APPLE: *Malus domestica* Borkhausen, ‘Gala’

**CONTROL OF APPLE MAGGOT, 2007**

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Apple maggot (AM): *Rhagoletis pomonella* (Walsh)

The objective of this study was to measure the efficacy of some new insecticides and formulations when applied at the normal control timing of AM flight plus seven days.

The test materials were applied to 15-yr-old ‘Gala’ apple trees (Gray Block) at the Trevor Nichols Research Complex in Fennville, MI with an FMC 1029 airblast sprayer calibrated to deliver 100 gpa at 2.5 mph. Single-tree plots were arranged in a RCB design with four replications. Tree spacing was 18 × 20 ft, with at least one buffer tree and one buffer row separating all plots. Regular maintenance foliar applications of Ziram, Agrimycin-17, Penncozeb, Vangard, Apogee plus Bronc, Asana XL, Sovran, polyram and Mora-Leaf 20-20-20 were applied separately to all treatments. In addition Sinbar, and Touchdown were banded below the trees for weed control. Applications of test materials were made on 14-d intervals beginning on 10 Jul, 24 Jul, and 7 Aug. On 21 Aug (where fruit load was sufficient), 1 bu (approximately 250 fruit) of randomly selected apples were picked per replicate. All fruit were sampled on plots with < 1 bu Samples were weighed. Fruit from each replicate were put in bushel boxes that were inverted and then placed on racks over aluminum trays containing a 1-in layer of sand. The AM larvae matured and emerged from the fruit, then dropped into the tray and pupated. After incubating for approximately 6 wk at ambient temp, pupae were collected on 10 Oct by sifting the sand through window screening. Data are presented as the mean number of AM pupae per pound of fruit. All data were analyzed using ANOVA and means separation by Duncan’s New MRT at \( P = 0.05 \).

All treatments provided significant control of AM compared to the untreated check. Past trials have shown Provado 1.6F alone to give only moderate control of AM, so it is likely that Nu-film improved its activity on this pest. Rimon is not known to have any acute toxic effects on AM adults, so these results may be from the transovarial activity seen on other pests.

**Table 1.**

<table>
<thead>
<tr>
<th>Treatment/formulation</th>
<th>Rate formulation or 100 gal</th>
<th>Application timing</th>
<th>AM pupae evaluation - 21 Aug</th>
<th>pupae/lb fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated check</td>
<td></td>
<td></td>
<td>6.61a</td>
<td></td>
</tr>
<tr>
<td>Imidan 70 WP + Tri-Fol L</td>
<td>3 lb/0.5 pt/100 gal</td>
<td>BCD</td>
<td>0.35c</td>
<td></td>
</tr>
<tr>
<td>Assail 30SG Calypso 4F</td>
<td>5 oz/6 fl oz</td>
<td>BCD</td>
<td>0.33c</td>
<td></td>
</tr>
<tr>
<td>Provado 1.6F + Nu-Film 17L</td>
<td>8 fl oz/14.3 fl oz</td>
<td>BCD</td>
<td>0.23c</td>
<td></td>
</tr>
<tr>
<td>Baythroid XL 1EC Calypso 4F</td>
<td>2.8 fl oz/6 fl oz</td>
<td>BC</td>
<td>0.9c</td>
<td></td>
</tr>
<tr>
<td>Rimon 0.83EC</td>
<td>20 fl oz</td>
<td>ACD</td>
<td>2.41b</td>
<td></td>
</tr>
</tbody>
</table>

Means followed by same letter do not significantly differ (\( P = 0.05 \), Duncan’s New MRT).

\( a \) Fruit harvested on 21 Aug; pupae collected on 10 Oct.

\( b \) A = 6 Jul (AM flight + 3 d); B = 10 Jul (AM flight + 7 d); C = 24 Jul; D = 4 Aug.

\( c \) ANOVA performed on square-root transformed data; data presented are actual counts.