ABSTRACT

After five years of evaluating pruning as compared to no pruning, no significant difference in yield could be detected, but no pruning did result in lower quality walnuts. In 1983, a low crop year, alternate year pruning was incorporated into the trial and a significant improvement in yield was detected when pruning was skipped in 1983 (even year pruning) with no quality loss. In the high crop year of 1984, yield was significantly better when pruning was skipped the previous winter (odd year pruning) over other treatments. The continued non-pruned treatment had the poorest quality, all other treatments were equal in nut quality. In 1985, yield was significantly better where pruning was skipped the previous winter (even year pruning) over other treatments. Nut quality data awaits analysis.

OBJECTIVES

The objectives of this trial are to evaluate any benefits derived from annual pruning, alternate year pruning or non-pruning a mature, high-yielding Ashley walnut orchard.

PROCEDURES AND RESULTS

In the 1982 crop year, a long-term pruning trial on a dense Ashley walnut orchard comparing annual pruning against non-pruning was altered because no yield benefit could be measured from annual pruning. Quality factors such as percent large, percent light meats and percent edible were greater in the pruned treatment, but value improvement was not enough to offset the cost of pruning and brush removal which was determined to be $125 per acre.

In 1983, pruning on alternate years was added to the pruning/no pruning treatments. There are two alternate year treatments; one which is pruned on even crop numbered years and another which is pruned on odd numbered years.

In 1983, the annual pruned plots averaged 57 pounds of prunings per tree. The odd year pruned plots averaged 85 pounds of prunings per tree. Although the goal was to prune the trees in a similar fashion, the odd year pruned plots were pruned heavier than the annually pruned plots. The non-pruned and even year pruned plots were left unpruned.

Of the parameters measured in 1983, delivered yield per acre and dollars income per acre were significantly better in the even year pruned treatments (skipped pruning in 1983) as compared to all other treatments in this light crop year. Percent large size nuts was best in the annually pruned and odd year pruned treatments, poorest in the even year pruned treatments (see Table).

In 1984 the annual pruned treatment averaged 36 pounds of prunings per tree. The even year pruned treatment averaged 47 pounds of prun-
ings per tree. The non-pruned and odd year pruned treatments were left unpruned.

In 1984, yield was significantly greater in the odd year pruning treatment than in the other treatments. The percent large size nuts and percent sound was significantly poorer in the non-pruned treatment.

In 1985 the annual pruning treatment averaged 32 pounds of pruning per tree. The odd year pruned treatment averaged 52 pounds of prunings per tree. The non-pruned and even year pruned trees were left unpruned. Yield in 1985 was again significantly greater where pruning was skipped the previous winter (even year pruning). The other three treatments (annual pruning, odd year pruning and non-pruning) were equal in yield.

Alternate year pruning maintains good production during the year pruning takes place and improved production and dollar yield per acre the alternate or non-pruned year. Quality loss occurred during the second year of non-pruning and has generally been poorest every year in the non-pruned treatment. Also in the non-pruned treatment the production areas has moved to the tree extremities with dead wood being present internally. Much of this dead wood falls from the tree during shaking, hampering the harvest procedure.

1984 and 1985 Pruning Trial

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% Large Size 1984</th>
<th>Delivered Ton/A 1984</th>
<th>$/Acre 1984</th>
<th>Delivered Tons/A 1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Pruning</td>
<td>75 A</td>
<td>2.73 B</td>
<td>1837 AB</td>
<td>2.22 B</td>
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<tr>
<td>Alternate-Odd Year Pruning</td>
<td>71 AB</td>
<td>3.02 A</td>
<td>2013 A</td>
<td>2.34 AB</td>
</tr>
<tr>
<td>Alternate-Even Year Pruning</td>
<td>75 A</td>
<td>2.76 B</td>
<td>1814 AB</td>
<td>2.57 A</td>
</tr>
<tr>
<td>No Pruning</td>
<td>67 B</td>
<td>2.59 B</td>
<td>1680 B</td>
<td>2.25 B</td>
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</tbody>
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