EFFECT OF A CHANDLER WALNUT INTERSTEM ON GROWTH OF
PARADOX/HOWARD WALNUT TREES

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INTRODUCTION

Occasionally young walnut trees are regrafted to change variety. Growers might have first year Chanders they want to change to Howard or another variety. At grafting, the initial variety may be completely removed or a section left on the rootstock as an interstem. Leaving the interstem allows for higher grafting onto more desirable diameter wood. The question is what is the effect of the interstem on growth performance of the tree, particularly when a vigorous Chandler interstem occurs when regrafting to Howard. Regrafting in a first year Tehama county walnut orchard offered an opportunity to evaluate the effect of a Chandler interstem on tree growth.

MATERIALS

Walnut trees on Paradox rootstock were initially planted April 7, 1999. After one year of growth, it was discovered Howards and Chanders had been grafted in the same block. The mix was significant enough to warrant regrafting. This set up an opportunity to easily make walnut trees with Chandler interstems. At grafting, scions were either completely removed (cut back to rootstock) or grafted onto existing scions. In the spring, interstems were tested using isozyme analysis to identify if they were Howard or Chandler.

The three treatments are:
1) Paradox/Howard
2) Paradox/Howard/Howard
3) Paradox/Chandler/Howard

Trees were regrafted April 7, 2000 and stem circumference was measured October 18, 2000. Tree height was estimated, however, topping to prevent wind breakage and wind breakage itself made height comparisons unreliable. Most trees made 7-10 feet of new growth. The plot is a randomized complete block design with three treatments and eleven individual tree replicates.

RESULTS

After only one season, there were no significant differences in rootstock or scion circumference with or without the Chandler interstem (Table 1).

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Paradox Circumference (cm)</th>
<th>Howard Circumference (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paradox/Howard</td>
<td>13.75 a</td>
<td>9.69 a</td>
</tr>
<tr>
<td>2. Paradox/Howard/Howard</td>
<td>13.40 a</td>
<td>9.27 a</td>
</tr>
<tr>
<td>3. Paradox/Chandler/Howard</td>
<td>13.95 a</td>
<td>9.28 a</td>
</tr>
</tbody>
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Future plans include following these trees for growth and yield performance.