Pruning for Cropload Management and Productivity

2012 WINTER PRUNING WORKSHOP

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Pruning Principles for Orchards

- **Pruning is important to maintain productive tree**
  - **Need to develop strong tree structure**
  - **Large yields of high quality fruit**
  - **Balance cropload with vegetative growth**
    - **Especially important with short fruit developmental period in Florida (78 days vs. 120 days; temperate climates)**
    - **Development of fruiting wood vs. blind wood**

Blind Wood

Blind Wood = No leaves to support current season's fruit, no buds to produce future shoots

- More prevalent with fast, vigorous growth

Improper Cropload Balance

- Tree on left has ideal cropload and canopy growth
- Tree on right has heavy cropload, poor canopy
- Thinning and pruning are important for cropload management

Pruning Principles for Orchards

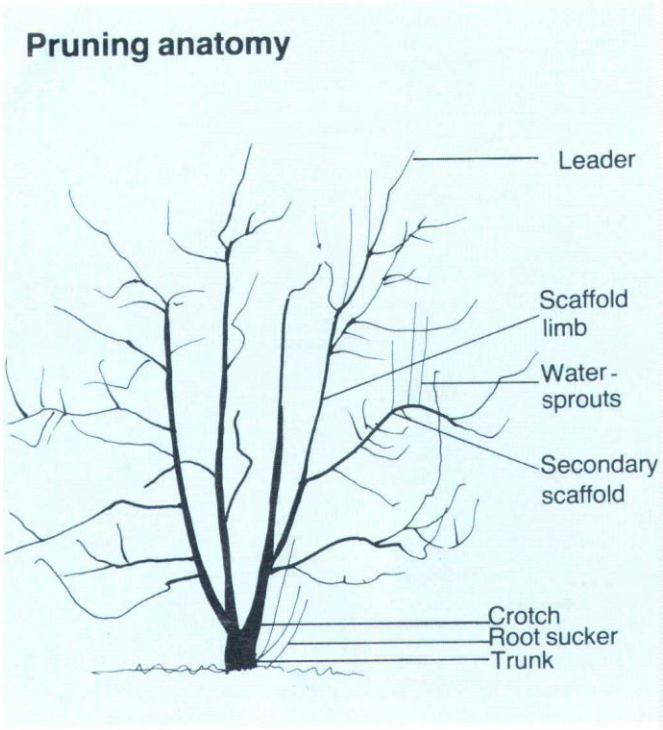
- **Maintain tree height**
  - **~ 8 feet to reduce ladder requirements**
- **Remove diseased or dead limbs**

- **In Florida, two pruning periods:**
  - **Winter**
  - **Summer**

Before & After (Winter):

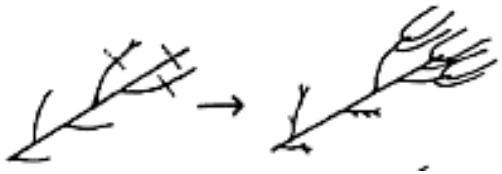
Before & After (Spring):

Terminology

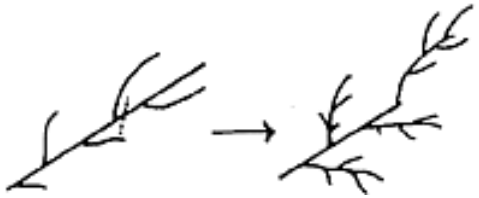


Types of Pruning Cuts

- **Heading Cuts**
  - **Invigorate the tree**
  - **Increase branching by causing lateral bud break**



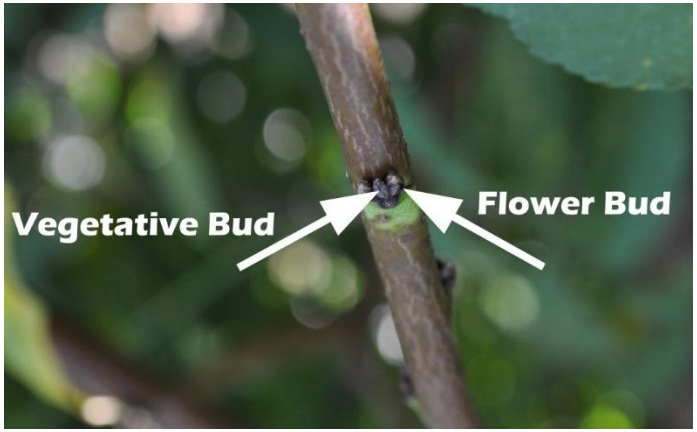
- **Thinning Cuts**
  - **Reduce branch number**
  - **Encourage apical shoot elongation**



Importance of Proper Pruning

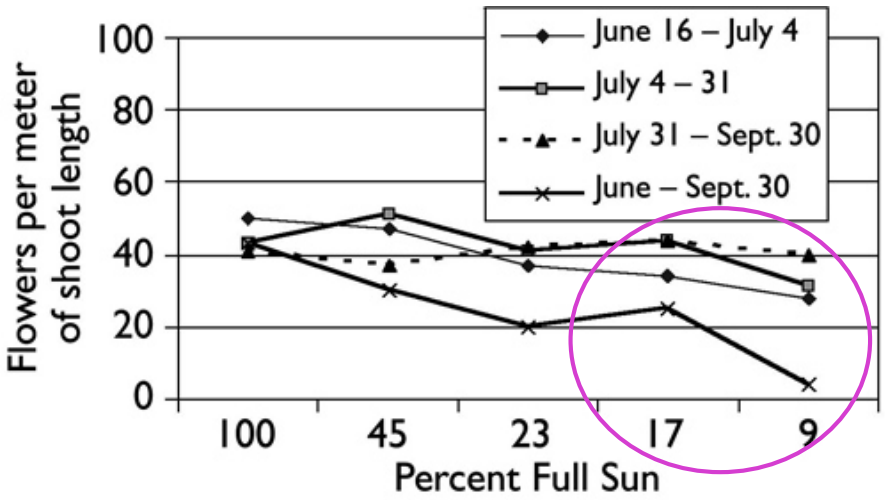
- **Manages cropload (directly)**
  - **Fruiting wood cut out and reduced**
  - **Need to know where bearing wood is:**
    - **Peaches are borne on one-year-old wood**
    - **Most pruning cuts will reduce overall yield**

Peach Growth



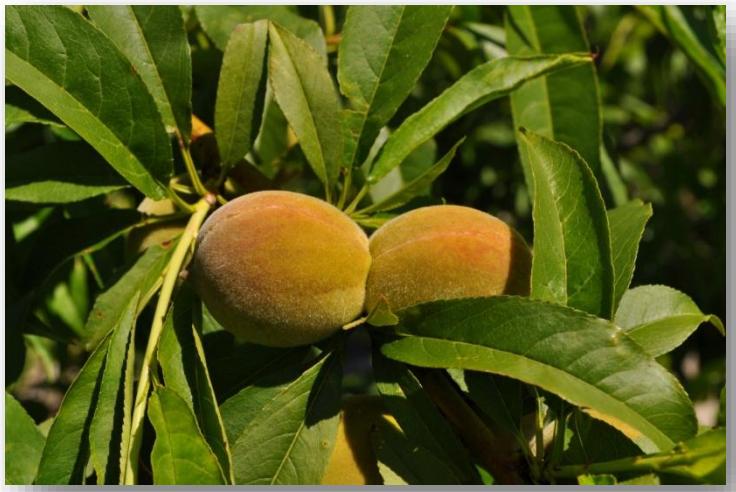
Pruning Principles for Orchards

- **Manages fruit bud initiation (indirectly)**
  - **Increases sunlight penetration into canopy**



Pruning Principles for Orchards

- **Reduces canopy temperature by increasing air flow (directly)**
  - **Can reduce incidence of doubling fruit**



Peach Diseases Affected by Canopy Size

- **Manages disease (indirectly)**
  - **Crowded canopy with excessive growth = disease**
  - **Need good air flow**


Photo: G. England

- **Mainly fungal diseases:**
  - **Alternaria rot**
  - ***Brown rot***
  - ***Peach Scab***
- **Vigorous canopies are difficult to cover effectively with spray**

FlordaPrince vs. TropicBeauty

Upright Growth

Semi-spreading Growth

Pruning and Thinning Peach Trees

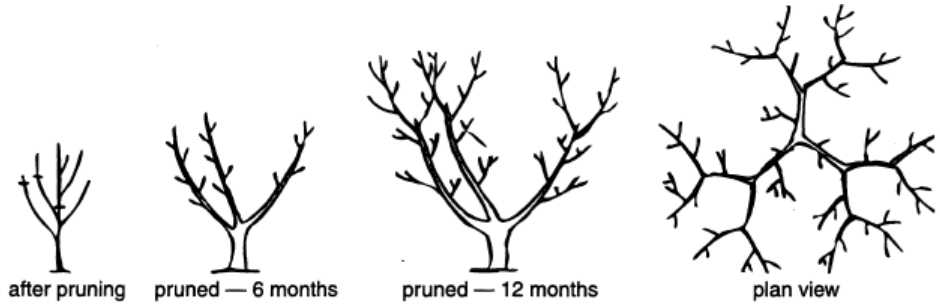
- **Extent of pruning depends on success of training system**
  - **Train trees when young**
  - **Use pruning to maintain initial training system**

Auburn University Libraries, 1926

Peach Training Systems

- **Open Vase**
  - **Traditional system**
  - **In Florida, fast growth can close canopy within 2 years**
    - **7-8 feet of growth in a year**
  - **Important to manage vigorous canopies with proper pruning techniques**
- **Young vs. Mature trees**
  - **Training & maintaining tree balance**

Open Vase Training System



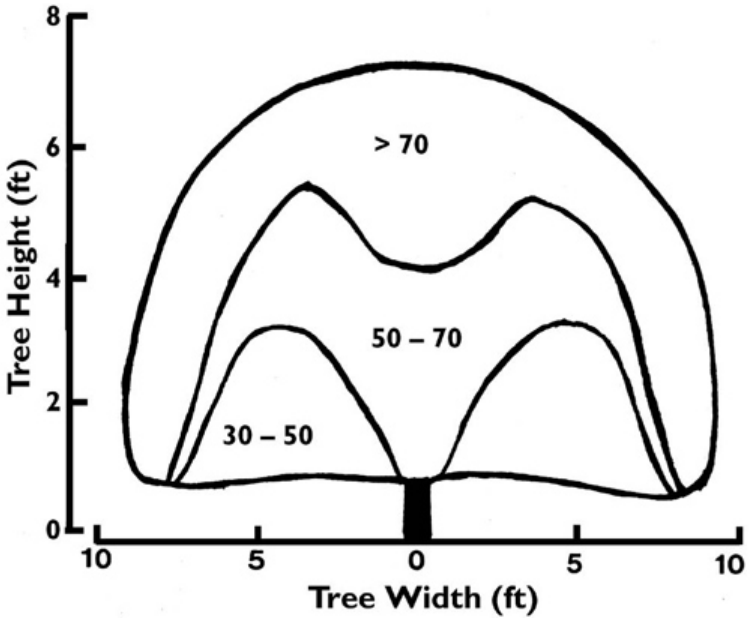
- **Prune young trees for structure:**

Year 1

Year 2

Open Vase Training System

- Mature trees must be managed to optimize sunlight interception
- Avoid sunburn
  - Leave a few upright shoots in canopy center during summer pruning



Pruning Techniques

- **Remove watersprouts**
  - **Vigorous, upright growth**
    - **Fruit produced is of poor quality**
    - **Wide internode spacing**
    - **Shading for lower branches**
- **Prune out diseased or dead wood**
  - **Peach Tree Short Life**
    - **Unexplained shoot dieback**

Pruning Techniques

- **Remove limbs or branches that cross**
  - **These increase shade**
  - **Can cause mechanical damage on fruit**
- **Thin canopy**
  - **Fruit buds require light to develop**
    - **Excessive shade = higher proportion of vegetative buds**
  - **Reducing fruiting wood helps to reduce thinning costs**

Pruning Summary

- Winter Pruning
  - Remove water sprouts
  - Shape tree & thin branches
  - Choose fruiting wood close to scaffolds
- Summer Pruning
  - Reduce tree height to 8 feet
  - Remove dead shoots
  - Remove hanging shoots close to ground
  - Increase light penetration to middle of tree
    - Be careful of sunburn!