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…

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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

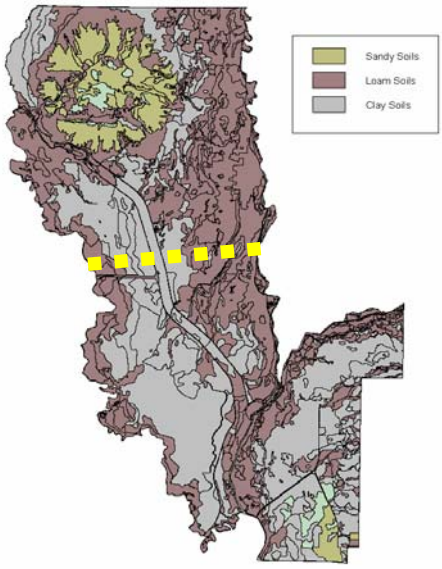
All soil and crop maps courtesy of

Margaret Stelmok

Sutter County

Department of Ag

General Soils Map of Sutter County



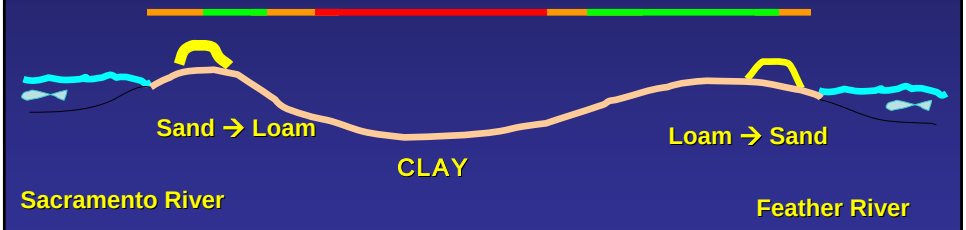
General Soils Transect
Sutter County

Sacramento River

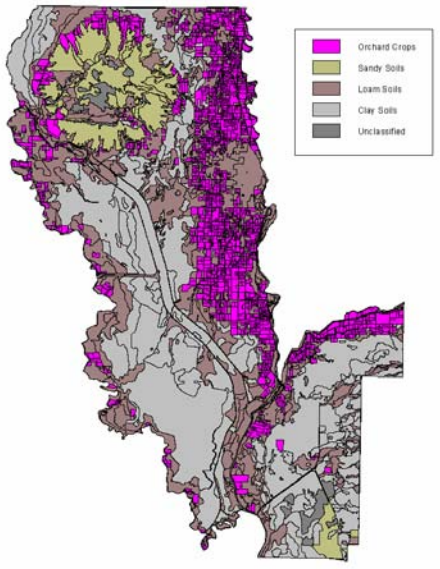
Feather River

General Soils Transect
Sutter County

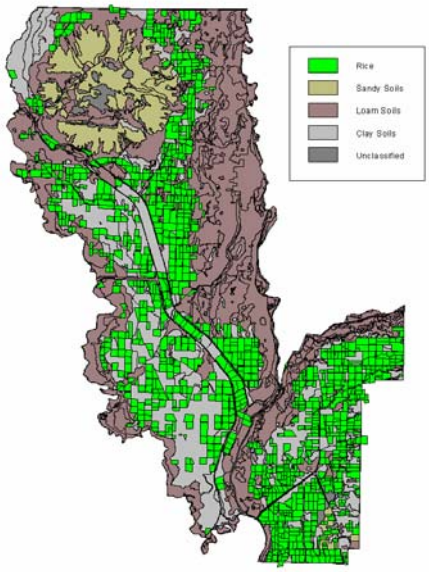
General E-W Pattern of Orchard Crop Potential in Sutter County.



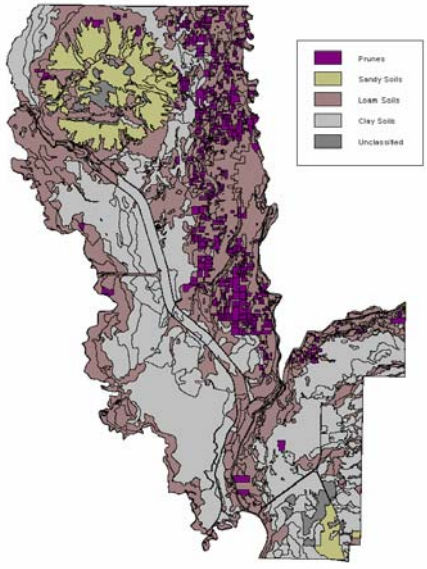
Soils and Orchard Crops: Sutter Co.



Soils and Rice Acreage: Sutter County



Soils and Prune Acreage: Sutter County



Best Tool for Soil Evaluation…

Will the Tree Grow?

- ✓**Soil**
  - –Texture
  - –Depth
  - –Chemistry
- **Weather**
- **Disease**

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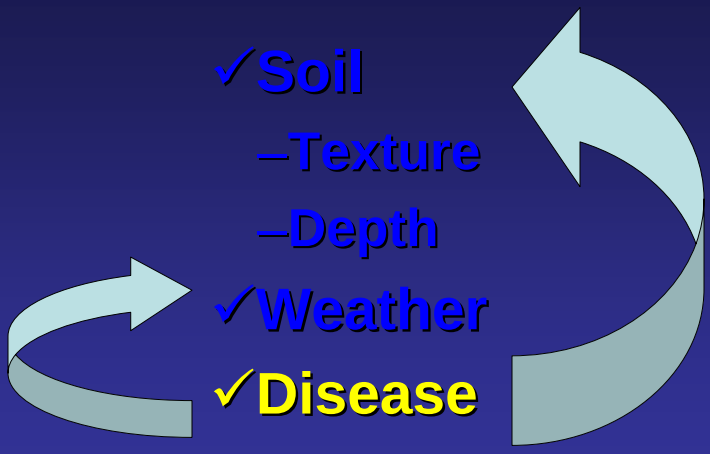

Diseases that Kill Trees

- Phytophtora (peach root)
- Bacterial Canker
- Oak Root Fungus (peach root)
- Brown line (prunes on Myro seedling or peach)
- Mild Etch (almonds on plum root)

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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

Key Issue	Almond	Prune
Annual Return to Grower	Nut set	Crop Set and Fruit size
Annual Threat	Bloom/spring weather	Bloom/spr. weather Cropload man.
Key Pest(s)	NOW, PTB	Aphid
Key Disease timings	Bloom, spring	Bloom, preharvest
Perennial Threat	Blow over, root/scaffold disease	Cropload man., root/scaffold disease

What about environmental issues?

- Ag waiver
- Ground water quality
- Pesticide drift
- FQPA
- Water availability

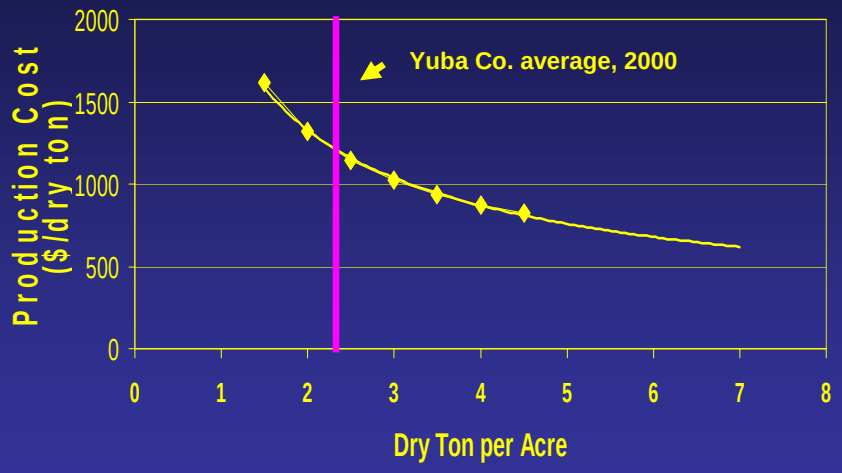
Conclusion

Almond or prune production in Yuba and Sutter Counties is feasible at the right location with the right management.

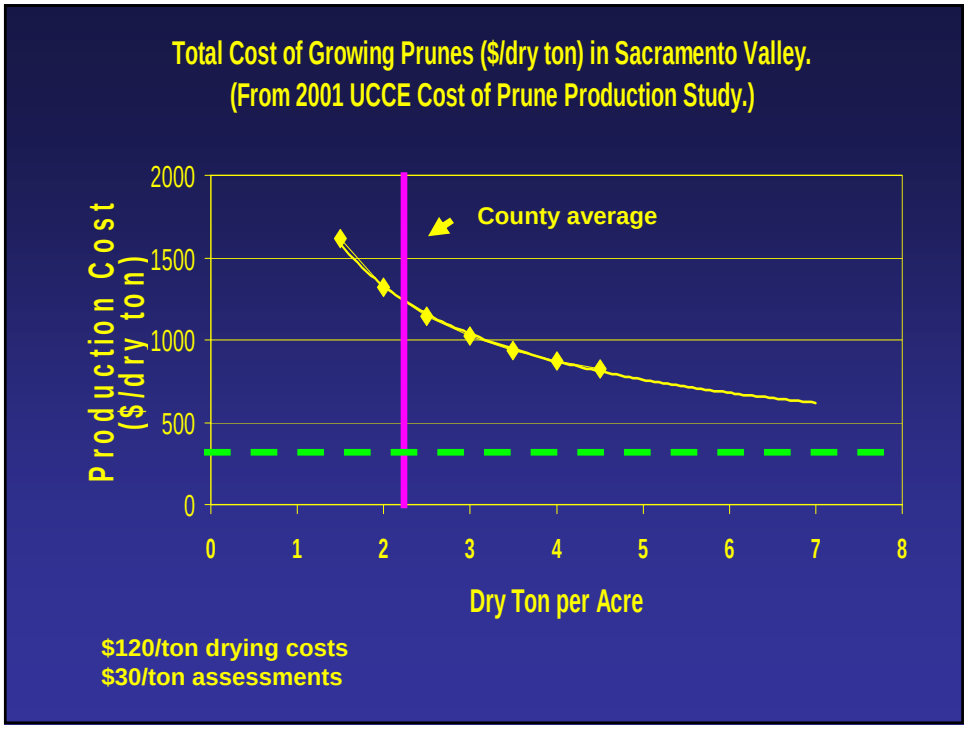
Growers must be competitive with other regions – domestic or international -- to remain in business. So…

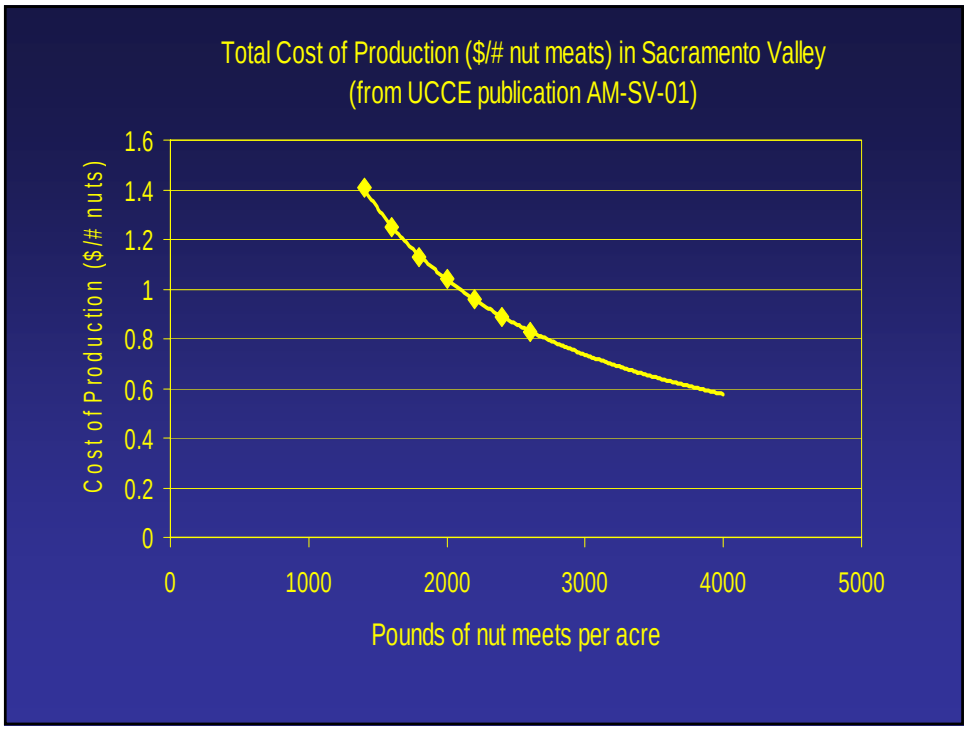
***When should* growers plant prunes or almonds?**

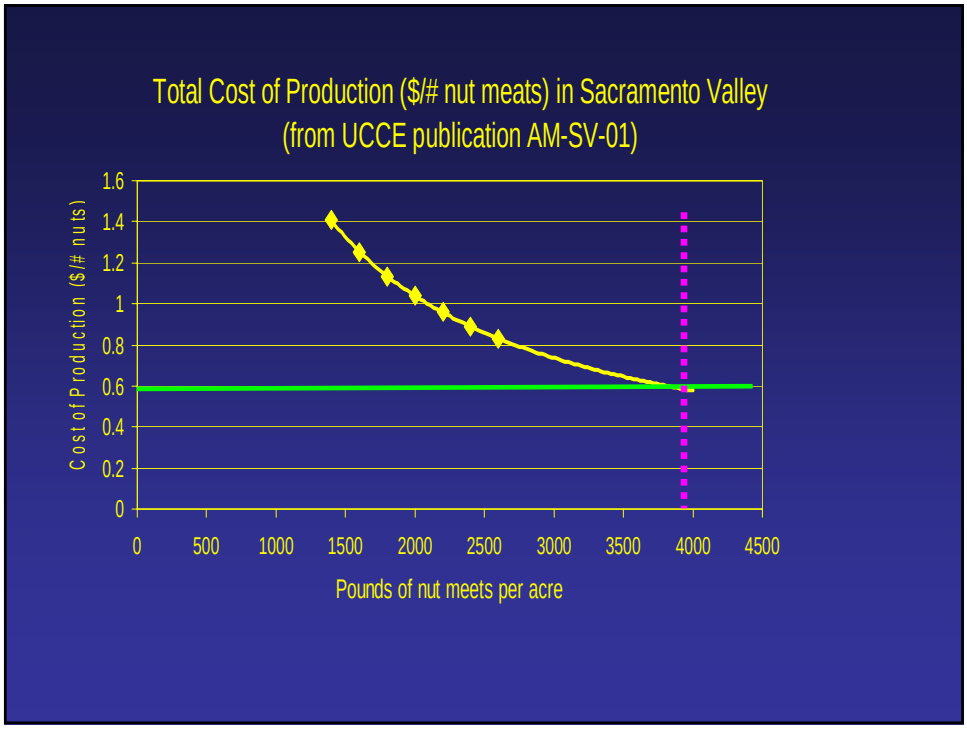
Total Cost of Growing Prunes ($/dry ton) in Sacramento Valley.
(From 2001 UCCE Cost of Prune Production Study.)



$120/ton drying costs
$30/ton assessments


Total Cost of Growing Prunes ($/dry ton) in Sacramento Valley.
(From 2001 UCCE Cost of Prune Production Study.)
Production Cost ($/dry ton)
2000
1500
1000
500
0
County average
0
1
2
3
4
5
6
7
8
Dry Ton per Acre
$120/ton drying costs
$30/ton assessments


Total Cost of Production ($/# nut meats) in Sacramento Valley
(from UCCE publication AM-SV-01)
Cost of Production ($/# nuts)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
Pounds of nut meets per acre



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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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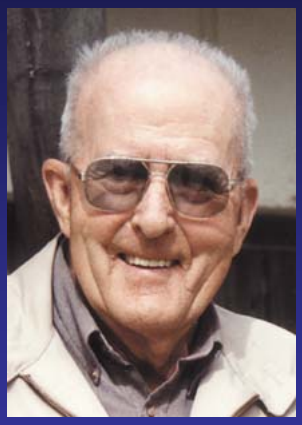
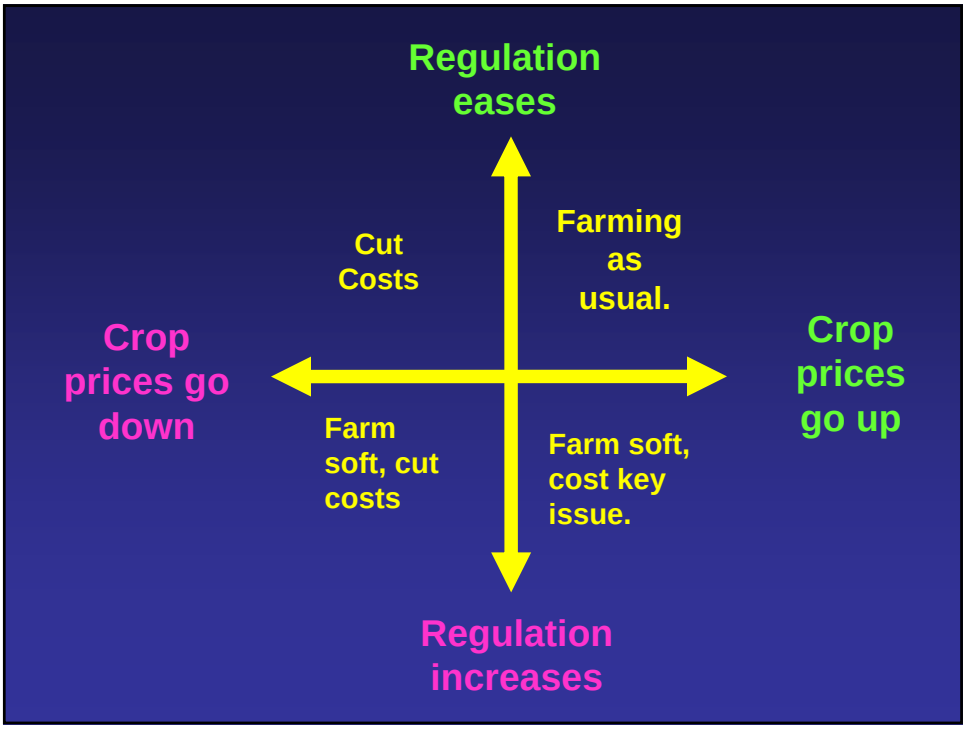
Grady Auvil (1905-1998)



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.



Insanity is…

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

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Thank you