

PLANNING OF ORCHARD

Orchard refers to an area where intensive cultivation of fruit crops is done.

(Or) it is an area where fruit crops like mango, citrus, papaya, banana etc. are cultivated.

(Or) it is an enclosed area where a fruit /group of fruit trees are grown.

Orcharding: refers to growing of fruit plants in an orderly manner and maintain them for successive economic returns.

Garden: The term garden refers to fruit farm, where sophisticated agro-techniques are employed for commercial cultivation.

Orchard is a long-term investment and needs lot of planning and expertise. While planning and planting a new orchard, one should give utmost attention and care to various aspects like selection of location and site, nature of soil and subsoil, planning of suitable kinds and varieties of fruits, proper planting distance and purchasing of plants from reliable nurseries.

Preparation of land

The land should be cleaned properly for free movement of men and machinery. All the trees, bushes and creepers should be removed. The soil of the area designed for growing fruit plants needs thorough preparation. A virgin land requires a deep ploughing and harrowing. The land should be repeatedly ploughed and bring the soil to a fine tilth.

Layout plan

The marking of position of the plant in the field is referred as layout. The layout plan of the orchard should be prepared carefully, preferably in consultation with horticultural experts. The orchard layout plan includes the system of planning provision for orchard paths, roads, water channels and farm building. A sketch of the proposed orchard should be prepared before the actual planting is taken up.

Method of layout

For laying out an orchard, according to square system, a base line is first established and position of the trees is marked along this line by laying wooden stakes in the ground. Another base line at right angle to the first base line, is then marked along with the other edge of the field with the help of a carpenter square or a cross staff.

The right angle can also be drawn with the help of measuring tape. One end of this tape is fixed at three metre distance from the corner along the first line and the tape is then stretched along the second base line for a distance of four metre. The diagonal distance between these two points should be five metre. The wooden stakes are put in the ground at the desired distance along the second line. All the four rows are thus established and staked. Three men, one putting the peg in the field and others correcting alignment while moving along the base line, can easily stake the whole field.

The marking of position of the plant in the field is called “**layout**”.

Aims:

- 1) To provide adequate space to plants.
- 2) To accommodate more number of plants.
- 3) Easy intercultural operations.
- 4) System of planting

The following are the important systems of planting generally followed on the basis of Agro-climatic conditions to improve aesthetic view of the land.

1. Square system

It is the most commonly used method and easy to layout in the field. In this system, plant to plant and row to row distance is the same. The plants are at the right angle to each other, every unit of four plants forming a square. This system facilitates the interculture in two directions after the orchard is planted.

Advantage:

- 1) Most easy and popular one.
- 2) In this row to row and plant to plant distance is kept similar.
- 3) Plants are exactly at right angle to each other.
- 4) Interculture operations can be done in both the directions.
- 5) Adequate space for inter-cultivation of remunerative crops like vegetables.

2. Rectangular system

In this system, the plot is divided into rectangles instead of squares and trees are planted at the four corners of the rectangle in straight rows running at right angles. Like square system, this system also facilitates the interculture in two directions. The only difference is that in this system more plants can be accommodated in the row keeping more space between the rows.

Advantages:

- 1) Lay out in rectangular shape.
- 2) More space between row to row.
- 3) Inter-cultural operations can be done in both the ways.
- 4) Plants get proper space and sunlight.

3. Hexagonal system

In hexagonal system, the trees are planted in the corners of equilateral triangles. Six trees thus form a hexagon with another tree at its centre. This system, though a little difficult for execution but accommodates 15 percent more plants. Cultivation of land between the tree rows is possible in three directions with this system. This system is generally followed where the land is costly and very fertile with ample provision of irrigation water.

Advantages:

- 1) Accommodates 15 % more plants than the square system.
- 2) Plants are planted at the corner of equilateral triangle.
- 3) Six trees are planted making a hexagon.
- 4) The seventh tree is planted in the centre and called septule.
- 5) This requires fertile land.

Disadvantage: Lay out is difficult and cumbersome.

4. Quincunx system

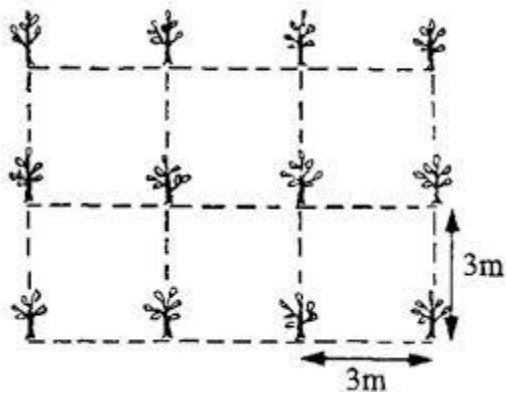
This system is exactly like the square system but one additional tree is planted in the centre of each square. The number of plants per acre by this system is almost doubled than the square system. Fruit trees like papaya, kinnow, phalsa, guava, peach, plum etc. can be planted as fillers in the permanent trees provides an additional income to the grower in the early life of the orchard. The filler trees are uprooted when the main orchard trees start commercial fruiting.

5. Contour system

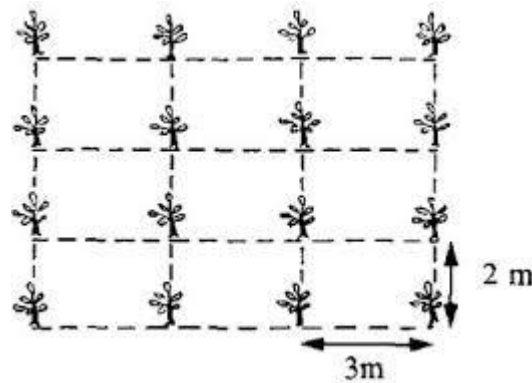
This system is usually followed in the hilly areas with high slopes but it is very much similar to the square/rectangular system. Under such circumstances, the trees may be well planted in lines following the contour of the soil with only a slight slope. Irrigation and cultivation are then practiced only across the slope of the land as this practice reduces the chances of soil erosion. In this system layout is done as in square/rectangular system, first by establishing the base line at the lowest level and then marking for the trees should be done from the base to the top. Bench terraces are used where the slope is greater than 10 per cent.

6. Triangular system

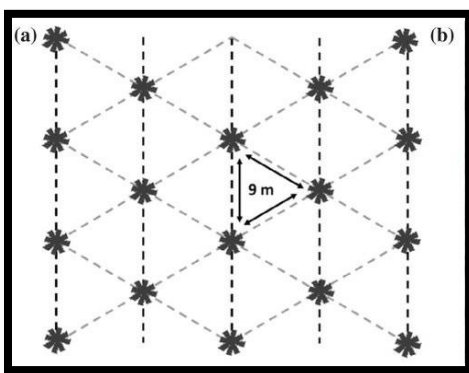
In this system, trees are planted as in the square system but the plants in the 2nd, 4th, 6th and such other alternate rows are planted midway between the 1st, 3rd, 5th and such other alternative rows. This system provides more open space for the trees and for intercrop.



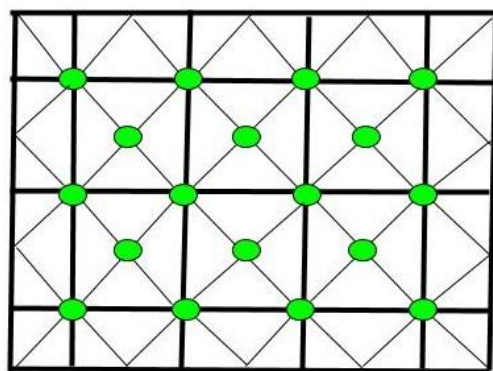
Square system



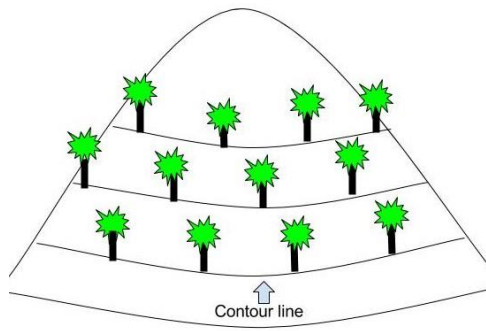
Rectangular system



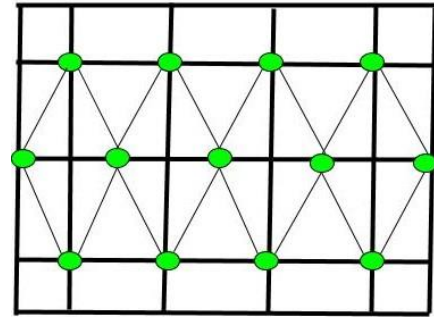
Hexagonal system



Quincunx system



Contour system



Triangular system

