



Growing Apples

Presented by
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Apples and Pears: Soils

- Apples and pears like deep well drained soils
- Soils in Oregon are:
 - - sandy or sandy and rocky
 - - loamy (with clay) is preferred
- Work with soil or bring in better soil

Soils in the area



- Determine the soil type
- Clear the rocks
- Determine spacing
- Dig holes and add lots of OM
- Get good plant materials



Plant either fall or spring.

Add lots of OM to the soil: compost, manure of sheep, chickens, dairy, horses

Be sure to irrigate regularly the first year.

Don't stress the trees.



Make sure that you have an established, working irrigation plan.

Make sure the irrigation system will reach all of the trees in a timely manner.

Irrigate at least once a month.

Check irrigation with a shovel.

Dig around the drip line of tree, 8 inches deep and grab soil

The soil should be moist, not wet.

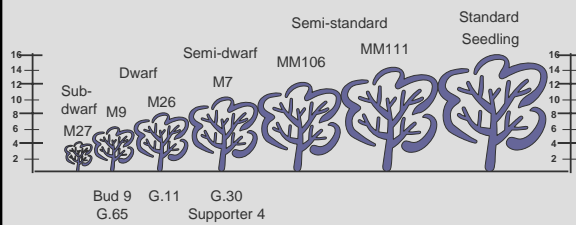
You will soon learn your soil!



Apple Varieties

- Up to 1950
 - 1200 varieties of apples had been developed
- 1950 - 2002
 - only 200 varieties of apples developed

Apple rootstocks



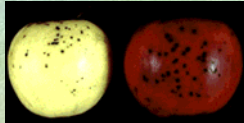
Spacing of Apple Trees

- Dwarf: 1 to 8 feet tall
 - 1-8 per row, 14-16' between trees
- Semi-dwarf: 16 feet tall
 - 10-16 per row, 16-18' between trees
- Standard: 16 to 25 feet tall
 - 16-25 per row, 18-22' between trees
- Site planning involves the size of area available and the size of trees desired.

Diseases

- Apple Scab – *Venturia inaequalis* - summer lime sulfur, captan
 - Scab-immune apple varieties for new orchards

WSU Photo



- Immune varieties:
 - Prima, Liberty, Chehalis

Apple and Pear Scab



Apple and Pear Scab



Scab



Powdery Mildew
Podosphaera leucotricha



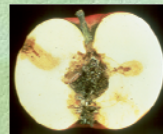
Anthraxnose
Cryptosporiopsis curvispora



Insects & Other Pests

- codling moth
- apple maggot
- leaf-roller
- scale
- aphids
- mice
- deer
- gophers

Codling Moth
Cydia pomonella



Apple Maggot
Rhagoletis pomonella



Fruit Tree
Leaf Roller
*Choristoneura
rosaceana*



Fruit Tree
Leaf Roller
Damage



Leaf Hopper
*Stictocephala
bubalus*



Oystershell Scale
Lepidosaphes ulmi



San Jose Scale Damage
Quadraspidiotus perniciosus



Rosy Apple
Aphid
*Dysaphis
plantaginea*




Woolly
Aphid –
*Eriosoma
lanigerum*



Two Spotted Mite
Tetranychus urticae



Red Mite
Panonychus ulmi

Red Mite Damage

Pest Control

- Late winter disease control
 - fixed copper - diseases
 - dormant oil - to smother insect eggs
 - If dense foliage - needs to be pruned
 - Rake up infected leaves
- During summer
 - Keep tree aerated
 - Good sanitation
 - Keep from over irrigating
- Harvest
 - Destroy infected fruit


Pest Control

- Late 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


Pest Control cont.

- Summer to harvest
 - Codling moth-
 - Trap to determine emergence- 2-3 flights
 - Mating disruption
 - Horticultural oils (~3-4 weeks after bloom-apply every 5-7 days for 4-5 weeks)
 - Bt
 - Surround
 - Mites, scale and aphids -
 - Horticultural oils
 - Insecticidal soaps

Meadow Mouse (Vole)



Sheep, Cow or Horse Damage



UC Statewide IPM Project
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Gopher Mound



Pocket Gopher



Pruning

- Minimum pruning once a year
- Keep the trees low
- Depends on the rootstock and variety
- Most are multiple leader branched trees
 - tip-bearers, avoid heading cuts
 - spur-bearers, leave spurs
 - lateral bearers, heading cuts OK
 - review HINTS: leave one sucker, hand prune in June, root sucker control



Pruning



Pruning



Pruning



Trellis



Thinning

- thin around May 30-June 15
- thin according to the size of apple wanted
- thinning ensures
 - good fruit size
 - protects the branches from breakage
 - helps prevent alternate bearing
- thin apples 4-8" apart

Fertilization

- Excess N encourages vegetative growth, bitter pit and lessens disease resistance.
- See Fertilizer Guide (FG 66): Home Fruit, Vegetable, and Ornamental Gardens

Tree Age	Apples, Pears, Prunes	Peaches
Apply N (lb/tree).....	
1	none to 1/8	none to 1/2
2	1/4	1/2
3-5	1/4 to 1/3	1/2 to 3/4
6-7	1/3 to 1/2	3/4 to 1

Kinds of fertilizers

- Compost
- Chicken
- Sheep, cow, horse or any animal

Fertilizer values

- Compost – 2N-2P-2K
- 1st number is nitrogen
- 2nd number is phosphorus
- 3rd number is potassium

Fertilizer values

- Compost – 2N-2P-2K
- 1st number = 2% N
- 2nd number = 2% P
- 3rd number = 2% K

Fertilizer values

- Compost – 2N-2P-2K
- Chicken – 10N-5P-3K
- Sheep, cow, horse
 - 2N-1P-1K

The End



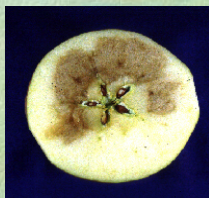
Questions ??????????



Bitter Pit



Water Core



THE END

Fertilizer values

If you have 1000 kg of
compost, **ONLY 2%** of
the materials is
NITROGEN!