Pruning and Training a Narrow Canopy Hedgerow for Mechanical Harvest

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Situation

- Cost and availability of hand harvest
- Development of Canopy Shakers
- Problems
  - Harvest efficiency
    - Head access. Leading edge, trailing edge inside fruit
  - Fruit damage
    - Stopped progress for 5 years
Objectives:

- Develop a narrow canopy hedgerow to facilitate mechanical harvest
- Evaluate and demonstrate feasibility of a high density hedgerow developed specifically for mechanical harvest
- Compare different strategies for developing a narrow canopy hedgerow
Nickels Hedgerow

- Planted in spring of 2000 at the Nickels Estate in Arbuckle
- 12x18 North South hedgerow planting
- Six Sevillano pollinators strategically placed
- Center row grafted to Sevillano summer of 2003
- Artificially pollinated with Sevillano pollen, 2004, 2005
Treatments

- Conventional
- Espalier, through pruning
- Espalier, woven
- Espalier, tied
Nickels Hedgerow Olive Yields. 2004-06
Tons per acre

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<tbody>
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<td>Conventional</td>
<td>4.09</td>
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<td>Free Standing Espalier</td>
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Relationship to Proximity of Pollinator

- Rows nearest pollinators (36 ft) averaged 3.11 tons/ac
- Row farthest from pollinators (96 ft) averaged 1.45
Nickel’s Hedgerow Olive Harvest, 2004-07
Manzanillo Table Olives

Planted 7/8/00  North-South Planting  12’x18’ or 202 trees/acre

Espalier, Trellised, Tied
Espalier, Trellised, Woven
Free Standing Espalier
Conventional

Cumulative Yield
Tons/A

Cumulative $/Acre

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Cumulative Yield
Tons/A

Cumulative $/Acre
California Prune Harvester
Conclusions

- Manzanillo Olives can be grown successfully in a narrow canopy hedgerow
- No differences in training systems
- Appear to be well adapted to canopy shakers and trunk shakers
Future Plans

- Continue to collect yield data on different training systems
- Test various types of mechanical harvesters especially trunk shake type
Thanks

- Nickels Soils Laboratory
- Musco Family Olives