Growing Tree Fruits for the Home Garden

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Douglas County

Topics to be covered
- Site selection
- Varieties
- Pollination
- Rootstocks
- Planting
- Fertilization
- Irrigation
- Fruit thinning
- Pruning
- Pest controls

Growing tree fruit

Site Selection

Growing tree fruit

Site Selection

Site selection

- Plant Zone 6, 7, or 8
- good for deciduous tree fruit
- Eight hours of sun
- Some elevation-fights frost
- Slope direction influence bud break
- Need a water source
- Well drained soil best

Frost Pockets & Warm Spots

Site Selection-Soil

- Tolerance to waterlogging
- Pear- very tolerant
- Apple-tolerant (except M26, MM106)
- Plum- tolerant
- Peach- sensitive
- Apricot- very sensitive
- Cherry- very sensitive
Growing tree fruits

Varieties

Varieties best suited for home orchards

- Apples
  - Scab resistant
  - Mildew resistant
- Pears
  - Fireblight resistant
- Cherries
  - Self-fertile

Scab-resistant apple varieties

- Early ripening:
  - Pristine
  - William’s Pride
  - Dayton
- Mid-/ early late:
  - Liberty
  - Enterprise
- Late:
  - Goldrush

Leading Varieties

- Red Delicious
- Golden Delicious
- Fuji
- Gala
- Jonagold
- Braeburn
- Cameo

Old Favorites

- Gravenstein
- Newtown Pippen
- Spitzenberg
- Arkansas Black
- Northern Spy
- Winesap
- Ida red
- Jonathan
- Elstar
- Cox’s Orange
Standard pear varieties

Big four -
- Bartlett (Summer*)
- Bosc (Winter**)
- Comice (Winter**)
- D’Anjou (Winter**)

*Summer- will ripen after harvest
**Winter- requires chilling to ripen normally

Fireblight resistant pears varieties
- Harrow Delight
- Harvest Queen
- Magness

Peach Varieties
- Favorites
- Redhaven
- Elberta
- Rio Oso Gem
- Suncrest
- O’Henry
- Reliance
- Leaf curl resistant
- Frost
- Early Redhaven
- Creswell
- Clayton
- Muir
- Krummel
Plum and Prune Varieties

- Plums- (Japanese)
  - Beauty- red
  - Santa Rosa- red
  - Satsuma- red
  - Shiro- yellow
  - Methley- light red
- Prunes- (European)
  - Italian- purple
  - French- blue
  - Stanley- blue
  - Moyer- purple

Cherry Varieties

- OLD
  - Bing
  - Cristalina
  - Rainier
  - Royal Anne
  - Regina
  - Chelan
- NEW
  - Sonata
  - Lapin
  - Sweetheart
  - Skeena
  - Stella
  - Sandra Rose

Growing tree fruit

Pollination

- Tree fruit crops
  - insect pollinated
    - honey bees
    - mason bees
    - misc.
- Nut crops
  - wind-pollinated

Definitions:
Pollination = the transfer of pollen to the receptive part of the female flower.
Pollinator = the agent of pollen transfer (bees, flies, etc.).
Pollinizer = the source of the pollen.

Pollinizers

- Apple
  - another variety
  - crabapple
- Pear
  - Bartlett
- Cherry
  - discussed later
- Peach
  - self-fertile
- Prune plum
  - ‘Italian’ benefits from another var.
- Oriental plum
  - usu. needed
Apple Pollinizer Chart

Cherry Pollinizers
- Bing - Van or Rainier
- Chelan - Bing, Van or Rainier
- Cristalina - Sandra Rose, Lapins

Self Fertile Varieties
- Sandra Rose
- Sonata
- Lapins
- Skeena
- Sweetheart
- Staccato

Growing tree fruits
Rootstocks and dwarfing mechanisms

Why dwarf trees?
- Safer - little to no ladder work
  - pruning/training
  - harvesting
  - spraying
- Begin flowering earlier (precocious)
- Bear earlier
- More productive
- Less pruning

What fruit trees can be dwarfed?
- Significant dwarfing
  - Apple - 4'
  - Cherry - 8'
- Slight dwarfing
  - Pear - 10+
  - Plum - 10+
  - Peach - 8+
**Goal**

How do you dwarf fruit trees?

- Dwarfing rootstocks
  - genetically different root system
  - variety is budded/grafted onto a rootstock
    - not true from seed
    - varieties are difficult to root
    - not dwarfing

**Grafting**

- Scion
- Rootstock

**Growing tree fruits**

**Planting systems**

- Deciduous fruit trees planted bare-root.
- Planting holes dug wide.
- Do not glaze the sides of the planting hole.
- Broken or damaged roots trimmed off.

**Planting**

- Trees planted with graft union above soil line.
- Trunks painted with white interior latex paint (can be diluted with water 1:1).
- Water trees in.
- Prune off top at desired height to encourage branching.
- Don’t put fertilizer in hole or around tree base until 2nd yr.
Pruning after planting

• Central leader training

• If not branched, head the tree at ~30"

• Allow 4-5 lateral branches to develop (not all from the same location on the trunk)

Spacing

• Dwarf
  – 6-8 foot spacing

• Semi-dwarf
  – 10-15 ft spacing

• Standard
  – 18-25 ft. spacing

Growing tree fruits

Fertilization

Fertilization

• Apply nitrogen fertilizer during growing season. (April/May)

• Early season application will promote growth in current season.

• Aug-Sep application will be stored in buds for flowers-fruit during following season.

Fertilization-pH

• Young trees should grow 18-30 inches

• Older trees should grow 12-18 inches

• pH of 6-7 good, lime every third year
Growing tree fruits

Irrigation

Irrigation Needs (inches/week)

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<th>Mar</th>
<th>Apr</th>
<th>May</th>
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Why do we thin fruit?

- Fruit size
  - apple, pear, peach, plum
- Return bloom
  - mostly in apple
- Prevent limb breakage
- Distance
  - at least 6” (fist with extended thumb)
  - < 25% of the crop in apple and peach

Fruit Thinning—Heavy Set
Thin to Singles

- Apple < 40 days after full bloom
  - 1 fruit / 2 spurs
- Pears < 60 days after full bloom
  - 1 fruit/ 2 spurs
- Peaches < 60 days after full bloom
  - 6” to 10” apart

Fruit thinning

Growing tree fruits

Pruning

Why Prune?

- Balance vegetative growth and flowering-fruiting
- Pruning + nitrogen = vigor, unfruitful, large fruit
- No pruning + heavy crop load = weak trees, small fruit size

Pruning

- Heading back cuts
  - invigorating
  - lateral buds break
  - increases branching
- Thinning out cuts
  - branch collars
  - equal but opposite
  - stimulate apical shoot elongation
  - reduce branch number
Reinvigorate Fruit Wood

For compact trees:
- Use dwarfing rootstocks.
- Select spur type cultivars.
- Select genetic dwarfs (very short internodes).
- Minimize dormant pruning.
- Train to favor more horizontal growth.
- Water and fertilize in moderation.

Training Systems

- Central Leader
- Super Spindle System
- Bibaum System (Double Axis)
- Open Center Vase
Growing tree fruits

Pests and control

Diseases

- Apple scab
- Fireblight

Codling Moth – Apple and Pear Pest

Voles

Organic does not mean pesticide free

Type of pesticide used
- naturally occurring
- short residual

Pest control

- Sanitation, sanitation, sanitation!!!!
  - Remove all fruit before winter
  - Cut out cankers/dead wood
  - If bad scab year, rake up leaves and compost
  - Prune for good air movement
  - Plant disease resistant varieties
Apple pest control

- **Fall or Winter**
  - Anthracnose: **fixed copper**
  - Scale, aphids and mite eggs: **dormant oil**
  - Scab: **lime sulfur**
- **During bloom stages**
  - Scab and mildew: **lime sulfur and sulfur**
  - Shothole borer: **needle and pyrethrum**
- **Post-bloom**
  - Scab and mildew: **sulfur cantan immunox**

Apple pest control

- **Summer to harvest**
  - Codling moth:
    - Trap to determine emergence: 2-3 flights
  - Horticultural oils: (~3-4 weeks after bloom-apply every 5-7 days for 4-5 weeks)
  - **Cyd-X virus**
  - **Surround**
  - **Spinosad**
  - Mites, scale and aphids:
    - Horticultural oils
    - **Insecticidal soaps**

Pear pest control

- Similar to apple
- Pseudomonas blight: **Fixed copper** (late fall and dormant)
- Fireblight:
  - Pruning
    - **Copper sulfate and oil, Bordeaux**

Cherry pest control

- Bacterial canker (Pseudomonas):
  - Pruning in late Aug-Sep dry season
  - Bordeaux, **Fixed copper** (late fall and dormant)
- Blossom blight and brown rot
  - Pruning
  - Fixed copper during bloom
  - Sulfur, post-bloom
  - Remove rotten fruit

Peach Pest Control

- Peach leaf curl
  - 3 dormant copper or lime-sulfur sprays
    - Nov, Jan or Feb, pre bud break
- Coryneum blight: **fall copper**
- Bacterial canker: **fall copper**
- Brown rot: pre bud break sulfur and mid summer to harvest

Backpack Sprayer Best

- backpack sprayer
Still Need a Ladder

Use Resistant Varieties