Northern Michigan FruitNet 2016
Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – October 11, 2016

CALENDAR OF EVENTS

11/9  SWD Summit
       NWMHRC, Please RSVP

01/17 - 01/18/17  2017 Orchard and Vineyard Show
                   Grand Traverse Resort

What’s New?

- Continued brown marmorated stink bug trap catches and some fruit damage in east Michigan

SWD Summit - SAVE THE DATE!

Michigan State University and Cherry Marketing Institute are hosting a third annual spotted wing Drosophila (SWD) Summit on November 9, 2016 at the Northwest Michigan Horticultural Research Center. This day-long meeting will bring together growers, researchers, consultants, processors, and other industry leaders to discuss the challenges of SWD during the 2016 and past field seasons. This pest has profoundly impacted the way we manage insects in cherries in Michigan. This meeting will be an in-depth discussion to continue to develop an industry approach to sustainably manage
SWD in Michigan cherries.

More information and the agenda will follow in the coming weeks. For now, we hope that you will save November 9th for the 2016 SWD Summit. We really want your input, so we hope you will be able to attend this important meeting.

Thank you!
NWMHRC and CMI

Please contact Jenn at 231-946-1510 or goodr100@msu.edu to RSVP for this event.

Agricultural Survey Responses Needed

Please forward the link on to other Leelanau growers who may have not filled out the survey yet. Here is the link for the agricultural survey: https://www.surveymonkey.com/r/9CX3VRP

Leelanau Peninsula Economic Foundation Technology Committee
Seeks Community Input!
High-speed Internet and broadband capabilities can no longer be considered a “luxury.” Indeed, Internet is considered a utility and a critical necessity for schools, families, libraries, business owners, and emergency services personnel.

The Leelanau Peninsula Economic Foundation (LPEF) Technology Committee has partnered with Connect Michigan to survey Leelanau County residents and stakeholders to identify needs and priorities. The survey will be helpful to efforts designed to identify areas lacking broadband access and for developing mechanisms to promote expansion of services via attracting additional providers.

Connect Michigan has worked with providers to identify Internet needs throughout Michigan. In the image below, the areas shaded in red represent un-served, or inadequately served Leelanau residents. Areas shaded in yellow, according to Connect Michigan, have at least some level of broadband availability. As depicted, significant portions of Leelanau County are without adequate service.

The Technology Committee’s Chair, Commissioner Patricia Soutas-Little, says, “Broadband is vital for so many businesses and residents. Leelanau County has such a diverse landscape, knowing current accessibility and resident needs, will help us plan for the future.”

The Committee is striving to have survey result tabulated in early September. Survey results will be used to develop action plans and work with potential providers to address gaps and improved service goals. The Survey is open until September 3 and only takes ten minutes to complete. You can take the survey as a resident, business owner, or as a designated representative of another organization. The survey is available online at https://www.surveymonkey.com/r/9CX3VRP - or a paper copy can be obtained from any library or by calling the Leelanau Peninsula Chamber of Commerce at (231) 994-2202. For additional information about this effort, contact Patricia Soutas-Little at (231) 218-8496.


Important management recommendations for growers who still have late ripening fruit to harvest. Damaged apples have been reported in Golden Delicious and other early ripening varieties harvested from trees at orchard margins.

Posted by Julianna Wilson, Larry Gut and Rufus Isaacs, Michigan State University Extension, Department of Entomology, MSUE News
Nymphs and adults caught in baited traps at edge of fruit and vegetable plantings and a few urban sites in the Lower Peninsula. Line indicates percent traps that caught any BMSB; squares indicate average number captured per trap in a given week.

This is the ninth and final report for 2016 of the Michigan State University Extension brown marmorated stink bug monitoring network. Last week, 29 nymphs and 808 adults for a total of 837 brown marmorated stink bugs were captured from 96 traps at 30 sites (see graph for season trend). With 42 percent of traps catching brown marmorated stink bugs this week, and nearly double the number caught, it is clear brown marmorated stink bugs are very active. This week was also the first time this season we caught brown marmorated stink bugs at orchards in southeast Michigan.

The majority of brown marmorated stink bugs caught in traps continue to be from Berrien (apple, grape, peach and urban), Kent (apple), Ottawa (apple), Saginaw (urban) and Van Buren (grape) counties. In addition, MSU Extension fruit educators have received calls and emails about damaged apples harvested within the last couple weeks. We also know that brown marmorated stink bugs are aggregating on the sides of homes and other structures in the process of seeking shelter overwinter.

In this final report of the season, we are including some important information for fruit growers who have late-season apples and grapes yet to be harvested.

**What to do if you still have late variety apples to harvest in 2016**
Brown marmorated stink bug nymphs and adults can cause damage in fruit and vegetable crops, but the damage will not be detected until weeks or even months later, especially in the case of fruit that is stored before being sold. In apples, damage to fruit from brown marmorated stink bug feeding can be confused with several disease or nutrient deficiencies, so it is important to involve your local MSU Extension fruit
educator to help determine what caused the damage or send samples to MSU Diagnostic Services.

While brown marmorated stink bugs are fairly easy to identify and distinguish from native stink bugs, they can be highly cryptic in orchards. They prefer the tops of trees and their coloring exactly matches tree trunks. Traps are easy to deploy and check, but the area of influence for a single baited trap appears to be relatively small, and not terribly efficient. Therefore, it is important to place them near the crop, and if using a Rescue brand trap, make sure the fins of the trap touch the trunk or post so nymphs are able to crawl up into it.

It is also important to combine trapping with other sampling methods such as jarring of upper branches of fruit trees over beating trays in orchard edges close to woodlots. Apple orchards adjacent to peach orchards are considered to be at high risk for brown marmorated stink bug feeding injury, because peaches are highly favored by brown marmorated stink bugs.

If you have apples that are still a couple weeks away from harvest and you have harvested early-season apples in adjacent orchards showing signs of damage, you may want to apply a full cover of an insecticide that is rated as being excellent against brown marmorated stink bugs below (Table 1). This would be considered a “rescue” treatment meant to prevent further injury from occurring this season.

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Active Ingredient</th>
<th>Class (Group)</th>
<th>PHI (days)</th>
<th>Relative efficacy against BMSB</th>
<th>Rate per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admire Pro</td>
<td>imidacloprid</td>
<td>neonicotinoid</td>
<td>7</td>
<td>G</td>
<td>2.8 oz</td>
</tr>
<tr>
<td>Assail 30 SG</td>
<td>acetamiprid</td>
<td>neonicotinoid</td>
<td>7</td>
<td>G</td>
<td>2.5 oz</td>
</tr>
<tr>
<td>Belay 2.13 SC</td>
<td>clothianid</td>
<td>neonicotinoid</td>
<td>7</td>
<td>G</td>
<td>6-12 oz</td>
</tr>
<tr>
<td>Leverage 360 SE</td>
<td>imidacloprid &amp; beta-cyfluthrin</td>
<td>neonicotinoid &amp; pyrethroid</td>
<td>7</td>
<td>E</td>
<td>2.8 oz</td>
</tr>
<tr>
<td>Actara</td>
<td>thiamethoxam</td>
<td>neonicotinoid</td>
<td>14</td>
<td>E</td>
<td>2-2.75 oz</td>
</tr>
<tr>
<td>Danitol 2.4 EC</td>
<td>fenpropathrin</td>
<td>pyrethroid</td>
<td>14</td>
<td>E</td>
<td>16-21.3 oz</td>
</tr>
<tr>
<td>Lannate 90 SP</td>
<td>methomyl</td>
<td>carbamate</td>
<td>14</td>
<td>E</td>
<td>1 lb</td>
</tr>
</tbody>
</table>

For next season in apples
Keep records of where damaged fruit occurred on your farm this season – those will be the orchards to target with the following measures. Timed to occur with second generation codling moth, orchards that are at risk of brown marmorated stink bug
damage should receive a full cover of an insecticide that works on codling moths and brown marmorated stink bugs, making sure the tops of the trees are well covered. Monitoring with pheromone-baited traps will help determine population pressure and whether follow-up applications every seven days with a perimeter spray until harvest are needed.

**For next season in peaches**
Monitor peaches beginning mid-late May, especially along wood edges. Weekly border sprays on five- to 10-acre plots (crop border plus first full row) have been shown to be an effective strategy in New Jersey. Dispersal to peaches can be initially monitored using pheromone traps placed at the edges. Initiating sprays when bugs are first detected has not been evaluated, but might be an appropriate timing. Peaches on the interior should be monitored for injury or bug presence. If brown marmorated stink bugs are detected on the interior, a full block spray should be done.

**What to do in grapes**
Feeding by brown marmorated stink bugs can injure wine and juice grapes, but the primary concern is presence of the stink bugs during crush, which may taint the juice. A single application of a pyrethroid insecticide prior to harvest will remove bugs hiding in clusters, but be sure to check with your winemaker or processor before spraying close to harvest, and be sure to only use products with short pre-harvest intervals. As in other crops, brown marmorated stink bugs have higher populations on the edge of vineyards, so this knockdown treatment may be restricted to the crop edge.

**About the brown marmorated stink bug monitoring network**
Traps were checked at more than 80 sites for brown marmorated stink bug nymphs and adults using pyramid or Rescue style traps baited with commercial lures. Counties being monitored for brown marmorated stink bugs in 2016 were Allegan, Antrim, Benzie, Berrien, Genesee, Grand Traverse, Ingham, Ionia, Kalamazoo, Kent, Lapeer, Leelanau, Lenawee, Livingston, Macomb, Monroe, Oakland, Oceana, Ottawa, Saginaw and Van Buren. Traps were set up near apple, peach, pear, sweet and tart cherry, blueberry, grape, raspberry, strawberry, a variety of vegetable crops and at several urban locations considered to be hotspots.

For more information about management strategies in fruit, please refer to the MSU Extension Bulletin E0154, “2016 Michigan Fruit Management Guide.” To learn more about how to monitor for brown marmorated stink bugs, distinguish it from other similar-looking stink bugs and which plants it favors, visit MSU’s Brown Marmorated Stink Bug website.

<table>
<thead>
<tr>
<th>County</th>
<th>Cumulative total of BMSB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegan</td>
<td>0</td>
</tr>
<tr>
<td>Antrim</td>
<td>0</td>
</tr>
<tr>
<td>County</td>
<td>Participants</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Benzie</td>
<td>0</td>
</tr>
<tr>
<td>Berrien</td>
<td>1,208</td>
</tr>
<tr>
<td>Genesee</td>
<td>43</td>
</tr>
<tr>
<td>Grand Traverse</td>
<td>0</td>
</tr>
<tr>
<td>Ingham</td>
<td>2</td>
</tr>
<tr>
<td>Ionia</td>
<td>0</td>
</tr>
<tr>
<td>Kalamazoo</td>
<td>0</td>
</tr>
<tr>
<td>Kent</td>
<td>196</td>
</tr>
<tr>
<td>Lapeer</td>
<td>0</td>
</tr>
<tr>
<td>Leelanau</td>
<td>0</td>
</tr>
<tr>
<td>Lenawee</td>
<td>7</td>
</tr>
<tr>
<td>Livingston</td>
<td>0</td>
</tr>
<tr>
<td>Macomb</td>
<td>14</td>
</tr>
<tr>
<td>Monroe</td>
<td>71</td>
</tr>
<tr>
<td>Oakland</td>
<td>9</td>
</tr>
<tr>
<td>Oceana</td>
<td>0</td>
</tr>
<tr>
<td>Ottawa</td>
<td>139</td>
</tr>
<tr>
<td>Van Buren</td>
<td>163</td>
</tr>
<tr>
<td>Saginaw</td>
<td>82</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>1,934</strong></td>
</tr>
</tbody>
</table>

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**Grower Training Course - Produce Safety Alliance**

This event is brought to you by Michigan State University Extension, MDARD, Michigan Farm Bureau and the Produce Safety Alliance

9 AM – 5:30 PM  
November 2, 9 or 10, 2016

The PSA Grower Training Course is one way to satisfy the FSMA Produce Safety Rule requirement outlined in § 112.22(c) that requires ‘At least one supervisor or responsible party for your farm must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate by the Food and Drug Administration.’

The course will provide a foundation of Good Agricultural Practices (GAPs) and FSMA Produce Safety Rule requirements, and details on how to develop a farm food safety plan.

After attending the entire course, participants will be eligible to receive a certificate from the Association of Food and Drug Officials (AFDO) that verifies they have
completed the training course. To receive an AFDO certificate, a participant must be present for the entire training and submit the appropriate paperwork to their trainer at the end of the course. Trainings are being offered in the following locations:

- Wednesday November 2  Hart Community Center, Hart MI
- Wednesday November 9  Krysiak’s house, Bay City MI
- Thursday November 10  Jordan Tatter Center, SWMREC, Benton Harbor

**Agenda**

8:30 am Registration  
9 am Welcome and Introduction  
9:15 am Introduction to Produce Safety  
10 am Worker Health, Hygiene, and Training  
11 am Break  
11:15 am Soil Amendments  
Noon Wildlife, Domesticated Animals, and Land Use  
12:45 pm Lunch  
1:30 pm Production Water  
2:15 pm Postharvest Water  
3:15 pm Break  
3:30 pm Postharvest Handling and Sanitation  
4:30 pm How to Develop a Farm Food Safety Plan  
5:15 pm Final Questions and Evaluations  

For More Information or to Enroll Online visit:  
[http://events.anr.msu.edu/2016growerproducesafety/](http://events.anr.msu.edu/2016growerproducesafety/)

**Continued brown marmorated stink bug trap catches and some fruit damage in east Michigan**

For the second week, trap catches of brown marmorated stink bugs have been on the rise, seen now in seven of the 10 trapping sites in east Michigan orchards with some fruit feeding damage as well.

Posted by Bob Tritten, Michigan State University Extension, MSUE News

Again this week we are seeing a strong trap catch of adult brown marmorated stink bugs in traps scattered over eastern Michigan orchards. Last week, we saw trap catches in half of the 10 trapping sites, and this week that number increased to seven of the 10 trapping sites. These trap catches started Sunday, Sept. 25, and Tuesday, Sept. 27. Last week’s trap catches occurred in Genesee, Lenawee, Oakland and Washtenaw...
counties, and in the last few days Macomb County saw its first trap catch. Earlier this summer, MSU set up a network of more than 80 trapping sites in orchards and vegetable farms across the state, with 10 sites here in east Michigan.

I had several reports in the last few days of fruit growers finding brown marmorated stink bug adults crawling on empty apple bins, window screens and on farm buildings, and even on some people, mostly on sunny afternoons. We are finding that scouting for brown marmorated stink bugs in orchards and adjacent fields and woodlots is difficult to do, as this pest is rather illusive.

I found some limited late-season feeding damage on apples at all but one of the nine fruit farms I visited Monday and Tuesday of this week (Oct. 3-4). The list of apple varieties where I saw damage has also greatly expanded in the last two days, now including Gala, Golden Delicious, Empire, Jonagold, Cortland, Red Delicious, Northern Spy, Crispin (Mutsu) and Cameo. I expect that as we move through apple harvest, we may see damage on other varieties.

This feeding damage most likely occurred in the last two to three weeks. It is hard to say at this time why brown marmorated stink bug adults are attracted to certain apple varieties at certain times, and yet will leave neighboring varieties undamaged. Brown marmorated stink bugs also feed on a wide variety of other plants that are common throughout Michigan.

As you are harvesting or grading fruit, be on the lookout for damage that at first glance looks like bitter pit or hail injury, but take a closer look. Damage is most often first mistaken for bitter pit symptoms, which is related to a calcium disorder. It is very difficult to tell the difference between bitter pit, hail and brown marmorated stink bug injury. Late-season feeding usually causes depressions on the fruit surface and the appearance of necrotic tissue or corking just below the fruit surface. Late-season brown marmorated stink bug feeding damage may look different than early-season damage. Bitter pit is usually concentrated on the calyx end of the apple and brown marmorated stink bug injury can be anywhere on the fruit. For pictures of brown marmorated stink bug injury on apples, see “Brown marmorated stink bug trap catches increased heavily in east Michigan.”

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WEB SITES OF INTEREST:

Insect and disease predictive information is available at:
http:// enviroweather.msu.edu/homeMap.php

This issue and past issues of the weekly FruitNet report are posted on our website:
http:// agbioresearch.msu.edu/nwmihort/faxnet.htm

60-Hour Forecast:
http:// www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous46ktvc

Information on cherries:
http:// www.cherries.msu.edu/

Information on apples:
http:// apples.msu.edu/

Information on grapes:
http:// grapes.msu.edu

Fruit CAT Alert Reports:
http:// news.msue.msu.edu