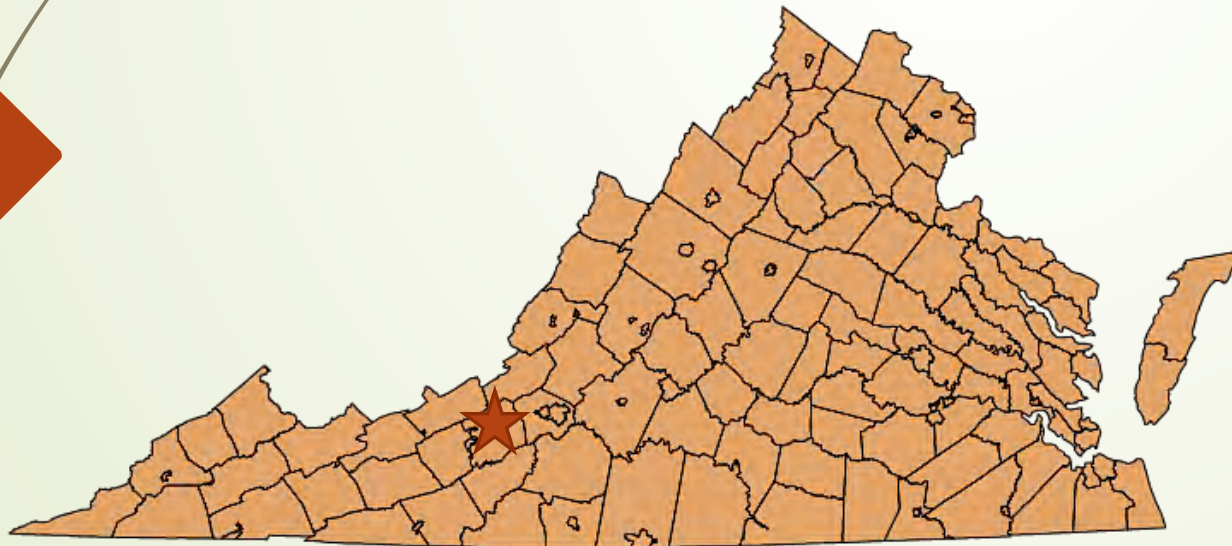


Brown marmorated stink bug oviposition on trees around Blacksburg, VA

Adam J. Formella and Thomas P. Kuhar



Background



- Egg masses have been found on catalpa, red bud magnolia, serviceberry and red maple (Bakken et al., 2015).
- Egg masses are typically found between the first of June and late August (Basnet et al., 2015).

Background

- *Trissolcus japonicus* is an egg parasitoid of BMSB being considered for classical biological control.
- *T. japonicus* is currently in quarantine, but has been found naturally in MD, VA, WA and NY.



Natural Born Stink Bug Killer Found in Washington State

October 23, 2015 by Entomology Today [Leave a Comment](#)



Since 2007, the U.S. Department of Agriculture has been directing studies of a tiny Asian wasp called *Trissolcus japonicus*. These wasps are parasitoids of the brown marmorated stink bug (*Halyomorpha halys*), which has caused millions of dollars in damage to fruit orchards since it was discovered in the U.S. less than two decades ago. Researchers [...]

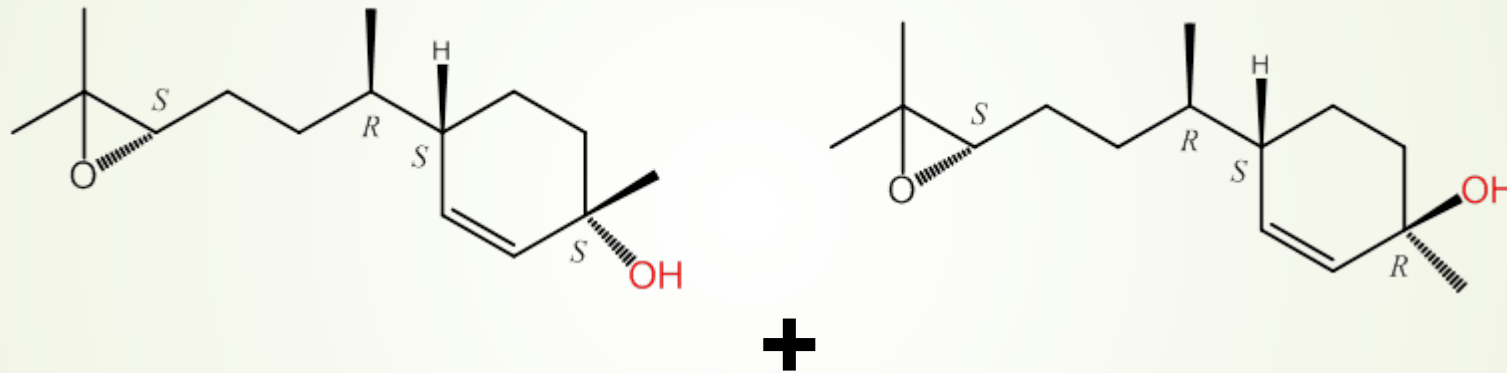
Filed Under: [Entomology News](#) Tagged With: [biocontrol](#), [biological control](#), [brown marmorated stink bug](#), [Halyomorpha halys](#), [Parasitoid wasp](#), [Trissolcus japonicus](#)



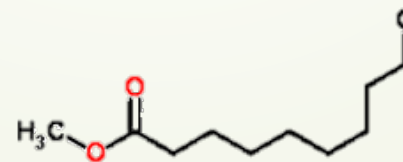
Background

Main component of BMSB aggregation pheromone
(3*S*,6*S*,7*R*,10*S*)-10,11-epoxy-1-bisabolen-3-ol

Minor component of BMSB aggregation pheromone
(3*R*,6*S*,7*R*,10*S*)-10,11-epoxy-1-bisabolen-3-ol



MDT

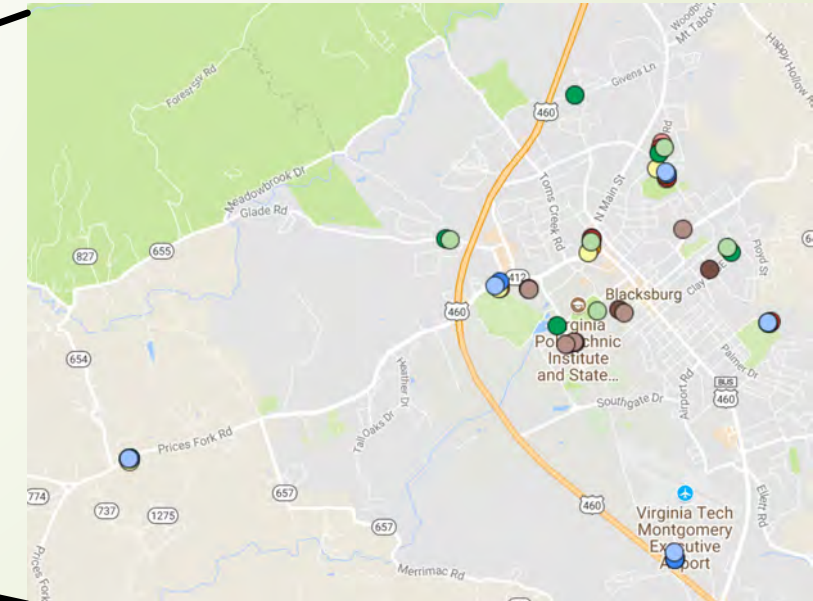
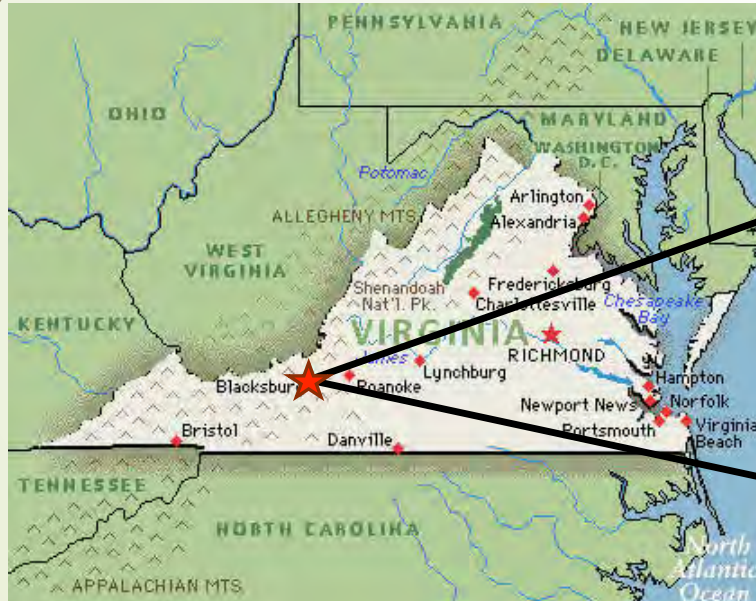


- Trécé Pherocon BMSB aggregation lures have been used to trap both nymph and adult BMSB.



Question

- Is there a difference in the number of egg masses found among tree species common to Blacksburg, VA?
- Is there a difference in the number of egg masses in trees with aggregation lures versus trees without lures?



Materials and Methods



- Five tree species: Catalpa, Redbud, Red Maple, Serviceberry, Southern Magnolia.

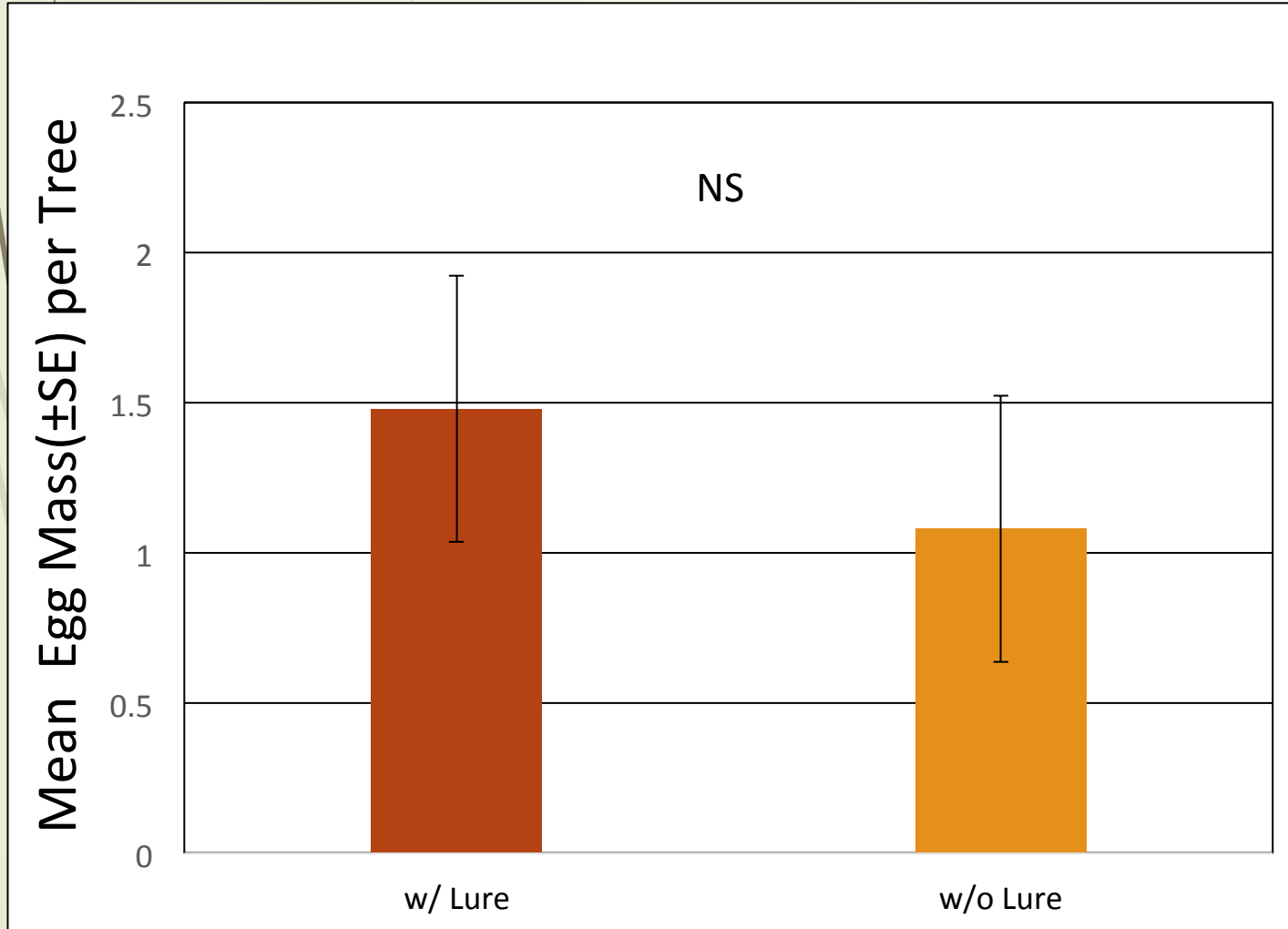
- Ten trees of each species (five w/ and five w/o lure).



- Searched at eye level for two minutes.

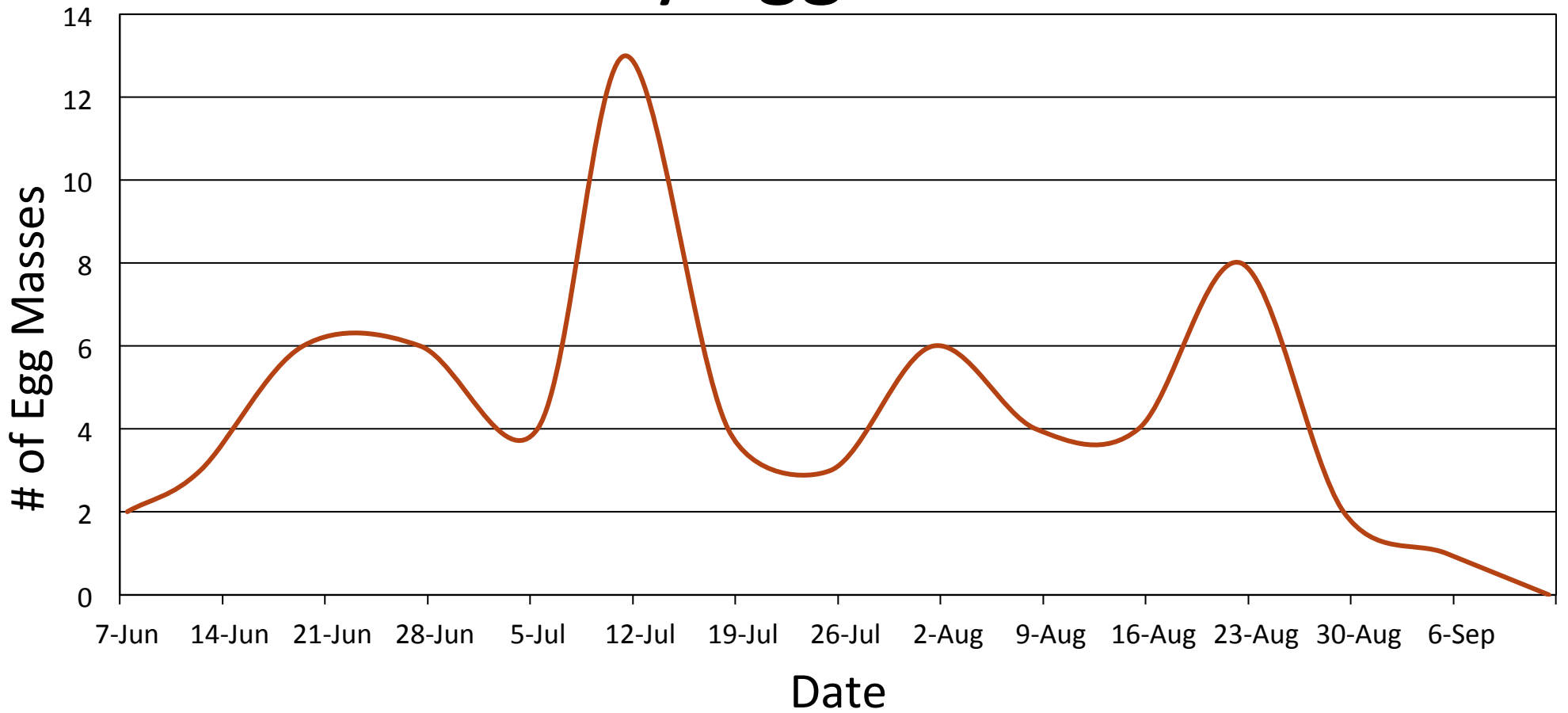


Effect of Lure on Egg Density

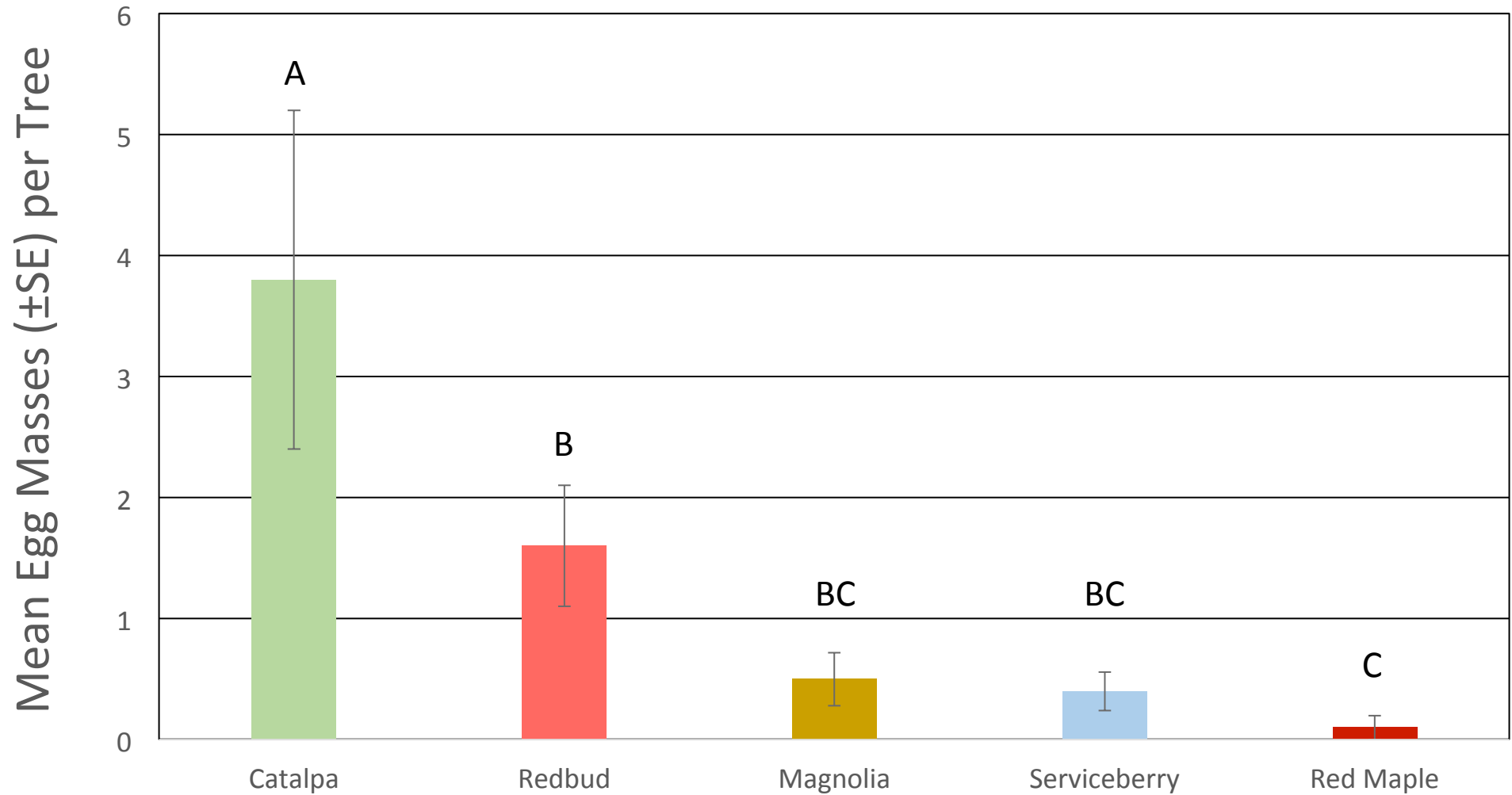


- Least squares mean
 $p = 0.5270$
- Repeated measures ANOVA between tree species, $p = 0.3740$
- Repeated measures ANOVA within tree species, $p = 0.2767$

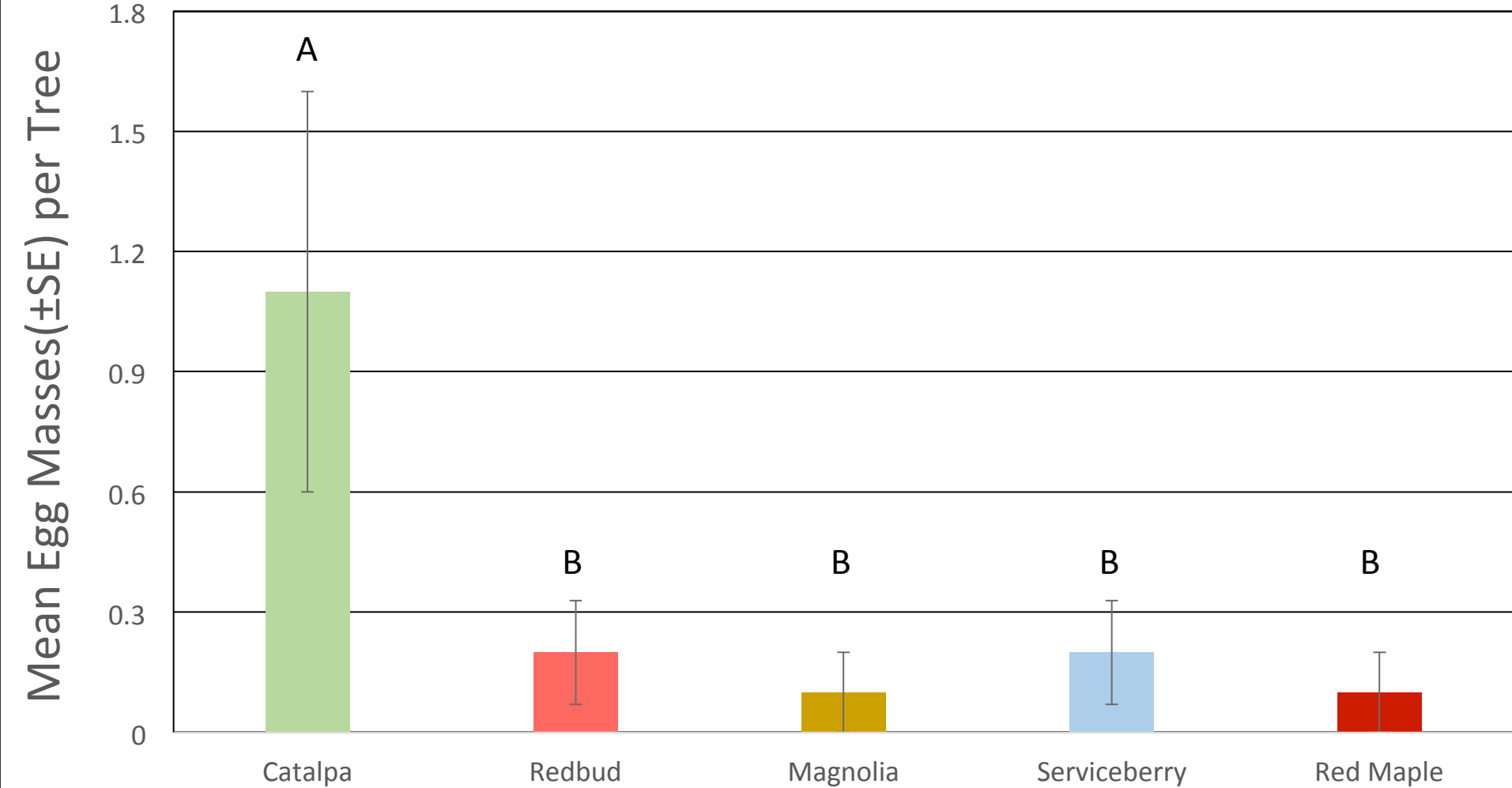
Weekly Egg Masses



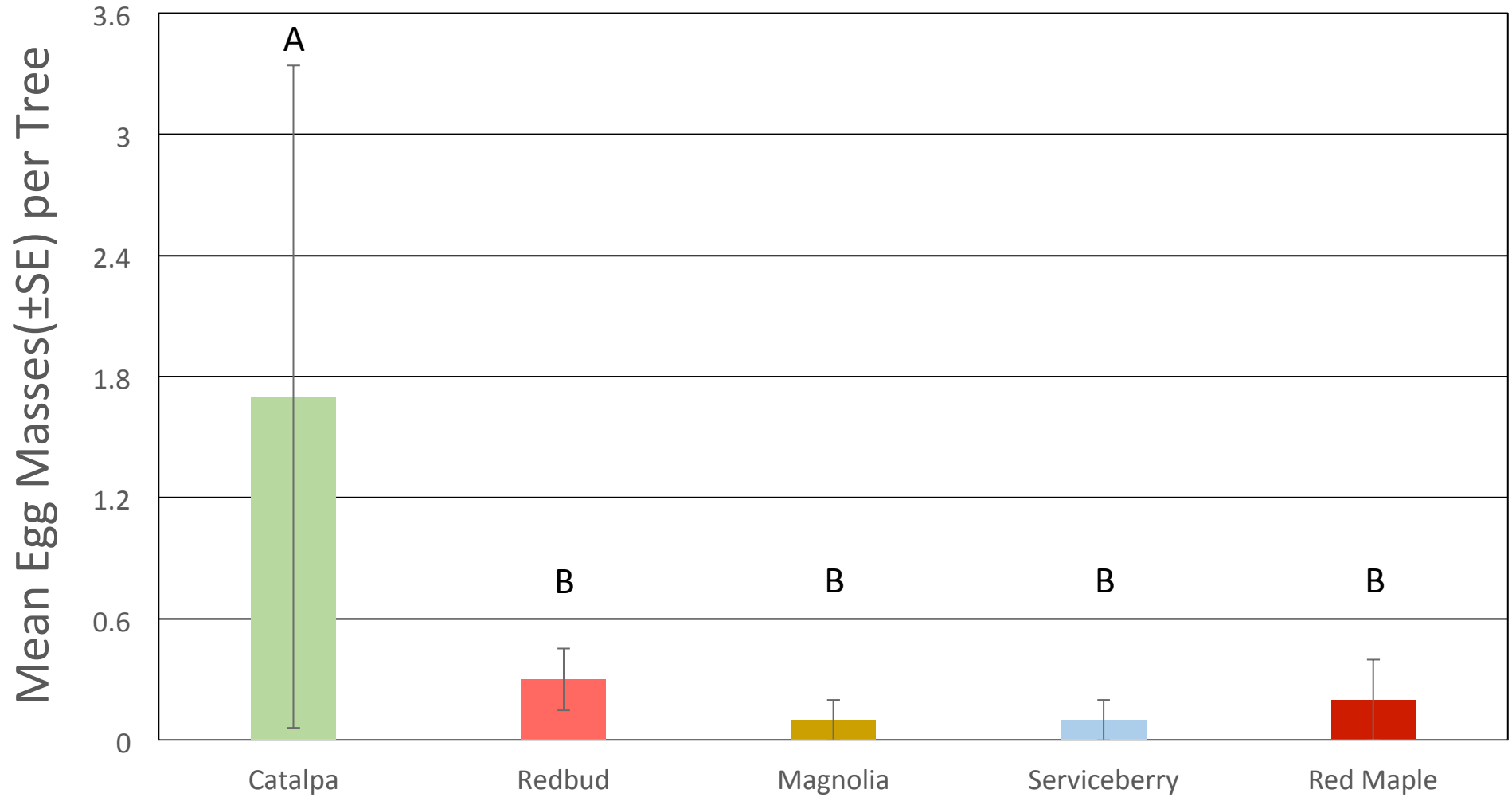
Cumulative Egg Mass



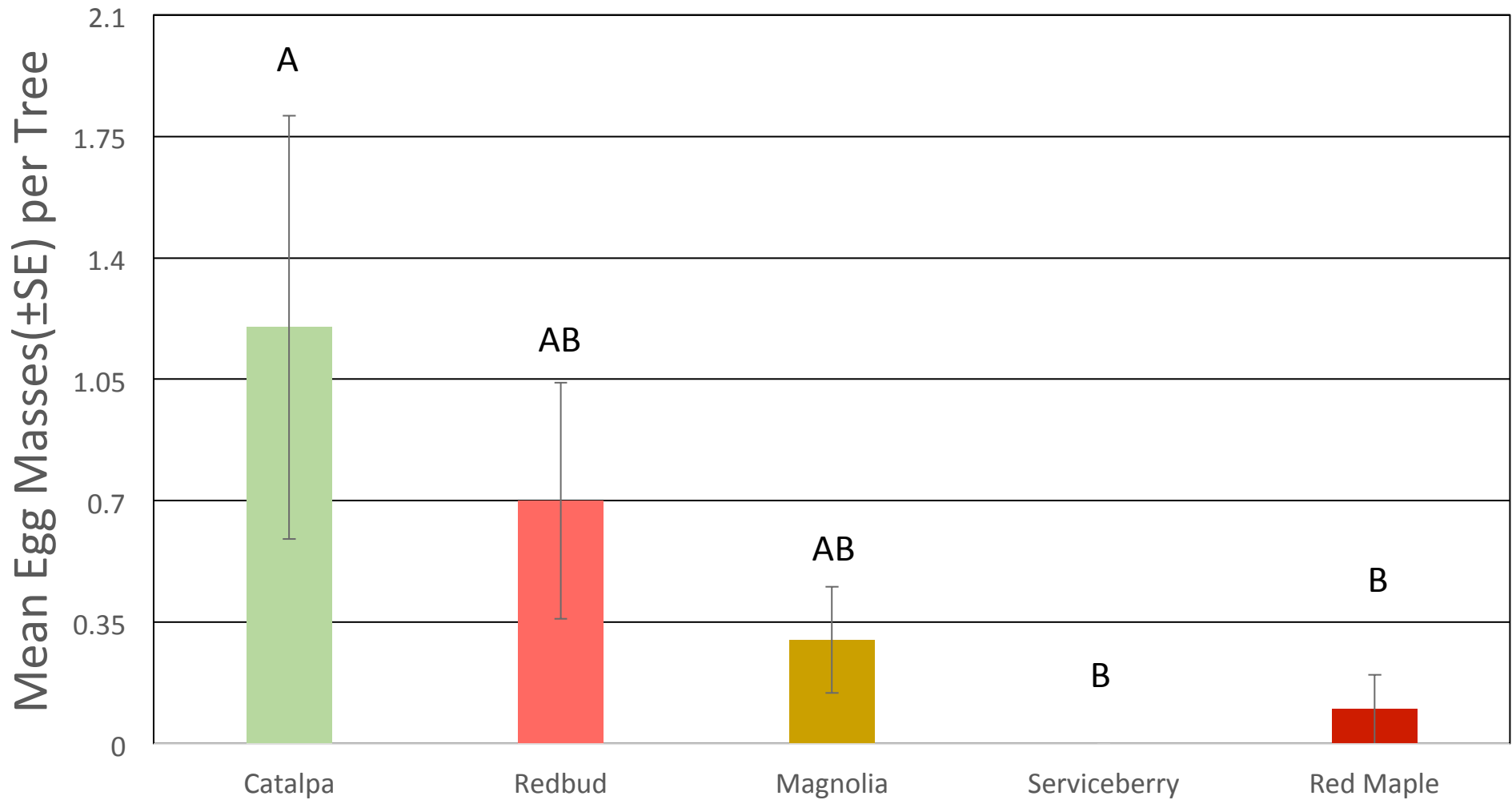
June



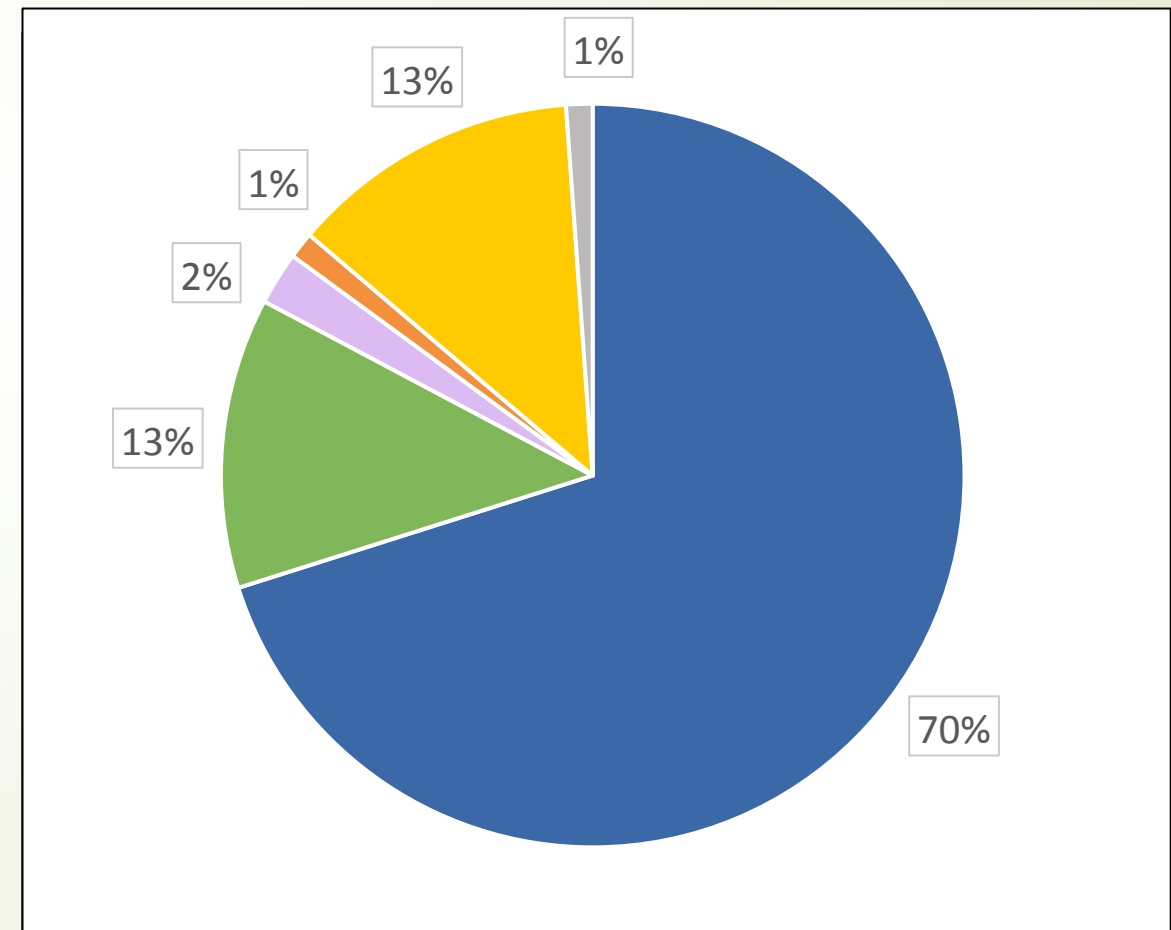
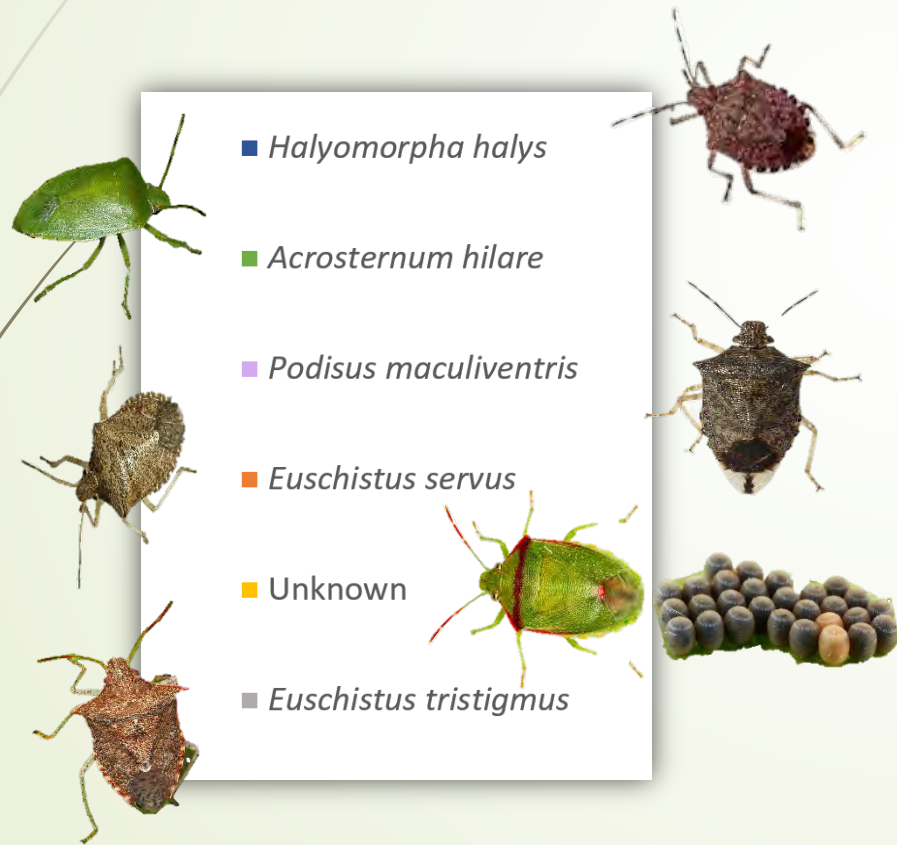
July



August














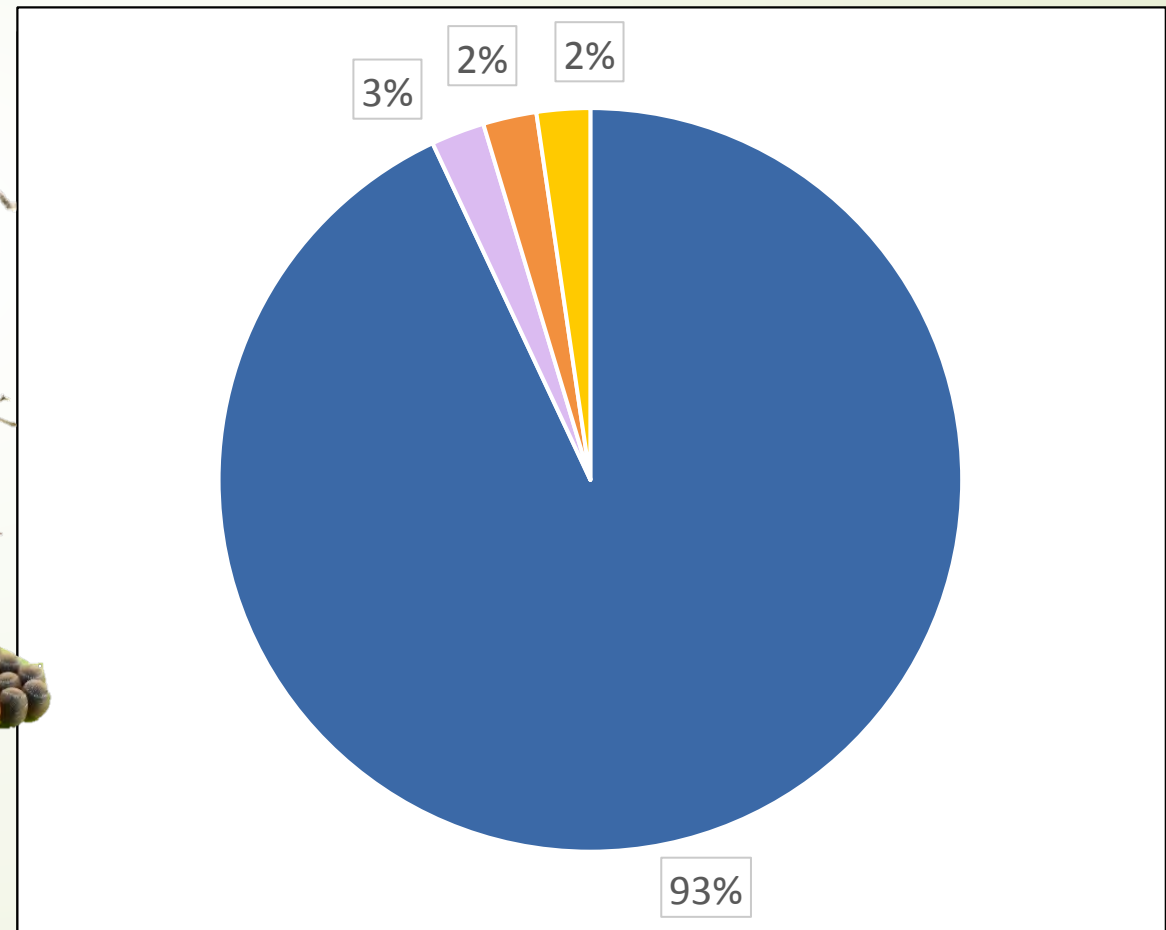
Stinkbug Population Proportions



Catalpa













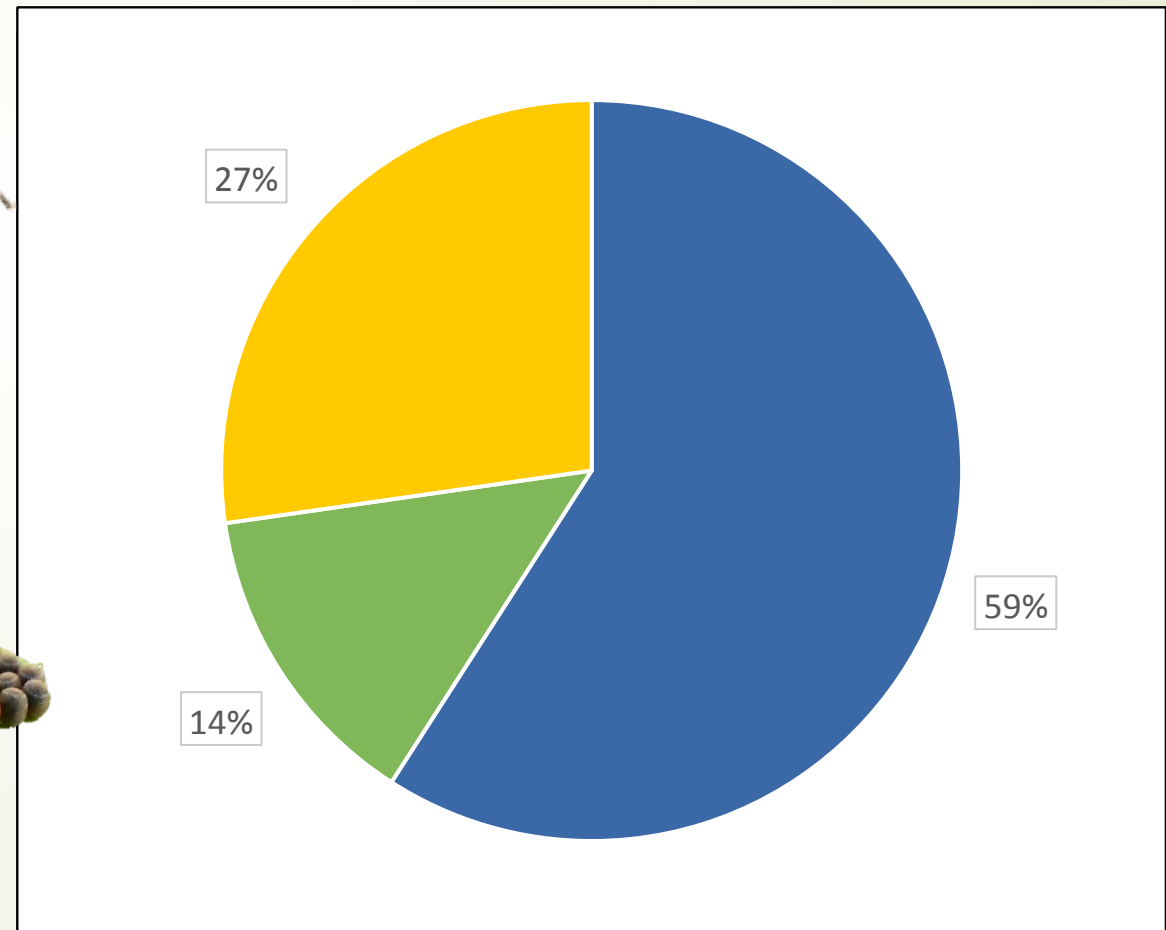
-  *Halyomorpha halys* 
-  *Acrosternum hilare* 
-  *Podisus maculiventris* 
-  *Euschistus servus* 
-  Unknown 
-  *Euschistus tristigmus*



Redbud



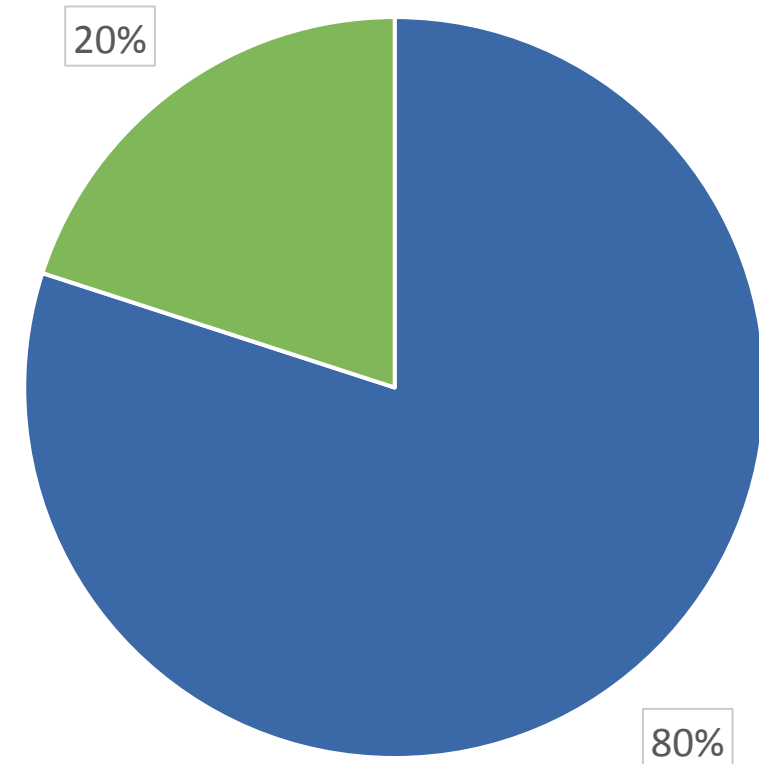
-  *Halyomorpha halys* 
-  *Acrosternum hilare* 
-  *Podisus maculiventris*
-  *Euschistus servus*
-  Unknown 
-  *Euschistus tristigmus* 



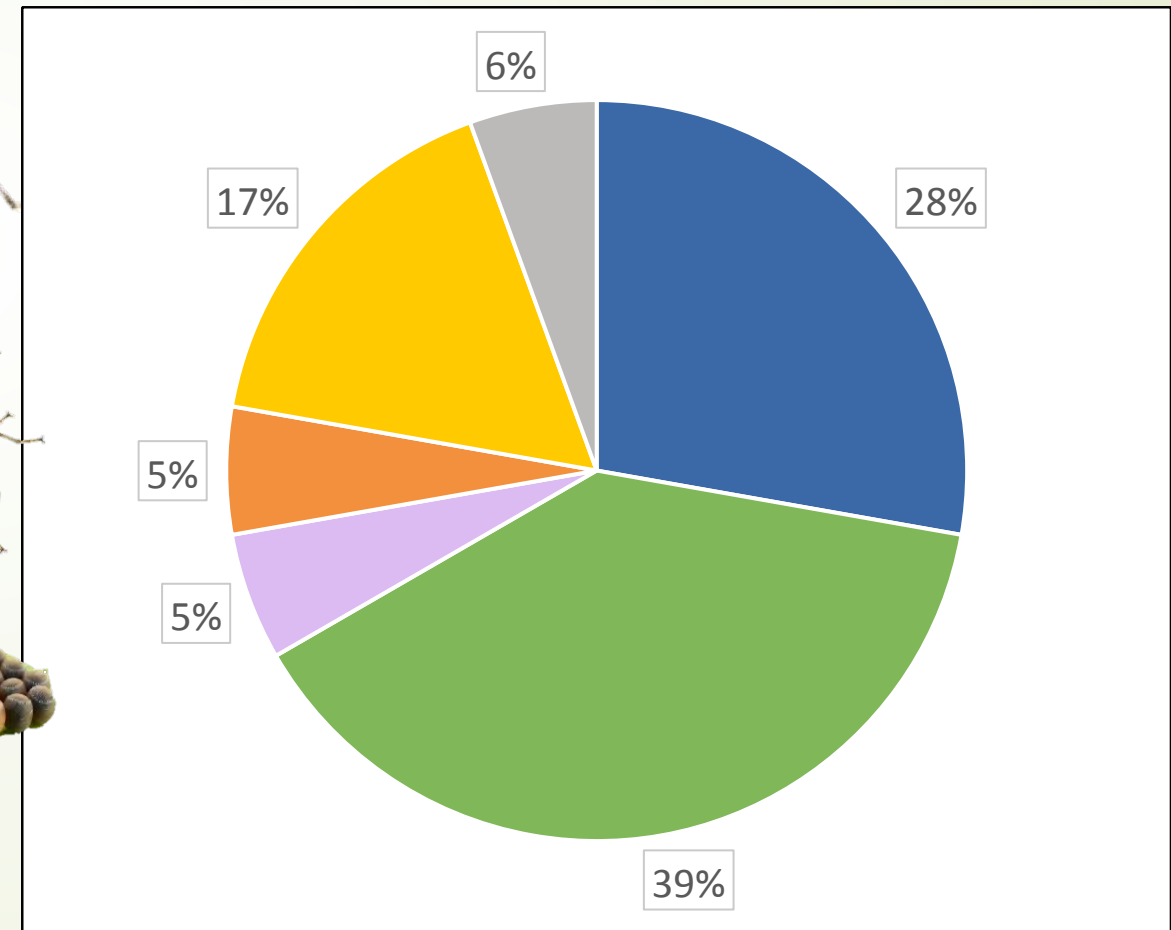
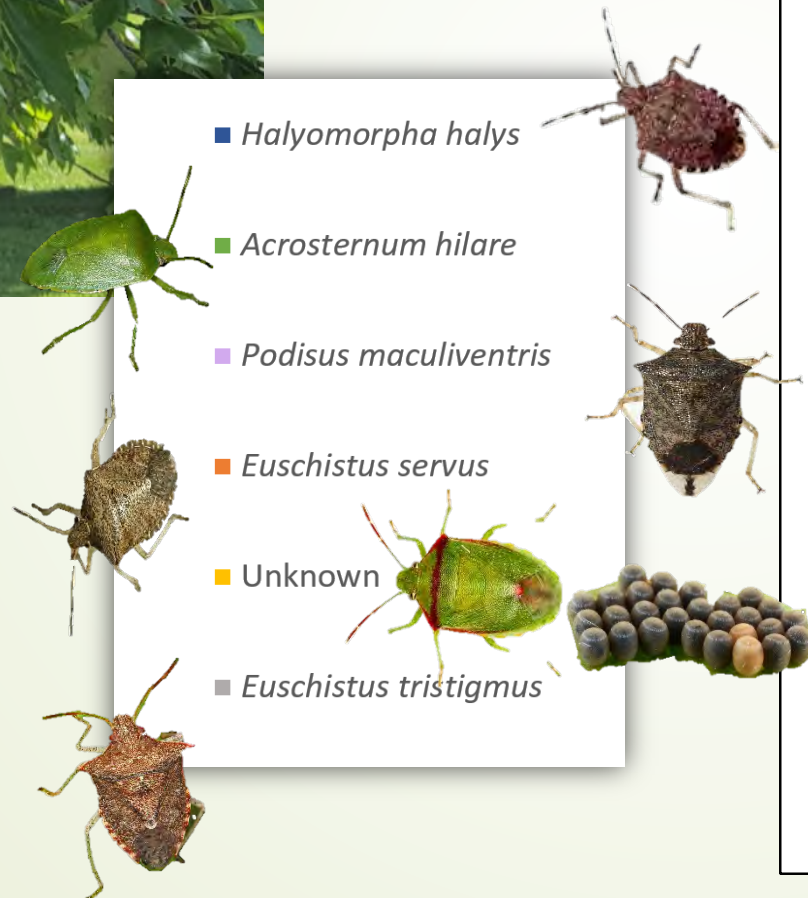
Serviceberry



- *Halyomorpha halys*
- *Acrosternum hilare*
- *Podisus maculiventris*
- *Euschistus servus*
- Unknown
- *Euschistus tristigmus*



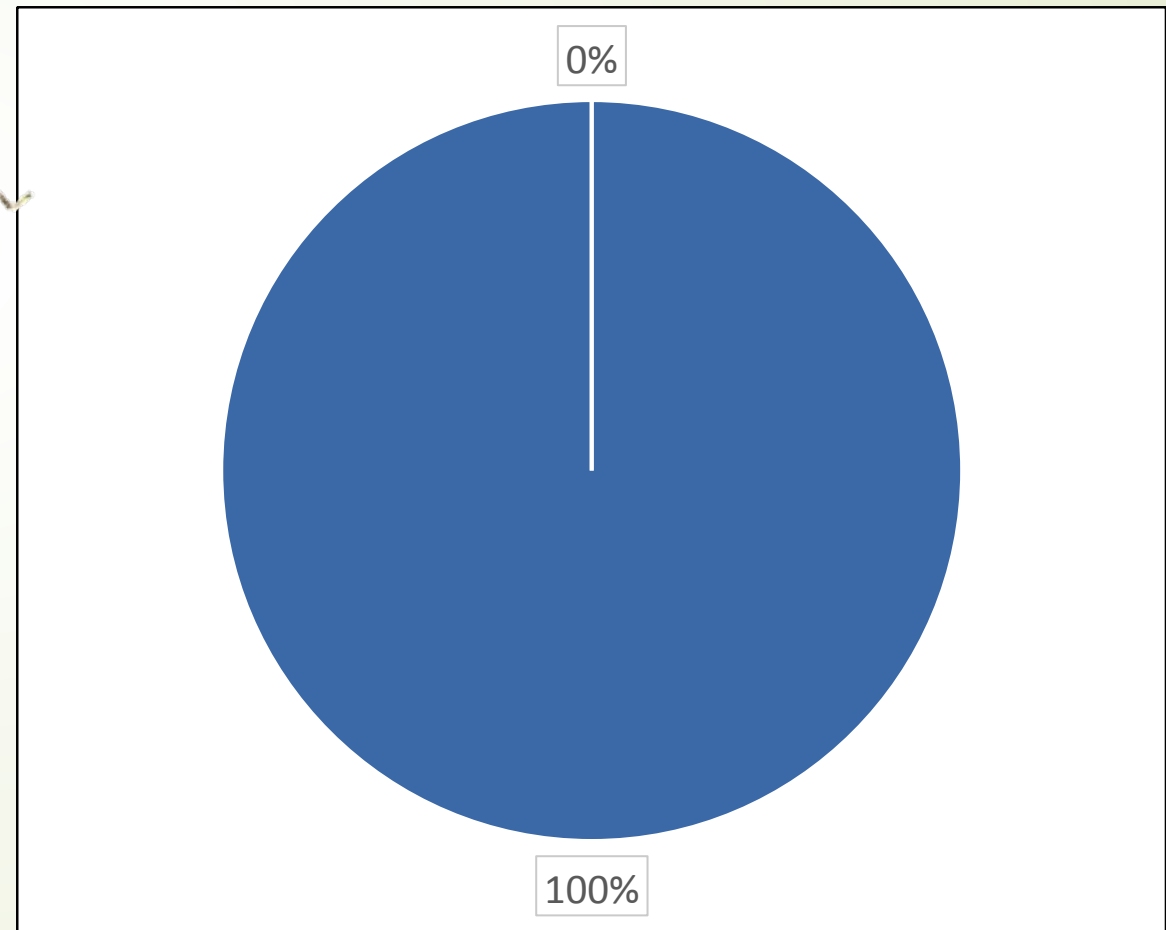
Red Maple





Magnolia

- *Halyomorpha halys*
- *Acrosternum hilare*
- *Podisus maculiventris*
- *Euschistus servus*
- Unknown
- *Euschistus tristigmus*



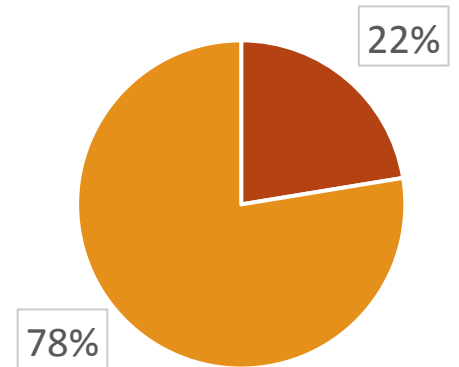
Parasitoid Data

- Total egg masses collected: 116.
- Total emerged parasitoids: 324.
- Total unhatched eggs: 164



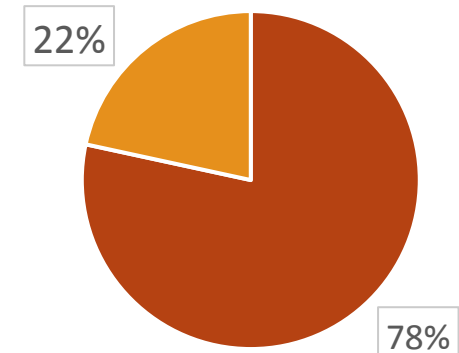
Egg Masses

- Parasitized/Unhatched
- BMSB Hatched



Emerged Parasitoids

- Anastatus reduvii
- Anastatus mirabilis



Acknowledgments



The Kuhar Lab

Funding was provided by the NIFA grant:
USDA-NIFA SCRI 2016-51181-25409.



Questions?

