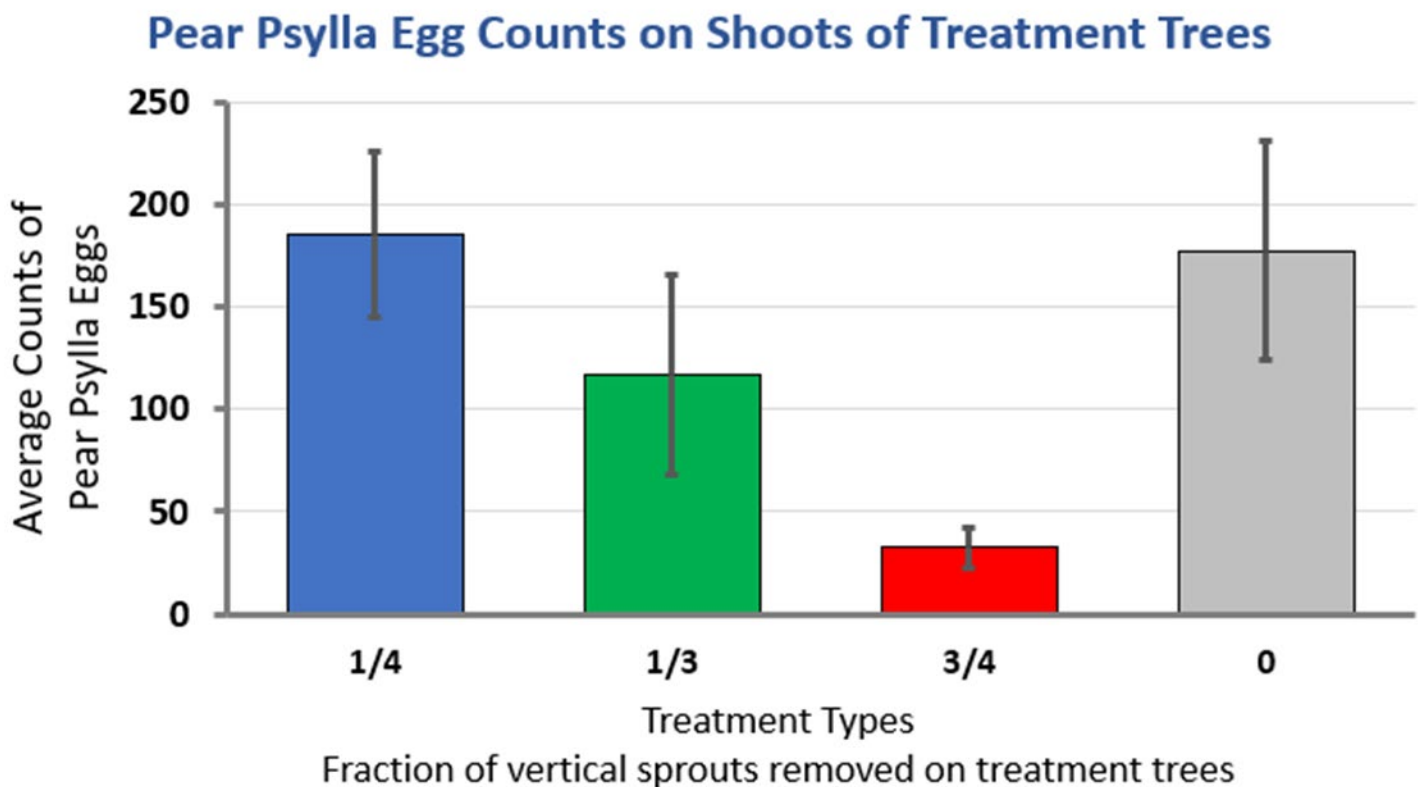


4a. Pear psylla experiment

Maxwell Francke

Testing the viability of pruning vertical 'watersprouts' on pear trees to control the pest insect Pear Psylla

- Twenty-four trees were each assigned one out of four treatments- Either 1/4, 1/3, 3/4, or no watersprouts removed.
- Watersprout removal is expected to reduce populations of pear psylla which are attracted to the soft vegetation for feeding and laying eggs.
- Additionally, we are assessing if there is any increased risk in fireblight caused by pruning injury.
- Hours pruning in relation to tree size and number of people was also recorded to test if it is a timely, financially viable means of management.
- We are still collecting data, analysis will be completed by the start of fall
- Figure below shows egg counts for the first data sample 6/10/22, there may be significant difference between 0 and $\frac{3}{4}$ watersprouts removed.



4b. Is the Samurai Wasp, an enemy of the Brown Marmorated Stink Bug, present in Massachusetts?

Mateo Rull



Overview

- The Brown Marmorated Stink Bug (BMSB) constitutes a multi-million-dollar threat to large-scale agriculture and small-farm economies.
- A lack of local enemies in the U.S. has allowed the BMSB to spread across 46 states, including Massachusetts (MA).
- In its native Asia, the Samurai Wasp (SW) kills up to 80% of BMSB eggs, but it is unknown whether it is present in MA.

How the Samurai Wasp controls BMSB populations

- Chemical cues attract the wasps to freshly laid BMSB eggs.
- Mated female wasps penetrate egg's shell and deposit their eggs, killing the developing stink bug larva as their own larvae develop.
- If present in MA, the SW could be used as a *biological control* agent, so ongoing efforts by the UMass Amherst Fruit Extension team aim to lure and identify this beneficial parasitoid wasp.

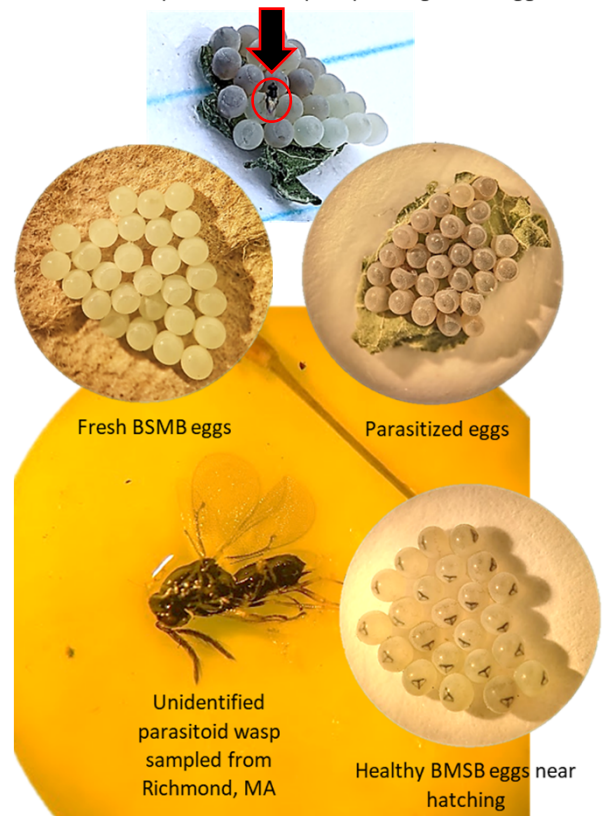


Samurai Wasp emerging from BMSB egg (top)
Lateral view of female SW adult (bottom)

Adapted from Talamas et al., 2015



Unidentified parasitoid wasp ovipositing BMSB eggs



Fresh BMSB eggs

Parasitized eggs

Unidentified
parasitoid wasp
sampled from
Richmond, MA

Healthy BMSB eggs near
hatching