Northern Michigan FruitNet 2017
Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – April 18, 2017

CALENDAR OF EVENTS

4/18	**IPM Kickoff** NWMHRC
5/5	**Wine Grape Spring Kick-Off** **NWMHRC, 9 am – 5 pm** Pre-registration required; information will be posted at Parallel 45 Vines & Wines web site soon. http://www.p45michigan.com/
5/19	**Save the Date: Apple Thinning Meeting** NWMHRC, 10 – 1 PM, **RSVP by May 17** More information to come!
5/9 – 6/27	**Leelanau IPM Updates** Jim and Jan Bardenhagen's Farm, 12PM – 2PM
5/9 – 6/27	**Grand Traverse IPM Updates** Wunsch Farms Packing Shed, 3PM – 5PM
5/10 – 6/28	**Antrim IPM Updates** Jack White Farms, 10AM – 12PM
5/10 – 6/28	**Benzie IPM Updates** Blaine Christian Church, 2PM – 4PM

What's New?

- **Northwest Michigan Fruit Regional Report – April 18, 2017**

- **Time to buckle down rather than give up on controlling oriental fruit moth in peaches**

Northwest Michigan Fruit Regional Report – April 18, 2017

Tree fruits are developing and primary apple scab season is underway in northwest Michigan.

GROWING DEGREE DAY ACCUMULATIONS AS OF April 17, 2017 AT THE NWMHRC

Year	2017	2016	2015	2014	2013	2012	27 Yr. Avg.
GDD42	153.9	119.8	108.8	42.3	20.6	375.4	120.5
GDD50	55.5	46.7	39.4	7.6	1.3	199.8	47.1

2017 Growth Stages as of 4/17/17

Bartlett Pear – Bud swell
Potomac Pear – Late bud swell
Mac – Green tip
Gala – Green tip
Red Delicious – Green tip
HoneyCrisp – Green tip
Montmorency – Side green
Balaton – Early green tip
Hedelfingen – Side green
Gold – Green tip
Napoleon – Side green
Riesling – Scale crack

Weather Report

We had warm, summer-like temperatures over the weekend, and we hit daytime highs of 73 degrees F at the NWMHRC on Saturday and 66 degrees F on Sunday. Growers have been concerned about the recent cold overnight temperatures, and we had some growers use frost fans last night (17-18 April). Cold overnight temperatures are also

predicted to drop to or just below freezing on 20 April. Our growing degree-day accumulations are similar to our long-time average. So far this year, we have accumulated 153.9GDD base 42 and 55.5GDD base 50. Our averages are 120.5GDD base 42 and 47.1GDD base 50. Using forecast data, we anticipate to be at bud burst in tart cherry by 30 April.

We also had rainfall over the weekend, and the NWMHRC received about ¾" of rain. Most growers were covered prior to the rain and likely will need to cover up again for the next predicted rain. The forecast is predicting rain on Thursday and Friday this week.

Crop Report

Tree fruit continues to move slowly, but we are seeing green tip or side green in all apple and cherry varieties. Growers have been watching forecasts to predict when to cover up prior to rain. Growers are also watching temperatures and rainfall/sow for pruning sweet cherries with the threat of bacterial canker. We had an excellent high-density sweet cherry pruning demonstration at Lutz Farms and King Orchards on 17 April. We had over 40 growers in attendance at King's. Thank you to all that came out to this event.

Pest Report

Primary apple scab is underway in northwest Michigan and growers that had green tissue present last week covered susceptible tissue prior to rainfall. Depending on when green tip occurred, there could have been either one or two apple scab infection periods. The NWMHRC is monitoring for primary apple scab spore discharge this season and following rainfall over the weekend, spores were discharging. Most areas received enough rainfall to wash off residues and growers are planning to recover prior to the coming rain. Furthermore, although temperatures have been cooler and development has slowed, there has been new growth since last week and this new growth should also be protected from possible scab infections. Dry weather last season was a blessing and most of the area had low scab incidence; however, maintaining good protection during primary scab season is key for effective season long scab management.

Green fruit worm have been flying on warmer days and we have received several calls regarding scale insects in both apples and sweet cherry. Last season's weather had favorable conditions for scale development and we had a few reports of San Jose scale on apples late in the season. We have also found San Jose scale in sweet cherries, particularly in Golds and other light varieties in previous years, so we encourage growers and consultants to keep a look out for this insect. We also visited an orchard last week with lecanium scale on sweet cherries adjacent to a woodlot.

2017 IPM Update Schedule

Emily Pochubay and Nikki Rothwell
Michigan State University Extension

Tree Fruit IPM Updates beginning the second week of May through June will highlight management of the seasons current potential pest challenges dictated by weather and pest biology. Attendees are encouraged to bring examples of pests and damage found on the farm to these workshops for identification and discussion. Additionally, we are planning to revisit some of the new Worker Protection Standards as well as host invited speakers from local organizations and MSU at this year's meetings. Workshops will be held weekly in Leelanau, Grand Traverse, Antrim, and Benzie counties. Tree fruit growers and consultants are welcome to attend meetings at any of the locations and times that are most convenient (see below). These workshops are free and do not require registration. Restricted use pesticide applicator recertification credits (2 credits per meeting) and Certified Crop Advisor credits will be available. We are looking forward to seeing you in a few weeks! For more information, please contact Emily Pochubay (pochubay@msu.edu), 231-946-1510.

Leelanau County

Location: Jim and Jan Bardenhagen, 7881 Pertner Road, Suttons Bay
Dates: May 9, 16, 23; June 6 (tentative), 13, 20, 27
Time: 12PM – 2PM

Grand Traverse County

Location: Wunsch Farms, Phelps Road Packing Shed, Old Mission
Dates: May 9, 16, 23; June 6 (tentative), 13, 20, 27
Time: 3PM – 5PM

Antrim County

Location: Jack White Farms, 10877 US-31, Williamsburg (south of Elk Rapids on the southeast side of US-31)
Dates: May 10, 17, 24; June 7 (tentative), 14, 21, 28
Time: 10AM – 12PM

Benzie County

Location: Blaine Christian Church, 7018 Putney Rd, Arcadia, MI 49613
Dates: May 10, 17, 24; June 7 (tentative), 14, 21, 28
Time: 2PM – 4PM

Respirator Guidelines to Meet New Worker Protection Standards

Growers will need a medical evaluation and respirator fit test to handle and apply some pesticides this season.

Emily Pochubay and Amy Irish-Brown, MSU Extension

Requirements for a medical evaluation, fit testing, and specific training for use of respirators and the associated record keeping became effective on January 2, 2017. At this time, most growers are aware of this revision to the Worker Protection Standard (WPS) regulation that requires pesticide handlers and applicators to wear a respirator during mixing/handling, spray applications, and potential other uses as outlined on pesticide labels. Additionally, those who use pesticides with respirator requirements must receive documentation from a physician or licensed health care professional (PLHCP) that has 'respirator evaluation' as part of his/her license to ensure that the pesticide handler is medically able to use a respirator. Not all PLHCPs are qualified to provide the respirator evaluation, but primary care physicians should be able to refer patients to appropriate medical personnel. Alternatively, growers can contact local occupation and environmental health professionals who are more likely to have the credentials needed to provide the appropriate respirator medical evaluation and documentation. Please review the following guidelines to help address some of the recent questions we have received from growers.

Who needs to receive a medical evaluation and how often?

Employees that could be exposed to hazardous airborne contaminants may be required to wear a respirator; respirators and respirator use requirements will be outlined on individual pesticide labels. Some pesticides may require respirators for employees that mix spray material and/or require applicators to wear a respirator during applications of certain pesticides. Employers are responsible for ensuring that employees receive the appropriate equipment, evaluation, respirator fit test, training, and record keeping that conforms to OSHA standards.

According to the EPA, the medical evaluation is required one time per employee unless another evaluation is required due to one of the following reasons:

- The medical determination is only good for a specified length of time.
- The employee reports medical signs or symptoms related to respirator use.
- The PLHCP, supervisor, or program administrator recommends a re-evaluation.
- Fit-test or other program information indicates a need for re-evaluation.
- When changes in the workplace increase respirator stress on an employee.
- The initial medical examination demonstrates the need for a follow-up medical examination.

Who provides the evaluation? What kind of evaluation and documentation are needed?

A physician or licensed health care professional (PLHCP) with respirator evaluation as part of their license will provide the appropriate evaluation using a medical questionnaire or exam that conforms to the OSHA standard. Contact the PLHCP to determine whether a questionnaire or exam will be used and to receive appropriate paperwork. Prior to completing the questionnaire or exam, employers must provide employees with:

- The type and weight of the respirator that the handler will use.
- How long and how frequently the handler will use the respirator.
- How much physical work the handler will do while using the respirator.
- Other PPE the handler will use.
- The temperature and humidity extremes of the working environment.

Contact a primary care physician to receive a referral for a licensed professional, if necessary. Another low-cost (~$25) and fast alternative for a medical evaluation is OshaMedCert (http://www.oshamedcert.com/Default.aspx), an online service that involves filling out a form and sending it for approval or denial by a PLHCP; individual's health information remains confidential throughout the process. A respirator fit test (see below) will be needed after receiving the medical determination from OshaMedCert.

A written medical determination of the respirator evaluation for each employee is required before the employee can use the respirator. The employer must keep the medical determination documentation for two years. According to the EPA, the required written information to be provided by the PLCHP to the employer must only include:

- Whether or not the employee is medically able to use a respirator.
- Any limitations on respirator use in relation to the medical conditions (if any) of the employee or workplace conditions.
- Need for any follow-up medical evaluations.
- A statement that PLCHP provided the employee with written recommendation; in some cases, this recommendations may simply state that the applicator/person that will use the respirator is capable of wearing a respirator.

Again, the information outlined above is the *only* information that should be provided in the PLHCP's recommendation to the employer to protect the employee's private medical information and avoid violation of HIPAA laws.

What's Next? Respirator Fit Tests.

After receiving a medical evaluation, a fit test is needed to ensure that the respirator forms an adequate seal with an employee's face to provide appropriate inhalation exposure protection. A new fit test is required annually or whenever there is a change to the respirator or a physiological change to the employee that could affect the seal between the respirator and the user's face. Furthermore, fit tests are required for each type of respirator that will be used as indicated by pesticide labels. Finally, employees must undergo the fit test using a respirator with the exact specifications of the respirator that will be used on the job.

Fit tests must follow OSHA protocols, and there are two methods for fit testing. The quantitative fit test (QNFT) requires special equipment and a trained person to conduct the testing. Fit test kits are also available to perform qualitative fit tests (QLFT) by a person that can accurately prepare test solutions, calibrate equipment, perform the test

properly, recognize invalid tests and ensure test equipment is working properly. Sources for fit tests include pesticide suppliers or companies such as Gempler's or Grainger.

A primary care physician may be able to provide additional options and referrals for fit test providers in the area. We confirmed that Munson Medical Center's Occupational Health and Medicine Clinic (550 Munson Ave. Traverse City, MI 49686; Ph: 231-935-8590) is equipped to perform the appropriate respirator exam (~$80.00) and the fit test (~$25.00) in one visit by appointment only. Spectrum Health Services in other areas of Michigan provide similar services. Patients that wish to only receive a fit test need to provide appropriate respirator exam result documentation prior to the test.

Additional information regarding respirator requirements and other WPS revisions can be found in the EPA's *How to Comply with the 2015 Revised Worker Protection Standards for Agricultural Pesticides* (https://www.epa.gov/sites/production/files/2016-10/documents/htcmanual-oct16.pdf).

2017 Tree Fruit IPM Kick-off

April 18, 2017, 5:00 – 8:00 PM
Northwest Michigan Horticultural Research Center

Please join Michigan State University Extension at the Northwest Michigan Horticultural Research Center on Tuesday, April 18 from 5:00 – 8:00 PM for the annual Tree Fruit IPM Kickoff! This year, we are pleased to host Ontario Ministry of Agriculture's Application Technology Specialist, Jason Deveau, using ZOOM teleconferencing. Deveau will discuss spray strategy techniques including application rates, calibration, coverage, and canopy management – the foundations of optimizing spray economy and effectiveness. Following last year's challenging fire blight scenario, MSU's Dr. George Sundin will join us to present considerations for fire blight management this season. Dr. Sundin will also discuss the implications of new data on SDHI efficacy for cherry leaf spot management. Eric McCumber will provide a summary of the key Worker Protection Standard changes for 2017 and preparations for future changes. We will cover the annual pesticide label changes and updates and have a brief discussion on the future of borer pest management. This event is free of charge, and pesticide recertification credits and certified crop advisor credits will be available. We are looking forward to kicking off the 2017 season with you!

4:45	**Welcome and Refreshments**
5:00 – 5:15	**Pesticide Label Changes and Updates** *Emily Pochubay, MSU Extension*
5:15 – 6:00	**Fire Blight and Leaf Spot Considerations for 2017**

	Dr. George Sundin, Dept. of Plant, Soil, and Microbial Sciences, MSU
6:00 – 6:45	**Crop-Adapted Spraying** *Jason Deveau, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) via ZOOM Teleconference*
6:45 – 7:00	**Break**
7:00 – 7:45	**Worker Protection Standard Update** *Eric McCumber, MDARD*
7:45 – 8:00	**Borer Management Challenges in Stone Fruit** *Dr. Nikki Rothwell, MSU Extension and AgBioResearch*
8:00	*Fill out pesticide recertification and certified crop advisor sheets.*

Time to buckle down rather than give up on controlling oriental fruit moth in peaches

Here's answers to your questions on using mating disruption and pyrethroid insecticides in controlling oriental fruit moth in Michigan peaches.

Posted by **Dave Jones**, Michigan State University Extension, MSUE News

Oriental fruit moth has become an increasing concern across much of the peach industry in recent years. The solution to this problem will take the united effort of the peach industry recommitting to some important standards as a unit to bring oriental fruit moth population numbers back down into a reasonable range. We can get this problem back under control, but it will take a team effort on all of our parts.

Two concerns that have bothered growers over the past couple of years are as follows.

"I'm not seeing control of oriental fruit moth with my mating disruption like I it used to, especially at block edges."

You're absolutely right. However, this is **not** because mating disruption doesn't work anymore, it's because we have had an explosion in the populations of oriental fruit moth in area orchards. This is due to reduced use of oriental fruit moth mating disruption by the industry as a whole and over-reliance on pyrethroid insecticides. The result is oriental fruit moth damage the likes of which we have never seen as an industry.

Please read Larry Gut and Mike Haas' new Michigan State University Extension article on mating disruption strategies for information on proper choice of mating disruption product and timing of applications before the growing season starts: "Manage oriental fruit moths using mating disruption."

This information will be critical for getting back to where we want to be as an industry.

"Our chemistries don't work like they used to."

In the case of pyrethroid insecticides, this is likely true. Pyrethroid resistance for oriental fruit moth has been documented in adjacent states and in Ontario. Strict reliance on these products is bound to get us in trouble with resistance, and preliminary information from Gut's lab suggests this may already be the case in our area. The good news: There are still many products on the market we know work very well on oriental fruit moth that do not fall in the pyrethroid class. These products are critical in maintaining any action we have left from the pyrethroid class while avoiding economic hardships caused by loss of crop.

Considerations for 2017

Pyrethroid usage for oriental fruit moth management. Due to the reduced cost associated with using pyrethroid-based spray programs for oriental fruit moth management, many growers rely on these products exclusively in their spray programs. However, preliminary data from Gut tells us we are likely starting to lose pyrethroid efficacy on oriental fruit moth, contributing to the pressure we've experienced recently. There are several lessons to be learned here.

- A cheap pyrethroid spray that is not working at high efficiency should not be considered more economical than a more expensive product that does. We work too hard as an industry to be spending money on products that are providing sub-par control, and there is a good chance several of the pyrethroid products now fit this description (*see Table 2 below*).
- **We still have many products we know are effective in managing this insect** (*see Table 1*). Do yourself, as well as your neighbors, a favor and put something besides strictly pyrethroids out there this year. Rotating active ingredients in products has always been important, but it is particularly important for oriental fruit moth right now.
- Keep your spray intervals tight, particularly if you do choose to use pyrethroids. Pyrethroids can break down quicker in hot weather, and gaps in coverage could mitigate what management we still do get with these products. This year, **spray a rotation of active ingredients at tight windows in the presence of mating disruption**.
- Use pheromone traps to monitor oriental fruit moth population levels. This is one of the best ways to get an indication of the pressure a peach block is facing from oriental fruit moth and the potential for damage. Catches for the first generation will show what is carried over from last year. Catches for the second and third

generations help to indicate how effective the spray program is for the current year.

- Non-bearing peach orchards still need to be protected from at least the first generation of oriental fruit moth.
- Pyrethroids may still have some value for helping to control tarnished plant bug.

Table 1 summarizes non-pyrethroid product efficacy towards oriental fruit moth, compiled from information presented by Gut. Re-familiarize yourself and your staff with this list before we get into the growing season.

Table 1. Insecticides registered for oriental fruit moth control in peach			
Compound trade name	**Chemical class**	**Effectiveness**	**Residual activity**
Imidan	OP	Excellent	14 days
Exirel	Diamide	Excellent	10-14 days
Altacor	Diamide	Excellent	10-14 days
Delegate	Spinosyn	Excellent	7-10 days
Assail	Neonicotinoid	Excellent	10-14 days
Rimon	IGR	Excellent	10-14 days
Voliam Flexi	Premix	Excellent	10-14 days
Intrepid	IGR	Good	10-14 days
Diazinon	OP	Good	10-14 days
Avaunt	Oxadiazine	Fair	7-10 days
Lannate	Carbamate	Fair	7-14 days
Sevin	Carbamate	Fair	7-14 days
Esteem	IGR	Fair	7-10 days

Table 2 summarizes the products that are at risk of no longer being effective. **We need to break the cycle of repeated pyrethroid use in the 2017 growing season due to growing concerns of resistance.** Remember, your spray guide says “excellent” on these products right now, but work done in 2017 on toxicity of these products on oriental fruit moth may update these ratings considerably. Until 2017 data is available, play it safe and either rotate with other modes of action or avoid these products entirely.

Table 2. AT RISK insecticides registered for oriental fruit moth control in peach			
Compound trade name	**Chemical class**	**Current labelled effectiveness rating**	**Residual activity**
Asana	Pyrethroid	Excellent	7-10 days
Danitol	Pyrethroid	Excellent	7-10 days
Lambda-Cy	Pyrethroid	Excellent	7-10 days
Baythroid	Pyrethroid	Excellent	7-10 days
Perm-up	Pyrethroid	Excellent	7-10 days
Leverage	Premix	Excellent	10-14 days
Endigo	Premix	Excellent	10-14 days

Voliam Xpress	Premix	Excellent	10-14 days

Lastly, don't get discouraged if you see high numbers of oriental fruit moth this year again. This problem likely took several years to get this bad, and it may take a couple of years to bring the population back down. It only takes a few orchards worth of improperly managed peaches scattered around your region to help this pest maintain the population levels we are seeing. We've also had an extremely mild winter, which may mean a particularly high rate of successful overwintering for the insect. If everyone counts on their neighbor to do the right thing and use mating disruption and rotate non-pyrethroid sprays this year, we all lose. We're a team here, so let's all commit to updating our programs in order to move forward in 2017.

The Protection Plan for Managed Pollinators in Michigan draft release

Michigan has released its draft plan to protect managed pollinators from pesticide threats. This joint effort is designed to provide clear actions that can be taken to reduce pesticide exposure to bees.

Posted by **Sarah Scott**, and Meghan Milbrath, Michigan State University Extension, Department of Entomology, MSUE News

Image courtesy of Sarah Scott, MSU.

The Michigan Department of Agriculture and Rural Development (MDARD), along with Michigan State University and Michigan Farm Bureau, is releasing its draft Protection

Plan for Managed Pollinators in Michigan (referred to as the plan), which aims to increase communication to reduce the risk of pesticides to pollinators across our state. The steering committee is seeking feedback from the public on the proposed draft to produce a document that has the most positive impact and acceptance among Michigan citizens.

The draft plan can be found online at The Protection Plan for Managed Pollinators in Michigan. The document includes voluntary strategies for growers, beekeepers, landowners and pesticide applicators to mitigate the risk of pesticides while still supporting a robust agricultural economy. Michigan's plan follows the National Strategy to Promote Pollinator Health, which includes the Pollinator Research Action Plan and the Pollinator-Friendly Best Management Practices for Federal Lands.

Our plan follows the National Association of State Departments of Agriculture guidelines for creating a managed pollinator protection plan. Over time, the plan will be reviewed to determine how well it is working to help protect managed pollinators.

The plan is meant to provide a way to mitigate the risk of pesticides to bees and other managed pollinators while supporting the use of crop protection. This will be accomplished by establishing a framework for open communication and coordination between individuals who are applying pesticides and beekeepers that have colonies in areas that could be impacted, and supporting best management practices. The key goals of the document are:

- Mitigate potential exposure of honey bees to pesticides.
- Foster positive relationships between beekeepers, growers and applicators.
- Allow for crop and honey production.
- Refine public understanding of pollinator health issues, factors affecting pollinators and what can be done to mitigate negative outcomes on pollinator populations.
- Find ways to minimize risk to pollinators that citizens, businesses, agencies and Michigan residents can follow.

If you would like to provide input and feedback on the plan, please complete the Protection plan for managed pollinators in Michigan feedback survey, or email any comments to MMP3@msu.edu by June 1, 2017. Sign up for the plan mailing list to stay up-to-date on developments or changes to the plan.

For more information on other states' Managed Pollinator Protection Plans, resources on Michigan's Plan or pollinators in Michigan, visit MSU's Michigan Pollinator Initiative Managed Pollinator Protection Plan page. The final draft of the plan will be available at MDARD's Managed Pollinator Protection Plan website.

Chestnut Orchard Establishment Workshop

Join us to learn about commercial chestnut production in Michigan this April!

Erin Lizotte, MSU Extension

The Michigan chestnut industry has been growing steadily over the last decade, with a lot of interest in production from new growers. To address this interest, Michigan State University Extension will be holding a one-day workshop to introduce attendees to the opportunities and challenges of commercial chestnut production. The workshop will include: an introduction to the history of the industry in Michigan; an economic analysis of production; orchard establishment and design; pest management; and harvesting, marketing, and storage.

The Chestnut Orchard Establishment Workshop will be held on April 20th from 10:00 am-4:00 pm at the Clarksville Horticultural Experiment Station, in Clarksville Michigan. The cost of the event is $50 and includes lunch and support materials. To register, visit https://events.anr.msu.edu/chestnutworkshop2017/

Those attending are encouraged to visit www.chestnuts.msu.edu before the event for a primer on chestnut production. The 'Production considerations' section may be particularly helpful.

Pruning Workshop: *for Home Gardeners*

LEARN THE SCIENCE AND ART OF PRUNING:

Pruning is an important cultural practice for maintaining the health, vigor and appearance of woody plants. It involves both art and science - art, in shaping plants to enhance the landscape; and science in knowing how, when, where and why to prune for maximum benefit.

MSU Extension will host a pruning workshop on **Friday, April 28, 2017 from 8:30 a.m. - 12:30 p.m.** at the **NW Michigan Horticultural Research Center** (just north of Traverse City, near Bingham in Leelanau County). This workshop is geared towards homeowners and gardeners, and will help you master the science (and a bit of art) of pruning. **MSU Extension Sr. Educator, Rebecca Finneran**, will lead this workshop. Participants will spend time in the classroom learning best pruning practices and the best equipment for each job, and then move outdoors to apply the learning with hands-on pruning. Participants should bring their own hand-held pruning shears if available, and wear

weather- appropriate clothing to be both indoors and outdoors; rain or shine.

The cost is **$35 per person,** and includes education, instruction and light refreshments. Spaces are limited and preregistration is required.

HOW TO REGISTER:

Register online at: https://events.anr.msu.edu/pruningworkshop

CONTACT:

For more information, contact **Annette Kleinschmit** at 231-256-9888 or kleinsc7@msu.edu .

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