Regional Considerations for Pistachio Production

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Thanks to David Doll & Louise Ferguson for input.

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- Current Production Areas
- Annual Climatic Considerations
- Orchard Lifetime Consideration

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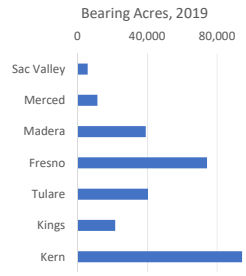
Current Pistachio Geography



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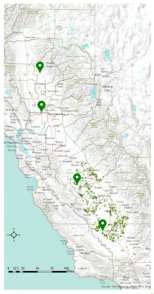
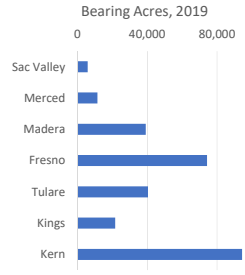
Data & Image: Admin Committee For Pistachios

Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar

Photos: Jarvis-Shean, Ferguson, UC IPM

Current Pistachio Geography





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Data & Image: Admin Committee For Pistachios

Climate: In-Season Rains

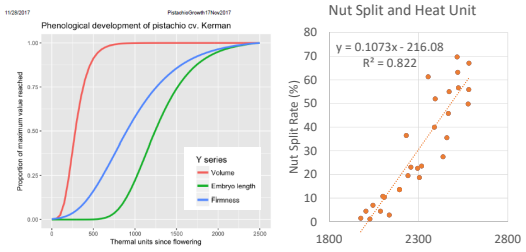
	April	May	June	July	Aug	Sept
Durham	1.5	1.1	0.3	0.0	0.0	0.1
Davis	1.2	0.5	0.1	0.0	0.1	0.1
Firebaugh	0.7	0.4	0.1	0.0	0.0	0.1
Belridge	0.6	0.3	0.0	0.1	0.0	0.0

C. Kallsen on Cultivars

T. Michalides on Fungal Diseases

CIMIS, 2000-2019

Climate: In-Season Heat



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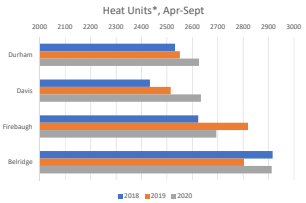
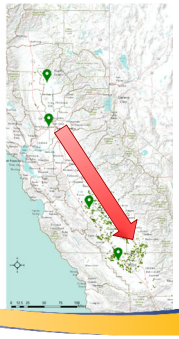
Figures: Louise Ferguson, UC Davis

Climate: Heat Units

- Nut Maturation
  - Delayed Development, Poor Split %
  - ~2400 HU maximum kernel weight
  - Above 2000 HU, 100 HU=1% splits





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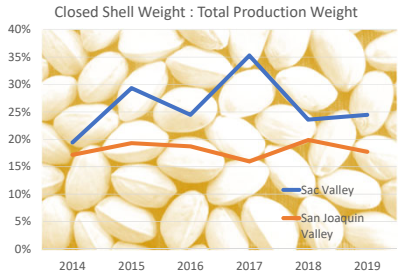
*Heat Unit= Avg daily temp – 7°C

Climate: In-Season Heat



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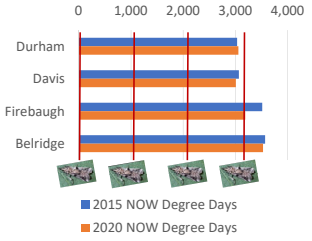
Climate: Navel Orangeworm & Heat

- Earlier Biofix, More Generations
- Ease of Sanitation



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H Wilson on NOW
March 15th – Sept 30th DD accumulation

Climate: Winter Chill

- Impacts of Chill
  - Delayed bloom
  - Poor male overlap, increased blanks
  - Multiple shakes

Scattered 'Kerman' bloom observed in 2014

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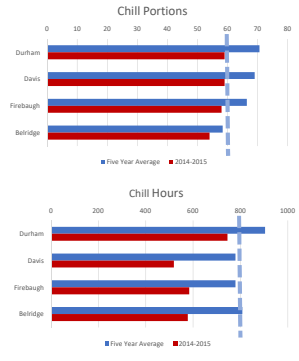
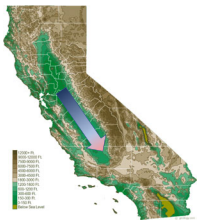
Photo: D. Doll

Climate: Chill Accumulation



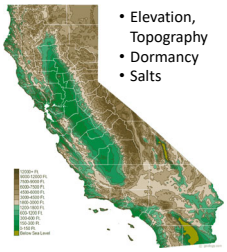
- Cultivar important, esp. males
- Fog helps chill



UC Davis Fruit & Nut Center

Climate: Freeze

Winter Juvenile Tree Dieback



- Elevation, Topography
- Dormancy
- Salts

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Photo: C. Kallsen

- Current Production Areas
- Annual Climatic Considerations
- Orchard Lifetime Consideration

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Water Quantity and Quality

- Varies across the state
  - 42” of water use for maximum production
  - Can get by on less, but affects yield
  - May need more if poor quality
- Source Issues
  - Groundwater
  - Surface Water

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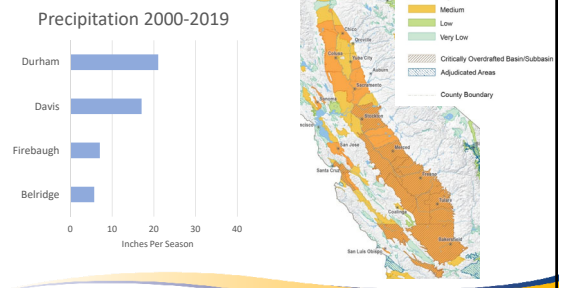
Water Quantity



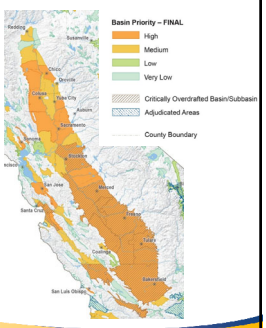


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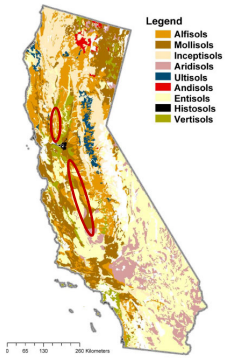
Image: CA Dept Water Resources

Soil Quality

- Saturated or easily saturated soils
  - River bottoms
  - High water table (quality and quantity)
- Saline, Alkaline soils
  - Toxicity of sodium, chloride, and boron
  - Limits – M. Culumber's talk



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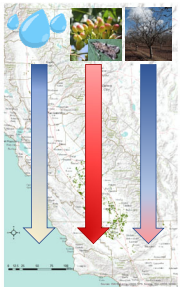
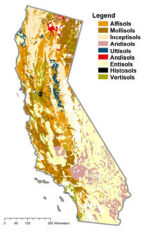
CA Soils Resource Lab, UC Davis

Conclusions

- No perfect site
- Management of many of these issues is possible
- For heat, chill, water & soil, early decisions are key
- Decisions must be made on current and future conditions





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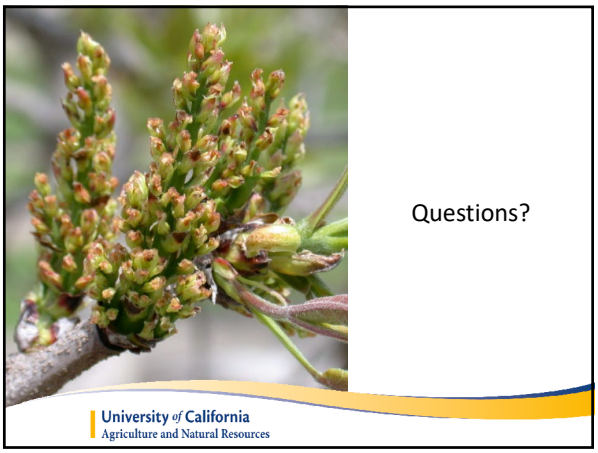

Questions?

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