PRUNING FRUIT TREES AND BERRIES

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TOPICS

• Basic Biology of Fruit Trees
• Tips for Successful Fruit Gardening
• Tools for Pruning
• Pruning Methods
Biology

Requirements for plants:
Sun Light, Water, Air, Temperature and Fertile Soil
BIOLOGY

- Sunlight

PHOTOSYNTHESIS
BIOLGY

• Water
BIOLOGY

• Soil
BIOLGY

• IMPROVE SOIL
  • RAISED BED
  • IMPROVE DRAINAGE
  • IMPROVE SOIL WITH AMENDMENTS
    • COMPOST
    • EXPANDED SHALE
    • TILL WITH EXISTING SOIL
BIOLOGY

- **USE ORGANIC MULCH TO HELP:**
  - **CONSERVE MOISTURE TO SAVE WATER**
  - **REDUCES EVAPORATION**
  - **PREVENTS EROSION**
  - **CONTROLS WEEDS**
  - **RELATES SOIL TEMPERATURE**
  - **ENRICHES SOIL NUTRIENTS**
  - **INCREASE SOIL HEALTH**
  - **DECREASE SOIL COMPACTION**
  - **3 INCHES RECOMMENDED**
- Top of root ball level with ground
- Protect trunk from weed trimmers with 2-liter plastic bottle.
- Keep mulch away from trunk.
- Flood partially backfilled hole with slow-running hose.
- Mulch 3"-4" depth
- Cut roots that are circling the container
- Backfill planting hole with original soil.
- Bottom of root ball on firm soil
- Soil ring
- Planting hole 2-3 times root ball diameter
BIOLOGY

• **Temperature**

• **Hardiness**

  • Based on the average annual extreme minimum temperature

• **Chilling Requirements**

  • Time between 32F and 45F from Oct-Feb
Zone 8a = 10 to 15 F
TIPS FOR SUCCESSFUL FRUIT GARDENING

• PROPER PLANNING AND DESIGN
  • SELECT THE PROPER SITE
  • USE ADEQUATE PLANT SPACING
  • TEST YOUR SOIL – TYPE, DRAINAGE, NUTRIENTS, pH, SOIL PROPERTIES
  • PROPERLY WATER – GOLDILOCKS PRINCIPLE
  • LIGHT - FULL SUN, AT LEAST 8 HOURS/DAY
  • PROVIDE ALL THE REQUIREMENTS FOR THE PLANT
  • SELECT CROPS AND VARIETIES SPECIFIC FOR OUR SOIL AND CLIMATE
  • PREVENT DISEASE AND INSECT PROBLEM BEFORE THEY OCCUR
  • USE HARDWOOD MULCH AROUND THE DRIP LINE OF THE TREE
  • REALIZE FRUIT TREES ARE SHORT-LIVED, AND WON’T LIVE FOREVER
BENEFITS OF PRUNING AND TRAINING

**Benefits:**

- **Sunlight Penetration into Canopy**
- **Size Control**
- **Easier to harvest**
- **Fruit Load Management**
- **Encourage Proper Branching for Strength**
- **Manage Vigor**
- **Reduce Injury**
- **Increased Air Flow for Reduce Disease**
- **Sanitation: Remove Disease**
ART AND SCIENCE OF PRUNING

• **The science of pruning a tree means being aware of how light affects its growth, and how its structure develops over time.**

• **The art lies in pruning a tree so that the balance of growth and productivity is esthetically pleasing to you.**

• **Aim for a tree that is well balanced between growth and production, easy to manage, and open to the light and air.**

• **Think of it as a living sculpture, with many light channels flowing throughout its structure**

  • **By Gary Moulton & Jacky King, WSU**
  • [http://extension.wsu.edu/maritimefruit/Pages/PruningBasics.aspx](http://extension.wsu.edu/maritimefruit/Pages/PruningBasics.aspx)
TOOLS FOR PRUNING

Chainsaw
Long reach pruner
Bypass hand pruner
Folding saw
Lubricant
Pruning saw
Small bypass lopper
Scabbard
Large bypass lopper
PRUNING LARGE BRANCHES
EFFECT OF PRUNING ON GROWTH

Terminal bud

Node

Lateral bud

Bud Scale Scar

Current Season’s Growth

Previous Season’s Growth

Alternate Bud Arrangement
EFFECT OF PRUNING ON GROWTH

active apical bud

dormant lateral bud
FRUIT AND NUT GARDENING IN TEXAS

- Apples
- Blackberries
- Blueberries
- Chestnuts
- Figs
- Grapes
- Jujubes
- Loquats
- Peaches
- Nectarines
- Plums
- Pears
- Pecans
- Persimmons
- Pistachios
- Pomegranates
- Raspberries
- Strawberries
- Tropical and Subtropical Fruits
- Walnuts
PRUNING AND TRAINING METHODS

• **Open Center**
• **Central Leader**
• **Modified Central Leader**
• **Fruit Bush**
• **Trellis**
• **Cane, Spur, Cordon, ETC.**
• **Thin Center**
• **Other Methods specific for the Fruit Crop**
PRUNING AND TRAINING METHODS
Central leader

Modified central leader

Open center or vase shape
<table>
<thead>
<tr>
<th>Open Center</th>
<th>Central Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peaches</td>
<td>Apples</td>
</tr>
<tr>
<td>Plums</td>
<td>Pears</td>
</tr>
<tr>
<td>Nectarines</td>
<td>Mayhaws</td>
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<tr>
<td>Apricots</td>
<td>Pecans</td>
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<tr>
<td>Almonds</td>
<td>Persimmons</td>
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<tr>
<td>Cherries</td>
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</tbody>
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TRAINING AND PRUNING OPEN CENTER

Figure 4. Remove all side shoots at planting.

Figure 5. Open system training involves developing a strong open center framework in the first 2 or 3 years.

Figure 6. The shape of the open system must be maintained throughout the life of the tree.
Plant a stick that is ~24 inches tall
Stone fruit trees produce flowers on one year old wood, so leave one year old wood throughout the tree.
FRUIT TREES BLOOM EARLY IN SPRING

• LATE FREEZES CAN REDUCE FLOWER NUMBERS
WITHOUT PRUNING THE FRUITING WOOD MOVES UP AND OUT
CENTRAL LEADER

APPLES

PEARS

PECANS

PERSIMMONS
PRUNING CENTRAL LEADER

Figure 7. Central leader pruning is generally used for pecans, apples and pears. A central trunk supports scaffold branches with wide-angle crotches.
2–3 Sets of scaffolds

Central leader

Second set

First set
FRUIT BUSH
FRUIT BUSH
ESPALIER
MIMIC OLD TREES

Tie down shoots
DWARFING ROOTSTOCKS
GROW IN CONTAINERS
GRAPES

Pruning and Training

• one-year-old bud on a vine will produce a shoot that will produce one to two clusters of grapes
• leave 10 to 14 one-year-old buds on each side of the trunk
TRAINED AND PRUNING GRAPES

Figure 8. Prune severely at planting to only two buds.

Figure 9. Prune off all growth except the main shoot with two buds during the first winter.

Figure 10. Train the most vigorous shoot to a stake during the second growing season, tying every 6 in. Cut the trunk shoot above the low (42-inch) wire to force lateral shoots to grow near this wire.

Figure 11. Cane pruning.

Figure 12. Cordon training.

Figure 13. Muscadine grapes should be trained on parallel spur-pruned cordons.
AFTER PRUNING
One bud = one shoot = 1 to 2 clusters of grapes
Best arbor grape is Champanel
ANOTHER TYPE OF ARBOR
TRAINING AND PRUNING BERRIES

Figure 14. Clip berry plant tips to develop a compact hedgerow.

Figure 15. Trailing and semi-erect berries should be trellised for good sunlight exposure.
BIENNIAL PLANTS

- Grow a top
- Fruit the next year
- Then the fruiting canes die
Remove old canes after fruiting
Prune to a hedge
RASPBERRIES NEED TO BE TRELLISED
FIGS

Grow as brush due to potential freeze
THINNING FRUIT TREES

- Increases size
- Keeps the tree from breaking
Fruit Thinning

- Peaches/Nectarines
  - 4 to 6 inches apart.
- Apples/Pears
  - 1 to 2 fruit per cluster.
- Plums/Apricots
  - 2 to 3 inches apart.
- Persimmons
  - 1 fruit per shoot.
- No thinning required for most other fruit.
INTERNET RESOURCES

http://aggie-horticulture.tamu.edu
http://winegrapes.tamu.edu/
http://www.noble.org
http://vfic.tamu.edu/
http://agrilifebookstore.org/
http://Collin.agrilife.org
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