IR-4 BMSB Efficacy Study, 2011

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Researchers:

- Galen Dively - Peppers
- George Hamilton, Ann Rucker - Peaches and Apples
- Tom Kuhar - Peppers
- Doug Pfieffer - Raspberries
- Joanne Whalen - Sweet corn
IR-4 Efficacy Study

• The application rate remained the same in all crops.

• The number and timing of the applications varied, dependent on the crop.

• Other insecticides were evaluated in several of the trials.
## Treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
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<tbody>
<tr>
<td>Dinotefuran (Venom 70SG)</td>
<td>116 g/A</td>
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<td>Dinotefuan</td>
<td>116 g/A</td>
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<tr>
<td>+ PBO*</td>
<td>5 fl.oz./A</td>
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<tr>
<td>Etofenprox (Trebon 280 g/l SG)</td>
<td>237 ml/A</td>
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<td>237 ml/A</td>
</tr>
<tr>
<td>+ PBO*</td>
<td>5 fl.oz./A</td>
</tr>
<tr>
<td>Untreated</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td></td>
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<tr>
<td>*Piperonyl butoxide = Exponent Insecticide Synergist</td>
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</tbody>
</table>
• ‘John Boy’ peaches at the Bridgeton, NJ AG REC
• 6 apps, from first significant damage to 3 Day PHI
• Visual 3 min. counts of BMSB taken
• High BMSB pressure, but low counts
• Fruit evaluated for damage at harvest (peeled & cut)
• Treatments showed significantly less damage than control, except for Trebon alone
• Addition of PBO reduced fruit damage at high end, + 10 stings. Equal to Danitol, the standard
Apples – George Hamilton, Ann Rucher, Tom Freiberger

- ‘Roma’ apples at the Cream Ridge NJ AG REC
- 3 apps, from first significant damage to 3 Day PHI
- Visual 3 min. counts of BMSB taken
- High BMSB pressure, but low counts
- Fruit evaluated for damage at harvest (peeled & cut)
- Venom + PBO had significantly more fruit without sting damage
- Trebon + PBO had significantly lower average number of stings/fruit
Peppers – Galen Divelly

• ‘Paladin’ bell peppers at the Central MD Research Farm, Beltsville, MD
• 3 apps on July 7, August 9 & 16
• Evaluations made on July 13, Aug. 4, 8, 15 & 23
• Light BMSB pressure, but both Venom & Etofenprox with or w/o PBO significantly reduced BMSB populations
• Fruit evaluated for damage July 13, Aug. 8, 15 & 23
• Venom with or w/o PBO sign. reduced damage. Neither Trebon treatment reduced damage
• ‘Aristotle’ bell peppers at the VT Kentland Farm
• 4 apps on August 1, 6, 15, 25
• BMSB were 90% of stink bugs per visual estimate
• High BMSB pressure, > 20%
• Fruit evaluated for damage Aug. 9 & 19, Sept. 1
• Only significant differences on Aug. 9 when Trebon + PBO, Venom + PBO, Danitol and Belay significantly reduced fruit damage
• Raspberries, VT Kentland Farm
• Treatments sprayed in 1.2 m section of plot
• 10 BMSB paced on caged raspberry stem
• Counts made at 1, 2 3 and 6 days after treatment
• Cumulative % mortality of BMSB significantly better with all 4 treatments and malathion. Addition of the PBO not significantly better, but warrants further research.
Cumulative % mortality of BMSB with Pesticides.

- Control
- Malathion
- Venom 70SG
- Venom 70 SG+ PBO
- Trebon
- Trebon+ PBO

No. of days:
- 1Day Mort.
- 2Days Mort.
- 3Days Mort.
- 6Days Mort.

Cumulative % mortality range:
- 0 to 40
Sweet corn – Joanne Whalen

- ‘WSS0987” Bt Sweet corn UDEL Newark research farm
- Three apps: tassel emergence, grn silk and brown silk
- BMSB counted pre-app and and 3 days post-app.
- Aug, 1 ears harvested, husked and evaluated for blemished kernels.
- Low pressure: 0 to 1.5 average # BMSB/plant pre-app.
- No significant differences between treatments after each application. The total number of BMSB does drop over the course of the three applications:
  - Untreated # BMSB/plant
    - July 11, 0.25
    - July 25, 0.09
BMSB populations were lower than in 2010, especially towards the end of the season.

There is some evidence that dinotefuran (Venom) and/or etofenprox (Trebon) control BMSB.

The addition of PBO may improve efficacy of both products.

Additional research is needed.

Some other products that showed promise were: malation, Belay, Danitol and Actara 25WG.