Home Orchard Care for Master Gardeners

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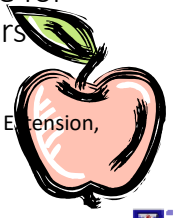


This Can Be You!

Growing Quality Fruit

- Requires planning and long-term commitment
- Annual cultural practices
  - Pruning, fertilization, irrigation, weed control, IPM, thinning, harvesting
- Different fruits have different cultural requirements

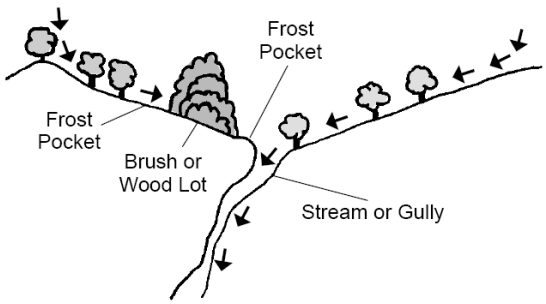
Home Orchard Road Map

- Site Selection
- Fruit Tree Propagation
- Tree Selection and Spacing
- Planting
- Irrigation
- Pruning
- Fertilization
- Thinning
- Harvest

Site Selection

- Deep, well-drained, productive soils
- Cold air is more dense that warmer air and flows down slope (like water)
- Gentle slopes are preferred
- Avoid "frost pockets" where cold air can become trapped
- There are some inexpensive frost protection techniques

Cold Air Drainage Example

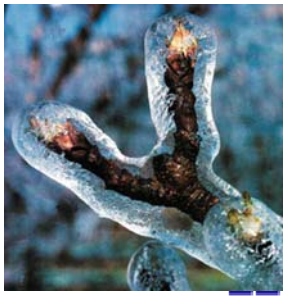


Minimizing Frost Damage

- Select appropriate cold hardy varieties
- Maintain bare ground
- Overhead irrigation
- Covering trees to trap heat (PVC frames)
- Light bulbs/Christmas lights
- Using anti-transpirants

Peach Orchard

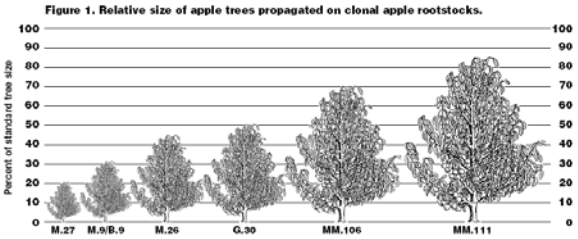
Frost Protection w/Irrigation



Fruit Tree Propagation

- Rootstocks are field-grown from cutting
  - 100+ for fruit trees – 20 for apples
  - Dwarfing characteristics (semi-dwarf)
  - Graft compatibility
  - Disease resistance
  - Early fruit production (precocity)
- Interstem material is sometimes used
- Scion – known variety that is budded on to the rootstock or interstem

Dwarfing Effects of Various Apple Rootstocks



Grafting/Budding

After wax has been applied

Bench Grafting M111 to M9 Interstem

Planted in the field

Grafting/Budding (cont.)

Bud wood grown to produce scions

T-budding mid to late summer

5 foot tall tree the following season

Tree Selection

- Bare root
- Container
- Box
- Ball and Burlap

Look for young, well-labeled trees with healthy roots and stems. Beware of bargains. The price of the tree will be the smallest expense in the long-run.

Variety Selection

- Know your climate
  - Sunset, USDA Plant Hardiness, U of A
- Chilling Requirement
  - Accumulation of hours below 45ºF and above 32ºF
  - Each fruit variety has a corresponding chilling requirement
- Self fruitful vs. non-self fruitful (requiring cross pollination)
- Select varieties that bear at different times

Arizona's Climate Zones

Chilling Requirements for Yavapai County

- Verde Valley (3,000 to 4,500 ft)
  - 600 to 750 chill hours
- Prescott (4,500 to 6,000 ft)
  - 750 to 1,000 chill hours
- These numbers are approximate and some fruit varieties do not have chilling requirements high enough for our area

Tree Spacing

- Semi-dwarf apples, peaches, apricots, and plums should be about 15-18 ft apart
- High-density planting
- Multi-budded "cocktail" trees

Planting

- Prune out damaged roots with clean, sharp tools
- Plant trees in native, non-amended soil during the month of March
- Soak the bare root tree roots in a bucket of water before planting
- Add soil and water incrementally to prevent air pockets
- Plant at same depth as it was grown in the nursery – bud union should 2-3 inches above the soil line
- Some people recommend the graft union face north

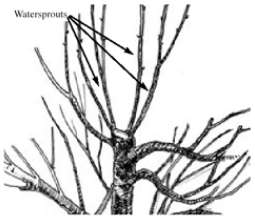
Planting and Initial Pruning

Pruning

- Modified Central Leader
  - Apples and pears
- Open Center
  - Stone fruits: peaches, nectarines, plums, apricots, cherries, etc. Some people prunes apples and pears this way too

Pruning

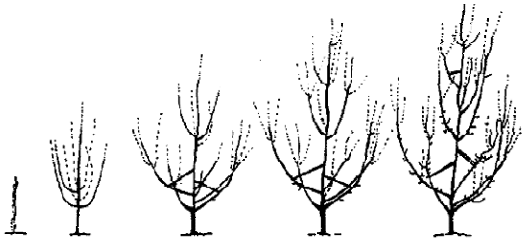
- Heading Cut
- Thinning Cut



THINNING CUTS
Cut to a branch, twig or bud

Open Center Pruning

Modified Central Leader



Irrigation

- Flood/basin irrigation is probably best, basin should be 2 feet beyond drip line
- Drip irrigation is also effective as long as it adequately designed and function
- Microsprinklers will also do the job
- Apply some water during dry winter periods
- Mulching will prevent evaporation, but can also prevent the soil from warming

Fertilization

- Nitrogen is the primary concern (P and K are probably adequate)
- Pears-0.05 lb N/inch of trunk diameter and up to 0.5 lb N/tree
- Apples and Stone Fruits-0.1 lb N/inch of trunk diameter and up to 1.0 lb N/tree

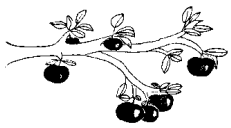
Fertilizer Calculations and Application Timing

- Apple with a 7 inch trunk diameter
- 7 inches x 0.1 lb N/inch dia.=0.7 lbs N
- Using ammonium sulfate (21-0-0)
- 0.7 lbs N x 100 lb fert/21 lb N=

  3.3 lb ammonium sulfate/tree
- It is best to split three ways ½ in April/May (after leaf out), ¼ in July, and ¼ in September
- 1.7 lb in April/May, and 0.8 lb in July and again in September

Thinning Fruit

- Thinning improves fruit quality and can increase yields
- Thin fruit to be about 5 to 8 inches apart and only one fruit per cluster



Harvesting Fruit

- Apples
  - When normal, unblemished fruit begin to drop
  - Flesh color at the bottom of the fruit has changed from green to yellow-green
  - Taste it (the birds will also eat it)
- Apricots
  - Softens slightly and easily separates from the stem

Harvesting Fruit (cont.)

- Cherry
  - Maximum sized and full-flavored
  - Will not ripen off the tree
  - Sweet cherries remain firm when ripe
  - Sour cherries pull off stem easily
- Peaches/Nectarines
  - Fruit separates easily from the stems
  - Will ripen best on the tree

Harvesting Fruit (cont.)

- Pear
  - Should be picked slightly before ripe and will ripen further indoors
  - Change in fruit color from green to yellow
- Plums
  - Sugar increases and color changes
  - Flesh softens somewhat

Fruit Tree IPM-Insects

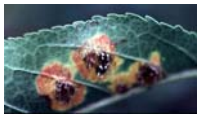
- Codling Moth
- Peach Tree Borer
- Aphids
- Thrips
- Stink Bugs/Plant Bugs
- Wooly Apple Aphid




Fruit Tree IPM-Diseases

- Crown Gall
- Fire Blight
- Texas Root Rot
- Cytospora Canker
- Cedar Apple Rust






Fruit Tree IPM-Vertebrates

- Pocket Gophers
- Deer/Elk
- Sapsuckers/Woodpeckers
- Birds

Final Thoughts

- Choose appropriate varieties
- Grow what you enjoy
- When the trees get old, replace them
- Keep good records (flavor, productivity, years of crops, etc.)
- Have Fun!