

To Remove or Not to Remove Trees in a Double Planted Orchard—That is the Question

Roger Duncan, Pomology Farm Advisor, UC Cooperative Extension, Stanislaus County

Almond growers sometimes plant trees in very tight spacings with the idea that they will obtain high yields early and then eventually remove every other tree when things begin to get crowded. Trials conducted in the Sacramento Valley suggest it is best not to remove those trees after all. Farm Advisor John Edstrom (Colusa, Sutter and Yuba Counties) has conducted a long term experiment looking at sustaining yields in hedgerow almonds. The Nonpareil:Price (1:1) orchard was planted in 1980 to a 7'x22' hedgerow on Lovell rootstock in a class 2 soil. John pruned the trees in one of four ways:

- 1) leaving all trees in (7'x22') and pruning in a conventional manner;
- 2) training the trees initially to only two scaffolds and pruning conventionally every year after;
- 3) leaving trees **unpruned** after selecting primary scaffolds the first year.
- 4) removing every other tree in 1986 after harvesting almonds for four years (resulting in a 14'x22' spacing);

Where temporary trees were removed, yields dropped very significantly after tree removal as expected. However, even after more than 10 years have passed and even though adjacent trees have grown in to fill the space, **yields have still not caught up to the permanent hedgerow planted trees**. It is unlikely that these trees will ever regain comparable productivity.

What may be most interesting is that the **unpruned trees have not dropped off in productivity even after sixteen years**. Although the cropping continues to move progressively into the tops of these heavily shaded trees, yields are still sustained.

Cumulative yields from 1984-1996 for the four treatments are listed below:

	<u>Pounds Nonpareil / acre</u>
1) Permanent hedgerow (7'x22'), conventionally pruned	27,048
2) Two scaffolds (7'x22'), conventionally pruned	29,088
3) Permanent hedgerow (7'x22'), unpruned	28,137
4) Temporary hedgerow (thinned to 14'x22')	22,361

The bottom line is that we are probably over-pruning our almond trees, putting too much emphasis on preventing shading of lower wood. Unlike with peaches or fresh market fruit, we do not need to worry about fruit size, color, etc. Previous studies have demonstrated that pruning every two or three years has no detrimental effect on yield. My guess is that we could go longer than that.

There are problems with minimally pruned almond orchards. After many years much of the crop sets in the tops of the trees where the nuts are more difficult to reach with ground applied sprays and are more difficult to knock from the trees. However, saving over \$100 per acre each year in pruning costs with no brush to dispose of makes minimal pruning an attractive alternative to consider.