

SUSTAINING YIELDS IN HEDGEROW ALMONDS

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The long term evaluation of various tree spacing, training and pruning techniques continued into the 22st year. Since 1979 four training concepts have been monitored for their affect on yield of Nonpareil; Price 1:1 hedgerow planting (7'x22') at the Nickels Soils Lab in Arbuckle. The following treatments began at the first dormant pruning:

- 1) **Temporary Hedge** – trained to three scaffolds, standard pruning for permanent trees, with alternate trees gradually whisked back and then removed after their 8th year (1986), leaving a 14'x22' spacing.
- 2) **Permanent Hedge** – trained to three scaffolds, standard pruned and maintained at 7'x22'.
- 3) **Two Scaffold Hedge** – a 7'x22' hedge trained with two primary limbs growing out into the row middles and standard pruned.
- 4) **Unpruned Hedge** – a 7'x22' hedge trained to three scaffolds and then essentially unpruned.

RESULTS

Yields in this trial declined greatly for the 2000 season. Nonpareil production this season was 1178 lbs/ac for the 2 scaffold plots, 1151 lbs. for the unpruned, 979 lbs. for the permanent hedge and 1637 lbs. for the temporary hedge plots.

Average yield for all treatments in 2000 was just 58 % of the 1999 production. However, production for the Temporary Hedge plot did not decline, but maintained last years moderate yield of 1600 lbs/ac. **This marks the first season that the Temp hedge treatment outproduced the other more tightly spaced trees.**

Accumulative yields for the Temporary 14' X 22' Hedge through the 22st leaf still lag far behind all 7' X 22' hedgerows (See Table I). The continued low yield from the Temporary Hedge suggests that alternate tree removal is a questionable practice, even in tightly spaced hedgerow almonds. However, the peculiarities of this test site should be considered when interpreting these yields. This two cultivar planting (Nonpareil and Price) has developed on Class II/III gravelly loam soil under a single hose drip irrigation system. These limitations have restricted the root system and the regrowth of permanent trees into their expanded space (from 7' spacing to 14' spacing). Also, the adjacent tightly spaced pollinizer rows created shaded conditions, further inhibiting fruitwood regrowth on the 14' x 22' spaced Nonpareil plots. Given more favorable “regrowth” conditions, this hedge removal treatment may have regained high productivity and proven, over time, to be an economically viable system. Certainly under our conditions with nearly 7,000 lbs. in accumulated lost production, this is not an

advisable hedge management strategy.

Closed spaced almond hedgerows appear to be quite forgiving with respect to pruning/training methods. Accumulative yields show no difference between trees pruned to Two-Scaffold, Permanent (3-scaffold) or left Unpruned (after scaffolds established).

We know of no other experimental data that shows unpruned almonds to produce yields equal to standard pruned trees over this length

of time. Excessive overgrowth and shading has not occurred in the unpruned trees under these low vigor conditions created by tree crowding and soil/root limitations. However, the sustained productivity in this test of the Unpruned Hedge merits consideration when planning a pruning program for almond hedgerows. Our savings, in pruning costs over the span of this trial were considerable.

NICRAC SusYield rpt00

TABLE I. YIELDS BY HEDGEROW SYSTEMS

**Kernel Pounds per Acre
Leaf/Year**

Treatment	11th 1989	12th 1990	13th 1991	14th 1992	15th 1993	16th 1994	17th 1995	18th 1996	19th 1997	20th 1998	21st 1999	22nd 2000	Cumulative ^{1/} 1984-2000
2 Scaffold	2746 a	3470	2992	2079	1943	2835	1598	2968	2953 a	2296 a	2483	1178	36,820
Unpruned	2870 a	3072	3036	2471	1804	2799	1215	2833	2680 a	1958 ab	2307	1151	35,082
Permanent	2680 a	3333	2254	2268	1189	2678	1297	2624	2498 a	2494 a	2136	979	34,176
Temporary	2046 b	2450	2576	1739	1280	2448	1079	2076	2081 b	1757 b	1662	1637	27,861

^{1/} Cumulative Yields Since 1984.

HEDGE ROW YIELDS

