

Northern Michigan FruitNet 2014

Northwest Michigan Horticultural Research Center

Weekly Update

May 6, 2014

CALENDAR OF EVENTS

- 5/7** **IPM Update – Antrim Co.**
Jack White Farm, 10:00-Noon
- 5/7** **IPM Update – Benzie Co.**
Loy Putney Farm, 2:00-4:00 p.m.
- 7/2** **IPM Updates End**

GROWING DEGREE DAY ACCUMULATIONS AS OF April 28 AT THE NWMHRC

| Year | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 24 Yr. Avg. |
|--------------|------|------|------|------|------|------|-------------|
| GDD42 | 117 | 205 | 493 | 151 | 464 | 239 | 272.0 |
| GDD50 | 27 | 102 | 246 | 48 | 212 | 94 | 119.1 |

Growth Stages at NWMHRC (May 5, 2014 9:00 a.m.)

Apple: Red Delicious – Early silver tip
Gala – Silver tip
Yellow Delicious – Silver tip

Pear: Bartlett: Bud swell

Sweet Cherry: Hedelfingen: Side green
Napoleon: Green tip
Gold: Green tip

Tart Cherry: Side green
Balaton: Green tip
Apricot: Bud swell
Grapes: Early scale crack

NORTHWEST MICHIGAN REGIONAL REPORT

N. Rothwell, E. Pochubay, and D. Elsner, MSU Extension

Cool and wet weather is slowing spring throughout the region; blooming fruit is not predicted in the next week.

Weather Report

For many of us here in northwest Michigan, spring does not seem like it will ever come. Cool and wet weather has become the norm, and the occasional sunny day comes as a bit of a surprise. Daytime highs have been in the mid-40s to low 50s F, and nighttime temperatures remain in the low 40s. However, these cool temperatures coupled with cold winds off of Lake Michigan make the temperatures seem much cooler. We are slowly accumulating degree-days, but we are considerably behind our 20+ year average. Thus far in 2014, we have accumulated 117GDD base 42 and only 25GDD base 50 while our average accumulations are as follows: 272GDD base 42 and 119GDD base 50. This week's temperatures are expected to be in the 60s and even reaching into the 70s F on Wednesday and Thursday. In addition to cool temperatures, we have had substantial rainfall. In April, we had almost 5 inches of rain at the NWMHRS, and in May, we have had just over 0.5" in the past five days. Even if there has been no rain in the forecast, conditions have been grey and overcast. Soils are still wet in the orchard, and in some low spots, we still have standing water.

Crop Report

As to be expected with the cool temperatures, tree fruits and vines have not moved much from last week. We are starting to see some initial green in sweet and tart cherries. A little green is also starting to show up in Red Delicious, but development is slow with the current conditions. Growers continue to move forward with pruning, and most are saving sweet cherries until warmer and drier conditions to minimize the impacts of bacterial canker. We have observed winter damage in young sweet cherries, and the cambium is noticeably brown when we cut into the wood. We will try to determine the extent of this damage in the coming weeks. Some growers to the south have sprayed or are considering applications for apple scab with green tissue on some early varieties and with the ongoing rainy conditions, but overall fungicide applications have been minimal.

Pest Report

The Northwest Michigan Horticultural Research Center is monitoring for apple scab spores during the primary infection period. With the exception of some earlier apple varieties starting to show green, most apple varieties remain dormant/silver and as a result, are not yet susceptible to scab infection. However, apple scab spores were discharged during last week's rain. Our first detection of spores was on 4/30 following a rain event where spore numbers were an average of 50.75 spores per spore rod. Since the first detection, the average number of spores per rod has increased to an average of 258.75 per rod. This most recent spore count followed a wetting period that the NWMHRC weather station recorded as beginning in the evening on 4/30 and ending mid-day on 5/3.

The cool weather this spring has delayed insect activity. Pheromone monitoring traps for spotted tentiform leafminer, oriental fruit moth, and American plum borer were deployed at the NWMHRC on 4/30. Since then, we have not detected any of these pests at the station. However, green fruit worm moths are active and were detected in our traps. These insects emerge early in the season and often fly earlier than other species. We have received more reports of San Jose scales on sweet cherries in Leelanau, Grand Traverse, and Antrim counties. Dormant oil sprays have been applied in both apples and cherries; growers should be cautious when spraying oil if freezing temperatures are predicted because phytotoxicity can occur when oil is applied during cold temperatures. Some copper applications have also been made in apples in the last few days.

Wine Grapes

Due to continued cold temperatures, no noticeable development in bud development.

STILL LOOKING FOR SWEET CHERRY GROWER COLLABORATORS FOR 2014 BIRD DETERRENT TRIAL

Michigan State University and the Northwest Michigan Horticultural Research Center are looking for grower collaborators for a bird deterrent trial in northwest Michigan using air dancers (inflatable tube men powered by fans). We are searching for sweet cherry orchards that have typically had high bird pressure and that have electrical outlets nearby. The trial would require cooperation with experimental protocols. Research done in orchards would include cherry and bird counts for approximately three weeks before harvest. If you are potentially interested in participating in this project, please contact Catherine Lindell (517-884-1241, lindellc@msu.edu) or Shayna Wieferich (517-432-3923, shaynawief@gmail.com)

MINIMIZING PESTICIDE EXPOSURE TO BEES IN FRUIT CROPS

Use these practices and guidelines for minimizing exposure of bees to pesticides while still managing pests and disease in fruit crops.

Posted on **April 29, 2014**, **MSUE News**, by [Julianna Wilson](#), Larry Gut, Rufus Isaacs and Emily May, Michigan State University Extension, Department of Entomology



Honey bee on superberry. Photo credit: Jerry A. Payne, USDA ARS, Bugwood.org

Most fruit crops grown in Michigan need bees, whether managed or wild, for pollination. Honey bees are by far the most important crop pollinators because they are abundant, will collect nectar and pollen at distances of more than a mile away from their hive, and are relatively easy to transport in and out of plantings in time for bloom. Honey bees are typically placed in the field when crops are at 5-10 percent bloom and then removed at “petal fall.” While bees are essential for the production of most fruit crops, pest management is also critical for producing marketable and profitable yields. This can create a potential conflict between the need to protect bees and the need to prevent insect and disease pests.

The challenge for commercial fruit growers is to manage the pests and diseases that cause crop losses while minimizing pesticide exposure to bees across the variety of crops and cultivars that may bloom at different times throughout the spring across the farm. Many insecticides are known to be acutely toxic to bees and are restricted from use during bloom to minimize exposure. Newer research suggests that other insecticides and some fungicides and inert ingredients in pesticide formulations may affect brood development when residues are brought back to beehives. As part of the response to increasing concerns and more detailed information about pesticide effects on bees, there have been [recent changes to pesticide labels](#) and the re-evaluation of practices that will minimize pesticide exposure to bees in fruit crops.

[Michigan State University Extension](#) has provided guidelines for fruit growers on minimizing the risk of pesticides to bees. It all starts with good communication between growers and their beekeepers. Discussions during the winter can set the stage for how many hives will be needed and when and where to put the bees on the farm. As the season starts, making good pre-bloom decisions and avoiding exposure of bees to toxic pesticides are essential.

Some general practices that can minimize this risk include:

- Draft a written contract with the beekeeper to clarify expectations on both sides.

- Select a location for hives on the farm that is upwind from potential drift.
- Honey bees can cover a lot of ground, so place hives in safe locations rather than along drive lanes within or close to the planting.
- Know when to expect the delivery of hives and when they will be removed.
- Examine delivered hives to know the health and strength of the hives you are renting.
- At all times, follow the label for pesticide application. New labels for neonicotinoids and for Exirel have bee-specific language.

Specific practices to minimize exposure of bees to pesticides include:

- Provide sufficient time between pre-bloom sprays and placement of hives to avoid exposing bees to lethal residues.
- Do not apply bee-toxic insecticides until crop flowering is complete and all petals have fallen.
- Do not apply insecticides permitted for use during crop bloom while bees are foraging. Spraying after sunset can greatly reduce the risk of exposure.
- Select less toxic insecticides whenever possible. Consult the [Michigan Fruit Management Guide E-154](#) for the table of insecticide toxicity ratings for honey bees.
- If fungicides are needed during bloom, spray after sunset or when air temperature is below 55 degrees Fahrenheit whenever possible.
- Turn off the sprayer near hives and avoid pesticide drift onto open flowers.
- Use selective herbicides to eliminate forbs from drive lanes or mow before spraying to reduce flowering weeds in the crop field.
- After crop bloom, draw bees away from crop plantings by providing non-crop flowering plants elsewhere on the farm (i.e., meadows that contain bee-attractive plants or summer flowering cover crops like buckwheat).

For more detailed information on this topic, consult the recently updated Oregon State University publication "[How to Reduce Bee Poisoning from Pesticides](#)."

Drs. Gut and Isaacs' work is funded in part by [MSU's AgBioResearch](#).

This article was published by [Michigan State University Extension](#). For more information, visit <http://www.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

MONITOR VINEYARDS FOR CUTWORMS AND FLEA BEETLES DURING BUD SWELL GROWTH STAGE

Time spent monitoring vineyards for cutworms and flea beetles can avoid costly pest damage.

Posted on **April 29, 2014, MSUE News**, by [Rufus Isaacs](#), Michigan State University Extension, Department of Entomology

Bud swell of grapes is being reported in Southwest Michigan, and I have seen wild grape buds starting to reveal some green tissue this week (as of April 29, 2014). This means we are approaching the time when growers should monitor for cutworms and flea beetles, two early

season pests that can feed on buds and limit crop yield. There are good rules of thumb for deciding whether damage from these insects warrants control, and information on scouting and other management components from [Michigan State University Extension](#) is provided below.

Cutworms

The term cutworm covers many species in the moth family Noctuidae, and as their name suggests, these insects are nocturnal. Vineyards on light-textured soils are typically most at risk. Both the adults and the larvae are only active at night, and the larvae can climb up onto vines during very cool, nighttime conditions. During the day, cutworms hide in the soil or leaf litter and can be found in the top layer of soil.

Many of these insects feed on weeds, but some climb the stems of plants to feed on buds and other young foliage. These climbing cutworms are the ones causing damage to grapevines. Direct observation of feeding by the larvae requires a late-night trip to the vineyard, but their damage is quite easy to see. In Michigan vineyards, the spotted cutworm, *Amathes c-nigrum*, is our main pest species, and the larvae feed on buds and may also feed on leaves until the shoots are 10-15 centimeters long. However, it is the feeding on small buds that has the greatest potential for economic damage.

Cutworm feeding on a bud can reduce the crop by one to two clusters, so the high potential for rapid damage by cutworms requires that growers make good management decisions. Even 2 percent bud injury is an action threshold for an insecticide treatment to prevent further damage, so vineyards should be scouted during the period of bud swell to identify regions with cutworm pressure (see below).

Flea beetles or steely beetles

This insect attacks buds of both wild and cultivated grapes and is another early season grape pest. The adult insects move to the vines at bud swell and usually are localized within the vineyard. Sites near overwintering habitats such as woods or abandoned vineyards are especially at risk. Beetles are most easily seen during warm, sunny weather when they tend to be on the top of vines, usually mating or feeding on buds. This insect can arrive in large numbers when conditions are right for their activity, so be sure to check vines on good weather days during bud swell.

Adults are shiny blue, about 4-5 millimeters long and have strong hind legs that enable them to jump if disturbed, hence the name. The overwintering adults cause the greatest damage by boring into the developing bud and hollowing out the inside while the larvae and summer adults feed on leaf tissues. Bud feeding is similar to that caused by cutworms with similar effects to the vine (see above cutworm description).

Wherever possible, cleaning up overwintering sites, both wasteland and woodland, near to vineyards can help combat grape flea beetle.

Scouting for bud damage

Growers should watch for damage by cutworms and flea beetle, especially if the vines remain in the susceptible bud swell stage for a while with cooler weather. Cutworms tend to be more of a problem in sandy sites, so these should be prioritized for scouting. Both cutworms and steely beetles can cause damage quickly if the temperatures warm up, and since they are difficult to catch “in the act,” regular scouting for the first signs of damage is essential to prevent significant bud loss.

An action threshold of 2 percent damaged buds is recommended in juice grapes, and this can be determined by sampling 10 buds on each of 10 vines spread through the vineyard. Thresholds in winegrapes may be lower due to the higher value of the crop, but there has been little formal research on this topic. Still, it is clear that the potential damage justifies scouting and management if cutworm damage is detected.

As mentioned above, once the shoots get past bud burst and into the 1- to 3-inch range, the danger from flea beetles and cutworms is diminished significantly.

Cultural control

Vineyards that are weedy tend to have more cutworm problems, presumably because the larvae have more places to hide and conditions are better for them. Weedy vineyards also provide more places for the cutworms to hide from sprays applied for their control, so improving weed control is one component of an integrated pest management program to reduce cutworm damage.

Leaving some extra buds is a potential strategy for hedging your risk against cutworm, and frost, injury. Scouting is still required though to make sure the damage doesn't exceed the number of extra buds left behind.

Chemical control

An appropriate insecticide application should be considered if scouting shows significant damage is occurring, and assessments of damage should include wooded borders where flea beetle pressure may be higher and areas where cutworms have been a recurring problem.

Lorsban Advanced is labeled for cutworms at 1 quart per acre in at least 50 gallons of water per acre. Delegate is a reduced risk option registered for cutworm control at 3-5 ounces per acre. There are also a number of pyrethroid insecticides registered for use against cutworms that provide excellent control of cutworms and flea beetle, including Mustang Max at 2-4 ounces per acre, Danitol at 10.6 ounces per acre, and Brigade at 3.2-6.4 ounces per acre.

Research in Washington State vineyards has shown excellent protection against cutworms using only trunk sprays of a pyrethroid. This approach targets the spray to the trunk surface and larvae have to climb up through the residue to reach the buds. This significantly reduces the

cost of application, but it is important to realize that this will not protect the upper canopy from flea beetle feeding.

For photos of grape flea beetle and cutworm damage to grapes, see the [Identifying Insects](#) pages at the recently updated [MSU Viticulture and Enology](#) website at www.grapes.msu.edu.

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

This article was published by [Michigan State University Extension](#). For more information, visit <http://www.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

2014 PESTICIDE SUPPLEMENTAL LABELS

Emily Pochubay and Nikki Rothwell, MSU Extension

Cherry and Apple Supplemental Label Conditions

Bravo Weather Stik 24c for cherry leaf spot in tart cherries

- Available through 2017; need to re-register and receive the training affidavit annually
 - Visit www.michigan.gov/cherrysln to obtain training affidavit
 - Applicators must have a signed copy of the training affidavit in their possession during any 24c SLN Bravo Weather Stik application
- Only Bravo Weather Stik may be applied post-shuck split
- Minimum 21-day PHI
- Cherries must be mechanically harvested into water
- Cherries must spend 2 hours on cooling pad
- Initial flow rate on the cooling pad must be 8-10 gallons gpm
 - After initial period, flow rate may be reduced to 4-6 gpm
- Rinse water generated during the cooling process must not drain or channel toward aquatic areas
- Cherries cannot be used fresh; they must be processed by a commercial processor
- Do not apply more than 20.5 pt of Bravo Weather Stik (15.4 lb a.i.) per acre per growing season. Do not apply more than 15.4 lb per acre of chlorothalonil-containing products per growing season.
- Minimum re-treatment interval is 10 days.

Indar 2F 24c for blossom blight and fruit brown rot in cherries, peaches, and nectarines

- Applicators must have a copy of the special label at the time of application.

- Use 6 to 12 fl oz of Indar 2F per acre in a minimum of 20 gal of water by ground or 10 gal of water by air.
- Indar 2F may be applied up to the day of harvest.
- Primary use of Indar should be for fruit brown rot control in cherries, peaches and nectarines, begin applications 2 to 3 weeks before harvest using a 7- to 10-day spray interval.
- Do not make more than 8 applications at the 6 fl oz rate or 4 applications at the 12 fl oz rate. MSU is recommending the 12oz/acre rate.
- Do not apply more than 48 fl oz of Indar 2F (0.75 lb active) per acre per season.
- Do not graze livestock in treated areas or feed cover crops grown in treated areas to livestock.
- **Chemigation:** Do not apply this product through any type of irrigation system
- Expires May 12, 2019

Kasumin Section 18 for fire blight blossom blight in apples

- Exemption only applies to orchards in counties where streptomycin-resistant bacteria are present: Antrim, Berrien, Cass, Grand Traverse, Ionia, Kent, Leelanau, Montcalm, Newaygo, Oceana, Ottawa, and Van Buren Co.
- Applicators must have a copy of the special label at the time of application.
- Kasumin 2L may only be applied when disease forecasting model or fire blight state expert determine that the weather conditions favor a disease epidemic.
- We have typically utilized the [MaryBlyt fire blight prediction model](#) and have called for Kasumin applications when the Epiphytic Infection Potential (EIP) number from the MaryBlyt model **reaches or exceeds 100**. This model is available on the [MSU Enviro-weather](#) website; use the weather station closest to your orchard location to get local conditions.
- Make sure to document the MaryBlyt EIP prediction by printout or screen capture to include in your spray records. Also, make sure you document the EIP number when you make the decision to spray – since this number is predicted for the next few days out, the number can change as current conditions and predictions change.
- Do not apply Kasumin as the first spray of the season. It can only be used after a first spray of a registered alternative. These can include copper, oxytetracycline, Serenade MAX, or other biological control agents.
- A maximum of **two sequential applications** of Kasumin can be made at a rate of 2 quarts (64 fluid ounces) per acre. Applications are restricted to ground equipment and cannot be made through any type of irrigation system.
- A maximum of **three applications** of Kasumin can be used (64 fluid ounces per acre) if authorized. Treatments can be made no later than petal fall.
- **Alternate row applications are not allowed.** This requirement of the Section 18 exemption is for resistance management and was instituted in 2012.
- Do not use in orchards in which the soil has been fertilized with animal manure. This restriction addresses concerns that kasugamycin resistance could be transferred to *E. coli* bacteria present in animal manure.
- Exemption expires May 31, 2014. All unopened and unused product must be returned to the dealer where purchased or to the manufacturer or disposed of in accordance with

Resource Conservation and Recovery Act regulations following the expiration of the Section 18 exemption.

Imidan 24c

The 24c application to increase the application rate from 2.125 lb/acre to 2.5 lb/acre for use in tart cherries **was not** supported. Hence, the rate for use in tart cherries remains at 2.125 lb/acre. The maximum yearly amount is 7.5 lb/acre in cherries and 22.125 lb/ac

TREE FRUIT IPM UPDATE SERIES – 2014

Emily Pochubay and Nikki Rothwell
Michigan State University Extension

After a one-year break, Michigan State University is back to offering on-farm IPM workshops in Leelanau, Grand Traverse, Antrim, and Benzie counties in northwest Michigan for the 2014 season. Workshops begin the first week of May in hopes of providing commercial tree fruit growers with a review of good practices for developing sustainable pest management programs as well as key information on early season disease protection. Workshops through the first week of July 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. These IPM workshops are free and do not require registration. Certified crop advisor continued education credits and pesticide recertification credits will be available. Tree fruit growers are welcome to attend meetings at any location and time that is most convenient. We are looking forward to interacting with you all at these meetings. For more information, please contact Emily Pochubay at pochubay@msu.edu or (231) 946-1510.

IPM Update Locations

Leelanau County

Location: Jim and Jan Bardenhagen, 7881 Pertner Rd, Suttons Bay
Dates: May: 6, 13, 20, 27; June: 3, 10, 17, 24; July: 1
Time: 12PM – 2PM

Grand Traverse County

Location: Wunsch Farms, Phelps Road Packing Shed, Old Mission
Dates: May: 6, 13, 20, 27; June: 3, 10, 17, 24; July: 1
Time: 3PM – 5PM

Antrim County

Location: Jack White Farms, 10877 US-31, Williamsburg
(south of Elk Rapids on the southeast side of US-31)
May: 7, 21; June: 4, 18; July: 2
Time: 10AM – 12PM

Benzie County

Location: Loy Putney Farms, 4286 Raymond Rd, Frankfort
May: 7, 21; June: 4, 18; July: 2
Time: 2PM – 4PM

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WEBSITES 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/>

Fruit CAT Alert Reports has moved to MSU News

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