

Brown Marmorated Stink Bug Monitoring in Stanislaus County Cling Peach Orchards

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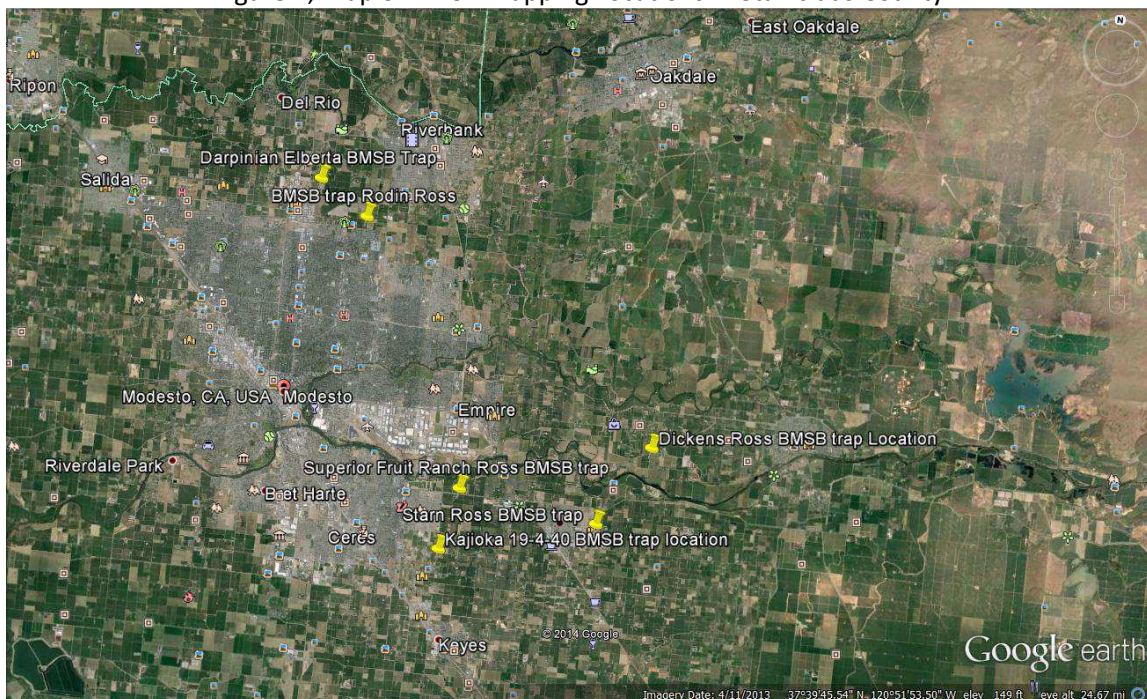
Purpose:

The brown marmorated stink bug (*Halyomorpha halys*) (BMSB) originated in East Asia and was first identified in the US in Pennsylvania in 2001. It has now spread to over 40 states. A large BMSB population was discovered in Midtown Sacramento in early Sept. 2013, and subsequent surveys have shown that they now infest all of downtown and midtown Sacramento, as well as areas near Yuba City. An unconfirmed report of BMSB also occurred in the city of Modesto during the summer of 2013. During the same time, many North San Joaquin Valley cling peach growers were reporting unidentified insect feeding damage on several late harvested cling peach varieties. This resulted in substantial losses in some orchards. Some USDA graders blamed the damage on “stink bug”.

Materials & Methods:

Beginning in April 2014, six peach orchards in Stanislaus County were monitored for BMSB. Because BMSB populations are most commonly spread over long distances by vehicles, new infestations are often discovered in or near residential areas. Therefore most of the monitored orchards were adjacent to or near urban areas (Fig. 1). Some of the monitored orchards reported having the “unidentified” damage in 2013.

Figure 1, Map of BMSB Trapping Locations in Stanislaus County



Monitored orchards were on Kiernan Road in North Modesto (cv. Faye Elberta), Claratina Road in East Modesto (cv. Ross) (Figure 2), Hopper Road in Waterford (cv. Ross), Faith Home Road in Ceres (cv. 19-4-40), Gilbert Road in Ceres (cv. Ross) and Geer Road in Hughson (cv. Late Ross) (Fig. 3).

Figure 2. Tony Rodin (cv. Ross) Orchard, North Modesto

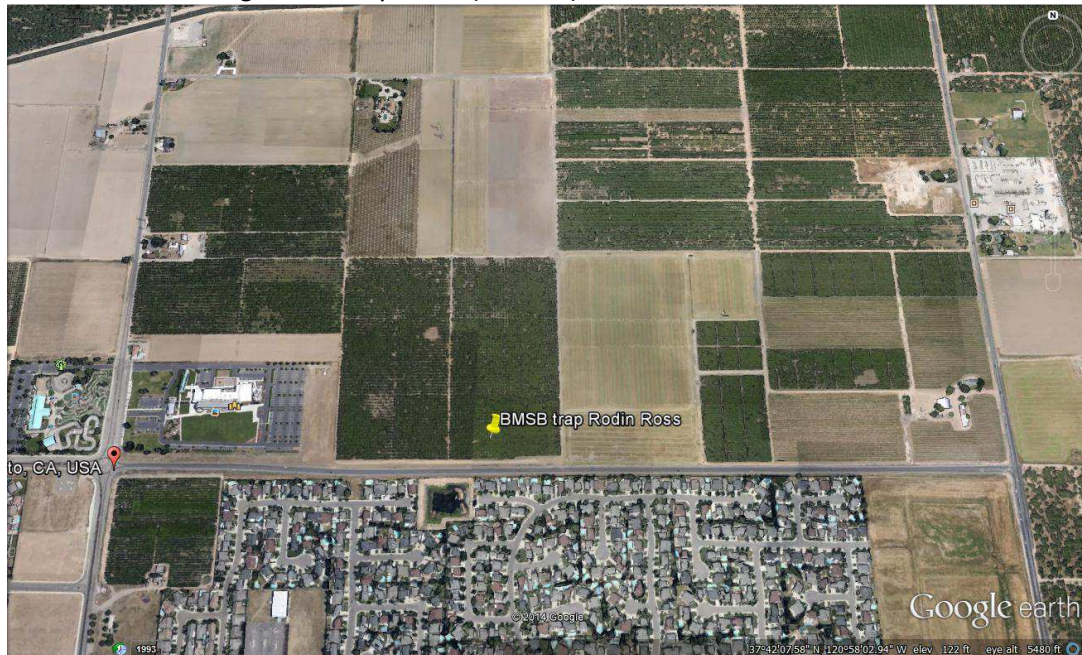
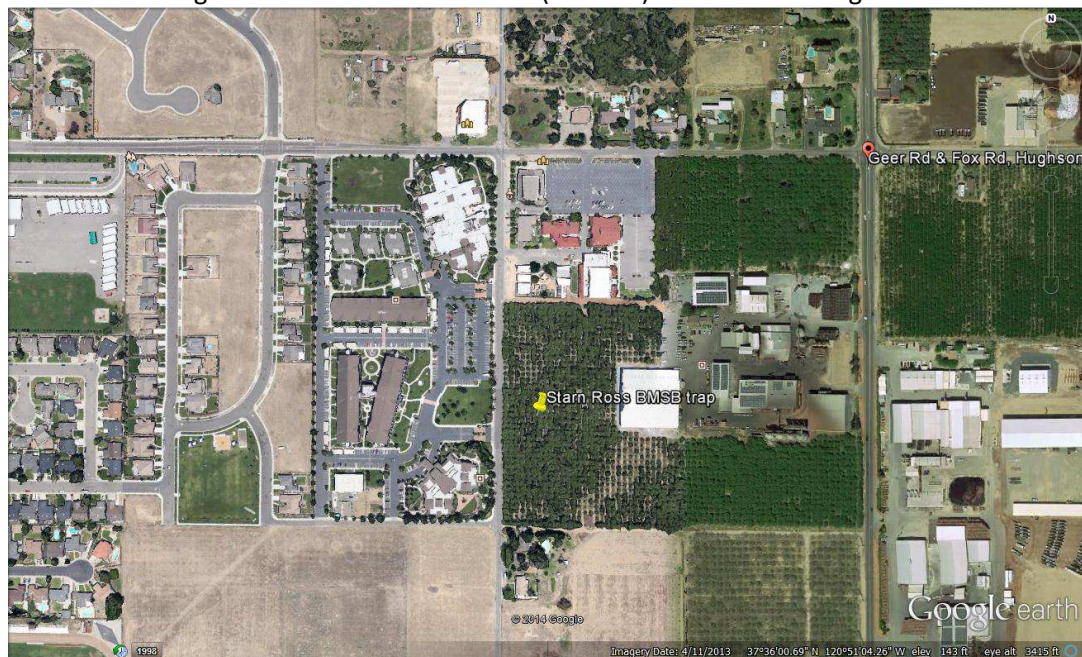


Figure 3. Darrell Starn Orchard (cv. Ross) Monitored in Hughson



Orchards were monitored once per week from April through September. Monitoring consisted of BMSB pheromone traps, five-minute timed searches, beat tray samples and fruit inspection. Pheromone traps were four-foot tall black corrugated pyramids (Fig. 4) with an inverted, clear plastic contained on top (Fig 5). Two lures were placed inside each container: a BMSB aggregation pheromone lure (100 mg) and a lure containing the synergist methyl decatrienoate (MDT, 66 mg; AgBio, Inc.). The plastic container has an entry cone opening allowing the stink bugs to crawl in but it is difficult for them to find their way back out.

Figs. 4 & 5. BMSB traps with green cone and pheromone lures.



In addition to pheromone trapping, five minute searches were conducted by slowly walking through each block and inspecting fruit, leaves and branches for signs of stink bugs. Limbs were gently beaten with a padded wooden handle and dropping insects were caught on a tray and inspected. Captured stink bugs were transported to the Stanislaus UCCE lab for close inspection and identification.

A small number of stink bugs were captured in three of the seven orchards throughout the season, primarily in the pheromone traps. All captured stink bugs were identified as Consperse Stink Bugs and not BMSB. Very little stink bug fruit damage was detected in any of the orchards (Fig 6.). In one orchard, a substantial amount of fruit damage was seen, most likely from early thrips feeding (Fig. 7).

Fig. 6. Gum balls from stink bug feeding



Fig. 7. Early season thrips feeding injury



Table 1. Stink Bug Captures							
Date	Rodin Ross 1 Claratina West	Rodin Ross 2 Claratina East	Darwinian Fay Elberta Kiernan Red.	Superior F. R. Ross Gilbert Rd.	D. Starn Late Ross Euclid Rd.	Dickens Ross Hopper Rd	Kajioka 19-4-40 Faith Home
4-22	0	0	0	0			
4-29	0	0	0	0		start	
5-6	2 CSB	0	0	0		0	
5-12	1 CSB	0	0	0	start	0	
5-19	0	0	0	0	0	0	
5-27	0	0	0	0	0	0	
6-2*	0	0	0	0	0	0	
6-9	0	0	1 CSB (trap)	1 CSB (tree)	0	0	start
6-16	0		0	0	0	0	0
6-23	0		0	0	0	0	0
6-30	0		0	0	0	0	0
7-7	0		0	0	0	0	0
7-14	1 CSB		0	2 CSB	0	0	0
7-21	0		0	0	0	0	0
7-28	0		0	0	0	0	0
8-4	0		0	0	0	0	0
8-11	0		0	0	0	0	0
8-18	0		0	0	0	0	0
8-25	0		0	0	0	0	0
9-2	Orchard removed		6 CSB (trap)	0	0	0	0
9-8			2 CSB (trap)	0	0	0	0
9-15			0	0	0	0	0
9-22			0	0	0	0	0
9-29			0	0	0	0	0

Conclusions. No signs of brown marmorated stink bugs were detected in any of the monitored orchards. Five-minute searches and beat tray sampling, while detecting a few consperse stink bugs, never detected any BMSB. Pheromone traps for BMSB are not as effective as they are for many other insect species. However, consperse stink bugs were occasionally caught in the traps, even though populations were well below economic damaging levels. This may indicate that if BMSB was present at a significant level, we would have found some. It seems unlikely that the damage caused in 2013 was due to BMSB. Due to the presence of this insect in other areas of California, it may be advisable for pest control advisors to place their own pheromone traps in peach orchards throughout the area for early detection of the arrival of BMSB in the North San Joaquin Valley.