

Northern Michigan FruitNet 2017

Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – July 18, 2017

CALENDAR OF EVENTS

8/24	NWMHRC Open House and Leelanau Hort Society Annual Meeting and Dinner
-------------	--

What's New?

- **NW MI SWD Trap Counts – 7/18/17**
- **New recorded programs available on MSU Extension
Beginning Farmer website**
- **Grapevine leafroll virus a threat to Michigan grapes**

NEW ARTICLES

NW MI SWD Trap Counts – 7/18/17

Spotted wing drosophila (SWD) numbers are rising in many fruit crops across the state, including trap counts in northern Michigan. Table 1 shows the trap counts for NW Michigan so far this week (more trap counts will be available as we check them on Wednesday and Thursday this week). The trap counts from the NW Station have jumped considerably from last week, but growers should remember that we have many

experiments on the station where we have little to no insecticide applications in many of our blocks. With little residue, SWD are able to successfully reproduce and numbers are climbing rapidly. However, the other trap count numbers are also on the rise, and growers should remain diligent about control through harvest. Also included in this FruitNet is a letter from Dr. Rufus Isaacs to the SW Michigan blueberry growers. SWD numbers are rising quickly in that part of the state, and growers should be sure to keep a good cover to prevent blueberry infestations. Dr. Isaacs' states that these trap counts are so high that they resemble what we would consider 'August' SWD populations indicating that SWD numbers are rising faster than in past seasons. We remind NW growers that we may face a similar situation in our region, but to be aware of this potential exponential population increase in coming weeks. We are just moving into sweet cherry harvest, and some growers have started tart cherry harvest—we have a few weeks before harvest is complete, and again remind growers to have an efficacious insecticide on to prevent SWD infestation. We will continue to keep track of the SWD numbers as we check our traps this week and the following weeks. Please call the NW Station if you have questions about insecticide efficacy or trap counts in a particular region: 231-946-1510.

Table 1

Location and # of traps out	wk of 5/15	wk of 5/22	wk of 5/29	wk of 6/5	wk of 6/12	wk of 6/19	wk of 6/26	wk of 7/3	wk of 7/10	wk of 7/17
North Manistee - 7	trap set	0	0	0	2	Not checked due to REIs	1	6	14	*
Benzie - 44	trap set	3	2	4	23	50	23	48	103	*
Yuba - 22	trap set	0	0	0	1	16	7	13	23	*
Central Lake - 7	trap set	0	0	1	0	1	0	0	0	*
Old Mission - 26	trap set	1	0	0	0	7	1	0 - Not all traps checked due to REIs	15	*
Bingham - 75	trap set	0	0	0	3	38	92	68	73	777
Cedar - 8	trap set	0	0	0	1	12	0	3	4	20

East Leland - 7	trap set	0	0	0	0	0	0	Not checked due to REIs	1	1
Northport - 7	trap set	0	0	1	0	2	3	2	13	*

SWD Caught outside of NW MI

Trap Count

Location	wk of 5/15	wk of 5/22	wk of 5/29	wk of 6/5	wk of 6/12	wk of 6/19	wk of 6/26	wk of 7/3	wk of 7/10	wk of 7/17
North Manistee		0	0	0	1	0	0	0	0	*
Bingham		0	0	0	1	0	0	0	0	*

*** = Trap count is incomplete.**

letter from Dr. Rufus Isaacs to the SW Michigan blueberry growers

Dear blueberry growers/consultants:

Catches of SWD across southern Michigan are sharply up in traps checked by MSU staff and private consultants. You may be aware of this already, but we wanted to let you know what we are seeing across the region since this is an unusually early increase in SWD activity at raspberry and blueberry farms. Some traps are catching mostly female SWD, so be aware that scouts looking only for males will be missing some important information. Our identification guide for SWD is posted [here](#). We are also starting to find more SWD larvae in salt tests of some fruit this week, especially at sites where we find high SWD fly counts in traps.

Most of these SWD larvae are the tiny first instar larvae but some untreated crop areas or wild host plants we are sampling have more mature (larger) larvae. **Commercial farms using an effective spray program for this pest generally have it under control**, with either zero or very low infestation, but it is concerning to see that ripening berries are already getting larvae as soon as they ripen at high pressure sites or sites without a good IPM program in place. Locations with a lot of woods nearby and especially those with honeysuckle and other wild plants ripening in the nearby woods are providing very high SWD pressure this season. And it is still only mid-July.

SWD is currently behaving like it normally does in August when the populations spike, so it seems to be about a month early. This means that for blueberry growers ripening or

ripe Bluecrop need protecting now and it suggests a bumpy ride through Jersey and into Elliott season. Raspberry growers also need to be protecting their ripe raspberries and preparing for how they will manage SWD through fall harvest. I know similar messages have gone out already this year via extension meetings and our online news, but it is important for growers to be protecting ripening fruit from this pest. This is not a 'normal' year.

For recommendations, consult the E-154 Fruit Pest Management Guide or visit www.ipm.msu.edu/SWD.htm.

New recorded programs available on MSU Extension Beginning Farmer website

For those interested in new farm enterprises, these recorded presentations by MSU Extension educators and other experts offer a free, online opportunity to learn about the basics.

Posted on **July 14, 2017** by [Jim Isleib](#), Michigan State University Extension, MSUE News

The [Michigan State University Extension Beginning Farmer Webinar Series](#) completed its sixth year in May 2017. Recordings of this year's presentations are now available online on the [MSU Extension Beginning Farmer Webinars Series website](#) at no cost.

There are currently 70 recorded presentations, delivered by 53 expert presenters from MSU and elsewhere from 2012 through 2017, posted on the website. They cover a wide variety of topics for beginning farmers. Categories include:

- Farm business
- Field crops
- Fruits and nuts
- Livestock
- Machinery
- Marketing
- Organic agriculture
- Pollinators
- Poultry
- Vegetables
- Floriculture
- Woodlot management
- Soil fertility and health
- Aquaculture

The new recordings from the 2017 series include:

- [Small vegetable farm systems](#), presenter: Abbey Palmer, MSU North Farm, Chatham, MI
- [Hoophouse management](#), presenter: Collin Thompson, MSU Extension, MSU North Farm, Chatham
- [Maple syrup](#), presenters: Bob and Sue Battel, MSU Extension and Battel's Sugar Bush, Pure Maple Syrup
- [Fencing and water systems for livestock](#), presenters: Jerry Lindquist and Kevin Gould, MSU Extension
- [Blueberries](#), presenter: Mark Longstroth, MSU Extension
- [Crop nutrient management](#), presenter: Jim Isleib, MSU Extension
- [Aquaculture](#), presenter: Elliot Nelson, Michigan Sea Grant Extension
- [Planning and operating a mixed fruit orchard](#), presenter: Bob Tritten, MSU Extension
- [Producing and selling eggs](#), presenter: Dr. Darrin Karcher, Purdue University

A recent [survey sent to past participants in the series](#) indicates these webinars have been helpful to people considering a new farm business enterprise. In some cases, the basic information helped people get started. In other cases, the participants decided they would be wiser explore something else. Either way, getting a good look at a proposed farm business enterprise gives a person useful insights as they make decisions.

A new series of online webinars will be developed for winter 2018. A small fee is charged to participate in live webinars. Attending live has benefits, including the opportunity to interact with presenters during the program. If you want to be notified directly about upcoming MSU Extension Beginning Farmer Webinars, please contact Jim Isleib at isleibj@anr.msu.edu.

Please feel free to visit the [Beginning Farmer Webinars Series website](#) and take a look through the recorded webinars.

Grapevine leafroll virus a threat to Michigan grapes

Learn more about how grapevine leafroll virus threatens Michigan grapes with this video presentation.

Posted on **July 18, 2017** by **Cameron Macko**, MSU IPM Program, MSUE News



Reddening of the leaves and green veins are clear indicators of grapevine leafroll virus. Photo by Annemiek Schilder, MSU.

Grapevine leafroll virus is one of the most common viruses affecting grapes in the world, and Michigan is no different. Though lighter cases can have a negligible impact on yield per vine, severe and very severe cases can destroy 35 percent and 65 percent of yield respectively, according to new research from Michigan State University [Department of Plant, Soil and Microbial Sciences](#) professor [Annemiek Schilder](#).

Thanks to funding from the [Michigan Grape and Wine Industry Council](#) and [MSU Project GREEN](#), Schilder and her team set out to analyze the impact of grapevine leafroll virus on the yield and juice quality of Chardonnay grapes in Michigan, assess the distribution of the disease in a vineyard also infected with tobacco ringspot virus and determine the presence of insect vectors and the potential of the disease to spread.

Growers can watch a short video about this study at “[Impact and spread of grapevine leafroll virus](#).”

The video concludes that grapevine leafroll virus tends to avoid vines infected with tobacco ringspot virus, which can kill vines, and also tends to infect several vines at once, indicating the disease can spread to nearby vines.

To access “[Impact and spread of grapevine leafroll virus](#)” and other wine grape research videos on a variety of topics, go to the [Michigan State University Extension Grapes Research page](#).

ARTICLES FEATURED IN PAST FRUITNET REPORTS

Managing Spotted Wing Drosophila (SWD) in Cherries at Harvest Time

Application strategies, insecticides choices, and general rules of thumb to maximize effective SWD management near harvest time.

Nikki Rothwell, NWMRHC and MSUE
Emily Pochubay, NWMRHC and MSUE
Larry Gut, Dept. of Entomology, MSU
John Wise, Dept. of Entomology, MSU and TNRC

As much of the state is harvesting or about to start tart cherry harvest, we want to remind growers about the best management practices for controlling spotted wing drosophila (SWD) at this critical time of year. There are several considerations including SWD biology, population size, and spray program efficacy that impact management decisions. Current trapping data indicate that SWD populations are building faster this season compared with past years in all cherry growing regions of the state. SWD adults were active and caught in traps earlier in 2017 than in past seasons and as soon as suitable hosts are available, SWD are able to reproduce and potentially contribute to high SWD pressure. To minimize the risk of infested fruit at harvest, growers need to be actively managing SWD with the most effective spray programs to achieve optimal control this season.

First, growers should choose the most efficacious insecticides to control SWD. This statement cannot be understated as SWD control becomes increasingly challenging as the SWD population builds. In efficacy trials conducted at the Northwest Michigan Horticultural Research Center (NWMHRC) and the Trevor Nichols Research Complex (TNRC), data have shown that even the best insecticide programs cannot prevent SWD infestation under extremely high pressure. These data suggest that growers need to be on top of SWD management programs to prevent and delay the exponential SWD population growth—as populations increase, insecticide efficacy and control decreases.

SWD management programs should begin when traps in a particular region start to catch SWD and fruit are susceptible. The statewide SWD trap line can be found at MSUE News for Ag

(http://msue.anr.msu.edu/news/michigan_spotted_wing_drosophila_report_for_june_27_2017). The NWMHRC also puts out a daily SWD trap count through the northwest region's FruitNet newsletter (<http://www.canr.msu.edu/nwmihort/>). Click on Northern Michigan FruitNet on the menu; these 200+ traps are specific to NW Michigan. SWD females oviposit eggs into susceptible hosts. From no choice tests conducted at the TNRC and NWMHRC, we found that cherry fruit are susceptible to SWD egg-laying as

soon as the cherry loses its green color. We have repeated host susceptibility trials at the NWMHRC this season, and preliminary data suggests that female flies will lay eggs in underripe fruit if provided no other choice. However, if given a choice of different fruits, female flies prefer ripe fruit. These results suggest that although SWD can lay eggs in underripe fruit, female flies will seek out riper fruit in a given area. Therefore, growers should be sure to cover the ripest fruit/variety/block on the farm first. We will have more information on SWD host preference upon the conclusion of this 2017 study. For now, growers should assume that all cherries are susceptible to SWD infestation throughout the state.

Our annual SWD efficacy trials provide the ratings used in the MSUE Michigan Fruit Management Guide (Bulletin E154), and these ratings are updated according to the most recent efficacy results. The ratings used are as follows: excellent, good, fair, and poor. Although these terms seem somewhat general and perhaps a bit subjective, they are relative terms. The rating for each product is established as a result of how insecticides perform compared with the other products in the trial(s), how well they limit SWD infestation. For instance, insecticides that have an 'excellent' rating have provided the best and most consistent control of the pest compared with the other insecticides. These ratings are a way to rank the efficaciousness of the different materials. They likely reflect differences in factors like the toxicity of the compound, residual longevity, rainfastness, and others, but we have not directly measured differences in these factors.

For the most recent SWD efficacy trials conducted in 2016, seven insecticides had an 'excellent' rating in the E154 bulletin: Exirel, Apta, Imidan, Danitol, Entrust, Warrior II, and Mustang Max. However, based on the 2015 efficacy trial conducted at the NWMHRC, we found that the insecticide Apta was not as effective in controlling SWD under high pressure (Figure 1).

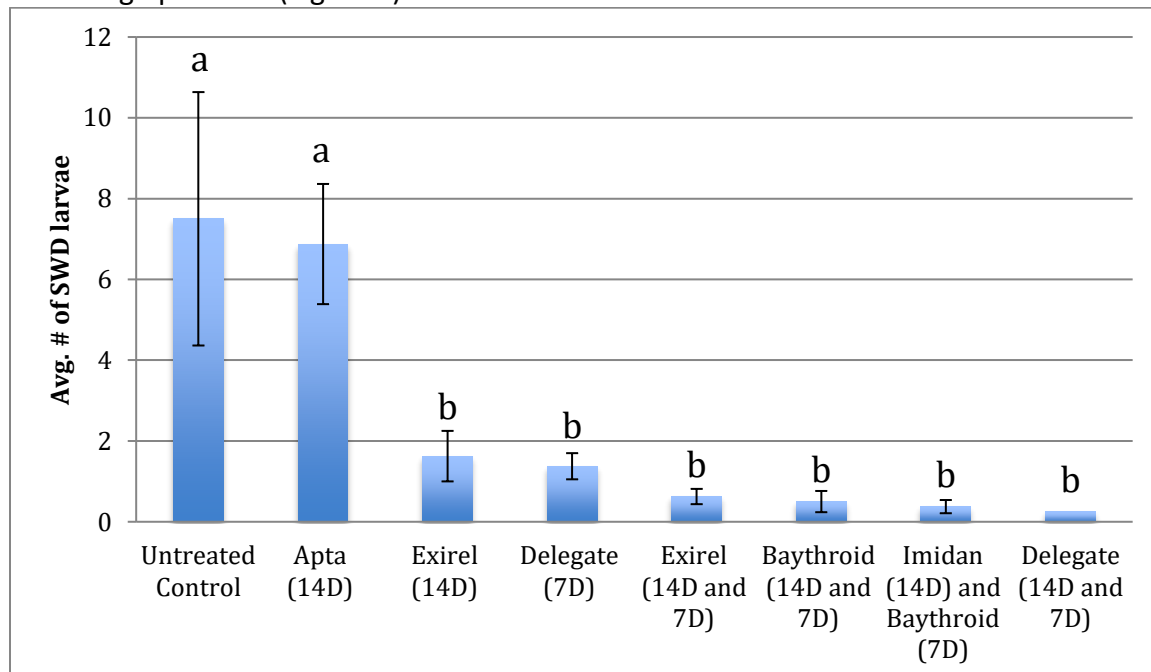


Figure 1. 2015 SWD efficacy results from the NWMHRC.

From the 2016 NWMHRC efficacy trial, we found that we had similar control of SWD with the selected programs shown in Figure 2. All of the programs below provided significantly better control than the untreated check. Of these efficacy programs, the combination of Imidan at 14D and Warrior at 7D provided the best control of SWD control, *BUT* growers should note that an application of Warrior at 7D is not a legal application and was used for research purposes only. *Warrior has a 14D PHI.*

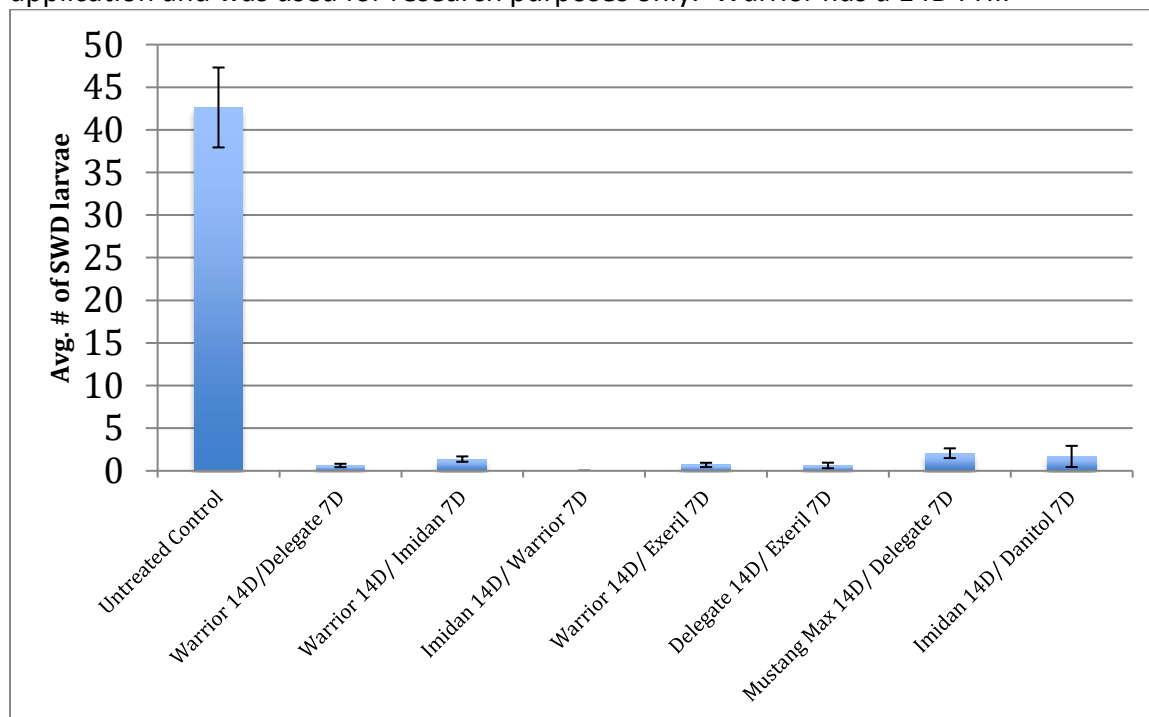


Figure 2. 2016 SWD spray program efficacy results from the NWMHRC.

We have conducted numerous trials at the Trevor Nichols Research Center over the past three years to evaluate the efficacy of insecticides for SWD control. Products tested have included Exirel, Imidan, Apta, Delegate, Grandevo and Movento. In single or two-tree replicated trials, Imidan, Exirel, and a yet to be registered material, Harvanta, have provided the best control. All other compounds have been less consistent and not as effective as Imidan or Exirel. We have not tested many of the pyrethroid compounds. Our efficacy ratings for the pyrethroids are based on the consensus of researchers across the country that have conducted SWD efficacy trials.

Based on all the information we have gathered thus far, the following compounds are rated excellent and provide the best opportunity for preventing SWD infestation in cherries: Danitol and Exirel with a 3-day PHI (anecdotally, Exeril is likely a better and longer lasting material than Danitol). Imidan with a 7-day PHI, and Warrior and Mustang Max with a 14-day PHI are also excellent materials, and again, Imidan is likely longer lasting than Warrior and Mustang Max, both pyrethroids that are susceptible to UV degradation. For the 2017 season, Mustang Max has been granted an emergency exemption for a 3-day PHI in tart cherry in Michigan.

In addition to spray programs, we also have evaluated the efficacy of different insecticide application strategies to combat SWD: using Imidan, Baythroid, and Delegate. Prior to SWD, most growers used an alternate row middle spray technique for insect and disease management in tart cherries. The goal of this project was to determine if an alternate row spray strategy would be effective under high SWD pressure. Treatments were applied using two spray regimes and two timings between applications: 1) alternate row at 7D intervals, 2) alternate row at 10D intervals, 3) every row at 7D intervals, and 4) every row at 10D intervals. Treatments were applied approximately four weeks prior to harvest.

Of the three products tested, the fewest number of larvae were found in fruit treated with Imidan. The every row sprays of Imidan resulted in the fewest detectable SWD larvae of the four Imidan regimes, and less than five larvae were detected in either the 7D or 10D every row application. More larvae were found in alternate row Imidan treated fruit compared with every row Imidan treated fruit at each sampling period. For the entirety of the experiment, less than an average of five larvae were detected in the 7D alternate row treatment; however, efficacy diminished when the timing was extended out to 10D, and we detected higher averages of larvae in this treatment compared with the 7D alternate row treatment at 3D and 7D after the last application was made.

Both Baythroid and Delegate were less efficacious than Imidan. However, the 7D every row treatment of Baythroid and Delegate had the fewest larvae compared with the other application strategies. When the every row treatment was stretched out to 10D between applications, we detected ~ 20 larvae with Baythroid seven days after the last application. Similarly, we found 10 larvae in the fruit at both the 3D and 7D after the final application of the Delegate every row 10D treatment. In the alternate row treatments (7D and 10D), both insecticides had ~10 larvae at the 3D and 7D after treatment samples.

The results of this trial demonstrated that Imidan provided the best SWD control using either alternate row or every row spray regimes compared with Delegate or Baythroid applied in both alternate and every row spray strategies. Under high SWD pressure, we found that the most optimal spray regime of the strategies that we investigated was a 7D every row application with all of the insecticides; the optimal insecticide and regime was an every row spray every 7D with Imidan. Again, under high pressure, we would not recommend stretching Imidan spray intervals to 10D. Our results indicate that growers should not apply alternate row applications of Baythroid or Delegate or stretch every row applications beyond 7D. It is critical to note that SWD larvae were found in fruit 7D after the final application, which corresponded with harvest timing for all application strategies and insecticides. Again, even with good spray programs, residues of these insecticides may not be adequate after 7 days to prevent SWD infestation under high-pressure scenarios. This result reiterates the importance of maintaining excellent coverage of fruit and keeping a tight spray program to ensure that fruit do not become infested with SWD.

Additional information we gathered from comparing grower spray records and measuring on-farm fruit infestation has further corroborated the results from SWD efficacy research trials. These observations indicated that pyrethroid insecticides should not be stretched beyond five days in hot and dry years. Growers should not stretch intervals of any materials, but particularly pyrethroids. For example, in 2016, we found larvae in fruit of commercial orchards six days after a Danitol application under high SWD pressure. Danitol is rated “excellent” for SWD, but we hypothesize that efficacy broke down quickly during last season’s hot and dry weather. Grower spray records observations also confirmed the NWMHRC’s spray strategy research; we found higher numbers of SWD larvae in orchards that used an alternate row regime, even when insecticides rated “excellent” were used.

Lastly, we remind growers to try to achieve the best insecticide coverage. This tenant of fruit growing is well known and applied, but SWD seems to be more capable of finding holes in spray coverage than other pests. Likely as a result of its SWD’s rapid reproductive power and short generation time, populations rise quickly and challenge even the best management programs. Growers should be sure to properly calibrate the sprayer, slow down to ensure good coverage, and make insecticide applications when conditions are calm. The other common question of 2017 is when to reapply after a rain event. We have conducted rainfastness trials at the TNRC in apples, grapes, and blueberries (Bulletin E154, page 304), and we can extrapolate that information and apply it to cherry. We are currently conducting rainfastness trials in cherry, and data are forthcoming.

SWD populations will continue to build throughout the season, and our research and observations have indicated that the later the harvest timing, the more difficult it is to control this pest—likely as a result of high SWD numbers. We understand the constraints of the harvest season, but removing the crop as quickly as possible is ideal. Also, communicating with processors to understand potential harvest quotas and other potential harvest delays will help growers plan a management strategy that includes rotation of insecticides, pre-harvest intervals (PHIs), re-entry intervals (REIs), and season totals for each insecticide.

Leelanau County Household Hazardous Waste & Electronics Collection - Saturday, July 15, 2017 at Glen Lake School

Do you have leftover oil paint, fuel, pesticides, batteries, motor oils, cleaning supplies, or small electronic items in your home?

Improper storage and disposal of these materials can result in health and environmental risks. Instead of storing these materials and risking improper disposal, take them to a

collection for proper disposal.

TO PARTICIPATE, you MUST make an appointment.

Call: Leelanau County Planning at (231) 256-9812, for appointments.

Costs for these collections are covered under

P.A. 69 of 2005 - a charge placed on Winter Tax Bills.

These collections are for Leelanau County HOUSEHOLDS ONLY.

For more information on HHW or other solid waste programs, visit

www.leelanau.cc/solidwaste.asp **Remaining 2017 Saturday Collections:**

Next Leelanau County Household Hazardous Waste and Electronics Collections: August 19 (Peshawbestown), & October 7 (Elmwood Township). Call Leelanau County Planning at (231) 256-9812 to make an appointment.

NEW Agriculture Container Recycling Program! – Updated Version

American Waste is no longer recycling ag containers for free at their facility. But no worries! Growers will be able to recycle their containers free of charge at various locations in Northwest MI.

Where are the collection sites?

- Wilbur-Ellis Co
8075 -31 Williamsburg, MI 49690
- Ellsworth Farmer's Exchange (Co-op) – Change in address
11900 Byers Rd. Ellsworth, MI 49729
- CHS Inc
6766 E Traverse Hwy Traverse City, MI 49684
- Crop Production Services (CPS)
13343 Pleasanton Hwy, Bear Lake, MI 49614

When can I drop off my ag containers?

- June 26-29: You can drop off your materials during regular business hours at any collection site listed above during the last week of June. G. Phillips & Sons (the ACRC contractor) will pick up containers on Friday, June 30.
- Post-harvest collection: TBD (end of September/first week of October)

What do I do to prepare the containers for recycling?

- Triple rinse, remove caps, remove loose leaf labels (if possible), put in large/clear plastic bags OR string together 20-30 containers with twine – if the containers are not up to these standards, they will not be accepted.
- All non-refillable, high-density polyethylene (HDPE) plastic crop protection and specialty pesticide product containers in sizes up to and including 55 gallons are accepted.

Questions? Contact Lauren Silver (lsilver@gtcd.org) or Lizzy Freed (lfreed@gtcd.org) at the Grand Traverse Conservation District. Ph: 231-941-0960

Black Stem Borer Information Needed

The black stem borer, *Xylosandrus germanus*, is a small (2mm) ambrosia beetle that has been causing more problems in apple plantings than in past years. In fact, we have seen more issues with this pest in 2017 than other years combined. Black stem borer adults most commonly attack stressed trees, and growers may not notice these small beetles/infestations until the trees start to collapse. These beetles often attack trees on the orchard edge, commonly near woodlots; however, this spring, we have detected infested trees in the orchard middles or far from the orchard perimeter.

Signs of black stem borer infestation is initially difficult to detect, but growers can look for tiny entrance holes (1mm in diameter), sawdust “toothpicks” protruding from the holes, dark discoloration on the bark, oozing sap and dry, blistered bark. The dark bark is the most visible sign, and once this discoloration is detected, growers can examine the trees more carefully to look for the small entrance holes.

Additionally, there is a monitoring protocol that some consultants have been using to detect black stem borer emergence and activity. We remind those who are trapping for the beetles that the traps baited with ethanol or spirits are not specific to black stem borer and that many different beetles including black stem borer look-a-likes could be present in the traps. Because the beetles are so small, positive identification can be difficult. Hence, scouting orchards for symptoms such as entry holes, toothpicks, etc. as well as the beetles inside of the tree should be used in conjunction with monitoring devices to determine the level of trees infested with black stem borer.

There are many hypotheses as to why we are seeing a higher number of infested orchards this season than in past years. First, ash trees have been declining due to emerald ash borer, and once these trees die, opportunistic insects that infest stressed trees may be looking for new hosts. We have had a few hard winters in recent years, and trees may be stressed as a result of these prolonged cold temperatures. Additionally, any type of tree stress seems to increase stem borer activity: drought stress, too much

water, less than optimal fertilization programs, or a combination of many of these stresses. Lastly, we are planting more high-density apple blocks today than in the past, and perhaps, we are just noticing an increased numbers of stem borer simply because there are more trees planted on dwarfing rootstocks, which are more susceptible to mortality due to their size.

We are trying to learn more about this pest and its impacts across the region. If your farm has had problems with black stem borer, please contact Nikki, Emily, and/or Jenn at the NWMHRC (231-946-1510. rothwel3@msu.edu, pochubay@msu.edu, or goodr100@anr.msu.edu). We would like to know the age of the trees, the age when the trees became infested, the nursery, location of the block(s), rootstock, and variety. We will compile this information to see if there are areas of overlap between infested sites. Thank you for your help!

Clarifications on Worker Protection Standards: Central Posting for Pesticide Application Information versus Decontamination Station Requirements for Agricultural Workers

Eric McCumber, MDARD

Emily Pochubay and Nikki Rothwell, MSU Extension

Both MDARD and MSU have received recent questions about the requirements to display pesticide application information at a central posting area. Growers also have questions about what should be included at designated decontamination stations. This article is intended to clarify such questions because we have heard misinformation that pesticide application information should be posted within a ¼ mile of where agricultural workers are working in a treated block—this type of posting is *not* required to meet WPS regulations. This confusion may be related to regulations for decontamination stations; according to WPS, **decontamination stations** are required with ¼ mile from where agricultural workers will be working during the REI or for 30 days thereafter of the application of a WPS-labeled pesticide. Although we will cover the key points for these two issues in this article, more detailed information can be found in the How To Comply Manual (HTCM) at www.pesticideresources.org. In the HTCM, central posting location information is on page 21 and decontamination station information can be found on page 48. The information presented below is relevant to agricultural employers of agricultural workers. Supplies needed for handlers' decontamination sites are different and we encourage employers and handlers to review this information as needed (page 74-75 of the HTCM).

Central posting locations serve as the hub for pesticide application information, and this central posting location is the *only* location on the farm that is required to contain the information outlined below. *According to MDARD, central posting locations* are areas where all farm employees can find any information related to pesticide applications. If a WPS-labeled pesticide has been applied, or if a restricted-entry interval (REI) has been in effect within the past 30 days, then the agricultural employer must display the required information (see below) at a central posting location whenever any agricultural worker is on the agricultural establishment. The location of the central posting is determined by the agricultural employer, but it should be placed in a location where employees congregate such as the workshop, office, break room, or an area where they check in for work. Agricultural workers must be informed where the designated central posting location is located and must be allowed unrestricted access to the posted information during employment hours.

Agricultural producers are required to display at the central posting area the following information. Again, agricultural workers must have unimpeded access to the information during work hours.

- **Pesticide application information including:**
 - ✓ Brand name of the pesticide(s) applied.
 - ✓ Active ingredient(s).
 - ✓ EPA Reg. No.
 - ✓ REI.
 - ✓ Crop/site treated.
 - ✓ Location and description of treated area(s).
 - ✓ Date(s) and time(s) application started and ended.
- **Safety Data Sheets (SDS)** for each pesticide product.
- **Pesticide Safety Information.** Prior to the updated WPS, this information was required to be displayed in a poster format (known as pesticide safety poster). Agricultural employers are no longer required to display a poster, but must provide information about certain WPS safety concepts-about preventing pesticides from entering the body. The required 7 safety concepts include:
 - ✓ Avoid getting pesticides on your skin or into your body. Pesticides may be on plants, soil, irrigation water, equipment, or may drift from nearby applications.
 - ✓ Wash before eating, drinking, using chewing gum or tobacco, or using the toilet.
 - ✓ Wear work clothing that protects your body from pesticides, such as long-sleeved shirts, long pants, shoes, socks, and a hat or scarf.
 - ✓ Wash or shower with soap and water, shampoo hair and put on clean clothes after work.

- ✓ Wash work clothes separately from other clothes before wearing them again.
- ✓ If your body is contaminated by pesticides wash immediately, and as soon as possible, wash or shower with soap and water and change into clean clothing.
- ✓ Follow directions about keeping out of treated or restricted areas.

In addition, the updated safety information that will be required in the future must include:

- ✓ Instructions for seeking medical attention as soon as possible after being poisoned, injured or made ill by pesticides.
- ✓ Name, address and telephone number of state or tribal pesticide regulatory authority. In Michigan, the agency is the Michigan Department of Agriculture and Rural Development, 525 West Allegan Street, P.O. Box 30017, Lansing, MI. The phone number is 800-292-3939.
- ✓ If pesticides are spilled or sprayed on the body use decontamination supplies to wash immediately, or rinse off in the nearest clean water, including springs, streams, lakes or other sources if more readily available than decontamination supplies, and as soon as possible, wash or shower with soap and water, shampoo hair, and change into clean clothes.
- ✓ Follow directions about keeping out of treated areas and application exclusion zones.
- ✓ The term “emergency medical facility” should be revised to “a nearby operating medical care facility.” Include name, address, and telephone number for the medical facility. This information should be clearly identified as emergency medical contact information on the display.
- ✓ The point that there are federal rules to protect workers and handlers is self-evident and is no longer required to be part of the safety information

NOTE: The updated pesticide safety information content is not required until 1/4/18, but employers can begin using the updated version immediately. Details are shown on page 23 of the How To Comply Manual. The EPA is in the process of developing a poster version of the pesticide safety information.

Agricultural producers are only required to have *one central posting area*, but must provide unrestricted access to agricultural workers during work hours. It can be impractical for farms that are many miles apart to give unrestricted access, so agricultural producers may set up different central posting areas for distinctly different farm locations at their discretion. Agricultural employers may also provide the central posting information electronically, as long as content, accessibility, display, legibility, location, and retention requirements are met. Employers would need to ensure that agricultural workers have access to the information, such as through a smart phone or dedicated computer, and are instructed in how to access the information.

Agricultural employers must make sure that decontamination supplies are provided to workers doing tasks that involved contact with anything that has been treated with the pesticide including soil, water, or plants in a pesticide-treated area where, within the last 30 days, a WPS-labeled pesticide product has been used or a REI for such pesticide has been in effect.

Decontamination supplies that must be provided include:

- ✓ Water – the employer must provide at least 1 gal of water per worker at the beginning of the work period and at a quality and temperature that will not cause injury or illness if it contacts skin or eyes, or is swallowed.
- ✓ An adequate supply of soap and single use towels. Hand sanitizers or wet towelettes *do not* meet the requirement for soap or towels.

Duration of the Decontamination Site

If the REI of an applied pesticide is greater than 4 hours, decontamination supplies must be provided until 30 days after the end of the REI expires. If the REI is less than 4 hours, decontamination supplies must be provided until 7 days after the REI expires.

Location of Decontamination Sites

All decontamination supplies for agricultural workers must be located together and be reasonably accessible to where the workers are working (generally within ¼ miles of the workers) and be outside of any treated area or an area under a REI. For worker tasks performed more than ¼ mile from the nearest point reachable by vehicles or more than ¼ mile from a non-treated area, the decontamination supplies may be at the nearest vehicular access point outside any treated area or area under REI (page 48 of the HTCM).

Remember that in addition, the Pesticide Safety Information (formerly referred to as the Pesticide Safety Poster) must be displayed at any permanent decontamination site, or any decontamination site that services 11 or more workers (page 21, HTCM).

In summary, central posting locations are the main hub for pesticide application information, and the information that must be displayed at the central posting locations is not required in other agricultural areas (i.e. ¼ mile from workers working in treated fields, or at decontamination stations). It is the responsibility of the employer to train employees on how and where to access the central posting information. Although not required, some growers may choose to provide additional pesticide application information to their workers by having additional posting sites or virtual access to this information. Potable water, and an adequate supply of soap and single use towels, and possibly pesticide safety information (if the decontamination site is a permanent location or services more than 11 workers) must be provided at decontamination

Respirator Guidelines to Meet New Worker Protection Standards

Growers will need a medical evaluation and respirator fit test to handle and apply some pesticides this season.

Emily Pochubay and Amy Irish-Brown, MSU Extension

Requirements for a medical evaluation, fit testing, and specific training for use of respirators and the associated record keeping became effective on January 2, 2017. At this time, most growers are aware of this revision to the Worker Protection Standard (WPS) regulation that requires pesticide handlers and applicators to wear a respirator during mixing/handling, spray applications, and potential other uses as outlined on pesticide labels. Additionally, those who use pesticides with respirator requirements must receive documentation from a physician or licensed health care professional (PLHCP) that has 'respirator evaluation' as part of his/her license to ensure that the pesticide handler is medically able to use a respirator. Not all PLHCPs are qualified to provide the respirator evaluation, but primary care physicians should be able to refer patients to appropriate medical personnel. Alternatively, growers can contact local occupation and environmental health professionals who are more likely to have the credentials needed to provide the appropriate respirator medical evaluation and documentation. Please review the following guidelines to help address some of the recent questions we have received from growers.

Who needs to receive a medical evaluation and how often?

Employees that could be exposed to hazardous airborne contaminants may be required to wear a respirator; respirators and respirator use requirements will be outlined on individual pesticide labels. Some pesticides may require respirators for employees that mix spray material and/or require applicators to wear a respirator during applications of certain pesticides. Employers are responsible for ensuring that employees receive the appropriate equipment, evaluation, respirator fit test, training, and record keeping that conforms to OSHA standards.

According to the EPA, the medical evaluation is required one time per employee unless another evaluation is required due to one of the following reasons:

- The medical determination is only good for a specified length of time.
- The employee reports medical signs or symptoms related to respirator use.
- The PLHCP, supervisor, or program administrator recommends a re-evaluation.
- Fit-test or other program information indicates a need for re-evaluation.
- When changes in the workplace increase respirator stress on an employee.
- The initial medical examination demonstrates the need for a follow-up medical examination.

Who provides the evaluation? What kind of evaluation and documentation are needed?

A physician or licensed health care professional (PLHCP) with respirator evaluation as part of their license will provide the appropriate evaluation using a medical questionnaire or exam that conforms to the OSHA standard. Contact the PLHCP to determine whether a questionnaire or exam will be used and to receive appropriate paperwork. Prior to completing the questionnaire or exam, employers must provide employees with:

- The type and weight of the respirator that the handler will use.
- How long and how frequently the handler will use the respirator.
- How much physical work the handler will do while using the respirator.
- Other PPE the handler will use.
- The temperature and humidity extremes of the working environment.

Contact a primary care physician to receive a referral for a licensed professional, if necessary. Another low-cost (~\$25) and fast alternative for a medical evaluation is OshaMedCert (<http://www.oshamedcert.com/Default.aspx>), an online service that involves filling out a form and sending it for approval or denial by a PLHCP; individual's health information remains confidential throughout the process. A respirator fit test (see below) will be needed after receiving the medical determination from OshaMedCert.

A written medical determination of the respirator evaluation for each employee is required before the employee can use the respirator. The employer must keep the medical determination documentation for two years. According to the EPA, the required written information to be provided by the PLCHP to the employer must only include:

- Whether or not the employee is medically able to use a respirator.
- Any limitations on respirator use in relation to the medical conditions (if any) of the employee or workplace conditions.
- Need for any follow-up medical evaluations.
- A statement that PLCHP provided the employee with written recommendation; in some cases, this recommendations may simply state that the applicator/person that will use the respirator is capable of wearing a respirator.

Again, the information outlined above is the *only* information that should be provided in the PLHCP's recommendation to the employer to protect the employee's private medical information and avoid violation of HIPAA laws.

What's Next? Respirator Fit Tests.

After receiving a medical evaluation, a fit test is needed to ensure that the respirator forms an adequate seal with an employee's face to provide appropriate inhalation exposure protection. A new fit test is required annually or whenever there is a change to the respirator or a physiological change to the employee that could affect the seal between the respirator and the user's face. Furthermore, fit tests are required for each type of respirator that will be used as indicated by pesticide labels. Finally, employees must undergo the fit test using a respirator with the exact specifications of the respirator that will be used on the job.

Fit tests must follow OSHA protocols, and there are two methods for fit testing. The quantitative fit test (QNFT) requires special equipment and a trained person to conduct the testing. Fit test kits are also available to perform qualitative fit tests (QLFT) by a person that can accurately prepare test solutions, calibrate equipment, perform the test properly, recognize invalid tests and ensure test equipment is working properly. Sources for fit tests include pesticide suppliers or companies such as [Gempler's](#) or [Grainger](#).

A primary care physician may be able to provide additional options and referrals for fit test providers in the area. We confirmed that Munson Medical Center's Occupational Health and Medicine Clinic (550 Munson Ave. Traverse City, MI 49686; Ph: 231-935-8590) is equipped to perform the appropriate respirator exam (~\$80.00) and the fit test (~\$25.00) in one visit by appointment only. Spectrum Health Services in other areas of Michigan provide similar services. Patients that wish to only receive a fit test need to provide appropriate respirator exam result documentation prior to the test.

Additional information regarding respirator requirements and other WPS revisions can be found in the EPA's *How to Comply with the 2015 Revised Worker Protection Standards for Agricultural Pesticides* (<https://www.epa.gov/sites/production/files/2016-10/documents/htcmanual-oct16.pdf>).

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:

Farmer to Farmer - Connecting Farmers, Cultivating Community
<http://www.f2fmi.com>

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://www.canr.msu.edu/nwmihort/nwmihort_northern_michigan_fruit_net

60-Hour Forecast:

<http://www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous46ktvc>

Information on cherries:

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

Information on apples:

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

Information on grapes:

<http://grapes.msu.edu>