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Center for Smart Agriculture

Hi Tech Fruit Culture



Module 2: High Density Planting

Session 1: High Density Planting Introduction and Importance



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- **High Density Planting**
- The high density planting (HDP) in fruit crops is one of the recent novel concepts of increasing the productivity without affecting the quality of fruits.
- India is the largest producer of fruits in the world after China.
- The average productivity and per capita availability of fruits in India is, however, low as compared to many developed countries.



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- The main reasons for low productivity are old and senile orchards, wider spacing, low yielding varieties, poor orchard management and inadequate technological up-gradation and adoption by the growers.
- Presently, the continuing decline in the availability of cultivable land, rising energy and land costs together with the increased demand of fruit and fruit products, have given thrust to the concept of high density planting (HDP) in fruit crops.



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- High density planting gives earlier production and return per unit area, shortens juvenility, eco-friendly, provides efficient land use and better use of resources like light, water and fertilizers, efficient pesticides application, besides, in this system the harvesting becomes easy.



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- **Aim of HDP**
- The main aim of HDP is to achieve the twin requisites of productivity by maintaining a balance between vegetative and reproductive growth without impairing the plant health and fruit quality.
- **Principle of HDP**
- The underlying principle of HDP is to make the best use of vertical and horizontal space per unit time and to harness maximum possible return per unit of inputs and natural resources.



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- **Advantages of HDP**
- It induces the precocity
- Enhanced fruit yield and quality
- Low cost per unit production
- Enables mechanization in fruit crops
- Efficient use of applied and natural re sources



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- **Disadvantages of HDP**
- In long run, it results in heavy competition for space, nutrients and water.
- Over crowded growth of canopy results in buildup of high humidity, reduced cross ventilation in the orchard, which are conducive for more incidence of pests and diseases.
- The trees in close plantings soon begin to crowd each other and yields decline
- Efforts to breed dwarfing rootstocks that can control the growth of mature trees have been largely unsuccessful



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- **Approaches for establishing high density orchards**
- HDP can be achieved with the suitable use of following components, they are
 - (a) Dwarf scion varieties,
 - (b) Dwarfing rootstocks and inter-stocks,
 - (c) Training and pruning,
 - (d) Use of growth regulators and
 - (e) Suitable crop management practices.
- These components are harnessed in HDP which helps in attaining the goal of high yield and quality.



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Thank
you

