Northern Michigan FruitNet 2004
Weekly Update

NW Michigan Horticultural Research Station

Jim Nugent, District Horticulturist
Position Vacant, District Fruit IPM Agent
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May 4, 2004

GROWING DEGREE DAY ACCUMULATIONS as of May 3, 2004 at the NWMHRS

Year	2004	2003	2002	2001	2000	14 yr. Avg.
GDD42	205	221	205	284	299	226.2
GDD50	76	90	105	144	116	96.9

WEATHER

Frost occurred in some areas of NW MI on the mornings of May 3 & 4. Fortunately, some clouds each night helped keep temperatures in most of NW MI from dropping as low as experienced in many other areas of the state.

GROWTH STAGES at NWMHRS (5/3/04)

Apple – Red delicious: early tight cluster
Pear – Bartlett: bud burst
Sweet Cherry: Napoleon –tight cluster
Tart Cherry: Montmorency – bud burst
Apricot: 50% bloom
Plum: European type – early tight cluster
Grapes: Chardonnay – late bud swell

COMMODITY REPORT

Apples: No **scab** infection periods occurred during the past week. **Oyster shell scale** has reached economic thresholds in a few blocks. The scale feeds on the tree branches, but high populations can result in stunted growth, reduced winter hardiness, and crawlers will move onto apples during the summer, which may reduce fruit value. Very little research has been conducted on this insect, but general recommendations call for control of the over wintering adults with oil, or target an appropriate insecticide at the crawler stage. Oyster shell scale crawlers are expected to begin emergence about 2-3 weeks after bloom in apples.

Apricot is currently in bloom. **Always avoid the use of sulfur on apricot during the bloom period**.

Sweet cherry is not yet blooming in NW MI (at the time of this writing on 5/4). Weather forecasts call for a warming trend with almost daily chances for rain for the next several days. This could result in bloom occurring during a period of excellent conditions for the development of brown rot, so be prepared for this possibility (at least in the earlier blooming areas of NW MI). To assure good pollination of sweet cherries, I recommend two good beehives per acre.

Grapes and newly planted trees: watch closely for **climbing cutworm** damage.

WINTER INJURY IN YOUNG MONTMORENCY CHERRIES
By Jim Nugent
District Horticulturist, MSUE

Montmorency tart cherry is generally a very winter hardy tree as long as they do not defoliate too early in the growing season from cherry leaf spot infection. However, during 2002 and again in 2003 (to a lesser extent), some tree mortality occurred that is an example worthy of discussion.

The problem is limited to trees age 1 to 5, being most common in ages 2-4. This type of injury typically occurs on exceptionally cold sites, and is always worse in the lowest areas within an orchard. This is very typical of winter injury. What is not typical is where the injury occurs in the tree. Typically, when checking for winter injury in a tree one cuts into the inner bark (phloem) to check for discoloration. In this case, however, the damaged tissue is the wood (xylem), so some loppers are required for diagnosis.

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The wood appears light brown in color in the damaged areas rather than white. In all cases, if snow was present at the time of the cold event, then the wood remains undamaged (white) below the snow depth at the time of the cold event.

Some trees may also have some dead or damaged phloem tissue, but this is often only found to a limited extent. When phloem injury is present, it is most commonly found on the SW side of the tree.

The location of this phloem injury, I believe, provides a clue as to what is likely the cause of this unusual phenomenon. I suspected last year and am now quite sure that this type of injury occurs only when above freezing winter temperatures are followed by a major cold event. It affects only young trees because, with their thin bark, the trees more readily lose internal cold hardiness. In both 2003 and 2004, the above freezing conditions occurred with snow on the ground. The snow reflects sunlight onto the trunk, warming them to temperatures well above the air temperatures. In 2003, the warm-up was only for a couple of days, but temperatures then plunged in 37 hours to about -20° F. In 2004, the warm-up was much greater, but the cold event that followed was not as severe, so the extent of injury in the state was less. The closest weather station to a seriously damaged orchard in 2004 recorded 22 days of daily highs above freezing during a 24 day period between February 18 and March 12. Then, on March 13, the temperature at the weather station dropped to a low of 6° F. It was likely at or below 0° F in the cold areas of the damaged orchard.

It is worth noting that we have seen young Montmorency orchards survive colder events with no injury when the event was not preceded by above freezing temperatures. Because it appears that de-acclimation plays a significant role in this xylem injury, the extent of the tree warm-up could be reduced simply by painting the trunks with white latex paint. This technique is often used to protect more tender trees like peaches and sweet cherries from the bark splitting associated with "southwest injury," but is not a common practice with the hardier Montmorency. So while this winter induced xylem injury in Monts is not a common occurrence, I suggest painting trunks with white latex paint during the first 5 years when blocks are planted in colder sites or in low areas within otherwise better sites.

MANAGING BROWN ROT
By Jim Nugent, District Horticulturist, MSUE

For about the past 15 years, we have had sterol inhibiting (SI) fungicides available for disease control. First Funginex, then Nova, were used for blossom blight control. In recent years, SI's such as Indar, Elite, and Orbit have become the main compounds used to control brown rot both during bloom and the pre-harvest period. Unfortunately, diseases are capable of developing resistance to this class of materials. So consider utilizing fungicides when possible from other fungicide classes to help delay the onset of resistance to this important group of fungicides. There are several other compounds registered for use on stone fruits.

Following are labeled materials for brown rot control.

Protectants in various classes with no resistance issues:

Bravo – Apricot (A), Cherry (C), Peach (Pe), Plum (Pl) through shuck split (SS)
Captan – A (during bloom), C, Pe, Pl
Sulfur – C, Pe, Pl
Ziram – A, C, Pe
Sterol inhibitors
Elite – C, Pe
Indar – A, C, Pe
Orbit – A,C, Pe, Pl
Nova – A,C,Pe, Pl; blossom blight only
Dicarboximides
Roval – A,C,Pe, Pl; through petal fall (pf)
Strobilurins
Abound – A,C,Pe,Pl – not recommended due to severe phytotoxicity issues with McIntosh type apples in the vicinity of the treatment
Flint – Not labeled before pf; weak on brown rot
Cabrio – Weak
Strobilurin + Boscalid
Pristine – A,C, Pe, Pl; good
Analinopyrimidine
Vangard – A, C (tarts only), Pe, Pl; blossom blight only during bloom

Benzimidazoles

Topsin-M – A,C,Pe,Pl; widespread resistance to the class of fungicides (from Benlate use) limits its use
Fenhexamid
Elevate – A,C,Pe, Pl; fair

Not all materials are equally effective, but look for opportunities to work materials from various chemical classes into your brown rot management strategy.

An excellent article on managing brown rot, by Dr. Bill Turechek at The NY State Ag Experiment Station in Geneva, appeared in the April 26th issue of the Scaffolds Fruit Journal. For those interested, here's a link to the article:

http://www.nysaes.cornell.edu/ent/scafolds/2004/040426.html#d1

ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1, 2004

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@msu.edu
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May 11, 2004

GROWING DEGREE DAY ACCUMULATIONS as of May 10, 2004 at the NWMHRS

Year	2004	2003	2002	2001	2000	14 yr. Avg.
GDD42	269	306	262	410	460	313.3
GDD50	105	131	126	217	223	143.1

WEATHER

Degree day accumulations in NW MI have slowed and are now behind the past 14 year average. Rainfall this week was quite varied, but generally was less than the rest of the lower peninsula. Disease pressure has also varied a great deal this past week.

GROWTH STAGES at NWMHRS (5/3/04)

Apple – Red delicious: tight cluster
Pear – Bartlett: green cluster
Sweet Cherry: Napoleon – full bloom
Tart Cherry: Montmorency – open cluster
Apricot: petal fall
Plum: European type – early white bud
Grapes: Chardonnay – late bud swell

COMMODITY REPORT

Sweet cherries: Early to mid-season bloom varieties are in full bloom at the NWMHRS; bloom has not yet begun in the coolest areas of NW MI. Conditions for **brown rot blossom blight** have been favorable in areas where bloom has been present. Temperatures have not been favorable for pollination this past week.

Tart cherries: Bud damage from the May 3rd freeze is most prevalent in the southern-most area of NW MI. Most of NW MI had a cloud cover that kept temperatures above damaging levels. Crop potential remains good for NW MI. Danube, an early blooming tart cherry, is just beginning to bloom at the NWMHRS.

Apples: An **apple scab** infection period occurred during the past couple of days in some areas of NW MI, but not in other areas. **Rosy apple aphid** hatch is beginning.

Plums: Many Japanese varieties are in bloom at the NWMHRS; most European varieties are not yet blooming.

MISCELLANEOUS

Correction to the 2004 Michigan Fruit Management Guide (Spray Calendar)

Flint is listed as an option during bloom on sweets and tarts, but the label limits its use to petal fall and beyond. Therefore, Flint is not an option for bloom application.

ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1, 2004

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May 18, 2004

GROWING DEGREE DAY ACCUMULATIONS as of May 17, 2004 at the NWMHRS

Year	2004	2003	2002	2001	2000	14 yr. Avg.
GDD42	269	306	262	410	460	313.3
GDD50	105	131	126	217	223	143.1

WEATHER

Above normal temperatures on 5/10–5/12 resulted in rapid plant development. This was followed by a long wetting period between 5/12 and 5/15.

GROWTH STAGES at NWMHRS (5/17/04)

Apple – Red delicious: 10% king bloom
Pear – Bartlett: full bloom
Sweet Cherry - Napoleon: petal fall
Tart Cherry - Montmorency: early petal fall
Apricot: fruit set
Plum - European type: 50% petal fall
Grapes - Chardonnay: 1-3" shoots

COMMODITY REPORT

Cherries: Heavy brown rot and **cherry leaf spot** infection periods occurred on 5/12-5/15 in those blocks with susceptible bloom and/or foliage present. Substantial freeze damage from the 5/3 freeze has become more visible as buds have progressed into bloom in the Manistee/Benzie area. A cloud cover in more northerly areas of NW MI that morning resulted in warmer temperatures and hence much better crop potential.

Apples: A heavy **apple scab** infection period occurred on 5/12-5/15. That wetting event had the potential to be a **fire blight** infection, but few apples in NW MI had begun to bloom prior to the event. **Codling moth** traps should be placed at this time.

Pears: Pears that were blooming by 5/12 were exposed to a **fire blight** infection period.

MISCELLANEOUS

Plum Curculio Behavior
By Jim Nugent

MSU researchers have been trapping plum curculio in NW Michigan with pyramidal traps since late April. As trapping methods improve, we are learning that this pest becomes active very early. The main factors that influence the beginning of egg laying are the availability of susceptible fruit for egg laying and adequately warm evening temperatures. Hence, the first crop where we typically see egg laying is in apricot because it develops ahead of other fruit. Sweet cherries come next. Egg laying in fruit can occur as early as late petal fall, but fruit really gets susceptible at or shortly after shuck split.

Management of Cherry Powdery Mildew
George Sundin, Plant Pathology, MSU
Jim Nugent, Northwest Horticultural Research Station

Click here to link to this article (PDF)

Source: Fruit Crop Advisory Team Alert, May 18, 2004 - Vol. 19, No. 6

ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1, 2004

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May 25, 2004

GROWING DEGREE DAY ACCUMULATIONS as of May 24, 2004 at the NWMHRS

Year	2004	2003	2002	2001	2000	14 yr. Avg.
GDD42	453	476	332	619	622	497.3
GDD50	199	211	153	329	293	242.9

WEATHER

Heavy rainfall (1.5 - 3 inches) with a long wetting period occurred between 5/21 and 5/24 in NW Michigan. A trace or more of precipitation has been recorded at the NWMHRS on 16 of the first 25 days in May. Degree-day accumulations are behind the 14-year average for this date in NW Michigan. This is particularly interesting because southern and central Michigan are well ahead of normal.

GROWTH STAGES at NWMHRS (5/24/04)

Apple: Red delicious-- early petal fall
Pear: Bartlett -- petal fall
Sweet Cherry: Napoleon – fruit set
Tart Cherry: Montmorency – petal fall
Apricot: fruit set
Plum: European type – petal fall
Grapes: Chardonnay – 1" - 3" shoots

COMMODITY REPORT

Apple - Heavy rainfall during a long, cool wetting period from 5/21-5/24 resulted in a heavy **scab** infection period throughout NW Michigan. Apples are in bloom to petal fall, so are susceptible to **fireblight**. However, the Maryblyt model did not predict infection due to cool weather preceding and during the event. **Codling moth** traps should be in apple orchards at this time.

Apples and thinning. Expect the exceptional amount of cloudy weather at this time to result in reduced fruit set. I suggest that thinning will not want to be aggressive this year. Phil Schwallier will be in NW Michigan to discuss thinning strategies with growers. Join Phil at one of the two following locations.

Wednesday, May 26

1:00-2:00 p.m. Leelanau IPM Update session at Larry Esch Farm on Horn Rd East Leland.

4:00-5:00 p.m. Evans' Bros. Farm, Joyfield Rd, southern Benzie county. This meeting does not replace the Benzie IPM update session held today, May 25, at Evans' farm.
Cherries were exposed to a heavy **cherry leaf spot** infection period. **Brown rot blossom blight** is present in sweets from an earlier infection period in some blocks. These sweet blocks will need a more stringent spray schedule for brown rot throughout the season.
Gypsy moth larvae are unusually plentiful in area orchards next to woodlots where the larvae blow into the orchards from infested wooded areas. Check orchards, including non-bearing, that could potentially be infested. They can do significant feeding damage when present in an orchard. Gypsy moths are easily controlled with many insecticides.

Adult potato leafhoppers (PLH) are making a very early appearance in area orchards and vineyards. Plum, apple and grape are most susceptible to PLH, so will want to monitor these crops (including non-bearing).

Once evening temperatures rise into the 60's, expect **plum curculio** to begin egg laying.

MISCELLANEOUS

Discussion with US House Ag Committee Chair

Congressman Dave Camp has arranged to have the Chairman of the House Agriculture Committee, Congressman Bob Goodlatte (R-VA), visit NW Michigan. Part of his visit will include a luncheon and roundtable discussion on issues of importance to agriculture in NW Michigan. You are invited to attend this session. This will be a good opportunity for Chairman Goodlatte to hear from growers in one of the most diverse agricultural states in the nation.

What: Roundtable discussion with Congressman Bob Goodlatte, Ag Committee Chair
When: Monday, June 7, 2004, 12:45-2:30 p.m.
Where: NW Michigan Horticultural Research Station

MSU Organic Apple Field Day

MSU Organic Apple Field Day will be held Thursday, June 17th, 1-4 p.m., at the Clarksville Horticulture Experiment Station. Advance reservations should be made by Monday, June 14. Contact Sandy Allen, 517/355-5191, ext. 339 or allens@msu.edu.

The organic apple field day will feature presentations and discussion on three of the major areas being investigated in research at the orchard: building soil quality, orchard floor and tree management, and disease and insect management. The certified organic apple orchard is comprised of 2500 trees on five acres and includes three apple cultivars with different susceptibility to disease. The orchard has been under study for five years.

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