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# **HIGH DENSITY PLANTING IN APPLE**

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"Read More,





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Suitable crop management practices.

#### **ADVANTAGE OF HDP:**

- Best utilization of land and recourses.
- Quality production of fruit crops.
- Increase in yield per unit area.

Density Trees/ha **MM109** Semi vigorous 6X6 278 MM111 Semi-dwarf 4.5X4.5 494 Standard M7 Dwarf 1.5X1.5 4444 **MM106** MM109 Semi-vigorous 5X5 400 **MM111** Semi-dwarf 3.5X3.5 816 M7 3X3 1111 Dwarf **MM106** 



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#### **Promising spur varieties**

- □ Star crimson
- $\Box$  Red spur
- $\Box$  Gold spur
- $\Box$  Well spur
- □ Oregon spur
- $\Box$  Silver spur
- $\Box$  Red chief
- □ Bright "N"Early
- □ Royal gala
- 🗆 Red Fuji

#### Training system of HDP in Apple



The standard trees are trained on modified central leader system. The technique is a compromise between central leader and open central system method. It is suitable for trees that will grow too tall if you allow the leader to keep growing.

### PRUNING SYSTEM IN HDP IN APPLE:

Pruning in apple is essential to maintain a proper balance between vegetative growths and spur development. The basic steps of pruning standard bearing trees are :

- 1. Start pruning at the top of the tree and work downwards.
- 2. Cut a bud growing limbs back to strong laterals.

3. Remove the crowding branches and thin out the remaining living the vigorous fruiting wood well spaced along the length of limbs.

- 4. Removing dead, broken and diseased wood.
- 5. The plants trained on spindle bush system can be pruned.
- 6. The branches causing shade to the other
- lower branches should be removed of headed back.
  - 7. In thinning out of branches to main stem, a stub should be left to encourage the regrowth of moderately vigorous fruitful bud.
  - 8. A wide removing too many branches and so reducing potential fruit yield.
  - 9. The main branches which have lost the vigor can be stimulated by pruning. Wornout wood of heavy cropping varieties should be removed periodically.



Before pruning After pruning At planting First summer (June)



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## USE OF BIO-REGULATORS IN HDP:

- 1. Reduction of vegetative shoot growth in orchard trees, has been obtained with different compounds such as chloromeqofuat chloride, paclovutrazol, uniconazol etc.
- 2. The general target for growth retardant compounds in many fruit trees species is to alter assimilate partitioning in favor of reproductive part at the expense of vegetative shoot growth by acting on endogenous gibberellins biosynthesis.
- 3. Such compounds make it possible to reduce vegetative growth and also improving tree productivity and fruit quality.

- 4. The retardants (Alar 2000ppm, ethrel 1000ppm and a mixture of alar 1000ppm with ethrel 500ppm) greatly reduced the vegetative growth of Golden Delicious, Starkspur Golden Delicious and James Griebe.
- 5. Diaminozide (Alar) and paclobutrazol (Cultar) were applied at different timing and concentration.
- 6. Instead of de-heading the trees every two year as in the original meadow orchard system, shoot growth and cropping were controlled by growth retardants and light winter pruning.

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