BLUEBERRY: *Vaccinium angustifolium* Aiton ‘lowbush’

BLUEBERRY MAGGOT CONTROL, 2010b

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Blueberry maggot (BM): *Rhagoletis mendax* Curran

A field trial was conducted in order to investigate the utility of foliar applications of Mycotrol O (2.5 L / ha) (*Beauveria bassiana*) either alone or in concert with GF-120 NF Fruit Fly Bait (spinosyns). Treatments were applied to a crop-year lowbush blueberry field in Township 18, ME. There were three replications of each treatment plus three untreated check plots. Plot size was 80 × 100 ft. There were two applications; 8 and 16 Jul; berries were 25% and 50% ripening and turning blue, respectively. Mycotrol O was applied in 5.4 gal of water-mixture per acre using a SOLO 450 mist blower. GF-120 NF Fruit Fly Bait was applied at a rate of 1:5 v/v with water using an ATV-mounted sprayer. Specifications of the ATV-mounted sprayer were: nozzle height = 3 ft; nozzle type = TeeJet25015; a TeeJet 8015 LP Fan Tip, relief pressure nozzle was used on the tank return to drop pump pressure from 60 to 10 psi at the nozzles; ground speed = 4 mph; swath width = 20 ft, 10 ft to each side; wind speed for effective use is 3-6 mph. Pre- and postspray populations of BM adults were monitored with baited yellow Pherocon AM traps. One trap was placed in each plot and checked twice weekly through the duration of the trial. Traps were set on 29 Jun and replaced on 8 and 16 Jul. Efficacy was further evaluated based on the number of BM pupae collected from berry samples. On 21 Jul, we raked one quart of berries from each of four preselected subsites within each replication. To collect BM pupae, the berries from each replication were combined and distributed in a 1 to 2-inch deep layer in screened boxes suspended over ca. 2 inches of fine sand. Hardware cloth (0.25 inch) was used as a screening material. In mid-Oct, BM pupae were separated from the sand by floating them in water. ANOVA (RCBD) and Tukey’s HSD (*P* ≤ 0.05) were used to compare the seasonal density of BMF adults captured on Pherocon AM traps. GF-120 alone and in combination with Mycotrol O significantly reduced the seasonal density of BMF adults (*P* = 0.014). ANOVA and LS Mean Differences (*P* ≤ 0.05) were used to compare the average number of pupae/qt of fruit between treated and untreated check plots. Data were transformed by log(*X* + 0.1) prior to analysis to stabilize variances.

No phytotoxicity was observed on any plot. Although infestation was high in all three treatments, numbers were significantly lower than the untreated check in plots treated with GF-120 and with a combination of Mycotrol O and GF-120 (*P* = 0.013).

<table>
<thead>
<tr>
<th>Treatment/formulation</th>
<th>Rate product/acre</th>
<th>Adult Seasonal density*</th>
<th>Mean Pupae/qt</th>
</tr>
</thead>
<tbody>
<tr>
<td>GF-120</td>
<td>1.5 v/v</td>
<td>6.7b</td>
<td>10.2c</td>
</tr>
<tr>
<td>Mycotrol O</td>
<td>2.5 L/ha</td>
<td>19.1ab</td>
<td>60.7ab</td>
</tr>
<tr>
<td>Mycotrol O</td>
<td>2.5 L/ha</td>
<td>8.1b</td>
<td>16.8bc</td>
</tr>
<tr>
<td>+ GF-120</td>
<td>+ 1.5 v/v</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Untreated check</td>
<td>-</td>
<td>29.6a</td>
<td>78.3a</td>
</tr>
</tbody>
</table>

Means within each column followed by the same letter(s) are not significantly different (*P* ≤ 0.05, Tukey’s HSD, adults or LS Means Differences, pupae). Data for the number of pupae per quart were transformed by log(*X* + 0.1).

*Seasonal densities are trapezoidal integrals of densities over the season divided by the number of day’s duration of the experiment.