Pruning for Cropload Management and Productivity

2013 Winter Pruning Workshop
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Pruning Principles for Orchards

- Pruning:
  - Develops strong tree structure
  - Thins buds to achieve yields of high quality fruit
  - Balances cropload with vegetative growth
    - Especially important with short fruit developmental period in Florida (78 days vs. 120 days; temperate climates)
    - Development of good-sized 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

Good balance with crop and canopy
Not thinned
Terminology

Pruning anatomy

- Leader
- Scaffold limb
- Watersprouts
- Secondary scaffold
- Crotch
- Root sucker
- Trunk
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

Vegetative Bud  ➔  Flower Bud

One year old wood
Pruning Principles for Orchards

- Manages fruit bud initiation (indirectly)
- Increases sunlight penetration into canopy
- Low sunlight will reduce the amount of flower buds formed, ultimately reducing the crop the next year.

Figure 4. Flower density (flowers per meter of shoot length) of ‘Redhaven’ peach shoots as influenced by light levels (percent full sun) during four periods of the growing season in Virginia.
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

UF2000; Botryosphaeria
Pruning Principles for Orchards

- Reduces canopy temperature by increasing air flow (directly)
  - Can reduce incidence of doubling fruit
Before & After (Winter):
Before & After (Spring):
Peach Diseases Affected by Canopy Size

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

- Mainly fungal diseases:
  - Alternaria rot
  - Brown rot
  - Peach Scab

- Vigorous canopies are difficult to cover effectively with spray

Photo: G. England
FlordaPrince vs. TropicBeauty

‘UFBest’ also has upright 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
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:

![after pruning](image1)   ![pruned — 6 months](image2)   ![pruned — 12 months](image3)   ![plan view](image4)

Year 1

Year 2
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
  - Dead wood will appear greyish, while wood that is alive will be reddish-brown
  - 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
  - Majority of cuts in should be thinning cuts with a few heading cuts
Pruning Summary

- Prune to maintain productive tree
- Heading cuts can result in thinner fruiting wood
- Thinning cuts should be the majority of those made in each season.

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