Prune and almond growing in Yuba and Sutter Counties: Barriers and Opportunities -- Current and Future

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Pull or Plant: Orchard Economic Outlook
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University of California
Cooperative Extension
Agriculture & Natural Resources
Central Valley Region

My Assignment is to Cover...

- The technical feasibility of growing specific crops in the local area.
  - Soils
  - Water
  - Diseases
- Local marketing facilities and prospects of changes.
- Technologies on the horizon.
My Assignment is to Cover…

✓ The technical feasibility of growing almonds and prunes in the local area.
  – Soils
  – Water
  – Diseases

• Local marketing facilities and prospects of changes.
• Technologies on the horizon.

What does “feasible” mean?
Can **Consistent Production** of **High Yields** of **Excellent Quality** Fruit or Nuts be realized?

**Will the Tree Grow?**

- **Soil**
  - Texture
  - Depth
  - Chemistry
- **Weather**
- **Disease**
Essential Point

1. How well a soil holds water (soil texture)
2. How water moves thru a soil (drainage)

By the time an orchard is ready to plant, the soil texture and depth are fundamental, central indicators of the feasibility of growing a tree crop on that land.

Will the Tree Grow?

Peach and peach/almond hybrid roots need sandy to loam textured, well-drained soils for best production.

Plum roots are more tolerant of wet soil conditions, but also grow best on deep, well-drained soils.
Key Point
Good Management is Essential for Orchard Profitability…

• Good Site + Good Farming = $$$$$
• Good Site + Poor Farming = $$
• Poor Site + Excellent Farming = $$$$$
• Poor Site + Poor Farming = $ or 0

General Soils Review

• Right on the river = seepage?, too sandy?, ?
• Near rivers = loam texture, better drainage
• Basin locations = heavy, less well drained
All soil and crop maps courtesy of
Margaret Stelmok
Sutter County
Department of Ag

General Soils Map of Sutter County

General Soils Transect
Sutter County

Sacramento River

Feather River

Sand → Loam

Loam → Sand

CLAY
General Soils Transect
Sutter County

General E-W Pattern of Orchard Crop Potential in Sutter County.

Sand → Loam
CLAY
Loam → Sand
Sacramento River
Feather River

Soils and Orchard Crops: Sutter Co.
Best Tool for Soil Evaluation...

Will the Tree Grow?

✓ Soil
  – Texture
  – Depth
  – Chemistry

• Weather
• Disease
**Will the Tree Grow?**

- Soil
  - Texture
  - Depth
  - Chemistry
- Weather
- Disease
Diseases that Kill Trees

• Phytophthora (peach root)
• Bacterial Canker
• Oak Root Fungus (peach root)
• Brown line (prunes on Myro seedling or peach)
• Mild Etch (almonds on plum root)
Bacterial Canker “Hot Spot” in Prune.

Armillaria
(Oak Root Fungus)
Cytospora canker on prune.

Not lethal, usually, but very debilitating to an orchard. A disease of stressed trees.

Will a Crop* Grow?

- Bloom weather
  - Rain
  - Frost
- Post bloom weather
  - Rain
  - Frost
- Fruit and leaf diseases
- Insect pests
- Irrigation

*Can you get consistent production of high quality crop?
Growing Almonds or Prunes

<table>
<thead>
<tr>
<th>Key Issue</th>
<th>Almond</th>
<th>Prune</th>
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<tr>
<td>Annual Return to Grower</td>
<td>Nut set</td>
<td>Crop Set and Fruit size</td>
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<tr>
<td>Annual Threat</td>
<td>Bloom/spring</td>
<td>Bloom/spr. weather</td>
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<td></td>
<td>weather</td>
<td>Cropload man.</td>
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<tr>
<td>Key Pest(s)</td>
<td>NOW, PTB</td>
<td>Aphid</td>
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<tr>
<td>Key Disease timings</td>
<td>Bloom, spring</td>
<td>Bloom, preharvest</td>
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<tr>
<td>Perennial Threat</td>
<td>Blow over,</td>
<td>Cropload man., root/scaffold disease</td>
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<td></td>
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<td></td>
<td>disease</td>
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What about environmental issues?

• Ag waiver
• Ground water quality
• Pesticide drift
• FQPA
• Water availability
Conclusion

Almond or prune production in Yuba and Sutter Counties is feasible at the right location with the right management. Growers must be competitive with other regions – domestic or international -- to remain in business. So...

*When should* growers plant prunes or almonds?

![Graph of Total Cost of Growing Prunes ($/dry ton) in Sacramento Valley.](from 2001 UCCE Cost of Prune Production Study.)

- $120/ton drying costs
- $30/ton assessments
Total Cost of Growing Prunes ($/dry ton) in Sacramento Valley.
(From 2001 UCCE Cost of Prune Production Study.)

County average

$120/ton drying costs
$30/ton assessments

Total Cost of Production ($/# nut meats) in Sacramento Valley
(from UCCE publication AM-SV-01)
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New Technologies?

• New dried plum varieties (Sutter, 2000; Muir, 2004)
• New rootstocks from CA and world (in evaluation)
• Recent and new almond varieties
• Ladder-free prune orchards?
• No-prune almond orchards?
• Genetic engineering?
• New tools to evaluate/solve incompatibility problems in almond.
Thoughts to Consider

✓ Don’t make long term decisions based on short term information.
  • Innovation will be the key to success in the future.

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✓ Innovation will be the key to success in the future.
Grady Auvil (1905-1998)

What Grady Auvil did as a Horticulturist

1948  Established Red Haven Peaches in the Northwest
1950's  Introduced the use of grass cover in orchards
1952  Demonstrated advantage of poplar windbreaks
1960  Introduced Red Gold Nectarine to Northwest
1968  Established Tree Fruit Research Commission
1972  First Commercial Plantings of Granny Smith apple in Washington State
1973  Pioneers use of M26 Rootstocks on apples
1975  First to successfully market Rainier cherries
1980  Introduced double-row planting of Granny Smith
1999  First commercial production of the Auvil Early Fuji
Kern Co. almond trial to learn how to train almonds for catch-frame harvest.

Crop prices go up
Crop prices go down
Farming as usual.
Farm soft, cut costs
Farm soft, cost key issue.
Regulation eases
Regulation increases
Cut Costs
Insanity is…

Doing what you have always done and expecting things to change.

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Thank you