

Northern Michigan FruitNet 2018

Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – July 20, 2018

CALENDAR OF EVENTS

8/23

NWMHRC Open House

What's new?

- **SWD Update; Northwest Michigan, 20 July 2018**
- **"Forty Years Advancing Fruit Production: Applied Physiology, PGRs, Rootstocks, and Orchard Systems" – Symposium**
- **2018 Agriculture Container Recycling Program**

New articles

SWD Update; Northwest Michigan, 20 July 2018

Nikki Rothwell and Emily Pochubay, NWMRHC

This week, spotted wing drosophila (SWD) trap counts were low across the region. During the week of 16 July, we caught a total of 56 flies in our 80 traps (Table 1). These numbers are much lower than during the week of 2 July when we captured 432 flies in our traps and lower than the week of 9 July when we caught 256 flies. We are trying to understand the current situation, as it is drastically different than in years past.

We have had very low counts up until the week of 2 July when trap counts skyrocketed after a 0.33" rain event on 1 July. We were surprised to see an increase in fly activity following this small amount of moisture – a substantial jump in trap catches from the week of 26 June to the week of 3 July (Table 1). This season's high trap counts during that first week of July 2018 were 6x higher than the trap counts during the same timeframe of 2016 and 2017. We hypothesized that the rain event following extremely hot and dry weather stimulated fly activity. We were concerned about these high SWD numbers, but the hot and dry weather inhibited fly activity and as a result, fewer flies were caught in traps due to the low activity level.

Table 1. SWD trap catches for the 2018 season

	wk of 5/15	wk of 6/4	wk of 6/11	wk of 6/18	wk of 6/26	wk of 7/2	wk of 7/9	wk of 7/16
North Manistee	trap set	0	0	0	0	16	2	4
Benzie	trap set	0	0	2	0	90	10	10
Yuba	trap set	0	0	0	0	40	19	7
Central Lake	trap set	0	0	0	0	1	3	0
Old Mission	trap set	1	0	1	0	12	3	1
Suttons Bay	trap set	0	0	1	1	3	2	4
Cedar	trap set	0	0	0	0	50	84	15
East Leland	trap set	0	0	0	0	25	0	1
Northport	trap set	0	0	0	1	15	3	4
NW Station (unsprayed)	trap set	0	1	2	3	180	110	10
Total flies		1	1	6	5	432	236	56

The region received variable rainfall on 12-13 July with low total accumulation (0.2") at the NWMRHC. Last week, we hypothesized that this rain would trigger another spike in trap counts to reflect increased SWD activity following this rain; more fly activity would increase the potential for infestation in fruit. However, this situation was not the case. This week's trap counts (week of 16 July) remained low – again, we only trapped 56 total flies in our traps. These two recent rain events, 1 July and 12-13 July, resulted in a different SWD response. After the 1 July rain event, SWD numbers spiked >86x the previous week's trap counts, but in the second event on 12-13 July, SWD numbers

dropped to lower levels. Both rain events had similar amounts of rainfall—0.33” and 0.20”.

After the 12-13 July rain event, daytime temperatures were in the mid-70s to mid-80s with very little moisture. Perhaps continued dry conditions following a minimal rain event continued to suppress SWD activity. Another hypothesis is that with the increased numbers of ripening fruits available, SWD trap catch was reduced as a result of competition. However, we have not seen significant decreases in trap catch as the crop ripens in past years. Rather, SWD trap counts typically have continued to rise throughout the season and skyrocket after harvest or later in the season. This season’s trap counts do not follow the pattern of SWD population growth in previous years. This season, we have observed distinct peaks in SWD activity on 1 July followed by decreasing trap counts since the first week of July (Table 1). At this time, we conclude that the weather is impacting trap counts. This situation makes SWD management programs more difficult as we are unable to rely on trap numbers to guide decision-making. At this time, we should still err on the conservative side and keep fruit covered through harvest.

Despite low trap counts, we have had reports of infestation. Although we have not identified the larvae (if present) of all blocks with infestation, we have observed cherries infested with sap beetles (Figure 1) rather than with SWD. Additionally, we have observed cherries with ‘stings’ that are much larger than stings or exit holes of SWD. Larger holes in fruit are likely old plum curculio exit holes or sap beetle oviposition stings. Lastly, there has been some discussion of higher levels of stings/infestation in trees with SWD cup traps. We have tried to verify this disclaimer but have yet to see a correlation between SWD traps and infestation over the past four years. At this time, we have concluded that commercially available SWD lures (ex. Trecé, Scentry, yeast-sugar bait, etc.) are not exceptionally attractive to SWD, and therefore these baited traps are unlikely to increase SWD activity/oviposition in trees that host SWD traps.



Figure 1. Sap beetle larvae in a decaying cherry.

"Forty Years Advancing Fruit Production: Applied Physiology, PGRs, Rootstocks, and Orchard Systems" – Symposium

24 August 2018, Hagerty Conference Center, Traverse City, Michigan

This day-long symposium and post-symposium dinner has been organized to **highlight current advances in fruit research** and recognize the statewide, regional, national, and international impacts of the 40+ year careers of Michigan State University professors of fruit science, **Jim Flore** and **Ron Perry**. Many of the anticipated speakers at the symposium studied with Drs. Flore and/or Perry at MSU and have become **leaders around the world in fruit research, teaching, extension, and industry.** **sym Schedule (subject to change)**

8:15-8:20 Welcome and Introduction

8:20-8:50 **Jim Flore**, *Career Reflections* (30 min)

8:50-9:15 **Riccardo Gucci**, University of Pisa, Italy (25 min) *From Tree Physiology to Fruit Quality: the Role of Carbon and Water in Orchards*

9:15-9:35 **Marlene Ayala**, Pontificia Universidad Catolica, Chile (20 min) *Practical Applications of Source-Sink Relationships in Sweet Cherry*

9:35-9:55 **Paolo Sabbatini**, Michigan State University (20 min) *Changes in Within-Vine Carbon Partitioning Subjected to Early Basal Leaf Removal*

9:55-10:20 **Moreno Toselli**, University of Bologna, Italy (25 min) *Organic Fertilization Affects Carbon and Nutrient Balance in the Orchard Ecosystem*

10:20-10:45 Coffee break

10:45-11:05 **Lailiang Cheng**, Cornell University (20 min) *Photosynthesis and Flower Development in Relation to Sorbitol in Apple*

11:05-11:25 **Dario Stefanelli**, Agriculture Victoria, Australia (20 min) *Apple Biennial Bearing, the Importance and Effects of Crop Load*

11:25-11:50 **Roberto Zoppolo**, INIA, Uruguay (25 min) *Vineyard Water Management in a Temperate Humid Climate*

11:50-12:15 **Alan Lakso**, Cornell University (25 min) *Fruit Crop Physiology to Support Grower Practices*

12:15-1:30 Lunch

1:30-2:00 **Ron Perry** (30 min) *Career Reflections (30 min)*

2:00-2:25 **Tom Beckman**, USDA-ARS, Byron (25 min) *Rootstock Breeding to Improve Disease Resistance and Orchard Productivity*

2:25-2:45 **Greg Lang**, Michigan State University (20 min) *Integrating Rootstocks and Canopy Physiology into New Orchard Systems*

2:45-3:05 **Brent Black** - Utah State University (20 min) *Precision Tart Cherry Orchard Management: High Density System Development, Mapping and Variable Rate Applications*

3:05-3:30 **Terence Robinson**, Cornell University (25 min) *The Evolution/Revolution in Apple Planting Systems and Rootstocks*

3:30-3:50 Coffee break

3:50-4:10 **Win Cowgill**, Rutgers University (20 min) *Six Years of Research with Plant Growth Regulators for Feathering Apple Trees*

4:10-4:30 **Todd Einhorn**, Michigan State University (20 min) *Practical Orchard Strategies to Manage Flower Development and Fruit Set*

4:30-4:55 **Enrico Peterlunger**, University of Udine, Italy (25 min) *New Tools for Physiology Research and Breeding in Grapevine*

4:55-5:15 **Duane Greene**, University of Massachusetts (20 min) *A High Rate of ReTain Influences 'Honeycrisp' Apple Fruit Quality and Storage Potential*

5:15-5:40 **Paul Domoto**, Iowa State University (25 min) *Reflections on Thirty-Eight Years of NC-140 Apple Rootstock Research*

5:40-5:45 Symposium wrap-up

6:00-7:00 Reception/social hour (*partial sponsorship by Michigan Grape & Wine Industry Council*)

7:00-10:00 Dinner and short appreciations (e.g., 2-4 min per speaker) (*partial sponsorship by Michigan Grape & Wine Industry Council*)

Registration and Travel Arrangements for the Flore/Perry Symposium

Please see the program and itinerary above (subject to slight modifications) for the one-day fruit science symposium, "**Forty Years Advancing Fruit Production: Applied Physiology, PGRs, Rootstocks, and Orchard Systems**" to honor the retirements of **Professors Jim Flore** and **Ron Perry**. As you can see, this is going to be a very stimulating day of state-of-the-art international fruit research presentations, reflections on major advances in fruit production over the years, and ample opportunities to socialize with Jim, Ron, and the many academic and industry colleagues attending the program and/or dinner in beautiful Traverse City, Michigan. Many people are planning to spend extra days and/or bring family members to enjoy the Grand Traverse Bay area - there is much to see and do, from the Sleeping Bear Dunes National Lakeshore to sailing and fishing to dozens of opportunities for tasting of award-winning wines, ciders, and craft beers!

The registration website is now available at:

https://events.anr.msu.edu/Hort_Dept_Fruit_Symposium/

Thanks to Michigan State University and industry sponsorships, we were able to keep the registration costs exceedingly low:

\$75 for the Symposium, lunch, wine reception, and dinner

\$35 for the Wine reception and dinner only

\$50 for the Symposium and lunch only

Please register as soon as possible, and note that **registration closes on August 17** (we need to provide a firm number for the meals one week in advance of the symposium).

Also, please note that Traverse City is a highly desirable destination in summer, and so this second-to-last weekend of the traditional tourism season means hotel rooms will be increasingly difficult (and increasingly expensive) to procure, as will air travel into Traverse City airport (alternatives are to fly into Detroit, Lansing, Flint, or Grand Rapids, and rent a car to drive to Traverse City).

The MSU Horticulture Department has been able to reserve a block of hotel rooms at the Country Inn and Suites for \$226/night, which are available **until July 23** or until they are gone. Other alternatives may be found at hotel clearinghouse sites such as www.Hotels.com, www.Expedia.com, www.Tripadvisor.com, or www.Airbnb.com.

Ms. Meghan Hill in the MSU Horticulture main office may be able to help with travel questions, and Ms. Greta McKinney from the Horticulture main office will be our on-site arrangements coordinator for the Symposium and meals, so if you have any registration problems or any dietary restrictions, please advise Greta.

If you have any questions about the Symposium program, please don't hesitate to contact any of us, as between us we'll endeavor to get you the answers you'll need to have a wonderful time! We are looking forward to seeing you in Traverse City!

Sincerely,

Todd Einhorn, einhornt@msu.edu

Greg Lang, langg@mu.edu

Symposium Convenors

Meghan Hill, hehrerme@msu.edu

Greta McKinney, mckin134@anr.msu.edu

Symposium Travel Coordinator and Arrangements Coordinator, respectively

2018 Agriculture Container Recycling Program

A FREE service for agricultural producers in NW Michigan

Where are the collection sites?

- Wilbur-Ellis Co
8075 US-31 Williamsburg, MI 49690
- Ellsworth Farmer's Exchange (Co-op)
11900 Byers Rd. Ellsworth, MI 49729
- CHS Inc

6766 E Traverse Hwy Traverse City, MI 49684

- Crop Production Services (CPS)
13343 Pleasanton Hwy, Bear Lake, MI 49614

When can I drop off my ag containers?

- August 20- August 28 You can drop off your materials during regular business hours at any collection site listed above during these dates. G. Phillips & Sons (the ACRC contractor) will pick up containers on Wednesday, August 29.
- NOTE: CPS in Bear Lake will accept containers anytime throughout the growing season. All other collection sites will ONLY accept containers between August 20- August 28.

One Additional Site: Drop off ONLY on August 29

- Cherry Bay Orchards
2801 N. Jacobson Rd. Suttons Bay, MI 49682
This will be a ONE-DAY collection. You may drop off your containers between **8:00 am and 3:00 pm on August 29.**

What do I do to prepare the containers for recycling?

- Triple rinse, remove caps, remove loose leaf labels (if possible), put in large/clear plastic bags OR string together 20-30 containers with twine – if the containers are not up to these standards, they will not be accepted.
- All non-refillable, high-density polyethylene (HDPE) plastic crop protection and specialty pesticide product containers in sizes up to and including 55 gallons are accepted.

***We will have 1 final recycling collection date in 2018 on October 30. Keep an eye out for future fliers about when you can drop off your containers for this collection date!

Questions? Contact Lauren Silver (lsilver@gtcd.org) or Lizzy Freed (lfreed@gtcd.org) at the Grand Traverse Conservation District. Ph: 231-941-0960

Articles featured in past FruitNet Reports

Hanging light fixture left behind at the NW Station

After the 2018 Industry Day presentation at the NW Station, we found that someone left behind a hanging light fixture. If this is yours, please call the station at 231-946-1510 or email Jenn at goodr100@msu.edu.

Predicted 2018 Apple Harvest Dates

Philip 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. This spring was colder than average which delayed the development of spring foliage. Then warmer weather arrived and bloom developed 7 behind normal in the south to 2 days behind normal in the north part of the state. Record hot temperatures followed thus advancing harvest dates to predict near normal dates for 2018 for the state. In general, 2018 Predicted Harvest Dates are roughly normal in the south and a few days early in the north. Bloom dates this spring were late across the state.

As always, the weather seems to be unusual each year and 2018 was no different. It began with what appeared to be another very late spring. Most areas bloomed late except northern areas of the state. During April very cold weather moved in several times leaving low areas and sensitive varieties with minor frost damage. In general, apple blocks have a mix of cropload, some light areas but mostly moderate to heavy cropload. 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. If hot stressful weather occurs in August or September, apple maturity will be advanced. The 2018 predicted harvest dates are listed in Table 1. This year 2018, we are a few days behind last year. Table 2 lists this year's predictions compared to normal and last year.

The normal harvest dates for other varieties are listed in Table 3 for the Grand Rapids area. This year's 2018 predicted dates for other non-modeled varieties 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). Harvista can be applied 3 to 7 DBH. Use Table 3, 2018 Predicted Harvest Dates for Other Varieties, to time ReTain applications and adjust for varieties and locations.

Table 1. 2018 predicted peak harvest dates.

Station	Full bloom date 2018			Predicted harvest date 2018			
	McIntosh	Jons	Reds	McIntosh	Jons	Reds	Observer
SWMREC	11-May	13-May	14-May	8-Sep	24-Sep	1-Oct	Shane
Deerfield	8-May	9-May	10-May	5-Sep	22-Sep	29-Sep	Tritten
Romeo	13-May	14-May	15-May	10-Sep	25-Sep	30-Sep	Tritten
Peach Ridge	16-May	17-May	17-May	14-Sep	26-Sep	2-Oct	Irish-
Hart	21-May	22-May	23-May	19-Sep	30-Sep	7-Oct	Irish-
NWMHRS	22-May	23-May	23-May	20-Sep	2-Oct	8-Oct	Rothwell

Table 2. 2018 predicted peak harvest dates compared to normal and last year.

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

Table 3. Normal and 2018 peak harvest dates for varieties for the Grand Rapids area

Variety	Normal date	2018 predicted date
Paulared	8/24	8/24
Gingergold	8/26	8/26
Gala	9/10	9/10
McIntosh	9/15	9/14
Honeycrisp	9/18	9/18
Empire	9/24	9/24
Jonathan	9/26	9/26
Jonagold	9/26	9/26
Golden Delicious	10/2	9/28
Red Delicious	10/5	10/2
Idared	10/10	10/9
Rome	10/15	10/14
Fuji	10/25	10/25
Braeburn	10/25	10/25
Goldrush	11/1	11/1

Project GREEN Drone Workshops

Background: Thanks to a grant from AgBioResearch at MSU, RS&GIS and Dr. Bruno Basso will be conducting a series of **free** Drone workshops over the next two years, for growers across the state. Through these workshops, growers will develop an understanding of drone- based data collection and analysis with specific application to their commodity groups. Each of the 2-day workshops will target a specific commodity group including: tree & bush fruits, viticulture, nursery stock, and row crops.

Registration: <https://goo.gl/forms/UQDAnHWxBpRtnopz2>

Agricultural Specialization (Commodity Group)	Location	Date
Tree / Bush Fruit	Southwest MI Extension Center, Benton Harbor	August 9 -10, 2018
Grapes	Northwest MI Horticulture Research Center, Traverse City	September 13 – 14, 2018

Nursery Stock	Michigan State University, East Lansing	September 6-7, 2018
Row Crops	TBD	TBD

Overall Attendees will:

- Learn the essential elements required to safely conduct commercial flight and mapping operations in the National Airspace System including flight planning and preparation
- Take part in hands-on drone flights both manual and autonomous.
- Develop an understanding of analysis techniques and applications in precision ag
- Gain a brief overview of Remote Sensing and its management applications.
- Leave the course with a clear understanding of the Drone-to-GIS workflow, including planning and completing missions, processing data and analyzing said data in GIS

Space is limited, if you are interested in attending please register and answer the questions at: <https://goo.gl/forms/UQDAnHWxBpRtnopz2>

Interested parties must sign up by July 25, 2018, we will confirm your spot by August 1, 2018.

Please contact Erin Bunting (ebunting@msu.edu) or Bruno Basso (basso@msu.edu) for more information

MSU Extension programs and material are open to all without regard to race, color, national origin, gender, gender identity, religion, age, height, weight, disability, political beliefs, sexual orientation, marital status, family status, or veteran status. Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities.

WEB SITES OF INTEREST:

Farmer to Farmer – Connecting farmers, cultivating community

<http://www.f2fmi.com>

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://www.canr.msu.edu/nwmihort/nwmihort_northern_michigan_fruit_net

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>