

## **IR-4 BMSB Efficacy Study, 2011**

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## IR-4 Efficacy Study

**Study Director: Keith Dorschner**

**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

<b>Dinotefuran (Venom 70SG)</b>	<b>116 g/A</b>
<b>Dinotefuan</b>	<b>116 g/A</b>
<b>+ PBO*</b>	<b>5 fl.oz./A</b>
<b>Etofenprox (Trebon 280 g/l SG)</b>	<b>237 ml/A</b>
<b>Etofenprox</b>	<b>237 ml/A</b>
<b>+ PBO*</b>	<b>5 fl.oz./A</b>

**Untreated**

**Standard**

**\*Piperonyl butoxide =**

**Exponent Insecticide Synergist**



## Peaches – George Hamilton, Ann Rucher

- **‘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 Dively

- **‘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**



## Peppers – Tom Kuhar

- **‘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**





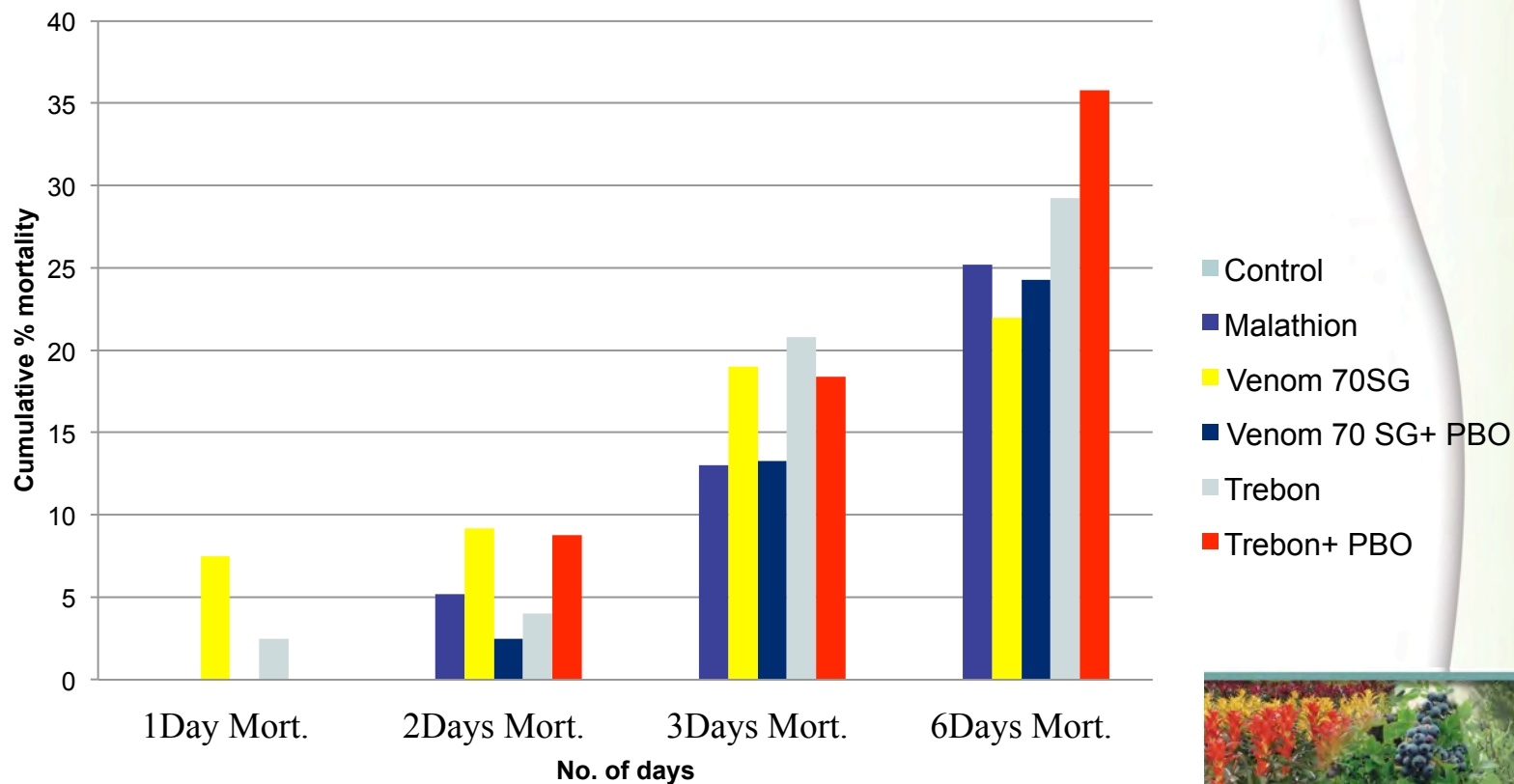
## Raspberries – Doug Pfeiffer

- **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.**



## Raspberries – Doug Pfeiffer

Cumulative % mortality of BMSB with Pesticides.



## 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**



## Summary

- **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.**

