Northern Michigan FruitNet 2016
Northwest Michigan Horticultural Research Center

Weekly Update

FruitNet Report – July 27, 2016

CALENDAR OF EVENTS

8/3	**MSU CA Clinic 2016** *Boulder Creek Golf Club, Belmont, MI*
8/25	**NWMHRC Open House**

What's New?

- **Diversion staff in NW MI**

SWD Trap Update – July 26, 2016

**May and June catches have been removed from table*

___ = New catches

Total catches per region:

Centerville Twshp. - 287
S. of Suttons Bay - 88
Old Mission - 178
M-72 W corridor - 31
Elk Lake Rd. – 138
N. of Suttons Bay – 11
Eastport - 1
Northport-Omena – 549
Benzie – 824
Yuba – 8
Bingham – 3
East Leland – 11
E. of Suttons Bay – 1
Manistee – 191
S. of Elk Rapids – 21
NWMHRC – 48
Bingham – 3
***Abandoned block in Centerville – 293
Stoney Point – 49
Williamsburg – 5
Leland – 2
N. of Elk Rapids – 1
S. part of Grand Traverse Co. - 15

Diversion staff in NW MI

We have arranged for additional compliance staff members to be in NW MI for the week to help with the diversion process. They will be there through Sunday. Given the hail storm and the place in the harvest process, we thought that this week would be the one where diversions would be requested.

This week would be the ideal time to have orchard diversions done if anyone is planning to do them. We could keep the in-orchard diversion process going smoothly and avoid a bottle neck later in the season. If the diversion is done later, growers may well have to wait awhile to get their diversion work done.

I would very much appreciate it if you would share this information with anyone who is planning to do orchard diversions or who you think might wish to do orchard diversion. If planning to do a diversion, growers should call **Jackie Somerville**, NW MI Supervisor, to schedule the diversion work. She can be reached at **231/350-3388**.

If anyone needs to get a sampling layout, they can call the CIAB at **517/669-1070**. We will prepare the sampling layout and send them to growers and to the compliance staff.

Thank you.

Respectfully,

Perry M. Hedin
Exec. Dir.

Navigating Diversion, Crop Insurance, and NAP Decisions for Damaged Tart Cherries

Use these guidelines to assess which scenario is the most economical for your farm business; growers are recommended to contact crop insurance agent or Farm Service Agency (FSA) for further assistance.

N. Rothwell and E. Pochubay, NWMHRC
J. Bardenhagen and J. Nugent, MSUE Emeriti

With the large crop and recent hailstorm, growers will need to make decisions regarding the marketability of the crop. This year is somewhat different from years past as there is now tart cherry crop insurance, which was an addition to the most recent farm bill. Last year, growers in SW Michigan had similar considerations with crop insurance when they were hit with hail and high winds. Additionally, diversion credits may be worth more than in past years; at this time, we have heard diversion credits may be worth $0.10-0.17 per pound. We worked through the following scenarios taking the following into consideration: diversion, CAT (Basic NAP), Buy-up NAP, and tart cherry crop insurance.

The first step in this decision-making process is to determine if the crop is marketable; some growers may have taken this step already. Crop marketability depends on whether the whole orchard is damaged and is a total loss or if there is only partial damage to a block with some salvageable fruit. Growers should contact their processors to assist with this decision, and in many cases, the processor will determine if the crop is harvestable. However, if the damage is bad enough, the adjustor may be able to determine if the crop is salvageable. For any policy (NAP, crop insurance, etc.), the block needs to have a 'salvage value of zero', and an adjustor or processor needs to reject the fruit with some documentation that the fruit cannot be salvaged. If a processor has determined the block is not salvageable, then the grower must contact the adjustor. The fruit must be *on the tree* for an appraisal. Adjustors want to make

sure the grower did everything he or she could to produce the crop. Growers may need to provide adjustors with a letter from the processor stating that the crop is not marketable.

If the whole orchard is a total loss, and if the grower has tart cherry crop insurance, there are a few options to consider. The Risk Management Agency (RMA) decided that growers with crop insurance will receive 80% of the National Agricultural Statistics Service (NASS) price for the 2016 season, and they will not consider any revenue from diversion credits. The RMA felt that there was no consistent price for diversion credits, so they will not count these credits against crop insurance. Growers will simply receive 80% of the NASS price.

Tart cherry crop insurance is a revenue policy, and the guarantee is based on the coverage a grower chooses (50-75%). The grower should have received a piece of paper that states the guarantee that was set in November 2015. If a grower has both the basic NAP and crop insurance, he or she cannot collect from both crop insurance and NAP. If you have already taken money from NAP, the grower will have to pay it back if he or she is receiving money from crop insurance.

Growers should keep their potential yield in mind with this large crop. If a grower shakes ¾ of his acreage, the yields off the harvested portion of the farm may be larger than a grower's historical yields that could result in disqualification of the grower's crop insurance guarantee. Hence, growers will need to determine the total guarantee for crop insurance using the following formula:

Avg price (ARH) x acres x coverage level = total $ guarantee

If a grower has higher yields in 2016, and he harvests only a portion of his total acres, the yield off the harvested acres multiplied by the NASS price (NASS is used in crop insurance rather than the FSA price that uses an Olympic average) = revenue that may exceed the guarantee. In this case, diversion might be an option on the acres that will not be harvested. Growers should talk with their crop insurance agent to help him or her run the numbers.

If the orchard is determined to be a loss by an adjustor and the grower has Basic NAP, the loss has to be above 50% of the grower's average yield (APH) in order to kick in the policy. Growers should use the following formula to calculate their expected revenue:

Avg. Yield (APH) x acres x 50% coverage x $0.32 (FSA price) x 55% x 80% (for non-harvest) = expected revenue

Growers should pay particular attention to their yields this year as yields are higher in most orchards compared with past years. For Basic NAP, average yield is calculated as an average of the past 10 years of production (i.e. 2006 -2015). Growers should look at 2016 production in the orchard and compare it to past production as this year's yields may influence the decision to use the Basic NAP or diversion certificates. If there is partial damage to the orchard, and 50% of the normal production is lost, the yields will

likely be high enough to offset Basic NAP because it is a production policy. A CIAB representative can help determine the tart cherry yield in an orchard.

If the tart cherry block has some salvageable production, and the grower has the Buy-up NAP, he or she can buy up from 50% coverage all the way up to 65% coverage. For example, if a grower has 65% coverage on Buy-up NAP, he or she has to have marketable yield of 65% of the grower's APH (10-year average yield) for the policy to kick in. With this policy, growers should use the following formula:

Avg. Yield (APH) x acres x % coverage x $0.32 (FSA price) x 80% (for non-harvest)

There are two differences between Basic NAP and Buy-up NAP. First, a grower can choose to purchase more coverage in Buy-up NAP than the mandatory 50% coverage in Basic NAP. But, perhaps the greater advantage to Buy-up NAP is that growers will be paid on 100% of the FSA price rather than 55% of that price in Basic NAP.

NAP is a policy based on marketable yield, and crop insurance is based on revenue. In the case of NAP, if diversion certificates are acquired and sold, then the crop is considered marketable and is not eligible for NAP. Whereas crop insurance allows the sales of diversion certificates as a means to capture some revenue, but this revenue will be considered when calculating the qualifying indemnification.

In summary, growers can use these steps to determine how to proceed with damaged orchards:

1. Determine if the crop is marketable or if part of the block is salvageable.
2. Estimate yield of salvageable fruit.
3. Use the aforementioned formulas to calculate the estimated revenue based on the different policies.
4. **Lastly, growers are recommended to contact FSA and/or crop insurance agent to help calculate the expected values from the different options.**

Again, growers need to consider their production for 2016 to determine which compensation scenario will be the most beneficial for their business.

Recommendations on How to Manage Unharvested or Diverted Cherries

Growers that will not harvest a block of cherries should remove fruit from the trees and physically destroy it in an effort to reduce SWD populations.

N. Rothwell, E. Pochubay, and K. Powers, NWMHRC

As growers are currently assessing their crops after the recent hailstorm, there are many considerations for how to handle cherries left in the orchard. This year, some growers will not be able to commercially harvest the crop due to the level of damage to the fruit caused by the recent storm. Additionally, because this year's crop is large, some growers will be diverting fruit to obtain diversion credits. In either case, fruit that are left hanging on the tree due to damage or diversion will be a potential breeding ground for spotted wing drosophila (SWD). Last season, there were cherries infested with SWD larvae, and as a result, growers have been diligent with SWD management programs this season. However, now that we are in the home stretch and in the midst of cherry harvest, growers are wondering what to do with fruit that will not be harvested. The NWMHRC has a trial currently underway to help guide growers on handling a cherry crop that will be left in the orchard.

Hypothesis. We hypothesized that fruit shaken to the ground and physically destroyed would decay and dry out faster than leaving fruit intact—either on or off the tree; dried up/destroyed cherries would be a less suitable host for SWD reproduction and regeneration.

Methods. Ripe, unsprayed Montmorency tart cherries were collected on 7 July 2016. Fruit were collected without stems, and the cherries were placed in a windrow in the center of the sod row middles. Piles of fruit (~2 quarts of fruit) were placed in a straight line along the sod row middle in an attempt to mimic the piles of cherries that come off the conveyer of a harvester and drop onto the orchard floor rather than into a cherry tank. We put fruit down into two lines in the orchard; we smashed one line of fruit and left the other line of fruit intact. To simulate mechanically crushing or mashing of fruit by a farm implement, we positioned fruit in front of golf cart tires in the orchard row and drove over the piles of fruit (Figure 1). Because the tires of the golf cart were smaller than tractor or truck tires, we ran over the fruit twice with both front and back tires. We collected samples of smashed and intact cherries at 1D, 3D, 5D, and 7D after they were either smashed or placed intact on the ground (Figures 2-7). Each treatment was replicated five times. Following each collection timing (1D, 3D, 5D, 7D), the smashed and intact fruit were brought back to the laboratory and exposed to SWD adult flies. We placed a 4" x 4" square of fruit into bioassay containers (Figure 8). Fruit were placed directly onto a plastic mesh 'net' inside a sandwich size plastic container; the mesh and fruit were placed on top of a small sponge to soak up extra moisture. The 4" x 4" square of fruit that was placed on top of the mesh was approximately 1" in depth. Five male and five female SWD were added to each container. The number of SWD larvae per sample was counted after eight days for each of the collection timings (Figure 9).

Figure 1. Piles of fruit placed in the orchard row and then driven over by the golf cart.

Figures 2 and 3. Fruit crushed by golf cart (left) and intact fruit (right) on day of harvest.

Figure 8. Fruit placed into shallow bioassay containers for exposure to SWD adults.

Figures 4 and 5. Crushed (left) and intact fruit (right) on day 5.

Figure 9. First inspection for larvae on fruit collected at day 1.

Conclusions. Results indicated that crushing the fruit in the orchard reduced the number of SWD larvae at all timings, 1D, 3D, 5D, and 7D after the initial crushing of fruit. Data showed that physically destroying fruit will be effective in reducing the SWD population in orchards where fruit will be left in orchards due to hail damage or diversion. However, growers should note that our experiment was completed during a relatively warm spell. During the duration of this trial when the fruit would have been in the orchard (7 July-13

July), the average temperature was 73.8 degrees F. There were three rain events, and the NWMRHC received 0.27" on 8 July and 0.01" on 11 and 12 July. We also had heavy dews on most mornings during this trial period.

At this time, we recommend that growers who will not harvest a crop should put fruit on ground and smash or destroy the cherries as best as possible. An option for removing the fruit would be to use a traditional shaker (both halves of a double incline or a one-man shaker), and windrow the cherries to the center of the sod row middle. We crushed our fruit with a traditional tire (small tread), but flail mowers or cultipackers may work even better for destroying intact fruit. Tractor tire treads may be too deep for adequately crushing fruit, and smaller 'piles' of fruit are more easily crushed than deep piles of cherries.

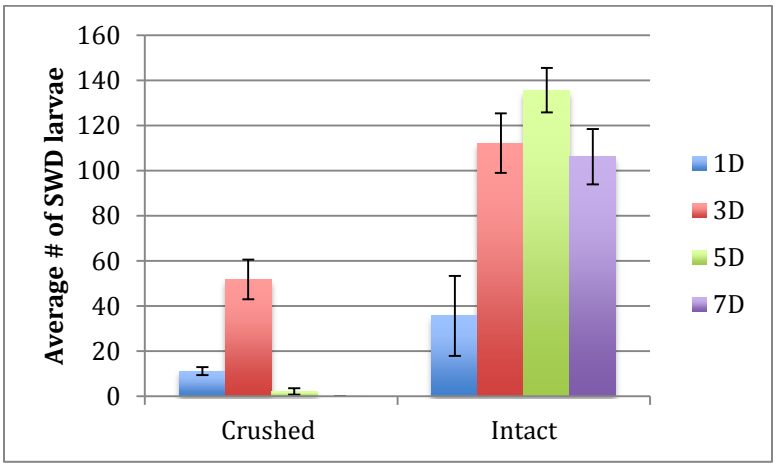

Figure 10. Average number of SWD larvae observed in 5 replications of crushed and intact fruit collected at 1D, 3D, 5D, and 7D after crushing or placing intact fruit on the ground.

Managing apple maggots with insecticides

Insecticide selections should include consideration of apple maggots when present. Posted by **John Wise**, Michigan State University Extension, Department of Entomology, MSUE News

High levels of apple maggot adult emergence have been detected at the Michigan State University Trevor Nichols Research Center in Fennville, Michigan, following rainfall events over the last week. Controlling apple maggots has been traditionally achieved with organophosphate (OP) insecticides, like Imidan. Synthetic pyrethroid compounds, like Asana, Warrior, Danitol, Battalion, Mustang Max and Baythroid, are also toxic to adult fruit flies, but are generally viewed to be moderately effective because they have a shorter field residual.

There are several reduced-risk and OP-replacement insecticide products that include

apple maggots on their labels. The neonicotinoids Belay, Admire and Assail are labeled for apple maggot control. They have limited lethal action on adult apple maggots, but provide strong curative activity on eggs and larvae. The Spinosyn compounds Delegate and Entrust are active on apple maggots when ingested, but have shown to be only fair control materials in field trials with high pest pressure, thus are labeled for apple maggot suppression only. The Diamide compound Exirel is active on apple maggots, and is labeled for population suppression. Leverage, Voliam Flexi and Endigo are pre-mix compounds that are labeled for apple maggot control.

Summary of insecticides used to control apple maggots						
Compound trade name	**Chemical class**	**Life-stage activity**	**Effectiveness rating on apple maggot****	**Residual activity**	**Mite flaring potential**	**Effectiveness rating on codling moth****
Imidan	Organophosphate	Adults and curative	Excellent	14+ days	Relatively safe	Excellent
Asana, Warrior, Danitol, Mustang Max, Baythroid, Battalion	Pyrethroid	Adults	Fair-Good	7-10 days	Highly toxic	Fair
Delegate, Entrust*	Spinosyn	Adults	Fair	7-10 days	Moderate toxicity	Fair-Excellent
Assail, Belay, Admire	Neonicotinoid	Adults and curative	Good-Excellent	10-14 days	Relatively safe - Moderate toxicity	Good-Excellent
Exirel	Diamide	Adults	Good	10-14 days	Relatively safe	Excellent
Leverage	Premix (pyrethroid + neonicotinoid)	Adults and curative	Excellent	10-14 days	Highly toxic	Fair-Good
Endigo	Premix (pyrethroid + neonicotinoid)	Adults and curative	Good	10-14 days	Highly toxic	Good
Voliam Flexi	Premix (diamide + neonicotinoid)	Adults and curative	Excellent	10-14 days	Relatively safe- Moderate toxicity	Excellent

* OMRI-approved for organic production.
** Effectiveness rating of insecticides as noted in MSU Extension bulletin E0154, "2016 Fruit Management Guide."

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

MSU CA Clinic 2016

The 2016 MSU Controlled Atmosphere Storage Clinic will be held at the **Boulder Creek Golf Club in Belmont, Michigan** on August 3, 2016.

The **Controlled Atmosphere (CA) Clinic** is organized by the Department of Horticulture at Michigan State every other year to pass on new information relating to controlled atmosphere storage and warehousing of apple and other temperate fruit. The CA Clinic serves to facilitate communication between researchers, industry spokespersons, technical experts and packinghouse and storage operators. Attendees should expect to be brought up-to-date on the most recent scientific findings and related practical developments in the field of CA and refrigerated storage.

We are fortunate this year to feature **Drs. Jennifer DeEll (ONT)** and **Peter Toivonen (BC)**, two of the nation's leading experts on the storage of apples and other perishables. Presentations will deal broadly with the challenges of successful fruit storage and will highlight the storage of the Honeycrisp and other difficult to store apples. In the Great Lakes Region, we have begun to store Honeycrisp in CA storage - a practice that will likely become commonplace in the coming years. Importantly, an adequate storage strategy for Honeycrisp has been difficult to come by: sensitivities to low temperature and typical storage atmospheres have made this an extremely challenging fruit to store. In addition, there will be presentations by experts from MSU (Drs. Beaudry and Lu) and a number of technical updates from leaders of postharvest industries including Pace, Decco, Storage Control Systems, and AgroFresh.

Clinic Speaker Agenda, August 3, 2016 - Boulder Creek Golf Course/Meeting Rooms, Belmont, Michigan (updated July 22, 2016)

To register, visit: http://events.anr.msu.edu/MSUCA2016/; Doors open at **7:30 a.m.** and educational sessions begin at 8:30. Morning snack, lunch and breaks included. There is no charge for this event thanks to the generosity of our sponsors.

Time	Speaker	Affiliation	Presentation Title
8:30	Dr. Randolph Beaudry	MSU	Welcoming Remarks/Introductions
8:40	Amy Irish-Brown and Phil Schwallier	MSU	MSU apple assessment program - Year 1
8:55	Jennifer DeEll	OMAFRA, Ontario	Storing Honeycrisp - Harvista®, delayed CA, and more
9:25	Dr. Dana Faubion	AgroFresh, Lead R & D Manager, Yakima, WA	Introduction to AvantStore®
9:45	Chad Christopherson, Dr. Lynn Oakes, and Dr. Nazir Mir	Decco/Essentiv/Uniphos	TruPick® – postharvest freshness management: the newest concept in 1-MCP delivery technology
10:05	**Morning Break - visit sponsor booths**		
10:20	Dr. Peter Toivonen	Agriculture and Agri-Food Canada, Summerland, BC	Re-evaluation of approaches to assess apple harvest maturity
10:40	Ted Nulliner	Pace International	FYSIUM® - The Future of 1-MCP
11:00	Dr. Randolph Beaudry and Jim Schaefer	MSU	Dynamic controlled atmosphere storage (DCA)
11:30	Jim Schaefer	Storage Control Systems	Stress-Free DCA
12:00	**Lunch Break - visit sponsor booths**		
12:45	Dr. Randolph Beaudry	MSU	CA injury in Empire and Honeycrisp: Control by diphenylamine and preconditioning
1:00	Dr. Anand Pothula for Dr. Renfu Lu	USDA, MSU	Development of a self-propelled apple harvest and automatic in-field sorting machine.
1:20	Dr. Jennifer DeEll	OMAFRA, Ontario	Storage disorders in Empire, McIntosh, and Gala
1:50	Fernando Edagi	AgroFresh, R & D Manager Wenatchee, WA	Harvista® Technology: Beyond Harvest Management Tool
2:10	Dr. Peter Toivonen	Agriculture and Agri-Food Canada, Summerland, BC	What's new in apples from British Columbia? When to harvest and how they store
2:35	**Afternoon Break - visit sponsor booths**		
2:50	Debra Chester	MSU Occupational Health	CA Room Safety & Regulations
3:10	Ben Paskus for Dr. Randolph Beaudry	MSU	Revisiting hypobaric storage for perishable produce
3:30	Yuzhen Lu for Dr. Renfu Lu	USDA/MSU	A new imaging technique for enhanced detection of defects on apples
3:50	Dr. Randolph Beaudry		Sum up and thanks
4:00		Adjourn	

Noninsured Crop Disaster Assistance Program decision tool and instructional video

The development of risk management plans for farms should include consideration of crop insurance or NAP buy-up coverage.

Posted by **Adam Kantrovich**, Michigan State University Extension, MSUE News

Agricultural producers are bombarded with challenges when raising a crop. Risk comes from many areas, including labor market, market price volatility, geo-political issues and regulations. With revenue shortfalls from reduced yields, a farm may not have the income necessary to purchase inputs for the coming-year crop. Farmers need to use a number of risk management strategies that allow themselves to "hedge" for various scenarios that can lead to reduced or eliminated crop revenue.

For many farms, crop insurance is an option for the crops they raise. Crop yield and revenue insurance is administered through the Risk Management Agency (RMA) of the USDA and can be purchased through private crop insurance agents. This insurance provides most grain, oilseed and tree fruit farms with a variety of insurance contract options to protect against yield or revenue loss risks. Farms typically pay a premium that has been subsidized for participation in these types of programs. Although crop insurance increases per acre costs, it can provide additional revenue when needed due to losses incurred through weather and other events.

Unfortunately there are many for which crop insurance is not available. The Noninsured Crop Disaster Assistance Program (NAP) that is administered through the Farm Services Agency (FSA) of the USDA is available for crops not covered by crop insurance. A producer must sign-up through their local FSA office for NAP.

The NAP program provides loss risk protection for crops that are not insurable through commercial crop insurance or for crops that are in a "pilot" status, such as the Cherry Revenue insurance program. NAP may also be available if crop insurance does exist for a crop, but coverage is not available for your crop type or intended use such as fresh market versus processed market.

The 2014 Farm Bill made substantial changes to the NAP program. Previously the program was almost a pure catastrophic type of program with maximum coverage at 50 percent of a farms approved historical yield. Shortfalls were paid at only 55 percent of the NAP market price. Now NAP coverage can be purchased up to 65 percent of a farms approved historical yield with shortfalls being paid at 100 percent of the NAP market price. The NAP program has a maximum payment of $125,000 per person and the premium is also capped at 5.25 percent of the yield guarantee valued at the NAP market price. Each crop does have a $250 administrative fee in addition to the premium cost which means between the capped premium cost of $6,563 per person and administrative fee of $250 the most that would be paid is $6,813 per person for a single

crop. However if you are a beginning farmer, a socially disadvantaged farmer, or limited resource farmer a producer may qualify to have the premium reduced by up to 50 percent and the administrative fee waived.

Michigan State University Extension, through collaboration with University of Illinois and FSA, developed a NAP Crop Eligibility, Premium, and Payment Estimator that producers can use to help determine if a farms crop(s) are eligible for the NAP program, what the premium would be, and an estimate of payments with a disaster. Adam Kantrovich of the MSU Extension Farm Information Resource Management (FIRM) team and Eric Fischer of the Michigan USDA-FSA developed a short instructional video on how to use the NAP Crop Eligibility, Premium, and Payment Estimator. These links and other relevant information can be found on the FIRM team Crop Insurance webpage, or the FIRM Team NAP Buy-Up Farm Bill webpage.

MSU Extension reminds you to always contact your trusted legal and tax advisors.

For further information, please contact akantrov@msu.edu or view the MSU Extension FIRM webpage or the FIRM team staff webpage to find your closest farm financial educator.

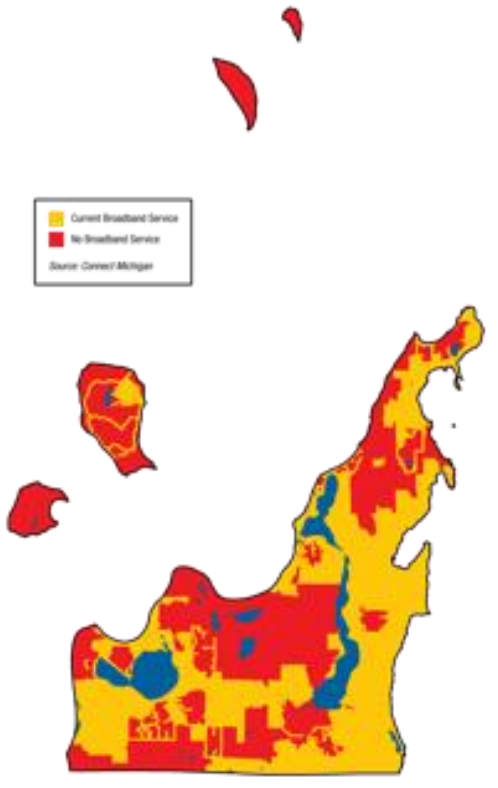

Figure 1. Leelanau County broadband availability, 2/2016

Leelanau Peninsula Economic Foundation Technology Committee Seeks Community Input!

High-speed Internet and broadband capabilities can no longer be considered a "luxury." Indeed, Internet is considered a utility and a critical necessity for schools, families, libraries, business owners, and emergency services personnel.

The Leelanau Peninsula Economic Foundation (LPEF) Technology Committee has partnered with *Connect Michigan* to survey Leelanau County residents and stakeholders to identify needs and priorities. The survey will be helpful to efforts designed to identify areas lacking broadband access and for developing mechanisms to promote expansion of services via attracting additional providers.

Connect Michigan has worked with providers to identify Internet needs throughout Michigan. In the image below, the areas shaded in red represent un-served, or inadequately served Leelanau residents. Areas shaded in yellow, according to Connect Michigan, have at least some level of broadband availability. As depicted, significant portions of Leelanau County are without adequate service.

The Technology Committee's Chair, Commissioner Patricia Soutas-Little, says, "Broadband is vital for so many businesses and residents. Leelanau County has such a diverse landscape, knowing current accessibility and resident needs, will help us plan for the future."

The Committee is striving to have survey result tabulated in early September. Survey results will be used to develop action plans and work with potential providers to address gaps and improved service goals. The Survey is open until September 3 and only takes ten minutes to complete. You can take the survey as a resident, business owner, or as a designated representative of another organization. The survey is available online at http://www.connectmycommunity.org/leelanau-peninsula/ or a paper copy can be obtained from any library or by calling the Leelanau Peninsula Chamber of Commerce at (231) 994-2202. For additional information about his effort, contact Patricia Soutas-Little at (231) 218-8496.

WEB SITES OF INTEREST:

Insect and disease predictive information is available at:
http://enviroweather.msu.edu/homeMap.php

This issue and past issues of the weekly FruitNet report are posted on our website:
http://agbioresearch.msu.edu/nwmihort/faxnet.htm

60-Hour Forecast:
http://www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous46ktvc

Information on cherries:
http://www.cherries.msu.edu/

Information on apples:
http://apples.msu.edu/

Information on grapes:
http://grapes.msu.edu

Fruit CAT Alert Reports:
http://news.msue.msu.edu