

# BMSB in the Utah Agricultural Landscape: Abundance, Damage Characterization, and Impact

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## Utah Ag / Urban Interface



- BMSB established in urban areas
- Urban/suburban areas are in close proximity to agriculture
- First crop damage in Utah - 2017



## Stink Bug Feeding



## Stink Bug Feeding Damage



Photo by Lori Spears



Photo by Cami Canon



Photo: Tracy Leskey



Photo: Yan Wang

## Overview

- Will BMSB feed on all stages of tart cherry and peach?
- What does damage look like, and does feeding lower fruit quality or yield?
- Is BMSB a major problem in the Utah agricultural landscape (yet)?



Photo: Barbara Whigg

## Tart Cherry



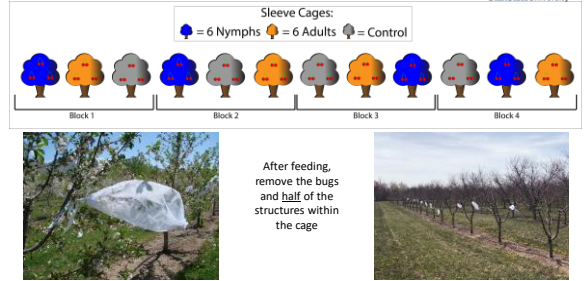
- Unstudied fruit in regards to BMSB preference and susceptibility
- BMSB readily feeds on and damages sweet cherries, making tart cherry a major concern.



- Allow BMSB to feed on all major development stages.
- Begin feeding at onset of fruit stage, and allow feeding for one week.

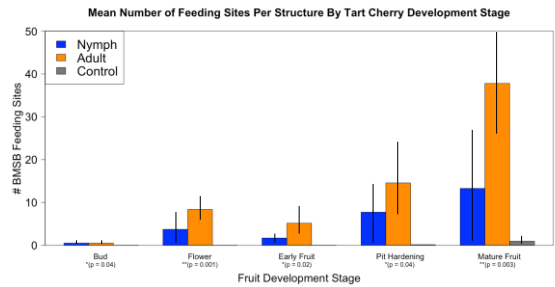


### Study Design



### Analyze for Immediate Damage

- Stain the removed structures with acid fuchsin (a protein stain)
- Count the total number of feeding sites per structure





Feeding hole on flower



Stilet sheath on young fruit



Stilet sheaths on near-mature fruit



Corking damage on mature fruit

- Harvest the remaining fruits at typical harvest time
- Assess parameters of fruit quality:



Mass



Diameter



External Appearance



Softness



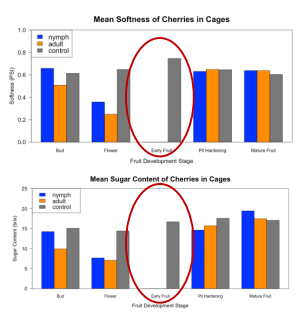
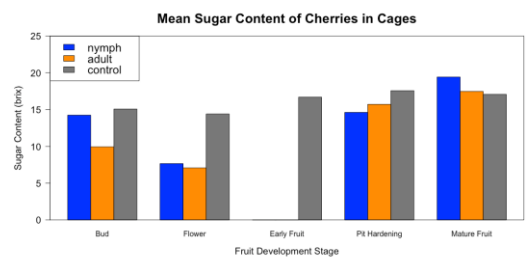
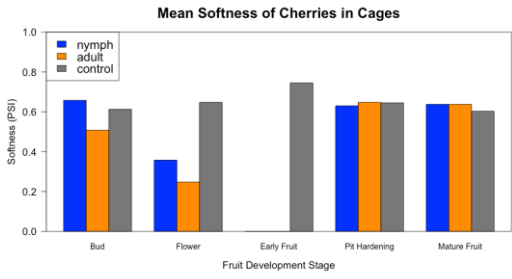
Sugar Content

3 general outcomes from feeding:

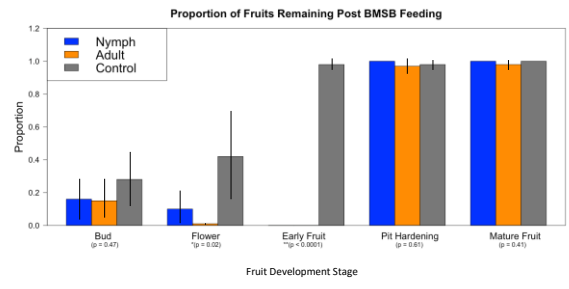


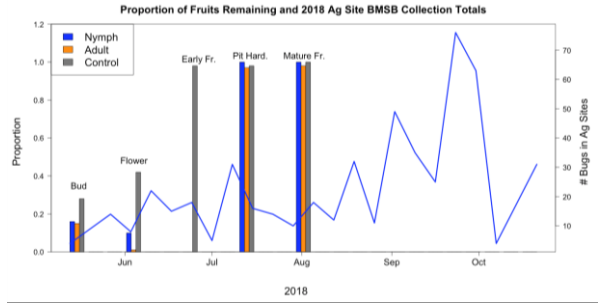
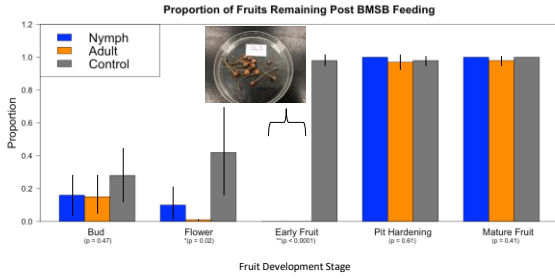
Analysis revealed no significant differences in quality of mature fruits remaining on trees at harvest





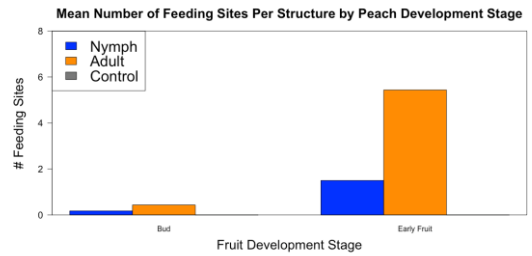
The nymph and adult feeding cages had no data for the early fruit stage.

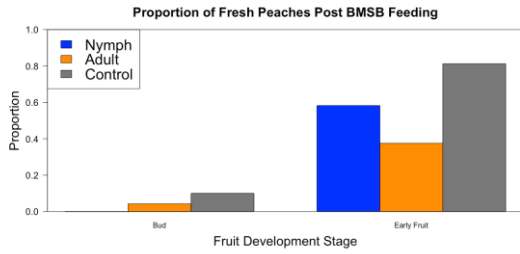




Peaches

- Major BMSB host in the U.S.
- Repeated cherry experiment on bud and early fruit stage





Harvested Peaches



Quality differences in Peaches

- Inconclusive from our data, but we know BMSB can cause heavy damage.



Photo: StopBMSB

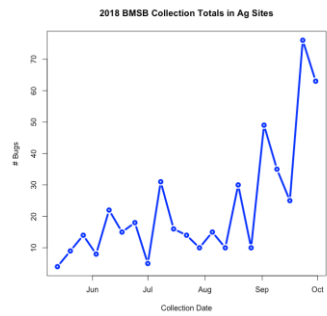
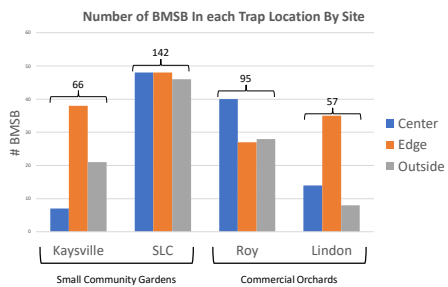
Where does BMSB “Hang Out?”

- Typically an edge-driven pest.
- Does it behave similarly in Utah?
- Traps were place at plot center, plot edge, and 5 – 10 meters outside of the production area.



### Scope of Trapping Study

- Utilized small community gardens and larger commercial orchards.





## Conclusions

- BMSB can potentially cause loss of tart cherry yield if they feed on young fruits.
- Not yet an economic concern.
- Monitoring for BMSB is critical.
- Remove catalpa nearby production areas?



AgBio Pyramid Trap ~ \$50



Beat Sheet Sampling

## Acknowledgements

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## Resources

utahpests.usu.edu

**WASH PESTS fact sheet** EXTENSION UtahStateUniversity

**Brown Marmorated Stink Bug**  
*Halyomorpha halys* (Stål)

Do You Know?

Stopbmsb.org

**BMSB Damage Gallery**

Click on a thumbnail image for a larger version.