

Northern Michigan FruitNet 2016 Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – April 19, 2016

CALENDAR OF EVENTS

4/23	Top Bar Hive Building Workshop NWMHRC
4/26	USDA Value-Added Producer Grant Workshop Michigan Works! Building

What's New?

- **Message for MAEAP Partners and Supporters**
- **Wine Grape and Saskatoon Report**
- **Northwest Michigan Fruit Regional Report**
- **2016 IPM Update Schedule**
- **Do you need to worry about early spring freezes?**
- **Time to start monitoring for black stem borer**
- **Measuring spotted wing Drosophila impacts – your help needed!**

GROWING DEGREE DAY ACCUMULATIONS AS OF April 18, 2016 AT THE NWMHRC

Year	2016	2015	2014	2013	2012	2011	26 Yr. Avg.
GDD42	141	119	42	26	382	77	127.2
GDD50	60	43	8	3	202	23	50.1

2016 Growth Stages as of 4/11/16

Bartlett Pear – ear, bud burst

Potomac Pear – bud burst

Mac – green tip

Gala – ¼” green

Red Delicious – green tip

Golden Delicious – green tip

Montmorency – side green

Balaton – side green

Hedlfingen – side green

Gold – green tip

Napoleon – side green

Riesling – scale crack

Northwest Michigan Fruit Regional Report – April 19, 2016

The recent warm up kick-started tree development and apple scab could be a concern with rain predicted later this week.

Emily Pochubay and Nikki Rothwell

Weather and Crop Report

Most of the trees at the NWMHRC are showing some green tissue. Sweet and tart cherries are at the side green stage, and apples are at green tip to ¼" inch green depending on variety. Tree development will likely slow toward the weekend with the predicted cool down. Growers are busy pruning, and there is a lot of brush still in the orchards at this time.

We have accumulated 141GDD base 42 and 60GDD base 50. Our 20+ year averages for this time are as follows: 127GDD base 42 and 50GDD base 50, so we are quite on 'average' this year. Tart cherries are typically at full bloom around 360GDD base 42, and sweet cherry full bloom is at 275GDD base 42. Little damage has been reported or observed in tree fruits in northwest Michigan from the recent cold temperatures.

Pest Report

Recent warm weather has accelerated tree development and growers are beginning to apply delayed dormant applications for pests and diseases this week. Many apple varieties are showing green, and there is a chance for rain overnight on Wednesday into Thursday that will likely trigger apple scab spore release. Growers that have green tissue present should apply a copper application to protect trees prior to this week's rain. If an orchard had scab last season, it will be of utmost importance to protect trees during this 2016 primary scab season. There have been reports of early spore discharge in other parts of the state due to warm conditions in March. Additionally, the warm conditions in the last week have hastened maturation of the overwintering fungus. Hence, protecting green tissue early in this primary season will be crucial to prevent early scab infection. The NWMHRC is sampling for apple scab spore discharge for the duration of the primary scab season.

Now is a good time to scout for overwintering scale, particularly in orchards that have had lecanium or San Jose scale or symptoms of scale in previous seasons. Lecanium scale infestations have been located next to wood lots or areas with lots of maple trees. San Jose scale has been more problematic in sweet cherry in recent years, and light colored sweet cherries are particularly susceptible. Growers should also keep an eye out for overwintering European red mite eggs that have been reported in low numbers.

Green fruit worm began flying during the recent warm up; however, insect activity will likely slow down later in the week with predicted cooler temperatures. The NWMHRC trap line is in place, and we will begin monitoring for early season tree fruit pests such as the American plum borer and oriental fruit moth. We have also observed many pollinators and other beneficial insects foraging in the field recently.

Wine Grapes

A few of the earliest varieties in the research vineyard are showing a little bud swell, mostly on canes close to the ground. The condition of the canes looks fairly good EXCEPT for the extensive scaring of the periderm from the hail on August 2 of 2015. It will take some time to tell if the hail injury will result in poor bud break or the flagging of shoots later in the growing season. If you are still pruning and renewing with long canes, I suggest laying out four canes instead of two if you were in the areas hit by hail. Spur pruning will take out much of the hail- injured wood—select the best spurs without hail damage near the base.

There is still plenty of time for dormant treatments against powdery mildew.

Saskatoons

Bud development has progressed rapidly in some plantings, we have about 50% of the fruit buds in the full green stage at the research center. Based on observations over the last few years, there usually will not be any significant pest insect activity until the white tip stage when aphids may appear. The 2016 pesticide recommendations for saskatoons are now available through my office—contact me at elsner@msu.edu to receive them by a return email.

I am seeking grower assistance in tracking bud, flowering and fruit developmental stages in order to improve crop management and IPM practices in saskatoons. You can participate even if you only have a few bushes. See the attached document called “Saskatoon bud and fruit developmental stages” or request one directly from me at elsner@msu.edu. All you need to do is record the dates your plants reach the listed developmental stages and send in the information at the end of the season.

Looking for Input from all Businesses Including Farms in Leelanau County

You and your business are important to the vitality of the Leelanau Peninsula, and the newly-created Leelanau Peninsula Economic Foundation wants to hear from you. What’s going well for you in your business? What issues keep you up at night? How can a non-profit economic enabler like the LPEF help businesses in Leelanau County thrive?

The LPEF is conducting a brief e-survey to learn about your dreams, challenges, and your suggestions concerning what they should focus on as they work to strengthen the economic vitality of Leelanau businesses and communities.

Please take a few moments to click on the link below to share your thoughts. The survey's completely anonymous and should take less than 10 minutes of your time.

Thank you,

Leelanau Peninsula Economic Foundation Board

<http://www.surveygizmo.com/s3/2631180/LPEF-Leelanau-Business-Survey-2016>

Measuring spotted wing Drosophila impacts – your help needed!

This survey will help researchers identify impacts of spotted wing Drosophila (SWD) on fruit growers and look for new management tactics and programs, improved insecticide efficacy and SWD training.

Posted by **Rufus Isaacs**, and Larry Gut, Michigan State University Extension, Department of Entomology, MSUE News

Michigan State University researchers are part of a recently funded project, **“Sustainable Spotted Wing Drosophila (SWD) Management for United States Fruit Crops,”** and the team is surveying fruit growers with two goals:

- 1 Measure the impact of SWD throughout the United States.
- 2 Guide our project activities over the next four years.

This five-year project, coordinated by North Carolina State University, is developing national research and extension projects to minimize the impacts of SWD. They include new management tactics and programs, improved insecticide efficacy for SWD and information and training on SWD for growers, extension agents and others. In order to achieve this and ensure the research and extension efforts match the needs of growers, the project is collecting information on the impacts of SWD on fruit growers, current management practices and preferences, and your requirements for better management of SWD. Participation is voluntary and the survey does not collect personally identifying information. The data will only be analyzed and reported in aggregate form.

We would like to get feedback from as many growers as possible! So, please complete the survey here: **Sustainable SWD Management Grower Survey**
Contact me at isaacsr@cns.msu.edu for additional information.

<https://survey.ncsu.edu/swd/>

Funding for this project is provided by the National Institute of Food and Agriculture, U.S. Department of Agriculture Specialty Crops Research Initiative under Agreement No. 2015-51181-24252.

2016 IPM Update Schedule

**Emily Pochubay and Nikki Rothwell
Michigan State University Extension**

Tree Fruit IPM Updates beginning the first week of May through mid-July (as needed) 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. Workshops will be held weekly in Leelanau and Grand Traverse counties and bi-weekly in Antrim and Benzie counties. Tree fruit growers are welcome to attend meeting at any of the locations and times that are most convenient (see below). These workshops are free and do not require registration. 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 3, 10, 17, 24, 31; June 7, 14, 21, 28

Time: 12PM – 2PM

Grand Traverse County

Location: Wunsch Farms, Phelps Road Packing Shed, Old Mission

Dates: May 3, 10, 17, 24, 31; June 7, 14, 21, 28

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 4, 18; June 1, 15, 22, 29

Time: 10AM – 12PM

Benzie County

Location: Blaine Christian Church, 7018 Putney Rd, Arcadia, MI 49613

Dates: May 4, 18; June 1, 15, 22, 29

Time: 2PM – 4PM

Top Bar Hive Building Workshop

Saturday, April 23, 2016

10:00am - 4:00pm

Northwest Michigan Horticultural Research Center
6686 South Center Highway
Traverse City, MI, 49684

Most people think of Langstroth hives when they think of an apiary, but top bar hives can be less expensive to build and require minimal lifting. Ready to build your own? Join us!

Top bar beekeeper and craftsman Matt Joppich, of Matt Joppich Furniture, will discuss the benefits of top bar hives and teach basic top bar bee care. Together, the workshop attendees will build a top bar hive and everyone will walk out with detailed building plans to make their own top bar hive at home.

Cost: \$40. Register [here](#). Space is limited, and registration closes April 20. Questions? Contact [Jeannie](#) at (231) 622-5252.

Do you need to worry about early spring freezes?

Cold, windy, snowy weather shouldn't concern fruit growers as much as calm, clear nights.

Posted by [**Mark Longstroth**](#), Michigan State University, MSUE News



These apricots at white bud would be damaged at 24 F; some would survive down to 14 F. Each bud contains a single flower. Photos by Mark Longstroth, MSU Extension

In early spring as fruit trees begin to grow, many people are worried that freezing temperatures will kill the buds of their fruit trees. These buds can handle very low temperatures in the winter. Just because they have begun to grow does not mean they will be killed by freezing temperatures. The swollen buds can often easily withstand cold temperatures in the teens. As the plants move past the swollen bud stage, they become susceptible to cold temperatures down in the low 20s.

There are a lot of factors to consider and all freezes are all unique. The bud development stage will determine if the temperatures are low enough to cause harm. The weather conditions before and during the freeze and especially the wind and dew point will determine how cold the lowest temperatures will be. Finally, the topography of the site influences the risk of injury as cold air will settle into the low areas leaving warmer air at higher sites.

Another factor is not all the buds die at once. The most advanced buds will be killed at a warmer temperature than slower developing buds. Some fruit varieties, such as apricots, develop very quickly and are more susceptible to freezes than slower developing fruit such as cherries, peaches, apples, blueberries and grapes.



Tart cherries at swollen bud. Some of these buds would be damaged at 24 F, but some

would survive down to 10 F. There are three or four flowers in each bud and they do not all die at once.



Apples at half-inch green. Each bud contains five flowers. These buds can withstand 23 F without any damage.

In southwest Michigan, our relatively mild winter and warmth in March allowed many fruit trees to get off to an early start. Cooler weather has slowed development, but we have swollen buds and green tissue exposed. On our most advanced fruits, tiny flower buds are exposed. I expect some injury from temperatures in the low 20s and severe damage from temperatures in the teens. See the [Michigan State University Extension](#) article, "[Freeze damage depends on tree fruit stage of development](#)," for more information. You can also view a [table on the critical temperatures for tree fruit crops](#) and another table with pictures, "[Picture Table of Fruit Freeze Damage Thresholds](#)." These can be used to estimate the risk of freezes to fruit buds.

There has been little movement in grapes, so they can still handle fairly cold temperatures. Strawberry flower buds are still in the ground and should not suffer any damage until we get close to 10 degrees Fahrenheit. Blueberry buds are at swollen bud to bud burst and would be damaged by temperatures below 18 F. Damaging lows into the teens are forecast for Tuesday, April 5, and Saturday, April 9, morning.

A lot depends on the conditions of the freeze. If it is cloudy or windy, there is little to be done. During a [radiation freeze](#), there are several techniques growers can use to reduce or prevent freeze injury. Orchard wind machines are effective if we have a strong inversion and work under really cold conditions. Sprinkler irrigation systems are not designed to protect below the mid-20s and should not be used for freeze events into the low twenties. A lot depends on the dew point during a freeze as this is often close to the actual low. See "[What is the difference between a frost and a freeze](#)" for more information.

For more information on predicting freezes and their affects, see the following articles:

- [Monitoring for the risk of frost and freezing temperatures](#)
- [Spring freezes and fruit bud damage](#)

- What are radiation freezes?
 - Analyzing and improving your farm's air drainage
 - Air moving fans for improved air drainage
 - Moist, weed-free soil retains more heat
 - Using sprinklers to protect plants from spring freezes
 - Protect blueberries from spring freezes by using sprinklers
 - Freeze damage depends on tree fruit stage of development
 - 2013 bloom dates for southwest Michigan tree fruit crops
 - Using Enviro-weather's regional overnight temperature report during cold events
 - Probability of a hard frost or freeze in the spring for some southwest Michigan fruit sites
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Message for MAEAP Partners and Supporters

The MAEAP Incentives Task Force, developed by the MAEAP Advisory Council, has created a survey for all farmers (both MAEAP-verified and not MAEAP-verified). The survey seeks to identify the incentives and challenges for participating in MAEAP. We encourage your organization to share the message below with your farmer/grower members. The highlighted sections of the message below can be customized and filled in with your organization's name to accompany the survey link that you forward to your members.

The survey should only take 3-5 minutes.

The deadline for the survey to be completed is: April 24

Survey link: <http://bit.ly/MAEAPSurvey>

If you have any questions, please contact Emily Reinart with Michigan Farm Bureau at [517-679-5337](tel:517-679-5337) or ereinar@michfb.com.

USDA Value-Added Producer Grant Workshop

Tuesday, April 26, 2016

1:30 – 3:30 PM

Michigan Works! Building

1209 S. Garfield Ave, Traverse City, MI 49686

Learn if the USDA grant program is the right tool for your farming operation and how local partners can assist with your application

*(Enter conference room from doors on south parking lot)

There is approximately \$44 million available to help agricultural producers enter into value-added activities. Awards may be made for either economic planning or working capital activities related to the processing and/or marketing of value-added agricultural products. The maximum grant amount for a planning grant is \$75,000 and the maximum grant amount for a working capital grant is \$250,000.

There is a matching funds requirement of at least \$1 for every \$1 in grant funds provided by the Agency (matching funds plus grant funds must equal proposed total project costs).

Application materials including the NOSA, Application tool kit, links to required forms and other important application resources are available at:

<http://www.rd.usda.gov/programs-services/value-added-producer-grants>

If you are interested, the USDA encourages you to contact them to discuss your proposal well in advance of the application deadline. You can reach Bobbie Morrison, Carol Webb and Natalie Garr at (517)-324-5157 with any questions.

This event is brought to USDA Rural Development along with MSU Extension. MSU Product Center, the Michigan Small Business Development Center and its host, Networks Northwest.

Time to start monitoring for black stem borer

Black stem borers will soon be on the move in young orchards. Monitoring for adult activity to time management decisions should start in orchard margins this week.

Posted by **Larry Gut**, Julianna Wilson and Mike Haas, Michigan State University Extension, Department of Entomology, MSUE News

Tweet



Simple black stem borer trap: inverted juice container with sides cut away containing an ethanol lure in the top and soapy water in the bottom. Photo credit: Mike Haas, MSU.

The black stem borer (*Xylosandrus germanus*) is a small (2 millimeters) ambrosia beetle that becomes active in spring after one or two consecutive days of temperatures 68 degrees Fahrenheit or higher, often coinciding with forsythia bloom. The list of host plants it will infest includes many forest and ornamental trees as well as apple and stone fruit.

Black stem borer adults are attracted to stressed trees although they have been known to infest trees that do not appear to be stressed. Young trees near the perimeter of orchards, especially near woodlots, are at greatest risk of injury. Signs of infestation include 1 millimeter diameter entrance holes, sawdust “toothpicks” protruding from the holes, dark discoloration on the bark, oozing sap and dry, blistered bark.

Monitoring

Use a simple trap to monitor female activity in the spring. To construct a trap, cut two to four windows in the body of a plastic 1- or 2-liter bottle that has a cap (see photo). Hang it in the orchard upside down at a height of 0.5 meters (1.6 feet) at the orchard edge near wooded areas. Bait the trap with ethanol using one of the following methods: Pour a cup of vodka into the cap end of the trap, or purchase a ready-made ethanol lure (Standard Release ethanol lures, AgBio, Inc., Westminster, CO) to hang inside the trap and fill the bottom of the trap with soapy water or a small amount of antifreeze.

Check traps at least once per week. The beetles are very tiny and require the use of a microscope and training to identify them correctly to species. Your local Michigan State University Extension fruit educator can help.

Management

The time to spray an insecticide for this pest is when females are colonizing new trees in the spring. Pyrethroid insecticides applied as trunk sprays, at least in nursery settings, have shown the most promise in reducing the number of new infestations within a season. The application of bio-repellents applied to the trunks of stressed trees may also reduce infestation. Although not registered specifically for black stem borer control in Michigan, permethrin is an effective material for reducing the number of new trees attacked in the spring. In apples, green fruitworm and spotted tentiform leafminers are insects listed on the permethrin label and these pests commonly occur around the same time as the spring black stem borer flight. Apple bloom occurs near this time also, so precautions must be taken to protect pollinators.

Unlike sprays for other borers, systemic insecticides are not recommended against this pest because larvae and adults in brood galleries feed on the ambrosia fungus, not plant tissue.

Later in the season, the best management strategy is to remove and burn trees that are 75 percent or more dead or dying. It is also important to make sure all large prunings and brush piles are either flailed or burned. Infested trees, either intact or freshly cut into piles, have been implicated as sources of new infestations.

For more information, please download the free fact sheet: [Managing Black Stem Borer in Michigan Tree Fruits.](#)

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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>