

Northern Michigan FruitNet 2015

Northwest Michigan Horticultural Research Center

Weekly Update

May 12, 2015

CALENDAR OF EVENTS

2015

- 5/5-7/14 Leelanau County IPM Updates**
Bardenhagen Farm
- 5/5-7/14 Grand Traverse County IPM Updates**
Wunsch Farm
- 5/6-7/15 Antrim County IPM Updates**
Jack White Farms
- 5/6-7/15 Benzie County IPM Updates**
Blaine Christian Church
- 5/9 Hazardous Waste and Pesticide Collection for Antrim County**
- 5/28 Hazardous Waste and Pesticide Collection for Grand Traverse County**
- 5/30 Hazardous Waste and Pesticide Collection for Leelanau County**

GROWING DEGREE DAY ACCUMULATIONS AS OF MAY 11, 2015 AT THE NWMHRC

Year	2015	2014	2013	2012	2011	2010	25 Yr. Avg.
GDD42	341	197	295	564	225	479	341.0
GDD50	157	69	159	277	83	214	155.3

Growth Stages at NWMHRC (May 11, 2015, 2:30 p.m.)

Apple: Red Delicious – Open Cluster
Gala – Open Cluster
Yellow Delicious – Open Cluster

Pear: Bartlett: 40% Bloom

Sweet Cherry: Hedelfingen – Ear. Petal Fall
Napoleon – Ear. Petal Fall
Gold – Full Bloom

Tart Cherry: 30% Bloom

Balaton: 60% Bloom

Apricot: Late Petal Fall

Grapes: Chardonay – Bud Swell

Northwest Michigan Fruit Regional Report – May 12, 2015

Northwest Michigan fruit growers are continuing to protect for possible apple and cherry disease infections during recent wet weather.

Emily Pochubay and Nikki Rothwell

Weather Report

Our warm and dry summer-like weather last week was replaced with cool and damp conditions over the weekend. On Friday evening, temperatures dropped by 20+ degrees in a matter of minutes, and since that time, daytime temperatures have been in the mid-50s and low 60s; this cool weather was accompanied by mist and fog. Wet and cool conditions are expected through today, but the sun is forecasted to return on Wednesday and Thursday (13 and 14 May). Rain is predicted to move back into the area for the coming weekend. Although conditions have been wet, we have received no considerable rainfall at the NWMHRC. In total, we have received less than ¼" of rainfall from this last extended wetting period (Saturday-Tuesday morning); perhaps more substantial rain will fall today. Our degree-day accumulations are almost exactly where we have been for our average: 341GDD base 42 and 157GDD base 50. Overnight temperatures are expected to reach into the mid-30s tonight and Wednesday, but frosts are not as likely in good fruit growing sites and wind tonight should help to prevent development of an inversion layer. However, the middle of the state and low-lying areas may dip below freezing.

Crop Report

The warm weather last week really moved crop development, and most sweet cherries began to bloom toward the end of last week. Tart cherries in warm sites also began to bloom last week. Fortunately for those orchards with open blossoms on Thursday and Friday, conditions were warm and sunny, and open blossoms had good potential to be pollinated. However, as blossoms continued to open over the weekend, there was little bee activity with the cool and wet weather. Pollination is a concern, particularly in orchards in cooler areas of the region. Wednesday and Thursday (13 and 14 May) are our next best days for pollination as sun is expected but temperatures are only predicted to be in the mid-50s to mid-60s. After Thursday, rain is predicted to move back into the region for the weekend, and there may be little opportunity for good pollinating conditions. Most apple orchards are not yet in bloom, and we are hoping for warmer and dryer weather for apple bloom.

Pest Report

Cloudy, periodic rain, and cool weather have been consistent since Saturday, and growers were busy spraying fungicides last week to protect blossoms and new tissue prior to wetting events

Cool temperatures in the last few days have slowed the development of fire blight bacteria, and as a result, the current risk of fire blight infection for the coming week is low. Additionally, apple blossoms are not susceptible to fire blight infection until flowers are open and few apples have open blossoms in the region at this time. Fire blight could be a concern if temperatures increase into the mid- to upper- 60s when apples begin blooming. Currently, the epiphytic infection potential or EIP values on Enviro-weather's fire blight model are low, and at zero if apple bloom or biofix is 9 May – 15 May. However, EIPs can change quickly because these values are based on degree-hour accumulation rather than the typical degree-day accumulations used in other disease models like apple scab and cherry leaf spot. Therefore, we would like to remind growers to check this model often as predicted weather conditions can change frequently and these changes would impact EIPs. The EIP values are higher for Saturday and Sunday at this time. Some orchards in the Benzie-Manistee area could have open blossoms by the end of the week. The figure below is the 11 May Maryblyt fire blight output for the Benzonia station that currently shows a moderate risk of infection with an EIP of 74 on Sunday.

Directions for assist chart:

2015		Temperature(F)			Rain		EIP for Biofix Date: (Bloom or spray date)													
Day	Date	Max	Min	Avg	in.	Chance of rain	5/5	5/6	5/7	5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15	5/16	5/17	
Wednesday	5/6	74.6	47.2	60.9	0	--	26	21												
Thursday	5/7	83.2	58.9	71.1	0	--	129	124	103											
Friday	5/8	74.8	54.8	64.8	0	--	188	188	167	64										
Saturday	5/9	57.7	46	51.9	0.05	--	126	126	112	43	0									
Sunday	5/10	62.7	44.5	53.6	0	--	56	56	56	21	0	0								

Note: Last time reported by station is (3:55-4:00PM)

Monday	5/11	Forecast: 67	Actual (3:15-3:20AM): 47.4	57.2	0.12	100%	56	56	56	21	0	0	0	
Forecast Data														
Tuesday	5/12	53	49	51	--	50%	14	14	14	14	0	0	0	0
Wednesday	5/13	51	36	43.5	--	14%	7	7	7	7	0	0	0	0
Thursday	5/14	65	33	49	--	10%	7	7	7	7	0	0	0	0
Friday	5/15	65	47	56	--	67%	0	0	0	0	0	0	0	0
Saturday	5/16	74	55	64.5	--	61%	37	37	37	37	37	37	37	37
Sunday	5/17	74	54	64	--	60%	74	74	74	74	74	74	74	74

Conditions may have been conducive for both American and European brown rot (EBR) pathogens over the weekend, but with the cool temperatures, EBR is more likely to become a problem in area orchards. Current and predicted conditions will continue to favor EBR infection of cherry blossoms from popcorn through bloom. Cherry development, in particular tart cherry, is variable across the region where in some areas many blossoms are open and in others, there is little white present on trees. Tart cherries are susceptible to European brown rot infection during the popcorn stage and through bloom. Balaton are more susceptible than Montmorency to EBR infection and should be protected from EBR infection. However, Montmorency can become infected in optimal conditions like the current cool and wet weather we have been receiving. Michigan State University recommends that growers who are planning to protect from EBR pathogens use Indar at the popcorn and 7-10 days later timings to prevent infection. If blossoms were not protected at the popcorn stage, a later Indar application during bloom will help to prevent EBR infection.

Green tissue expanded late last week in tart cherries across the region. Fully expanded leaves, including bract leaves, are susceptible to cherry leaf spot (CLS) infection. Although CLS develops and infection occurs more slowly during cool temperatures, CLS spores can discharge and initiate possible infection periods in wet weather with temperatures in the low to mid 40s. The northwest region is currently in the midst of ongoing cherry leaf spot infection periods that were initiated by wetting events that began 9 May – 11 May.

Spotted tentiform leaf miners and green fruitworm moths are active, and GFW larvae could also be active at this time. Apple flea weevil was detected in high densities in an organic apple orchard in Leelanau County last week. Cool conditions do not favor insect activity.

Grapes

Many varieties are showing bud swell. In the research vineyard Cabernet Franc is the most advanced *vinifera* cultivar, at bud-burst with several leaves showing in the lowest portion of the vine. On all of the *vinifera* cultivars there is very little bud swell above about 1.5 feet from the ground—the snow cover line back during the worst winter cold. At some commercial vineyards I have seen significant bud swell on Chardonnay vines much higher in the trellis.

There is still time for dormant sprays against powdery mildew in many sites. No pest activity has been reported to this date. Vineyards with a history of climbing cutworms should be monitored closely for their activity during the next couple of weeks.

We still have a good deal of pruning and training to do at the research center vineyard. I would greatly appreciate volunteers to help get this done—I plan on working in the vineyard this Thursday and Friday, May 14 and 15, starting about 9 am both days. If the weather is questionable, give me a call at 231-357-8353 to make sure it will be a work day before heading over to the vineyard.

Saskatoons

Bloom is underway in the area. Unfortunately, the weather is pretty poor for pollinator activity. I have not seen any symptoms of entomosporium leaf spot or rust disease to this point, but with the wet weather of late we have probably had some chance for early infections.

If you do not have a copy of the 2015 pesticide recommendations for Michigan saskatoon production, just send an email request to me at elsner@msu.edu.

KEEP BEE SAFETY IN MIND DURING ORCHARD BLOOM

Bloom is upon us again and it is time to review best management practices for protecting bees in orchards.

Posted on **May 8, 2015** by MSUE News, [Julianna Wilson](#), Michigan State University Extension, Department of Entomology

Protecting pollinators against pesticide exposure by paying attention to when bees are active is one of the most important steps tree fruit growers can take as part of a sound integrated pest management (IPM) plan. Two other important steps growers should take are to prevent drift onto non-crop flowering plants, and provide flowering habitat out of the way of potential pesticide drift after crop bloom.

Tree fruit growers need the services of bees to move the pollen necessary to initiate fruit. While pollination alone does not guarantee a marketable crop, pollinator stewardship is an important component of tree fruit IPM. An IPM plan is a set of best management practices that rely on what we know about the biology of a cropping system and how it interacts with the environment to select and implement management strategies when they will be most effective against a particular pest, and do the least harm to humans and the environment.

[Michigan State University Extension](#) has developed a summary of best management practices for pesticide use and bee safety in orchards.

Pre-bloom

Draft a written contract with your beekeeper to clarify expectations on both sides, including record keeping, when the hives will be delivered, where the hives will be placed on the farm and when they will be removed. Keep good records of all pesticide applications so that if a complaint arises, the record shows that everything was done according to label.

Provide sufficient time between pre-bloom sprays and placement of hives to avoid exposing bees to lethal residues. Remember that re-entry intervals (REIs) on pesticide labels should not be violated by a beekeeper placing colonies or removing them from your crop.

When honey bees are delivered

Select a location for hives on the farm that is protected from potential spray drift. Honey bees are highly mobile, so for maximum safety, hives should be placed on the perimeter of plantings rather than along drive lanes within the planting. Make sure that pesticide applicators know where these locations are so that they can be avoided.

In the company of the beekeeper, examine delivered hives to know the health and strength of the hives you are renting. Hives with six to eight frames containing 70-75 percent brood per frame are considered to be a reasonable expectation at the beginning of pollination season in Michigan.

During bloom

At all times, follow the current label for pesticides being applied. New EPA pesticide labels have bee-specific language and it is anticipated that more pesticide labels will include bee-specific labeling in the future. Select pesticides that are least toxic to bees whenever possible.

Provide notice of planned pesticide applications so that the beekeeper has time to close hives if he or she feels the need to do so prior to an application. Avoid applying insecticides permitted for use during crop bloom while bees are foraging, and avoid tank-mixes that include insecticides to control pests in the immediate post-bloom period – even when not labeled as bee toxic.

Bees are less active in cool temperatures and low light, so spraying pesticides after sunset can greatly reduce the risk of direct exposure, as can spraying when temperatures are below 55 degrees Fahrenheit. Drift prevention should include turning off the sprayer near hives, avoiding spraying under windy conditions and using equipment calibrated or designed to produce low drift.

Clean equipment and dispose of pesticide products safely – do not leave contaminated water where bees can access it. Prevent pesticide contamination of open water sources that bees might use consume for regulating in-hive temperatures.

Petal-fall and post-bloom

Do not apply bee-toxic insecticides until crop flowering is complete and **all** petals have fallen; if you are unsure whether bees have finished foraging in your crop or not, spray after sunset or when air temperatures are below 55 F to minimize exposure of remaining bees to pesticides. Use selective herbicides to eliminate flowering weeds from drive lanes or mow before spraying to reduce flowering weeds in the orchard.

Provide non-crop flowering plants elsewhere on the farm to divert bees from fruit plantings (i.e., meadows that contain bee-attractive plants or summer-flowering cover crops like buckwheat) and prevent drift of pesticides off target.

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Important Crop Insurance Deadline Near for Illinois, Indiana, Michigan, and Ohio Producers

Producers Need to Certify Conservation Compliance by June 1

The 2014 Farm Bill requires insureds to comply with highly erodible land conservation (HELC) and wetland conservation (WC) provisions to be eligible for crop insurance premium subsidies beginning with the 2016 reinsurance year. In 2014, FCIC paid approximately 62% of the producers premium cost. Producers that are not in compliance with WC and HELC provisions could see their premium cost double.

Simply stated, by June 1, 2015, insureds must have an AD-1026 [Highly Erodible Land Conservation and Wetland Conservation Certification Form](#) on file with FSA in the same name and taxpayer identification number you use when you purchase your crop insurance policy to retain the premium subsidy. To accommodate growers with only orchard, bush and vine crops, the new AD-1026 doesn't require the establishment of detailed farm records with FSA, only the full tax identification number to establish and record compliance is met. To ensure producers are aware of the change, the Risk Management Agency sent letters in November and again in April to producers that have crop insurance, but FSA records indicate no AD-1026 is on file.

It is also important to note that **insureds with catastrophic coverage (CAT) are still required to sign an AD-1026 to be eligible for the premium subsidy.** Even though they only pay an administrative fee, there is a premium associated with CAT coverage and the producer will be responsible for the full premium if they don't comply with Conservation Compliance.

To continue to be eligible for premium subsidy on any Federal crop insurance policy, including specialty crops, livestock, and pasture, a form AD-1026 must be filed with FSA by June 1, 2015. If you do not have form AD-1026 on file with FSA by June 1, 2015, or are not in compliance with the requirements as outlined on the form, you will not be eligible for premium subsidy on any Federal crop insurance policy that has a sales closing date on or after July 1, 2015. This means you may still be eligible for insurance but you will have to pay the full premium.

You can find your local FSA office at <http://offices.sc.egov.usda.gov/locator/app>. Additional information about Federal crop insurance and the HELC and WC provisions is available at the RMA website at www.rma.usda.gov and NRCS's [Conservation Compliance webpage](#)

Apple flea weevil detected in organic apple orchard in northwest Michigan

A high population of this old orchard pest has been found in a northwest Michigan organic apple orchard.

Emily Pochubay and Matt Grieshop

In the last five years, organic apple growers in the southern portion of Michigan's lower peninsula have observed occasional upsurges of apple flea weevil (*Orchestes pallicornis*). The AFW is an old orchard pest that has gone relatively unnoticed or misdiagnosed in conventional

and organic orchards in the last few decades. Historical records indicate at least two outbreaks of the weevils in the 20th century, once in the late 1920s and again in the early 1980s. Last week, AFW was detected in Northwest Michigan in an organic apple orchard. High populations of this pest were found in the southern part of the state in 2010 and since then, it continues to be a regular pest in Southern and Central Michigan organic orchards.

The AFW emerges in the spring sometime between the green tip and pink stages of apple bud development. Many apples in the northwest region are at the pink stage currently and will begin opening blossoms soon. Adults that are currently present in orchards will feed on leaves and buds leaving a characteristic “shot hole” type of damage (Figure 1). Feeding damage at this time can also cause buds and blossoms to abort.



Figure 1. ‘Shot hole’ damage caused by adult feeding

Adults are also mating at this time and the females will begin laying eggs in leaflets as they form. Eggs are typically laid near the main leaf vein and the larvae that hatch from the eggs are leaf miners that mine from the main vein toward the leaf’s margin. These larval leaf miners form a pupal chamber called a ‘blister’ between the upper and lower leaf surfaces near the leaf margin or edge (Figure 2). The larvae pupate inside of this blister and emerge as adult beetles in June and July. Newly emerged adult weevils feed on leaf tissue before entering diapause in late August or September. Adults overwinter in leaf litter on the orchard floor at the base of trees.



Figure 2. Apple flea weevil blister on leaf margin

The adult beetles are small (~3 mm long) black weevils with a short snout and club-shaped antennae (Figure 3). The hind legs of the beetle are enlarged at the segment closest to the beetle’s body. These legs are spring-loaded, allowing the beetles to jump when disturbed – hence the name ‘flea beetle.’ The beetles will also tuck their appendages close to their body and drop from foliage when disturbed.

Apple flea weevil made the limelight in 2010, when this pest caused up to 90 percent of fruit losses in some Michigan orchards. Since then, damage has been observed in both conventional and organic apple orchards in Michigan. The two best control timings for this pest are between tight cluster and pink to kill adults that emerge, begin feeding, and laying eggs in the spring. The key for control is to have enough leaf area present for spray material to contact and provide efficacy against the weevils. Research conducted by the MSU Organic Pest Management lab has shown that the spinosad insecticide, Entrust, has good activity against AFW. However, no insecticides are currently labeled for AFW.



Figure 3. Adult apple flea weevil

Scouting for blisters will indicate the effectiveness of early control tactics. If necessary, an additional application could target adults that emerge from the blisters in mid-summer. There is one generation of apple flea weevil per season; therefore, intervention this season should reduce populations in the 2016 season. \

Michigan Wineries Now Have Their Own Industry Benchmarking Program

Greenstone Farm Credit Services

GreenStone and North Coast Ag Advisors announce the Michigan Winery & Vineyard Benchmark Program.

GreenStone Farm Credit Services is pleased to announce a partnership with North Coast Ag Advisors and Farm Credit East to launch the Michigan Winery & Vineyard Benchmark Program for Michigan winery and vineyard owners and managers. GreenStone is the sponsoring underwriter of the program. Farm Credit East provides the technology tools for data analysis.

A first of its kind in Michigan, the program is designed for winery and vineyard business owners and managers to help them better understand their competitive position in the marketplace, provide insight into industry trends and assess the financial implications of their growing, wine-

making and marketing strategies, decisions and practices.

Jim Casler, President of North Coast Ag Advisors comments, "This program helps continue to launch Michigan forward as a world-class wine-producing region. The West Coast has long had industry benchmark programs like this. Now is Michigan's time."

North Coast Ag Advisors serves as the primary contact for winery and vineyard owners and managers; collecting and analyzing business data, conducting an annual conference and performing one-on-one review sessions with each participating winery and vineyard.

"As the fourth largest producer of grapes in the nation, it's time for Michigan winery owners, the investment community and the industry at-large to have access to Michigan specific data to help best understand the industry and help it grow. As a sponsor of the program, we've committed ourselves to better understanding this industry to help support our members." says Tyson Lemon, GreenStone vice president of commercial lending.

Eligibility for participation is based on the winery's ability to provide accurate financial and operational information about their business. In order to maintain program participant confidentiality, all data is scrubbed of any identifying information and then analyzed to determine financial ratios, operating efficiency and other key performance indicators. The data from all program participants is then gathered together to produce an annual industry report. An annual conference is held to share the findings, followed-up with one-on-one consultations with each winery.

Gregg McConnell directs the North East winery benchmark for Farm Credit East, ACA. Gregg explains "We're excited to provide the technology to get the Michigan Winery Benchmark going with our colleagues Greenstone Farm Credit and North Coast Ag. The program has been a great assistance to wineries in the North East for the past 7 years, and now through collaboration the impact is expanding to Michigan. A key to its success is confidentiality, and North Coast Ag will provide strict confidentiality which is important to winery owners."

Casler further adds, "The information in the annual report and the individualized follow-up analysis is not easy for the average winery owner to obtain. In fact, it's been almost impossible until now. Since most of the 100-plus wineries in Michigan are privately owned, the information just isn't out there like it would be if they were all public companies."

Linda Jones, Executive Director of the Michigan Grape and Wine Industry Council provided "Our office must receive at least half a dozen inquiries a year for this kind of information. I am guessing that several of Michigan's winery and vineyard owners will take advantage of this program."

The Michigan Winery Benchmark Program is now officially launched and will continue for at least the next three years. A goal is to attract at least a 20 percent participation rate with all eligible wineries and vineyards.

For more details and qualification information, visit www.JimCasler.com/wine.

FRUIT GROWERS ARE SHOWING A RENEWED INTEREST IN PRUNING ROOTS TO MAKE CANOPIES MORE COMPACT

Posted on **May 7, 2015** by [Ron Perry](#), Michigan State University Extension, Department of Horticulture



Root pruner used at the Northwest Michigan Horticulture Research Center in 2014.

Recent weather conditions are promoting bud break and bloom in stone and pome fruit. The bloom is concentrated and pressing everyone's schedules with multiple activities simultaneously. [Michigan State University Extension](#) has a project in tart cherries where one of our treatments is to prune roots to see if the practice on this crop can stymie tree vigor so that we can more easily harvest with a berry harvester. This is one of different approaches to canopy management to make canopies more compact. This will be the second year we have tried this practice and look forward to the results.

In spring 2014, we pruned roots using an implement we borrowed from a couple different fruit growers. In discussing this practice with Phil Brown of Phil Brown Welding, he indicated there is a renewed interest, especially in apples, in using a root pruner, and he is building new machines. Some orchardists are even asking for one that can do two rows simultaneously (one pass). The practice became popular when apple growers were using semi-dwarfing rootstocks and finding that trees were shading neighboring trees due to tight spacing. Studies have demonstrated that restricting root extension and volume by pruning with a sub-soiling knife can reduce canopy volume and vigor of fruit trees by nearly 30 percent.

The studies conducted on apples and sweet cherries in Hungary (Bruner, 1986) and apples in Ohio (Ferree, 1992) demonstrated that bloom was the optimum time to prune roots, and both studies also indicated fruit size was diminished by 20-25 percent. The practice calls for pulling a sub-soiling knife alongside tree-rows to a depth of 14-18 inches and 12-18 inches out from tree trunks on both sides of trees parallel to tree rows. The only problem with this practice is that the

pruning is done without knowing for sure exactly how much of the root volume is affected (removed) since it is done below ground. The theory indicates that likely one is removing about 30 percent of the rooting volume. The practice soon became less interesting to apple growers with reports of significant reduction in fruit size. Secondly, many growers began transitioning to dwarf rootstocks, eliminating the need to prune roots.

Why is the interest returning? According to Brown, growers are using the machine to reduce fruit size for large fruited varieties, which is helping meet marketing preferences for smaller fruit size. Secondly, some of the new Tall Spindle plantings are becoming more vigorous than intended on sites with fertile soils.

Our study, which was just deployed for the first time in spring 2014, demonstrated a canopy volume reduction of close to 30 percent on Montmorency/Mahaleb rootstock, conducted at the [Northwest Horticulture Research Center](#). Roots will be pruned once again at bloom in the plot (next week). In a separate study, we compared root pruning at bloom and at pit hardening (three weeks later) to determine the difference. We will be trying the comparison again this year. There is little to no reports of previous studies conducted on tart cherries.

Dr. Perry's work is funded in part by [MSU's AgBioResearch](#).

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HOUSEHOLD HAZARDOUS WASTE AND PESTICIDE COLLECTIONS:

[Leelanau County](#) : upcoming collection on May 30

[Antrim County](#) : upcoming collection on May 9

Grand Traverse County : upcoming collection May 28, 2015

****Reservations are required; every county has different requirements for materials they will take back.**

Information on Grand Traverse County Hazardous Waste and Pesticide Collection:

GRAND TRAVERSE COUNTY RESOURCE RECOVERY DEPARTMENT (RecycleSmart) will conduct a Household Hazardous Waste (HHW) & Pesticide collection on Thursday, May 28, 2015.

The online scheduling system is a convenient and the recommended tool to secure an appointment.

An appointment is required and can be made at www.RecycleSmart.info or by calling the RecycleSmart Hotline at 941.5555.

This service is provided to Grand Traverse County residents at no cost, (up to 150 lbs., \$1.30 lb. thereafter). Accepted material includes cleaning products, pesticides, mercury, moth balls, motor oil, pool chemicals, oil based paint, latex paint, CFL bulbs and more...

Latex paint is accepted.

For more information visit www.RecycleSmart.info or call the RecycleSmart Hotline at 941.5555

2015 Tree Fruit IPM Update Series

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 season's 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 meetings at any of the locations and times that are most convenient (see below). These workshops are free and do not require registration. Certified crop advisor continued education credits (two per meeting) and pesticide recertification credits (two per meeting) 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.

IPM Update Dates, Times, and Locations

Leelanau County

Location: Jim and Jan Bardenhagen, 7881 Pertner Rd, Suttons Bay
Dates: May: 12, 19, 26; June: 2, 9, 16, 23, 30; July: 14
Time: 12PM – 2PM

Grand Traverse County

Location: Wunsch Farms, Phelps Road Packing Shed, Old Mission
Dates: May: 12, 19, 26; June: 2, 9, 16, 23, 30; July: 14
Time: 3PM – 5PM

Antrim County

Location: Jack White Farms, 10877 US-31, Williamsburg (is not correct in Google Maps) *North of Camelot Inn and South of Elk Rapids on the southeast side of US-31*
May: 20; June: 3, 17; July: 1, 15
Time: 10AM – 12PM

Benzie County

Location: Blaine Christian Church, 7018 Putney Rd, Arcadia, MI 49613
May: 20; June: 3, 17; July: 1, 15
Time: 2PM – 4PM

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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 is available at the new cherry website:

<http://www.cherries.msu.edu/>

Information on apples:

<http://apples.msu.edu/>

Fruit CAT Alert Reports has moved to MSU News

<http://news.msue.msu.edu>