

Quadrant II – Notes

Programme: BSc. (Hons.) Agri.

Subject: Horticulture

Course Code: HORT-111

Course Title: Fundamentals of Horticulture

Module Name: Principles of orchard establishment

Module No: 5

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Notes :

Principles of orchard establishment

Orchard is the piece of land wherein the fruit trees are planted for the economical purposes

Why orchard?:

- a. For a systematic planting
- b. To avoid any mistake
- c. For well planned, scientific management of orchards
- d. For avoiding wastage and loss compensation
- e. Important for the fruit crops
- f. Commercialization of crops based on agro climatic requirements

Factors to be considered for orchard management

- Climate and Soil:** Final decision of success or failure, temp, humidity, winds, light, fertility, sandy loamy soils
- Transport facilities:** well equipped with roads and pathways
- Market facilities:** near to markets for local, domestic or export markets
- Irrigation facilities:** good source of water

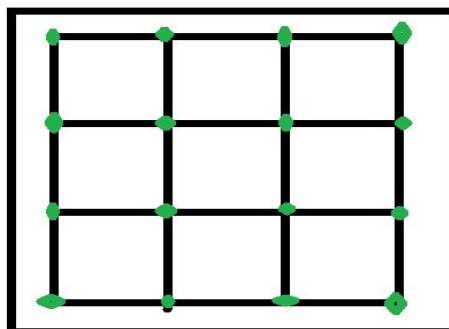
- ❑ Manpower facilities: availability at cheap rates
- ❑ Others: electricity, away from sick plantation

Steps in orchard establishment

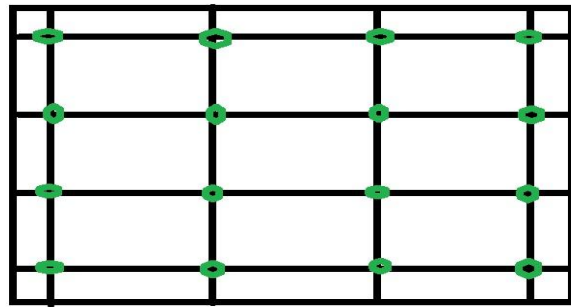
- **Preliminary operations:**
 - ❖ **Fencing** with live (cactus, bougainvilleas) or dead materials (stones, barbed wires, concrete, etc.)
 - ❖ **Windbreaks:** planting tall trees to reduce the speed of winds that can damage the main crop
 - ❖ **Shelter belts:** planting the shade trees for the purpose of rest to labors
- **Planting Systems:** layout According to crop, variety, spacing, sole or intercrops, topography
- Planting: season July-August
- After care

Planting system

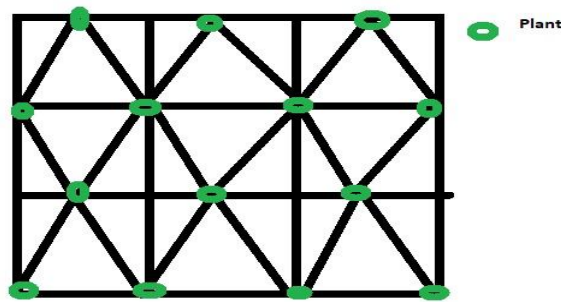
- ❑ **Square:** plant to plant and row to row distance are equal an plants re planted at each corers of square Advantage: 1) Easy and 2) Intercultural operations can be conveniently.



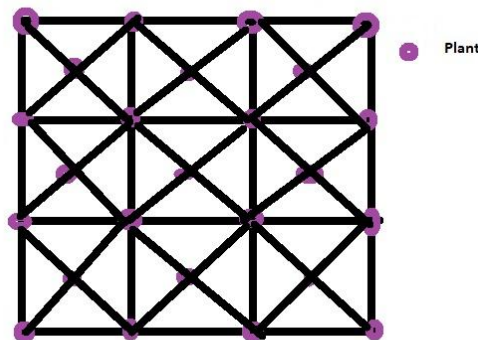
- ❑ **Rectangular:** The plot is divided into rectangles instead of squares and trees are planted at the four corners of the rectangle in straight rows running at right angles.



- ❑ **Triangular:** trees 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.

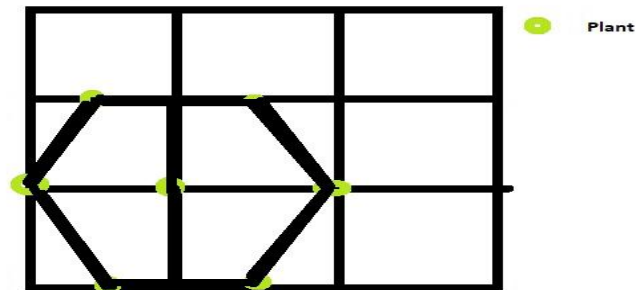


- ❑ **Diagonal or quincunx:** Plantings are done in the square system but one additional tree is planted in the centre of each square. The number of plants per acre by this system is almost doubled than the square system.

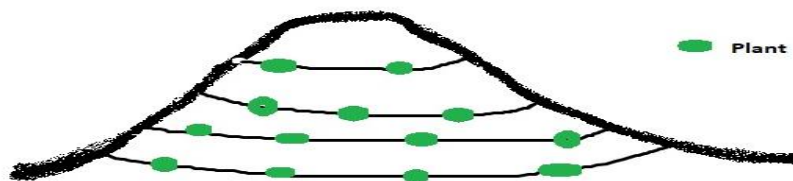


- ❑ **Hexagonal:** In hexagonal system, the trees are planted in the corners of equilateral triangles. Six trees thus form a hexagon with another tree at its centre.

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.

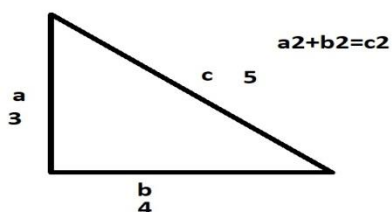


- **Contour:** Followed in the hilly areas with high slopes. Layout is done by preparing bench terraces are used where the slope is greater than 10 per cent.



How to do it straight?

- Mark a Base line
- Apply Pythagoras theorem for marking another side after placing measurements in right angle



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- Peg marking at each points of spacing
- Make a Layout
- Planting by following package of practices