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Center for Smart Agriculture Applied Hi-Tech Horticulture



Module 2: Innovative Technologies in Hi-Tech Horticulture

Session 13: Methods of Training and Pruning



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Training and Pruning

Training

- ❖ Training refers to judicious removal of part to develop a proper shape of plant capable of bearing heavy crop load
- ❖ To give shape and size

Pruning

- ❖ Pruning is defined as the judicious removal of parts like root, leaf, flower, fruits etc. to obtain good and qualitative yield.
- ❖ To give higher yield and quality



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Objectives of Training

- ❖ To develop strong framework
- ❖ Regulate and control shape of the tree for easy to cultural operation and harvesting
- ❖ To have a better crotch angle between scaffold branches of the trees.
- ❖ To facilitate interception of sunrays to each and every part of the trees.
- ❖ To remove water sprout
- ❖ To develop a balance between vegetative and reproductive growth of the tree.



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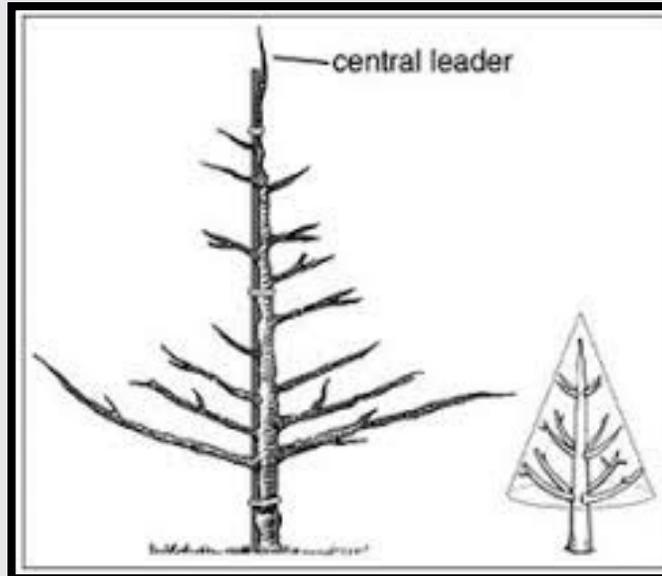
Principles of Training

- ❖ Training should be started from very beginning age of the plant
- ❖ Most of the fruit trees are trained through single stem system.
- ❖ In plants having prominent apical dominance, the terminal bud should be removed to emergence of side shoots.
- ❖ Narrow crotch angle are discarded.
- ❖ Water sprout should be removed.
- ❖ Drooping branches needs to be removed.

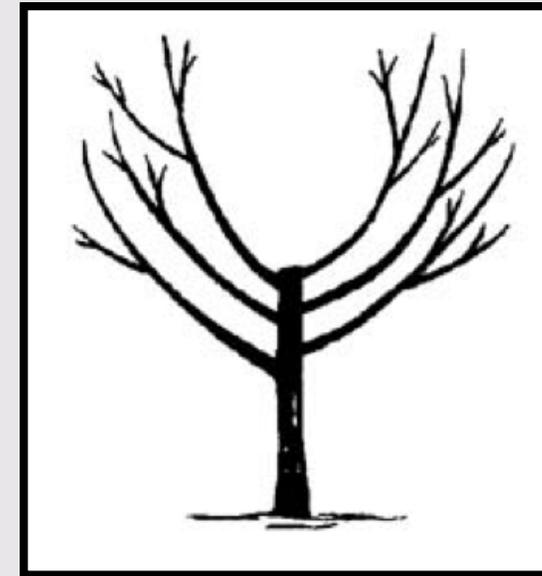


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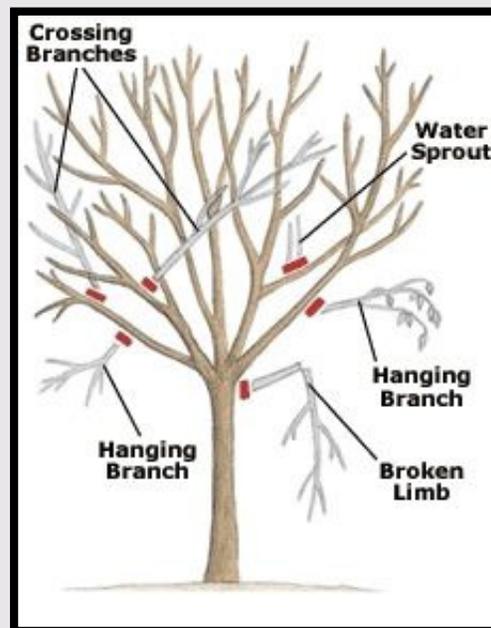
Method of Training



1. Central leader system



2. Open centre system



3. Modified leader system





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Objectives of pruning

- ❖ To control flowering and fruiting
- ❖ To augment production in plants which bear on new shoots.
- ❖ To obtain regular bearing.
- ❖ To remove diseases, damages, insect infested and weak shoots.
- ❖ To thin out flowers and fruits.
- ❖ To ensure access to sunlight to bearing shoots.
- ❖ To invigorate the plant.
- ❖ To have a balance between vegetative and reproductive growth.



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Principles of Pruning

- ❖ Remove water sprout
- ❖ To remove a shoot completely, it should be removed from the base.
- ❖ Avoid bark injury while pruning.
- ❖ Pruning should be completed well in advance of flowering season.
- ❖ In deciduous plants, pruning should be done in advance of winter so that low temperature injury may be minimized.
- ❖ Apply bordeaux paste after pruning to avoid incidence.
- ❖ Crowded, interlace rating, diseased, damaged and insect infested shoots should be removed.



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Some special type of training

1. Bush system
2. Pyramid sysytem
3. Espalier system
4. Cordon system
5. Tatura sysytem



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Training method for grape

1. Head system
2. Kniffin system
3. Telephone system/Overhead trellis system
4. Bower system



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Head system

Source: Dr. Pratap Singh Kapte, Farm photo



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Single stake system



Bower system



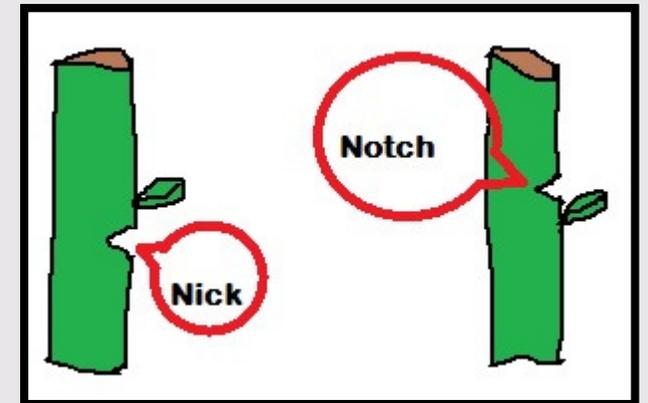
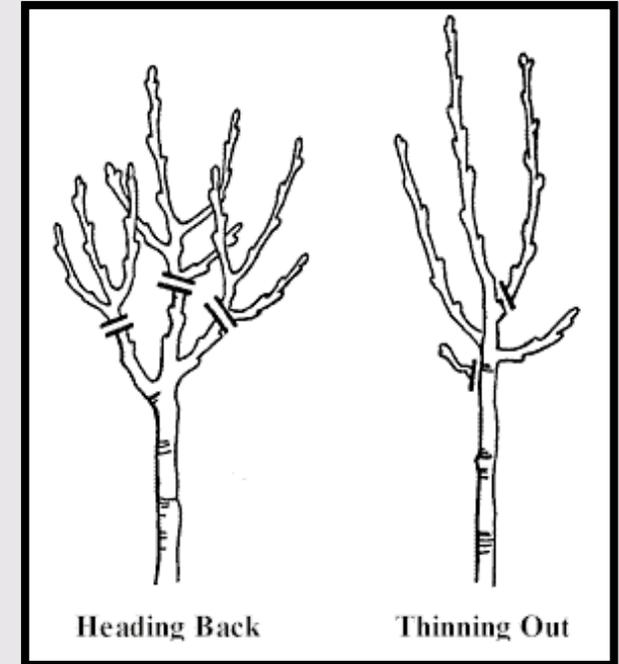


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Method of Pruning

1. **Heading back:** Removal of terminal portion of shoot leaving basal portion intact
2. **Thinning:** Complete removal of part of the plant
3. **Ringing or Girdling:** About 3cm length bark is removed.
4. **Notching:** Making notch above a bud by removing a wedge shaped piece of bark.
5. **Nicking:** Making notch below a bud by removing a wedge shaped piece of bark.





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Girdling or Ringing in Litchi



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