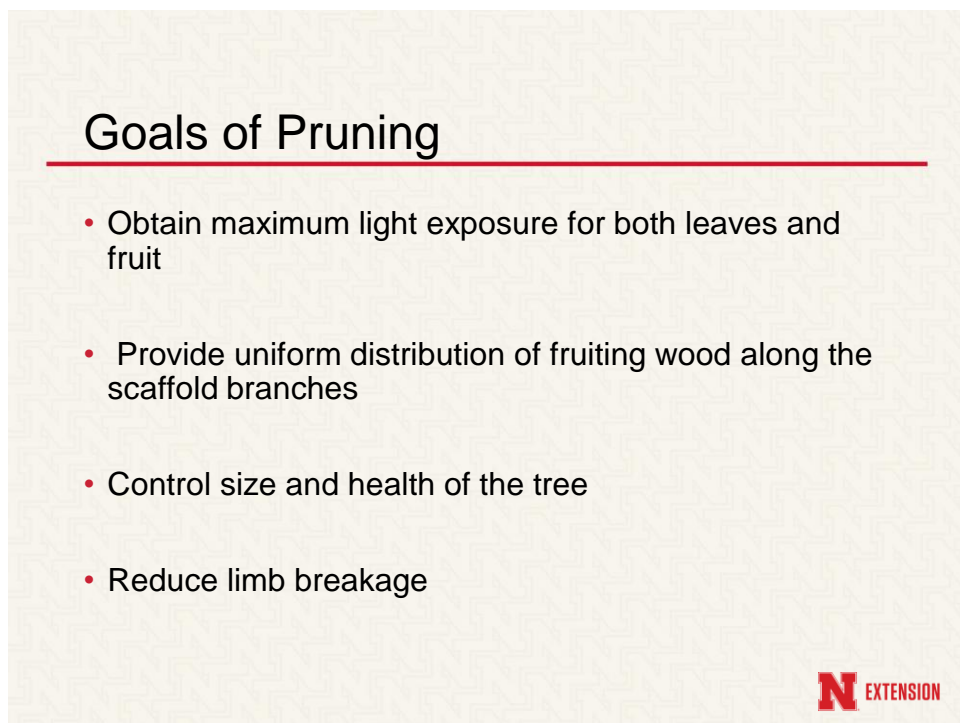


1



- Obtain maximum light exposure for both leaves and fruit
- Provide uniform distribution of fruiting wood along the scaffold branches
- Control size and health of the tree
- Reduce limb breakage

2

Goals of Pruning Continued

- Produce high- quality fruit of desired size
- Increase air flow in the tree to improve production and reduce potential for disease
- Ensure a healthy root system by root pruning at planting, if necessary



3

Pruning at Planting

- Remove damaged roots
- Remove girdling roots
- Enlarge planting hole for large roots instead of forcing
- Prune out branches with less than 45 degree angles



4

Critical Pruning Time Window

- Most pruning is done during the dormant season
- Usually January – March
- Reinvigorate trees by removing diseased, damaged and dead wood
- Excessive pruning can lead to water sprouts



5

Summer Pruning

- June – August - Complete before the end of August
- Remove water sprouts, suckers, diseased or dead branches
- Goal – optimize light penetration and air flow
- Goal – Balances over vigorous growth with fruit production



6

Pruning Unbranched Trees/Whips

- Initiates secondary growth
- Prune back to a healthy bud
- Standard – 44 inches
- Semi Dwarf – 36-40 inches
- Dwarf – 29-30 inches



7

Pruning Branched Trees at Planting

- Prune branches by half for secondary growth
- Remove branches that form narrow angles under 45 degrees
- If branches were pruned prior – Do not prune again



8

Equipment

- Scissor Cut Hand Shears
- Lopping Shears
- Bow Saw
- Sanitize with 10 percent bleach solution between cuts
- Use a spray bottle and wipe with clean rags



9



Figure 3. Examples of hand pruning equipment: (a) scissors-cut hand shears, (b) lopping shears, and (c) curved pruning saw. Photos: Oregon State University.

<https://extensionpublications.unl.edu/assets/pdf/ec1233.pdf>



10

Types of Cuts

- Training – Establish structural development and framework
- Timeframe by Type
- Dwarf – 2-3 Years
- Semi Dwarf – 3-4 Years
- Standard – 5-8 Years – Depending on Variety



11

Types of Cuts, Continued

- Maintenance or Renewal
- Goal – Maintain size, shape and vigor
- Thinning and Heading Back Cuts
- Maintenance – Remove suckers, damaged and diseased branches
- Thinning Out – Remove shoots and branches back to lateral branches, scaffold branches and the trunk



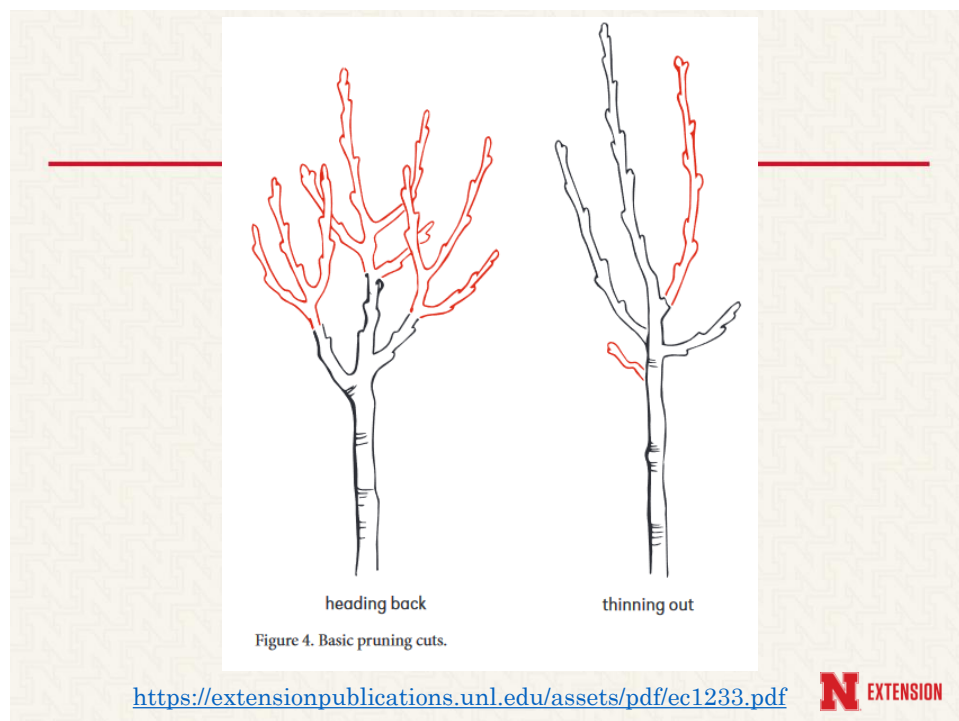
12

Modified Leader Training Systems

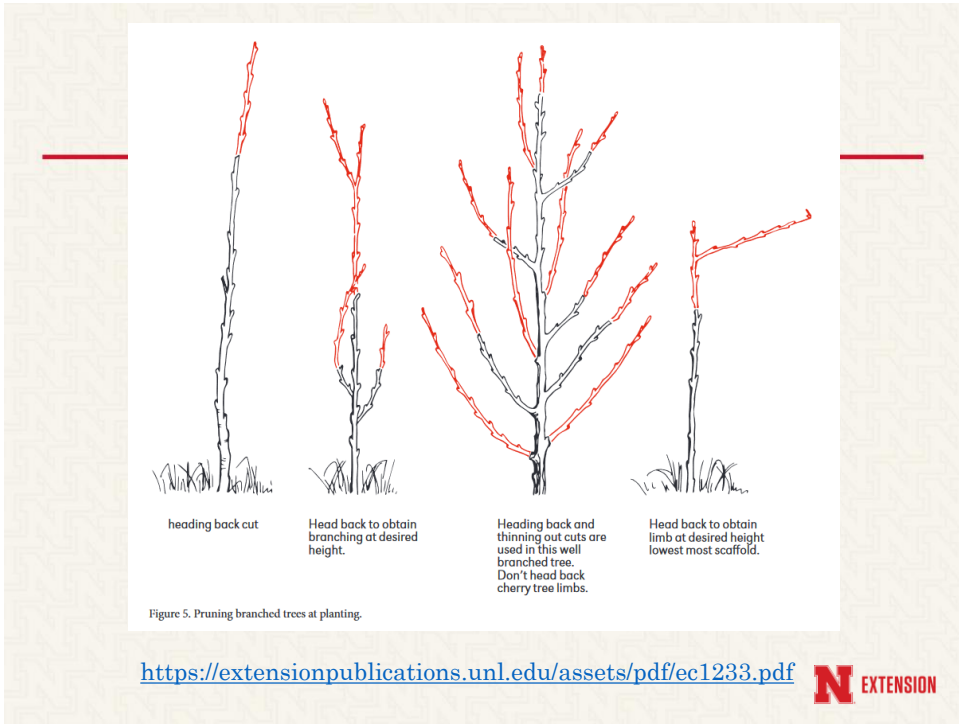
- Keep up to four scaffolds
- At least 6-10 inches apart vertically
- Wide branch angles – 45 degrees or more
- Low Scaffold – at least 24 inches above ground
- Lowest Scaffold – Points Southwest to shade the trunk and reduce freezing and cracking
- Keep one leader – Leader should be twice as long as longest lateral
 - Exception are Pears



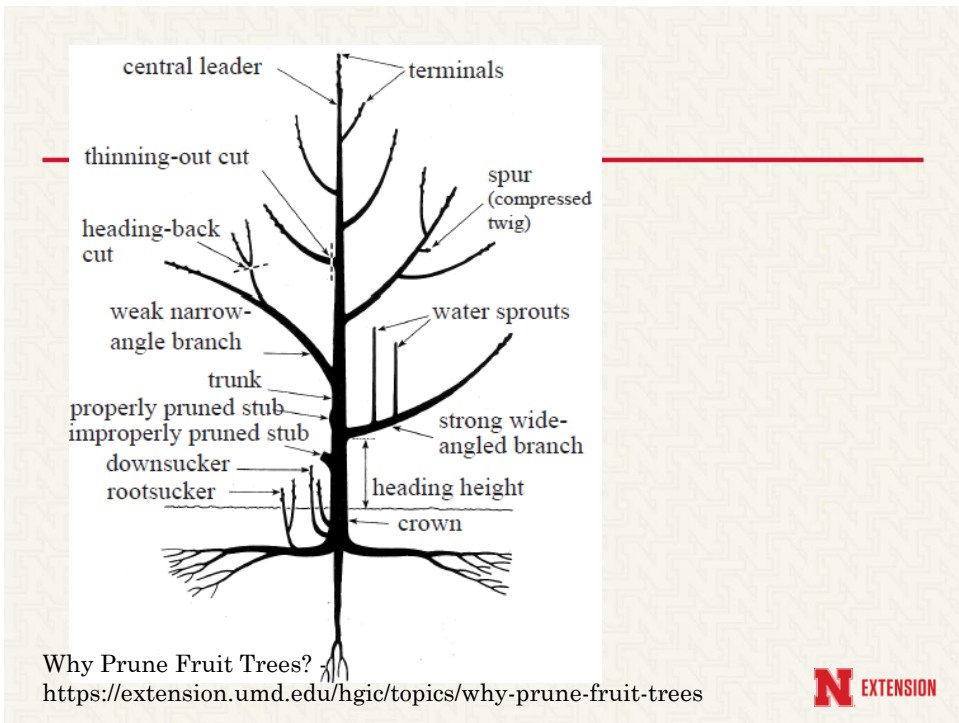
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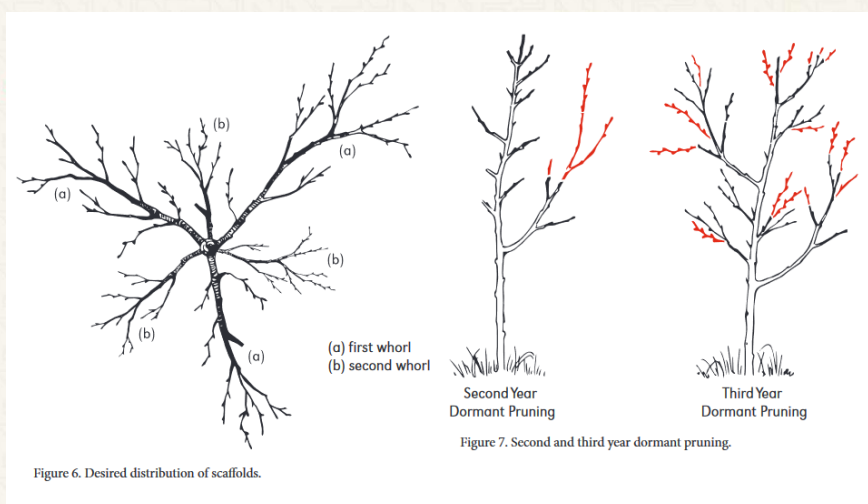
16

Third Year Dormant Pruning

- Retain 2-3 more scaffolds
- Promote 2 more in Year 4
- Scaffolds should not be longer than leader
- Retain 2-3 laterals on each scaffold
- Do not allow laterals to compete against scaffolds



17



<https://extensionpublications.unl.edu/assets/pdf/ec1233.pdf>



18

Fourth or Fifth Year Dormant Pruning

- 6 scaffolds should be established by now
- Prune to reduce shading of lower branches
- Prune back aggressive laterals
- Balance top and bottom canopy
- Promote new scaffolds to replace damage scaffolds as needed
- Leader can be pruned back to a well placed lateral for light penetration



19

Pruning Fruit Bearing Trees

- Maintains canopy shape and size
- Remove large branches only in the case of damage or disease
- Biennial Producers – prune in spring to balance growth and fruit set
- Remove disease and dead branches



20

Pruning Fruit Bearing Trees

- Remove suckers and water sprouts
- Remove crossing or parallel branches
- Remove limbs toward the center of the tree
- Remove excess branching that reduces light
- Keep pruning equipment sanitized between cuts



21

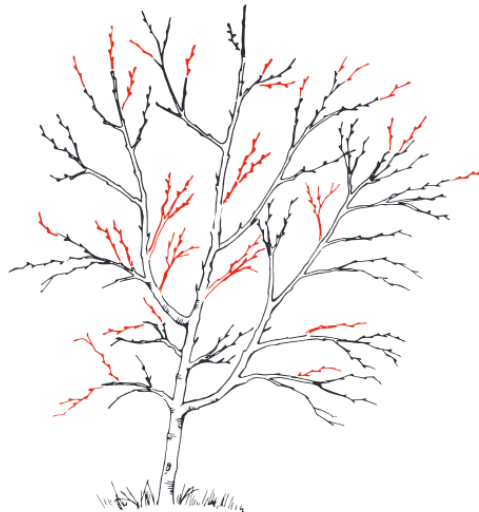


Figure 8. Training to a modified leader is complete. Note: Don't remove the leader until the tree begins to bear fruit.

<https://extensionpublications.unl.edu/assets/pdf/ec1233.pdf>



22

Pruning Neglected Trees

- May take 3 or more years to correct years of neglect
- Do not remove more than 1/3 of healthy canopy per year.
- Do not remove more than 1/3 of the height of the leader
- Remove dead, diseased or damaged branches



23

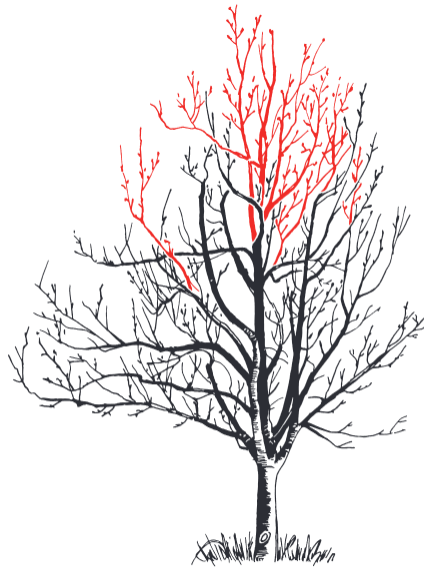


Figure 9. Lowering the height of a neglected tree.



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Pruning Neglected Trees, Continued

- Remove vertically growing shoots and broken branches
- Remove large branches – counts toward 1/3 canopy reduction – Remove narrow branch angles first
- Prune upper branches to shorter lengths *
- Cut back large lateral branches *



25

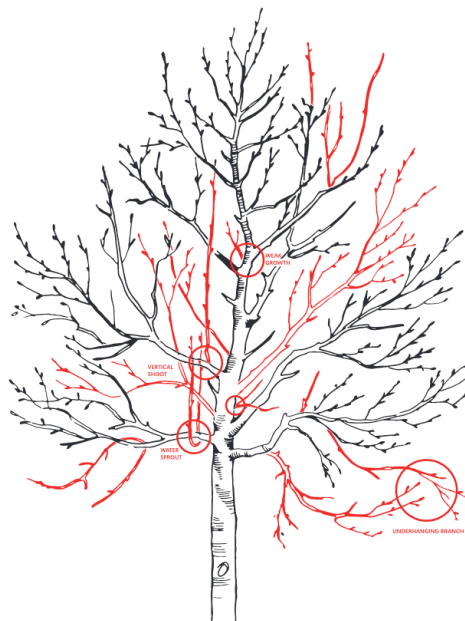


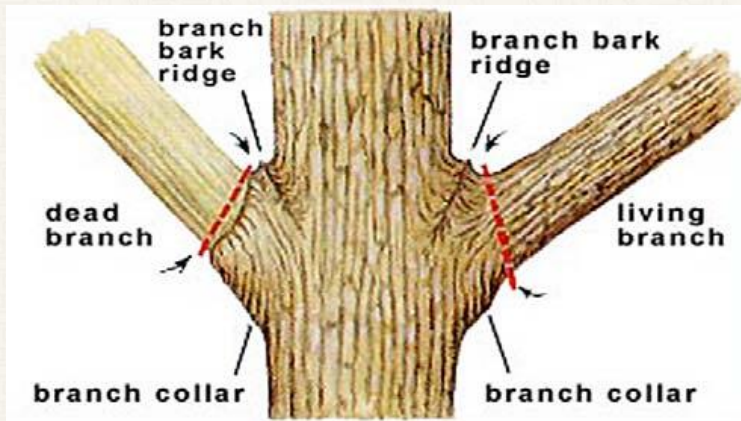
Figure 11. Thinning out undesired growth from a bearing or neglected fruit tree.

<https://extensionpublications.unl.edu/assets/pdf/ec1233.pdf>



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Pruning Cuts



How to Prune a Tree - <https://agrilife.org/treecarekit/planting-tree-maintenance/how-to-prune-a-tree/>

N EXTENSION

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Lateral Pruning Cuts

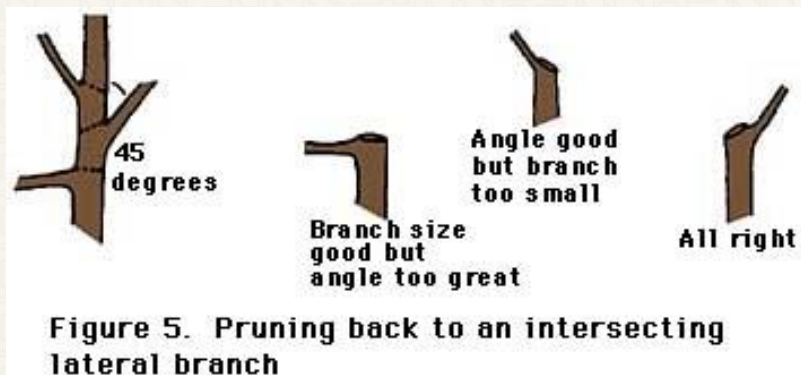


Figure 5. Pruning back to an intersecting lateral branch

Follow Proper Pruning Techniques - <https://aggie-horticulture.tamu.edu/earthkind/landscape/proper-pruning-techniques/>

N EXTENSION

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Thinning Fruit

- Increases fruit size
- Reduced excessive fruit drop
- Reduce weight and strain on branches
- Apples – Reduce Clusters from 5-6 to 2 each
- Ideal – One fruit per 6 inches of shoot
- Peaches – Start thinning at marble sized fruit until mid May
- Ideal – One fruit per 6-8 inches of shoot minimum



29

Specific Fruit Thinning

- Apples – Reduce Clusters from 5-6 to 2 each
- Ideal – One fruit per 6 inches of shoot
- Peaches – Start thinning at marble sized fruit until mid May
- Ideal – One fruit per 6-8 inches of shoot minimum



30

Specific Fruit Thinning, Continued

- Plums tend to produce heavy numbers without thinning
- Weight can cause heavy strain and breakage
- Ideal – Fruit spaced every 2-3 inches
- Tart Cherries – No thinning usually needed.



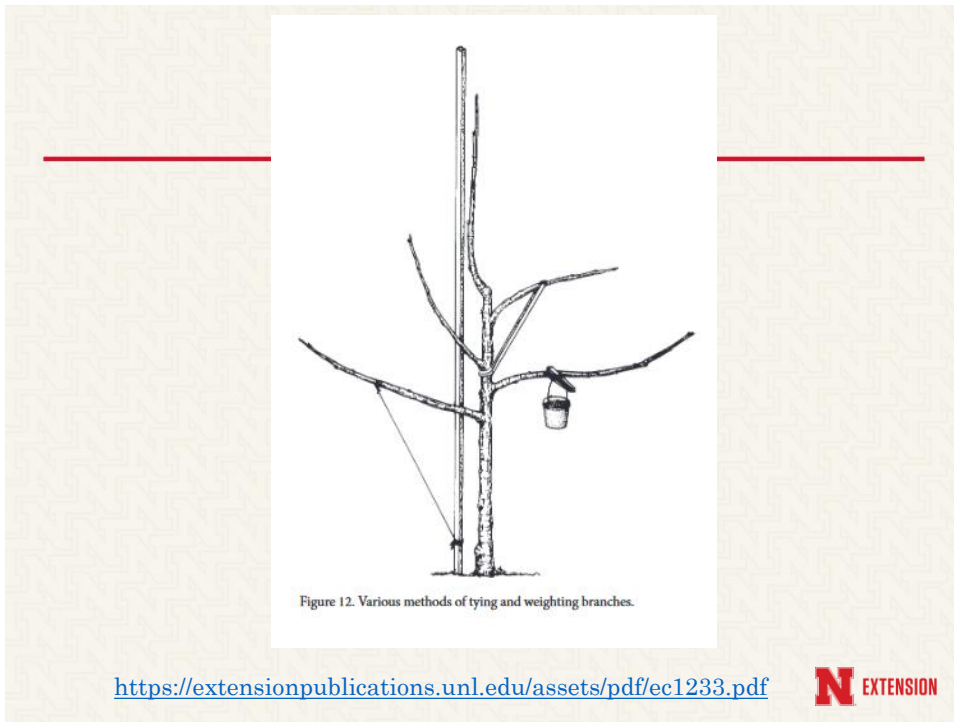
31

Branch Spreading

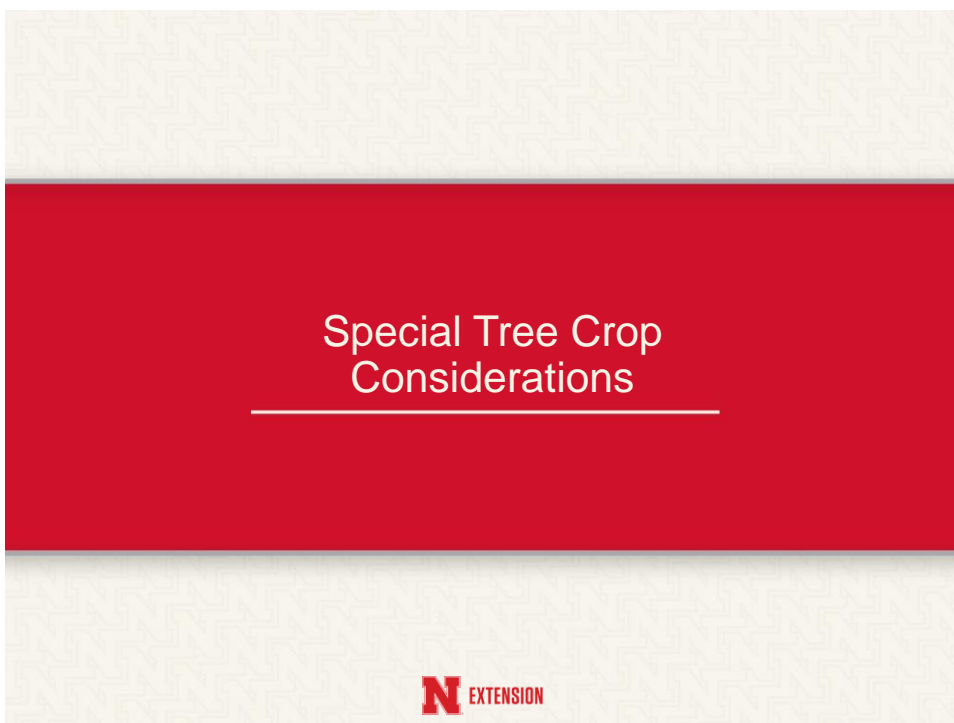
- Spread branches mechanically to 45 degree angle
- Spreading almost horizontal
- Use of ties and weights
- Older branches can be spread by cables
- Spreading for 2-3 years – then remove devices



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33



34

Apricot

- Produce fruit on short lived spurs
- Cutting back and thinning out important
- Very prone to early flower and frost damage
- Prune after the danger of frost is past



35

Pears

- Tend to produce narrow branch angles less than 45 degrees
- Prune back scaffolds to outward laterals or buds
- Heavy pruning produces water sprouts easily and terminal growth
- Very prone to fire blight *
- Promote multiple leaders to address fire blight tendency



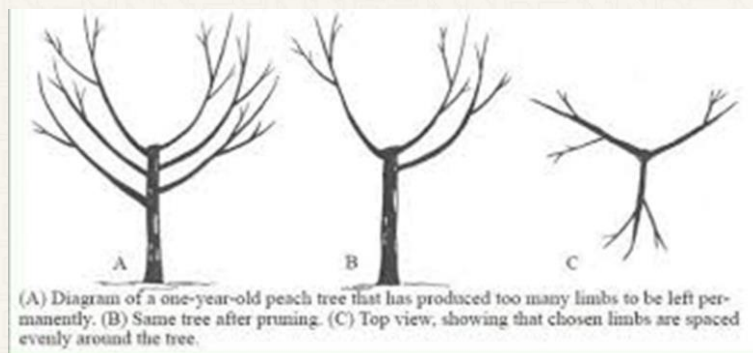
36

Peaches

- Fruit set on one year wood
- Usually red in color
- Prune in mid March to mid April
- Uses a vase shaped system – remove central leader
- Promotes light penetration



37



Pruning and Training Stone Fruit -
<https://extension.umd.edu/hgic/topics/training-and-pruning-stone-fruit>



38

Plums

- Evenly space scaffolds
- Scaffolds tend to be very compact
- Excessive produces water sprouts and suckers



39

Tart Cherries

- Produce on long life spurs, up to 10 years
- Spreaders can be used to open up branch angles
- Removal damaged and downward branches
- Remove branches growing across the canopy
- Remove rubbing branches and water sprouts
- Thinning cuts increase light penetration and air movement



40

References

- Pruning Fruit Trees
- <https://extensionpublications.unl.edu/assets/pdf/ec1233.pdf>
- Pruning and Training Stone Fruit
- <https://extension.umd.edu/hgic/topics/training-and-pruning-stone-fruit>
- How to Prune A Tree
- <https://agrillife.org/treecarekit/planting-tree-maintenance/how-to-prune-a-tree/>



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