A COMPARISON OF CONFIRM® WITH LORSBAN® FOR CONTROL OF FIRST GENERATION CODLING MOTH LARVAE IN WALNUT

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SITUATION AND PROCEDURES

Confirm® is listed in the UC Walnut Pest Control Guidelines as a recommended pesticide for control of codling moth (CM) larvae in the 2nd spring generation, but not in the 1st generation. Lorsban® is recommended for either or both generations. There has been some question whether Confirm® is equal to Lorsban® for 1st generation CM control. Confirm® is an insect growth regulator that causes little or no disruption to bio-control in walnuts. A primary issue is possible disruption of the walnut aphid parasite Trioxys pallidus by pesticides used for first generation CM control.

Lorsban® has not been disruptive in this area, but is limited to two applications per season. If Lorsban is used twice for 1st generation CM control, this may require the use of disruptive pesticides for 2nd and 3rd generation sprays. Confirm® could be a useful addition for 1st generation CM control in an IPM program.

An old orchard of Payne walnuts in Livingston, CA was chosen for this test of Confirm®. The pesticide treatments we applied to three replicated blocks with three replicated untreated check blocks adjacent to the pesticide treatments. Three Consep pheromone traps placed at about 15’ height in the trees were monitored to find the 1st flight biofix and calculate degree days for the flight. The biofix was determined to be April 16, 1998.

The first Confirm® application was made on May 1, 1998 at the 1A codling moth flight at 240 DD and 3/8” – ½” Payne nut size. Sprayer speed was 1.9 mph and application rate was 233 g/a at 70 trees per acre.

TREATMENTS

YELLOW = CONFIRM® @ 16 oz/a + Latron CS-7 @ 5 pt/500 gal. May 1 at 240 DD.
BLUE = LORSBAN® 4EC @ 4 pt/a plus 1 qt spreader per tank. Applied 5/4/98 at 284 DD.
WHITE = UNSPRAYED CHECK TREES.

The second application of Confirm® was on May 29th at 7 a.m. to the 1B flight at 522 DD.

YELLOW = CONFIRM® @ 16 oz/a + Latron CS-7 @ 5 pt/500 gal
Speed 2 mph at 207 gpa. (Actual rate was 13.3 oz per acre.)
BLUE = LORSBAN 4EC @ 4 pt/a plus 1 qt spreader per tank applied June 1st at 568 DD.
WHITE = UNSPRAYED CHECK TREES.

The orchard was monitored weekly to detect any fallen nuts from the 1A flight and beginning June 1st weekly counts of nut strikes on the trees were made from 200 nut pairs per rep or 600 nut pairs per treatment.
RESULTS

The codling moth flight was extremely late in 1998. There were no nut strikes from the 1A flight, so there was no nut drop to count. The codling moth pressure is average, not high in this orchard. The first strikes were detected on pairs of nuts in the trees on June 18th.

Table 1. Codling moth larval strikes per 600 pairs of nuts.

<table>
<thead>
<tr>
<th>TREATMENT</th>
<th>6/18/98</th>
<th>6/25/98</th>
<th>7/2/98</th>
</tr>
</thead>
<tbody>
<tr>
<td>LORSBAN®</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CONFIRM®</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CHECK</td>
<td>13</td>
<td>9</td>
<td>66</td>
</tr>
</tbody>
</table>

CONCLUSIONS

The CM control with Confirm® was excellent in this test where Confirm® was applied at 240-250 DD in the 1A flight and repeated at 520-530 DD for the 1B flight. Lorsban® also gave excellent control where applied at about 280-300 DD and 570-600 DD. We had no stings in either the Confirm® or in the Lorsban® treatments. Confirm® seems to have a place in 1st generation CM control where CM populations are low to moderate.
Figure 1. First application plot map.

**PLOT MAP OF BEN SOUZA WALNUT ORCHARD-1998**

19425 W WESTSIDE BLVD

STEVINSON, CA

**FIRST APPLICATION MAY 1, 1998**

**MIXED PAYNE AND HARTLEY WALNUTS**

May 1, 1998: Moderate wind before predicted May 3, 4 rain.
First tank Confirm @ 64 oz/a + 26 oz Latron CS-7 per 100 g.
Second tank Confirm @ 16 oz/a + 16 oz Latron CS-7 per 100 g.
Sprayer speed 1.9 mph, Payne nut size 3/8"-1/2", Hartley up to 1/4".

<table>
<thead>
<tr>
<th>5 ROWS LORSBAN BLUE</th>
<th>4 ROWS CONFIRM YELLOW</th>
<th>5 ROWS LORSBAN BLUE</th>
<th>4 ROWS CONFIRM YELLOW</th>
<th>4 ROWS LORSBAN BLUE</th>
<th>4 ROWS CONFIRM YELLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16 oz/a</td>
<td></td>
<td>16 oz/a on 2 center rows (64 oz on outside rows)</td>
<td></td>
<td>64 oz/a</td>
</tr>
</tbody>
</table>

**26 ROWS X 25 TREES/ROW**

YELLOW = CONFIRM @ 16 oz/a = 32 oz/500 g tank + Latron CS-7 @ 5 pt/500 gal (5/1/98)
WHITE = UNSPRAYED CHECK TREES.

25' X 25' = 70 trees/acre. 3 reps (12 rows) = 300 trees = 4.3 acres. Two tanks = 1000 g for 4 acres @ 250 g/a.
CONFIRM @ 200 DD on 5/1/98.
Figure 2. Second spray dates plot map.

MIXED PAYNE AND HARTLEY WALNUTS

<table>
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<th>4 ROWS CONFIRM YELLOW</th>
</tr>
</thead>
</table>

26 ROWS X 25 TREES/ROW

YELLOW = CONFIRM @ 2 pt/500 g tank (Target = 16 oz/a) + Latron CS-7 @ 5 pt/500 gal

Applied 7 am MAY 29, 1998 @ 540 DD. Total trees are 338 / 70 = 4.8 acres. This equals 207 gpa. Rate of 32 oz per 500 gal = 13.3 oz per acre.

BLUE = LORSBAN 4EC @ 9 pt/500 gal tank (4 pt/a). Plus 1 qt spreader. (June 1, 1998)

WHITE = UNSPRAYED CHECK TREES. Spacing 25' X 25' = 70 trees/acre.