

Status of Monitoring Tree Fruit Orchards for Invasive Insects in Michigan

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Background

The Brown Marmorated Stink Bug (BMSB), *Halyomorpha halys* and the Spotted Wing Drosophila (SWD) *Drosophila suzukii* are insects which are non-native threats to our Michigan tree fruit industry. Both insects were first found in Michigan in 2010. BMSB has been identified in the following counties: Berrien, Eaton, Genesee, Ingham, Lenawee and Monroe. SWD is present in at least 22 southern MI counties and was responsible for widespread damage to blueberries in 2012.

Monitoring

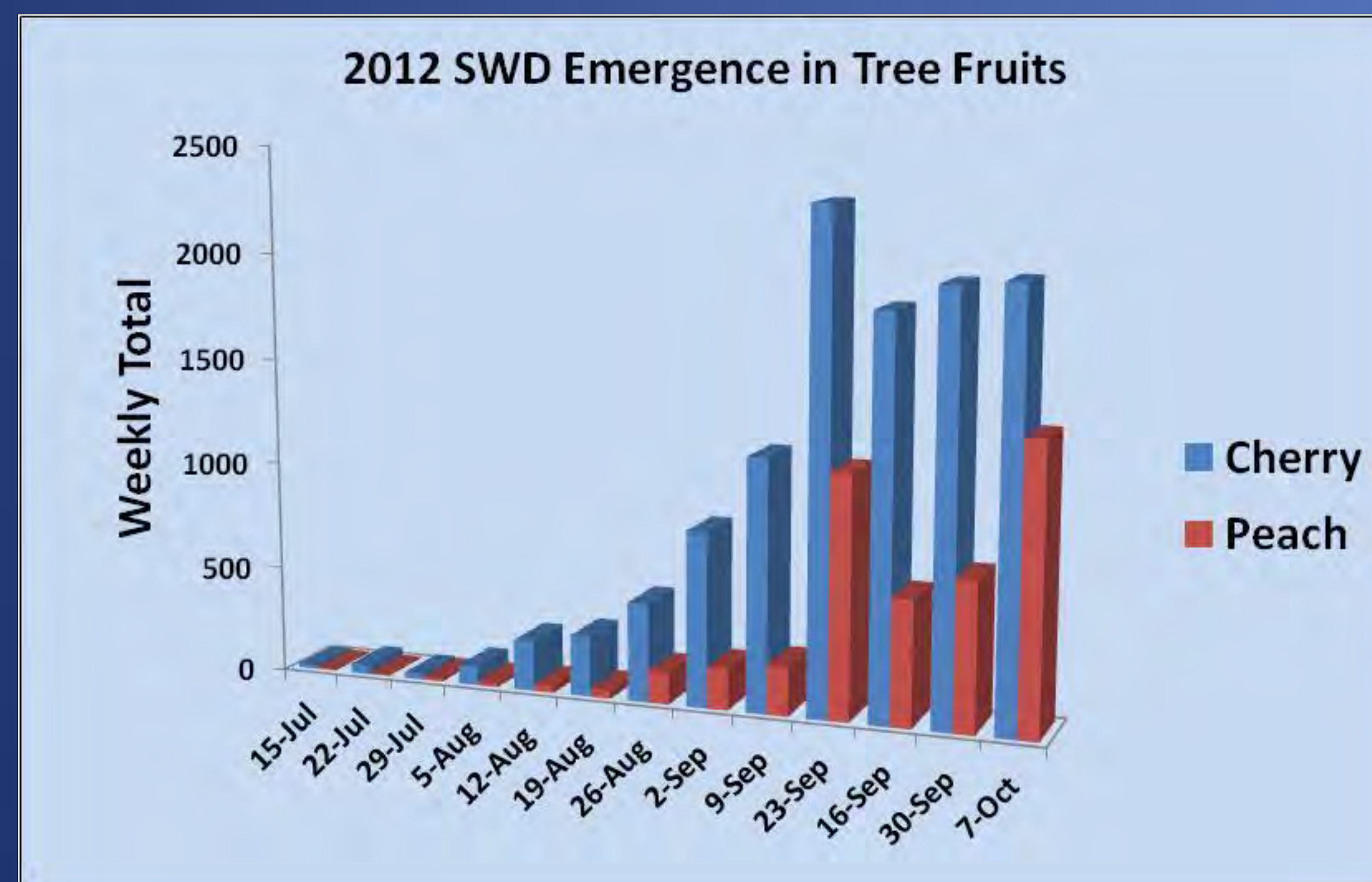
A network of blacklight traps designed to capture BMSB were deployed in or near tree fruit orchards (see map below) and monitored weekly throughout the summer and into the fall. Last year no BMSB were captured but in 2012 the traps were modified to be more efficient and 3 BMSB were collected. Homeowners also collected suspected BMSB and turned them in to the Michigan State University Diagnostic Services for positive identification. (Diagnostic Services, 578 Wilson Rd., Rm. 107, East Lansing, MI 48824-6469. Phone 517-355-4536.) SWD traps were placed in cherry and peach orchards to monitor seasonal abundance of the flies. SWD were found in cherry orchards just after harvest. They can be controlled by many of the insecticides used for cherry fruit fly management. SWD is present in peach orchards during harvest of many varieties. Growers should use monitoring to determine if a chemical management program is necessary.



A male SWD with prominent dark spots on the wings.



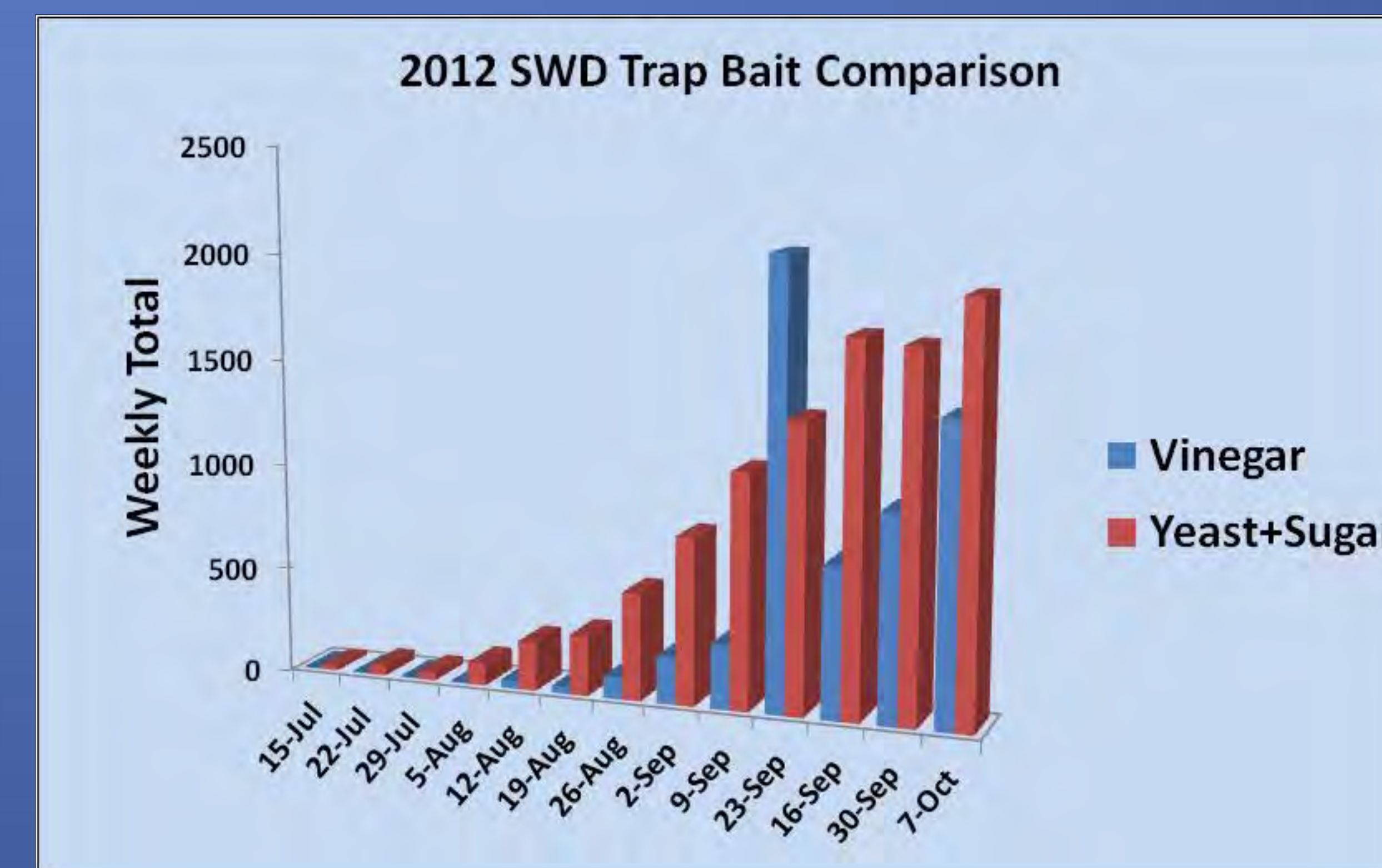
The adult BMSB resembles some of our native stink bugs.



Modified light trap for brown marmorated stink bug.

Research

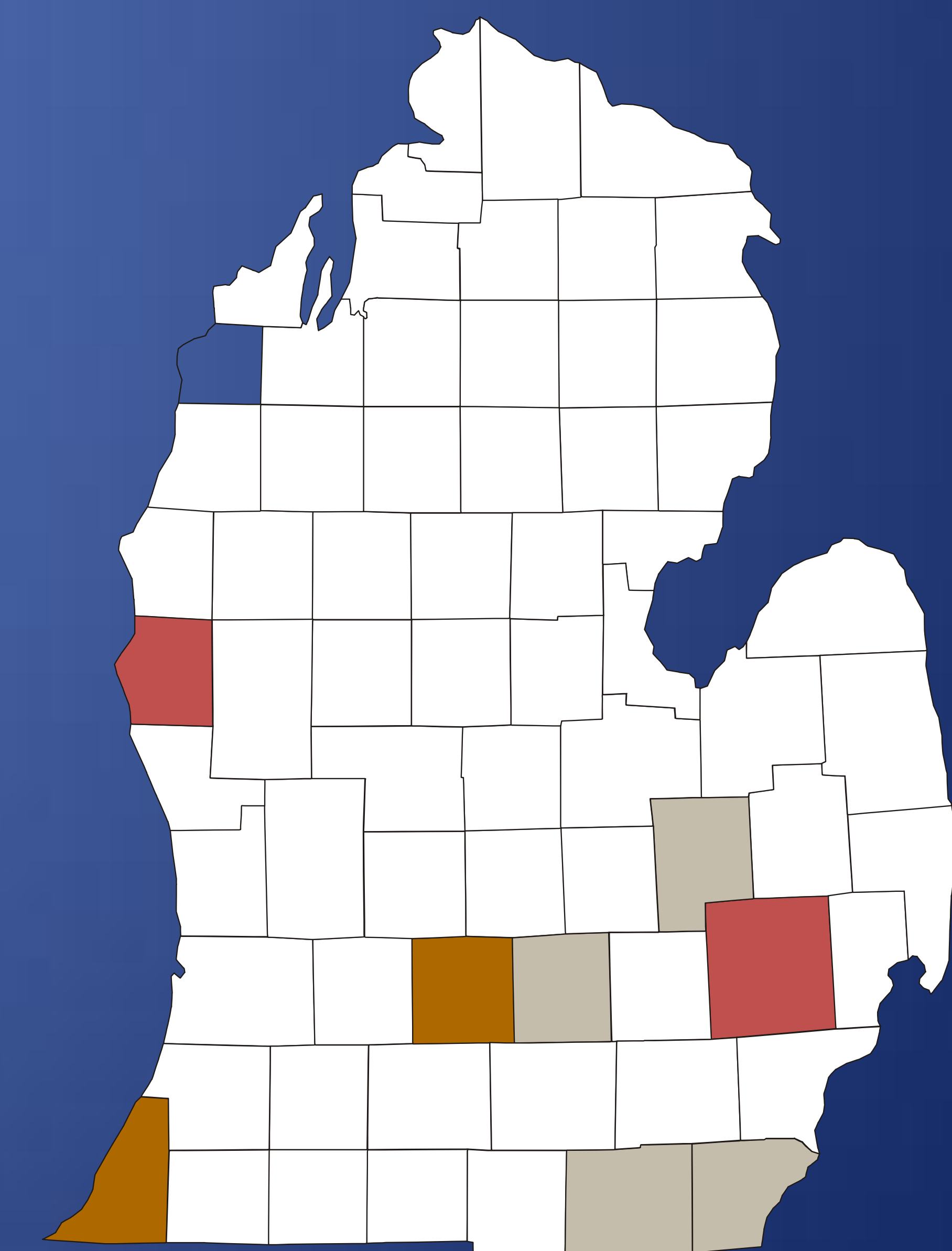
We compared the effectiveness of SWD traps using apple cider vinegar as the attractant to traps using a yeast and sugar bait (below). The yeast and sugar blend greatly outperforms the vinegar bait, with earlier detection of SWD as well as higher numbers captured throughout the season.



Spotted wing drosophila vinegar trap.



The female SWD can lay eggs in undamaged fruit due to her sharp, cutting ovipositor.



BMSB distribution in MI. Initial confirmed detection in 2010 (brown), 2011 (gray) or 2012 (red).