

Grapes

Planting

Land Preparation

The land is thoroughly ploughed and levelled. The vine rows are oriented in the north-south direction in order to expose the leaves on both sides of the vines to sunlight. Orientation of rows is important only when the vines are to be trained to telephone, kniffin or tatura trellises.

Season of Planting

Normally the planting is done during November-January in Central India, December-January in south Karnataka and Tamil Nadu and February-March in North India. In areas with limited irrigation facilities planting can be done with the onset of monsoon.

Spacing

Spacing of the vines varies with training system and the variety. In central Maharashtra and north interior Karnataka, for bower trained Thompson Seedless vines a spacing of 1.2 x 3.6m or 1.8 x 2.4m is adopted. The spacing between the rows of the vines trained on 'T' trellis may vary from 1.8-2.4m. However, in case of tractor operation the row-to-row distance should be kept at 3m. The commonly followed spacing are 4.5 x 4.5m (Anab-e-Shahi), 7.2 x 3.6m (Bangalore Blue) and 3.0 x 3.0m for Perlette and Beauty Seedless varieties.

Pit Digging

As per the layout plan the pits are marked in the field. Pits of size 60-90cm³ should be opened at least one month prior to planting and exposed to sun. Each pit is filled with topsoil first followed by subsoil mixed with well-decomposed FYM, 1kg Superphosphate and 500g Sulphate of Potash. Prior to planting, pits are watered and one year rooted cuttings are planted in the pits. New growth starts 20-25 days after planting. The young plants are staked and trained after one month of planting.

Training of Grape Vines

Training of grape vines is important as it helps to maintain the stature and spread of the vine in a way that is convenient to carry out the intercultural operations. Various structures that provide support the grapevines are called as trellises. An ideal trellis should be economical, facilitate different cultural operations, provide good leaf exposure, provide area for large number of fruiting units and allow more light and ventilation into the vine canopy. The most prevalent are Bower, 'T' trellies, Kniffin and Head system.

Bower System

This system is also called overhead, arbour or pergola. Owing to vigorous of the vine and pronounced apical dominance in the tropics, this system is found most suitable for many of the commercial grape cultivars. Though it is very expensive, it was found most appropriate one and associated with highest yield. Bower system of training provides a desirable microclimate in the vine canopy and reduces the adverse effects of arid and hot weather on vine metabolism and life.

In this system vines are spread over a pandal mounted at 2-2.4 m above the ground on poles made up of concrete, stone or iron. Spacing of vertical poles depends on the spacing of vines. One pole each is fixed at both the ends of the rows while the internal poles are fixed in such a way that there are two vines between two successive poles within a row. The poles are fixed before planting while the criss-cross network of wires is fixed after planting.

The axillary shoot growth up to the height of 1m from the ground level is discouraged. Growing tip is pinched off at 15-20 cm below the pandal level. The shoot should be more than 6mm thick at the point of pinching. Two shoots arising in opposite direction from the main stem are allowed to grow. They are called as primary branches. On each of these primary branches 3-4 pairs of secondary arms are retained on either side of the branch at a distance of 45-50 cm in dry regions awhile in comparatively cooler and humid areas they are allowed at an interval of 60-75 cm. The growing secondary branch of more than 6mm thickness should be first pinched into half to develop 5-6 tertiary branches near its basal portion while the second cut is given near the final length of the secondary. This will give rise to 12-15 tertiary branches (canes) on each secondary branch.

'T' Trellis

It is locally called as telephone. This system is suitable for moderately vigorous varieties with more apical dominance. It is an improvement over 'bower' system with respect to ventilation and light penetration. It is relatively less expensive than 'bower', and facilitates mechanised spraying and many other cultural operations. However yields in this system are less as compared to the 'bower' system due to less number of canes per unit area.

In 'T' trellis, the vines are allowed to grow straight up to a height of 1.5-1.6m. Two primaries are developed on the main stem. On each of these primaries short secondaries of 30-45 cm are developed on both sides of the primary to form an umbrella type framework. Canes are developed on these short secondaries.

'Y' Trellis

This system has good provision for light interception and favourable fruit bud formation. When the trellis is fully covered with foliage, both foliage and bunches are protected from the sun burn. 'Y' trellis consist of a vertical post 120-135 cm above the ground and two inclined arms measuring 90-120 cm placed at an angle of 90-110°. The main stem is pinched at 120-135 cm above the ground level and a single pair of primary arm is developed on the wire. The secondaries and the canes are allowed to trail on wires fixed 10-15 cm apart on the inclined surface of 'Y'.

Gable System

This is an improved system of training developed by combining advantages of bower and 'Y' system (IIHR, Bangalore). It is mostly suited for vigorously growing vines where the shoots are exposed to sunlight for fruit bud formation while bunches hang below the canopy and thus are protected from direct sunlight.

In this system the length of the stem of 'Y' and both its arms is 1.2m. The canopy wires are spaced at 30-35cm apart on each arm. Thick wires connect two arms of the 'Y' on either side of the rows. Two more wires are stretched interconnecting the thick wires forming a narrow bower between the two rows.