

Growing Tree Fruits for the Home Garden

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Topics to be Discussed

- Varieties
- Pollination
- Rootstocks
- Pruning
- Fertilization
- Irrigation
- Fruit Thinning
- Pest controls

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Growing tree fruits

Varieties

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Varieties best suited for home orchards

- Apple
 - Scab resistant
 - Mildew resistant
- Pear
 - Fireblight resistant
- Cherry
 - Self fertile
- Persimmon
 - Insect and disease hardy
- Fig
 - Cold hardy varieties
 - Drought hardy

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Growing tree fruit

Pollination

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Pollination

- Tree fruit crops
 - insect pollinated
 - honey bees (20%)
 - mason bees and
 - misc. bees (80%)
- Nut crops
 - wind-pollinated

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Honeybee Hazard of Pesticides

Pesticide	Active In.	Bee hazard
• Entrust	spinosad	X
• Cyd-X	gran. virus	none
• Sevin	carbaryl	XXX
• Malathion	malathion	XXX
• Mineral oil	oil	X
• Surround	clay	none
• Lime sulfur	calcium poly	none

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Pollination

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.



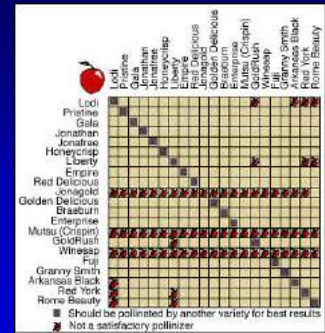
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Pollinizers

- Apple
 - another variety
 - crabapple
- Peach
 - self-fertile
- Pear
 - Bartlett
- Prune plum
 - ‘Italian’ benefits from another var.
- Cherry
 - discussed later
- Oriental plum
 - needed
- Fig
 - not needed
- Persimmon
 - not needed

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Apple Pollinizer Chart



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Cherry Pollinizers

- Bing- Van or Corum
- Chelan- Bing, Van or Rainier
- Cristalina- Sandra Rose, Lapins
- Royal Ann- Corum

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Self Fertile Varieties

- Sandra Rose
- Sonata
- Stella
- Lapins
- Skeena
- Sweetheart
- Staccato

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Growing tree fruits

Rootstocks and dwarfing mechanisms

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Why dwarf trees?

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

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What fruit trees can be dwarfed?

- Significant dwarfing
 - Apple- 4-6'
 - Cherry- 8+
 - Peach- 8+
- Slight dwarfing
 - Pear- 10+
 - Plum- 8+

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Goal



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Growing tree fruits

Pruning

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Why Prune?

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

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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)

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Training Trees



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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

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Training Systems – Central Leader



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Bibbaum System (Double Axis)



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Open Center Vase



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Open Center Vase (old)



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Spacing

- Dwarf
 - 6-8 foot spacing
- Semi-dwarf
 - 10-15 ft spacing
- Standard
 - 18-25 ft. spacing

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Growing tree fruits

Fertilization

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Accumulated Dry Matter

- Six year old Gala trees on M26 roots
- Tree accumulates 10 lbs. DM per year
- 72% to fruit
- 17% to shoots and leaves
- 11% to trunk and roots

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Fertilization

- Apply nitrogen fertilizer during growing season. (April/May)
.5 lb. per tree actual N for trees 1-8
- Early season application will promote growth in current season.
- Aug-Sep application will be stored in buds for flowers-fruit during following season. Foliar 1lb. urea for 4 gallons of water

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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

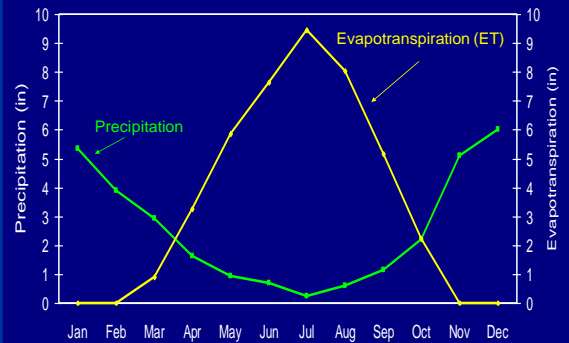
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Growing tree fruits

Irrigation

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Irrigation



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Irrigation Needs (inches/week)

	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov
Roseburg									
Apples, Cherries	0.0	0.4	1.0	1.5	1.9	1.6	0.9	0.0	0.0
Pears, Plums	0.0	0.3	0.9	1.3	1.8	1.4	0.8	0.0	0.0
Grants Pass									
Apples, Cherries	0.3	0.9	1.5	1.9	2.3	1.9	1.3	0.5	0.0
Pears, Plums	0.3	0.8	1.4	1.7	2.1	1.8	1.1	0.4	0.0

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Growing tree fruits

Fruit thinning

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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

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Fruit Thinning-Heavy Set



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Fruit Thinning Each Cluster



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Thin to Singles



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Fruit thinning

- 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

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Growing tree fruits

Pests and control

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Diseases

Apple scab



Fireblight



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Codling Moth – Apple and Pear Pest



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Voles



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Organic **does not** mean pesticide free

Type of pesticide used

- Low toxicity
- Short residual

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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

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Apple pest control

- Fall or Winter
 - Anthracnose- fixed copper
 - Scale, aphids and mite eggs- dormant oil
 - Scab- lime sulfur
- Delayed Dormant stage
 - Scab and mildew- lime sulfur and sulfur
 - Shothole borer- needle and pyrethrum
- Post-bloom
 - Scab and mildew- sulfur captan immunox

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Apple pest control

- Summer to harvest
 - Codling moth-
 - Trap to determine emergence- 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

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Pear pest control

- Similar to apple
- Bacterial canker (*Pseudomonas*) prune during dry season, fall copper spray, following spring frost.
- Fireblight-
 - Pruning
 - Copper sulfate and oil, Bordeaux

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Cherry pest control

- Bacterial canker (*Pseudomonas*)-
 - Pruning in dry season, summer or fall
- Blossom blight and brown rot
 - Pruning
 - Fixed copper during bloom
 - Sulfur, post-bloom
 - Remove rotten fruit

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Peach Pest Control

- Peach leaf curl
 - 3 dormant copper & lime-sulfur sprays
 - Nov, Jan or Feb, pre bud break
- Coryneum blight- (shothole) fall copper
- Brown rot- pre bud break sulfur and mid summer to harvest sulfur

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Backpack Sprayer Best



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R.E.I and P.H.I.

• Pesticide	R.E.I.	P.H.I.
• Spinosad	4 hr.	7 day
• Sevin	12 hr.	3 day
• Cyd-X	4 hr.	none
• Immunox	1 day	14 day
• Sulfur	1 day	1 day
• Lime sulfur	2 day	7 day
• Hort oil	4 hr.	none
• Malathion	12 hr	3 day

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Still Need a Ladder



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Use Resistant Varieties



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More Information

- <http://www.extension.org/apples>
- <http://extension.oregonstate.edu/douglas/horticulture>

