

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

<u>Treatment</u>	<u>2004 4th season</u>	<u>2005 5th season</u>	<u>2006 6th season</u>	<u>Cum. Yield</u>
Conventional	4.09	1.75	2.81	8.65
Free Standing Espalier	3.66	1.51	2.26	7.43
Espalier, Trellised, Woven	4.21	1.68	2.28	8.17
Espalier, Trellised, Tied	3.58	3.45	1.76	8.79

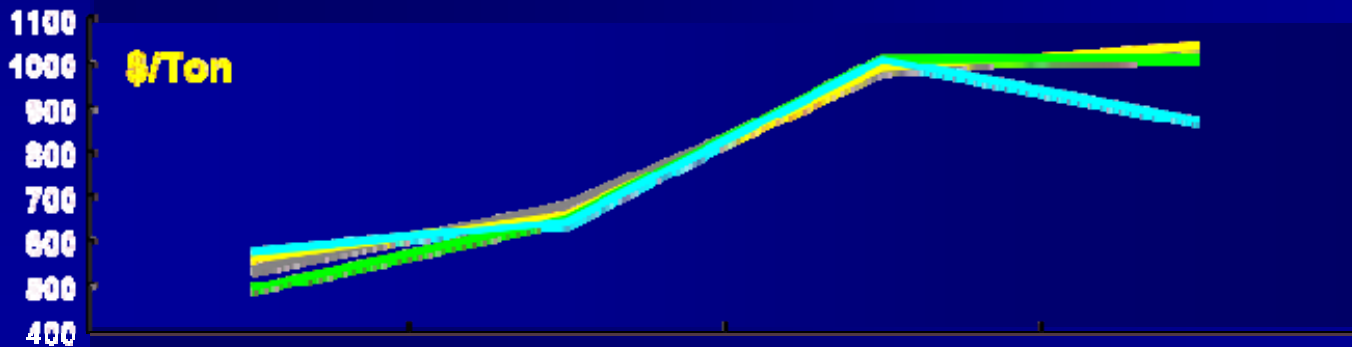
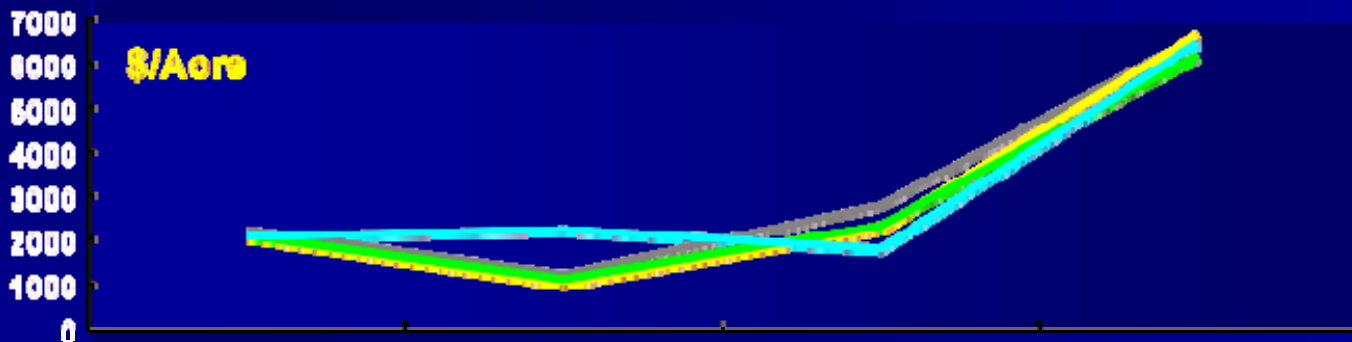
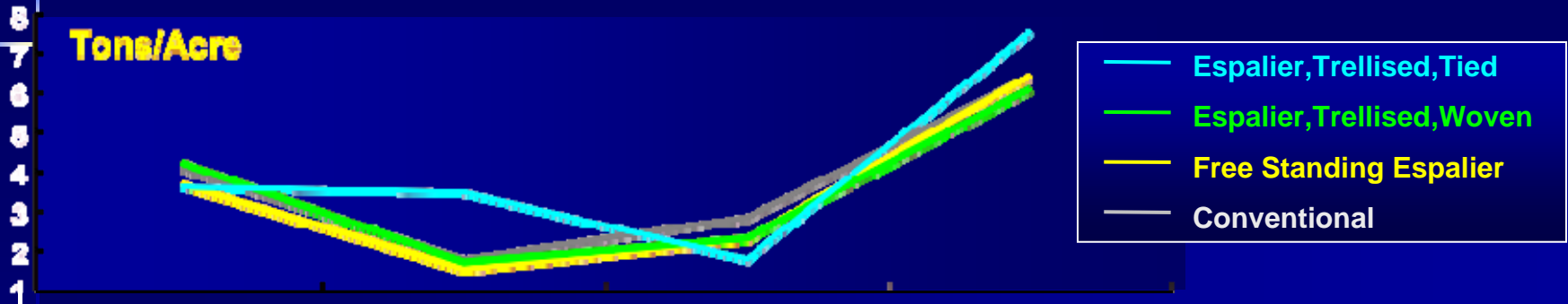
Relationship to Proximity of Pollinator

- Rows nearest pollinators (36 ft) averaged 3.11 tons/ac
- Row farthest from pollinators (96 ft) averaged 1.45

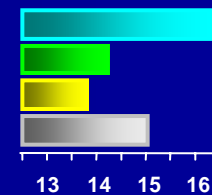
Nickel's Hedgerow Olive Harvest, 2004-07

Manzanillo Table Olives

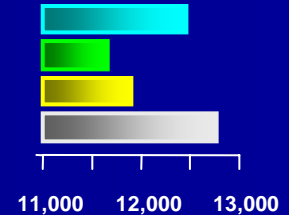
Planted 7/8/00 North-South Planting 12'x18' or 202 trees/acre



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