Pruning and Training
Sweet Cherries
Lynn E. Long
Oregon State University Extension

Oregon Production Trends
• The Dalles
  – Single commodity
  – 200 A – 1500 A
  – Most growing > 6 varieties

Oregon Production Trends
• Oregon
  – 80% of dwarfing rootstocks sold into Oregon
  – Gisela 6 and 12
  – Krymsk 5 (K6)

Labor Issues
• Worker Productivity
• Worker Satisfaction
• Worker Safety
• Ability to Attract Labor More Readily

Pedestrian Orchards
• Concerned about labor
• Pedestrian orchards
  – Easier maintenance
  – Harvest time is halved
  – Need fewer pickers

Comparing the Economic and Cash Costs to Establish a Standard and High Density Sweet Cherry Orchard in Wasco County, Oregon.

- Standard density = 15’x18’ Mazzard
- High density = 10’x16’ Gisela

Cash Flow = planting costs, labor, fertilizer, chemicals, harvest costs
Economic Costs = interest costs, depreciation, return on investments

C. Savard
Future Labor Shortages

- We will lack trained laborers.
- We now have complicated systems.
- Impossible to replicate.
- Dr. Matthew Whiting – “We need to take the art out of pruning.”

Choosing the right system

- As important as choosing:
  - Variety
  - Rootstock

Two Systems

- Steep Leader
- Vogel Spindle
- Spanish Bush

Training System Publication

- $5.00 + postage

Spanish Bush

- Developed in Ebro Valley of Spain
- Dwarfing rootstocks recommended for fertile soils
- Non-dwarfing used in Spain, Australia

Spanish Bush Attributes

- Divert vigor throughout multiple branches
- Maximum height 8 ft (2.4 m)
Tree Spacing
- High Density
- 6 – 8 ft (1.8-2.4 m) x 15-18 ft (4.6-5.5 m)

Early Training
- Branching formed through heading cuts
- Non-precocious

Early Training
- Branching formed through Promalin
- Notching
- Precocious

Branch Renewal
- Fruiting wood is constantly renewed

Spanish Bush Attributes
- A true pedestrian orchard
  - U Pick
  - Commercial harvest

Spanish Bush
- Laterals are bearing wood
- Leaders are permanent
KGB Modification

• Similar through formation

KGB Modification

• No permanent branches

KGB Modification

• 4 largest leaders stubbed back each year
• New growth headed
• Laterals removed

KGB Modification

• 4 largest leaders stubbed back each year
• New growth headed
• Laterals removed

Vogel Central Leader (Spindle)

• Developed in Franconia, Germany
• 8-10 ft x 16-18 ft
• Works best with dwarfing rootstocks
• Maximum height 10-12 ft

Precocious System

• Highly precocious
  – Horizontal angles
  – Little pruning in establishment

3rd leaf Regina
Early Training

• Flat branch angles characteristic of system

Vogel System Attributes

• Branches renewed to encourage fruit size

Experience with productive rootstocks

• Oregon growers are learning
• 2006 - Lapins/Gisela, 12 t/a
• 2007 - Lapins/Gisela, mature, 6.8 t/a, 95% 9½ row +
• Regina/G6, 5th leaf, 8.2 t/a, 62% 9½ row +
• Lapins/Krymsk, mature, 8 t/a, peaking on 9½ row +

Mature Tree

• Easy and fast to prune

Principles of Pruning

• Common to any system on productive rootstocks
  • Gisela, Krymsk, MaxMa 14, etc.
  • Maximize fruit size
### Simple 4 Step Process

<table>
<thead>
<tr>
<th>Timing</th>
<th>Technique</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dormant season prior to first crop</td>
<td>Remove pendant wood &amp; weak shoots</td>
<td>Removes wood that tends to overset &amp; produce small fruit</td>
</tr>
<tr>
<td>1st dormant season on</td>
<td>Tip all growth</td>
<td>Reduces future crop</td>
</tr>
<tr>
<td>2nd dormant season after significant fruiting</td>
<td>Stub 20% of fruiting branches back each year</td>
<td>Reduces current crop</td>
</tr>
<tr>
<td>Dormant season each year</td>
<td>Thin shoots at tree top to single branch</td>
<td>Allows light penetration</td>
</tr>
</tbody>
</table>

---

### Step 1
- Remove pendant and small wood
- Bad on Mazzard
- Disaster on Gisela
- No new growth
- Not enough leaves to support crop

### Step 2
- Dormant season
- Remove ½ to ⅔ of last years growth
- Tip all branches
- Reduces future crop

### Tipping Response

#### Unpruned
Bing/G5

- Year 1 - vegetative growth
- Year 2 - vegetative growth
- Year 3 - vegetative & fruit growth

Matthew Whiting, WSU

**Assumptions:**
- 7 lvs/spur
- 6 fruit/spur
- 2" cm annual growth
- 1 node per 1 inch
- 5 leaves/fruit neces.

- Year 3 Leaf:Fruit: 2.5 leaves/fruit
- Year 4 Leaf:Fruit: 1.8 leaves/fruit
Year 3  Leaf:Fruit
4.7 leaves/fruit
Year 4  Leaf:Fruit
2.1 leaves/fruit

Assumptions:
- 7 lvs/spur
- 6 fruit/spur
- 60 cm annual growth
- 1 node per 2.5 cm
- 5 leaves/fruit needed

M. Whiting, WSU

Pruned 1 year
Bing/Gisela 5

Pruned 2 years
Bing/Gisela 5
Year 3  Leaf:Fruit
4.4 leaves/fruit
Year 4  Leaf:Fruit
3.5 leaves/fruit

M. Whiting, WSU

Step 3
- Renewal Pruning
- Stub back 20% of all fruiting wood each year
- Leave 5”-20” stubs
- Reduces current seasons crop
- Renews spurs

Step 4
- Dormant season
- Thin shoots at top of tree to single branch
- Make sure tree shaped like pyramid
- Allows light penetration throughout tree

Step 4
- Manage crop load in year 1