University of California
Agriculture and Natural Resources
Making a Difference for California

Pruning Systems for High Density Orchards

Nickels Soil Lab Project

John Edstrom[1], Bill Krueger[2], Franz Niederholzer[3], Stan Cutter[4], and Andrew "Bobby" Johnson[5]

[1] Farm Advisor, Colusa Co. (ret.), [2]UC Farm Advisor, Glenn Co. (ret), [3]UC Farm Advisor, Colusa/Sutter/Yuba Counties, [4]Nickels Soil Lab, [5]UC/ABC Intern.

Objectives

To evaluate tree pruning methods for maximum production while maintaining long-term yield in 16'x22'spaced almonds.

Methods

- 15th season evaluating minimum pruning methods (planted in 1997)
- 16'x22' spacing, north and south on Lovell peach seedling.
- Microsprinklers, irrigated 2x per week to meet ETc
- Sandy loam with clay at 26-60''
- Orchard design is 1:1, Nonpareil alternates with Monterey, Carmel, Aldrich
- Replicates: 3 Nonpareil, 3 Monterey, 1 Aldrich, 2 Carmel

Nonpareil

Pruned

Unpruned

Pruning treatments

- **Standard** - 3 primary limbs selected at 1st dormant, secondaries selected 2nd dormant. Balanced canopy wit opened centers. Yearly pruning.
- **Unpruned** - 3 primary limbs selected, tipped and left long at 1st dormant pruning, then no additional pruning unless required for operations, wind etc.
- **Mechanically Topped** - Same as unpruned plus machine topping, cut ½ previous yr growth in winter after 2nd year, then spring 4th leaf.
- **Temporary Scaffolds** –Train limbs at 1st dormant to favor 3 primary scaffolds. Keep temporary branches lower on trunk, removing only ones competing with permanent scaffold. Temp limbs removed yr 4-8 after cropping.

Average Yields of All Varieties

No statistical difference between 2012 pruning treatments

Pruning Method	2000	2001	2002	2003	2004	2006	2007	2008	2009	2010	2011	2012	Accumulative yield (yrs 3-15)
Standard	1,185	1,414	2,613	2,033	1,928	2,140	2,843	3,503	2,483	2,542	2,439	**2,635**	**31,905**
Temp Scaffolds	1,406	1,461	2,677	1,764	1,945	2,045	2,698	3,322	2,441	2,373	2,583	**2,713**	**28,538**
Mech Topped	1,060	1,366	2,660	2,244	1,890	2,060	2,788	3,374	2,423	2,409	2,385	**2,820**	**31,476**
Unpruned	1,374	1,422	2,801	2,260	2,042	2,009	2,698	3,427	2,445	2,379	2,577	**2,945**	**33,867**

Yields in this report are calculated from small lots. They do not include deduction from huller/cracker loss and assume solid orchards with no missing trees. Therefore, the numbers are approximately 5-10% higher than expected commercial block yields.

Special thanks to the Almond Board of California, Ubaldo Salud, Roberto Meza, Gerry Hernandez, and Leslie Clark Pingrey