Pomology 101
Fruit Gardening

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Topics

• Fruits for North Texas
• Basic Biology of Fruit Trees and Berries
• Tips for successful Fruit Gardening
• Varieties for North Texas
• Tools for Pruning
• Pruning Methods
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
Fruit and Nut Crops in **North** Texas

- Apples
- Blackberries
- Chestnuts
- Figs
- Grapes
- Peaches
- Nectarines
- Plums
- Pears
- Pecans
- Persimmons
- Pomegranates
- Raspberries
- Strawberries
- Walnuts
Easy Fruit and Nut Crops in **North** Texas

- Blackberries
- Figs
- Grapes
- Peaches
- Pears
- Pecans
- Persimmons
- Pomegranates
- Raspberries
- Strawberries
Biology

Requirements for plants:

Sun Light, Water, Air, Temperature and Fertile Soil
Biology

- Sunlight

Photosynthesis
Biology

- Water
Biology

• Soil
Biology

• 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
Planting a Fruit Tree
- Top of root ball level with ground
- Protect trunk from weed trimmers with 2-liter plastic bottle.
- Flood partially backfilled hole with slow-running hose.
- Soil ring
- Keep mulch away from trunk.
- Mulch 3”-4” depth
- Cut roots that are circling the container
- Bottom of root ball on firm soil
- Backfill planting hole with original soil.
- 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
  • Climate can create the largest risk to success
Biology – Temperature – Cold Hardiness

Zone 8a = 10 to 15 F
Tips for successful Fruit Gardening

• 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
Tips for Successful Fruit Gardening

- Select crops and varieties specific for our soil and climate
- Purchase quality plants from reputable nursery
- Don’t plant too deep
- 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
Variety Selection

• Learn as much as possible about the specific fruit crop
• Start by reviewing varieties recommend by Texas A&M Extension Horticulture @
  • AggieHorticulture.tamu.edu
• Check availability with Nursery
• Double check that the variety:
  • Has the proper chill hours
  • Adapted to your soil
Varieties for North Texas

- Blackberries –
  - Kiowa, Ouachita, Arapaho, Natchez, Chichasaw, Navaho, apache
- Figs –
  - Texas Everbearing (brown Turkey), Alma, Celeste
- Pears –
  - European Hybrids - Kieffer, Orient, Moonglow, Magness
  - Asian Varieties- 'Shinko', 'Shin Li'
Varieties for **North Texas**

- **Grapes** –
  - Victoria Red, Champanel, Black Spanish, Blanc du Bios
- **Pecans** –
  - Desirable (I)ss, Pawnee (I)ss, Kanza (II)
- **Peaches** –
  - Harvester, Majestic, Redskin
- **Plums** –
  - Morris
Varieties for North Texas

• Persimmons –
  • Eureka, hachiya, Tane-nashi, Tamopan, Fuyu, Izu, Fanko
• Pomegranates –
  • Al-sirin-nar, Salavatski, Russian 18.
• Raspberries –
  • Dorman Red
• Strawberries –
  • Chander, Seascape, Oso Grande, Sequoia
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.

• 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
Tools for pruning

- Chainsaw
- Long reach pruner
- Bypass hand pruner
- Folding saw
- Lubricant
- Pruning saw
- Scabbard
- Small bypass lopper
- 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
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
## Fruit Tree Pruning Techniques

<table>
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<th>Open Center</th>
<th>Central Leader</th>
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<td>– Cherries</td>
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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

First set

Second set

Central leader

a

d

c

b

e
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.
Fruit Bush - Figs
Fruit Bush - Figs
Fruit Bush – Pomegranates
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
Training 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 Pruning. Muscadine grapes should be trained on parallel spur-pruned cordons.
Before Pruning
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
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
http://ccmgatx.org