

Establishment and management of orchard

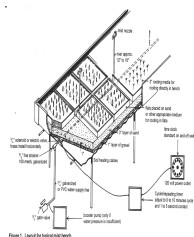
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Orchard is a long-term investment that requires a great deal of experience and preparation.

When preparing and planting a new orchard, various factors should be given greatest consideration and concern such as:

- Place and site selection,
- Character of the subsoil and soil,
- Scheduling of suitable fruit types and varieties,
- Sufficient distance of planting
- Plant purchases from reputable nurseries.

Land planning :

– For the free movement of men and equipment, the land should be cleaned properly.

– It is important to remove all the trees, bushes and creepers.

– Thorough preparation is essential for the soil of the area planned for growing fruit plants.

– A virgin area requires a deep ploughing and harrowing operation.

– The field should be ploughed repeatedly and brought to a fine tilth of the soil.

Plan of layout :

– The layout is used to mark the location of the plant in the field.

– The orchard development plan should be carefully planned, preferably in consultation with horticultural experts.

– The orchard layout design involves the planning framework for the provision of orchard paths, roads, water channels and farm construction.

– Before the actual plantation is taken up, a sketch of the planned orchard should be prepared.

Layout process :

– A base line is first formed for the laying of an orchard, according to the square method and the location of the trees is marked along this line by laying wooden stakes in the soil.

– Another base line is then marked with the aid of a carpenter square or a cross staff at the right angle of the first base line along with the other side of the ground.

– With the assistance of measuring tape, the right angle can also be drawn.

– One end of this tape is positioned along the first line at a distance of three meters from the corner and the tape is then extended along the second base line at a distance of four meters. Five metres should be the diagonal distance between these two points.

– The wooden stakes are set in the soil along the second line at the desired distance.

– All four rows are therefore set up and staked. Three men can easily stake the entire field, one putting the peg in the field and others fixing alignment when traveling along the base line.

– “The plant’s position marking in the field is called-layout.”

Purposes :

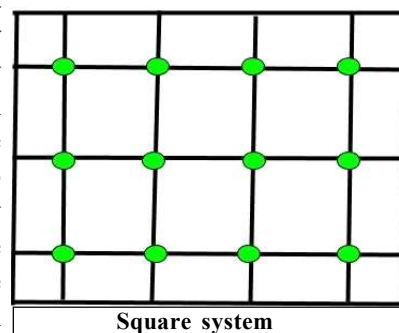
- To give plants sufficient space.
- To handle more plant numbers.
- Simple intercultural events.

The planting method :

The following are the significant planting systems commonly followed to enhance the aesthetic view of the land based on agro-climatic conditions.

Square system :

It is the most widely used and easy-to-lay method in the field. In this method, the distance from plant to plant and row to row is the same. The plants are at the correct angle to each other, each unit



forming a square of four plants. After the orchard is planted, this method promotes the intercultural in two ways.

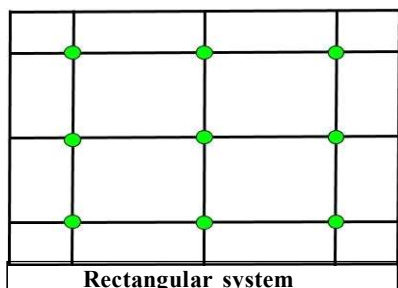
Benefit:

- The simplest and most famous one.
- The row and plant to plant distance in this row is kept close.

- Plants are precisely right-angled to each other.
- Intercultural operations in both directions can be carried out.

– Sufficient inter-cultivation space for remunerative crops such as vegetables.

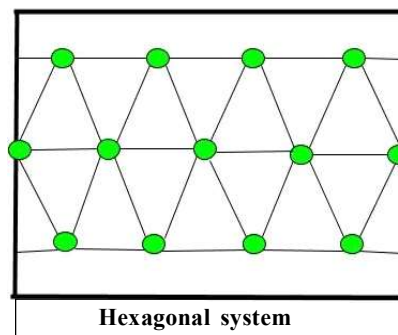
Rectangular system : The plot is divided into rectangles instead of squares in this scheme and trees are planted in straight rows running at right angles at the four corners of the rectangle. This system, like the square system, also promotes interculture in two directions. The only difference is that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



Benefits:

- Rectangular shape. Lay out.
- More row-to-row space.
- Inter-cultural activities can be carried out both ways.
- Plants get proper sunlight and space.

Hexagonal system: The trees are planted at the corners of the equilateral triangles in the hexagonal system. In this way, six trees form a hexagon with another tree at its middle. This method, while a little daunting for implementation, accommodates 15 percent more plants. With this method, cultivation of land between the tree rows is possible in three directions. This scheme is usually practiced where the land is expensive and very fertile with sufficient supply of irrigation water.



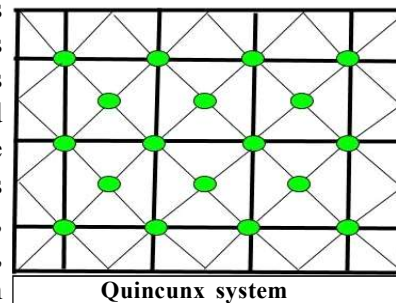
Benefits:

- It accommodates 15 per cent more crops than the square system.
- At the corner of an equilateral triangle, plants are cultivated.
- Six trees have been planted to create a hexagon.
- In the middle, the seventh tree is planted and named a septule.
- Fertile land is needed for this.

Inconvenience:

- It is tough and slow to lay-out.

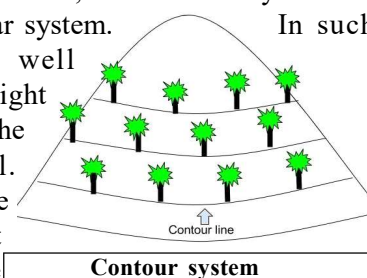
Quincunx system: This system is just like the square system except one additional tree is planted in the middle of each square. This system almost doubles the number of plants per acre compared with the square system. Fruit trees such as papaya, kinnow, phalsa, guava, peach, mango, etc. can be planted in the



permanent trees as fillers that provide the grower with an additional income in the early life of the orchard. The filler trees are uprooted when commercial fruiting starts with the main orchard trees.

Contour system: In hilly areas with high slopes, this system is commonly practiced, but it is very similar to the square/rectangular system.

In such cases, trees may be well planted, with only a slight slope, in lines following the contour of the soil. Irrigation and irrigation are then only carried out around the slope of the land as the risks of soil erosion are minimized by this method. The construction of this method is carried out as in the square/rectangular system, first by placing the base line at the lowest level and then marking the trees from the base to the top. Where the slope is greater than 10 per cent, bench terraces are used.



Triangular system : Trees are planted in this method as in the square system, but the plants are planted in the 2nd, 4th, 6th and other alternate rows halfway between the 1st, 3rd, 5th and other alternative rows. This scheme provides for

- Plants are offset by half the space between plants in a row in alternating rows.
- Result in 9 per cent fewer plants than square and rectangular framework. Eg: Amrapali-1600 / ha of plants.
- More open space for intercrops and for trees.

