Northern Michigan FruitNet 2008
Weekly Update
NW Michigan Horticultural Research Station

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July 2, 2008

WEATHER REPORT

Daytime temperatures have been climbing into the mid-70's to mid-80's in the past week, but nighttime temperatures have remained in the mid 50's to low 60's. So far this season, we have accumulated 1230GDD base 42 and 711GDD base 50. At this same time last year, we had accumulated 1740GDD base 42 and 979GDd base 50. We received ¼" of rain at the NWMHRS, but different weather stations in the region recorded varying amounts of rainfall. For example, Kewadin received 0.38 inches of rain while the East Leland station only recorded 0.05 inches of rain. In the areas with less rain, newly planted trees are beginning to stress from lack of moisture.

CROP REPORT

Sweet cherries are beginning to color around the region, and many southerly areas are predicting to begin harvesting early varieties on Wednesday or Thursday of next week. In some blocks of sweet cherries, the fruit appearance reflects the year's weather conditions--frost scars, bacterial canker, and some hail marks are evident. We are still hoping that much of the fruit that is not developing will drop before harvest begins in the coming weeks. Tart cherries are also sizing at this time, and a few blocks are even starting to take on some color. Apples in some areas that were hardest hit by the frost/freeze event on Memorial Day weekend have developed frost rings around the fruit. Strawberry harvest continues in the region.

PEST REPORT

Cherry

Cherry leaf spot symptoms are becoming more visible throughout the region with heavy symptoms observed in some young orchards. Cherry leaf spot infection periods were predicted in many areas throughout the region based on isolated rainfall that occurred on June 27-30. **Bacterial canker** infections are still evident on fruit in some orchards, and the effects of the early infections remain visible on leaves. We have spotted **American brown rot** on sweet and tart cherries at the station, including those orchards that have received fungicides. We are also continuing to see a high proportion of damaged and unfertilized fruit hanging in clusters. These poor quality and undeveloped cherries are more susceptible to American brown rot, and growers should be diligent about brown rot fungicide programs.

Oblique banded leafroller numbers are increasing with the average trap catch at the station rising to 30 this week. **Lesser and greater peach tree borer** emergence remains steady with about 15 and 2 per trap, respectively. **American plum borer** emergence has

steady with about 10 and 2 per trap, respectively. **American plum borer** emergence has declined drastically over the past two weeks; this week we caught an average of only 1 moth per trap. We have not caught any **cherry fruit fly** in the past two weeks. We biofixed (full bloom) for **plum curculio** on **June 16** at the station, and since that time we have accumulated 509 DD50.

Apple

Rainfall has been extremely variable throughout the region over the past week. Some areas had heavy to moderate **apple scab** infections predicted between June 27th and the 30th. Symptoms of apple scab have become visible in some orchards. **Fire blight** strikes have also been in Gingergold and Honeycrisp orchards; strikes should be pruned out as they arise. **Codling moth** numbers at the station have spiked this week with an average of 35 per trap. We biofixed for codling moth on June 3 at the research station, and since that time we have accumulated 430 DD50. **Oblique banded leafroller** numbers remain at 20 per trap at the station. We caught 5-6 **oriental fruit moth** this week and have not trapped **apple maggot.**

Grape

Potato leafhopper is being observed in low numbers in regional vineyards.

AMERICAN BROWN ROT
Erin Lizotte, IFP/IPM District Educator, MSU-E

American brown rot (ABR) management is becoming increasingly important as the sugar content in the cherries begins to increase and fruit begins to color. The recommendation for ABR management includes the application of the first fungicide 2-3 weeks before harvest with subsequent applications every five to ten days. The spray interval is highly dependent on the fungicide applied, weather, and inoculum level. Spore production is greater between 59 and 74º F than at cooler temps. The optimal temperature for infection is between 67 and 77º F. Although injury to the fruit leads to increased infection, the fungus readily infects when no wound or fruit-to-fruit contact is present. Under ideal conditions, spore production can occur within as few as three days, allowing for epidemic outbreaks after a very short period of time.

The table below lists fungicides labeled for the control of ABR, the recommended rates, and efficacy. Just a reminder, most of these fungicides are sterol inhibitors (with the exception of Pristine) and therefore do not have activity again cherry leaf spot.

American Brown Rot Fungicide Recommendations

	Tarts				Sweets		
Fungicide	**Rate**	**Efficacy**	**PHI**	**Fungicide**	**Rate**	**Efficacy**	**PHI**
Indar 75WSP	2 oz	Excellent	0	Indar 75WSP	2 oz	Excellent	0
Orbit 3.6EC	4 oz	Excellent	0	Orbit 3.6EC	4 oz	Excellent	0
Elite 45WSP	6 oz	Excellent	0	Elite 45WSP	8 oz	Excellent	0
Pristine	10.5-14.5	Good-Excellent	0	Pristine	10.5-14.5	Good	0

Always read all fungicide labels before application.

BIRD DAMAGE IN MI FRUITS
Erin Lizotte
IFP/IPM District Educator, MSU-E

As all fruit growers know, bird damage causes significant loss of fruit crops each year in this region. The last bird damage survey in Michigan was performed in 1972 and estimated tart cherry damage at 17.4%. These numbers are considered minor compared to losses in the wine grape and blueberry industries each year. We are lucky to have attracted the interest of Dr. Catherine Lindell, Dept of Zoology, MSU, who has worked extensively with bird pests in Costa Rica and has been visiting apple, cherry, and grape growers to learn more about our industry. Dr. Lindell will be helping us gather information on species structure and bird behavior in fruit systems.

We are distributing surveys to growers to record your observations on your farm. These

surveys are meant to determine what species of birds are in the fruit, what they are doing in the orchard/vineyard, and how many of them are present. These surveys will be used to develop a season-long bird species profile for different crops. As we go into the busy harvesting season, this information becomes even more important, as most of the damage will take place as the fruit ripens.

Attached to the end of the FruitNet is a copy of the survey. Please fill out the survey for observations made during a one week period. You don't have to fill one out every week to participate as the information will be consolidated across counties. Bird surveys will be available from the Research Station in paper form, on our web page, and via the FruitNet for the remainder of the season. The data collected in these surveys will be used to prove impact during grant application, and will help direct future research.

Here is a link to the **Bird Survey Form** in PDF format

To return your survey via fax, please send it to (231)946-1404, attention Erin. You may also e-mail them as an attachment to **taylo548@msu.edu**.

Information on cherries is available at the new cherry website: **http://www.cherries.msu.edu/**

Insect and disease predictive information is available at:
http://www.enviroweather.msu.edu/home.asp

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

ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1, 2008

Please send any comments or suggestions regarding this site to:
Bill Klein, **kleinw@msu.edu**

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July 8, 2008

GROWING DEGREE DAY ACCUMULATIONS THROUGH JULY 8th AT THE NWMHRS

Year	2008	2007	2006	2005	2004	2003	18yr. Avg.
GDD42	1400	1745	1675	1696	1309	1453	1519.4
GDD50	816	1093	1007	1064	718	847	918.7

Growth Stages at NWMHRS (7/8/08— 8:00 a.m.)

Apple: 30-35 mm
Pear: Bartlett: 34 mm fruit
Sweet Cherry: Hedelfingen: 19 mm fruit
Napoleon: 19 mm fruit
Gold: 18 mm fruit
Tart Cherry: Montmorency: 18 mm
Balaton: 19 mm
Apricot: 30 mm fruit
Plum: 25 mm
Grape: Buckshot

Weather Report

The Fourth of July holiday weekend was perfect weather for summer! Temperatures were in the mid-70's to mid-80's. With these warm temperatures, we have accumulated growing degree days (GDD) more quickly than our past 2008 summer weekends. As of Tuesday morning, we have accumulated 1400 GDD base 42 and 816 base 50. We are still considerably behind where we were at the same time last season. A little over ¼" of rain fell last Wednesday, and we received a small amount of rain on Monday morning (<0.01") at the NWMHRS. Areas in Benzie and Manistee counties received much more rain – 2.5-4". This morning, July 8, there is high humidity, lots of mist, and very warm temperatures. There were reports of hail this past Thursday in Leelanau County.

Crop Report

Sweet cherry harvest has begun in southern areas in the region. By the end of the week, we anticipate most receiving stations to be at or moving toward full swing. The rain will be a challenge to fruit with frost scars and other weather-related damage. Tart cherries are beginning to color, and overall cherry size still seems on the small side so far this season. Apples are sizing well (30-25 mm), but due to hail and windy conditions, fire blight has been more prevalent than in past years. Strawberry harvest is winding down, and most growers are finished picking this season.

Pest Report

Cherry

Cherries are ripening throughout the region and the first few sweet cherry stands are popping up! As the fruit begins to color, and the weather warms and humidity soars**, American brown rot** continues to be a concern. **Cherry leaf spot** symptoms are becoming more noticeable, and some areas have relatively high pressure this year. We are also receiving grower reports of **powdery mildew** at high levels in area orchards. We have caught our second **cherry fruit fly** at the NWMHRS; these numbers are tremendously low compared to past years. **Oblique banded leafroller** numbers are holding steady at the station trap line with about 25 per trap. **Lesser peach tree borer** is still emerging with 10-15 per trap; this week only one **American plum borer** was caught. **Greater peach tree** borers are continuing to emerge, with an average of three moths per trap at the station.

Apple

We are seeing symptoms of **scab** throughout the region, and as late as last week, we saw new infections developing on leaves. Symptoms of **fire blight** are becoming more obvious, with some area orchards exhibiting signs of relatively new infections. Infected shoots should be pruned out as soon as possible to prevent further spread and trauma blight infections later in the season. **Codling moth** numbers are still relatively high with 22-31 per trap at the station. **Oblique banded leafroller** numbers are still around 20 per trap, and **spotted tentiform leafminer** are on the rise again with 9-59 per trap. We caught an average of five **Oriental fruit moths** per trap at the station.

Grape

Powdery mildew is being seen at low levels in area vineyards. **Potato leafhoppers** and **rose chafers** are also at lower levels than usual. Although rare in NW Michigan**, Phomopsis cane** and **leaf spot** has been observed in one area vineyard at high levels. The cool, wet weather this spring was ideal for disease development. **Grape tumid gallmaker** has also been spotted in the region. Early blooming varieties of grape are now in bloom.

MONITORING AND MANAGEMENT STRATEGIES FOR CHERRY FRUIT FLY

John Wise, MSU Trevor Nichols Research Complex
Nikki Rothwell, MSU Northwest Horticulture Research Station
David Epstein, MSU IPM Program
Larry Gut, MSU Department of Entomology
Luís Teixeira, MSU Department of Entomology

Cherry fruit fly (CFF) overwinter as pupae and are developmentally ready to emerge as adults in late spring. Adult fly emergence depends on soil heat accumulation. Peak emergence is highly dependent on site-specific weather conditions. Much of the Michigan fruit growing region has had above normal precipitation and relatively low temperature over the growing season, so CFF emergence is proceeding slower than normal this year.

Monitoring adult CFF flight is the key to effective management of this pest. Adult activity can be monitored using yellow sticky boards with ammonium bait. The yellow trap is most useful during the pre-oviposition period when newly emerged females are actively feeding. Traps should be placed on the south-facing side of the top of the canopy of trees in perimeter rows because most flies are expected to be immigrating from wild hosts outside the orchard. The native host of CFF is wild black cherry. Optimally, traps should be checked twice weekly until the first fly is captured, then once a week thereafter to indicate the end of the flight.

Identifying CFF generally requires the use of a 10X hand lens. Adults are gray flies, approximately 5 mm in length. The most characteristic feature of the fly is the dark pattern on their wings with a broken band at the tip (figure 1). These wing-banding patterns are used to differentiate between fruit fly species.

The greater the number of traps deployed per block, the greater the confidence level in basing treatment decisions on fly catch. Place at least two traps along borders that historically have been a source of infestation. Proper trap maintenance is crucial to trap effectiveness. Over time, the adhesive can be fouled by leaves, twigs, other insects and debris. Remove debris and insects each time traps are checked. The adhesive should then be evenly redistributed. In determining control treatment timing, on-farm fly catches should be used in conjunction with regional trapping information. Basing treatment decisions solely on regional information may lead to unnecessary insecticide applications. If you employ a good trapping program, a control treatment for CFF is not warranted until flies are captured on your farm. If flies are trapped on-farm, and a regional trap catch was recorded prior to the on-farm fruit fly capture, the treatment should be timed based on the earlier regional capture. This conservative approach is the best way to ensure that the control is applied prior to the flies reaching reproductive maturity and beginning to lay eggs. Chemical control of CFF is focused almost entirely on the adult, with the goal of preventing egg-laying.

Upon emergence there is an 10-12 day period before female flies begin to lay eggs. During this time they are searching for nutritional sources needed to become sexually mature. After female flies complete this pre-oviposition period and have mated, they will seek out fruit for egg-laying. They lay eggs just under the skin of ripening fruit with a needle-like ovipositor, making visual detection of the puncture wound difficult to distinguish. Fly larvae, called maggots, hatch from eggs within a week and begin to feed in the flesh of the fruit. Mature maggots drop out of fruit and enter the ground, where they pupate, starting the next generation's life cycle.

DIFFICULTY WITH SAN JOSE SCALE

N.L. Rothwell, District Horticulturist

Many growers have had the misfortune of finding San Jose scale (SJS) in their sweet cherry orchards this past season. These growers are concerned that this pest population will cause problems again this year. Additionally, if no oil or Lorsban applications were made during the delayed dormant timing, growers will need to control the crawler stage later in the season. In fact, 'later in the season' is a bit up in the air at this time, unfortunately.

Our crew and the Trevor Nichols (TNRC) research team have been monitoring for SJS crawlers throughout the season, and neither group has captured these tiny insects on the black sticky tape. We have also placed pheromone traps out to catch flying adult males, and to date, we have caught one male. At the TNRC, they had a flush of males in early June, but crawlers did not follow these catches. Since we have had difficulty finding crawlers, the stage at which we would be targeting for insecticide control, timing these applications has also been a challenge.

Research has been done at Cornell University to develop a good strategy for targeting insecticide applications against first generation crawlers in apple. The upshot of their work recommends that growers target first generation crawlers at 500 growing degree days (GDD) past 1 March. Using this approach, we would have hit 500GDD on 16 June, which seems a bit early when we look at past data (i.e. crawler activity) from TNRC. However, some growers are following this strategy and we hope to determine the effectiveness of these applications.

The current challenge is to control SJS now in light of our somewhat holey information. According to the model, we are beyond peak crawler emergence. If growers did not put on a delayed dormant spray, orchards with high scale populations or visible damage from 2007 will need to apply an insecticide as soon as possible. Compounds with crawler activity will most likely still have some impact on the SJS population despite this later timing. If growers applied a delayed dormant spray, he/she could wait until the second generation for control. We have much better data for timing insecticide sprays for the second generation crawlers, which is a mid-August timing. If populations are low, waiting for this second generation spray is a good idea.

In terms of insecticide options at this time, we have no data on SJS in cherry. Based on apple work, we know that Assail and Warrior have shown good control of SJS. Additionally, growers targeting cherry fruit fly at this time may want to apply an insecticide that also has activity on SJS.

ETHEPHON ON CHERRIES

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

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

Ethephon releases ethylene, which penetrates plant cells and binds to receptors that affect expression of various genes. In the case of cherries, ethephon affects the gene that controls the synthesis/activation of cell wall loosening enzymes such as polygalacturonase and pectin methylesterase, thus dissolving the pectins between cells in the abscission layer. This chain-like reaction leads to cell separation in the developmentally-programmed abscission zone between pedicel and fruit or pedicel and spur. In short, ethephon loosens the cherries from the stem, which results in a gentle 'shaking' of the tree to remove the fruit.

One main concern in recent years (2005-2007) has been the amount of ethephon-induced damage with the hot, dry weather conditions. Ethephon can have excessive activity under a certain set of conditions, which can result in tree injury. As mentioned last season, we remind growers that we have observed quite a bit of ethephon damage in the past few years, especially in sweet cherries and of those varieties, Golds seem the most sensitive. This damage occurred when ethephon was applied during hot and dry weather conditions during 2007, 2006 and even in many blocks in 2005. Trees under stress, particularly drought stress, become more susceptible to ethephon damage. Damaged trees exhibit excessive gumming, and branches lose their leaves. We have also noticed areas within a block may show considerably more ethephon damage than other areas. Most likely the trees that show the most damage were more stressed in some way at the time of application, and soils in a particular area can help showcase this ethephon damage.

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

As mentioned above, both temperature and tree vigor are associated with the degree of response achieved. At higher temperatures during the 72 hours following application, the magnitude of response is increased and at lower temperatures it is decreased. Trees low in vigor or under stress respond to a greater extent, and gumming and leaf abscission may result. **Do not treat such trees**! **Repeat, do not treat such trees**!

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

Rate:
Vary the rate depending on anticipated temperatures for 72 hours after application, days before harvest, tree stress and past experience. *Lower rates decrease the likelihood of tree injury.*
Light sweets
-- When applied concentrate (80 gals. water/acre or less), 1 to 2 pts/acre applied 10-14 days before anticipated harvest should provide adequate loosening. Rates up to 2.5 pts/acre may be necessary for harvesting in less than 10 days. When applied dilute, use no more than ¾ pt/100 gals or 3 pts/acre.
Dark sweets
-- When applied concentrate, use 1.5 to 2.5 pts/acre applied 10-14 days prior to anticipated harvest. Rates up to 3 pts/acre may be necessary for harvesting in less than10 days. When applied dilute, use no more than 1 pt/100 gals. or 4 pts/acre.
Tart cherries
-- When applied concentrate, use 0.5 to 1 pt/acre applied 7 to 14 days prior to anticipated harvest. When applied dilute, apply no more than 1/3 pt/100 gals or 1 pt/acre.
Time of Application:
Apply approximately 7 to 14 days before anticipated harvest. Do not harvest within 7 days of application (7-day PHI).
Temperature:
Avoid application when high temperatures are expected to exceed 85° F or remain below 60° F for the 72 hour period after application. Use relatively high rates when high temperatures are expected to be in the 60's ° F and lower than normal rates when highs are expected in the lower 80's.
Tree stress:
Do not spray trees that are low in vigor or under stress conditions.
Do not
spray trees that had serious gumming the previous year.
Crop load:
Heavy crop load, i.e., low leaf to fruit ratio, is more difficult to loosen so use relatively higher rates or expect a longer time to achieve desired loosening.
Concentrate spraying:
Applying ethephon with concentrate sprayers (i.e., 80 gallons of water/acre or less) achieves the same level of loosening at lower rates per acre than does dilute applications. Uniform coverage is important.
Tree size:
Suggested rates/acre is based on full-sized trees. Adjust rates downward when treating blocks with smaller trees.
Growers should pay particular attention to the temperatures. As evident from the last three seasons, hot temperatures can really do damage to cherry trees. Growers that have had problems in the past years should avoid ethephon, especially if the trees showed serious gumming and leaf loss.

GLYPHOSATE DAMAGE IN APPLE AND CHERRY ORCHARDS

Nikki Rothwell, District Horticulturist, NWMHRS
Mark Longstroth, SW District Fruit Educator
Bill Shane, District Horticulturist, SWMREC
Amy Irish-Brown, District Fruit ICM Educator, CHES

We have seen glyphosate (Round-Up) damage to cherry and apple trees over the past few weeks. In most cases, damage was to young trees, but we have found damage on 15-20 year old tart cherries. Glyphosate damage is easily recognized; the leaves on a branch or the whole tree are small and narrow with a light yellow/pale green color. The leaves may be so narrow they resemble conifer-type needles rather than broad leaves. This type of foliage has been described as having 'mouse-ear' leaves. If growers see glyphosate damage on either a branch or a whole tree, the symptoms give the plant an unhealthy and stressed appearance.

The damage showing up this spring probably occurred with late summer-early fall glyphosate applications; this is the time when trees are storing reserves in the roots for next year's growth. The activity of glyphosate on weeds is the same in fruit trees: the product must be applied to green tissue to be effective. Glyphosate does not move through the roots via soil application because glyphosate is quickly tied up by soil particles. To have glyphosate damage in fruit trees, the product must have contacted the tree itself, either directly sprayed onto a branch or the trunk, or by drift of spray droplets. Glyphosate contact in the latter part of the season causes the tree to take up the herbicide and translocate it to the roots, storing it with the carbohydrates. In spring, the tree moves its reserves,

including the herbicide back to the canopy, and symptoms become visible on the foliage.

Spring damage symptoms can often be explained by one of the following: 1) glyphosate is applied to young trees (< 3rd leaf), 2) applications of glyphosate are made late in the season, or 3) when applications are made without a proper weed boom or other tree protection strategies at later application timings. The general rule of thumb for timing glyphosate is to apply no later than July. This date is variable depending on yearly weather conditions affecting tree bark development and nutrient movement inside the tree. A glyphosate application date in one year may be problematic in another season under a different set of weather conditions. Applications of glyphosate are not recommended for apple trees younger than the third leaf. Use of a non-porous tree wrap or even water-based latex paint will help prevent glyphosate uptake by young bark. Lastly, if growers decide to apply this herbicide later than July, a shield-protected boom on the weed sprayer is necessary, but not foolproof. Growers who are using glyphosate sprays only to control weeds in the tree row need to be especially mindful of sprays on the lower trunk that may be absorbed by young suckers or even by older bark.

Many products with the glyphosate active ingredient are now on the market, and these different formulations could be compounding the recent problems. Use of formulations containing surfactants with aggressive uptake properties may be enhancing glyphosate problems in fruit orchards Dr. Christy Sprague of the MSU Crop & Soil Sciences Department wrote up this nice article that will help decipher some of the new formulations in order to minimize damage. Although this article was written for those in the row crop arena, it is still valuable for explaining differences in new products/formulations: http://www.ipm.msu.edu/CAT05_fld/FC06-09-05.htm#4.

GROWERS INVITED TO CHECK OUT NEW HARVESTER

Dr. Ron Perry has been working with Dr. Amy Iezzoni, the Cherry Industry and with Oxbo (Korvan) in getting a blueberry harvester to try out on some seedling trees*.* The model that we will be trying is the 7420 (http://www.oxbocorp.com/7420features.html). The machine has an overall width (outside dimension) of 10 ft and has a threshold that will allow canopy (interior) at 5 X 8 ft. While this company has a grape harvester with a slightly larger interior threshold, this machine is gentler in its fruit removal process. Blueberries, when harvested with this machine, are accepted for fresh harvest as well as a processed product.

The demonstration will be held at Clarksville Horticultural Research Station on **Wednesday, July 16** at **10:30 a.m**. Despite this busy time, we invite all growers to make the trek to Clarksville. Please call Nikki at the NW Station to coordinate rides (946-1510).

BIRD DAMAGE IN MI FRUITS
Erin Lizotte
IFP/IPM District Educator, MSU-E

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Please go to http://www.maes.msu.edu/nwmihort/birdsurvey.pdf to print the survey form and fill out the survey for observations made during a one week period. You don't have to fill one out every week to participate as the information will be consolidated across counties. Bird surveys will also be available from the Research Station in paper form. The data collected in these surveys will be used to prove impact during grant application, and will help direct future research.

To return your survey via fax, please send it to (231)946-1404, attention Erin. You may also e-mail them as an attachment to taylo548@msu.edu.

HIGH DENSITY APPLE ORCHARD WORKSHOP & TOUR

You are invited to attend a High Density Apple Tour Workshop to be held **July 10.** The tour will start at Ridgeview Orchards (Dietrich's), 3625 18 Mile Rd, Kent City at 1:00 p.m. and ending at Fruit Ridge Apple Company, 10 Mile Rd, Sparta. Guest speaker will be Dr. Terrence Robinson, Dept of Horticultural Sciences, Cornell University. In addition to looking at various trellis systems, equipment demos on side delivery mower, wire puller, wire unwinder and wire winder will also take place. The workshop is being hosted by Michigan Assoc. of Pomsters, Michigan State Horticulture Society, and MSUE.

For latest directions and rain out instructions, call 616/451-8065 (code-a-phone)

NEW DISASTER PROGRAM REQUIRES CROP INSURANCE

The Farm Bill includes mandatory funding for the Tree Assistance Program (TAP) and a new permanent disaster program. Though funding for these programs will not start until next fiscal year (which begins October1), producers will be allowed to file claims on the 2008 crop. In order to be eligible for these programs, producers must participate in the Federal Crop Insurance Program, or the Noninsured Crop Disaster Assistance Program. Recognizing that the registration date has passed, the Farm Bill legislation includes a mechanism for allowing growers who haven ot registered for a policy to do so now, thereby enabling them to participate in the disaster programs.

USDA is expected to issue a specific form for this purpose in the next few weeks. Registration will be handled by local Farm Service Agency (FSA) offices which will also be promoting the program. The Farm Bill states that growers have 90 days from the enactment of the Farm Bill to sign up if they are not already in a program. According to USDA, there are about 60 days left until that deadline runs out.

"KEEP OUR FARMERS FARMING" AUCTION

The Northwest Michigan Horticultural Research Foundation will be having an auction on **October 4, 2008**. It will be held at **10:00 am** at the Horticultural Research Station, 6686 S. Center Highway in Leelanau County. The Foundation is currently seeking items for the auction. Individuals or businesses can donate or consign farm equipment, lawnmowers, 4 wheelers, antiques, collectibles, or miscellaneous items worth over $25.00. The commission rate on consigned items is 10% to the Auction House, 20% to the Foundation and 70% to the individual or business. Proceeds will be used to fund horticultural research in northwest Michigan. Auction services will be provided by Century Asset Management, Inc. Everyone is welcome to attend.

Questions should be addressed to:

Jeff Winegard, Event Coordinator, Phone: (231) 348-8273 E-mail: winegard@charter.net
Dennis Kubesh, Auctioneer, Phone: (231) 228 6667 Fax (231) 228-7518 Web : www.centuryassets.com

Information on cherries is available at the new cherry website: http://www.cherries.msu.edu/
Insect and disease predictive information is available at:
http://www.enviroweather.msu.edu/home.asp

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

ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1, 2008

Please send any comments or suggestions regarding this site to:
Bill Klein, kleinw@msu.edu

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Northern Michigan FruitNet 2008
Weekly Update
NW Michigan Horticultural Research Station

Nikki Rothwell, District Horticulturist
Erin Lizotte, District Fruit IPM Agent
Bill Klein, Farm Mgr, NWMHRS
Duke Elsner, Agricultural & Regional Viticulture Agent
Rob Sirrine, Leelanau Extension Director

July 15, 2008

GROWING DEGREE DAY ACCUMULATIONS THROUGH JULY 14th AT THE NWMHRS

Year	2008	2007	2006	2005	2004	2003	18yr. Avg.
GDD42	1592	1934	1880	1936	1487	1621	1704.6
GDD50	952	1226	1156	1247	840	959	1048.1

Weather Report

Temperatures over the weekend were cool, and 0.22 inches of rain fell at the NWMHRS. However, rainfall was spotty over the region where some areas received more than others. Overall, less than ¼" of rain fell throughout the northwest. Weather predictions for the week are looking stormy, with daytime high's in the upper 70's and lower 80's/ Thundershowers are predicted for each day this week, which is not good news for the sweet cherry crop.

Crop Report

Sweet cherry harvest has officially begun in the region, and we are shaking all earlier ripening varieties. We have observed lots of frost scars from the Memorial Day freeze event, and there is significant cracking in our sweet cherry cultivar block here at the NWMHRS. We hope the wet weather predictions are incorrect as cracking is a major concern for the many varieties yet to be harvested.

Pest Report

Cherry: We are hearing reports of high **cherry fruit fly** catches in the region and have caught upwards of 25 in station traps this past week. **Oblique banded leafroller** numbers are averaging twenty-one per trap at the station. Borers are still emerging with an average of seven **lesser peach tree borer**, five **greater peach tree borer**, and four **American plum borer** per trap at the station. **Cherry leaf spot symptoms** are becoming easily visible in area orchards, and **American brown rot** is showing up sporadically throughout the region.

Apple: Spotted tentiform leafminer are emerging at high numbers with over 100 in one trap at the station. **Codling moths** are averaging twenty-six per trap and **oblique banded leafroller** numbers are down to an average of four per trap. Additionally, an **apple maggot** has been reported from one area scout. **Oriental fruit moth** numbers are low with only one trap catch of three.

Grape: Potato leafhopper is at relatively low levels in the region. **Powdery and downy mildew** have been observed but at low levels. Lastly, heavy **phomopsis** infection has been observed in one area vineyard.

CHERRY FRUIT FLY EMERGES A BIT LATE IN 2008
Erin Lizotte, IFP/IPM District Educator, MSU-E

Cherry fruit fly (CFF) is generally thought to reach peak emergence in late June to early July. This year's weather and/or the 2007 drought appear to have led to a delay in peak emergence this year. Last week we received reports of extremely high trap catches in one area orchard, and this week we caught a total of twenty-five in the research station trap line, which is up significantly from last week's catch of four.

First emergence and ongoing CFF activity can be monitored using yellow sticky traps baited with ammonium acetate. Based on information from the one regional orchard with high CFF, the traps WITH baits worked significantly better than yellow sticky traps alone (60:1). Traps should be placed adjacent to border areas with known alternate hosts of the fly, such as wild black cherry trees. Traps should have gone up around two weeks after shuck split when fruit begins to take on a yellowish color. However, to be on the safe side, growers without CFF traps can still place them into the orchard this year; these traps can be used to monitor for pesticide efficacy. The greater the number of traps per acre (at least one trap per 2.5 acres), the greater the confidence level in basing treatment decisions on fly catch. Proper trap maintenance is crucial to trap effectiveness. Figure 1 illustrates how to identify cherry fruit fly based on their wing patterns.

Individual fly catch numbers, combined with regional trapping information, can be used to determine pesticide timing. Because of the 0% tolerance of CFF larvae in harvested fruit, a conservative approach is recommended. There are many pesticide options for CFF listed in the 2008 Michigan Fruit Management Guide. Keep in mind that as we approach harvest, some pesticide pre-harvest intervals (PHI's) may be too long to allow for harvest on the desired date.

This information was developed from A Pocket Guide for IPM Scouting in Stone Fruits by David Epstein, Larry J. Gut, Alan L. Jones

and Kimberly Maxson-Stein.

EFFICACY OF TANK-MIXING INSECTICIDES, ETHEPHON, COPPER, AND LIME
N.L. Rothwell and K.L. Powers, Northwest Michigan Hort. Research Station

Some insecticides and plant regulators (ethephon) are pH-sensitive, which could present problems for growers that tank mix these chemistries in the field. This purpose of this trial was to evaluate the efficacy of tank-mixes of insecticide and ethephon when combined with copper, a relatively new fungicide recommendation for cherry leaf spot (CLS) control. Because copper has been documented to cause phytotoxic effects in hot, dry weather, we also advise mixing copper with lime at a rate of 3-6 lbs/acre. However, when lime is added to a tank mix, the water's pH is altered in a way that reduces the efficacy of pH-sensitive insecticides (Rothwell unpublished data). For example, when Imidan is tank-mixed with copper/lime, insecticidal properties of this product are negated; hence, this insecticide is not efficacious at high pH.

A study was conducted at the NWMHRS to determine if copper/lime will alter the pH of water when combined with four cherry insecticides, Imidan (phosmet), Actara (thiamethoxam), Provado (imidicloprid), and Warrior (Lambda-cyhalothrin), and one plant growth regulator, Ethrel (ethephon). Each chemical was 'tank-mixed' in a glass beaker with 1lb actual copper and 3lb lime. The pH was obtained for each chemistry in tap water and for each insecticide mixed with copper (1lb actual Cu) and lime (3lb) and three different rates of ethephon. pH readings were taken after mixtures were agitated and allowed to sit in solution for thirty minutes to simulate actual spray time in the orchard.

Table one represents the pH of each product in tap water. Table 2 is a summary of each insecticide mixed with copper/lime and ethephon at 1, 2, and 3 pint rates. Based on these results, all four insecticides can be tank-mixed with copper/lime and ethephon with no reduced insecticidal efficacy. However, when insecticides are mixed with only copper/lime, the pH are considerably higher than with insecticides alone or when tank-mixed with ethephon. These results suggest that copper/lime and insecticides tank-mixes may not be effective for controlling insects in the orchard. Further studies are warranted to measure efficacy of insecticides when tank mixed with copper/lime.

Table 1. pH of all products individually when mixed with tap water.

	pH
Tap Water (NWMHRS)	7.1
Ethephon, 1 pt/100 gal	6.4
Ethephon, 2 pt/100 gal	5.2
Ethephon, 3 pt/100 gal	2.8
Cuprofix 20 DF	7.4
Lime 3 lbs	10.0
Lime 6 lbs	10.0
Warrior	7.5
Provado	7.6
Actara	7.5
Imidan	7.4

Table 2. pH of Warrior, Provado, Actara, and Imidan when tank mixed with lime, copper, and 3 rates of ethephon.

	pH
Warrior	7.5
Warrior, 3 lbs Lime, Cu	**10.9**
Warrior, 3 lbs Lime, Cu, 1 pt Ethephon	5.2
Warrior, 3 lbs Lime, Cu, 2 pt Ethephon	4.4
Warrior, 3 lbs Lime, Cu, 3 pt Ethephon	3.8
Provado	7.6
Provado, Lime, Cu	**8.9**
Provado, 3 lbs Lime, Cu, 1 pt Ethephon	5.2
Provado, 3 lbs Lime, Cu, 2 pt Ethephon	4.8
Provado, 3 lbs Lime, Cu, 3 pt Ethephon	4.2
Actara	7.5
Actara, Lime, Cu	**9.3**
Actara, 3 lbs Lime, Cu, 1 pt Ethephon	5.6
Actara, 3 lbs Lime, Cu, 2 pt Ethephon	5.4
Actara, 3 lbs Lime, Cu, 3 pt Ethephon	4.9
Imidan	7.4

Imidan, Lime, Cu	**9.2**
Imidan, 3 lbs Lime, Cu, 1 pt Ethephon	5.5
Imidan, 3 lbs Lime, Cu, 2 pt Ethephon	5.0
Imidan, 3 lbs Lime, Cu, 3 pt Ethephon	4.7

The information regarding pH of ethephon alone in water is also worth noting. As we expect, the pH of the water is lowered when ethephon, a plant growth regulator, is added to the tank. This lowered pH is needed for ethephon to work at its fullest potential—growers that buffer the water will reduce ethephon's ability to loosen ripening fruit. Growers should also note that as the amount of ethephon increases, 1pt, 2pt, and 3pt, there is a direct correlation of decreasing pH in the tank mix: 6.4, 5.2, 2.8, respectively. Growers should make sure that the products (both fungicides and insecticides) added to the tank for the ethephon spray do not have any pH sensitivities (ie. Imidan). Growers planning to use Delegate, the new spinetoram material labeled in cherry, for second generation obliquebanded leafroller larvae should not tank-mix this product with ethephon. At this time, Dow Agroscience feels this product is most efficacious at a pH of 6-8—much higher than the pH of a tank with 2 or 3pt rates of ethephon.

BIRD DAMAGE IN MI FRUITS
Erin Lizotte
IFP/IPM District Educator, MSU-E

As all fruit growers know, bird damage causes significant loss of fruit crops each year in this region. The last bird damage survey in Michigan was performed in 1972 and estimated tart cherry damage at 17.4%. These numbers are considered minor compared to losses in the wine grape and blueberry industries each year. We are lucky to have attracted the interest of Dr. Catherine Lindell, Dept of Zoology, MSU, who has worked extensively with bird pests in Costa Rica and has been visiting apple, cherry, and grape growers to learn more about our industry. Dr. Lindell will be helping us gather information on species structure and bird behavior in fruit systems.

We are distributing surveys to growers to record your observations on your farm. These surveys are meant to determine what species of birds are in the fruit, what they are doing in the orchard/vineyard, and how many of them are present. These surveys will be used to develop a season-long bird species profile for different crops. As we go into the busy harvesting season, this information becomes even more important, as most of the damage will take place as the fruit ripens.

Please go to http://www.maes.msu.edu/nwmihort/birdsurvey.pdf to print the survey form and fill out the survey for observations made during a one week period. You don't have to fill one out every week to participate as the information will be consolidated across counties. Bird surveys will also be available from the Research Station in paper form. The data collected in these surveys will be used to prove impact during grant application, and will help direct future research.

To return your survey via fax, please send it to (231)946-1404, attention Erin. You may also e-mail them as an attachment to taylo548@msu.edu.

"KEEP OUR FARMERS FARMING" AUCTION
The Northwest Michigan Horticultural Research Foundation will be having an auction on **October 4, 2008**. It will be held at **10:00 am** at the Horticultural Research Station, 6686 S. Center Highway in Leelanau County. The Foundation is currently seeking items for the auction. Individuals or businesses can donate or consign farm equipment, lawnmowers, 4 wheelers, antiques, collectibles, or miscellaneous items worth over $25.00. The commission rate on consigned items is 10% to the Auction House, 20% to the Foundation and 70% to the individual or business. Proceeds will be used to fund horticultural research in northwest Michigan. Auction services will be provided by Century Asset Management, Inc. Everyone is welcome to attend.

Questions should be addressed to:

Jeff Winegard, Event Coordinator, Phone: (231) 348-8273 E-mail: winegard@charter.net
Dennis Kubesh, Auctioneer, Phone: (231) 228 6667 Fax (231) 228-7518 Web : www.centuryassets.com

Information on cherries is available at the new cherry website: http://www.cherries.msu.edu/
Insect and disease predictive information is available at:
http://www.enviroweather.msu.edu/home.asp

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ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1, 2008

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Rob Sirrine
Leelanau Extension Director

July 22, 2008

GROWING DEGREE DAY ACCUMULATIONS THROUGH JULY 21st AT THE NWMHRS

Year	2008	2007	2006	2005	2004	2003	18yr. Avg.
GDD42	1810	2104	2121	2179	1682	1794	1906.4
GDD50	1114	1340	1341	1435	980	1076	1194.1

Growth Stages at NWMHRS (7/21/08—3:00 p.m.)
Apple: 41-47 mm
Pear: Bartlett: 35 mm fruit
Sweet Cherry: Hedelfingen: Harvest
Napoleon: Harvest
Gold: Harvest
Tart Cherry: Montmorency: Early harvest
Balaton: 23 mm
Apricot: Harvest
Plum: 27 mm
Grape: Berry touch

Weather Report

We have had very interesting weather here in the northwest. The rainfall has been extremely variable where one weather station reports nothing to another less than 20 miles away reports over an inch of rainfall. This spotty precipitation has been difficult to predict fungicide applications this season. Hail was also reported in the southern portions of Leelanau County. During the past week, we have had high humidity and have had much cloud cover, particularly unusual for July. Temperatures have been cooler than our past July's as well. We have accumulated 1810GDD base 42 and 1114 base 50 so far this season, and these accumulations are ~100GDD behind our 18-year average.

Crop Report

Sweet cherry harvest is in full swing in the region. Quality of sweet cherries has been a challenge with frost scars, cracking from all the varied rainfall, and the American brown rot and Alternaria pressure is extremely high with the elevated humidity. Tart cherry harvest has also begun this

week. Growers may be hard pressed to get off a moderate to high crop load in sweet cherries while the low yielding tarts are already ripening. Sweet cherry size is smaller than anticipated with the adequate rainfall this spring. Tart cherry size is good due to the lower crop load in most blocks. Balaton yields are particularly low in many orchards. Red raspberry harvest has begun in the region.

Pest Report
Cherry

Oblique banded leafroller populations are high at the Northwest Station with over 50 in one trap this week. **Cherry fruit fly** numbers are also quite high, with 68 being trapped in one unmanaged station block. **Lesser** and **greater peach tree borers**, as well as **American plum borers**, are still emerging at relatively high numbers with up to 20 per trap at the station. We continue to see symptoms of **cherry leaf spot** intensifying, and the warm, wet weather is favorable for further spread of the fungi. **American brown rot** pressure is high, particularly in dark sweet cherry blocks. **Powdery mildew** has also been observed throughout the region with fruit infections occurring in one block of tart cherries at the station. **Alternaria fruit rot** seems to be more problematic this year. Alternaria is usually considered a minor problem on sweet and tart cherries. Lesions are circular, sunken and green-black in color. The disease is most severe on overripe fruit or where rain induced cracking exposes flesh to infection.

Apple

The station traps are catching an average of 20 **codling moths** per trap. **Spotted tentiform leafminer** numbers are up, with almost 300 caught in one station trap. We are continuing to see the aftermath of early **fire blight** infections in susceptible apple varieties around the region. **European red** and **two-spotted spider mites** are reaching threshold levels in some area orchards**. Green apple aphids** have also been reported by area scouts.

Grape

Downy mildew has been found in area vineyards, and we are starting to see **grape berry moth** webbing in clusters. **Potato leafhopper** populations seem to be relatively low at this time, which is surprising considering the spring storms this year.

ALTERNARIA FRUIT ROT IN CHERRIES
George Sundin, MSU Department of Plant Pathology

With a few exceptions, Alternaria fungi are considered opportunistic pathogens that are only able to grow on damaged or aging plant tissues. This is also the case in fruit crops, where Alternaria occurs mostly on overripe or damaged fruit. Typically, as a fruit ripens, it loses most of its defense mechanisms and can be easily colonized by pathogens that it would otherwise be resistant to. Alternaria fruit rot can be recognized as a dark-green to black, velvety layer of fungus spores in soft or sunken areas of the fruit.

Alternaria fruit rot occurs on both sweet and tart cherries. This disease is typically a minor problem in orchards but can become important if fruit become overripe or are injured, by cracking for example. Large circular, slightly sunken lesions appear on fruit that eventually become flattened and wrinkled. These lesions become black in color because of the spore mass of the fungus. Alternaria rot can also be a problem in storage again with infection initiated in injured fruit. Since this is typically a minor disease problem, there is little information on effective fungicides for control. The best way to control this disease is to avoid letting fruit become overripe on trees.

PREDICTED PEAK 2008 APPLE HARVEST DATES

Phillip Schwallier, District Horticulture Educator and Station Coordinator
Amy Irish-Brown, District ICM Educator
Clarksville Horticultural Experimentation Station

Apple maturity for 2008 is expected to be close to the long term normal date and 7 to 10 days behind last year. Bloom dates were behind last year for the most part and

days behind last year. Bloom dates were behind last year for the most part and temperatures during and after bloom were cold. This results in a prediction of delayed maturity. However, actual harvest dates for this year may differ from predicted dates for 4 reasons. First, the spring multiple freezes killed or damaged bloom on older wood including the king flowers. With bloom on older wood being reduced, many of the fruits on the trees are borne on 1 year old wood, which tends to bloom up to a week later. Second, where cropload is light, the fruit will mature a few days earlier than our predictions. Heavy cropload trees will mature a week after our predictions. This year there is quite a variation in croploads, but most trees are light. Third, there was considerable variation in bloom dates from block to block and orchard to orchard. Some blocks bloomed 3 to 5 days after a neighboring block. There was also bloom variation up and down hills. Fourth, temperatures during bloom were quite cold causing an extended bloom which contributes to a less accurate prediction.

This year's weather give us predicted harvest dates (Table 2) as much as 4 days ahead to 5 days later than the long term normal, depending on the variety and location. These predicted harvest dates are for the center or peak harvest of these varieties for CA storage. This year the state will harvest apples roughly 5 to 17 days behind last year (Table 2) predictions.

Hot temperatures during July and August will hasten the maturity of some varieties. Gala is notorious for ripening early when late summer temperatures are above normal. Other varieties are less prone to hot temperatures advancing fall maturity. Still other varieties ripen when cold temperatures occur at near harvest time.

The normal harvest dates for other varieties are listed in Table 3 for the Grand Rapids area. This year's 2008 predicted dates are a rough estimate based on the McIntosh, Jonathan and Red Delicious predicted dates. Other areas of the state should adjust non-predicted varieties based on their own history.

Table 1. 2008 predicted peak harvest dates

Full bloom date				**Predicted harvest date**			
Station	**McIntosh**	**Jons**	**Reds**	**McIntosh**	**Jons**	**Reds**	**Observer**
SWMREC	5-6	5-7	5-7	9-13	9-22	9-28	Shane
Deerfield	5-7	5-8	5-8	9-12	9-25	10-1	Tritten
Flint	5-8	5-9	5-9	9-12	9-23	9-29	Tritten
Peach Ridge	5-9	5-11	5-11	9-14	9-27	10-3	Schwallier
Ludington	5-15	5-17	5-17	9-19	10-3	10-9	Danilovich
NWMHRS	5-21	5-22	5-22	9-21	10-13	10-19	Rothwell

Table 2. 2008 predicted peak harvest dates compared to normal and last year

Days relative to normal *	**Days relative to last year***

Station	McIntosh	Jons	Reds	McIntosh	Jons	Reds
SWMREC	-3	-1	+0	+17	+7	+7
Deerfield	-4	-4	+1	+11	+10	+9
Flint	-2	2	+3	+9	+11	+10
Peach Ridge	0	-1	+1	+13	+8	+7
Ludington	+3	0	+5	+5	+10	+12
NWMHRS	+1	-3	+4	+12	+5	+5

* - = days before, + = days later

Table 3. Normal peak harvest dates for varieties for the Grand Rapids area

Variety	Normal date	2008 predicted date
Paulared	8-24	8-24
Gingergold	8-26	8-26
Gala	9-10	9-11
McIntosh	9-15	9-14
Honeycrisp	9-18	9-18
Empire	9-22	9-21
Jonathan	9-28	9-27
Jonagold	9-28	9-27
Golden Delicious	10-2	9-30
Red Delicious	10-5	10-3

Idared	10-10	10-9
Rome	10-15	10-14
Fuji	10-25	10-25
Braeburn	10-25	10-25
Goldrush	11-1	10-30

REMINDER ABOUT 2008 OPEN HOUSE

Although we are in the thick of cherry harvest, we want to remind growers and all friends of the Northwest Michigan Horticultural Research Station about the upcoming Open House. This year's Open House will be held on Thursday, 21 August. Educational sessions will be held in the afternoon followed by wine tasting and dinner at 6pm. We hope everyone will be able to attend this post-cherry harvest event!

NW WINE GRAPE IPM "FIRST FRIDAY" MEETING AND HARVEST BBQ
Paul Jenkins
MSU Small Fruit Education Coordinator

Date: **Friday, August 1**
Location: **NWMHRS**
Time: **3:00 – 5:00PM**

Paul Jenkins will lead a discussion on sustainable grape production, including a new workbook for Michigan growers and vineyard managers to assess on-farm sustainability. The meeting will include an end of season potluck; bring a dish to pass and your favorite beverage! For more information, contact Paul at jenki132@msu.edu or 517-432-7751.

BIRD DAMAGE IN MI FRUITS
Erin Lizotte
IFP/IPM District Educator, MSU-E

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WEBSITES OF INTEREST

Weekly CIAB Raw Product Report

http://www.cherryboard.org/Production2008.htm

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ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1, 2008

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July 29, 2008

GROWING DEGREE DAY ACCUMULATIONS THROUGH JULY 28th AT THE NWMHRS

Year	2008	2007	2006	2005	2004	2003	18yr. Avg.
GDD42	2002	2320	2334	2383	1854	1970	2100.7
GDD50	1250	1501	1498	1583	1095	1197	1332.4

Weather Report

The past week has brought in pleasant summer temperatures. Daytime temperatures have been in the upper 70's, and nighttime temperatures have been cool—mid-50's to low 60's. Overall, we have accumulated 2002 GDD base 42 and 1250 base 50. Rainfall was variable again across the northwest, where here at the NWMHRS we received negligible precipitation while the Benzonia weather station recorded 0.5" of rainfall.

Crop Report

The sweet cherry harvest is winding down, and most growers in the region are finished, except for Northport area growers who anticipate to be completed in the next few days. American brown rot has been a particular challenge this season, and many growers have abandoned blocks or partial blocks due to epidemic levels of this disease. Tart cherry harvest is in full swing. The crop size is on the small size, which has lead to larger fruit. Quality has also been a challenge in this crop, and wind whip seems to be the main culprit at the processor.

Pest Report

Cherry

Oblique banded leafroller numbers are still quite high, with an average of 25 per trap in the station trap line this week. **Lesser peach tree borer** and **American plum borer** numbers are down with less than ten of the station trap lines. **Greater peach tree borer** emergence is averaging around 20 moths per trap this week. **Cherry fruit fly** numbers continue to be a concern; at the NW station, we trapped 86 flies and reports from area scouts are reporting similar trap catches in area orchards. **Powdery mildew** is quit prevalent on new growth in area tart cherry orchards. **American brown rot** is also being

prevalent on new growth in area tart cherry orchards. Although brown rot is also being observed in Balaton and Montmorency blocks where wind whip was a problem. American brown rot levels in some area sweet cherry orchards have prompted many growers abandon harvest in some blocks. It is important to shake unsalable cherries onto the ground to prevent inoculum buildup as the fungus overwinters in dried "mummy" cherries on the trees. Lastly, as we move into the postseason, controlling **cherry leaf spot** should remain at the forefront of our minds. A postharvest application of chlorothalonil (Bravo) has been shown to significantly increase the retention of leaves into the fall, increasing a tree's ability to accumulate carbohydrates, which can ultimately minimize winter injury and poor fruit set in subsequent seasons.

Apple

Spotted tentiform leafminer trap catches continue to be high with 186 in the station trap line this week. An average of 7 **codling moths**, 8 **oblique banded leafrollers** and 6 **Oriental fruit moths** were recorded at the station on Monday. According to the codling moth PETE degree day model (based on the station biofix date of 6/3), we have accumulated 951 DD50, and should begin to see second generation adults emerging sometime next week at approximately 1,150 DD50 post-biofix. We'll begin looking for the second flush of oriental fruit moth in the coming weeks. One area scout reported an **apple maggot** in mid July, but we have not trapped any at the station. Apple maggot emergence occurred almost three weeks ago in southern Michigan, so we'll be expecting them to pop up in our region any day now. Growers are encouraged to have red sticky ball traps in all their blocks to effectively monitor apple maggot. **European red** and **two-spotted spider mites** are reaching threshold levels in some area orchards. **Green apple aphids** are also being reported by area scouts.

Grape

Little has changed since the last scouting report was released. **Powdery mildew (PM)** levels remain low as we move out of the "super" susceptible fruit stage in most area vineyards. However, in the unsprayed rows at the NWMHRS, PM is visible on leaves and fruit clusters. **Downey mildew** has been found in area vineyards, and we are starting to see **grape berry moth** webbing in clusters. A few Japanese beetles have been sighted feeding on raspberries.

OBLIQUEBANDED LEAFROLLER LARVAE WANTED!
N.L. Rothwell, District Horticulturist

Obliquebanded leafroller (OBLR) appears to be on the rise in both cherry and apple orchards in the region. We are interested in exploring if organophosphate (OP) resistance is the cause of our increasing populations. The method to determine if OBLR are resistant to OP's is quite cumbersome and requires collecting larvae from different orchards (both cherry and apple). At this time, second generation larvae are present in orchards, and we need to locate blocks where OBLR has been problematic. Please contact the NWMHRS if a particular orchard has or has had OBLR: 231-946-1510.

BROWN ROT MANAGEMENT IN UNHARVESTED ORCHARDS
Erin Lizotte, IFP/IPM District Educator, NWMHRS

As many growers are aware, American brown rot (ABR) has been a huge issue this season. Brown rot has been reported at epidemic levels in many area sweet cherry orchards, prompting many growers to leave blocks or portions of blocks unharvested. We suspect that the wet spring and recent warm weather provided the perfect conditions for exponential spread of the fungi. Additionally, many areas suffered hail, wind, and/or frost damage increasing fruit susceptibility; these events provided the perfect set of circumstances for

allowing brown rot infections to establish themselves early, well before the fruit was ripe.

Many initial ABR infections come from the "mummies" (dried, black cherries that remain on trees after harvest) that serve as an overwintering site for the fungi. Growers that are not harvesting sweet cherries due to excessive ABR in an orchard are likely setting themselves up for repeat ABR outbreaks next season. Therefore, growers that do not intend to harvest

up for repeat ABR outbreaks next season. Therefore, growers that do not intend to harvest cherries for commercial purposes should shake the fruit onto the ground to prevent the build up of inoculum in the orchard next spring. Given the high levels of infection this season, the number of mummies overwintering with ABR will provide a lot of infection potential for 2009. It is also important to note that although tart cherries are less susceptible to ABR, we have been observing higher than usual infections in Montmorency and Balaton orchards, which reinforces the importance of reducing inoculum levels to protect adjacent orchards.

POST HARVEST SPRAYS FOR CHERRY LEAF SPOT

Nikki Rothwell, NWMHRS
George Sundin, Plant Pathology, MSU

Cherry leaf spot is the most important fungal disease of tart cherry in Michigan. The leaf spot fungus *Blumeriella jaapii* infects leaves with symptoms first appearing on upper leaf surfaces as small purple spots. As spots accumulate on leaves, the leaves turn yellow and fall. The amount of lesions required to cause leaf yellowing and drop is variable. Late summer (August, early September) defoliation reduces the ability of trees to store photosynthate in roots leading to an overall loss of vigor and leaving trees more susceptible to killing by winter injury. Early-defoliated trees also typically exhibit reduced flower bud formation and often set less fruit the following season.

As harvest will be winding down for cherries, many growers will be considering post-harvest applications for cherry leaf spot (CLS). Considering the considerable amount of precipitation early this season, the disease pressure has been considerably higher compared to seasons past. We have also seen CLS lesions showing up on cherry leaves in the region, and we have observed some defoliation in some sites. For these reasons, growers may want to opt for making a post-harvest application for CLS.

We also cannot guess as to the weather for the remainder of July and into August. With the inability to forecast our future weather, growers will have to decide soon if he/she will need a post-harvest application. In addition, growers often do not notice CLS until they observe lesions forming on the leaves and/or defoliation, and at that point, it is often too late for control. At this time, growers should be scouting the tops of trees for yellowing leaves or for defoliation under the tree. These indicators are usually the first signs of cherry leaf spot infections that can be easily spotted by growers busy with harvest. Tops of trees tend to be more infected with CLS due to reduced spray coverage. Growers also need to keep in mind that even a relatively low level of infection now could spread rapidly if sufficient rain events occur in the coming weeks.

Leaves typically fall from branches a few weeks after they begin to show disease symptoms. Thus, the goal of a cherry leaf spot management program is to maintain a healthy canopy on trees at least through the end of September. This recommendation would ensure an adequate amount of leaves on trees into late October and beyond.

The fungicide of choice for leaf spot control after harvest is chlorothalonil (Bravo). Bravo 82.5 WDG at a rate of 3 lbs./A provides excellent leaf spot control. In addition, Bravo is a broad spectrum fungicide and thus is not subject to fungicide resistance concerns.

CHERRY PILOT PROGRAM MEETING

Matt Kamphoefner, Specialty Crops Coordinator

The Federal Crop Insurance Corporation's Board of Directors approved the implementation of the Actual Revenue History (ARH) Cherry Pilot Program on April 24, 2008. This pilot plan's design replaces the Fixed Dollar plan of insurance for cherries for the 2009 crop year. The Michigan counties approved for the program are Grand Traverse and Leelanau. On **August 19, 2008**, RMA will be sponsoring an ARH Cherry meeting in which you all are invited to attend. Watts and Associates, the program developer, will be presenting at the informational seminar. This will be an excellent opportunity for Michigan cherry growers to become familiar with the design of the new insurance program for crop year 2009.

Where: NW Michigan Horticultural Research Station
6686 S Center Highway
Traverse City, Michigan 49684

Traverse City, Michigan 49684
Time: 1:30-3:30 p.m.

CAN YOU GENERATE ENERGY ON YOUR FARM? THE ANSWER IS BLOWING IN THE WIND

EAST LANSING, Mich. -- Farmers interested in finding out whether building a windmill to generate energy or income might be feasible for their operations can apply for Michigan State University's (MSU's) anemometer loan program.

Ten anemometers (devices used to measure wind velocity) are available to qualified agricultural producers from MSU in cooperation with the U.S. Department of Energy. The anemometer loan is meant to help farmers determine if they have sufficient wind resources to benefit from the installation of small wind turbines.

Anemometers usually cost about $4,000, but these devices will be made available to selected producers for $250. The fee offsets installation costs.

Using the anemometers will help farmers determine the feasibility of setting up small wind generators that would reduce their dependence on fossil fuels.

To be eligible for the anemometer loan program, the property owner must approve the installation, and the anemometer must be used in an agricultural setting in Michigan. MSU Extension will select the borrowers, manage the lending of the anemometers, and provide technical support for installation, operation and analysis of the wind speed data collected over the loan period.

Applications for the loan program are available at **http://web1.msue.msu.edu/wind**; the application deadline is Aug. 31.

For more information, contact Eric Wittenberg, MSU anemometer loan program coordinator, by e-mail at **wittenbe@msu.edu** or by phone at 517-355-6650; or Steve Harsh, MSU professor of agricultural, food and resource economics, at **harsh@msu.edu** or 517-353-4518.

REMINDER ABOUT 2008 OPEN HOUSE

Although we are in the thick of cherry harvest, we want to remind growers and all friends of the Northwest Michigan Horticultural Research Station about the upcoming Open House. This year's Open House will be held on Thursday, 21 August. Educational sessions will be held in the afternoon followed by wine tasting and dinner at 6pm. We hope everyone will be able to attend this post-cherry harvest event!

NW WINE GRAPE IPM "FIRST FRIDAY" MEETING AND HARVEST BBQ
Paul Jenkins
MSU Small Fruit Education Coordinator

Date: **Friday, August 1**
Location: **NWMHRS**
Time: **3:00 – ???**

Paul Jenkins, MSU Fruit Education Coordinator, will lead a discussion on sustainable grape production, including a new workbook for Michigan growers and vineyard managers to assess on-farm sustainability. The meeting will include an end of season potluck where Plevalean hamburgers and all the fixings will be provided. Please bring a dish to pass and your favorite beverage! For more information, contact Paul at **jenki132@msu.edu** or 517-432-7751 or the NWMHRS at 231-946-1510.

BIRD DAMAGE IN MI FRUITS
Erin Lizotte
IFP/IPM District Educator, MSU-E

As all fruit growers know, bird damage causes significant loss of fruit crops each year in

As all fruit growers know, bird damage causes significant loss of fruit crops each year in this region. The last bird damage survey in Michigan was performed in 1972 and estimated tart cherry damage at 17.4%. These numbers are considered minor compared to losses in the wine grape and blueberry industries each year. We are lucky to have attracted the interest of Dr. Catherine Lindell, Dept of Zoology, MSU, who has worked extensively with bird pests in Costa Rica and has been visiting apple, cherry, and grape growers to learn more about our industry. Dr. Lindell will be helping us gather information on species structure and bird behavior in fruit systems.

We are distributing surveys to growers to record your observations on your farm. These surveys are meant to determine what species of birds are in the fruit, what they are doing in the orchard/vineyard, and how many of them are present. These surveys will be used to develop a season-long bird species profile for different crops. As we go into the busy harvesting season, this information becomes even more important, as most of the damage will take place as the fruit ripens.

Please go to **http://www.maes.msu.edu/nwmihort/birdsurvey.pdf** to print the survey form and fill out the survey for observations made during a one week period. You don't have to fill one out every week to participate as the information will be consolidated across counties. Bird surveys will also be available from the Research Station in paper form. The data collected in these surveys will be used to prove impact during grant application, and will help direct future research.

To return your survey via fax, please send it to (231)946-1404, attention Erin. You may also e-mail them as an attachment to **taylo548@msu.edu**.

"KEEP OUR FARMERS FARMING" AUCTION

The Northwest Michigan Horticultural Research Foundation will be having an auction on **October 4, 2008**. It will be held at **10:00 am** at the Horticultural Research Station, 6686 S. Center Highway in Leelanau County. The Foundation is currently seeking items for the auction. Individuals or businesses can donate or consign farm equipment, lawnmowers, 4 wheelers, antiques, collectibles, or miscellaneous items worth over $25.00. The commission rate on consigned items is 10% to the Auction House, 20% to the Foundation and 70% to the individual or business. Proceeds will be used to fund horticultural research in northwest Michigan. Auction services will be provided by Century Asset Management, Inc. Everyone is welcome to attend.

Questions should be addressed to:

Jeff Winegard, Event Coordinator, Phone: (231) 348-8273 E-mail: winegard@charter.net
Dennis Kubesh, Auctioneer, Phone: (231) 228 6667 Fax (231) 228-7518 Web : **www.centuryassets.com**

WEBSITES OF INTEREST

Weekly CIAB Raw Product Report
http://www.cherryboard.org/Production2008.htm
Information on cherries is available at the new cherry website: **http://www.cherries.msu.edu/**

Insect and disease predictive information is available at:
http://www.enviroweather.msu.edu/home.asp

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

ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1, 2008

Please send any comments or suggestions regarding this site to:
Bill Klein, **kleinw@msu.edu**

Last Revised: 7-29-08

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