Northern Michigan FruitNet 2017
Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – April 21, 2017

CALENDAR OF EVENTS

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?

- **Introducing: Thomas Todaro, Viticulture Extension Educator for Northwest Lower Michigan.**

- **Video presents methods for using own-rooted Vitis vinifera vines**
- **Improved degree-day maps on Enviroweather**

Introducing: Thomas Todaro, Viticulture Extension Educator for Northwest Lower Michigan.

Thomas was born and raised in Wooster Ohio, and is a recent graduate of The Ohio State University in the department of Horticulture and Crop Science specializing in Viticulture. Hisexperience in viticulture research began in 2012 and includes employment at The Ohio State University Viticulture Program as a Research Aide, Graduate Research Associate (GRA), and currently, Research Assistant. During this time, he conducted and presented projects focused on cultural practices to improve fruit and wine quality, increase freezing tolerance of bud and cane tissues, and improve efficiency in vine recovery following winter damage.

Thomas' experience in viticulture extension includes assistance in the planning and organization of viticulture workshops, field days, and presenting projects to growers in the form of newsletters, posters, educational videos, and conference presentations. In 2014 and 2015, Ohio vineyards sustained severe winter damage. It was at this time, Thomas and his advisor, Imed Dami, addressed the region's industry's need for research based information on vine recovery following severe winter injury through his thesis project titled: "Evaluating Cultural Practices for Recovery from Cold Damage in Grapevines." This project investigated various training and pruning methods on multiple cultivars to determine optimum vine recovery practices.

Thomas' research and extension experience in cool climate viticulture will be put to good use as the Viticulture Extension Educator, where he is proud to lead the MSU Extension efforts, and eager to learn the industry's specific needs, with the goal to achieve efficient, profitable and sustainable viticulture, and contribute to the overall advancement for the Michigan viticulture industry.

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

Video presents methods for using own-rooted Vitis vinifera vines

Learn about the research investigating if the insecticide Movento can provide long-term protection against phylloxeration in own-rooted Vitis vinifera vines in Michigan.

Posted by **Mallory Fournier**, MSU IPM Program, MSUE News

Phylloxera on a leaf.

Phylloxera is a devastating insect pest of vineyards that produces galling on the leaves. More seriously, it produces a nymph stage that feeds on the roots of grapevines, either killing the vines or leaving them very weak and unproductive. Two general strategies to combat this insect pest include developing phylloxera-resistant hybrid varieties and phylloxera-resistant rootstocks. Additionally, Bayer Crop Sciences has a product called Movento that has efficacy in controlling phylloxeration on the roots of grapevines.

Thanks to funding from the Michigan Grape and Wine Industry Council, Tom Zabadal and Jenny Schoonmaker of Michigan State University began a project to see if this chemical strategy could be used in Michigan to grow own-rooted vines of the Vitis vinifera species

and protect them from phylloxeration. Growers can watch a short video about this project at "Developing methods for use of own-rooted Vitis vinifera vines in Michigan vineyards."

The video addresses the following questions that were part of the project:

1. Can Movento provide long-term protection to vines against phylloxera infestation of roots?
2. If so, how often does Movento need to be applied to achieve this protection?
3. If Movento provides long-term protection against root phylloxeration, what strategies might growers employ to establish own-rooted vines in both new and existing vineyards?
4. What are the most efficient ways to employ those strategies?

To access "Developing methods for use of own-rooted Vitis vinifera vines in Michigan vineyards" and other wine grape research videos on a variety of topics, go to the Michigan State University Extension Grapes Research page.

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.

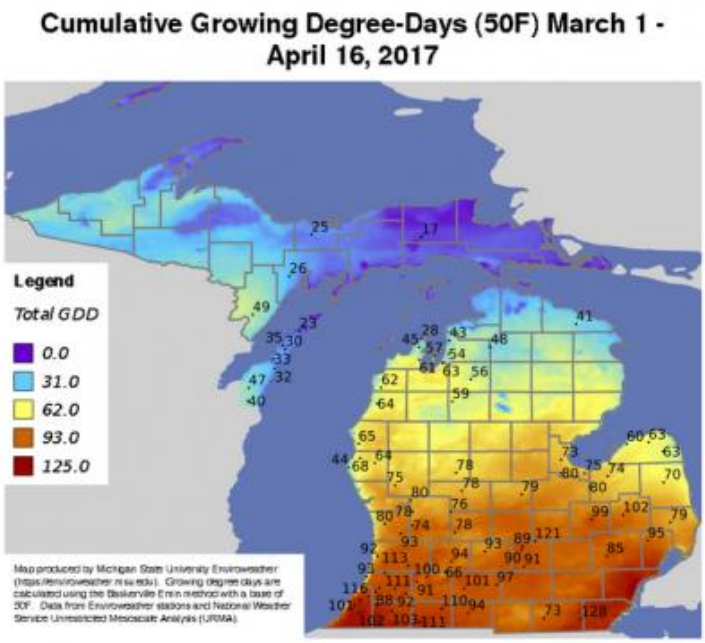
A primary care physician may be able to provide additional options and referrals for fit test providers in the area. We confirmed that Munson Medical Center's Occupational Health and Medicine Clinic (550 Munson Ave. Traverse City, MI 49686; Ph: 231-935-8590) is equipped to perform the appropriate respirator 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).

Improved degree-day maps on Enviroweather

New maps provide more accurate and extensive growing degree-day information to users making pest and crop decisions.

Posted by **Beth Bishop**, MSU Enviroweather, MSUE News



Enviroweather's map showing cumulative growing degree-days.

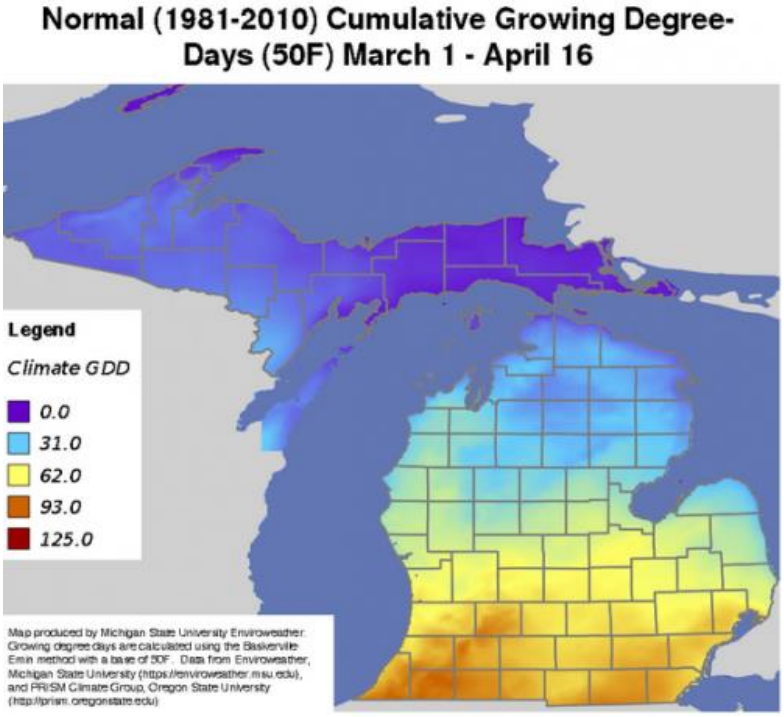
The Michigan State University Enviroweather's "Current Degree-Day Maps" tool shows accumulated growing degree-days (base 50) across Michigan from March 1 to the present (or a user-selected date). Additional maps depict degree-day accumulations compared with normal. These maps are one of Enviroweather's most accessed applications.

The tool was completely rebuilt just before the 2016 growing season. New maps are easier to read with improved color contrast and clearer numbers. We used a different data source from NOAA National Weather Service called UnRestricted Mesoscale Analysis (URMA) to produce the maps. URMA is a collection of gridded weather datasets with a spatial resolution of approximately 1.5 miles. It can provide highly detailed, contoured maps of weather variables across a region.

Based on extensive comparisons of the gridded data values versus observed point data, we decided to use the URMA data for Enviroweather products when feasible. These data provide a good estimate of conditions in a given area, especially when there are missing observations or observing sites.

As mentioned above, the “Current Degree-Day Maps” tool also includes maps of accumulated growing degree-days as compared with normal. The source of the data for calculating “normal” is new this year. Data for the “normal” calculations comes from the PRISM Climate Group at Oregon State University. Based on our evaluation, these data improve accuracy and precision. Data from the past 30 years (1981–2010) were used to calculate normal.

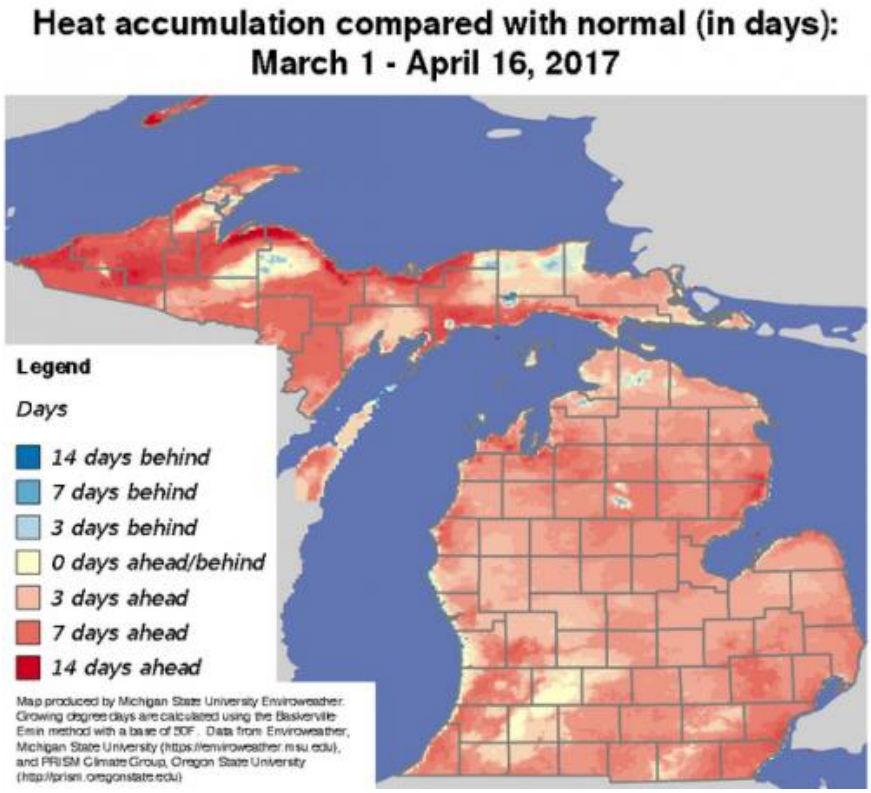
In 2017, we added another map that shows the calculated accumulated normal growing degree-days for the selected date.



Enviroweather map showing normal cumulative growing degree-days.

As in previous years, Enviroweather also displays maps of accumulated growing degree-days ahead/behind normal as measured by time (days/weeks) and degree-days. In 2017, we changed the way we depict days ahead or behind. Now the program takes the current degree-day accumulation and looks to the normal data set to determine when (on which date) that accumulation normally occurs. The difference in days between the normal map and the current map is used to determine days ahead/days behind.

For example, imagine the degree-day accumulation in East Lansing on April 20, 2017, is 151 (base 50). The program looks to the normal data and determines that in East Lansing, 151 degree-days is normally reached on April 23. That means 2017 is three days ahead of normal (The degree-days have been reached three days before they normally would have been.).



Enviroweather map showing heat accumulation compared with normal.

We hope the improvements made to the growing degree-day maps are helpful in your pest and crop decisions. As always, if you have questions or comments, feel free to contact me, Beth Bishop, Enviroweather coordinator, at 517 432-6520 or eweather@msu.edu.

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	**Chemical**	**Current labelled effectiveness**	**Residual**

name	class	rating	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.

Leelanau County HOUSEHOLD HAZARDOUS WASTE & ELECTRONICS COLLECTIONS

NOW ACCEPTING A MAXIMUM OF 10 - ONE GALLON CONTAINERS OF LATEX PAINT

The collections are for Leelanau County Households and covered as part of the $29 recycling fee on winter taxes. The collections are held from 8 AM – 2 PM and registration is required. Please call the Planning Dept. at 231-256-9812 to register.

We are always looking for volunteers to help with the collections, please let us know if you are interested.

Leelanau Planning Department

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