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Northern Michigan FruitNet 2005 Weekly Update

NW Michigan Horticultural Research Station

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District Horticulturist

District Fruit IPM Agent

Farm Mgr, NWMHRS

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Agricultural Agent

Leelanau Extension Director

June 7, 2005

Growing Degree Day Accumulations at NWMHRS as of June 6, 2005

Year	2005	2004	2003	2002	2001	15 yr. Avg.
GDD42	807	644	681	538	758	707.1
GDD50	422	300	323	270	382	361.8

GROWTH STAGES AT NWMHRS (6/6/05)

Apple: Red Delicious: 10 mm fruit; Mac: 13 mm fruit

Pear: 13 mm fruit

Sweet Cherry: Hedelfingen: 13 mm fruit; Gold: 11 mm fruit

Tart Cherry: 11 mm fruit

Apricot: 28 mm fruit

Plum: 8mm fruit

Grapes: Chardonnay: 10 – 16" shoots

WEATHER

The past week has been warm and dry at the NWMHRS. Degree days base 42 at the NWMHRS a week ago were 32 GDDs ahead of the past 15 year average, and they are now 100 GDDs ahead of average. Soil moisture is getting unusually dry for this early in the season due to low precipitation in the region.

CROP REPORT

Apples: Temperatures have been very good for applying **apple thinners**. Isolated **apple scab** symptoms have been reported in Benzie and Leelanau counties. **Fireblight** still remains a concern in susceptible varieties for the remainder of the week as long as tag bloom lingers in trees. **Codling moth** catches are on the rise this week, and **oriental fruit moth** has also made a big jump, with an average of 60 moths/trap. **Obliquebanded leaf roller** larvae are in high numbers in abandoned apple orchards. **Spotted tentiform leaf miner** catches are still on the decline.

Cherry: Small amounts of **cherry leaf spot** were found in isolated areas in Leelanau County. **Plum curculio** oviposition scars have been detected in multiple stone fruit orchards, and we are seeing **green fruitworm** leaf and fruit feeding. We are still capturing **American plum borers**. **Lesser peachtree borers** have been captured for the first time, and we averaged 25

borers/trap. **Sweet cherry** fruit set in NW MI is generally heavy. **Tart cherry** fruit set varies considerably. Trees that bloomed during the warm weather on May 8 and 9 generally set good crops, whereas orchards in cooler areas that crept into bloom during the cold period from May 11 to 17 have not fared so well.

MISCELLANEOUS

Sweet Cherry Variety Showcase

International Plant Management and Michigan State University Extension have combined to sponsor a Sweet Cherry Variety Showcase at Clarksville Horticultural Experiment Station on July 7.

The showcase will feature a new high tunnel covering a block of producing Rainier and Sweetheart cherries. The structure was installed this spring and will be used to study the feasibility of high tunnels for sweet cherry production in Michigan.

The showcase will also feature sweet cherry samples from Michigan, New York, Washington and Oregon. Speakers will discuss outstanding new varieties, high tunnel mechanics and opportunities and sweet cherry marketing in Michigan.

The program will begin at 1 p.m. Refreshments will be served. For more information, call International Plant Management at 1-800- 424-2765.

Irrigation

D. J. Nisbet

By Jim Nugent

As we've said before, most fruit crops do best when rainfall plus irrigation supplies water at the rate of about 75% of the evaporation rate from a pan of water sitting in the sun and wind. The following table indicates the evaporation rate for the 2005 season since May 1. I generally use May 1 as the beginning point for this calculation because it approximates a time when foliage is developing in many tree fruit crops. Prior to foliage development, the tree does not need much water as transpiration of water occurs through leaf tissue.

The table below compares rainfall at the NWMHRS to 75% of the rate of evaporation. Note that the evaporation rate is generally increasing at this time of year and it typically peaks in July. Also, as the season progresses the leaf surface is expanding. The 75% of evaporation figure is actually over stating water use during early season when foliage is limited, but may actually be too conservative of an estimator when foliage is well developed and fruit is in final swell. Dr. Ron Perry suggests that stone fruit should receive water equal to 100% of evaporation during a 4 to 5 week period prior to harvest. Trees grown on certain dwarfing rootstocks are particularly prone to drought stress. These trees need a steadier source of water than rainfall normally provides and some need more water than the normal 75% of evaporation rate. I suggest using the following as guidelines:

Apples on semi-dwarf rootstock and cherries on standard rootstocks – rain plus irrigation should equal approximately 75% of evaporation.

Sweet cherries on Gisela rootstocks – rain plus irrigation should equal 100% -125% of evaporation, rather than 75%.

Apples on M9 and similar rootstocks (except Mark) – rain plus irrigation should equal 100% - 125% of evaporation.

Apples on Mark rootstock – rain plus irrigation should equal 150% of evaporation.

Bearing trees carrying little to no fruit in 2005 will not need as much water as trees with normal crop loads. I estimate that water needs when fruit is not present are likely reduced by 25% to 33% (generally less reduction prior to terminal bud set and more reduction after terminal bud set). Irrigation is particularly important in young trees needing to fill their space. Be particularly conscientious about keeping adequate water on the above-mentioned dwarfing rootstocks.

Seasonal Evaporation & Precipitation				
Beginning May 1, 2005, at NWMHRS				
<u>Date</u>	<u>Evap/week (in.)</u>	<u>75% of Evap/week</u>	<u>Rainfall/wk at NWMHRS (in.)</u>	<u>Rainfall minus 75% of Evaporation</u>
5/2	0.31	0.23	0.01	-0.22
5/9	1.08	0.81	0.07	-0.74
5/16	0.76	0.57	0.53	-0.04
5/23	1	0.75	0.87	0.12
5/30	1.32	0.99	0.07	-0.92
6/6	1.6	1.20	0.05	-1.15
Totals	6.07	4.55	1.60	-2.95

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<http://www.maes.msu.edu/nwmihort/faxnet.htm>

[ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1, 2005](#)

Please send any comments or suggestions regarding this site to:

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Last Revised: 6-07-05

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Northern Michigan FruitNet 2005
Weekly Update
NW Michigan Horticultural Research Station

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June 14, 2005

Growing Degree Day Accumulations at NWMHRS as of June 13, 2005

Year	2005	2004	2003	2002	2001	15 yr. Avg.
GDD42	1037	822	806	704	930	867.0
GDD50	597	422	392	379	498	466.3

GROWTH STAGES AT NWMHRS (6/13/05)

Apple: Red Delicious: 21 mm fruit; Mac: 21 mm fruit
Pear: 21 mm fruit
Sweet Cherry: Hedelfingen:14 mm fruit; Gold: 11 mm fruit
Tart Cherry: 12 mm fruit
Apricot: 30 mm fruit
Plum: 18 mm fruit
Grapes: Chardonnay: 10 – 16" shoots

WEATHER

The past week has continued to be warm and dry at the NWMHRS. Degree days base 42 at the NWMHRS a week ago were 100 GDDs ahead of the past 15 year average, and they are now 170 GDDs ahead of average. Soil moisture is unusually dry due to low precipitation in the region.

CROP REPORT

Apples: Isolated **apple scab** symptoms have been reported in NW Michigan, but due to severe lack of rainfall, there has been very few lesions detected. We are predicted to be near the end of primary scab, but again with the small amount of moisture, there may be spores yet to be discharged with the next rain event. On Saturday, June 11, we reported a wetting event, which resulted in an apple scab infection in Eastport, Kewadin, Elk Rapids, and Bear Lake. **Codling moth** catches are still on the high side, with over 30 moths/trap. **Oriental fruit moth** has declined to half the population of last week: 30 moths/trap. **Spotted tentiform leaf miners** catches were very low this week.

Cherry: We are still finding isolated pockets of **cherry leaf spot (CLS)** around NW Michigan, although Saturday's wetting event result in a light CLS infection in many areas. **Powdery mildew** has also been reported in a few sites on cherry but less than we expected with this hot, dry weather. **European brown rot** has been reported in high quantities in both Balaton and Montmorency cherry blocks this season. The first adult **cherry fruit fly** was caught in the unsprayed Entomology Block

and monitoring cherry blocks this season. The first adult **cherry fruit fly** was caught in the unsprayed Entomology block at the NWMHRS on **JUNE 13TH**. **Plum curculio** (PC) oviposition scars have been detected in multiple stone fruit orchards, and many of our organic blocks have been hard hit. To control PC using the postponed insect treatment strategy (PITS), sprays should be applied at 375DD after full bloom. We are still seeing **green fruitworm** leaf and fruit feeding. **American plum borers** and **lesser peachtree borers** are on the decline this week. **Rose chafers** have started to emerge; we have seen them on cherry and grape.

Grape: Despite our drought conditions, grape shoot growth has been very rapid during the past week. Most cultivars have 12-18 inch long shoots and are now in the pre-bloom growth stage. It is an excellent time to remove suckers and time to tack shoots. There have been no reports of significant **powdery mildew** infections, and even the un-sprayed vines at the NWMHRS appear to be very free of all foliar diseases thus far. However, our humid weather calls for careful vigilance against powdery mildew infection during bloom.

Rose chafer adults are now active and fairly numerous in some areas. The first **hornworm** larvae have also appeared (very small at this time). These two pests will do little harm to fruit buds or berries, so they can be tolerated in many vineyards. They are of greatest concern in newly planted and young vineyards where maintaining every bit of foliage is important. **Potato leafhopper** adults have arrived in the area – look for these bright yellowish-green leafhoppers on shoot tips and leaves. Their feeding injury causes leaf discoloration and deformity, and on some varieties a significant shortening of internodes. Only a few potato leafhoppers per vine can cause serious injury, so scout for these regularly and be ready to make applications for this pest.

MISCELLANEOUS

Managing internal feeding fruit pests of cherry

Dr. John Wise and Dr. Larry Gut, Dept. of Entomology, MSU

There are two primary internal feeding insects that infest cherry fruit, **plum curculio** and **cherry fruit fly** (including eastern cherry fruit fly and black cherry fruit fly). The plum curculio (PC) is active earlier in the season than the cherry fruit fly (CFF), but there is often significant overlap in mid- to late June where both pests are a threat to the cherry crop. The PC overwinters as an adult and can be present in orchards as early as bloom time, but usually will not begin laying eggs into fruit until shuck-split or shuck-off period. The CFF emerges as an adult from the soil around mid-June. Females will begin seeking ripening fruit to lay eggs into 7 to 10 days later; this oviposition activity lasting through cherry harvest and after.

Cherry fruit fly control options include insecticides in the organophosphate (OP) class, synthetic pyrethroids, and more recently the neonicotinoids, Fruit Fly Bait and Particle Film. The OP's, like Guthion and Imidan, have been the standard for control because of their contact activity on CFF and long stable residues. The synthetic pyrethroids, like Asana and Warrior, also have contact poisons activity on CFF adults, but generally provide only moderate control because of short residual activity

Two new control options on the market are the neonicotinoids Provado and Actara, which have performed well in field efficacy trials. Provado has a 7-day pre-harvest interval, while the PHI for Actara is 14 days. Thus, Provado provides a good option for CFF control at that critical window of a week or so before harvest. Additionally, it is registered for use in both sweets and tarts. Since Actara is also active on PC, economical options for using this material would be a single application at 4.5 to 5.5 ounces/acre at second cover or a few weeks before harvest when control of both pests is often needed. Organic cherry growers may want to consider use of GF120 Fruit Fly Bait, Entrust (organic formulation of SpinTor) or Surround WP (kaolin). GF120 Fruit Fly Bait has been shown to provide effective control on various fruit fly species, but requires precise timing (CFF pre-oviposition period) and specialized application equipment. Entrust has shown to be active on fruit fly species but starting sprays during the pre-oviposition period on a 7-day interval is important for good performance. Field trials with Surround WP have shown good fruit protection from CFF when used on large blocks when coverage is maintained.

PC control options include insecticides in the organophosphate (OP) class, synthetic pyrethroids and more recently the neonicotinoids. One or more sprays are generally applied beginning at shuck fall, or earlier if PC adults are detected in the orchard or densities are suspected to be high. From second cover to a few weeks before harvest is a critical time for PC

control. At this time, adults are continuing to lay eggs and the hatching larvae will be present in fruit at harvest. The OP's, like Guthion and Imidan, have generally been the standard for control because of their strong contact activity on PC and long stable residues. The synthetic pyrethroids, like Asana and Warrior, also have the strength of being contact poisons and are very fast acting, but their residual activity is generally shorter than the OPs.

The newest control option on the market is the neonicotinoid, Actara, which has performed very well in field efficacy trials at the MSU Trevor Nichols Research Complex and Northwest Michigan Horticultural Research Station. This compound is unique in that it is lethal to PC as a contact poison when initially applied, but then as a translaminar (i.e. locally systemic)

unique in that it is retinal to PC as a nerve poison when initially applied, but then as a transaminar (i.e., locally systemic) material provides long lasting fruit protection. Organic cherry growers may want to consider use of Surround WP (kaolin). Field trials have shown it to provide measurable fruit protection when used on large blocks when coverage is maintained.

Seasonal Evaporation & Precipitation				
Beginning May 1, 2005, at NWMHRS				
<u>Date</u>	<u>Evap/week (in.)</u>	<u>75% of Evap/week</u>	<u>Rainfall/wk at NWMHRS (in.)</u>	<u>Rainfall minus 75% of Evaporation</u>
5/2	0.31	0.23	0.01	-0.22
5/9	1.08	0.81	0.07	-0.74
5/16	0.76	0.57	0.53	-0.04
5/23	1.00	0.75	0.87	0.12
5/30	1.32	0.99	0.07	-0.92
6/6	1.60	1.20	0.05	-1.15
6/13	1.90	1.43	0.12	-1.31
Totals	7.97	5.98	1.72	-4.26

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[ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1, 2005](#)

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@msu.edu

Last Revised: 6-14-05



Northern Michigan FruitNet 2005
Weekly Update
NW Michigan Horticultural Research Station

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[Duke Elsner](#) Agricultural Agent [Jim Bardenhagen](#) Leelanau Extension Director

June 21, 2005

Growing Degree Day Accumulations at NWMHRS as of June 20, 2005

Year	2005	2004	2003	2002	2001	15 yr. Avg.
GDD42	1192	969	962	837	1126	1034.1
GDD50	696	514	492	457	638	578.7

GROWTH STAGES AT NWMHRS (6/20/05)

Apple: Red Delicious: 22 mm fruit; Mac: 30 mm fruit
Pear: 23 mm fruit
Sweet Cherry: Hedelfingen: 15 mm fruit; Gold: 13 mm fruit
Tart Cherry: 13 mm fruit
Apricot: 33 mm fruit
Plum: 20 mm fruit
Grapes: Chardonnay: first bloom

WEATHER

NW MI received some rainfall this past week, but amounts were generally quite low. At the NWMHRS, rain for the month of June has totaled only .47 inches. This follows two months with only about 1.5 inches per month. Above normal temperatures keep advancing this season relative to normal. Degree day accumulations at both base 42° and 50° F are now ahead of every year since 1999.

CROP REPORT

Apples: Since we have been very dry this last month, we have seen low incidence of **apple scab**. A wetting event was reported on Thursday, June 16, which resulted in an apple scab infection throughout northwest Michigan. Primary scab was predicted to be over as of Monday (June 13th) here at the NWMHRS, but we recommended that growers keep covered for the June 16th rain event in case of remaining scab spores lying in wait for wetting period. We caught our first **OBLR** adult last week, but all other apple insect pests are on the decline. We have been seeing high numbers of **snail case bagworms** in apple, and they are causing some damage to the leaves.

Cherry: Very little **cherry leaf spot** has been reported in the area due to the dry conditions, but the June 16th wetting event resulted in a CLS infection period. We have detected **powdery mildew** in tart cherry blocks, as expected with the hot and

resulted in a CLS infection period. We have detected **powdery mildew** in tart cherry blocks, as expected with the hot and dry conditions. We captured our second **cherry fruit fly** of the season this Monday, which makes two flies in two weeks.

Grapes: Wine grapes are in or approaching bloom and still look to be very free of powdery mildew disease. Bloom is a key time for protection from **powdery mildew** in order to avoid rachis or fruit infections. **Potato leafhopper** nymphs can now be found on shoot tips. Watch out for chlorotic or deformed leaves (usually a downward cupping) and shortened internodes from potato leafhopper. **Rose chafer** is very numerous this year, especially in vineyards near grassy old field sites. Young vineyards are especially hard hit by this pest, since they have much less foliar area to give up before significant injury occurs. They will feed on grape clusters when there are a lot of beetles on the vines. A few **forester moth** and **hornworm** larvae have been seen, but it is still early for the bulk of these to appear. Again, these are far more of a threat to younger vineyards.

Growers should be concentrating on getting suckering done and getting shoots tucked to promote uniform canopies with good sunlight exposure to the fruiting zone. Waiting much longer will result in great difficulties as the tendrils start to get stronger.

Miscellaneous:

Drought Response

By Jim Nugent

Conditions are getting very dry in many areas in Michigan's fruit belt. At the NWMHRS we have received the lowest amount of precipitation during the April, May and June (to date) period of any year since we began keeping records in 1982! The rate of water demand has also been above normal this year, due to the above normal evaporation rates and heat.

In general, plants with limited root systems are the first to suffer from drought stress. The most susceptible trees and vines are the newly planted stocks. Next to be impacted will be young plants and those on the most dwarfing rootstocks. The two most appropriate responses to the drought are to apply water where possible and maintain exceptionally good weed control. Mulch can also help maintain better soil moisture, but it does not add moisture to the already dry soil.

Pre-Harvest Disease Control in Cherry

By Dr. Nikki Rothwell, Dr. Mira Danilovich

Two primary diseases that affect cherries during the summer season are cherry leaf spot and brown rot. Powdery mildew can also affect tart cherries in a hot, dry year such as this one. Major constraints to an economically viable cherry production in Michigan include adequate control of these diseases.

CHERRY LEAF SPOT. The fungus *Blumeriella jaapii* (Rehm) causes cherry leaf spot (CLS) in both tart and sweet cherries, although tart cherries show more susceptibility to CLS than sweets. CLS primarily infects leaves, but this disease ultimately decreases overall tree vigor and health. Purple lesions first show up on upper leaf surfaces, and eventually these spots turn brown. Wet weather causes whitish masses of conidia to grow on the undersides of the leaf in centers of the lesions. Often CLS appear as a one dimensional spot, surrounded by a light halo, on the top of the leaf, while the bottom-side lesion looks as if it is three-dimensional. A minimal number of lesions can cause the leaf to turn yellow and abscise. Trees severely defoliated prior to harvest produce light red fruit that have minimal soluble solids. These defoliated trees have difficulty forming buds and setting fruit for up to two years after severe infection; these trees are also less cold hardy and can die with low winter temperatures.

Chemical control. Cherry leaf spot control revolves primarily around fungicide applications as all cherry cultivars are susceptible to leaf spot. The first spray is usually applied as soon as the first leaves have unfolded. Sprays are often repeated on a 10-14 day (or 7 day alternate row) interval until harvest. There are many chemicals labeled for CLS, but MSU research from 2003-2004 has shown CLS to be developing resistance to one class of fungicides, the sterol inhibitors (SI's: Elite, Funginex, Indar, Nova, Orbit and Rubigan). This research suggests that Michigan growers need to shift from SI's to alternative chemistries for leaf spot control, which includes chlorothalonil (Bravo), strobilurins (Flint), strobilurin + Boscalid (Pristine), copper compounds, dodine, ziram, and captan. Bravo is the chemical of choice prior to shuck split and post-

harvest, as this chemistry provides good CLS protection, and it does not have resistance potential. A tank mix of ziram and captan is an option for covers. Dodine is also an effective chemical where resistance has not yet occurred. Strobilurins work well against CLS, and Pristine is an excellent chemistry if powdery mildew is also a problem in the orchard. New research has also suggested that copper compounds are effective against CLS in tart cherries only. When using an SI, always tank mix with another chemistry, such as captan. For a complete table of recommended CLS control strategies, please see [CAT Alert, May 3, 2005, Vol. 20, No. 4](#).

BROWN ROT. Warm, wet and/or humid weather is conducive to brown rot (*Monilia fructicola*) development and brown rot is

BROWN ROT. Warm, wet and/or humid weather is conducive to brown rot (*Monilinia prunivora*) development, and brown rot is a major disease of stone fruits. Sweet cherries are particularly susceptible to brown rot. Once the fruit begins ripening and changing color, it becomes more susceptible. This pathogen can gain easy access to fruit when any type of injury (insect damage, hail injury, bird pecks, bruised and/or cracked fruit, etc.) is present. Once the pathogen becomes established, soft brown spots appear on the fruit. These spots rapidly expand into lesions covered with powdery masses of creamy-tan colored conidia. Under favorable conditions, the entire fruit may rot within 48 hours. Eventually fruit that remains on the tree dries out; these fruits are often referred to as "mummies", and they become source for future infections.

Disease management: As it is true with any disease, reducing inoculum level will lower disease pressure. Control of blossom infection is important to minimize disease inoculum for fruit protection. Fruit injury should be minimized to reduce the fruit's susceptibility to *M. fruticola*. Insect damage to the fruit should also be curtailed to decrease disease outbreaks.

Chemical control: There are several good fungicides that provide adequate control for brown rot disease. Protectants (captan, Wettable Sulfur) may be an adequate option in low-pressure situations. Materials from this group must be applied prior to the expected wetting event. Sterol-inhibitors (Elite, Indar, Orbit) will provide excellent control of fruit brown rot, but these materials should be used judiciously as resistance has been reported with these products in cherry leaf spot disease. SI products are best applied before the onset of the infection, but some of these fungicides have a limited back action of 24-36 hrs (Indar, Orbit). SI are again best applied in a tank mix with a protectant, such as captan. Strobilurins (Flint, Pristine) adequately control brown rot, and they are currently an option for fungicide resistance management. They must be applied prior to the wetting event since there are no available data as to their kick-back action. Other options are available for brown rot blossom blight control, such as Rovral and Bravo, that cannot be used for summer control.

POWDERY MILDEW. Tart cherries are particularly susceptible to powdery mildew (*Podosphaera clandestina*) during hot, dry weather. When mildew first infects young leaves, it looks like a whitish felt-like patch (mycelium) on the bottom of the leaf. The top of leaf usually boasts a wrinkle, and there is a halo-like appearance where the mycelium is growing on the underside of the leaf. These powdery lesions can spread quickly and can soon cover the entire leaf. Eventually, small brown to black globular bodies develop in the mycelium. Fungal spores are spread from leaf to leaf when temperatures hit 68 degrees F. Powdery mildew takes hold of an orchard when temperatures are high and moisture is generally low but spiked with times of high humidity. Mildew can spread rapidly throughout an orchard if inoculum levels are high. Heavily infected terminal leaves tend to shatter during mechanical harvesting.

Disease management. Increasing air flow in the orchard is the best cultural control for powdery mildew. Pruning trees to improve will create a less optimal environment for powdery mildew development.

Chemical control. Powdery mildew is often controlled with fungicide applications. Since this disease is most often a problem in hot and dry years, every season may not require a powdery mildew fungicide application. However, powdery mildew is important to control at the onset of the problem as this disease progresses rapidly and can overtake the orchard in a short amount of time. The disease is best controlled during the first cover to the pre-harvest period. Flint and Pristine are both excellent against powdery mildew. Nova, Rubigan, and Elite (SI's) are all fair to good against mildew, but their use should be minimized due to resistance concerns. Sulfur provides some control of powdery mildew.

Seasonal Evaporation & Precipitation

Beginning May 1, 2005, at NWMHRS

Date	Evap/week (in.)	75% of Evap/week	Rainfall/wk at NWMHRS (in.)	Rainfall minus 75% of Evaporation
5/2	0.31	0.23	0.01	-0.22
5/9	1.08	0.81	0.07	-0.74
5/16	0.76	0.57	0.53	-0.04
5/23	1.00	0.75	0.87	0.12
5/30	1.32	0.99	0.07	-0.92
6/6	1.60	1.20	0.05	-1.15
6/13	1.90	1.43	0.12	-1.31
6/20	1.15	0.86	0.30	-0.56

Totals	9.12	6.84	2.02	-4.82

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ACCUMULATIONS SINCE MARCH 1, 2005](#)

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Bill Klein, kleinw@msu.edu

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June 28, 2005

Growing Degree Day Accumulations at NWMHRS as of June 27, 2005

Year	2005	2004	2003	2002	2001	15 yr. Avg.
GDD42	1416	1089	1166	1050	1310	1218.1
GDD50	864	579	641	614	767	706.2

GROWTH STAGES AT NWMHRS (6/27/05)

Apple: Red Delicious: 31 mm fruit; Mac: 34 mm fruit
Pear: 29 mm fruit
Sweet Cherry: Hedelfingen: 19 mm fruit; Gold: 16 mm fruit
Tart Cherry: 16 mm fruit
Apricot: 33 mm fruit
Plum: 22 mm fruit
Grapes: Chardonnay: fruit set

WEATHER

Weather continues to be hot and very dry in NW MI. A few scattered, light showers occurred in the area this past week. Rainfall at the NWMHRS for the past week was 0.03", bringing the June total to only 0.50 inches. Degree day totals are now ahead of normal by approximately 200 DD base 42, and 160 DD base 50, but this is still behind the early seasons of 1991, 1998 and 1999.

CROP REPORT

Apples: Fire blight strikes have started to show up in **Honeycrisp** and **Gala** in isolated areas around northwest Michigan. **Codling moth** catches are up from last week, 16.7 moths/trap at the NWMHRS, while **oriental fruit moth** has remained steady at 11 moths/trap. **Spotted tentiform leaf miner** catches have increased this week and averaged 204/trap. **Obliquebanded leaf roller** (OBLR) trap catches have increased this week, which puts our biofix date at the NWMHRS on June 20th. Based on predicted weather forecasts, OBLR egg hatch should begin sometime this weekend.

Cherry: Although most of northwest Michigan has been very dry in the last month, Benzie County received ¼ inch of rain on Friday night, which resulted in **cherry leaf spot** (CLS) infection. However, overall we have detected very few CLS lesions this season. **Powdery mildew** has been reported in most scouted cherry blocks. **Plum curculio** larvae are now in second or third instars and infested fruit will begin to drop from the tree in the next week. The plum curculio egg laying period is

wind meters, and insects that will begin to drop from the trees in the next week. The plum curculion egg laying period is finished in most areas in NW Michigan. **American plum borer** and **lesser peachtree borer** numbers are still low this week. **Two-spotted spider mites** have been found in relatively high numbers on older, inner spur leaves. **Cherry fruit fly** numbers have increased dramatically this week; we captured one fly last week, and this week the average number of flies per trap is 49 in an unsprayed block at the NWMHRS.

Grapes: Weather conditions have been very good for bloom and fruit set. Early cultivars already have buckshot sized berries. Rapid shoot growth is filling the trellis quickly, so we may see overly dense leaf canopies very soon this season. Watch out for **powdery mildew** on shaded leaves and clusters in dense canopies, a common problem last year. **Potato leafhopper** numbers are rising and their injury will soon be apparent if controls are not applied. **Rose chafer** numbers have dropped off drastically in an unsprayed vineyard that had very high numbers last week. They have not been reported as a problem in sprayed vineyards. **Hornworm larvae** and **forester moth** caterpillars are gaining size; watch out for them in young vineyards. Forester moth larvae will readily eat blossom clusters and young berries, but the hornworms generally stick to the leaves. No **spider mites** have been observed in vineyards yet this year, but the conditions have been right, and growers should be watchful for them.

MISCELLANEOUS

Cherry Fruit Fly is Here!

By Nikki Rothwell

Cherry fruit fly (CFF) trap counts have made a big jump here at the NWMHRS this week! We only captured one fly last week, and on Monday, we averaged 40 flies per trap. In northwest Michigan, we actually have two species of cherry fruit flies: black cherry fruit fly and cherry fruit fly (also called Eastern cherry fruit fly). However, for management purposes, these two species can be considered one because of their similarities in life cycles and control actions. CFF spend the winter in a puparium in the soil under host trees. When the weather warms up in the spring, the pupae change into adult flies and emerge from the ground. These adults feed in the trees for eight to ten days before the females lay their eggs. This feeding period is called the preoviposition period, and this feeding time frame provides an optimal window for control of adult flies before the females lay their eggs in the fruit. Adult flies feed on the dew on leaf and fruit surfaces, plant juices, or from punctures in the cherry fruit. After feeding, female flies lay eggs beneath the cherry skin, and each female is able to oviposit 300-400 eggs in 3-4 weeks. In 5-7 days, the eggs hatch and the larvae feed around the cherry pit, then move into the fleshy part of the fruit. Fully mature larvae drop from the fruit and bury into the soil where they spend the winter in their constructed puparium.

Yellow sticky traps should be hung in the orchards in June. When the first cherry fruit fly is captured in the orchard, a chemical application should be made. If a grower is not actively trapping in his/her orchard, the closest trap catch should be used to determine control action. There are many control options for CFF: organophosphates (OP's), synthetic pyrethroids, Sevin, neonicotinoids, fruit fly bait, and particle film (Surround). The OP's provide excellent control of CFF, and they have long residuals. However, the limit for Guthion in cherry is 3 lbs/season. Pyrethroids (Asana, Warrior) work as contact poisons on CFF, but they have much shorter residuals than OP's. Additionally, pyrethroids have a tendency to flare mites, and with this hot, dry summer, mites are already a potential concern in cherry. Sevin is an older carbamate insecticide that provides good CFF control, with a shorter residual than OP's and a shorter PHI. Research at Trevor Nichols found that Sevin XLR did not provide as good control as other formulations of Sevin. Provado and Actara (neonicotinoids) are two new products for CFF control in cherry. Provado is a good choice as we approach harvest time as this chemical only has a 7-day PHI. Actara's PHI is 14 days. GF120 Fruit Fly Bait has shown promise for CFF control with precise timing during the preoviposition period. Entrust is an active product against CFF, but it needs to be applied on a 7-day interval beginning at the preoviposition period. Surround has been effective in large blocks when growers maintain uniform coverage.

Ethephon on Cherries -- 2005

Jim Nugent updated his article on recommendations for Ethephon use to facilitate loosening for mechanical harvesting of sweet and tart cherries. The article can be accessed from our website at:

<http://www.maes.msu.edu/nwmihort/ETHEPHON.html>.

You can download it in adobe format from: <http://www.maes.msu.edu/nwmihort/ethephon.pdf>

SWEET CHERRY VARIETY SHOWCASE

International Plant Management, Inc. and Michigan State University Cooperative Extension have combined to sponsor a Sweet Cherry Variety Showcase for commercial growers at Clarksville Horticultural Experiment Station on July 7th.

The new high tunnel over producing Sweetheart and Rainier cherries will be the main feature of the showcase. This structure was installed this spring and will be used to study the feasibility of high tunnels in sweet cherry production in the Midwest.

Speakers include Dr. Greg Lang, Phil Schwallier, and Dr. Bill Shane of Michigan State University and Wallace Heuser of International Plant Management, Inc. The variety displays will feature selections from Southwestern, Northern and Central Michigan, Ontario, Washington, Oregon and New York. Also featured will be a video presentation of the new sweet cherry series from The University of Bologna in Bologna, Italy and some views of sweet cherry production and processing in Turkey.

The program will begin at 1:00. Refreshments will be available after the session. Clarksville Experiment Station is 15 miles east of Grand Rapids on I-96. Take exit 59 toward Saranac/Clarksville and turn right on Portland Road. For more information call International Plant Management, Inc at 1-800-424-2765.

Seasonal Evaporation & Precipitation				
Beginning May 1, 2005, at NWMHRS				
<u>Date</u>	<u>Evap/week (in.)</u>	<u>75% of Evap/week</u>	<u>Rainfall/wk at NWMHRS (in.)</u>	<u>Rainfall minus 75% of Evaporation</u>
5/2	0.31	0.23	0.01	-0.22
5/9	1.08	0.81	0.07	-0.74
5/16	0.76	0.57	0.53	-0.04
5/23	1.00	0.75	0.87	0.12
5/30	1.32	0.99	0.07	-0.92
6/6	1.60	1.20	0.05	-1.15
6/13	1.90	1.43	0.12	-1.31
6/20	1.15	0.86	0.30	-0.56
6/27	2.02	1.52	0.03	-1.49
Totals	11.14	8.36	2.05	-6.31

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, 2005](#)

Please send any comments or suggestions regarding this site to:

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