# Northern Michigan FruitNet 2013
# Northwest Michigan Horticultural Research Center

## Weekly Update

**August 6, 2013**

**CALENDAR OF EVENTS**

| | |
|---|---|
| **8/7** | **Hop Production 201 – Beyond the Basics Workshop**<br>SWMREC |
| **8/8** | **RidgeFest**<br>West Michigan Fruit Grower Tour |
| **8/9** | **Hops Field Day & Tour** |
| **8/15** | **2013 Soil Seminar – Educational Workshop**<br>Sears, MI<br>**See flyer (pg. 16) for more details and registration form** |
| **8/15** | **Roadblocks to MAEAP Verification Workshop**<br>Evans Brothers Fruit Company<br>**See flyer (pg. 17) for more details** |
| **8/22** | **NWMHRC Open House** |
| **8/22** | **Parallel 45/MSUE Viticulture Update**<br><br>New wine cultivars with Dr. Paolo Sabbatini<br>NWMHRC |
| **8/27** | **Peach and Plum Variety Showcase**<br>SWMREC |
| **9/14** | **Roadblocks to MAEAP Verification Workshop**<br>Putney Beef and Fruit<br>See attached for more details |

**GROWING DEGREE DAY ACCUMULATIONS AS OF August 5 AT THE NWMHRC**

| Year | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 23yr. Avg. |
|---|---|---|---|---|---|---|---|
| **GDD42** | 2300 | 2903 | 2350 | 2711 | 2033 | 2247 | 2353.8 |
| **GDD50** | 1521 | 1952 | 1549 | 1769 | 1210 | 1431 | 1514.0 |

**Growth Stages at NWMHRC (August 5 9:00 a.m.)**

**Apple**: Red Delicious – 52mm
Gala – 47 mm
Yellow Delicious – 46 mm
**Pear:** Bartlett: 38 mm
**Balaton**: Harvested
**Apricot:** Harvested
**Grapes:** Green fruit

**Northwest Michigan Regional Report**
N.L. Rothwell, NWMHRC

Tart cherry harvest continues in northwest Michigan, and cool weather has helped keep good quality fruit

Cool conditions have helped keep the quality of tart cherries up across the region—fruit is still looking good as harvest continues for many growers in northwest Michigan. The weather has been on the cool side with day time temperatures are in the low 70s, and nighttime temperatures dip into the mid-50s. Although not beach weather, the conditions have been perfect for cherry harvest. We have had no substantial rainfall since the end of June, and soils are dry across the region. We have accumulated 2300GDD base 42 and 1521 base 50, and these 2013 accumulations are consistent with our 20+-year average growing degree day accumulations.

**Apple.** Apples continue to size, and most fruit at the NWMHRC is between 45-55mm at this time. Early varieties are starting to color with our cool nights, and Gingergold harvest is closer than we anticipated. Fruit quality is looking excellent, and most growers are pleased with their thinning efforts this spring. Some hand thinning is still going on in blocks where there is still a little too many fruits. **Apple scab** is under control in many orchards, but lesions can still be found on leaves. Growers that have lesions need to protect their fruit through harvest.

**Codling moth** (CM) numbers are increasing in some apple blocks following two weeks of zero to few moths in traps. The increase in moth catch is likely the start of the second generation. MSUE recommends that growers monitor each individual blocks rather than relying on a regional trap catch because there is tremendous variability in CM population size and trap catch across the region. Growers should remember to use an insecticide with a different mode of action for second generation codling moth to minimize the threat of resistance.

Organophosphate resistance has been documented in CM (and obliquebanded leaf roller) in Michigan, and these chemistries will not be effective in controlling these pests. Pyrethroids are also not effective against these pests due to cross resistance.

We trapped our first **apple maggot** this week (AM) at the NWMHRC. Guthion, Imidan, Calypso, Assail, and Voliam flexi are all labeled as excellent materials against AM. The following materials are all rated good: Lannate, Provado, Bts, Belay, Baythroid, Admire Pro, Battalion, and Endigo.

**Cherry. Cherry leaf spot** (CLS) is evident in many area orchards in the tops of trees where the leaves are turning yellow and starting to drop. We recommend a post harvest chlorothalonil spray to minimize CLS to keep leaves on into September. A post harvest spray would also be helpful in controlling cherry fruit fly in 2014. **Cherry fruit fly** counts are very high (75+ on one trap) on some farms, and growers need to protect fruit through harvest. **Spotted wing drosophila** (SWD) is also a major concern as we have trapped adults in many cherry orchards across northern Michigan: Leelanau, Grand Traverse, Benzie, and Antrim Counties. We also know that these flies are able to lay eggs in fruit, even if the fruit is not ripe. We have detected SWD larvae in cherries that were not protected; therefore, the potential to have infested fruit is real and cherries need to be covered through harvest. Lastly, **American plum borer** catch has increased from last week; we trapped 46 adult moths this week.

**Wine Grapes**

Duke Elsner, Grand Traverse County MSUE

Cool weather and the added stress of berry development have slowed shoot growth, especially in vineyards that are not being irrigated. Hedging and leaf removal is underway at many sites. Some blocks have a very heavy crop load, quite visible where the leaves have been removed from the fruiting zone!

Given the long-range forecast for continued cool weather, growers should consider reducing the crop by cluster thinning in order to keep fruit development and maturation at a good pace. This is a difficult decision if the current crop load has not been carefully estimated. See the following references for crop estimation methods:

http://www.grapes.msu.edu/pdf/June%2016%20Michigan%20Grape%20and%20Wine%20Newsletter.pdf

http://www.michiganwines.com/docs/Research/08sabbatini1.pdf

**Powdery mildew** berry infections are now common at many sites, and some **downy mildew** has been reported. There have also been a few reports of **botrytis infections** on berries. Given the fact that berries are still green and hard, these infections probably are secondary to fruit injuries from insect feeding or some other sort of physical injury.

Adult **Japanese beetles** have now appeared in area vineyards. Their activity and injury may remain a minor problem if the cool weather trend continues.

**MICHIGAN SWD REPORT - August 6, 2013**

Spotted wing drosophila continues to be captured throughout Michigan, and larvae have been detected in multiple crops, so protect susceptible fruit.

**Nikki Rothwell, Karen Powers, and Statewide SWD Monitoring Team**

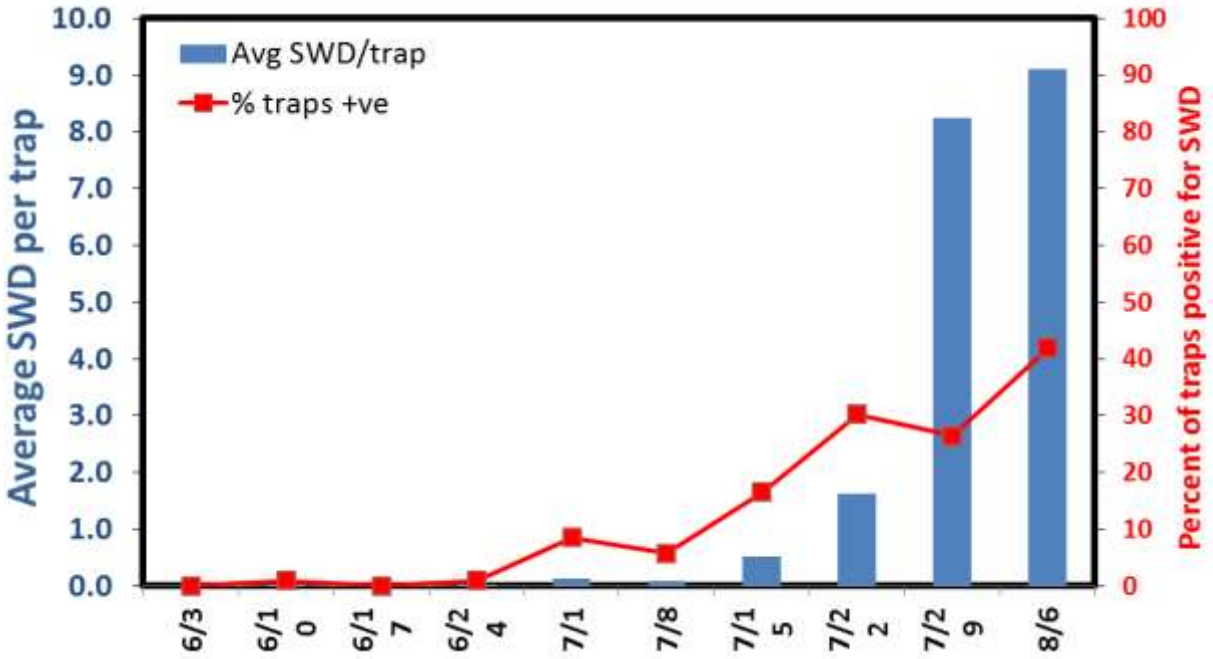
Adult spotted wing drosophila (SWD) catch remains relatively high over the past week across the Michigan fruit belt, and we are catching an average of 9.1 flies per trap. Last week our trap average was 8.2 flies per trap. The average is across all of the 120 traps in the MSU Extension SWD Monitoring Network over the past week where 42% of the traps were positive for SWD, up from 26.4% last week. Again these summary numbers do not reflect the much higher levels of SWD activity observed in the southern part of the monitoring network, particularly in SW Michigan. However, we are catching more SWD in northwest Michigan than in weeks past. We are also still observing more females than males in the traps, but male catch has also increased this week. The males are much more easily identifiable with the black spots on their wings, and since the females do not have the spots, we highly recommend that scouts and consultants to be trained to identify female SWD accurately.

In Berrien County over the past week, most sites continue to trap high numbers of SWD. In general, the grape, blueberry, raspberry, and strawberry sites have had much higher counts than the peach and cherry orchards. Trap counts in Berrien County range from 1 fly per trap to 316 flies in one trap. Berrien County has reported the highest fly catch this week with just fewer than 1000 flies on 17 traps--an average of 56 flies/trap. In Van Buren County, catches range from 1 SWD at a number of tart cherry orchards to 125 flies at a strawberry farm. Seven flies were captured at the woods edge in Kalamazoo County. In Allegan County, traps also ranged from sites with 1 SWD per trap to 9 SWD on a trap; trap counts are down from last week where some locations had 30-50 SWD per trap. A few potential factors that could help explain the decline in fly catch include aggressive spray programs in place at commercial farms as well as the wrap up of raspberry harvest and the cooler weather. For unsprayed fields, we are finding more SWD on some of the interior traps, as opposed to the traps on the field border. Monitoring of fruit using the salt test method is revealing Drosophila larvae in some raspberry and blueberry samples.

Fly counts in Ottawa County (mainly blueberry and raspberry) were down this week with only 1-4 SWD per trap compared to higher numbers last week that peaked at 24 flies/trap. In northwest Michigan, SWD have been captured in Leelanau, Antrim, Grand Traverse and Benzie counties at relatively low numbers. Most catches in northwest Michigan have been reported in cherry with some catches in raspberry and blackberry. The new SWD capture in Grand Traverse County was caught in a winegrape vineyard. It is worth mentioning again that we detected Drosophila larvae in unprotected cherries last week; at least some of this infestation has been identified as SWD. Because cherry harvest continues across the north, we remind growers to have an active monitoring program and to be checking fruit quality as harvest progresses. Unprotected fruit is at risk of SWD infestation, and as mentioned above, adult

catch does not always accurately predict larval infestation. We are currently testing materials with short PHIs at the NWMHRC this week to help growers manage this pest this close to harvest.

The continued catch of SWD and the frequency of captures in the past week indicate that growers with ripe and susceptible fruit should take precautions to prevent SWD infestation. With raspberry and blueberry harvest underway in southern Michigan, and with a week to two weeks of cherry harvest still to complete, growers need to be sure to keep this fruit protected through the harvest period. Growers should make their decisions to spray based on the presence of SWD flies and ripening or ripe fruit that are susceptible, plus the history of pest management inputs to each field. A monitoring program in these crops is recommended throughout the harvest season. For more on SWD identification, monitoring, and management see our SWD website at www.ipm.msu.edu/SWD.htm



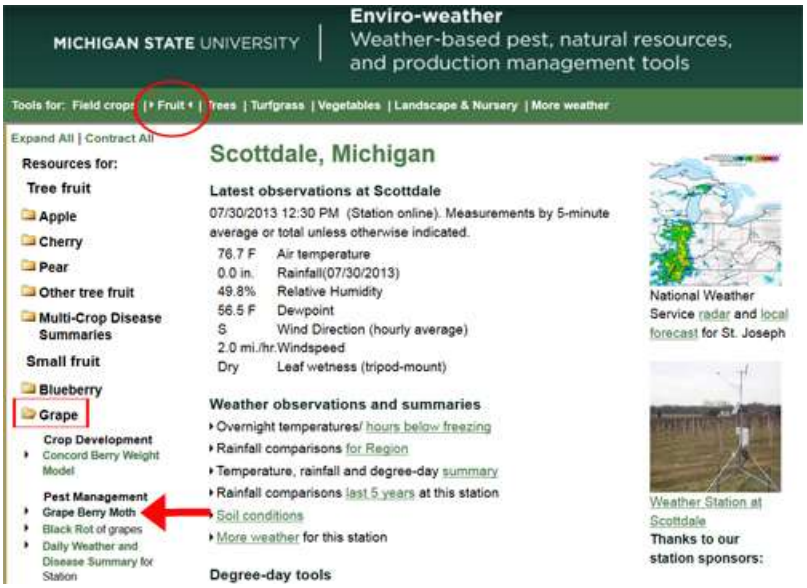

**GRAPE BERRY MOTH SPRAY TIMING WINDOW IS APPROACHING**

*Checking the Enviro-weather grape berry moth model can help growers improve timing of sprays to protect clusters before harvest.*

Posted on **July 30, 2013, MSUE News,** by **Rufus Isaacs**, Michigan State University Extension, Department of Entomology

The growing degree day (GDD) model for predicting grape berry moth phenology during the season is available at the Enviro-weather website. Go to www.enviro-weather.msu.edu, click on Fruit at the top (circle in image below), then Grape over in the left-hand column (square in image below), then Grape Berry Moth (arrow in image below), and it will open the model for the nearest weather station. You can select the preferred weather station from the drop-down menu

in the top of the page. This will show you the current estimated growing degree days from various dates in the spring listed across the top of the table that should be around the timing of your biofix date, when 50 percent of the clusters of wild grape were at 50 percent bloom. If you didn't record wild grape bloom date, use the middle of the table as an estimate.




**Scottdale Enviro-weather station page showing how to get to the grape berry moth model.**

For the Scottdale Enviro-weather station in Berrien County, the model is predicting the start of the third generation of grape berry moth around Aug. 6. The image below clipped from the Assist Chart is what you will see when running the model. Assuming that wild grape bloom was set on May 27, this shows for today, July 30, that the site is 1,479 GDD from biofix. Enviro-weather predicts that the third generation of grape berry moth will begin egglaying at 1,620, and this is predicted to occur at 1,620 GDD after biofix, as indicted by when the cells turn red on the Assist Chart. That level of heat accumulation is expected on Aug. 6 this season for this site. For later sites, these target dates will be later into August. Keep checking the Enviro-weather website to see the predicted timing for the start of this third generation's egglaying.

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monday | 7/29 | 71.8 | 51.4 | 61.6 | 15 | 1925 | 1590 | 1565 | 1532 | 1507 | 1487 | 1481 | 1479 | 1473 | 1463 | 1453 | 1433 | 1407 |
| Today's data: | | | | | | | | | | | | | | | | | | |
| 2013 | | Temperature(F) | | | Degree Days Base 47 F | | Biofix Date (Prediction of 810, 1620, and 2430 GDD Base47F from clusters with 50% flowers open | | | | | | | | | | | |
| Day | Date | Max | Min | Avg | Today | Since 3/1 | 5/19 | 5/20 | 5/21 | 5/22 | 5/23 | 5/24 | 5/25 | 5/26 | 5/27 | 5/28 | 5/29 | 5/30 |
| Tuesday | 7/30 | Actual (12:15-12:20PM): 76.8 | Actual (5:55-6:00AM): 49.1 | 62.85 | 16 | 1941 | 1608 | 1581 | 1548 | 1523 | 1503 | 1497 | 1485 | 1489 | 1479 | 1469 | 1449 | 1423 |
| Forecast data: | | | | | | | | | | | | | | | | | | |
| 2013 | | Temperature(F) | | | Degree Days Base 47 F | | Biofix Date (Prediction of 810, 1620, and 2430 GDD Base47F from clusters with 50% flowers open | | | | | | | | | | | |
| Day | Date | Max | Min | Avg | Today | Since 3/1 | 5/19 | 5/20 | 5/21 | 5/22 | 5/23 | 5/24 | 5/25 | 5/26 | 5/27 | 5/28 | 5/29 | 5/30 |
| Wednesday | 7/31 | 78 | 61 | 69.5 | 23 | 1963 | 1628 | 1603 | 1571 | 1545 | 1525 | 1520 | 1517 | 1511 | 1502 | 1492 | 1471 | 1446 |
| Thursday | 8/1 | 75 | 59 | 67 | 20 | 1983 | 1648 | 1623 | 1591 | 1565 | 1545 | 1540 | 1537 | 1531 | 1522 | 1512 | 1491 | 1466 |
| Friday | 8/2 | 78 | 57 | 67.5 | 21 | 2004 | 1669 | 1644 | 1611 | 1586 | 1566 | 1560 | 1558 | 1552 | 1542 | 1532 | 1512 | 1486 |
| Saturday | 8/3 | 76 | 56 | 66 | 19 | 2023 | 1688 | 1663 | 1630 | 1605 | 1585 | 1579 | 1577 | 1571 | 1561 | 1551 | 1531 | 1505 |
| Sunday | 8/4 | 75 | 54 | 64.5 | 18 | 2040 | 1705 | 1680 | 1648 | 1622 | 1602 | 1597 | 1594 | 1588 | 1579 | 1569 | 1548 | 1523 |
| Monday | 8/5 | 81 | 55 | 68 | 21 | 2061 | 1726 | 1701 | 1669 | 1643 | 1623 | 1618 | 1615 | 1609 | 1600 | 1590 | 1569 | 1544 |
| Tuesday | 8/6 | 84 | 67 | 75.5 | 29 | 2090 | 1755 | 1730 | 1697 | 1672 | 1652 | 1646 | 1644 | 1638 | 1628 | 1618 | 1598 | 1572 |

**Screen shot of the grape berry moth model on Enviro-weather for the Scottdale station on July 30, 2013.**

The predicted start of egglaying is the optimal timing for application of insecticides that are active on eggs and young larvae, such as Intrepid, Altacor or Belt. For these products, excellent cluster coverage is essential, but once it is on the clusters, long residual control of grape berry moth (two to three weeks) and rainfastness are achieved. For products that are broad-spectrum such as the pyrethroid, organophosphate and carbamate insecticides that are best timed for when the larvae hatch from the eggs, applications should be delayed to be timed 100 growing degree days later at 1,720 growing degree days from wild grape bloom. For the locations in far southwest Michigan, this will be four to five days later based on the predicted temperatures for the coming week.

In our recent research trials, spray programs that timed applications for berry moth control based on the growing degree day model outperformed those that used a calendar approach. This was the case for broad spectrum insecticides, and even better control was achieved when we tested growing degree day timed sprays using some of the new insecticides that are highly active and long-lasting for berry moth control. For example, a program using Intrepid at 8 ounces per acre applied at 810 GDD followed by Altacor at 3 to 4 ounces per acre applied at 1,620 GDD provided similar or slightly better control than a Sevin and Imidan program in the mid- and late season timings.

Altacor also has activity against Japanese beetles, which were first seen this week in scouting across southern Michigan, making it a useful tool for mid-season control when both pests are present. Belt has a similar mode of action to Altacor and is less expensive, but it is more selective and does not provide the Japanese beetle control. Other pest insects may be important in your vineyards, but if you are focusing on berry moth control, growing degree day-timed applications of long-lasting and active insecticides applied with excellent coverage provides an effective program to reduce pressure from this pest.

With harvest approaching, Michigan State University Extension warns growers to beware of products with long pre-harvest intervals and make sure that there are enough days before picking if using one of those. For example, Intrepid 2F has a 30-day waiting period before harvest.

*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).

## HORNWORM CATERPILLARS: THE BIG CATS OF THE VINEYARD

*Monitoring for these sphinx moth caterpillars can help save grape growers from some significant defoliation.*

Posted on **July 29, 2013, MSUE News,** by **Duke Elsner**, Michigan State University Extension

Michigan grape growers face a number of different insect pest challenges every year, but by far the biggest insects they encounter are the "hornworm" caterpillars of sphinx moths. There are three common grape-feeding species in the state with the Pandora sphinx, *Eumorpha pandorus*, and the Achemon sphinx, *Eumorpha achemon*, being the largest. A smaller species, the Virginia creeper sphinx (*Darapsa myron*, also known as the hog sphinx), is also often found feeding on grapevines.

The life histories of the Pandora and Achemon sphinx moths are very similar. Their caterpillars can reach over 5 inches in length when full grown. Their lifecycle starts out as a small, almost spherical green egg, usually laid singly on grape leaves by the adult moths in late June or July. Tiny caterpillars hatch about two weeks later.

At first, the caterpillars are bright green with a long, curled horn on their tail end. Slightly older caterpillars are usually bright green with a series of black-margined whitish or light yellow patches along their sides; they hold the front of their bodies up in a bent-back pose when threatened (Photo 1). There are a number of other color "morphs" in both species in which the base color of the caterpillar may be orange, rosy pink or even a deep brown. About mid-way through the caterpillar period, the horn is replaced by a slightly raised eye-spot marking (Photo 2).


**Photos 1-2. Left, Young Pandora sphinx caterpillar showing side patches and curled horn. Right, Older caterpillar showing eyespot marking on tail end.**

Younger caterpillars of the Pandora and Achemon sphinx are very hard to tell apart, but once they reach an inch in length it is usually possible. Pandora sphinx caterpillars typically have little shading or markings other than the eyespot and whitish patches, and the margins of the patches are not notched (Photo 3). The base color of the Achemon sphinx caterpillar, be it green, pink, brownish, etc., is delicately marked with small spots and patterns, and the margins of the whitish patches on their sides are notched (Photo 4).

**Photos 3-4. Left, Common color forms of Pandora sphinx caterpillars. Right, Two color forms of Achemon sphinx caterpillars.**

Full grown caterpillars are striking in appearance, and they are quite feisty – they will whip the front part of their body back and forth and regurgitate food to dissuade natural predators – and humans – from attacking them. The caterpillars feed only on the leaves of the grapevine, never injuring the shoots or fruit clusters. Larger caterpillars can eat several leaves a day, leaving tell-tale bare shoots on the vines. Large vines can tolerate this feeding injury without an impact on overall growth or fruit quality, but young vines may suffer greatly if a large portion of their foliage is consumed.

After growing to full size, the caterpillars tunnel into the soil and form pupation chambers several inches below ground; they may go more than a foot deep in sandy soils. They transform into a smooth, brown pupa (Photo 5) and remain in the soil chamber through the fall, winter and spring, emerging as adults in June or July.

**Photo 5. Pupa in soil chamber.**

The adult moths of the Pandora sphinx are large – up to a 4-inch wingspan – and colored in shades of green with reddish or pink markings (Photo 6); the adults of the Achemon sphinx are beautiful shades of light and dark brown, marked with darker lines and patches with bright pink highlights on the hind wings (Photo 7). The adults are active only at night and may sometimes be seen taking nectar from deep-throated flowers, hovering like hummingbirds. They are attracted to bright lights and may be found resting near these in the morning.

**Photos 6-7. Left, Adult moth of the Pandora sphinx. Right, Adult moth of the Achemon sphinx.**

The Virginia creeper sphinx moth caterpillar is a more typical hornworm, bearing a distinct horn on the tail end throughout the caterpillar period. They are about 2 inches long when full-grown and their coloration is either greenish or brownish with lighter markings (Photo 8). The adults of the Virginia creeper sphinx have a wingspan of about 2 inches with forewings that are shades of olive green and dull orange hind wings (Photo 9).

**Photos 8-9. Left, Two color forms of Virginia creeper sphinx caterpillars. Right, Adult moth of Virginia creeper sphinx.**

The Pandora sphinx is typically more common than the Achemon sphinx in Michigan vineyards, but population levels vary greatly from year to year and with location. The Virginia creeper sphinx is fairly common through much of the state. All three species are heavily parasitized by flies and wasps (Photo 10), keeping their numbers low enough that they are not usually pests of economic importance to established grape plantings. In newly planted vineyards, however, a single hornworm caterpillar can defoliate entire small vines, causing a great reduction in growth or death of the vine.

**Photo 10. Caterpillar with silk cocoons of parasitoid wasp.**

It is therefore prudent to maintain a regular monitoring program for young vineyards to be alert to the presence and activity of sphinx moth caterpillars. These are easy to control by hand-removal of individual caterpillars, or by use of one of the very effective and selective insecticides for moth control such as the bacterium B.t. (Dipel, Javelin) or the growth regulator insecticide methoxyfenozide (Intrepid). According to Michigan State University Extension, either of these will allow natural enemies to persist in the vineyard to aid in the suppression of the caterpillars.

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).

## UPDATED SPOTTED WING DROSOPHILA MANAGEMENT GUIDELINES IN MICHIGAN RASPBERRIES AND BLACKBERRIES

*Updated document provides guidance on minimizing the impact of the invasive pest spotted wing Drosophila in raspberries and blackberries.*

Posted on **July 30, 2013, MSUE News,** by **Rufus Isaacs**, Michigan State University Extension, Department of Entomology

As this week's spotted wing Drosophila (SWD) report shows, catches of this pest are increasing sharply across southern Michigan farms where Michigan State University Extension is monitoring. This highlights the need for growers of susceptible crops that are ripening or ripe to take precautions to minimize the effect of SWD on this year's crop. There are monitoring techniques that are recommended as well as various cultural and chemical approaches that can be taken, and these are described in detail in the newly-updated document "Spotted Wing Drosophila Management Recommendations for Michigan Raspberry and Blackberry Growers." This is posted at MSU's spotted wing Drosophila website as a PDF file that can be downloaded and printed for easy reference.

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



## PEACH AND PLUM VARIETY SHOWCASE

**Date:** August 27, 2013
**Time:** 4 p.m. - 7 p.m.
**Location:** SW Michigan Research and Extension Center, 1791 Hillandale Rd., Benton Harbor, MI 49022
**Contact:** MSU Extension Senior Specialist, Bill Shane: (269) 208-1652 or shane@msu.edu

This extensive stone fruit display will be assembled from samples contributed by commercial growers, nurseries, and university breeding programs across Michigan and elsewhere. Fruit on display will include yellow and white fleshed peaches and nectarines, donut, aprium, and plumcot types. Attendees will see new varieties and experimental selections from the Stellar, Flamin' Fury, Rutgers University, University of Wisconsin, Cornell University, and Michigan State University breeding programs. At this meeting plant breeders, commercial nursery, growers, and university researchers will share their experiences and recommendations with these new varieties.

**Schedule**:

4 p.m. - Fruit variety displays open for viewing and tasting;

4:30 p.m. - Fruit variety discussions;

6 p.m. - Dinner.

There is no charge. Dinner provided courtesy of Summit Tree Sales, Lawrence, MI. You are welcome to bring samples of new, unusual, and experimental peaches and plums varieties to add to the display. The SW Research and Extension Center will be open for self-guided tours to see over 60 projects on fruit and vegetables including high tunnel production, grapes, hops, peach training systems, variety trials, and peach breeding. This showcase is organized by the Michigan Peach Sponsors (web site: michiganpeach.org), Michigan Plum Advisory Board (web site: michiganplum.org), Summit Tree Sales, and Michigan State University Extension.

**HOUSEHOLD HAZARDOUS WASTE & PESTICIDE COLLECTION**

The summer Household Hazardous Waste & Pesticide Collection is scheduled for August 15, 2013 (Thursday). An appointment is required.

LATEX PAINT & MOTOR OIL Now Accepted,
however, NO empty or dried up paint cans

Grand Traverse County residents may dispose up to 150 lbs. of hazardous materials at no charge. Beyond this, a fee of $1.00 per pound will be charged. A 38¢ per pound fee for electronics does apply at all times.

All businesses are required to complete the CESQG form (Conditionally Exempt Small Quantity Generator). A generator is CESQG in a calendar month if no more than 100 kilograms (about 220 pounds or 25 gallons)of hazardous waste is generated in that month. Ref. 40CFR Part 261.5.
CESQG Certification Form

**Where to Recycle Electronics**

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***How Can You Tell If It's Hazardous?***
**Read the label and look for the following words:**
**Caution, Toxic, Corrosive, Pesticide, Combustible, Poison, Flammable, Warning, Danger**


More information is available at the Household Hazardous Waste website link.

RecycleSmart Minute (HHW)

"Michigan State University Extension features pertinent articles from hundreds of MSU Extension experts throughout the state covering up-to-date issues and information on agriculture (and other topics including family, health, communities, 4-H, governance) that affect your daily life.

To receive an email digest of information tailored to your interests, text MSUE to 22828 and follow the step-by-step instructions or sign up at http://bit.ly/msuenewsdigest."

**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

**Tart Cherry Raw Product Reports – 2013**

http://www.cherryboard.org/Week52013.pdf

4353 E US 10 Sears, MI 49679

# MORGAN COMPOSTING, INC.

## 2013 SOIL SEMINAR

Educational Workshop

JOIN US FOR OUR ANNUAL SEMINAR!

**This years theme:**

**"Layering of Good Practices to Build Healthy Soils"**

### Event Information - Thursday, August 15

| | |
|---|---|
| 9:00-9:30am | Registration and short farm tours |
| 9:30-9:45am | Welcome |
| 9:45-10:45am | Key Note Speaker |
| 11:00-11:45am | Session 1 |
| 11:45-1:00pm | Lunch |
| 1:00-1:45pm | Session 2 |
| 2:00-2:45pm | Session 3 |
| 2:45-3:00pm | Break |
| 3:00-3:45pm | Session 4 |
| 3:45-4:30pm | Short Farm Tours and Dismissal |

## Highlights!

### Speakers

**Dr. George Bird, Nematologist, Keynote Speaker**
Dr. Bird will be opening the program with a discussion on "Results of Biological Soil Sections".

**Paul Gross, MSU Extension**
Important Practices to Improve Soil Health, and why.

**Dr. John Biernbaum, MSU Professor in the Department of Horticulture**
Vegetable Production

**Dr. Jason Rowntree, MSU Assistant Professor, Beef Cattle and Forage Utilization**
Soil Biology of Pasture Management

**Craig Schaff, Local Farmer**
Sustainable Vegetable Production

**Christina Curell, MSU Extension**
Building Soil Health

**Vicki Morrone, MSU Extension**
Food Labels: Organic, Sustainable, GMO's...An In-Depth Discussion

**And much more!**

**Grab a friend and register today!**

### REGISTRATION INFORMATION:

Cost - $20 preregistration (online at www.dairydoo.com, phone: (231)734-2451 or through mail) or $25 at the door

*To preregister, please return this portion, with payment, to 4353 E US Highway 10, Sears, MI 49679. Checks can be made payable to Morgan Composting.*

Name(s):_____ Company/Farm: _____

City: _____ Phone:_____ Email: _____

Amount Enclosed: # of Registrations: ____ x $20.00 = _____

**Roadblocks to Verification Workshop**

**Thursday, August 15, 2013**
Evans Brothers Fruit Company
5:00pm
This event is co-hosted by MAEAP and the NRCS. Learn firsthand the main roadblocks growers face in the verification process and how to overcome them with the assistance of NRCS.

**Saturday, September 14, 2013**
Putney Beef and Fruit
12:00pm
This event is co-hosted by MAEAP and the NRCS. A bus tour stopping at five farms in Benzie and Manistee Counties currently in the process of becoming verified. Learn different tools NRCS has to offer to overcome obstacles and attain MAEAP verification. Following the farm tour, attendees are invited to join the Benzie Manistee Farm Bureau annual meeting and pig roast.

**For more information, contact Jessica Rasch 231-941-0960 ext 23 or jrasch@gtcd.org**