Growing Apples

Presented by Ross Penhallegon

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

<table>
<thead>
<tr>
<th>Variety</th>
<th>Height</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dwarf</td>
<td>1-8 feet</td>
<td>1-8 per row, 14-16’ between trees</td>
</tr>
<tr>
<td>Semi-dwarf</td>
<td>16 feet</td>
<td>10-16 per row, 16-18’ between trees</td>
</tr>
<tr>
<td>Standard</td>
<td>16-25 feet</td>
<td>16-25 per row, 18-22’ between trees</td>
</tr>
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</table>

Spacing of Apple 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

  - Immune varieties:
    - Prima, Liberty, Chehalis

Apple and Pear Scab
Apple and Pear Scab

Scab

Powdery Mildew
Podosphaera leucotricha

Anthracnose
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 plantaginella*

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 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
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

<table>
<thead>
<tr>
<th>Tree Age</th>
<th>Apples, Pears, Prunes</th>
<th>Peaches</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Apply N (lb/tree)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>none to 1/8</td>
<td>none to 1/2</td>
</tr>
<tr>
<td>2</td>
<td>1/4</td>
<td>1/2</td>
</tr>
<tr>
<td>3-5</td>
<td>1/4 to 1/3</td>
<td>1/2 to 3/4</td>
</tr>
<tr>
<td>6-7</td>
<td>1/3 to 1/2</td>
<td>3/4 to 1</td>
</tr>
</tbody>
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**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

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

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

Questions ?????????

Bitter Pit

Water Core
Fertilizer values

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