Northern Michigan FruitNet 2017
Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – August 25, 2017

CALENDAR OF EVENTS

9/5	**Join us Sept. 5: Opportunity for vineyard and winery managers** NWMHRC, 10AM – 5:30PM ***Please RSVP to Jenn at 231-946-1510 or goodr100@msu.edu**

What's New?

- **Spotted wing drosophila detected in peaches**
- **Reminder about Pesticide Labels**

NEW ARTICLES

Reminder about Pesticide Labels

We have had a few calls recently about pre-harvest intervals (PHIs). The PHI stated on the label is based on research that documents the residues of pesticides after the last applications are made. In short, PHIs are set based on the last application in the field to ensure that residue levels of the applied material will be under the FDA tolerance upon

harvest. The PHI on the label is the law. Even if growers test a crop for pesticide residues and find that it is under tolerance, the crop cannot be harvested until the appropriate PHI is met.

Spotted wing drosophila detected in peaches

SWD continues to pose threats to northwest Michigan fruit growers this season

Emily Pochubay and Nikki Rothwell

Although cherry season is over, spotted wing drosophila (SWD) continues to be a considerable challenge to growers of fruits that are susceptible to SWD. Unfortunately, SWD have been observed in another fruit crop that we did not consider to be susceptible in previous seasons: peaches. Today, 25 August 2017, we observed SWD infesting intact peaches in an orchard in northwest Michigan. While SWD have been seen infesting damaged peaches in previous seasons, this is our first case where we have observed SWD laying eggs in intact fruit and presence of larvae in undamaged fruit. SWD were found infesting the varieties Rising Star and Glowing Star, which are ripe in northwest Michigan where harvest is underway. This observation is concerning considering peach harvest may continue for another two to three weeks in some areas of the region. Additionally, we saw higher numbers of SWD flies in trees with high levels of brown rot; these rotting fruits may attract more flies to trees with higher levels of brown rot infection.

Growers and consultants working with peach growers should be on high alert of SWD in peaches, particularly as they ripen this season. Scouting for eggs in the peach fruit is very difficult due to the fuzziness of the fruit, but it is possible with a good hand lens. As a reminder, SWD eggs are white/opaque in color and shaped like a small oblong kidney bean with two filament-like breathing tubes. Eggs are usually deposited under the skin of the fruit and not visible, but the breathing tubes typically remain visible. Like in cherries, SWD-infested peaches also have a pinpoint leaky hole that can be a helpful symptom for scouting for infested fruit.

Peach growers may want to consider managing their orchards for SWD this season. There are several insecticide options registered for use on peaches. According to the Michigan Fruit Management Guide, the products Exirel, Imidan, and Mustang Max are rated ‘excellent’ for SWD. Although it is not listed in this guide, Warrior is also labeled for use on peaches and has provided excellent efficacy in cherries. ‘Good’ insecticide options include Danitol, Baythroid, and Delegate. Because peach harvest is underway, growers should be cautious of PHIs as some of these materials have 14-d PHIs. Additionally, growers should be sure to check labels for retreatment intervals of these products. At this time, we have not researched spray programs for SWD in peaches, but based on what we have learned in cherries, we encourage growers to ensure excellent coverage,

use materials rated ‘excellent’ when possible, and keep spray intervals tight through harvest.

To gain a better understanding of how this pest will impact peaches, we will begin choice and no-choice testing on different peach ripeness stages and varieties at the station this season. We will provide timely updates as they arise, but in the meantime, we encourage NW MI peach growers to contact the research station with any questions regarding SWD management. Although we did not observed SWD in nectarines or plums, these growers may also want to be cautious and err on the conservative side when managing for SWD this fall.

Insecticide	PHI	Efficacy Rating
Delegate	1	Good
Exirel	3	Excellent
Danitol	3	Good
Imidan	7	Excellent
Baythroid	7	Good
Mustang Max	14	Excellent
Warrior	14	Excellent*

*Based on data collected in cherries

Articles featured in past FruitNet Reports

Join us Sept. 5: Opportunity for vineyard and winery managers

Program and winery tour will feature internationally Keren Bindon, renowned leader in phenolics and color compounds.

Posted **Joy Landis**, MSU IPM Program, MSUE News

Photo by MSU Photography.

Michigan State University is hosting an event for vineyard and winery managers on Tuesday, Sept. 5, 2017, at the Northwest Michigan Horticulture Research Center (NWMHRC), 6686 S Center Hwy, Traverse City, MI 49684. Organized by MSU Horticulture's Paolo Sabbatini, the featured speaker is Keren Bindon, senior research scientist at the Australian Wine Research Institute (AWRI). Bindon is internationally respected for her knowledge of phenolics and color compounds.

As research scientist at the AWRI in Australia, Bindon has specialized in various secondary fruit metabolites, following their chemical destiny from the vineyard, the grapes, to the cellar and the wines. Her viticultural research focus has been water deficit and canopy management and their impact on phenolic and tannin chemistry during the formation process and their binding properties with grape cell walls.

Program agenda

- 10 a.m. — Welcome and introduction, Thomas Todaro and Duke Elsner, MSU Extension, and Nikki Rothwell, NWMHRC
- 10:15 – 11:15 a.m. — "Managing phenolics in the vineyard and winery," Keren Bindon, senior research scientist, AWRI
- 11:15 a.m. – 12:15 p.m. — "Canopy management efficiencies are highly modulated by the climate conditions," Paolo Sabbatini, associate professor, MSU Department of Horticulture
- 12:30 – 1:30 p.m. — Lunch at the NWMHRC (provided)
- 1:30 – 5:30 p.m. — Tour of vineyards and wineries

This event is free, but please RSVP if you will attend for lunch by calling 231-946-1510 or emailing goodr100@msu.edu. We look forward to a great day of sharing information and discussion.

Managing invasive insect pests in Michigan vineyards

Watch this video to learn more about monitoring for invasive insect pests in Michigan grapes.

Posted by **Keith Mason**, Michigan State University, Department of Entomology, MSUE News

Scout for brown marmorated stink bugs during harvest in 2017. Photo by Susan Ellis, Bugwood.org.

Monitoring for invasive insect pests is a crucial management tool for wine grape growers, especially during harvest. The Michigan Grape and Wine Industry Council provided funding for Michigan State University researchers to monitor for invasive insect pests; compare susceptibility of grape cultivars to infestation by spotted wing Drosophila (SWD); and test the efficacy of different approaches to vinegar fly and sour rot maintenance. Growers can watch a short video, "Biology and management of invasive insect pests in Michigan vineyards," that highlights this project.

Fifteen Michigan vineyards were monitored for four species of invasive moths, with no detections of these species in 2014 or 2015. Incidentally, no detections have occurred in similar monitoring in 2016 and 2017.

Brown marmorated stink bug was not detected in vineyards during this study. However, populations of this pest have increased in subsequent years, and during 2017 we are catching this pest in traps and finding them in vineyards during scouting. We have not had problems with this insect at harvest yet, but growers and scouts should use this video as a reminder to **scout for brown marmorated stink bugs during harvest in 2017.**

The invasive vinegar fly, spotted wing Drosophila (SWD), was present in all sampled locations, and the highest SWD captures occurred during harvest. Populations of this pest have also been increasing, and SWD should be a concern for some growers in 2017. Early ripening red varieties may be the most susceptible to SWD infestation, and infestation by other *Drosophila* species was similar across varieties. Leaf-pulling and

insecticide application reduced fruit fly numbers and sour rot incidence, but these differences were not statistically significant.

To access "Biology and management of invasive insect pests in Michigan vineyards" and other wine grape research videos on a variety of topics, go to the Michigan State University Extension Grapes Research page or see below.

- **Watch video:** Developing methods for use of own-rooted Vitis vinifera vines in Michigan vineyards by Tom Zabadal and Jenny Schoonmaker, MSU Department of Horticulture
- **Watch video:** Grape IPM Program by Rufus Isaacs, MSU Department of Entomology
- **Watch video:** Impact and spread of grapevine leafroll virus by Annemiek Schilder, MSU Department of Plant, Soil and Microbial Sciences
- **Watch video:** Leaf removal: A tool to improve crop control and fruit quality in vinifera grapes by Paolo Sabbatini, MSU Department of Horticulture
- **Watch video:** Strategic modernization of Enviroweather stations serving the Michigan grape and wine industries by Jeff Andresen, MSU Department of Geography

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Predicted 2017 Apple Harvest Dates

Phillip Schwallier, District Horticulture Educator Amy Irish-Brown, District ICM Educator MSU Extension

The predicted harvest dates for every MAWN weather station is now available on Enviroweather web site at Michigan State University. We have less confidence in this year's prediction for the middle of the state. Frost and a long cold bloom make it difficult to predict the exact full bloom dates. Apple set is from two year old and in some places from one-year-old wood that will produce a very mixed maturity at harvest. In general, 2017 Predicted Harvest Dates are roughly a few days ahead of normal except in the north, which might be normal. Predicted dates are a fairly normal except in the north ahead of last year. Bloom dates this spring were early in the south and normal in the north. May was a cold month and a long drawn out bloom period especially in the middle of the state. We do expect mixed maturity at harvest time due to the long bloom.

As always, the weather seems to be unusual each year and 2017 was no different. It began with what appeared to be another very early spring, however, cold May weather delayed bloom to a more normal timing from the middle state to the north. Most areas bloomed early. The cold May was also very dry and June followed with normal to hot temperatures, which give us early to normal predicted harvest dates. Frost damage is

considerable and the state's cropload is approximately 65% of normal. The tops of trees are heavy and the bottoms are light. Blocks with light croploads will mature 3 or 4 days sooner then 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 2017 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, 2017 Predicted Harvest Dates for Other Varieties, to time ReTain applications and adjust for varieties and locations.

Table 1. 2017 predicted peak harvest dates.

Full bloom date 2017				**Predicted harvest date 2017**			
Station	**McIntosh**	**Jons**	**Reds**	**McIntosh**	**Jons**	**Reds**	**Observer**
SWMREC	23-Apr	24-Apr	25-Apr	28-Aug	15-Sep	22-Sep	Shane
Deerfield	25-Apr	26-Apr	27-Apr	29-Aug	18-Sep	25-Sep	Tritten
Romeo	28-Apr	1-May	1-May	2-Sep	25-Sep	1-Oct	Tritten
Peach Ridge	1-May	5-May	7-May	5-Sep	27-Sep	4-Oct	Irish-Brown
Hart	11-May	13-May	14-May	13-Sep	30-Sep	6-Oct	Irish-Brown
NWMHRS	19-May	20-May	21-May	19-Sep	8-Oct	14-Oct	Rothwell

Table 2. 2017 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	6	6	2	1	0
Deerfield	10	3	7	3	-1	0
Romeo	11	0	2	5	1	4
Peach Ridge	10	-1	1	2	2	1
Hart	5	3	8	0	2	2
NWMHRS	3	-2	3	1	-8	-7

Table 3. Normal and 2017 peak harvest dates for varieties for the Grand Rapids area

Variety	**Normal date**	**2017 predicted date**
Paulared	8/24	8/19
Gingergold	8/26	8/21
Gala	9/10	9/5
McIntosh	9/15	9/5
Honeycrisp	9/18	9/15
Empire	9/26	9/25
Jonathan	9/28	9/27
Jonagold	9/28	9/27

Golden Delicious	10/2	10/1
Red Delicious	10/5	10/4
Idared	10/10	10/9
Rome	10/15	10/14
Fuji	10/25	10/24
Braeburn	10/25	10/24
Goldrush	11/1	10/31

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