shoots are bent, all remaining shoots are exposed to better light and less competition. Bending is necessary for keeping enough leaves on the plant which are required for production of carbohydrates.

PINCHING

Removal of a part of terminal growing portion of stem is called pinching. It is done to reduce the plant height and to promote auxiliary branching. Pinching of blind shoot is beneficial to increase flowering.

DISBUDDING

Removal of undesirable buds is known as disbudding. Keeping only the central bud and removal of others cause development of a quality bloom. It is done in standard/HT roses to reduce number of flowers.

DESHOOTING

It is generally followed in HT roses. Young vegetative shoots developing from the axils of leaves of basal and lateral shoots are removed to allow only one terminal shoots. It is important from the point of stalk length.

DEFOLIATION

Under special conditions it is followed, but it has reported that removal of leaves from rose plants will increase number of blind shoots, It will force the plants to produce growth and flowering during desired period.

USE OF GROWTH SUBSTANCES

To some extent some growth regulators like GA3 and retardants like CCC are used to get more number of flowers with good quality. GA3 @ 250ppm has been found to increase the stalk length, flower size and reduce number of blind shoots.

REMOVAL OF FADED FLOWERS

If the opened blooms are not removed in time, there is chance of developing fruits bearing seeds. Once the hips are formed and reach the advanced stage of development, growth

and flowering are severely reduced during the season; Cutting of faded flowers will force to produce strong lateral shoots which will produce good quality flowers.

REFERENCE

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