Phenology and Distribution of Brown Marmorated Stink Bugs

Pear Research Meeting
Feb. 4, 2015

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Brown Marmorated Stink Bug
(Halyomorpha halys)

Photos: Baldo Villegas
Each adult lives 6-8 months
Female can lay about 250 eggs
~2 generations in Mid-Atlantic states, 4-6 in southern China; California ???
BMSB in Calif. 2014

Established populations in:
Butte
Los Angeles
Sacramento
San Joaquin
Santa Clara
Sutter
Yolo

BROWN MARMORATED STINK BUG  HALYOMORPHA HALYS
CALIFORNIA 2014

Reproducing Populations
Single Finds
Interceptions

Courtesy of Charlie Pickett, CDFA
BMSB Finds
Sacramento County

Jan. 1, 2014

Dec. 31, 2014
Host Plants
Crops

- Stone fruits (esp. peach), pome fruits, citrus, persimmon, fig
- Berries
- Grapes (not a major host)
- Eggplant, tomato, okra, pepper, corn, beans (esp. soy), cucurbits, sunflower
Host Plants
Selected Ornamentals

- Catalpa
- Chinese pistache
- Elm
- Maple
- Holly
- Princess tree (Paulownia)

- Pyracantha
- Redbud
- Rose
- Tree of heaven
- Waxleaf privet
Chinese Pistache

*Pistachia chinensis*
Trident Maple
Acer buergerianum
Waxleaf Privet
*Ligustrum japonicum*
Tree of Heaven
*Ailanthus altissima*
BMSB Adults & Nymphs on Tree of Heaven

Adults & Nymphs on Marked Branches

No. of BMSB/week

- Adults
- Nymphs
Stink Bug Feeding

Photo: Jay Brunner

Photo: Tracy Leskey
BMSB Damage

Peach, 5/22

Nectarine, 6/3

Asian pear, 7/2

Plum – no damage
Lures (MDT) and Insecticide Strips

Lures:
- AgBio Combo lure (6 wks.) – $7.95
- Rescue (2 lures) (9 wks.) – $10

Vaportape (kill bugs in trap): $2.85
Phermone Trap
Dead-Inn Traps (AgBio, Inc.)

Grower
48” tall, $30

Professional
24” tall, $20

Homeowner
16” tall, $17
Phermone Traps
Rocket Trap (Rescue): $17 each
2014 Trap Locations & Counts
Midtown Sacramento

Adults/Nymphs

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<th>Location</th>
<th>Adults</th>
<th>Nymphs</th>
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Map of trap locations and counts in Midtown Sacramento.
Adults and Nymphs Trapped
Sacramento, 2014

BMSB/day/trap
Avg. of 4 traps, 2014
Male vs. Female BMSB Adults
Sacramento, 2014

BMSB/day/trap
Avg. of 4 traps, 2014

No./trap/day

Females
Males

Dates:
- 17-Mar
- 31-Mar
- 14-Apr
- 28-Apr
- 12-May
- 26-May
- 9-Jun
- 23-Jun
- 7-Jul
- 21-Jul
- 4-Aug
- 18-Aug
- 1-Sep
- 15-Sep
- 29-Sep
Trap Placement Locations
So. Sacramento County, 2014

- South of Sacramento (4)
- Pear orchards near residence of a Sacramento commuter (6)
- Farms that host visitors (5)
  » Wine tasting, agritourism, schools
Insecticide Efficacy
Field Study (Leskey et al., 2013)

- High mortality on day of application: Endosulfan (e.g., Thiodan), methomyl (Lannate), thiamethoxam (Actara), and bifenthrin (e.g., Brigade)
- Fenpropathrin (Danitol) and dinetofuran (Venom, Scorpion): strong anti-feeding effect for 7+ days
- Peaches in Mid-Atlantic: 10-12 weekly applications, alternate-row, late May-harvest using pyrethroids and neonicotinoids
- Effective insecticides in lab: only 60% average mortality in the field when applied late early July, 40% in Aug., and 20% in September
Sprayed orchard perimeter with insecticides → 75% of adult BMSB were stopped at the edge

Products and timings that worked well:

- Early season: Danitol
- Mid-season: Voliam Xpress, Perm-Up Assail
- Late July: Actara
- Pre-harvest: Actara, Danitol, Lannate, Venerate
Products that have shown good effectiveness against BMSB include:

- Pyrethroids: Baythroid XL (B-cyfluthrin), Danitol (fenpropathrin), Warrior II (Beta-cyfluthrin), products containing permethrin (e.g. Pounce)
- Neonicotinoid: Belay (clothianidin)
- Carbamate: Lannate (methomyl)
- Premixtures: Endigo ZC (Beta-cyfluthrin + thiamethoxam) and Leverage 360 (imidaclorpid + cyfluthrin)
Predators Seen in 2014

Assassin bug
Praying mantis
Spiders
Conclusions

- BMSB spread is slow – 4-5 yrs. from 1st intro
- Egg laying begins early May, extends for weeks
- Trapping inefficient in early season
- Check trees in Sept. (maple, pistache, privet, ToH)
- Two generations in Sacto.
- Many products may provide control (think IPM)
  - Edge spraying may be sufficient
- May not be as severe as in mid-Atlantic states
  - No neighboring forests, no soybeans
  - But pears – Old trees, rattail fruit
Questions?

Important Web Sites

StopBMSB.org
ucipm.ucdavis.edu
cesacramento.ucanr.edu