

Northern Michigan FruitNet 2014

Northwest Michigan Horticultural Research Center

Weekly Update

July 8, 2014

CALENDAR OF EVENTS

- 7/10 **MSU Clarksville Research Center Annual Tree Fruit Research Showcase Field Day**
- 7/11 **Parallel 45 Vineyard Meeting**
2 Lads, Old Mission Peninsula
- 7/12 **Household Hazardous Waste**
Leelanau County Government Center
- 7/15 **Soils Health Workshop**
Lansing, MI
- 7/22-24 **35TH Annual Ag Expo**
Michigan State University
- 8/15 **Hops Field Day**
- 9/4 **NWMHRC Open House – 35th Anniversary**

GROWING DEGREE DAY ACCUMULATIONS AS OF July 7 AT THE NWMHRC

Year	2014	2013	2012	2011	2010	2009	24 Yr. Avg.
GDD42	1412	1496	1978	1406	1812	1348	1532.9
GDD50	860	948	1259	837	1102	757	927.3

Growth Stages at NWMHRC (July 7, 2014, 10:30 a.m.)

Apple: Red Delicious – 37 mm fruit
Gala – No fruit
Yellow Delicious – 38 mm fruit

Pear: Bartlett: 19 mm fruit
Sweet Cherry: Hedelfingen: 20 mm fruit
Napoleon: 20 mm fruit
Gold: 16 mm fruit
Tart Cherry: 16 mm fruit
Balaton: 16 mm fruit
Apricot: 35 mm fruit
Grapes: Buckshot berry

NORTHWEST MICHIGAN REGIONAL REPORT

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

Cherries are ripening and growers need to be on high alert for Spotted wing *Drosophila* and American brown rot.

Weather Report. Temperatures have felt summer-like across the northwest with daytime highs in the 70s and low 80s. Nighttime temperatures have cooled down into the 50s and 60s. Thus far this season, we have accumulated 1412GDD base 42 and 860GDD base 50. These accumulations continue to be slightly behind our 24-year averages here at the NWMHRC. We also have had rainfall this past week with varying amounts of precipitation across the region. We received just over a half inch of rain last Wednesday, 2 July, and another 0.11" on 6 July. Rain is expected on and off today, Tuesday, 7 July. Conditions have also been windy over this past week, which has been challenging for growers to make applications.

Crop Report. Sweet cherries continue to ripen across the region, and first applications of ethephon are going on this week. Birds seem to be particularly problematic this season in ripening varieties. We have seen some cracking in some sweet cherries, likely as a result of the wet conditions. The crop of sweets looks good in northwest Michigan, and growers have been diligent about keeping fruit clean with the cracks and bird pecks. Tart cherries are also ripening and starting to turn red. The crop is estimated to be between 107-125 million pounds in northwest Michigan. As the fruit turns red, the crop visually appears to be varied by tree and by block as estimated earlier in the season. Apples are sizing well with the recent rains. Strawberry harvest continues, and growers are estimating a shorter than usual season.

Pest Report. American brown rot is showing up in isolated sweet cherry orchards across the region. We began receiving a few reports of ABR sporulating on non-pollinated fruit a few weeks ago and infected fruit is evident in heavy clustering varieties. However, we have had good weather conditions for the development of this disease, and we expected to see ABR more widespread than we are currently seeing. Some of the ABR infected fruit were previously damaged (birds, canker, insects, etc.), but ABR can infect fruit that have not been wounded, particularly when the disease moves from cherry to cherry in a cluster. In some orchards where ABR has been detected, infected fruit are just above eye level and visible from the ground. However, ABR can be difficult to find because infected fruit are often high in the tree canopy where fungicide coverage is reduced. ABR-infected fruit sporulate, in as little as three days in optimal conditions, and the disease can spread to nearby fruit. Temperatures between 59-74°F are optimal for ABR spore production and optimal temperature range for infection is 67-77°F. This week temperatures are predicted to be within the optimal infection range, and rain is forecasted. Because of these warm and wet conditions that have been typical this season, ABR has been and continues to be a priority, particularly now that sugar levels are increasing in sweet cherries. Growers need to be diligent about maintaining adequate coverage and preventing infection to have clean fruit at harvest. Once ABR infection is initiated, fungicides will not kill or stop ABR development. Sweet cherries are highly susceptible to ABR infection and the most effective materials should be used as a preventative measure. Currently, the SDHI fungicides are the best materials for ABR and although research has shown that

ABR has reduced sensitivity to Indar, we are still recommending a rotation of Indar at 12oz/acre and the new SDHI fungicides. Therefore, growers should be using Indar at 12 fl oz per acre (the 24c label rate) plus captan in rotation with an SDHI fungicide such as Merivon and Luna Sensation plus captan. Based on our data, Indar, even at the highest rate will only be effective for four to five days. Additionally, using the SDHI as the last spray before harvest will provide the longest effective ABR (and cherry leaf spot) control post-harvest.

We caught the first **Spotted wing *Drosophila*** (SWD) at the research station this week; a single female in a Montmorency tart cherry block. The first SWD (a single female in a trap) in northwest Michigan was captured Monday 30 June in Grand Traverse County in tart cherry. SWD have also been detected in a vineyard in Leelanau County in the last week. Many sweet and tart cherries are ripening and susceptible to SWD. Strawberries are also susceptible to SWD at this time and SWD will be a concern in other small fruits (raspberries, blackberries, etc.) as soon as they begin ripening. In cherries, SWD can begin laying eggs in fruit as the fruit turn straw-colored. Growers will need to be protecting ripening fruit if SWD was caught in their area (Yuba area in Grand Traverse County, Ellsworth, and southern Leelanau County—near the NWMRHC, and East Leland, Leelanau County). **Cherry fruit fly** and **black cherry fruit fly** have been captured in Leelanau Co. Last week, CFF was detected on Old Mission peninsula. We have not detected either of the cherry fruit fly species on traps at the NWMHRC. Growers need to be diligent about controlling this pest through harvest prevent infested fruit at harvest.

This is our third week of **obliquebanded leafroller** (OBLR) flight and OBLR trap numbers remain low – four moths per trap. At this time we have not received reports of high OBLR catches. We have received reports of **lecanium scale crawler** activity in sweet cherries in the East Leland area. We have not detected SJS crawlers in sweet cherry orchards where we are conducting a monitoring project for this pest; however, SJS crawler activity has been reported in apples in the region. Birds have moved into many sweet cherry blocks and growers have been applying bird deterrents.

Most apple orchards remain clean of diseases so far this season. We called the end to primary **apple scab** last week and growers who have scab lesions will need to continue their scab program past primary to ensure scab free fruit at harvest. **Codling moth** (CM) catches at the station remain low – an average of one moth per trap. **Obliquebanded leafroller** numbers in apples at the station remain low – an average of one moth per trap.

Wine Grapes

Bloom and fruit set is complete on all varieties. In general, berry set looks good on healthy shoots, but on shoots which are stunted in growth the set is far worse. As was expected, we are now seeing some canes with all of their shoots collapsing as a result of winter injury to trunk or cane conductive tissues.

Powdery mildew has been slow to develop to this point in the season, but recent warmer weather and high humidity may have been sufficient to support colony growth and new infections. **Downy mildew** has been seen on wild vines.

There are still a few lingering **rose chafers** in vineyards, but they are now of no consequence. **Potato leafhopper** populations have remained low. Adult grape berry moths should be active soon.

The next Parallel 45 vineyard meeting is this **Friday, July 11, 3-5 p.m.** at **2 Lads** vineyard and winery on Old Mission Peninsula. Please park as directed, NOT in the tasting room lot. Our topics will focus on pests, diseases and the Michigan Agriculture Environmental Assurance Program (MAEAP).

The **Parallel 45** summer **pig roast** will be held on **July 26** on Old Mission Peninsula. For more details, see their web site: <http://www.p45michigan.com/>

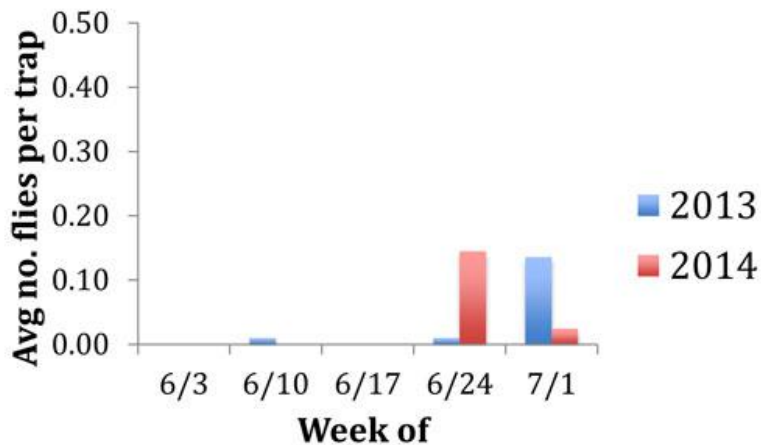
MICHIGAN SPOTTED WING DROSOPHILA REPORT FOR JULY 1, 2014

Catches of spotted wing Drosophila continue into their second week, with numbers remaining low.

Posted on **July 2, 2014**, **MSUE News**, by [Julianna Wilson](#), and Rufus Isaacs, Michigan State University Extension, Department of Entomology

This is the second weekly report of the [Michigan State University Extension spotted wing Drosophila](#) (SWD) statewide monitoring effort for 2014. Our network of traps across more than 80 sites was checked during the week of June 22 and has revealed continued activity of this pest in Michigan. The catches are generally lower this past week, but with a detection in a new location. There was a total of one male and two females trapped, one fly in each of three southwest Michigan counties: Berrien, Ottawa and Kent. This is the first detection of SWD activity in Kent County at a raspberry farm.

Comparison of average trap catches by week between 2013 and 2014



The number of flies caught in each trap was generally zero or one SWD. This indicates that SWD is slowly becoming active and growers should be on alert for this pest as their susceptible fruit crops start or continue to ripen. SWD can only infest berries when they are ripening or ripe, so currently the focus of SWD monitoring and management efforts should be on ripening strawberries and early summer raspberries. Blueberry fields that are just starting to be ripe should also be carefully monitored and managed if they have SWD captures and ripe fruit.

In addition to the use of monitoring traps to detect the adult flies, a simple salt solution of 1 cup of salt per gallon of water can be used to assess fruit for larval infestation. As blueberries, cherries, and other susceptible crops ripen, growers will need to make management decisions based on fly activity and crop ripeness stage.

For more information on SWD monitoring and management strategies, and to read past reports, visit [MSU's Spotted Wing Drosophila website](#).

The weekly SWD statewide monitoring report has been funded through [Project GREEN](#) and [Michigan State University Extension](#). This output is generated through a network of MSU Extension field staff and campus specialists. We would like to acknowledge the following team members and thank them for their weekly scouting efforts and input into this report: Rufus Isaacs, Keith Mason, Steve VanTimmeren, Larry Gut, Peter McGhee, Michael Haas, Bob Tritten, Mark Longstroth, Brad Baughman, Carlos Garcia, Karen Powers and Nikki Rothwell.

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).

CONTROLLING BLACK ROT AND PHOMOPSIS FROM GRAPE CLUSTERS

Black rot and Phomopsis are active in grapes. Aim to protect clusters from infection as soon as possible and rely on systemic fungicides for post-infection activity, particularly during rainy periods.

Posted on **July 1, 2014**, **MSUE News**, by [Annemiek Schilder](#), Michigan State University Extension, Department of Plant, Soil and Microbial Sciences

Young grape clusters are highly susceptible to all major diseases such as black rot, Phomopsis and anthracnose, particularly during the first three to four weeks after bloom. The weather has been very conducive to fungal infections due to frequent rains, warm temperatures and high relative humidity. The first black rot infections on fruit have been seen already as cream-colored spots and tiny brown specks on grape rachises indicate Phomopsis infection. The fungi that cause black rot, Phomopsis and anthracnose infections on the berries first make themselves known by infecting leaves earlier in the season. Numerous lesions on leaves also indicate a high risk of fruit infection, and in the case of black rot and anthracnose, contribute additional inoculum for fruit infections. Therefore, [Michigan State University Extension](#) advises careful scouting on a weekly basis and growers are advised to protect fruit clusters from infection using effective fungicides.

The risk of infection is especially high if we experience multiple rain events and moderate to high temperatures of 70-85 degrees Fahrenheit. While berries remain susceptible throughout their development to Phomopsis, the risk of infection diminishes after bunch closure because spore supplies become exhausted, especially in rainy years.

Black rot

Frequent rains and temperatures in the high 70s and low 80s are perfect for black rot infection. Black rot is a tricky disease because infections can remain latent or invisible for weeks, so you won't know the berries are infected until it is too late to do anything about it. However, one can scout for leaf spots which will also contribute conidia for fruit infections. Old fruit cluster remnants left hanging in the trellis are risky due to their proximity to current-year fruit. Fruit infections can take place anytime from bloom onwards, but only become apparent between bunch closure and veraison.

Black rot is relatively easy to control focusing primarily on protecting the clusters from infection. EBDC sprays applied earlier in the season for Phomopsis will have also controlled black rot leaf infections, and therefore no sprays are recommended specifically for black rot early in the season. One immediate pre-

bloom and two post-bloom fungicide sprays should be sufficient. Sterol-inhibitor fungicides (e.g., Rally, Elite) continue to provide outstanding control and have several days of post-infection activity.

There are various “generic” tebuconazole products on the market, e.g., Orius and Tebuzol, that may be more cost-effective. The difenoconazole ingredient in Revus Top and Inspire Super is similar to Rally and Elite when it comes to black rot control. **When using SI fungicides after a recent infection period, use the highest labeled rate** because post-infection activity is strongly rate-dependent, particularly when extended “kickback” activity is required. The strobilurin fungicides – Abound, Flint, Sovran, Pristine – are also very good against black rot but have limited post-infection activity and are better applied in a preventative mode. Luna Experience and Quadris Top are pre-mix fungicides with very good black rot activity.

Serenade (+Nu-Film P) is currently the best option for organic control of black rot, although bicarbonates also have moderate efficacy.

Phomopsis

Each rainfall event will lead to additional spore dispersal from old, overwintered canes and spurs and can lead to successful infection on the rachis and berries. The optimum temperature for infection is 59-68 F, at which time about six to 10 hours of wetness are needed for infection. The longer the tissue stays wet, the more severe the symptoms will be.

The best fungicides for control of Phomopsis during and after bloom are Abound and Pristine – do not use Pristine on Concord grapes. Phosphorous acid fungicides such as ProPhyt and Phostrol are also effective and cost-effective alternatives. These are systemic and will likely provide some kick-back activity. In trials done in Michigan, ProPhyt provided very good control of Phomopsis when sprayed on a 14-day schedule. Tighten the schedule and increase the rate if disease pressure is high.

Sterol inhibitors are **not** very effective against Phomopsis, although fungicides containing difenoconazole (Revus Top, Quadris Top, Inspire Super) tend to be a bit more effective than Elite. Ziram is a moderately good protectant against Phomopsis and can be a tank-mix partner with a phosphorous acid fungicide. EBDC fungicides and Captan are good protectants, but cannot be applied after bloom has started in juice grapes grown for the National Grape Cooperative. In addition, EBDCs have a 66-day pre-harvest interval.

Serenade (+Nu-Film P) is the best organic option for control of Phomopsis other than dormant applications of lime sulfur or copper.

Dr. Schilder's 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).

WEATHER IS IDEAL FOR DOWNY MILDEW ON GRAPES AT THIS TIME

Frequent rains and high relative humidity are favoring downy mildew in grapes. Choose an effective fungicide to protect clusters and leaves on susceptible cultivars.

Posted on **July 1, 2014**, **MSUE News**, by [Annemiek Schilder](#), Michigan State University Extension, Department of Plant, Soil and Microbial Sciences

Downy mildew, which is caused by the oomycete *Plasmopara viticola*, has gotten off to a good start this year due to copious rainfall, moderately warm temperatures and high relative humidity over the past weeks. Downy mildew was first seen on 'Chancellor' flower clusters of unsprayed sentinel vines in East Lansing, Michigan, several weeks ago and has since increased exponentially at that location, indicating ideal conditions for infection. Infected suckers at the base of the vine were also noticed; these were stunted and covered with a white layer of sporangia. This suggests that disease pressure has been moderate to severe so far this year.

The fungus overwinters as thick-walled spores (oospores) in leaf debris from the previous growing season on the soil surface under vines. Oospores at or near the soil surface will germinate in the spring by producing sporangia that are rain-splashed or wind-blown to susceptible grape tissues. Oospore germination is favored by rainfall of at least 0.4 inches and temperatures over 50 degrees Fahrenheit. Despite the fact that these conditions can occur in April and May, I have never seen downy mildew develop until June in Michigan. At the earliest, I have spotted downy mildew symptoms in early June, and usually these occur on wild grapes that grow close to the ground or on unsprayed Chancellor grapes during bloom as the clusters are particularly susceptible.

Sporangia release swimming zoospores in a film of water – rain or dew – which infect the leaves by penetrating the leaf stomata within several hours. Light-green or yellow lesions, or “oil spots,” on the leaves appear within five to 17 days after infection, depending on the temperature. The incubation period is shortest at temperatures of 20-25 degrees Celsius, or 68-77 F. When the temperatures are lower or higher, the symptoms will take longer to develop. Sporangia and zoospores are actually easily desiccated. They die within two to three hours of exposure to low humidity and sunlight, so most infection occurs soon after their release. However, they may survive on leaf surfaces for more than 24 hours under cool humid conditions. After warm, humid nights, a white downy fungal growth (sporangia) will appear on the underside of the leaves and other infected plant parts.

To look for downy mildew, visually scan leaves and clusters, focusing particularly on leaves and suckers close to the ground, as entire suckers can become infected by contact with oospores in the soil. If you see yellow lesions, turn the leaf over to look for white sporulation on the lower leaf surface. Occasionally, low-level Gramoxone herbicide injury may resemble downy mildew lesions. To confirm that it is downy mildew, simply remove several symptomatic leaves and place them in a plastic bag with a moist paper towel and store in the dark at room temperature overnight. White sporulation should be visible on the underside of the leaf the next day or definitely within two days.

Fungicide sprays for downy mildew at this time are recommended by [Michigan State University Extension](#) for susceptible varieties. The following fungicides are excellent options for downy mildew control: **Ridomil Gold MZ** or **Ridomil Gold Cu** (consider processor requirements, the pre-harvest interval, and copper sensitivity of vines before spraying) and phosphorous acids like **ProPhyt** and **Phostrol**. Both Ridomil and phosphorous acids are systemic and have curative and anti-sporulant activity. Ridomil applications often appear to eradicate downy mildew and can keep it at bay for three to four weeks. Phosphorous acids are not quite as strong as Ridomil, but they are substantially less expensive, and if symptoms and sporulation are already present, you can increase their effectiveness by applying a second “booster” application five days after the first application. Strobilurins like **Abound**, **Pristine** and **Sovran** are also very effective, but don't have much curative activity and are best used as preventative sprays.

Newer fungicides like **Revus**, **Revus Top**, **Presidio**, **Forum**, **Ranman**, **Reason** and **Tanos** also generally have good efficacy against downy mildew, but are best used as protectants as they have limited or no curative activity. Some of these, like Forum, are relatively inexpensive and can be used in a preventive tank-mix to provide cost-effective downy mildew protection. **Zampro** is a new downy mildew fungicide that has shown excellent activity against downy mildew. Be careful with Revus Top as it contains difenoconazole which can be phytotoxic to Concord, Concord Seedless and Thomcord grapes.

For organic growers, **Serenade** and **Sonata** are the best options; apply with NuFilm P sticker to extend the longevity of the product.

Dr. Schilder's 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).

BOTRYTIS GRAY MOLD CONTROL IN STRAWBERRIES AND RASPBERRIES

Rainy weather and high relative humidity promotes Botrytis gray mold in strawberries and raspberries. A range of effective fungicides are available to help manage the disease. Alternative fungicide classes to avoid development of fungicide resistance.

Posted on **July 1, 2014**, **MSUE News**, by [Annemiek Schilder](#), Michigan State University Extension, Department of Plant, Soil and Microbial Sciences

Botrytis gray mold, caused by the fungus *Botrytis cinerea*, is one of the most important fruit rot diseases affecting strawberries and raspberries. Typical symptoms include a spreading brown rot and fuzzy gray mold on ripening berries. Frequent rains, high relative humidity, and moderate temperatures are conducive to development of this disease. As gray mold develops on infected berries, these become sources of inoculum secondary infections of adjacent berries. The gray mold fungus overwinters on old leaves and plant debris and can sporulate profusely on dead and decaying plant material. The spores are airborne and are usually plentiful in strawberry and raspberry fields. Where possible, remove sporulating berries from the field and destroy them to limit inoculum availability.

There are a number of excellent fungicide choices for gray mold control in strawberries: **Switch** (cyprodinil and fludioxonil) and **Pristine** (pyraclostrobin and boscalid) provide excellent control and both have two different active ingredients, one of which is systemic, which broadens their spectrum of activity. Pristine also provides outstanding control of fungal leaf spots and anthracnose fruit rot.

New strawberry fungicides that have excellent activity against Botrytis gray mold are **Fontelis** (penthiopyrad) and **Inspire Super** (difenoconazole and cyprodinil). **Elevate** (fenhexamid) is a locally systemic fungicide with good to excellent activity against gray mold. **Captevate** is a pre-mix of captan and fenhexamid and has a broader spectrum of activity than Elevate alone as it also protects against anthracnose and leaf spots. **Scala** (pyrimethanil) is a newer fungicide labeled for Botrytis gray mold control in strawberries and is similar to one of the active ingredients in Switch.

Rovral (iprodione) is an older fungicide with good activity against Botrytis gray mold, but they can only be applied once in strawberries and up to four times per season in raspberries; activity is enhanced by adding a spreader-sticker. With respect to older fungicides for strawberries, a tank-mix of **Topsin M** (thiophate-methyl) and **Captan** (captan) provide good efficacy against a broad spectrum of fungi,

including gray mold. **Thiram** (thiram) is a broad-spectrum strawberry fungicide with decent efficacy against gray mold as well but is strictly a protectant.

Just as a reminder, **Cabrio** (pyraclostrobin) and **Abound** (azoxystrobin) are **not** suitable for gray mold control, but are effective against anthracnose and other fruit rot and leaf spot diseases. All fungicides mentioned above have a zero-day pre-harvest interval, except Topsin M (one day), Scala (one day) and Thiram (three days) in strawberries.

Remember to alternate fungicides in different fungicide classes for resistance management purposes. A table showing fungicide classes is available in the "[2014 Michigan Fruit Management Guide](#)," [Michigan State University Extension](#) bulletin E-154. Be careful using older fungicides like Captan, Rovral and Thiram when bees are foraging as these fungicides may be toxic to the brood when they are carried back into the hive by the worker bees. Some other fungicides may have toxicity in combination with certain insecticides or adjuvants. It would be best to spray in the evening during dry conditions or to avoid using these materials altogether.

Dr. Schilder's 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).

BLUEBERRY QUALITY AND PLANT NUTRITION

There is considerable interest in how to optimize blueberry quality through fertilization practices. Here are some thoughts on common questions.

Posted on **July 2, 2014**, **MSUE News**, by [Eric Hanson](#), Michigan State University Extension, Department of Horticulture

Can calcium additions improve blueberry quality?

Calcium (Ca) has specific effects on physiology of some fruits. Calcium sprays reduce the severity of bitter pit in apples and cork spot in pears, disorders associated with low fruit Ca levels. Increasing fruit Ca levels generally reduces fruit respiration rates and delays post-harvest fruit softening. This has been demonstrated in apples and pears, as well as kiwifruit, raspberries and strawberries. Calcium treatments have also been shown to reduce the incidence of gray mold (Botrytis rot) in strawberries. A characteristic of the responses to Ca is inconsistency; treatments show benefits in some studies, but not others. Responses may be related to the Ca content of test plants or application methods and timing.

The response of blueberries to Ca additions has also been inconsistent. In the 1990s, we studied soil additions of calcium sulfate (gypsum) and pre-harvest foliar sprays of calcium chloride on Michigan blueberries, but did not see effects on berry size, firmness or shelf life. Gypsum soil treatments were also tested recently in Argentina on O'Neal and Bluecrop blueberries. Gypsum treatments during the previous season appeared to reduce berry respiration and delay post-harvest softening to some degree. Some interesting work is being done at the University of Georgia with rabbiteye blueberries. Foliar sprays of several commercial Ca products (Calixin, KeyPlex, Cell Force) were applied prior to harvest. Early results show no effects on berry firmness, but an indication that sprays may increase average berry size. It seems that Ca fertilization has the potential to improve blueberry quality, but responses are

inconsistent and may be affected by the Ca status of plants and growing conditions, as well of the rates, timing and Ca product used.

Does urea use soften blueberries?

This question has not been researched thoroughly, but there does not seem to be an intuitive reason to expect that the use of urea as the nitrogen source would affect berry firmness. We could speculate that nitrogen use might affect firmness indirectly. Larger berries tend to be softer, so any fertilization practice that increases average berry size might affect firmness. Nitrogen rates also affect canopy density, which might affect firmness and quality by altering spray deposition and rot incidence, or shading developing berries.

Do late applications of nitrogen result in softer berries?

Some early work in New Jersey compared standard granular fertilizer application to fertigation up until harvest. Fertigated plants that received the latest nitrogen actually produced firmer berries than those fertilized with granular materials earlier in the season. Again, the response may be related to plant nitrogen status and actual rates used.

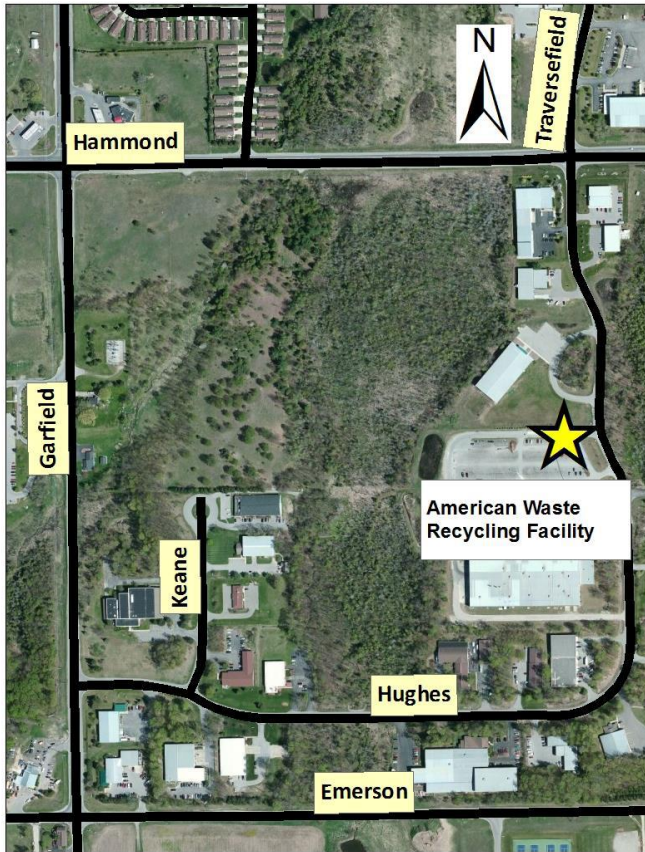
Dr. Hanson's work is funded in part by [MSU's AgBioResearch](#).

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).

Pesticide Container Recycling

American Waste is now accepting **Triple Rinsed** Pesticide Containers with **lids and labels removed** at their location at 280 Hughes Drive in Traverse City. This partnership saves from wastefully hauling empty containers around the state for recycling while utilizing a local resource. Growers can bring in bags of containers to the Recycling Facility and will need to pass over the weigh scale and tell the attendant they have pesticide containers for the "**Farm A*Syst Program**". Growers will not be charged for this service, but do need to pass over the scale in order to keep track of containers recycled through the program.

If you have questions or need pesticide container recycling bags, contact MAEAP Technicians at the Grand Traverse Conservation District: 231-941-0960



MSU CLARKSVILLE RESEARCH CENTER (CRC) WILL BE HOLDING ITS 2014 TREE FRUIT RESEARCH SHOWCASE

The MSU Clarksville Research Center (CRC) will be holding its 2014 tree fruit research showcase and field day on **July 10** from **9AM to 5PM**. Come join us to see the latest, cutting edge research from the MSU tree fruit team. Phil Schwallier and Dr. Ron Perry will discuss and demonstrate hedging systems for high density fruit and discuss new thinners. Dr. Amy Iezzoni will show and discuss some of the latest tart cherry selections being developed and tested at CRC including selections resistant to leaf spot and the strategy for breeding for Armillaria resistance. Dr. Greg Lang will showcase high density training systems for sweet cherry and other stone fruits and the use of protective covering systems, such as high tunnels, for fruit production. Drs. Ron Perry, Matt Grieshop and others will demonstrate Solid Set Canopy Delivery Systems in apples and cherries and highlight the innovative applications of these systems for pest management and microclimate modification. Lunch will be provided and the event is free to the public. More information, an event flyer and a (free) registration form will be released in mid-June.

2014 HOPS FIELD DAY & TOUR – August 15

MSU Extension is offering a **Hops Field Day and Tour** on **Friday, August 15 from 8 a.m. – 5 p.m.** Participants will meet at the MSU Horticultural Research Center (6686 South Center Highway, Traverse City, MI 49684), board a chartered bus and travel to **Empire Hop Farm** on the Leelanau Peninsula to tour one of the largest hop yards in Michigan and a new hop processing facility. The group will then travel to **Northport Brewing Company**, for lunch and a tour. In the afternoon participants will travel by bus to

tour **New Mission Organic's** hop yard and processing operation near Omena and then onto **K & K Farm** south of Suttons Bay.

Throughout the tour hop growers will be on site to discuss all aspects of hop production; initial costs, plant care, disease and insect management, short and tall trellis systems, trellis construction, and organic and conventional growing practices. The group will then return to the Research Center for an educational beer tasting led by Executive Director, **Scott Graham**, of the Michigan Brewers Guild, along with several Michigan brewers.

The cost is \$85 per person which includes lunch, charter bus transportation and handouts. **Pre-registration is required by debit/credit card online and space is limited. Due to the popularity of this event, payment is due at the time of online registration. Because of liability issues and space, participants will NOT be allowed to drive their personal vehicle on this tour; please don't ask.**

To register, go online to hops.msu.edu.

Once you are registered, you will receive confirmation immediately by email, and an agenda and directions the week prior to the event by email.

Don't delay, this tour fills quickly! If you have any questions, contact **Rob Serrine**, or **Annette Kleinschmit** at the Leelanau MSU Extension office at 231-256-9888 or msue45@msu.edu.

We thank our gracious program sponsors: Empire Hop Farm, Michigan Brewers Guild, Michigan Hop Alliance, New Mission Organics, K & K Farm and Northport Brewing Company.

Hoppy day,

Annette

~~~~~  
Annette Kleinschmit  
MSU Extension - Leelanau  
8527 E Government Center Dr, Ste 107  
Suttons Bay, MI 49682  
231-256-9888  
231-256-8331 fax  
[kleinsc7@msu.edu](mailto:kleinsc7@msu.edu)  
[www.msue.msu.edu/leelanau](http://www.msue.msu.edu/leelanau)

*MSU Extension programs and material are open to all without regard to race, color, national origin, gender, gender identity, religion, age, height, weight, disability, political beliefs, sexual orientation, marital status, family status, or veteran status. Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities.*

## **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>

# Cherry Industry Administrative Board

## Weekly Raw Product Report

### Week 1 - 2014

| Weekly Raw Product Report for<br>Week 1 ending July 5, 2014<br>(Millions of pounds) |            |            |            |              |              |               |
|-------------------------------------------------------------------------------------|------------|------------|------------|--------------|--------------|---------------|
| DIST.                                                                               | Processed  |            | Divert     | YTD<br>Total | 2014<br>Est. | 2013<br>Total |
|                                                                                     | Wk 1       | YTD        |            |              |              |               |
| NW MI                                                                               | 0.0        | 0.0        | 0.0        | 0.0          | 118.0        | 122.9         |
| WC MI                                                                               | 0.0        | 0.0        | 0.0        | 0.0          | 44.5         | 60.6          |
| SW MI                                                                               | 0.1        | 0.1        | 0.0        | 0.1          | 19.0         | 28.7          |
| NY                                                                                  | 0.0        | 0.0        | 0.0        | 0.0          | 6.0          | 11.7          |
| OR                                                                                  | 0.2        | 0.2        | 0.0        | 0.2          | 3.0          | 4.3           |
| PA                                                                                  | 0.2        | 0.2        | 0.0        | 0.2          | 0.9          | 2.2           |
| UT                                                                                  | 0.0        | 0.0        | 0.0        | 0.0          | 36.0         | 26.7          |
| WA                                                                                  | 1.2        | 1.2        | 0.0        | 1.2          | 26.0         | 17.9          |
| WI                                                                                  | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> | <u>0.0</u>   | <u>11.0</u>  | <u>11.1</u>   |
| <b>Total</b>                                                                        | <b>1.7</b> | <b>1.7</b> | <b>0.0</b> | <b>1.7</b>   | <b>264.4</b> | <b>286.0</b>  |

**Harvest for 2014 has begun! It is a bit later than normal, but Mother Nature decides when harvest will begin.**

**Far West** - OR & WA have begun harvest and are quite early this year. They may lead the early harvest activities. Quality in OR is reported as very good and pitting well.

**SW MI** - A very small quantity of cherries were delivered in week one. Harvest is a bit late compared to the norm of SW MI.

**PA** - A few cherries were received in the 1<sup>st</sup> week of harvest. PA is also rather late compared to its norm.

**Other areas** - No other districts harvested in week 1.