Evaluation of Insecticide-Based Management Options for BMSB in Virginia Apple and Peach Orchards

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Can we manage BMSB injury in apples and peaches?

- Single product evaluation (apple)
- Seasonal programs (apple & peach)
- Demonstration trial in commercial apple and peach blocks
Small-Plot, Single Products:

**Apple**

- Airblast, complete, ~10-d intervals
- Began in ‘Gala/Idared’ block, with pre-bloom neonic and miticide
- Two-tree plots, 4 replicates
- Three applications starting at PF
- Excessive thinning noted late May
- Moved to ‘Law Rome’ block with no previous insecticides in 2011
- Single tree plots (4 reps)
- Two applications since June 3
<table>
<thead>
<tr>
<th>Class</th>
<th>a.i.</th>
<th>Trade name</th>
<th>Rate/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyrethroid</td>
<td>permethrin</td>
<td>Perm-UP 3.2EC</td>
<td>12 fl oz</td>
</tr>
<tr>
<td></td>
<td>beta-cyfluthrin</td>
<td>Baythroid XL 1EC</td>
<td>2.8 fl oz</td>
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<tr>
<td></td>
<td>fenpropathrin</td>
<td>Danitol 2.4EC</td>
<td>16 fl oz</td>
</tr>
<tr>
<td></td>
<td>gamma cyhalothrin</td>
<td>Declare 1.25CS</td>
<td>1 &amp; 2 fl oz</td>
</tr>
<tr>
<td>Carbamate</td>
<td>methomyl</td>
<td>Lannate 90SP</td>
<td>12 oz</td>
</tr>
<tr>
<td></td>
<td>oxamyl</td>
<td>Vydate L</td>
<td>3 pt</td>
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<tr>
<td>Organochlorine</td>
<td>endosulfan</td>
<td>Thionex EC</td>
<td>1.67 qt</td>
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<tr>
<td>Neonicotinoid</td>
<td>clothianidin</td>
<td>Belay 2.13SC</td>
<td>6 fl oz</td>
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<tr>
<td></td>
<td>dinotefuran</td>
<td>Venom 70SG</td>
<td>6.75 oz</td>
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<tr>
<td>Pyrethroid/neonic</td>
<td>beta-cyfluthrin + imidaclorpid</td>
<td>Leverage 3SE</td>
<td>2.8 fl oz</td>
</tr>
</tbody>
</table>
Small-Plot Insecticide Programs: Apple

- Airblast, complete, ~14-d intervals
- Single-tree plots, 4 replicates
- 7 programs in ‘Redspur Delicious’
- 5 target BMSB primarily, starting at 2C
- Belay, Scorpion, Venom, Lannate, Thionex EC, Leverage, Danitol, Mustang Max
Small-Plot Surround Program: Apple

- Airblast, complete, ~14-d intervals
- Single-tree plots, 4 replicates
- 5 programs in ‘Ace Delicious’
- Surround at 12.5 and 25 lb/A alone, in combination with a.i., and a.i. alone
- Assail, Lannate, Thionex EC, ??
- PF through ??
- PF spray washed off in mid-May
- 2C application still evident
Small-Plot Programs: Peach

- Airblast, complete, ~14-d intervals
- 2-tree plots, 4 replicates
- 3 programs in ‘Redhaven’
- Endigo (Actara + Warrior), Perm-UP, Voliam Xpress, Thionex, Lannate, Baythroid, Danitol
Grower Demonstration Trial: Apple and Peach

- Blocks in commercial orchards in northern and central VA
- 5 blocks per crop
- ~5 A peach and ~10 A apple blocks
- “Experimental” vs grower STD programs
- Complete sprays at ~10–d intervals
- Aggressive programs based on results of USDA, VT and Penn State lab assays
Apples

- Prebloom: Lorsban/oil and neonic
- PF: Assail + Abba
- 1C – 13C (late September)
- Voliam Flexi, Lannate, Guthion, Guthion + Lannate, Belay, Danitol (1st spray late July), Leverage, dinotefuran (possibly by mid-summer)
- Altacor as needed for OFM, CM, LR
Peaches

- PF – 7C
- Perm–UP + Provado, Thionex EC, Perm–UP + Actara, Lannate, Danitol, possibly dinotefuran toward harvest
- Altacor and Delegate as needed for OFM
• Significant, widespread hail on May 17
• Impacted 3 of 5 cooperators
• Tagged 300 and 500 uninjured peaches and apples, respectively, per block for in-season and harvest evaluations
Basically nada
“The internal injury hasn’t shown up at this stage, but the halo effect is apparently common. Each of these areas had a feeding hole at its center.” 6.20.11