FULL COVERAGE VS HALF COVERAGE WALNUT BLIGHT
TRIAL - 1993

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In northern California counties, Walnut Blight caused by the bacteria *Xanthomonas campestris* pv. *juglandis* is a serious threat to walnut production particularly on early leafing varieties. Growers typically apply multiple sprays for disease suppression. One technique frequently used, is to spray every other row. These so called "half sprays" are attractive because they reduce application costs and decrease the time required to treat orchards. However, for a disease like walnut blight, where spray material coverage is essential, half sprays may not be advisable unless good, uniform spray coverage is possible. Plots were established in 1993 to evaluate half versus full spray coverage for walnut blight control.

Procedure

Replicated plots (four treatments x four replicates) were established in a mature Tehama County flood irrigated Ashley orchard with a history of walnut blight. Each treated plot was roughly 1.25 acres in size. Spray treatments were:

1) Sprays every four days, every row sprayed
2) Sprays every four days, alternating rows sprayed
3) Sprays every eight days, every row sprayed
4) Sprays every eight days, alternating rows sprayed

The alternating row sprays were applied such that every other row was sprayed but alternated such that after two spray events, every row was sprayed. Applications were applied with a Hardie Super 80 traveling at 1.7 MPH applying 1bs. Kocide 101 in 100 gal. of water per sprayed acre. The first spray was applied March 13, 1993 at roughly one inch catkin.

Blight incidence was evaluated by randomly selecting two representative trees per plot and counting nuts roughly 8-15 feet high. Fifty nuts distributed throughout the east side of the tree and fifty nuts distributed throughout the west side of the tree were visually rated to make up a 100 nut sample. The data are reported as percent blighted nuts.

Results

All treatments applied in this experiment failed to control walnut blight. Blight incidence in treated plots ranged from 64 to 73 percent compared to 62 percent blight in the untreated control (Table 1). Nineteen full coverage sprays, using 10 lbs. of Kocide 101, with good to excellent coverage failed to control walnut blight.
Discussion

Since the spray treatments failed to control walnut blight, conclusions regarding alternate row sprays cannot be made. However, these data demonstrate the inability of current spray techniques to control walnut blight.

Exactly why these spray treatments failed is not completely clear, however, analysis by two independent labs confirmed copper resistant blight bacteria in all experimental plots.

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>COVERAGE</th>
<th>SPRAYS</th>
<th>% BLIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-DAY</td>
<td>FULL</td>
<td>19.0</td>
<td>70 a</td>
</tr>
<tr>
<td>4-DAY</td>
<td>HALF</td>
<td>9.5</td>
<td>73 a</td>
</tr>
<tr>
<td>8-DAY</td>
<td>FULL</td>
<td>10.0</td>
<td>73 a</td>
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<tr>
<td>8-DAY</td>
<td>HALF</td>
<td>5.0</td>
<td>64 a</td>
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<tr>
<td>CONTROL</td>
<td>NONE</td>
<td>0.0</td>
<td>62</td>
</tr>
</tbody>
</table>

FIRST SPRAY 3/13/93 @ 10 LBS Kocide 101 PER AC

Table 1. Full coverage vs. half coverage walnut blight trial.