Northern Michigan FruitNet 2017
Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – July 7, 2017

CALENDAR OF EVENTS

7/14	**"First Friday Meeting" – Grapes** Ten Hands Vineyard, 3-5PM (held on the second Friday in July, in order to avoid the Cherry Festival)
8/24	**NWMHRC Open House and Leelanau Hort Society Annual Meeting and Dinner**

What's New?

- **Northwest Michigan fruit update – July 6, 2017**
- **CIAB Newsletter**
- **NW MI SWD Trap Counts – 07/07/17**

NEW ARTICLES

GROWING DEGREE DAY ACCUMULATIONS AS OF July 10, 2017 AT THE NWMHRC

Year	2017	2016	2015	2014	2013	2012	27 Yr. Avg.
GDD42	1598	1641	1524	1473	1587	2065	1606.1

GDD50	950	1007	904	898	1015	1322	978.9

2017 Growth Stages as of 7/10/17

Bartlett Pear – 28 mm fruit
Potomac Pear – 37 mm fruit
Mac – 50 mm fruit
Gala – 40 mm fruit
Red Delicious – 45 mm fruit
HoneyCrisp – 42 mm fruit
Montmorency – 19 mm fruit
Balaton – 22 mm fruit
Hedelfingen – 22 mm fruit
Gold – 22 mm fruit
Napoleon – 24 mm fruit
Riesling – Buck shot berries

Wine Grapes
Duke Elsner

Shoot growth has continued at a fast pace. Protecting clusters from powdery mildew is still the chief concern. Rose chafers have finally vanished, but Japanese beetle adults have been seen in the Traverse City area during the past week.

July "First Friday" Meeting
Duke Elsner

The next "First Friday Meeting" will he held on July 14 (the second Friday in July, in order to avoid the Cherry Festival). The location will be Ten Hands Vineyard on Old Mission Peninsula (Mission Road, just south of the Old Mission General Store) and the topic is "Foliar Fertilization Programs in the Vineyard". This discussion will be led by Craig Cunningham of Cunningham Viticulture Services, who has utilized foliar programs in vineyards for more than 10 years, including Ten Hands Vineyard (owned by Tom Petzold). We will also walk the vineyard for informal scouting, discussing issues as they come up. Tom will answer questions on his vineyard practices (composting, compost tea use, growing grass under the vines, etc.) to round out the session.

Saskatoons
Duke Elsner

The crop is close to 75% ripe at some sites and harvest is well underway. There have been no verified infestations of spotted wing drosophila so far.

ARTICLES FEATURED IN PAST FRUITNET REPORTS

CIAB Newsletter

CROP ESTIMATES AND MARKET CONDITIONS-On June 22, 2017 the CIAB met to discuss crop size and market conditions for the 2016/17 crop year. Sales, inventories and compliance activities were also discussed by the board along with carryout needs. Information from the meeting is presented below:

Crop Estimates (million lbs):

District	USDA-NASS	CIAB
NW Michigan		130
WC Michigan		26
SW Michigan		28
Subtotal, MI	164.5	184
Washington	25.3	26
New York	9	8
Wisconsin	10.4	9
Utah	29	25
Oregon		2
Pennsylvania		5
TOTAL	238.2	259

USDA-NASS reported their estimate based on surveys in late May and early June. Surveys were not conducted in Oregon and Pennsylvania. The board voted unanimously to adopt the CIAB estimate for the preliminary calculation of the optimum supply formula (OSF) for June. Unregulated districts for the preliminary restriction are Oregon and Pennsylvania.

OSF CALCULATION AND RESTRICTION- Free and restricted inventories are used, along with the crop estimate and sales, in the calculation of the OSF. The inventory breakdown is included below:

Inventory Type	Million lbs
Free	**110.5**
Restricted	**65.9**
Total	**176.4**

Inventory by type (as of May 31, 2017):

Product Type	Million lbs	Percent of Total
Frozen, General use	93.2	53%
Frozen, Dryer stock	42.6	24%
Waterpack	2.1	1.2%
Piefill	9.3	5.3%
Puree	0.6	0.3%
Juice	24.1	13.7%
Dried	2.4	1.4%
Other	1.7	1.0%
Total Carry-in	**176.4**	**100%**

Demand- 3 Year Average Sales- Sales for the marketing year ended May 31, 2017 are 260.8 million lbs. For calculation of the OSF, three year average sales are used to determine demand, plus a market growth factor (10% of 3 yr avg or 37.6 mm lbs). Average sales for the calculation are (in million lbs):

	Gross sales	Exports	USDA-Bonus Sales	Free Sales
2014	235	12	21.9	201.1
2015	257	12	46.8	198.2
2016	260	15	41.3	203.7
3 yr Avg.	**250.6**	**13**	**36.7**	**201**

OSF and Preliminary Restriction Percentage-The following table lays out the preliminary OSF calculation as approved by the CIAB on June 22, 2017. The adjusted surplus amount is divided by the amount of regulated tonnage available to calculate the restricted percentage amount (63.4/240 = 26%). The regulated tonnage number is smaller than the total crop estimate since Oregon and Pennsylvania are not included and also because the CIAB included an estimate for in-orchard diversion of 12 million lbs.

PRELIMINARY OSF CALCULATION-

Supply	
U.S. Crop	**259**
+ Carry In	**110.5**
=TOTAL SUPPLY	**369.5**
3 year sales avg	**201**
+ Target Carryout	**45**
+USDA Adjustment	**36**
=OPTIMUM SUPPLY	**282**
SURPLUS (TOTAL – OPTIMUM)	**87**
-Market Growth Factor	**23.7**
=Adjusted Surplus	**63.4**

Please note: Growers should contact their processor(s) directly about plans for compliance with the restriction percentage.

In-Orchard Diversion- In contrast to last year, the CIAB chose to include an estimate for in-orchard diversions for calculation of the OSF in June. Including this estimate in June increases the preliminary restriction percentage, but also helps to lessen the impact of changes in September when the CIAB sets the final restriction percentage.

SWD- A subcommittee of the CIAB worked this Spring to address concerns about in-orchard diversion practices and growers dealing with SWD (Spotted Wind Drosophila). The subcommittee recommended a proposal to amend in-orchard diversion practices and the proposal was adopted unanimously by the CIAB at its May 3 meeting in Grand Rapids, MI. Since we do not anticipate the proposal to be in place this season, the CIAB has moved ahead with retraining in-field compliance staff so that marketability for diversion is consistent with the FDA tolerance for canned and brined cherries. In practice, this means tart cherries will be rejected for in-orchard diversion only if they contain more than 5 tart cherries with worms, or 7 tart cherries with rot from a sample of 100. If growers have any questions about this inspection process, please feel free to contact the CIAB office directly.

MARKET EXPANSION- In January the CIAB tasked the Executive Committee with developing a proposal to address competition from non-domestic tart cherries. The committee met several times by conference call and in person to develop a proposal that was both workable and acceptable to as many in the industry as possible. The committee invited guests for input from sectors most impacted by non- domestic competition. Ultimately, a proposal was presented to the full CIAB on May 3, 2017 and it passed unanimously. USDA has agreed to allow the CIAB to adopt the provisions of the proposal in practice while it works its way through the informal rule making process. The most significant changes from the proposal are:

1. Market expansion projects will be eligible to earn diversion credits for 5 years

2. Projects that target non-domestic competition can be approved through the existing NPNM process, or through an expedited process by providing a statement of intent to use domestic tart cherries in place of non-domestic

3. Projects that target non-domestic product can be supplied by more than one handler and multiple handlers can receive credit for that project

CALENDAR of Events July – October, 2017

July 10, 17, 24, 31 – Form #1 Weekly Raw Product

July 10	Form #3 Sales/Inventory Report (for the period ending June 30)
July 17	Export and Market Expansion Documentation – June 1 through June 30
Aug.	7, 14, 21, 28 - Form #1 Weekly Raw Product
Sept. 1	Form 2 Cherries Acquired from Producers
Sept. 14	CIAB meeting, Fairport, NY
Oct. 2	Form 4 Handler
	Reserve Plan and Final Pack Report
	Form 5A Inventory Reserve Summary
	Form 5B Inventory Location Report

Section 18 for Mustang Max in Cherries

MDARD and the USEPA have issued a section 18 for the use of Mustang Max on tart cherries to control spotted wing drosophila.

Attached is section 18 label for Mustang Max in tart cherries and the declaration from MDARD.

To use Mustang Max in tart cherries in Michigan growers must have this label in their possession and follow the label directions.

A section 18 label allows the use of a specific product to control a specific pest in a specific state and is for a limited time only.

The Section 18 label allows the use of Mustang Max from today, June 30 to August 15, 2017. It allows the use of 4 fl. oz./A with a **3 day PHI**.

Application must be at least 7 days apart and no more than 24 fl. oz./A may be used in the season.

Clarified language from MDARD about use of Mustang Max in Tart Cherries

Growers can still make 6 applications at 4oz (or any other variation that does not surpass 24oz/season), but only two of those applications can occur between 14 and 3 days PHI.

This section 18 is specific to Michigan TART cherries so Mustang Max still has a 14 day PHI in sweet cherries. We are not able to apply for a section 18 in other crops, such as Michigan Sweet cherries, until we can demonstrate at least a 20% loss of that crop.

MDARD will also be required to report on the use of Mustang Max and its effectiveness. Keep good records and be prepared to be interviewed by MDARD later this season.

Potential for SWD Infestation in Dropped Cherries

We screened both June dropped and wind dropped fruit to determine levels of SWD infestation in tart and sweet cherries

Nikki Rothwell, NWMHRC and MSUE
Mike Haas, Dept. of Entomology, MSU
Larry Gut, Dept. of Entomology, MSU
Emily Pochubay, NWMHRC and MSUE

Many growers have asked if spotted wing drosophila (SWD) infest fruit that has dropped to the ground. In northwest Michigan, most of these fruit are on the ground as a result of June drop, but in SW Michigan there is a considerable amount of tart cherries on the ground because of heavy winds. We have been testing the susceptibility of June drop cherries to SWD infestation for the past two seasons at the NWMHRC.

In 2016, we collected tart cherries from the ground that had dropped as a result of June drop. We collected three sizes of fruit: <11mm, 11-13mm, and 13-17mm. We placed 10 fruits into plastic bioassay containers, and we exposed the fruit to five male and five female flies. We replicated the experiment five times for each size of tart cherry fruit. Flies remained in the bioassay containers for 14 days. We counted the number of adult flies after this time period, and we found no new adult flies. These results indicate that the various sizes of June dropped tart cherries were not a suitable host for SWD at these sizes. Female flies may have been able to lay eggs in the fruit in the bioassay containers, but the SWD were not able to survive on these June drop fruit; no new flies were reared out of tart cherry June drops in 2016.

At grower requests, we repeated this study in tart and sweet cherries in 2017. Growers observed that this year's June dropped fruit seemed 'fleshier' than in past years. We collected sweet cherries, tart cherries, and cracked sweet cherries from the ground at the NWMHRC. Fruit were weighed, and we also tested fruit for firmness. We placed 10

fruit into bioassay containers, and we replicated each treatment four times. We placed five male and female SWD into the containers; flies were removed after 24 hours. We counted eggs after 2 days, and we counted the number of larvae after 7 days. As expected, tart cherry drops weighed less than sweet cherries: 5.66 grams for a 10-fruit sample. Intact sweet cherries weighed an average of 9.94 grams, and the cracked sweet cherries weighted 34.2 grams. Cracked sweet cherries likely weighed more due to moisture in the fruits with the significant rainfall we have had in the past two weeks. Firmness also varied, and tart cherries were significantly firmer than sweet cherries: 565 grams for tart cherries, and 271.9 grams for intact sweet cherries and 229.1 grams for cracked sweet cherries.

The difference in SWD infestation between the fruits was significant (Figure 1). We found that SWD females were able to lay a few eggs in relatively green June dropped tarts, but no larvae survived on these fruits. They were able to lay more eggs in the intact sweet cherries (average 13.75 eggs). Some larvae were found in these fruits (an average of 9.75 larvae), but the greatest number of larvae were found in cracked sweet cherries collected from the ground (average of 48.5 larvae). Our recording of fewer eggs (34.5) than larvae in the cracked sweets is likely a result of human error counting small SWD eggs on individual fruits under a microscope.

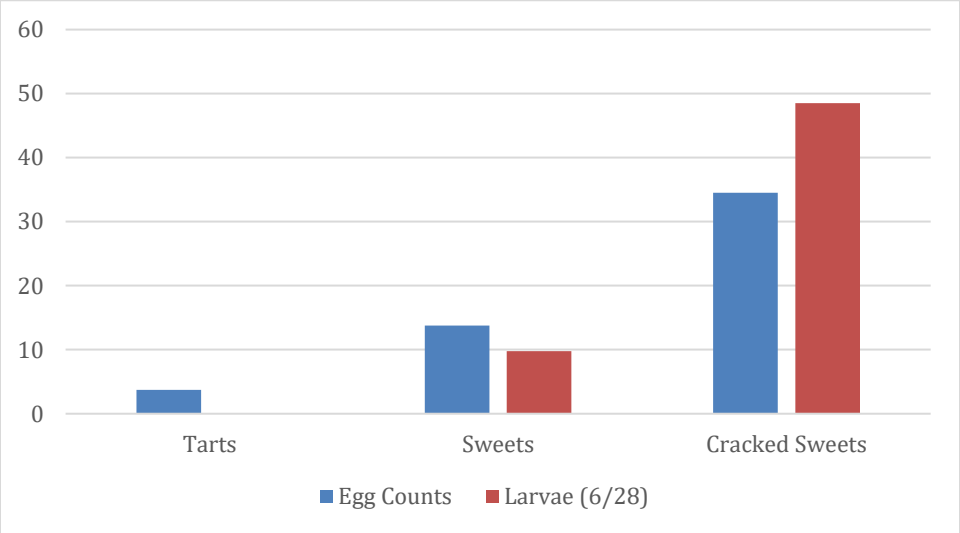

Figure 1. SWD eggs and larvae collected from June dropped fruit from NW MI

We conclude that SWD will not readily lay eggs or survive to adulthood on intact June dropped fruit. However, SWD do lay eggs and survive on damaged fruits that drop to the ground. At this time, June dropped fruit do not seem to be greatly contributing to increasing in-orchard populations unless there is physical damage to the fruit.

In SW Michigan, there are a substantial number of riper tart cherries (not June drops) that have been physically removed from the trees by wind. To determine if they could be infested by SWD, we collected 10 wind dropped fruit from the ground in each of 10 rows into the orchard. Fruit were intact and placed the fruit onto wire mesh in three emergence containers; a sponge was added for moisture. We counted the number of

male and female adult flies at 5 days and 7 days after the fruit were collected and placed into the emergence containers. In one orchard, no SWD were reared out of wind dropped tart cherries (Table 1). However, at the four other orchards, we found both male and female flies. The number of SWD varied between the orchards, but the wind-dropped fruit were definitely suitable hosts for SWD. We conclude that wind dropped cherries are adequate hosts that can support a generation of SWD, and these fruits will likely contribute to the overall population within tart cherry orchards unlike June dropped fruit that cannot sustain SWD at that stage of development.

Table 1. Male and female SWD collected from wind dropped fruit in SW MI

Site	**SWD**	**SWD**
	female	male
A	0	0
B	4	7
C	7	6
D	8	12
E	11	13

Growers need to maintain tight programs for SWD, particularly in the NW and WC where we have had so much rainfall. There are also concerns of SWD in SW Michigan where tart cherry harvest has just begun and SWD populations are rising quickly. Adults were captured earlier in the season than in past years, populations appear to be building fast, and we have detected larvae in cherries in orchards where we are conducting research. As in past years, we have shown that even the best spray programs cannot prevent infestations when SWD populations are high. Growers should use materials that are rated excellent against SWD. We are still waiting on the official word from the EPA on the reduced PHI for Mustang Maxx in tart cherries—we will be sure to update growers with information as soon as we have it.

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, blistery 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

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.

Decontamination sites

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).

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