

## ***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  
May 6, 2004



**University of California  
Cooperative Extension**

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**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.**

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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**

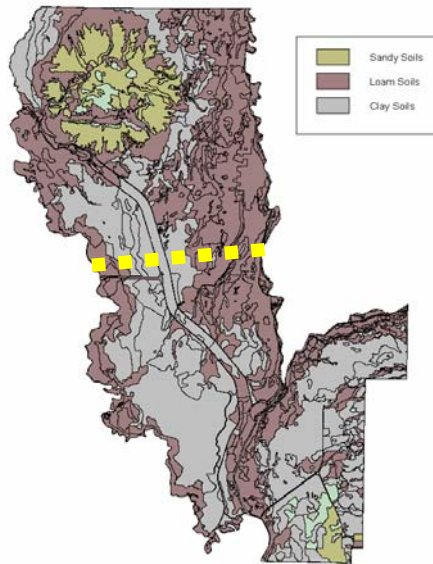
## ***General Soils Review***

- Right on the river = seepage?, too sandy?, ?
- Near rivers = loam texture, better drainage
- Basin locations = heavy, less well drained

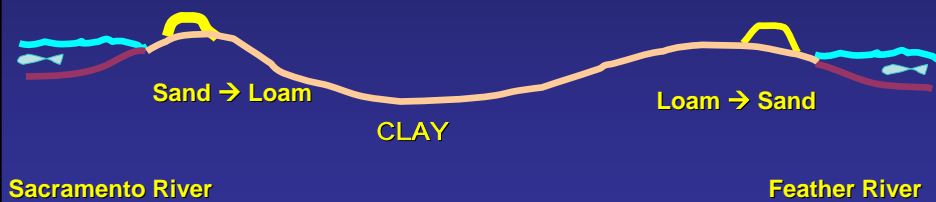
All soil and crop maps courtesy of

Margaret Stelmok  
Sutter County  
Department of Ag

### General Soils Map of Sutter County

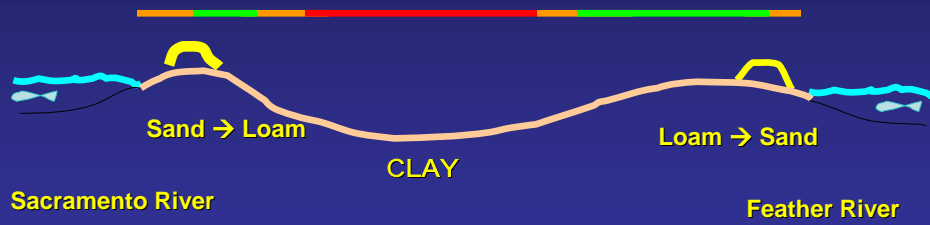


### General Soils Transect Sutter County

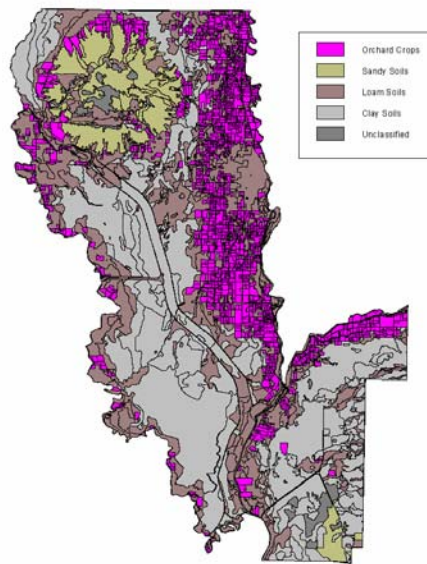


# General Soils Transect Sutter County

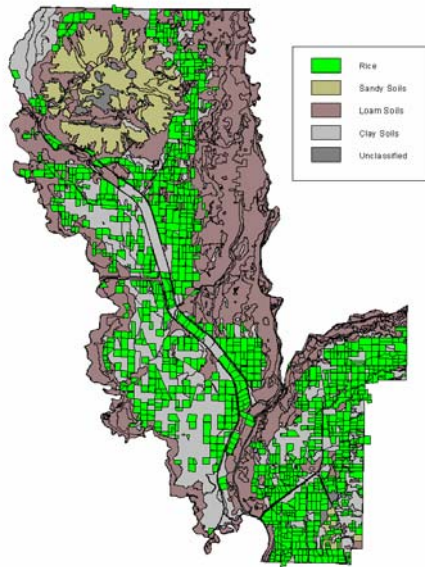
General E-W Pattern of Orchard Crop  
Potential in Sutter County.



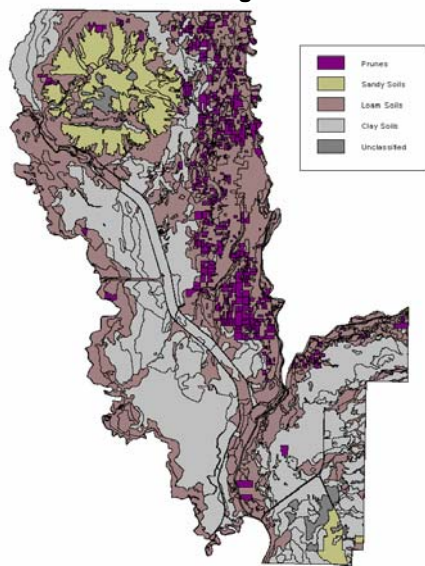
Soils and Orchard Crops: Sutter Co.



### Soils and Rice Acreage: Sutter County



### Soils and Prune Acreage: Sutter County





## ***Best Tool for Soil Evaluation...***



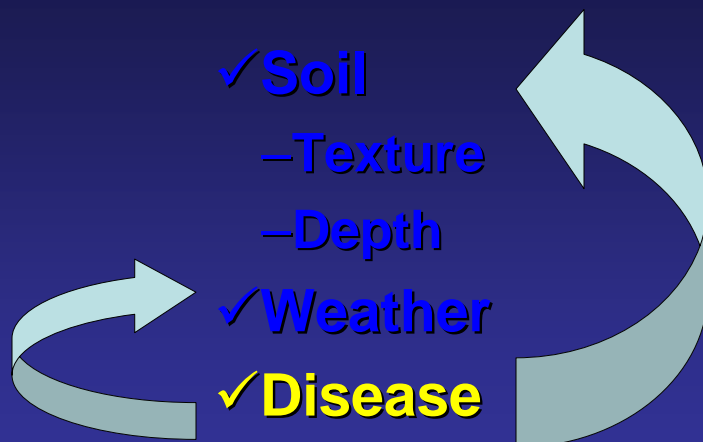
## **Will the Tree Grow?**

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

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- Disease

## Will the Tree Grow?



## ***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)

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## Bacterial Canker "Hot Spot" in Prune.



## Armillaria (Oak Root Fungus)

UC Statewide IPM Project  
© 1996 Regents, University of California

## **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

<u>Key Issue</u>	<u>Almond</u>	<u>Prune</u>
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

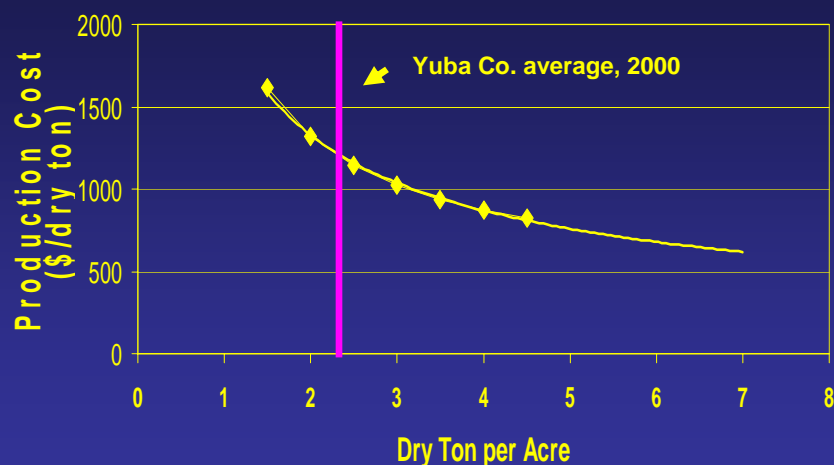
## Conclusion

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...

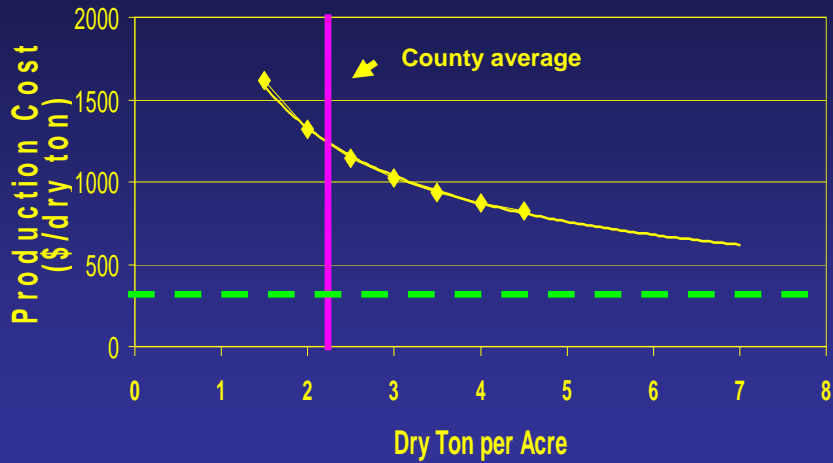
When should growers plant prunes or almonds?

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



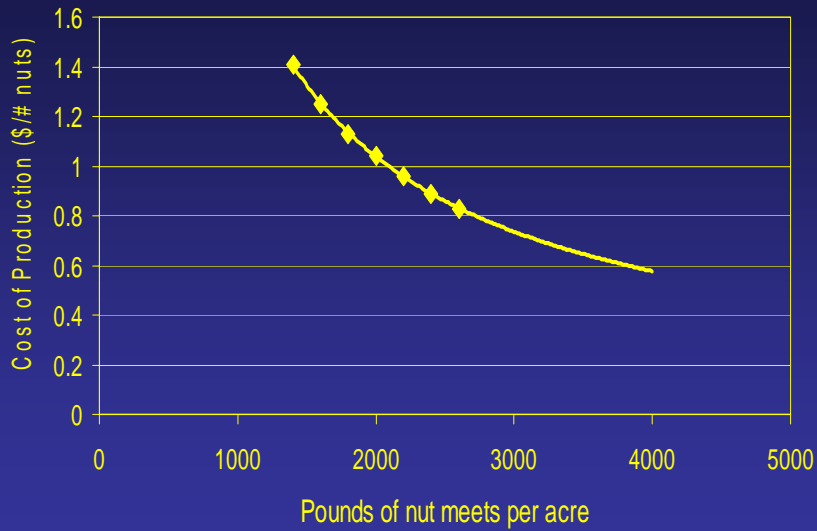
\$120/ton drying costs  
\$30/ton assessments

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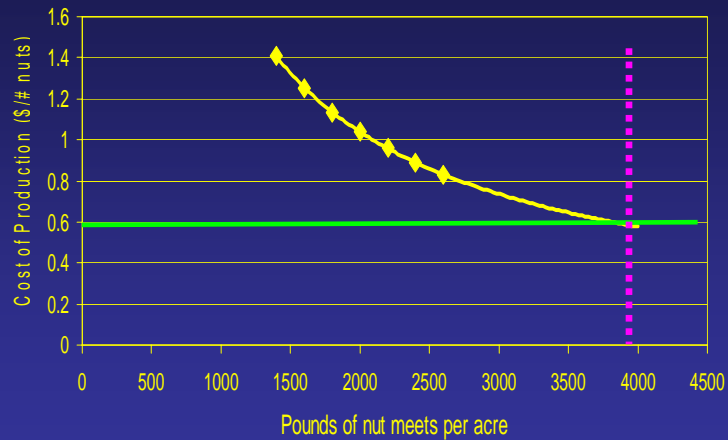
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Total Cost of Production (\$/# nut meats) in Sacramento Valley  
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- ✓ **Local marketing facilities and prospects of changes.**
  - Technologies on the horizon.

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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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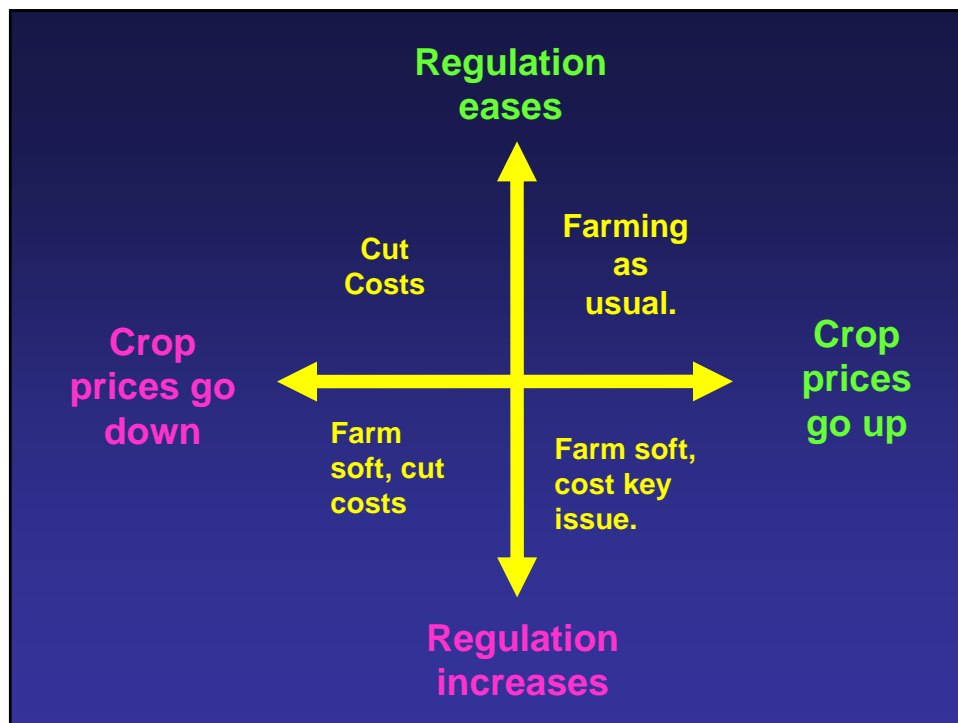
## Grady Auvil (1905-1998)



### 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**

