

# Northern Michigan FruitNet 2016 Northwest Michigan Horticultural Research Center

## Weekly Update

FruitNet Report – July 12, 2016

### CALENDAR OF EVENTS

- |      |  |
|------|--|
| 7/1  | <b>Natural enemies, new insecticide options, perimeter spray programs-- Rufus Isaacs, MSU</b><br>Hawthorne Vineyards on Old Mission Peninsula, 3-5PM |
| 7/13 | <b>Income Taxes for Foreign Agricultural Workers (H-2A)</b><br>NWMHRC, 8AM – 4:30PM  |
| 8/25 | <b>NWMHRC Open House</b>   |

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### What's New?

- **Leelanau Peninsula Economic Foundation Technology Committee Seeks Community Input!**
- **Predicted 2016 Apple Harvest Dates**
- **Northwest Michigan Fruit Regional Report – July 12, 2016**
- **Michigan spotted wing Drosophila report for July 8, 2016**
- **SWD Trap Update – July 11, 2016**

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### Northwest Michigan Fruit Regional Report – July 12, 2016

*Managing tree fruit diseases is key following stormy weather and hail last week.*

Nikki Rothwell and Emily Pochubay

**2016 Growth Stages as of 7/11/16**

Bartlett Pear – 32 mm fruit  
Potomac Pear – 38 mm fruit  
Mac – 36 mm fruit  
Gala – 40 mm fruit  
Red Delicious – 47 mm fruit  
HoneyCrisp – 46 mm fruit  
Montmorency – 21 mm fruit  
Balaton – 22 mm fruit  
Hedlfingen – 23 mm fruit  
Gold – 20 mm fruit  
Napolean – Harvested  
Riesling – Berry touch

### **Weather and Crop Report**

As we move into the workweek, temperatures are predicted to reach into the 90s. These temperatures are accompanied by slight chances of rain each day. After the somewhat unexpected storms that brought hail to the region last Friday (8 July), we are nervous about these high temperatures that will likely be followed by a cold front. Dr. Jeff Andresen thought that extreme weather would be limited in the north, and extreme weather events would most likely occur on Wednesday (13 July) afternoon. The region is quite dry, and rain would help size the crop. However, sweet cherry harvest has begun, and there is potential for cracking if we receive too much rainfall. The Friday storms brought variable amounts of rainfall to the region: NMWHRC (0.27"); Bear Lake (0.13"); Benzonia (0.1"); East Leland (1.34"); Eastport (0.99"); Elk Rapids (0.41"); Kewadin (0.52"); Northport (0.26"); and Old Mission Peninsula (0.82").

The biggest news is that we did have reports of hail in different parts of the region. East Leland area was hit pretty hard, and most of the apples in this location have some kind of hail damage. The apple damage ranges from bruises and indentations to punctures into the fruit flesh. Some growers are planning to remove all apples from the tree in order to maintain tree health for next season. There are some apples that may ripen, but they will be used for juice rather than for fresh market as they were originally intended. Other areas that seem to be particularly hard hit were Central Lake and Yuba/Elk Lake Road. We have grower reports of 30 minutes of hail in Central Lake, and trees sustained considerable damage in that situation. There are varying degrees of damage in Yuba and along Elk Lake Road. Lake Leelanau area growers are also reporting substantial damage in that region.

There is also damage in tart and sweet cherries. For some reason, the bruising and damage to these fruits is not as obvious as it is on apples. We hypothesize that perhaps

the cherry fruits were softer and the round hail 'bounced' off the fruit, and when the hail hit the hard apples, the damage is more obvious. However, there are still losses to sweet and tart cherries, and some growers have already decided to not shake damaged blocks. Growers should check into diversion of damaged tart cherry blocks, as these crops could be marketable for juice. Growers should be sure to contact his/her insurance agent if they have crop insurance for cherries (Please see 8 July's article, 'Considerations for hail damaged cherries after the July 8 storms').

We also remind growers to assess the damage to the cherry crop closely in the coming week. Damage to cherries appeared worse yesterday compared to the damage that first appeared after the storm on Friday afternoon. Growers need to decide if their fruit will be marketable by the time cherries would be harvested, especially tart cherries. In most cases, sweet cherry harvest is underway in northwest Michigan, and we could be weeks away from tart cherry harvest. Tart cherries are somewhat fragile in heat even in a good year, and with the predicted heat in the forecast, fruit that had hail may degrade in the coming weeks. Growers should continue with management programs until a decision is made about harvesting the crop. If a grower decides to abandon a block, fungicide sprays should continue to control leaf spot and to keep leaves on the trees into September. Growers should also contact neighboring farms about a decision to minimize management for spotted wing Drosophila (SWD) as these populations will build quickly in unmanaged blocks and have the potential to move into orchards where harvest is intended.

Lastly, we are currently working on scenarios/case studies to help growers make management decisions on crop insurance and diversion. We anticipate this information will be available to growers this Friday (15 July).

### **Pest Report**

Most catches of spotted wing drosophila (SWD) remained in the single digits and some areas caught numbers in the double digits last week (Table 1). Anecdotally, orchards with higher trap catches seem to be those with many ripe or ripening alternate hosts nearby and/or in orchards that may not be on a rigorous SWD spray program. However, most growers have been diligent with SWD spray programs this season. Preliminary data from trials at the NWMHRC indicate that SWD will lay eggs into damaged cherries; hence, cherries that crack due to rain or those that were injured by hail will be suitable hosts for SWD egg-laying. As a reminder, data from NWMHRC trials has shown that excellent coverage with efficacious materials at 7-d intervals is effective for preventing SWD infestation in fruit. Wet weather is currently predicted for this week and if the area receives substantial rainfall, orchards will need to be recovered.

Cherry fruit fly (CFF) activity has been reported in the region and many of the materials that growers have used against spotted wing drosophila such as pyrethroids and Imidan should also be efficacious for CFF. Delegate is less efficacious compared with some of these other materials and it is rated 'good' for CFF in the 2016 Fruit Management Guide.

Obliquebanded leafroller (OBLR) trap numbers remain low this week in cherries at the NWMHRC with an average of four moths per trap. Most growers used a material efficacious against OBLR recently and/or they are planning to make a pre-harvest application for this pest. We remind growers that OBLR numbers have been high across the state this season and most orchards will likely need to take action against OBLR pre-harvest to prevent shaking larvae into tanks at harvest.

The second flight of American plum borer is underway and trap numbers for greater and lesser peachtree borer were higher this week than last. We found an average of 17 lesser peachtree borers per trap and an average of 3 greater peachtree borers per trap at the station this week.

Overall disease incidence in both cherries and apples remains low. However, American brown rot (ABR) is concern at this time, particularly if cherries were injured by hail or wind. In orchards that were hit by the storm last week, most growers protected salvageable fruit from brown rot infection over the weekend. Although unharmed fruit are less susceptible to ABR, the coming week is predicted to be warm and possibly wet which are good conditions for ABR to get a foothold, particularly if cherries crack following rain. The SDHI fungicides are excellent materials for ABR and cherry leaf spot at the pre-harvest timing. Indar at the increased rate of 12 fl oz per acre under the special label is also efficacious against ABR, but this material is only rated 'fair' for leaf spot because we have isolates in Michigan that are less sensitive to Indar. All of the Enviroweather stations in northwest Michigan recorded cherry leaf spot infection periods during rain late last week and some areas had an additional infection period over the weekend.

Fire blight trauma blight is a concern following high winds and damaging hail on Friday 8 July. Many growers applied either streptomycin or copper in apple orchards that were impacted by the recent storm. If trauma blight occurred, early symptoms should appear by Saturday 16 July; fire blight symptoms typically become visible 103 GDD base 55 degrees Fahrenheit after the traumatic event.

Low levels of codling moth (three moths per trap) and obliquebanded leafroller (two moths per trap) were found in apples at the station this week.

## **Wine Grapes**

***Duke Elsner, MSU Extension***

The severe storm on Friday, July 8 brought large hail to many localities in the Grand Traverse region. If your vineyard suffered some hail damage, please report it to me so I can work on a damage estimate for the area. It may be advisable to apply a fungicide to protect hail injured fruits from infection by botrytis. Our recent run of hot and humid weather favored the development of powdery mildew, and it looks like more of the same is on the horizon. We are still in the window for powdery mildew infections of the berries, so it is import to keep things covered in the vineyard. Insect activity has been

very light other than a few sites where rose chafers needed controls; injury by this insect is virtually finished for the year.

## **Saskatoons**

### ***Duke Elsner, MSU Extension***

Most sites are well into harvest. I have seen some injury from apple curculio and saskatoon-juniper rust at commercial sites in the Traverse City area, but overall the condition of the berries look great. Berry samples from an untreated block at the Northwest Michigan Horticultural Research Center show that about half of the remaining apple curculios inside fruit have now pupated, and a few have emerged from the fruits as adults. No other internal feeding insects were found this week.

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## **Considerations for hail damaged cherries after the July 8 storms**

With the recent storms that moved through NW Michigan, growers need to assess damage to determine future management strategies

N. Rothwell, E. Pochubay, and K. Powers, NWMHRC

Cherry orchards were impacted by 8 July's hail, and growers should carefully weigh options to determine future management strategies. First, growers should assess the level of damage as the outcome of this assessment will determine the next steps. If the damage was fairly extensive, and if the grower has crop insurance, we recommend that the grower call his or her crop insurance agent as soon as possible. Particularly if the damage was widespread and rendered the crop unmarketable, growers should discuss the options with the crop insurance agency. If the crop is unmarketable, growers should consider minimizing management applications to reduce costs in these blocks. Even with the threat of spotted wing *Drosophila* (SWD), more insecticide applications will obviously increase costs in a block that will not provide income. Growers need to keep leaves on for next year, so growers should continue to manage for cherry leaf spot. If growers minimize insecticide and fungicide applications, he or she should communicate this decision to neighboring farmers. As we have mentioned in the past, SWD populations can build quickly in unsprayed fruit and move into blocks that are intended for harvest. Growers should also consider removing the crop from the trees to minimize infestation from SWD. More information on removing cherries from the tree and strategies for minimizing SWD infestations are forthcoming based on ongoing trials at the NWMHRC.

Secondly, if the fruit is on the borderline of marketability, we recommend that growers contact their processors to discuss options for this damaged, but potentially harvestable fruit. Processors that have a juice market may want growers to continue managing this fruit for this particular market. Growers should also consider other processors that may

be interested in the juice market. However, if the fruit will be used for juice, cherries will likely need to hang for longer to increase brix levels. The longer the fruit hangs, the longer management will be needed. Growers will need to decide if fruit will make it to harvest and be worth the extra sprays and costs associated with these applications. Growers need to be realistic if they can justify continuing management if the crop will not ultimately be marketable in the end.

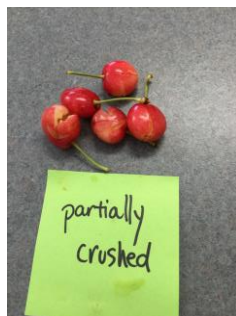
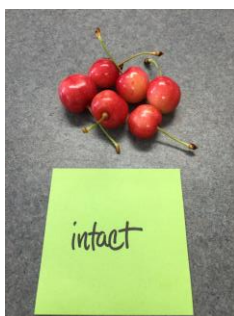
Again, growers should be assessing the level of damage to tart and sweet cherries, particularly if harvest is still quite far off. The NW region is predicted to harvest 165 million pounds of tart cherries, and removing that size of crop even under optimal conditions would have been a challenge. After this storm, there are varying levels of damage to both sweet and tart cherries, and growers need to decide if they will make it to harvest with a marketable crop or if they should stop management now. If the fruit has minor damage, growers will likely be able to manage insects and diseases to make it to harvest time. More intense damage will be more difficult to keep clean moving forward, and growers need to consider if they can make it to harvest with clean, disease-free fruit. If growers chose to move forward with harvesting damaged blocks, the quicker the damaged blocks can be harvested, the better.

Damaged fruit will be more likely to be infested by insects, particularly SWD. Spray programs in damaged blocks will need to be ramped up to prevent infestation. This scenario may be difficult to swallow and particularly challenging for growers as they are already spraying diligently to prevent SWD infestation. However, wounded or cracked flesh of a ripe cherry will provide an easy entry point for SWD egg laying; therefore, growers will need to be even more thorough in managing SWD. Laboratory studies conducted at the NWMHRC have shown that SWD females prefer to lay eggs into cracked or smashed fruit compared to intact fruit (Figure 1).

### **Damaged Fruit and SWD Fruit Infestation Trial**

**Methods:** Ripening fruit were collected from sweet cherry trees on 22 June 2016. Fruit was dividing into nine treatments:

- 1) intact fruit
- 2) partially crushed/cracked by gently squeezing between fingers
- 3) crushed and laid singly
- 4) crushed and laid in pile





**Figure 2.** Fruit in bioassay containers.

To simulate mechanically crushing or mashing of fruit by a farm implement we positioned fruit in front of truck tires in the orchard row and drove over the piles of fruit (Figure 1). Some fruit was picked up singly and others in piles (see photos). All fruit was brought back to the lab and set up into bioassay containers.

Trt 2

Each treatment was replicated five times where five fruit were added along with five

male and five female SWD. Bioassay containers are allowed to sit at room temperature for 10 days before the number of newly emerged SWD are counted. Results show that cracked fruit that was squeezed gently by hand had the most SWD that survived until adulthood; they could produce multiple generations in this fruit (Figure 3). These fruit would be similar to fruit that was cracked or damaged by hail in the recent storm. Therefore, we conclude that cracked fruit, such as those that are damaged or cracked by hail are preferred by SWD and can rapidly increase the SWD populations in an orchard. Cracked fruit are the most susceptible fruit to SWD infestation.



**Figure 1.** Driving over fruit to simulate mechanical crushing.

Additionally, damaged fruit will be more susceptible to diseases, such as American brown rot and Alternaria. American brown rot (ABR) is a particular concern in blocks that have been damaged. If the fruit will not be harvested, justifying the cost of continuing management programs is difficult. On the other hand, minimizing the potential for brown rot in orchards this season will reduce inoculum for next season. An SDHI fungicide (Merivon or Luna Sensation) tank mixed with Captan is the best option for controlling ABR at this point in the season. However, one spray may not provide enough control through harvest, particularly if harvest goes long. In this case, growers should follow the SDHI application with 12oz of Indar tank mixed with Captan. Again, cracked fruit are more susceptible to ABR infection than intact fruit.

Lastly, the current restriction on the tart cherry crop is 29%, and as a result, fruit may have been put on the ground even without the recent damage. However, we remind growers that the fruit used for diversion needs to be marketable. The level of damage may influence the decision if the crop is marketable or not. We recommend that if growers intend to divert partial or

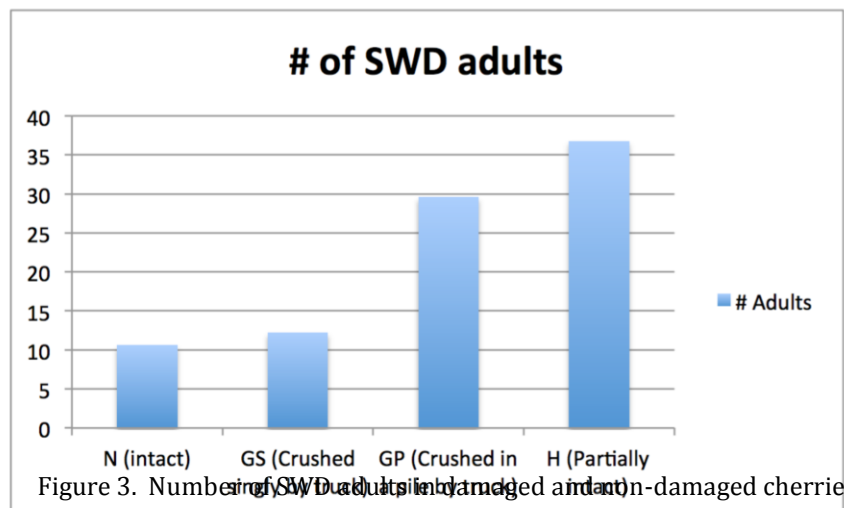


Figure 3. Number of SWD adults in damaged and non-damaged cherries

whole blocks, they continue to adequately manage for insects and diseases to ultimately have marketable cherries.

### **Apple growers need to cover for trauma blight in areas that received hail and or high winds**

Hail hit areas north of Suttons Bay and south of Northport-Omena in Leelanau County, Yuba area and more northerly areas in Antrim County, and some spotty areas near Maple City and Glen Arbor around 11:30 AM today (8 July). We have received reports of 3/4 inch to golf ball sized or larger hail that lasted between three to 10 minutes in these locations. Some other areas throughout the region received high winds and heavy rain during today's storms.

Trauma blight caused by fire blight bacteria is a concern in blocks that were damaged by hail and in apple and pear blocks that experienced high winds. Leaves blown onto the ground in orchards is a good indication that winds were high enough to cause concern for trauma blight. Orchards of particular concern are those that had fire blight infections earlier in the season. To minimize the effects of trauma blight, growers should begin applying streptomycin as soon as possible; this application should be applied within 12 hr of the storm. We recommend rates between 1.0-1.5 lb per acre. The high rate should be used in valuable varieties and in blocks that had fire blight this season. We remind growers to begin covering the most valuable varieties first. Copper can be incorporated in the tank or as a stand alone in blocks where there is streptomycin resistance. Copper applications could result in fruit finish concerns, and growers should be cautious when using copper in blocks that have marketable fresh market fruit. According to label, Kasumin applications are not permitted after petal fall. Apogee will not be useful at this time. Lastly, Mycoshield will not provide any assistance in controlling trauma blight.

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### **SWD Trap Update – July 11, 2016**

<b>Catch Date</b>	<b>Location</b>	<b>Crop</b>	<b>Total No. of SWD</b>
5/31	Centerville Twshp.	Tart Cherry	1
6/16	S. of Suttons Bay	Tart Cherry	1
6/17	Old Mission	Woodlot	2
6/20	M-72 W corridor	Tart Cherry	2
6/21	Old Mission	Sweet and Tarts	3
6/21	Elk Lake Rd.	Wild Raspberry	1



6/22	N. of Suttons Bay	Tart Cherry	1
6/22	Eastport	Wild Cherry	1
6/24	Northport-Omena	Tart Cherry	3
6/27	M-72 W corridor	Tart Cherry	7
6/27	Benzie	Tart Cherry	1
6/27	Benzie	Gooseberry	1
6/28	Elk Lake Rd.	Tart Cherry	1
6/28	Centerville Twshp.	Tart Cherry	1
6/28	Old Mission	Honeysuckle, Sweet Cherry, Tart Cherry	5
6/29	Elk Lake Rd.	Tart Cherry	2
6/29	Yuba		1
6/29	S. of Suttons Bay	Tart Cherry	2
6/29	Bingham	Mulberry, Raspberry	3
6/29	East Leland	Strawberry	2
6/29	Centerville Twshp.	Sweet Cherry	3
7/5	Northport-Omena	Tarts	6
7/5	East Leland	Sweets, Mulberry	7
7/5	Centerville Twshp.	Tarts	5
7/5	E. of Suttons Bay	Sweets	2
7/6	Manistee	Tarts	20
7/6	Benzie	Tarts, honeysuckle, sweets, raspberry, grape	27
7/6	M-72 W corridor	Tarts	6
7/6	Northport-Omena	Tarts	1

7/6	Old Mission	Tarts, honeysuckle, sweets, grapes	9
7/6	Elk Lake Rd	Tarts	2
7/6	Centerville Twshp	Sweets	2
7/6	S. of Suttons Bay	Sweets, tarts, raspberry, mulberry	10
7/6	East Leland	Strawberry	2
7/6	Kewadin	Tarts	1
7/6	S. of Elk Rapids	Tarts	1
7/7	M-72 corridor	Tarts	1
7/11	Manistee	Tarts, Sweets	7
7/11	Benzie	Tarts, Honeysuckle	9
7/11	S. of Suttons Bay	Sweets	1
7/11	Northport - Omena	Tarts	1
7/11	Old Mission	Tarts, Sweets, Honeysuckle	8
7/11	Elk Lake Rd.	Tarts, Raspberry	9
7/11	Yuba	Tarts	1

= New catches

Total catches per region:

Centerville Twshp. - 12

S. of Suttons Bay - 15

Old Mission - 27

M-72 W corridor - 16

Elk Lake Rd. – 15

N. of Suttons Bay – 1

Eastport - 1

Northport-Omena - 11

Benzie – 38

Yuba – 2  
 Bingham – 3  
 East Leland – 11  
 E. of Suttons Bay – 1  
 Manistee – 27  
 S. of Elk Rapids – 1

## Michigan spotted wing *Drosophila* report for July 8, 2016

**Numbers are up throughout the network this week; susceptible crops need to be protected.**

Posted on by [Julianna Wilson](#), Rufus Isaacs and Larry Gut, Michigan State University Extension, Department of Entomology, MSUE News

This is the [Michigan State University Extension spotted wing \*Drosophila\*](#) (SWD) Statewide Monitoring Network report. Out of the 147 traps collected during the week prior to July 7, 139 females and 131 males for a total of 270 SWD flies were captured from 56 traps, or 38 percent of the traps being monitored. That is a 31 percent increase over last week and an 81 percent increase over two weeks ago.

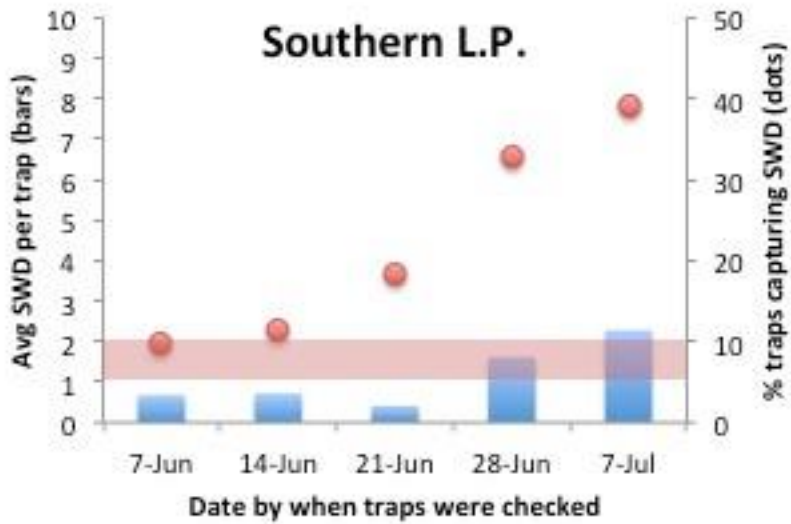
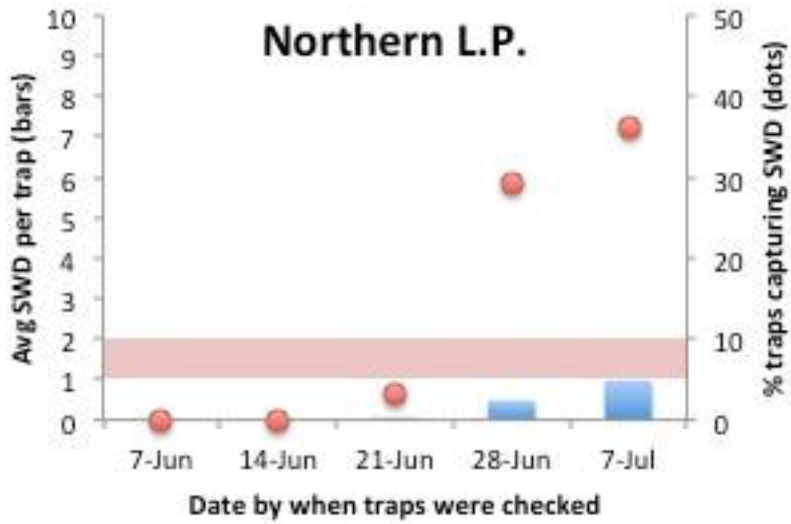
As of this week, SWD adults have been captured in traps baited with commercial lures in strawberry (Berrien, Livingston and Ottawa counties), blueberry (Allegan, Berrien, Ingham, Ottawa and Van Buren counties), raspberry (Allegan, Berrien, Van Buren counties), grape (Benzie, Berrien, and Grand Traverse counties) and cherry (Allegan, Antrim, Benzie, Berrien, Grand Traverse, Leelanau, Kent, Macomb, Monroe, Oceana and Van Buren counties) blocks.

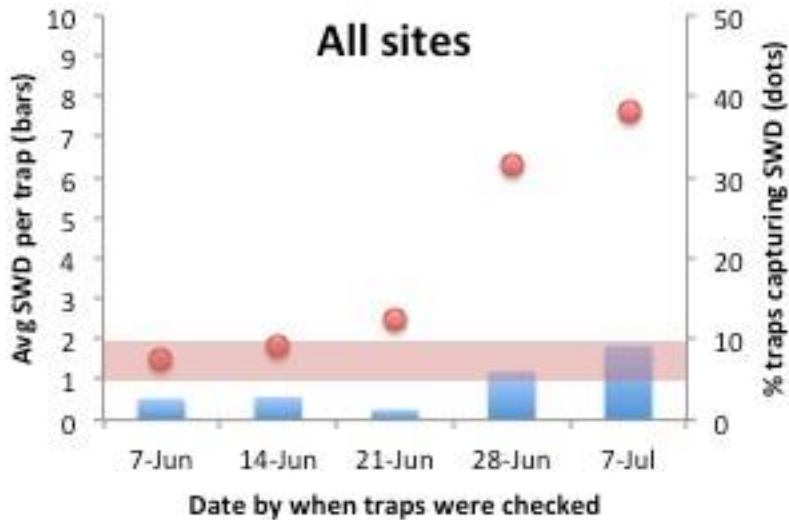
**Table 1. The regions that are being monitored for SWD in 2016, how each region is defined (by the counties listed), the number of sites in each region, and the cumulative total of SWD flies caught in traps by region.**

Region	Counties covered in the SWD monitoring network	No. <a href="#">sites</a> *	Cumulative SWD Total
SE	Genesee, Ingham, Lenawee, Livingston, Macomb, Monroe, Oakland	19	22
SW	Allegan, Berrien, Kalamazoo, Ottawa, Van Buren	79	410
Ridge	Ionia, Kent, Muskegon	14	104
WC	Mecosta, Oceana	9	16
NW	Antrim, Benzie, Grand Traverse, Leelanau, Manistee	61	79
	<b>Grand Total:</b>	<b>182</b>	<b>631</b>

\* Note: not all sites are monitored each week.

Average trap catch over the entire network is now over 2 SWD flies per trap in the southern part of the Lower Peninsula and 1 SWD fly per trap in the northwest counties. Some sites reported more than 20 SWD flies per trap. Ripening fruit throughout the state are likely to be at risk for infestation if not protected, especially in southwest and fruit ridge counties.





Bars represent the average number of SWD flies caught in monitoring network traps each week. Dots represent the percent traps that captured SWD that week. The shaded bar across each graph represents the proposed threshold for triggering management of the pest in susceptible crops. Northern Lower Peninsula (LP) encompasses all network traps in counties north of and including Clare in the Lower Peninsula (n = 50 traps this week). Southern LP encompasses all network traps in counties south of Clare in the Lower Peninsula (n = 97 traps this week).

Traps in the network are baited with commercially available lures and placed in susceptible crop fields or orchards, or in a location adjacent to susceptible crops, in areas where SWD infestation has been recorded in the past. Commercial plantings include strawberry, blueberry, raspberry, grape, tart and sweet cherry, peach and plum. Counties included in the 2016 trapping network are Allegan, Antrim, Benzie, Berrien, Genesee, Grand Traverse, Ingham, Ionia, Kalamazoo, Kent, Leelanau, Lenawee, Livingston, Macomb, Mecosta, Monroe, Oakland, Oceana, Ottawa and Van Buren.

For the most current recommendations for monitoring this pest, please refer to "[Monitoring traps for catching spotted wing Drosophila.](#)" You can find out more about how to identify and manage this pest in fruit crops by visiting [MSU's Spotted Wing Drosophila](#) website.

## Predicted 2016 Apple Harvest Dates

**Phillip Schwallier, District Horticulture Educator Amy Irish-Brown, District ICM Educator Clarksville Research Center**

The predicted harvest dates for every MAWN weather station is now available on Enviroweather web site at Michigan State University. In general, 2016 Predicted Harvest Dates are roughly a few days ahead of normal except in the north, which might be normal to behind normal. Predicted dates are a few days ahead of last year. Bloom dates this spring were early in the state. May was a cold month and a long drawn out bloom period. We do expect mixed maturity at harvest time due to the long bloom.

As always, the weather seems to be unusual each year and 2016 was no different. It

began with what appeared to be another very early spring, however, late winter and early spring cold conditions set in and growth was pushed back to near normal. Most areas bloomed early. The cold May was followed by a hot June, which give us normal to early predicted harvest dates. A heavy cropload developed with king fruitlets all healthy and setting. Most apple growers were successful in thinning the crop down to a nice cropload. Some blocks were over thinned due to the hot conditions during the thinning window. The state's cropload is approximately normal. Blocks with light croploads will mature 3 or 4 days sooner than the predicted harvest dates. Heavy croploads will mature 7 days later than the predicted dates.

The normal harvest dates for other varieties are listed in Table 3 for the Grand Rapids area. This year's 2016 predicted dates are a rough estimate based on the McIntosh, Jonathan and Red Delicious predicted dates. Other areas of the state should adjust non-predicted varieties based on their own history. ReTain application should be applied 30 DBH (days before harvest). Use Table 3, 2016 Predicted Harvest Dates for Other Varieties, to time ReTain applications and adjust for varieties and locations.

**Table 1. 2016 predicted peak harvest dates.**

Full bloom date				Predicted harvest date			
Station	McIntosh	Jons	Reds	McIntosh	Jons	Reds	Observer
SWMREC	24-Apr	25-Apr	25-Apr	30-Aug	16-Sep	22-Sep	Shane
Deerfield	26-Apr	28-Apr	30-Apr	1-Sep	17-Sep	25-Sep	Tritten
Romeo	9-May	11-May	12-May	7-Sep	26-Sep	5-Oct	Tritten
Peach Ridge	7-May	9-May	10-May	7-Sep	29-Sep	5-Oct	Irish-Brown
Hart	13-May	16-May	17-May	13-Sep	2-Oct	8-Oct	Irish-Brown
NWMHRS	21-May	22-May	23-May	20-Sep	30-Sep	7-Oct	Rothwell

**Table 2. 2016 predicted peak harvest dates compared to normal and last year.**

Days ahead of normal				Days ahead of last year		
Station	McIntosh	Jons	Reds	McIntosh	Jons	Reds
SWMREC	10	11	11	10	12	12
Deerfield	9	9	8	6	7	8
Romeo	0	1	1	2	1	-2
Peach Ridge	5	5	4	4	0	0
Hart	3	3	2	6	2	5
NWMHRS	-1	-1	-1	0	7	7

*2016 Predicted Apple Harvest Dates*

**Table 3. Normal and 2016 peak harvest dates for varieties for the Grand Rapids area**

Variety	Normal date	2016 predicted date
Paulared	8/24/16	8/19/16
Gingergold	8/26/16	8/21/16
Gala	9/10/16	9/5/16
McIntosh	9/15/16	9/7/16
Honeycrisp	9/18/16	9/10/16

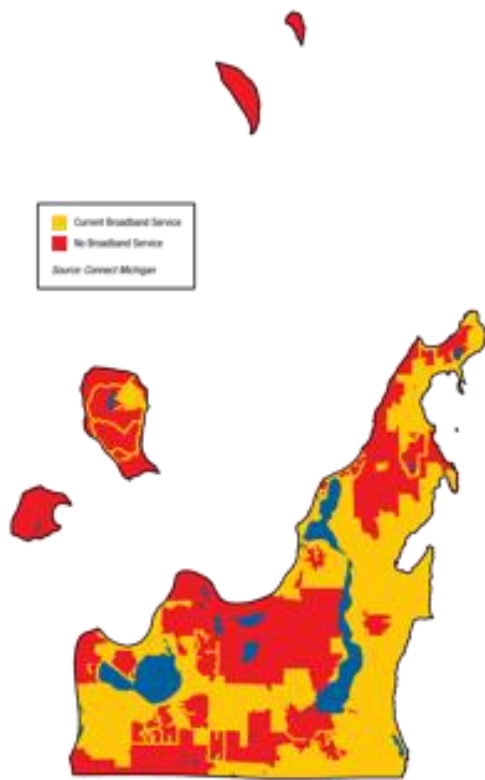
Empire	9/22/16	9/14/16
Jonathan	9/28/16	9/29/16
Jonagold	9/28/16	9/29/16
Golden Delicious	10/2/16	10/3/16
Red Delicious	10/5/16	10/5/16
Idared	10/10/16	10/10/16
Rome	10/15/16	10/15/16
Fuji	10/25/16	10/25/16
Braeburn	10/25/16	10/25/16
Goldrush	11/1/16	11/1/16

*2016 Predicted Apple Harvest Dates*

**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.





**Figure 1. Leelanau County broadband availability, 2/2016**

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 unserved, 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 <http://www.connectmycommunity.org/leelanau-peninsula/> 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 his effort, contact Patricia Soutas-Little at (231) 218-8496.

## **Income Taxes for Foreign Agricultural Workers (H-2A) – Meeting**

Meeting Dates and Times:

**Tuesday, July 12, 2016**

**Ottawa County Fillmore Complex Main Conference Room 12220 Fillmore Street West Olive, MI 49460**

**Wednesday, July 13, 2016**

**MSU Northwest Michigan Horticultural Research Center 6686 S. Center Highway Traverse City, MI 49684**

Michigan's agricultural industry has been seeing a decline in recent years of the traditional labor resources that have been used in the past. The use of the H-2A Guest Worker Program has seen a significant increase in use recently with continued significant growth in coming years. With this increase there is a need for legal and tax professionals to have an understanding on how to prepare taxes for H-2A guest workers, common pit-falls and challenges.

This Continuing Education Program will provide a four hour presentation with three hours of hands-on workshop to help tax professionals understand how tax law impacts foreign agricultural workers and their employers and give them a better understanding of the challenges faced by tax professionals, employers and the workers themselves as they strive to comply with federal and state tax laws.

The information included also applies to all taxpayers who use ITINs when filing tax returns and/or have spouses and/or dependents living outside the United States.

This program will use IRS Publications 519 and 51 and others as a guide throughout this training. Participants will gain an understanding of tax preparation for H-2A Guest Workers, the appropriate method to fill-out an ITIN documentation/application, how to appropriately calculate the time a guest worker has been "in country" over the past 3-years to determine the correct tax documentation needed to be filed in the present tax year. Participants will also receive an overview of the tax deductions, credits available and not available to H-2A Guest Workers.

This program will also discuss payroll and tax withholding issues and responsibilities of an Employer and H-2A Laborer that all tax and legal professionals should be aware of when working with their clients.

Registration fee is \$125.00 per person which includes lunch, refreshments, handouts and materials. **Register online** by July 8, 2016 at <http://events.anr.msu.edu/H2ATaxPrepWorkshop/>. Online registration offers payment by credit card or check. Or to register by mail, mail completed registration form at right with check payment no later than July 5. Please indicate the location you would like to attend.

More information can be found in the attached PDF flyer.

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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>