



## Pruning and Training Sweet Cherries

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## Oregon Production Trends

- The Dalles
  - Single commodity
  - 200 A – 1500 A
  - Most growing > 6 varieties



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## Oregon Production Trends

- Oregon
  - 80% of dwarfing rootstocks sold into Oregon
  - Gisela 6 and 12
  - Krymsk 5 (K6)




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## Labor Issues

- Worker Productivity
- Worker Satisfaction
- Worker Safety
- Ability to Attract Labor More Readily



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## Pedestrian Orchards

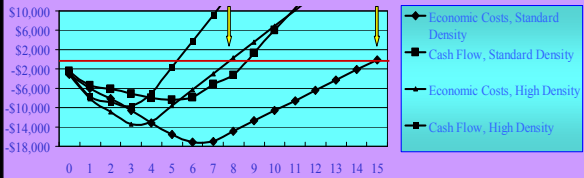
- Concerned about labor
- Pedestrian orchards
  - Easier maintenance
  - Harvest time is halved
  - Need fewer pickers



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Standard density = 15'x18' Mazzard      High density = 10'x16' Gisela

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



Year	Economic Costs, Standard Density	Cash Flow, Standard Density	Economic Costs, High Density	Cash Flow, High Density
0	0	0	0	0
1	-2000	-2000	-2000	-2000
2	-4000	-4000	-4000	-4000
3	-6000	-6000	-6000	-6000
4	-8000	-8000	-8000	-8000
5	-10000	-10000	-10000	-10000
6	-12000	-12000	-12000	-12000
7	-14000	-14000	-14000	-14000
8	-16000	-16000	-16000	-16000
9	-18000	-18000	-18000	-18000
10	-16000	-16000	-16000	-16000
11	-14000	-14000	-14000	-14000
12	-12000	-12000	-12000	-12000
13	-10000	-10000	-10000	-10000
14	-8000	-8000	-8000	-8000
15	-6000	-6000	-6000	-6000

Cash Flow = planting costs, labor, fertilizer, chemicals, harvest costs

Economic Costs = interest costs, depreciation, return on investments

C. Seavert





## 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


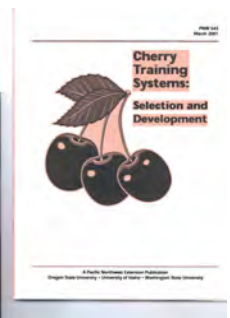



## Two Systems




## Training System Publication


- Steep Leader
- Vogel Spindle
- Spanish Bush
- \$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

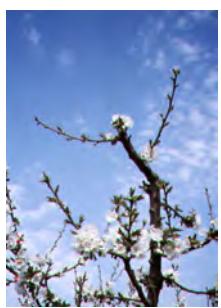

- A true pedestrian orchard
  - U Pick
  - Commercial harvest






## Spanish Bush


- Laterals are bearing wood
- Leaders are permanent



## KGB Modification

- Similar through formation



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## KGB Modification

- No permanent branches




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## KGB Modification

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




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## KGB Modification

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## 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




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## Precocious System

- Highly precocious
  - Horizontal angles
  - Little pruning in establishment






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3<sup>rd</sup> leaf Regina





## Early Training

- Flat branch angles characteristic of system



## Early Training

- Flat branch angles characteristic of system

## Vogel System Attributes


- Branches renewed to encourage fruit size


## Mature Tree



- Easy and fast to prune







## 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, 5<sup>th</sup> leaf, 8.2 t/a, 62% 9½ row +
- Lapins/Krymsk, mature, 8 t/a, peaking on 9½ row +

## Principles of Pruning

- Common to any system on productive rootstocks
  - Gisela, Krymsk, MaxMa 14, etc.
  - Maximize fruit size



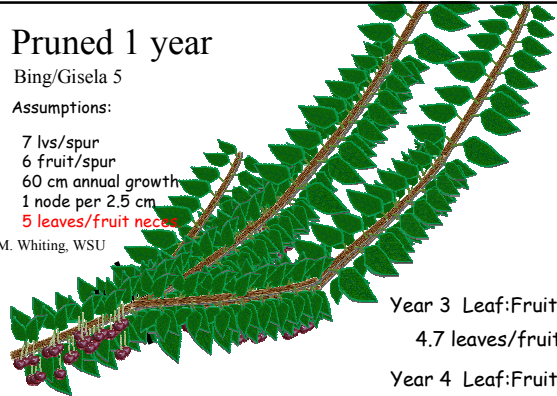
### Pruned 1 year

Bing/Gisela 5

Assumptions:

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

M. Whiting, WSU



Year 3 Leaf:Fruit  
4.7 leaves/fruit

Year 4 Leaf:Fruit  
2.1 leaves/fruit

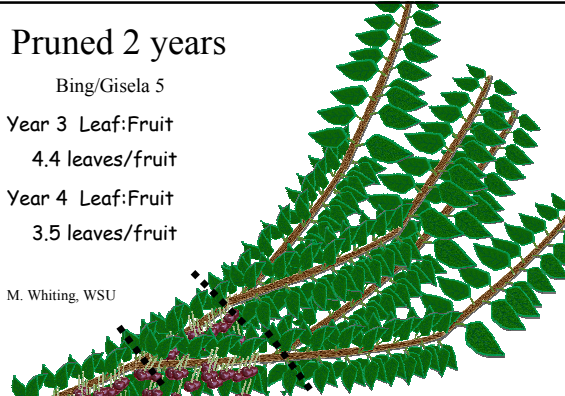
### Pruned 2 years

Bing/Gisela 5

Year 3 Leaf:Fruit  
4.4 leaves/fruit


Year 4 Leaf:Fruit  
3.5 leaves/fruit

M. Whiting, WSU




• Manage crop load in year 1

### Step 3



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



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### Step 4




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



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### Sweet Cherry Cultivars for the Fresh Market



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