PEAR: *Pyrus communis* (L.), ‘Bartlett’

CONTROL OF CODLING MOTH IN ‘BARTLETT’ PEAR, 2005

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Codling moth (CM): *Cydia pomonella* (L.)

The objective of this trial was to test the efficacy of various insecticides for control of CM in pear. Insecticides were applied to 11-yr-old ‘Bartlett’ pear trees at the Trevor Nichols Research Complex in Fennville, MI (Pear 4 Block) with an FMC 1029 tractor-mounted airblast sprayer calibrated to deliver 100 gpa at 2.5 mph. Two-tree plots were arranged in a RCB design with 4 replications. Tree spacing was 15 × 20 ft, with a minimum buffer of one tree within the row and one buffer row separating all plots. Regular maintenance foliar applications were applied separately to all treatments and included Agrimycin, Sovran, Penncozeb, Vangard, Flint, and Mora-leaf 20-20-20. Solicam, Princep, Weedar 64, and Glyphomax Plus were banded below the trees for weed control. Applications of test materials were made at 14 d intervals beginning at egg hatch of first and second generation CM, as indicated in the following tables. An evaluation of CM damage on 25 apples per replicate was made on the tree on 29 Jun after larvae of the first generation of CM would have entered the fruit. At early harvest on 23 Aug, 50 apples per replication were picked at random and examined externally and internally for damage from CM. Data are presented as the percentage of fruit with CM stings or entries, and as the percent marketable. Mean percent control was calculated using Abbott’s formula: 

\[ \text{Mean percent control} = \left(1 - \frac{n_{\text{treated plot}}}{n_{\text{control plot}}} \right) \times 100 \]

and all data were analyzed using ANOVA and means separation by Duncan’s New MRT (\(P = 0.05\)).

At the mid-season fruit evaluation, all treatments provided excellent control of CM compared to the untreated check (Table 1). In the harvest evaluation Rimon and Imidan gave the best protection of fruit from CM tunnels, followed by Calypso, but only Imidan prevented CM stings (Table 2). Imidan provided the highest levels of percentage control and marketable fruit, followed by Rimon, then Calypso (Table 3).
Table 1.

<table>
<thead>
<tr>
<th>Treatment/formulation</th>
<th>Rate amt</th>
<th>Application</th>
<th>Mid-season CM evaluation - 29 Jun</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>product/acre</td>
<td>timing</td>
<td>% damage-stings</td>
</tr>
<tr>
<td>Untreated check</td>
<td>--</td>
<td>--</td>
<td>1a</td>
</tr>
<tr>
<td>Calypso 4F</td>
<td>6 fl oz</td>
<td>A-E</td>
<td>0a</td>
</tr>
<tr>
<td>Imdadan 70WP + Tri-Fol</td>
<td>4 lb +</td>
<td>A-E</td>
<td>0a</td>
</tr>
<tr>
<td>Rimon 0.83EC</td>
<td>20 fl oz</td>
<td>A-E</td>
<td>0a</td>
</tr>
</tbody>
</table>

Means in a column followed by same letter do not significantly differ (Duncan’s New MRT, $P > 0.05$). Statistical analysis conducted on arcsine square-root transformed data; data presented are actual counts.

Table 2.

<table>
<thead>
<tr>
<th>Treatment/formulation</th>
<th>Rate amt</th>
<th>Application</th>
<th>Harvest CM evaluation – 23 Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>product/acre</td>
<td>timing</td>
<td>% damage-stings</td>
</tr>
<tr>
<td>Untreated check</td>
<td>--</td>
<td>--</td>
<td>3.5a</td>
</tr>
<tr>
<td>Calypso 4F</td>
<td>6 fl oz</td>
<td>A-E</td>
<td>2.5a</td>
</tr>
<tr>
<td>Imdadan 70WP + Tri-Fol</td>
<td>4 lb +</td>
<td>A-E</td>
<td>0.5b</td>
</tr>
<tr>
<td>Rimon 0.83EC</td>
<td>20 fl oz</td>
<td>A-E</td>
<td>2.5ab</td>
</tr>
</tbody>
</table>

Means in a column followed by same letter do not significantly differ (Duncan’s New MRT, $P > 0.05$). Statistical analysis conducted on arcsine square-root transformed data; data presented are actual counts.

Table 3.

<table>
<thead>
<tr>
<th>Treatment/formulation</th>
<th>Rate amt</th>
<th>Application</th>
<th>Harvest CM evaluation – 23 Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>product/acre</td>
<td>timing</td>
<td>% marketable</td>
</tr>
<tr>
<td>Untreated check</td>
<td>--</td>
<td>--</td>
<td>45.0c</td>
</tr>
<tr>
<td>Calypso 4F</td>
<td>6 fl oz</td>
<td>A-E</td>
<td>89.0b</td>
</tr>
<tr>
<td>Imdadan 70WP + Tri-Fol</td>
<td>4 lb +</td>
<td>A-E</td>
<td>97.5a</td>
</tr>
<tr>
<td>Rimon 0.83EC</td>
<td>20 fl oz</td>
<td>A-E</td>
<td>95.5ab</td>
</tr>
</tbody>
</table>

Means in a column followed by same letter do not significantly differ (Duncan’s New MRT, $P > 0.05$). Statistical analysis conducted on arcsine square-root transformed data; data presented are actual counts.

$^a$A = biofix+250 DD$_{50}$ (7 Jun); B = 250 DD$_{50}$+14 days (20 Jun); C = 250 DD$_{50}$+28 days (5 Jul); D = biofix+250 DD$_{50}$ (27 Jul); E = 250DD$_{50}$+14 days (10 Aug).

$^b$% control calculated using Abbott’s formula $[1 - (n_{\text{treated plot}} / n_{\text{control plot}})] * 100$. 

$^c$Means in a column followed by same letter do not significantly differ (Duncan’s New MRT, $P > 0.05$). Statistical analysis conducted on arcsine square-root transformed data; data presented are actual counts.

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