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Northern Michigan FruitNet 2008 Weekly Update NW Michigan Horticultural Research Station

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May 6, 2008

GROWING DEGREE DAY ACCUMULATIONS AS OF MAY 5th AT THE NWMHRS

Year	2008	2007	2006	2005	2004	2003	18yr. Avg.
GDD42	272	309	390	292	222	239	261.3
GDD50	125	127	179	123	83	97	112.8

Growth Stages at NWMHRS (5/5/08—9:00am)

Apple: Tight Cluster

Pear: Bartlett: Green Cluster

Sweet Cherry: Hedelfingen: 80% bloom

Napoleon: Full bloom

Gold: 1st bloom

Tart Cherry: Early white bud

Apricot: Full bloom

Plum: Early white bud

Grapes: Early bud burst

Weather Report

Although the weather has seemed chilly, our growing degree day (GDD) accumulations are similar to last year's GDD: 125 base 50 this year compared to 127 base 50 in 2007. The numbers are likely due to the extremely warm temperatures in the third week of April. However, temperatures have dropped since then, and the last week of April and first of May have remained cool; average temperatures have been in the mid to upper 40's. On 28, 29, and 30 of April, cold overnight temperatures were recorded—mid 20's to low 30's.

Crop Report

The cold overnight temperatures varied in the northwest regions last week, but overall we believed there was minimal damage to cherry or apple buds. However, as we have been cutting buds and hearing grower reports, we may have sustained more damage than our original assessments indicated. In some tart cherry blocks, we recorded ~50% damage while adjacent blocks sustained no damage. King bloom in some apple blocks was impacted by the cold temperatures, and sweet cherry damage appears to be minimal in many tested blocks. With time, we will have a better assessment of overall damage.

Pest Report

Things are starting to move along in the region despite the consistently low temperatures of the past week. Plum curculio has begun emerging in Northport orchards late last week. Here at the NW station, Oriental fruit moths have been captured in pheromone traps and oblique banded leafroller larvae have been detected in apple. European red mite eggs are at low to moderate levels in the region, and the first two spotted spider mites have been found on the underside of apple leaves and are laying eggs despite the temperatures. Aphids have also been observed in apple blocks. Over the weekend, a moderate apple scab infection was forecasted for most of the northwest region, and as sweets leaf out, the cherry leaf spot infection levels are now a concern.

CONTROL OPTIONS FOR MITES IN FRUIT CROPS

Table prepared by Drs. John Wise, Rufus Isaacs, and Larry Gut, Dept of Entomology, MSU and can be found at <http://www.maes.msu.edu/nwmihort/mitecontroltable.pdf>

COVER SPRAY OPTIONS FOR CHERRY LEAF SPOT CONTROL

George W. Sundin, Plant Pathology

Erin Lizotte and Nikki Rothwell, NWMHRS

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. Sweet cherries can tolerate quite a few lesions before leaf drop occurs, but Montmorency tart cherries will drop with only a few lesions, signifying the importance of proper leaf spot management. Balaton trees can tolerate more lesions than Montmorency, but they too drop their leaves more readily than sweet cherries.

The optimum conditions for lesion development are temperatures of 60-68 F with rainfall or fog. After lesions appear on upper leaf surfaces, examination of the underside of leaves reveals a large number of white spore masses. These spores are dispersed by rain and wind; such secondary cycles can continue repeatedly under favorable conditions through autumn.

Preharvest defoliation can result in a crop that does not mature adequately and causes serious tree damage. Even 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 typically exhibit reduced flower bud formation and often set less fruit the following season.

Ascospores (primary inoculum) of the leaf spot fungus are released from leaves on the orchard floor by rainfall from early bloom to about six weeks after petal fall. Infection takes place through natural openings (stomata) located on leaf undersides. Once leaves are unfolded, they are susceptible to the CLS pathogen and remain so throughout the season.

Management of cherry leaf spot should be initiated around petal fall or sooner if susceptible leaf tissue is present. The use of chlorothalonil (Bravo) is not allowed after shuck split (except post-harvest). As this product is less likely to develop resistance, Bravo should be used pre-shuck split, as both a protectant and a resistance management tool.

There are six major classes of fungicides registered for leaf spot control that could be used as cover sprays (Table 1). Each of these classes of fungicide, except copper compounds and Captan, has resistance concerns as resistance in leaf spot or other fungal pathogens has been demonstrated. Therefore, growers must be aware of fungicide resistance potential and be thinking about maintaining fungicide chemistries now and in the future. Resistance to SI fungicides is widespread in the leaf spot pathogen in Michigan.

Growers should also consider the timing of compounds to control the other important tart cherry fungal diseases. For example, the first cover spray timing after shuck split is a good timing for Pristine or a strobilurin, because these fungicides are also effective in powdery mildew control. Currently, the SI's remain an important tool for brown rot control, particularly if we experience warm and humid or wet weather 3-4 weeks before harvest. Any use of SI's in Michigan should be in a tank mix with 3-4 lbs. of Captan per acre.

The strobilurin/boscalid (Pristine) and strobilurin (Flint or Gem) fungicides are our best tools for multiple disease control. However, both are single-site fungicides with the potential for resistance development. Do not apply these fungicides more than twice consecutively or more than four times per season. Our recommendation is that these fungicides not be used more than twice per season. The risk of resistance is high with these fungicides and loss of a class of fungicide means fewer tools for future disease control.

We envision that copper compounds will become more and more important for leaf spot control as other fungicides are lost due to resistance. Copper is highly effective in leaf spot control with the only downside being the potential for phytotoxicity. We are currently recommending a rate of 1.2 lbs per acre of metallic copper with hydrated lime added at 6-9 lbs per acre to reduce phytotoxicity. Do not apply copper compounds prior to periods of warm, dry conditions (temps at or above 80 F). Scout orchards for phytotoxicity symptoms on leaves (bronzing on leaf undersides, conspicuous large yellow blotches on a few leaves, and/or blackening of leaf veins) prior to the next copper application. Do not apply a second copper application if trees are exhibiting phytotoxicity symptoms.

Cherry leaf spot can be successfully managed using currently available fungicides. However, it is uncertain if companies are developing additional classes of fungicides that would ultimately be registered for leaf spot control. It is incumbent upon everyone to maximize the lifespan of these current fungicides through effective resistance management.

Table 1. Class of chemistry and fungicides registered for cherry leaf spot control.

Boscalid	Pristine ^a
Strobilurin	Flint
Metal ion	Copper compounds
Sterol-inhibitors	Elite, Indar, Nova, Orbit, Rubigan
Guanidine	Syllit (dodine)
Heterocyclic	Captan ^b

^a Pristine is a mixture of a strobilurin and boscalid, another fungicide (separate chemistry).

^b Captan should only be used in combination with another compound because the rate (4 lbs/a) allowed on cherries is too low for effective disease control. Tank mixing Captan with other classes of fungicides will help delay resistance and will help control isolates of the fungus that may be developing resistance.

SIGN UP TODAY FOR THE CONSERVATION SECURITY PROGRAM (CSP)

CSP is a voluntary conservation program and has a unique role among USDA programs. It identifies and rewards those farmers and ranchers who meet the highest standards of conservation and environmental management on their operations. It creates powerful incentives for other producers to meet those same standards of conservation performance on their operations, and provides public benefits for generations to come.

Only landowners and producers in designated watersheds are eligible to sign-up for CSP. In Michigan, six watersheds have been designated since 2004 and 574 Michigan producers were accepted into the program. As funding becomes available, NRCS announces the addition of new watersheds into the program.

The Boardman River/Charlevoix River Watershed has been selected to participate in the 2008 CSP sign-up. More information about the sign-up can be found on the Boardman Charlevoix River Watershed Web page <http://www.mi.nrcs.usda.gov/programs/csp.html>.

Many agricultural producers in Leelanau, Grand Traverse, Antrim and Charlevoix Counties are eligible to sign up for this rewarding Farm Bill program. **The CSP sign up period is April 18 – May 16, only 11 days left!** Agricultural producers that have signed up to date are receiving anywhere from \$60 - \$80 per acre on lands enrolled into the program!

Call your local NRCS office for more details and to set up a pre-interview appointment:

-Traverse City USDA-NRCS Service Center 941-0951 ext. 103

-Bellaire USDA-NRCS Service Center at 533-8709 ext. 101

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

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[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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May 13, 2008

GROWING DEGREE DAY ACCUMULATIONS AS OF MAY 12th AT THE NWMHRS

Year	2008	2007	2006	2005	2004	2003	18yr. Avg.
GDD42	334	430	485	394	310	318	351.7
GDD50	151	196	230	181	131	133	161.6

Growth Stages at NWMHRS (5/12/08—4:30 pm)

Apple: Pink

Pear: Bartlett: 1st Bloom

Sweet Cherry: Hedelfingen: Early petal fall

Napoleon: Early petal fall

Gold: Full bloom

Tart Cherry: Montmorency: 75% Bloom

Balaton: 25% Bloom

Apricot: Late petal fall

Plum: 50% Bloom

Grapes: Bud burst

WEATHER REPORT

Spring does not seem to be coming to northern Michigan this year. We continue to have cool days and cold nights. Our average temperatures remain in the high 40's to low 50's. We are at 151 growing degree days (GDD) base 50 and 334 GDD base 42. Last year at this same time, we had accumulated 196 GDD base 50 and 430 base 42. We have had no substantial rainfall in the last week. Today, Tuesday, May 13 will be the warmest day of the week where meteorologists are predicting temperatures in the low 70's.

CROP REPORT

Because of the low temperatures, we have moved very slowly in terms of phenology. **Sweet cherries** are still in bloom and in early petal fall all over the northwest, and unfortunately we have had little honeybee activity with this cool and cloudy weather. Montmorency **tart cherries** are at 75% bloom at the NWMHRS, and **Balatons** seem to be moving along more slowly and they are at 25% bloom. **Apples** are at the pink stage for most varieties.

Many area growers have observed unusual sweet cherry buds in some orchards in the region. See article below.

We have also been detecting more damage in Montmorency than we anticipated last week. These findings have come as a bit of a surprise as our initial estimates showed little damage to blossoms. The damage also seems spotty, and we have detected damage even in good fruit sites.

PEST REPORT

Aphid nymphs have been sighted in higher numbers throughout apple orchards in the area. Larger **obliquebanded leaf roller** larvae are also on the move. **Red mite** eggs are hatching, and adults are moving onto leaves. **Two-spotted spider mites** still appear to be at relatively low levels, but have begun laying eggs where they are observed on the underside of leaves. Our trap line at the station is showing moderate **spotted tentiform leafminer** pressure. **American plum borer** and **green fruit worm** moths have also been caught in baited traps in our cherry blocks. No significant rainfall has occurred since May 7th and no **apple scab** infections have been predicted since the 6th.

WINTER DAMAGE EVIDENT IN SWEET CHERRY BLOCKS

N.L. Rothwell, District Horticulturist

Many area growers have observed unusual sweet cherry buds in some orchards in the region. Some of the buds on a branch look reddish in color and are fairly swollen in appearance, almost like they are ready to open. These buds are on the same branch as others that are in full flower. The strange buds look puffy and when squeezed, they feel 'empty'. In fact, when the buds do finally open, they are indeed empty. These vacant buds do not contain the normal flowers or blooms, just a few small leaves (Figures 1 and 2).

Although there are two potential causal agents of this swollen/empty bud, winter damage or *Prunus* necrotic ringspot virus (PNRSV), we suspect this situation was caused by cold winter temperatures. 'Red bud', a term often given to trees that show symptoms of PNRSV, do have these swollen red buds and a lack of flowers. This virus shows up when we have warm temperatures during bud formation (~75 F), and we

reached these temperatures in the third week of April. However, we have never documented PNRSV in sweet cherries, and all trees with these signs so far this season have been in low lying areas of the orchard. Based on this information, we conclude that the recent loss of flowers is due to cold temperatures.

Most likely this winter injury happened in January. Temperatures reached into the forties in the first weeks of the month, and overall daytime temperatures were above freezing. These warm temperatures made young trees susceptible to extreme cold, which happened on Sunday, January 19th—the temperatures dropped from the mid thirties during the week to a high temperature of 8° F. Another drop in temperature happened on the night of 30 January, where the day time temperature read 44° F, and the overnight temperature plummeted to 3.7° F. These temperature extremes likely caused the damage we are seeing in young sweet cherries.



Figure 1. Empty bud on damaged sweet cherry at NWMHRS



Figure 2. Swollen, red bud on damaged sweet cherry at NWMHRS.

CIAB REFERENDUM APPROVED

We received late last week word from the USDA that the CIAB was approved overwhelmingly by the growers and handlers voting in the referendum. The CIAB

will continue to operate for another six years.

Growers approved the renewal of the order with 81% of the producers voting in favor of the order. These voters represented 86% of the voting volume.

Handlers approved the renewal of the order with 78% of the voting processors voting in favor of the order. These voters represented 91% of the voting volume.

You can see the USDA's announcement at:

www.ams.usda.gov and then click on "Newsroom" at the top of the home page. You will find the announcement there.

SIGN-UP FOR THE CONSERVATION SECURITY PROGRAM (CSP) HAS BEEN EXTENDED

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Please send any comments or suggestions regarding this site to:

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