Northern Michigan FruitNet 2013
Northwest Michigan Horticultural Research Center

Weekly Update

Ju'y 2, 2013

CALENDAR OF EVENTS

7/9	**Cherry Variety & High-Tech Research Showcase** Clarksville Horticultural Experiment Station (See flier for details)
7/10	**Last IPM Update**
7/12	**Parallel 45/MSUE Viticulture Update** 2 Lads on Old Mission Peninsula
7/16-18	**MSU Ag Expo** http://agexpo.msu.edu/schedule
7/22	**Parallel 45/MSUE Viticulture Update** Winery sanitation workshop L. Mawby Vineyard
7/31	**SW Viticulture Field Day** SWMREC – Benton Harbor
8/2	**Parallel 45/MSUE Viticulture Update** Ground Cover Management/Cover Crops with Dr. Matt Grieshop Chateau Chantal – Old Mission
8/9	**Hops Field Day & Tour**
8/22	**NWMHRC Open House**
8/22	**Parallel 45/MSUE Viticulture Update** New wine cultivars with Dr. Paolo Sabbatini NWMHRC

GROWING DEGREE DAY ACCUMULATIONS AS OF July 1 AT THE NWMHRC

Year	2013	2012	2011	2010	2009	2008	23yr. Avg.
GDD42	1313	1762	1227	1607	1233	1248	1372.2
GDD50	813	1091	706	945	690	712	812.2

Growth Stages at NWMHRC (July 1, 8:00 a.m.)

Apple: Red Delicious – 32 mm
Gala – 23 mm
Yellow Delicious – 25 mm
Pear: Bartlett: 20 mm
Sweet Cherry: Hedelfingen: 14 mm
Napoleon: 15 mm
Gold: 12 mm
Tart Cherry: 13 mm
Balaton: 12 mm
Apricot: 25 mm
Grapes: Early buckshot

NORTHWEST MICHIGAN REGIONAL REPORT
N.L. Rothwell, NWMHRC

Grapes
Duke Elsner, Grand Traverse County MSUE

Shoot growth has been rapid despite very little rainfall in the last few weeks- even in non-irrigated vineyards. Bloom is wrapping up and we appear to have a great fruit set on many varieties. **Powdery mildew** will be the greatest disease concern for the next few weeks as berries develop. Even if it does not rain much, the wetness and humidity inside the canopy can provide the conditions for powdery mildew berry infections, so this is an important time to protect the fruit.

Rose chafers are still present, but their numbers have started to decline; they should be of no consequence in a few more days. **Potato leafhopper** numbers are still very low in the sites I have visited. The adult moths of the **large hornworm caterpillars** have started to fly, so egg-laying will begin soon. The caterpillars will not become voracious eating-machines until a few weeks later.

Dr. Rufus Isaacs will be on hand to discuss insect management issues for the next MSUE/Parallel 45 meeting on ***Friday, July 12,*** *from* ***3-5 p.m.*** *at the* ***2 Lads Vineyard and Winery*** on Old Mission Peninsula. Two recertification credits have been requested from the MDA for this program.

CHERRY FRUIT FLY HAS BEEN TRAPPED AT THE NWMHRC
Nikki Rothwell, NWMHRC

Cherry fruit fly (CFF) trap counts have been trapped at the NWMHRC on **Monday, July 1.** We caught 7 CFF on one trap and zeros in the other two traps. In northwest Michigan, we have two species of cherry fruit flies: black cherry fruit fly and cherry fruit fly (also called Eastern cherry fruit fly). However, for management purposes, these two species can be considered one because of their similarities in life cycles and control actions. Cherry fruit flies spend the winter in a puparium in the soil under host trees. When the weather warms up in the spring, the pupae change into adult flies and emerge from the ground. These adults feed in the trees for eight to ten days before the females lay their eggs. This feeding period is called the preoviposition period, and this feeding time frame provides an optimal window for control of adult flies before the females lay their eggs in the fruit. Adult flies feed on the dew on leaf and fruit surfaces, plant juices, or from punctures in the cherry fruit. After feeding, female flies lay eggs beneath the cherry skin, and each female is able to oviposit 300-400 eggs in 3-4 weeks. In 5-7 days, the eggs hatch and the larvae feed around the cherry pit, then move into the fleshy part of the fruit. Fully mature larvae drop from the fruit and bury into the soil where they spend the winter in their constructed puparium.

Yellow sticky traps should be hung high up in the canopy in June. When the first cherry fruit fly is captured in the orchard, a chemical application should be made. If a grower is not actively trapping in his/her orchard, the closest trap catch should be used to determine control action, but we highly recommend that each grower trap for CFF in their own orchards as trap catch is a function of population size.

There are many control options for CFF: organophosphates (OP's), synthetic pyrethroids, Sevin, neonicotinoids, fruit fly bait, and particle film (Surround). The OP's provide excellent control of CFF, and they have long residuals. However, the limit for Guthion in cherry is 1.5 lbs/season. Pyrethroids (Asana, Warrior) work as contact poisons on CFF, but they have much shorter residuals than OP's. Additionally, pyrethroids have a tendency to flare mites, and with this hot, dry summer, mites are already a potential concern in cherry. Sevin is an older carbamate insecticide that provides good CFF control, with a shorter residual than OP's and a shorter PHI. Research at Trevor Nichols found that Sevin XLR did not provide as good control as other formulations of Sevin. Admire (or other imidicloprid generics) and Actara

(neonicotinoids) are good against CFF control. Imidicloprid is a good choice as we approach harvest time as this chemical only has a 7-day PHI, but if harvest is going longer than intended, these products should not be stretched beyond seven days. Actara's PHI is 14 days. Voliam flexi is also rated as excellent against CFF. Delegate will provide suppression of CFF only but is an excellent material on the summer generation of obliquebanded leafroller.

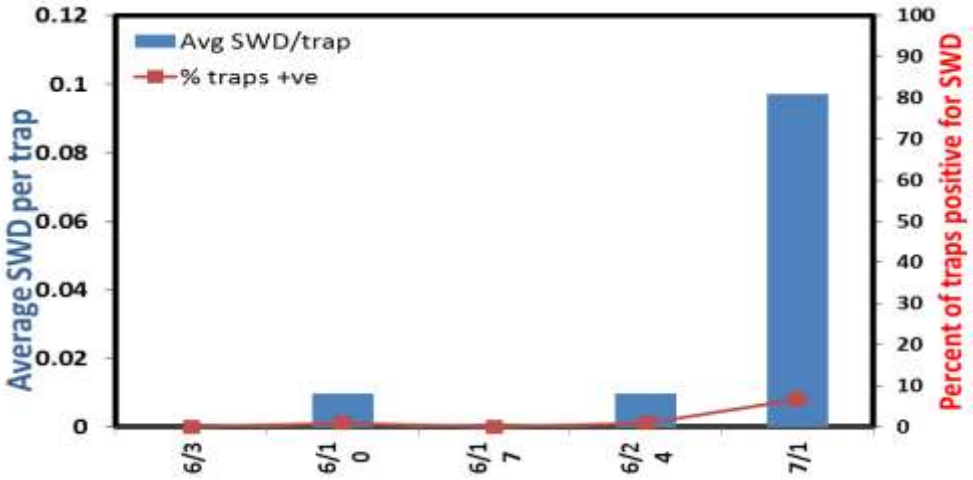
MICHIGAN SWD REPORT - July 2, 2013

New SWD detections have been made in Berrien, Allegan, and Ottawa counties in Southwest and West Central Michigan

Nikki Rothwell, Karen Powers, and Statewide SWD Monitoring Team

Spotted wing drosophila (SWD) numbers have increased in Southwest and West Central Michigan this week. Three males were caught in blueberry in traps at the edges of the blueberry fields, in woods at the edges of these fields, and within the interiors of these fields. We also caught five female SWD in the same trap locations in blueberry. One female was captured in a trap placed at the edge of a raspberry field. This week we caught a total of four SWD in Allegan County, two in Ottawa County, and one in Berrien County. Overall, we are catching about 0.1 flies/trap and 10% of all the traps in the state are catching flies.

As raspberries and blueberries are ripening, growers need to be sure to keep this fruit protected through harvest. Growers should make their decisions to spray based on the presence of SWD flies and ripening or ripe fruit that are susceptible. Growers should maintain a monitoring program in these crops through harvest. A private consultant trapped an SWD in a tart cherry block in Southwest Michigan. As sweet cherry harvest has begun in Southwest, Southeast, and the Grand Rapids area, growers should be monitoring these ripening fruits for the presence of SWD. Tart cherry harvest is predicted to begin later this week and into next week in the south, and these fields should be monitored for SWD. Cherries are on the list of fruits at high risk from SWD infestation.



ETHEPHON ON CHERRIES

N.L. Rothwell, District Horticulturist
J. Nugent, Retired District Horticulturist

Ethephon is a plant growth regulator, and its uses vary with plant species, chemical concentration, and time of application. Ethephon regulates phases of plant growth and development by application to various growth sites. This plant growth regulator has systemic properties where it penetrates the plant tissues and is decomposed to ethylene. This decomposition impacts the plants' growth processes. In cherry systems, ethephon promotes fruit loosening to facilitate mechanical harvesting. Ethephon, sold under the trade name Ethrel, has been used as a common management practice in both tart and sweet cherry harvest.

One main concern in recent years has been the amount of ethephon-induced damage with the hot, dry weather conditions, and we have had this siutation for the last few weeks here in northwest Michigan. Ethephon can have excessive activity under very hot and dry conditions, which can result in tree injury. Trees under stress, particularly drought stress, become more susceptible to ethephon damage. Damaged trees exhibit excessive gumming, and branches lose their leaves. We have also seen outbreaks of San Jose scale that have infested ethephon-damaged trees.

Timing the ethephon application is an important factor. A lower rate of ethephon provides adequate loosening if given adequate time for action (10 to 14 days), while higher rates will loosen fruit to the same degree more quickly. Therefore, it is possible to substitute time for rate and obtain the same effect. Secondly, it is important that the chemical not be applied too early in the season. The fruit should be in Stage III of growth, where the fruit is growing rapidly and the grass-green color begins to yellow or take on a tinge of red. If ethephon is applied earlier than Stage III, the fruit may fail to grow further and has the potential to drop off the tree with the stems attached.

As mentioned above, both temperature and tree vigor are associated with the degree of response achieved. At higher temperatures during the *72 hours following* application, the magnitude of response is increased and at lower temperatures, the response is decreased. Trees low with vigor or under stress respond to a greater extent, and gumming and leaf abscission may result.

The following recommendations should be used when applying ethephon to cherries:

1. **Rate:** Vary the rate depending on anticipated temperatures for 72 hours after application, days before harvest, tree stress and past experience. *Lower rates decrease the likelihood of tree injury.*
    A.
    B. **Light sweets** -- When applied concentrate (80 gals. water/acre or less), 1 to 2 pts/acre applied 10-14 days before anticipated harvest should provide adequate loosening. Rates up to 2.5 pts/acre may be necessary for harvesting in less than 10 days. When applied dilute, use no more than ¾ pt/100 gals or 3 pts/acre. We have observed more ethephon damage in light sweets than in canner or tarts, and we recommend that growers be cautious when applying higher rates of ethephon to light sweets, particularly if temperatures do reach the high 80s as they are predicted to do toward the end of the week. We recommend that a lighter rate be used with these hot temperatures.
    C. **Dark sweets** -- When applied concentrate, use 1.5 to 2.5 pts/acre applied 10-14 days prior to anticipated harvest. Rates up to 3 pts/acre may be necessary for harvesting in less than10 days. When applied dilute, use no more than 1 pt/100 gals. or 4 pts/acre.
    D. **Tart cherries** -- When applied concentrate, use 0.5 to 1 pt/acre applied 7 to 14 days prior to anticipated harvest. When applied dilute, apply no more than 1/3 pt/100 gals or 1 pt/acre.
2. **Time of Application:** Apply approximately 7 to 14 days before anticipated harvest. Do not harvest within 7 days of application (7-day PHI).
3. **Temperature:** Avoid application when high temperatures are expected to exceed 85°F or remain below 60°F for the 72 hour period after application. Use relatively high rates when high temperatures are expected to be in the 60s and lower than normal rates when highs are expected in the lower 80s.
4. **Tree stress:** Do not spray trees that are low in vigor or under stress conditions.
5. **Do not** spray trees that had serious gumming the previous year.
6. **Crop load:** Heavy crop load (low leaf to fruit ratio) is more difficult to loosen so growers should use relatively higher rates or expect a longer time to achieve desired loosening.
7. **Concentrate spraying:** Applying ethephon with concentrate sprayers (i.e., 80 gallons of water/acre or less) achieves the same level of loosening at lower rates per acre than does dilute applications. Uniform coverage is important.
8. **Tree size:** Suggested rates/acre are based on full-sized trees. Adjust rates downward when treating blocks with smaller trees.

Growers should pay particular attention to the temperatures for the 72 hours after the ethephon application. As evident from past seasons, hot temperatures can do significant damage to

cherry trees. Growers that have had problems in the past years should avoid ethephon, especially if the trees showed serious gumming and leaf loss.

CHERRY VARIETY AND HIGH-TECH CHERRY VARIETY RESEARCH SHOWCASE JULY 9

Participants will tour apple thinning trials and take part in discussions on orchard technologies, tart cherry selections and hedgerow systems, high efficiency training systems and much more.

Posted on **June 25, 2013, MSU E News,** by **Phil Schwallier**, and Amy Irish-Brown, Michigan State University Extension

Michigan State University Extension welcomes all to the Cherry Variety and High-Tech Research Showcase on Tuesday, July 9, 2013, at the Clarksville Research Center, 9302 Portland Road, Clarksville MI 48815 (view map).

This free program will start at 10:30 a.m. with tours of apple thinning trials. A free lunch, courtesy of Summit Tree Sales and International Plant Management, will be served at noon.

At 1 p.m. the Cherry Variety Showcase will start, followed by discussions of:

- Spotted wing Drosophila management
- High efficiency sweet cherry training systems
- Cherry covering systems (Cravo, VOEN, Haygrove and bird netting)
- Bloom delay with the solid set canopy delivery spray systems
- New tart cherry selections
- Tart cherry hedgerow systems for over-the-row harvester
- Other orchard technologies

Presenters include Greg Lang, Phil Schwallier, Wallace Heuser, Wanda Heuser Gale, Jim Flore, Amy Iezzoni, Amy Irish-Brown, Larry Gut, Nikki Rothwell, Bill Shane, and Ron Perry.

For more information, call 1-800-424-2765.

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CURRENT WINE AND JUICE GRAPE KNOWLEDGE FEATURED AT VITICULTURE FIELD DAY

Learn about wine and juice grape management practices, equipment and research findings at Viticulture Field Day, July 31, 2013.

Posted on **June 27, 2013, MSUE News,** by **Joanne Davidhizar**, Michigan State University Extension, Michigan State University Product Center

Dave Francis, Farm Manager, SWMREC. Photo credit: Tom Zabadal

A Viticulture Field Day will be held 9 a.m. to 7 p.m. Wednesday, July 31 at the Michigan State University Southwest Michigan Research & Center, 1791 Hillandale Road, Benton Harbor, MI 49022. The session is co-sponsored by the Michigan Grape Society and Michigan State University Extension.

Now in its 24th year, the Viticulture Field Day provides many opportunities for established and new grape growers to learn about current practices and research in wine and juice grapes through field-based workshops, equipment demonstrations, and the trade show.

Among the workshops for 2013 are the benefit of leaf removal, managing excessive vine size, trellis construction, promising wine grape varieties, and pest management. Michigan Grape Society industry leaders, growers, Michigan State University faculty and staff combine to present the educational sessions.

The registration fee is $35/person if received by July 17, or $45/person after. The fee includes lunch and a steak dinner.

Complete program information and registration are available online. You may also call the Southwest Michigan Research & Extension Center and speak to Diane Miner at 269-944-1477 ext. 201.

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).

MICHIGAN HOP UPDATE - June 28, 2013

Symptoms of potato leafhopper feeding are becoming visible. Downy mildew infections continue in hopyards and with rain in the forecast, growers should apply protectant sprays to minimize infections.

Posted on **June 28, 2013, MSUE News,** by **Erin Lizotte**, Michigan State University Extension

So far this season the Benton Harbor Enviro-weather station has accumulated 969 GDD50 with 1.68 inches of rain over the past week; the Clarksville Enviro-weather station has recorded 861 GDD50 and 0.99 inches of rain this past week; and the Northwest Michigan Horticultural Research Center has accumulated 733 GDD50 with 0.09 inches of rain over the last week. Growth has been really good with bines hitting the top wires in most northern Michigan hopyards.

Hop development in northwest Michigan on June 27, 2013.
Photo credit: Erin Lizotte, MSU Extension

Downy mildew remains the major concern for Michigan hop growers right now, with early initial infections fueling significant outbreaks in some hopyards. Downy mildew is caused by *Pseudoperonospora humuli* and can cause significant yield and quality losses, depending on variety and when infection becomes established. In extreme cases, cones can become infected and the crown may die.

Typically, downy mildew appears early in the season on the emerging basal spikes. Spikes then appear stunted, brittle and distorted. Asexual spore masses appear fuzzy and black on the underside of infected leaves. As bines continue to expand, new tissue becomes infected and

bines fail to climb the string. Growers can retrain new shoots, but often incur yield loss as a result.

This season, symptoms have appeared more readily on expanded leaves as small, angular lesions that are yellow and chlorotic in appearance. These small lesions expand over time and eventually sporulate on the underside of leaves when warm and moist conditions occur. According to "A Field Guide for Integrated Pest Management in Hops," infection is favored by mild to warm temperatures (60 to 70 degrees Fahrenheit) when free moisture is present for at least 1.5 hours, although leaf infection can occur at temperatures as low as 41 F when wetness persists for 24 hours or longer. At this point in the season, we are also beginning to see stunting and wilt of terminal portions of the bine.

It takes a multipronged approach to manage downy mildew. Growers should utilize a protectant fungicide management strategy to mitigate the risks of early and severe infections. Keep in mind that varieties vary widely in their susceptibility to downy mildew and select the more tolerant varieties when possible. Clean planting materials should be selected when establishing new hop yards since this disease is readily spread via nursery stock. It is also recommended that growers pull all basal foliage during spring pruning. Pruning should be performed as late as possible and all green materials should be removed from the hopyard and covered up or burned.

Cultural practices alone are not enough to manage downy mildew. Protectant fungicide strategies are particularly important during the year of planting to minimize crown infection and limit disease levels in the future. Well-timed fungicide applications just after the first spikes emerge and before pruning has been shown to significantly improve infection levels season long. Subsequent fungicide applications should be made in response to environmental conditions that favor disease (temperatures above 41 F and wetting events). Fungicides containing copper, boscalid, pyraclostrobin, phosphorous acids and a number of biopesticides have varying activity against downy mildew.

For organic growers, OMRI-approved copper formulations are the most effective. Sulfur products applied for **powdery mildew** protection will not protect again downy mildew. Michigan growers have yet to report significant powdery mildew damage, but given the experiences of hop growers around the United States, growers should keep an eye out for this potentially significant pathogen.

If you already have downy mildew established in your hopyard, cultural practices will be very important in regaining ground. According to David Gent, a hop specialist at Oregon State University, diseased shoots on the string should be removed by hand and healthy shoots retrained in their place. Remove superfluous basal foliage and lower leaves to promote air movement in the canopy and to reduce the duration of wetting periods. If there is a cover crop, it should be mowed close to the ground. If yards have no cover crop, cultivation can help dry the soil and minimize humidity. Keep nitrogen applications moderate.

Growers should also carefully monitor their hops for **potato leafhopper** populations as significant populations are being observed. Potato leafhoppers move in all directions when disturbed, unlike some leafhoppers that have a distinct pattern of movement. Potato leafhoppers

can't survive Michigan's winter and survive in the Gulf States until adults migrate north in the spring on storm systems. Although hop plants are susceptible to potato leafhoppers, they can tolerate some level of feeding and growers should be conservative in the application of insecticides. At this time, there is no set economic threshold for potato leafhopper in hops; however, some hopyards are seeing significant damage from potato leafhoppers at this time.

Potato leafhopper nymphs on hop plant. Photo credit: Erin Lizotte, MSU Extension

Potato leafhoppers causes what growers have termed "hopper burn," which causes necrosis of the leaf margin in a v-shaped pattern and may cause a yellowed or stunted appearance as well. The easiest way to observe potato leafhoppers is by flipping the shoots or leaves over and looking for adults and nymphs on the underside of leaves. Growers may also choose to place two-sided yellow sticky traps in the field to catch potato leafhoppers.

Growers needing to treat for potato leafhoppers can utilize products containing neonicitinoids, pyrethroids, organophosphates or spinosyns. Organic growers can utilize Entrust (spinosad) or Pyganic (pyrethrin) formulations that are OMRI-approved for potato leafhopper management.

As temperatures remain warm and the weather dries out for the summer, growers should be vigilant in scouting for **two-spotted spider mites**. Two-spotted spider mites are a significant pest of hops in Michigan and can cause complete economic crop loss when high numbers occur by decreasing the photosynthetic ability of the leaves and causing direct mechanical damage to the hop cones. Two-spotted spider mites feed on the liquid in plant cells, eventually causing visible symptoms. Leaves take on a white appearance and will eventually defoliate under high pressure conditions. Intense infestations weaken the plant and reduce yield and quality. Infested cones develop a reddish discoloration, do not hold up to the drying process and commonly have lower alpha levels and shorter storage potential. Additionally, the mites themselves act as a contaminate issue for brewers.

In the spring, only female two-spotted spider mites are present as they have overwintered in a dormant stage from the previous season and are already mated and ready to lay fertilized eggs. She appears particularly orange in color this time of the year and has overwintered on debris and trellis structures in the hopyard. As temperature warm, the females feed and begin laying eggs. Larvae emerge from the eggs in two to five days, depending on temperatures, and develop into adults in one to three weeks – again, depending on temperature. Two-spotted

spider mites like it hot with the pace of development increasing until an upper threshold around 10 0F is reached. Conversely, cold and wet weather is not conducive to development, which may explain the low pressure thus far this season.

Two-spotted spider mites are very small, but can be observed on the underside of leaves using a hand lens. The eggs look like tiny, clear spheres and are most commonly found in close proximity to adults and larvae. The larvae themselves are small, translucent versions of the adults that begin the season with a distinctly orange hue that changes over to translucent, yellow or green as they feed. Adults also have two dark spots.

When you are observing the underside of leaves keep an eye out for beneficial, predatory mites that actually feed on the TSSM. Predatory mites are often translucent, larger than TSSM and move at a much faster speed across the leaf surface. Predatory mites play an important role in balancing the TSSM population and should be protected when possible.

Growers should be scouting for mites now and remember that only when mites reach an economically significant level should cultural and chemical intervention be considered. Scouts should take leaf samples from 3 to 6 feet up the bine; as the season progresses, samples should be taken from higher on the bine as the mites migrate upward. Use a hand lens to evaluate two leaves from 20 plants per yard. Thresholds developed in the Pacific Northwest have established that more than two adult mites per leaf in June indicate the need to implement a pest management strategy. By mid-July, the threshold increases to five to 10 mites per leaf. Remember that if cones are not infested, hop plants can tolerate a good deal of damage from mites.

There are many factors that can affect the prevalence of mites in a given season, including the presence of beneficials, rainfall and temperatures. Consider selecting insecticides that have a minimal effect on beneficial insect populations and do not apply pesticides for mite control unless absolutely necessary as one application often necessitates continual applications in the absence of beneficial predators.

A number of **beneficial insects** were also observed this week, including a **crab spider** and **green lacewing** eggs. Green lacewing larvae are voracious predators of soft bodied insects including mites. Crab spiders are also predatory and will eat almost anything, including beetles and lepidopteron larvae.

Left, A green lacewing egg on a small filament. Right, A crab spider on a hop plant.
Photo credits: Erin Lizotte, MSU Extension

Growers should read and follow all pesticide labels carefully and proceed with caution when utilizing any materials.

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MICHIGAN CHESTNUT UPDATE – June 27, 2013

Potato leafhopper nymphs are visible. Early developing chestnut varieties like 'Labor Day' are beginning to shed pollen and female flowers are becoming visible in southern Michigan.

Posted on **June 28, 2013, MSUE News,** by **Erin Lizotte**, Michigan State University Extension, and Mario Mandujano and Dennis Fulbright, Michigan State University Extension, Department of Plant, Soil and Microbial Sciences

So far this season the East Lansing Enviro-weather station has accumulated 924 GDD50 with 0.70 inches rain over the past week; the Clarksville Enviro-weather station has recorded 861 GDD50 and 0.99 inches of rain this past week; and the Northwest Michigan Horticultural Research Center has accumulated 733 GDD50 with 0.09 inches of rain over the last week. Catkins with stamens are visible in northern Michigan.

Development of chestnut cultivar 'Colossal' in northwest Michigan on June 27, 2013. Photo credit: Erin Lizotte, MSU Extension

Potato leafhopper nymphs are being observed in higher numbers across the state. Like many plants, chestnuts are sensitive to the saliva of potato leafhoppers that is injected by the insect while feeding. Damage to leaf tissue can cause reduced photosynthesis which can impact production and quality, and damage the tree. Most injury occurs on new tissue on shoot terminals with potato leafhoppers feeding near the edges of the leaves using piercing-sucking mouthparts. Symptoms of feeding appear as whitish dots arranged in triangular shapes near the edges. Heavily damaged leaves are cupped with necrotic and chlorotic edges and eventually abscise fall off the tree. Severely infested shoots produce small, bunched leaves with reduced photosynthetic capacity.

Adult leafhoppers are pale to bright green and about 1/8 inch long. Adults are easily noticeable, jumping, flying or running when agitated. The nymphs (immature leafhoppers) are pale green and have no wings, but are very similar in form to the adults. Growers should also walk through their orchards, flipping over leaves and looking for adult potato leafhoppers and nymphs.

The most common classes of insecticides recommended for control of potato leafhoppers include the pyrethroids, carbamates, neonicotinoids and organophosphates. See the additional Michigan State University Extension article "Potato leafhopper management in chestnuts" for more information. Remember, even growers who believe they may have experienced crop losses due to the frost and freeze events this spring will still need to treat for potato leafhoppers to maintain tree health.

Left, Wingless potato leafhopper nymphs on the back of a chestnut leaf. Photo credit: Mario Mandujano, MSU.
Right, Symptoms of potato leafhopper feeding. Photo credit: Erin Lizotte, MSU Extension

Rose chafers are becoming a bigger concern for some growers as populations increase. Rose chafers are considered a generalist pest and affect many crops, particularly those found on or near sandy soils or grassy areas that provide an ideal habitat for reproduction. The adult beetles feed heavily on foliage and blossom parts of numerous horticultural crops in Michigan and can cause significant damage to chestnut orchards. Rose chafers can be particularly damaging on young trees with limited leaf area. Like Japanese beetles, rose chafers skeletonize the chestnut leaves, but tend to consume larger pockets of tissue with damage similar to caterpillar feeding than the fine, lace-like leaf that results from Japanese beetle feeding.

Rose chafers are light tan with a darker brown head and long legs and are about 12 millimeters long. There is one generation per year. Adults emerge from the ground during late May or June and live for three to four weeks. They are often found in mating pairs and fly during daylight hours. Visual observation while walking a transect is the best method for locating them. Because of their aggregating behavior, they tend to be found in larger groups and are typically relatively easy to spot.


Left, Adult rose chafers mating on chestnut. Right, Typical feeding damage from rose chafers on chestnut. Photo credits: Erin Lizotte, MSU Extension

There are no established treatment thresholds or data on how much damage a healthy chestnut tree can sustain from rose chafers, but growers should consider that well-established and vigorous orchards will likely not require complete control. Younger orchards with limited leaf area will need to be managed more aggressively.

Managing rose chafers can be a frustrating endeavor as they can re-infest from surrounding areas quickly. This re-infestation is often misinterpreted as an insecticide failure, but efficacy trials have shown that a number of insecticides remain effective treatment options. Carbamate, organophosphate, pyrethroid and neonicotinoid insecticides all have good activity against rose chafers and can provide some control.

Organic options including azadirachtin products and surround are marginally effective. Growers choosing to use kaolin clay should remember that good coverage is key and those considering pyrethroids or neonicotinoids should be aware that these products may potentially increase pest mite populations. Refer to the article "Rose chafer management in chestnuts for 2013" for more information on rose chafer biology and management.

Dr. Fulbright's work is funded in part by MSU's AgBioResearch.

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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