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Northern Michigan FRUITNET'99
Weekly Update

James E. Nugent Gary E. Thornton William M. Klein
NW Michigan Horticultural Research Station
Michigan State University

June 1, 1999

WEATHER:

Evaporation rates rose significantly by late last week, with 4 days at or above 0.30"/day. The total for the week was 1.76". Fortunately, much needed rain has fallen during the past 9 days. At the NWMHRS, evaporation for May totaled 5.92", which equates to a need for about 4.4" of water to meet crop needs. Rainfall during May totaled 2.65". Warm temperatures late last week provided the first good opportunity for apple thinning.

GDD 50: 417; **GDD 42**: 789

Apricot: Harcot – 24mm fruit
Plum: Stanley – 12mm
Apple: Red Delicious - 10mm
Sweet Cherry: Napoleon – 14mm
Tart Cherry: Montmorency – 13mm
Grapes: 16" shoots

COMMODITY REPORTS

Sweet cherries need to be protected against plum curculio. Stings have been found in commercial orchards. **Bacterial canker** leaf symptoms are expected to be visible late this week.

Tart cherries are currently 288 DD50 after full bloom, growers should have tart cherries protected by 375 DD50 after full bloom at the latest. In the warmer areas of NW Michigan, tarts should be protected against PC by this weekend at the latest. **Green fruitworm** are 3/4" long, but low in numbers this year. At the NWMHRS, we are 4 weeks after full bloom, which is an ideal time for Gibberellic acid sprays to be applied. It is important to remember that it is better to be too late than too early with these sprays. Trunk sprays for **lesser peach tree borer** and **American plum borer** should go on this week.

Apple growers should expect the results of thinning to be visually noticeable in 10 days after they were applied with average temperatures. **Plum curculio** stings can be found in abandoned orchards. **Codling moth** trap catches are on the rise. Growers in low pressure areas of NW Michigan should biofix when an average of 5 moths are caught per trap. **White apple leafhopper** nymphs can be found on the underside of leaves. **Green apple aphids** are building their colonies, but few of them at this point. **European red mites** continue to be scarce. **Dogwood borer** larva can be found in burrknots on apple rootstocks.

Peaches and apricots can both be injured by **tarnished plant bugs** and other plant bugs. Growers should have on an insecticide before mowing their orchards. Mowing can drive the tarnished plant bugs into the trees from the orchard floor.

Plums should be scouted for **European red mites** and **plum curculio**.

MISCELLANEOUS

Sovran just received a new registration for use on apples. It is not labeled for use on cherries, but want to add a note of warning that it has shown severe phytotoxicity on a few varieties of sweet cherries, including Sweetheart, Van and some other varieties or selections with Van parentage. Therefore, do not allow to drift on these cultivars and clean sprayer between application to apples and using the sprayer on sweet cherries with sensitive varieties. Most important Michigan varieties have shown no phytotoxicity when treated in research trials.

We heard this morning, during the Fruit Crop Advisory Team conference call, that Sovran has just received registration for use on apples. It has shown good promise for use in blocks where scab symptoms have developed. We'll send out complete information in next week's FruitNet. If you have questions before then, give us a call.

Insect Trap Count Averages at the NWMHRS

Date	Codling Moth	Spotted Tentiform Leaf Miner	Lesser Peach Tree Borer	American Plum Borer	Oblique Banded Leafroller	Grape Berry Moth

5/18	0	660	8	30		
5/24	1	88	1.3	14.3	0	
6/1	0.6	85	17	4.6	0	9

ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1 1999 (*)

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Northern Michigan FRUITNET'99

Weekly Update

James E. Nugent Gary E. Thornton William M. Klein
NW Michigan Horticultural Research Station
Michigan State University

JUNE 8, 1999

WEATHER

Strong winds hit NW Michigan with reports as high as 60 mph, causing some tree damage and the potential for fireblight spread. Evaporation rates have increased with the recent heat and wind. Evaporation at the NWMHRS this past week was 1.48", indicating about 1.11" of moisture is desired for tree fruit. Rainfall at the NWMHRS was 1.28".

GDD 50: 515; GDD 42: 941

GROWTH STAGES:

Apricot: Harcot – 25mm fruit
Plum: Stanley – 17mm
Apple: Red Delicious - 20mm
Sweet Cherry: Napoleon – 14mm
Tart Cherry: Montmorency – 13mm
Grapes: 24" shoots

COMMODITY REPORTS

Apples - Scab primary season is over. Growers should have followed up the heavy infection period of 5/25 with a back up spray. This spray, if a protectant was included, should have concluded the primary season. **Fireblight** strikes are now clearly visible where strep sprays were not applied, or where application was inadequate. Sunday's strong winds created a trauma blight for apples and pears. **Codling moth trap** catches remained steady. Growers who are not trapping should biofix on 5/19 and will need to spray immediately. Growers who biofixed on June 1st are currently at 115 DD base 50 and, with this heat, will probably need to spray by June 14th. **Plum curculio** are active in commercial orchards. **Spotted tentiform leaf miner** trap catches are down. **Green apple aphid** colonies are developing.

Cherries - It is not too late for Gibb sprays to be applied to **tart cherries**. Applications should be made in the evening on bearing trees when temperatures are closer to 70 degrees F to avoid too much of a response when applied in daytime temperatures above 85 degrees. **Cherry leaf spot** infections from the 5/19 rain are common on the lower parts of trees where alternate middle row sprays have been applied to control past heavy infection periods. Full covers are needed to best control a heavy infection period. Both **sweet** and **tart cherries** need to be protected against **plum curculio** until their egg laying ceases. **Green fruitworms** are pupating; larvae are 1 1/4" long. **Brown rot** pressure has been high with the recent high humidity. As sweet cherries start to turn color, growers should tighten up their schedules and switch to better fungicides. **European brown rot** is showing up in the Northport area on Montmorency. It causes a spur blight much like fireblight on apples. European brown must be controlled at bloom. **Powdery mildew** is showing up on the underside of tart cherry leaves. Growers should be putting on trunk sprays when the wind allows it.

Plums should be checked for **mites** and a miticide applied if you find over 5 mites per leaf. Thiodan should be sprayed as a trunk spray to protect against **borers**. **Plum curculio** remains a threat.

Peaches and **apricots** should be protected against **tarnished plant bugs** and other plant bugs, particularly if the orchard is mowed or a nearby hayfield is cut. Trunk sprays can be applied. **Plum curculio** remains a threat.

Grapes - Powdery mildew will be heavy this year. The prebloom fungicide spray will be extremely important in controlling this disease this year.

Strawberries - Harvest will get underway by the end of the week. Consider using irrigation during periods of high heat to help cool berries. We are not aware of any serious pest problems at this time.

MISCELLANEOUS

2,4-D Application Caution
By James E. Nugent, District Horticulturist, MSUE
Gary E. Thornton, District Fruit IPM Agent

The preharvest interval for 2,4-D on stone fruit is 40 days. It is too late for application on most sweets and many tart cherries. However, where it can be applied, avoid 2,4-D applications in heat. Do not apply 2,4-D when temperatures are predicted to be in the mid 80-'s and above. For orchard application we use the amine form which has much lower volatility than the ester form, but still the amine will volatilize under high heat.

Avoiding Problems with Water Soluble Packaging
By Jim Nugent and Gary Thornton

By Jim Nugent and Gary Thornton

Water-soluble packaging has greatly enhanced the convenience and safety of handling wettable powder pesticides. However, dissolving the packages can be affected by a few factors. To avoid problems, consider the following:

Boron in the spray mixture turns the packages to a jelly that quickly plugs screens. If using boron in the spray, always completely dissolve soluble packages prior to adding boron.

If boron was used in the prior tank, there will be some residue in the mixture left in the bottom of the tank. In the case of dilute to moderate concentrate mixtures, we generally do not see problems if not too much of the mixture is left in the bottom of the tank and if the tank is then at least 75% refilled with water prior to adding the soluble packaging. Problems are much more apt to occur when using high concentrate mixtures (this results in more boron remaining in the mixture in the bottom of the tank), when a larger amount of mixture is left in tank, or when packages get added after refilling the tank only a little way. If any of these potential problem situations occur, then either pre-dissolve the packages prior to adding to the tank or rinse out the sprayer prior to refilling.

Other heavy metals are also reported by the manufacturers to cause problems for the packages. In practice we have only seen the problem with boron, but still keep in mind that other heavy metals may also have an effect.
Packaging dissolves best in 6.0-6.5 pH water and more slowly in high pH water (it still dissolves, it just takes longer). If high pH water is being acidified, it may be desirable to acidify prior to adding water-soluble packaging.
Packages also dissolve more slowly in cold water.
Thanks to Rick Cater, Gowan Chemical, for assistance with this article.

Apple Thinning

By Jim Nugent and Phil Schwallier
MSUE District Horticulturists

Now is the time in NW Michigan when we can assess the impact of the apple thinning applications made on May 27-29 (a time when a good deal of thinner was applied). In those cases where a second application is required, it will need to be applied this week when temperatures are predicted to be very high. So here are some factors to consider when thinning under very high temperatures.

NAA gets more active with higher temperatures. For expected temperatures in the upper 80's to lower 90's, reduce rates about 25% when using NAA alone. If tank mixed with Sevin, suggest reducing NAA rate by 30-40%.
Sevin is very temperature dependent (even more than NAA), i.e., it is not effective when temperatures are cold and it's very effective when temperatures are hot. Therefore, expect more thinning from Sevin under hot conditions would normally occur. Because the effect of Sevin is not as rate dependent as NAA, it should still be applied at or above the lowest recommended rates but avoid applying at the highest rates during a period of high temperatures. For Sevin XLR, the lowest rate would be 1 pt/acre for medium size trees and 1 1/4 to 1 1/2 pts/acre for large, standard trees.
In situations where moderate thinning with a low rate of NAA plus Sevin would normally be used, consider using either NAA or Sevin alone under conditions of high heat. If aggressive thinning is needed, then the tank mix of NAA and Sevin could still be used, but decrease the NAA rate 30-40% and use the 1 pint/acre rate of Sevin.

Insect Trap Count Averages at the NWMHRS

Date	Codling Moth	Spotted Tentiform Leaf Miner	Lesser Peach Tree Borer	American Plum Borer	Oblique Banded Leafroller	Grape Berry Moth
5/18	0	660	8	30		
5/24	1	88	1.3	14.3	0	
6/1	0.6	85	17	4.6	0	9
6/8	2	14.7	17.3	2.7	0	7.7

ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1 1999 (*)

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Northern Michigan FRUITNET'99

Weekly Update

James E. Nugent Gary E. Thornton William M. Klein
NW Michigan Horticultural Research Station
Michigan State University

JUNE 15, 1999

WEATHER

The evaporation rate slowed to 1.37" during the past week. For irrigation scheduling this implies the need for approximately 1.03" of moisture for the week. While we measured precipitation on five days last week, the total at the NWMHRS was only 0.81".

GDD 50: 657; GDD 42: 1139

GROWTH STAGES:

Apricot: Harcot – 26mm fruit
Plum: Stanley – 18mm
Apple: Red Delicious - 28mm
Sweet Cherry: Napoleon – 15mm
Tart Cherry: Montmorency – 13mm
Grapes: First bloom

COMMODITY REPORTS

Apples are sizing well with the warm temperatures that we had until recently. Most growers have sprayed for **coding moth**, with light pressure blocks being the exception. **Plum curculio** remains active, however, it is past its peak. **Spotted tentiform leafminer** has started its second generation adult flight. Provado applied in approximately 2 weeks will control this generation, as well as **white apple leafhoppper** and **green apple aphids**. **Potato leafhoppers** are very active in young apples; control can be obtained with Guthion or Imidan. Symptoms of fireblight appeared in some orchards last week. In blocks with only occasional strikes they can be broken out, but if there are many strikes you may end up making matters worse by trying to cut them out. Potato leafhoppers should be controlled in these blocks, as they can spread **fireblight**.

Sweet cherries are taking on color, and as a result they are much more susceptible to **brown rot**. Indar, Elite, Orbit or Rovral should be used on a protectant basis until harvest. It is common to find some **leaf spot** showing up in **tart cherries**. Spray schedules should be tightened where it is found. **Greater peach tree borer and lesser peach tree borer** are both flying now, while **American plum borer** flight is winding down for this generation. Temperatures are too cool for gibb applications; growers who still want to apply would be better off waiting until it warms up to above 70 degrees.

Peaches and **apricots** injured by **tarnished plant bugs** have the typical sap oozing symptom now. Thinning should be wrapping up. **Rose chafers** are common.

We are starting to see bloom on most varieties of **grapes**. Some **potato leafhopper** injury is now evident. **Rose chafer** adults are now active in vineyards, but we have had no reports of high populations causing problems. Vineyard edges, in particular, should be watched closely. It is time for growers to be on the lookout for larvae of the larger **sphinx moths**, which can severely defoliate young vines. **Grape berry moth** trap catches averaged 4.3 per trap at the NWMHRS, down slightly

can severely defoliate young vines. **Grape berry moth** trap catches averaged 1.6 per trap at the NWMHRS, down slightly from last week. A prebloom fungicide for controlling **powdery mildew**, **black rot** and **downy mildew** is an important spray for good control.

Strawberry harvest began late last week, about 5-6 days later than last year, but still well ahead of normal.

MISCELLANEOUS

Improving Return Bloom in Apples
By Jim Nugent, District Horticulturist, MSUE

Scoring apple tree trunks to induce improved return bloom should be done at this time. If scoring young trees to induce flowering, I suggest using a linoleum knife. As trees get larger, then a wider cut is necessary. A hacksaw blade width works well for mature sized trees. Mature trees may be treated with a narrow pruning saw cut. I have seen a chain saw used on large trees to make the scoring cut. The wider the cut, the more severely the tree is affected. Generally, scoring is done with two half circle cuts spaced an inch or two apart.

Mullein Bug
By Gary Thornton, District Fruit IPM Agent

The mullein bug, *Campylomma verbasci*, is an important pest of Red Delicious and Spartan apples in Ontario, but it is fairly rare in Michigan. The mullein bug feeds mostly on the weed, common mullein and on apple. Mullein weed appears to be particularly common in young orchards in NW Michigan. Recently a planting of Red Delicious has shown injury from this pest in NW Michigan. The injury shows up on young fruit as slightly reddish pimples, and as the apples grow, the pimples distort the fruit. Fruit with multiple stings often fall off. In addition to Red Delicious and Spartan, Northern Spy, Empire, Cortland, Gala, Jonagold and Golden Delicious are susceptible to injury.

Nymphs hatch out during the bloom and petal fall periods. Like the tarnished plant bug, the mullein bug also has piercing-sucking mouth parts. The nymphs feed on sap from leaves and also sting the developing fruit. After feeding for several weeks the nymphs begin feeding on mites. Once they enter the adult stage they migrate to common mullein, where they feed for the remainder of the summer. In the fall eggs are laid back into apple shoots.

Control can be obtained with an early petal fall spray of Provado or a pyrethroid. Caution: a pyrethroid at this timing is very disrupting to predators.

Gibberellic Acid in Cooler Weather
By Jim Nugent

There is still some gibberellic acid that is being applied to tart cherries. Even though the window for application is almost closed, with predicted high temperatures being only in the upper 50's and lower 60's, I suggest waiting on the gib until warmer weather arrives. Gibberellic acid applied under these very cool conditions typically has a very poor response.

Ethephon Use On Cherries
By Jim Nugent

Ethephon used properly will facilitate mechanical harvesting, but it is important to avoid tree injury. Research and grower experience have shown that lower rates can be used than was first thought. This is caused in part because ethephon's activity increases as it is applied in higher concentrations, while the original research was conducted on a dilute basis. Lower rates will reduce the likelihood for tree injury.

The activity of the ethephon is greatly influenced by the temperatures that occur during the first 72 hours after application. This creates a challenge to achieve the desired results without experiencing injury. Consider the following:

1) Avoid application if temperatures are expected to exceed 85 degrees F during the 72-hour period after application, as activity is excessive.

2) Do not apply when temperatures are below 60 degrees F as activity is greatly reduced.

3) Do not treat trees low in vigor or under significant stress.

4) Applying ethephon with concentrate sprayers (i.e., 20-80 gallons of water/acre) achieves the same level of loosening at lower rates than does dilute applications.

5) With light sweet cherries, do not apply until fruit on the interior of tree is developing yellow ground color. Ethephon applied prior to this stage of development may cause fruit to drop prematurely with stems attached.

6) Consider the size of the trees when determining the appropriate rate per acre for concentrate spraying. Rates are based on typical full size trees. When treating younger blocks with smaller tree size, adjust the rate per acre downward.

7) Ethephon is applied 8-14 days prior to anticipated harvest. The time required to achieve adequate loosening is a function of ethephon rate and temperature.

8) Do not harvest cherries within 7 days of application of ethephon (7 day PHI on label).

9) If temperatures during the next 72 hours are expected to be above average (but not excessively hot), use lower than normal ethephon rates. Conversely, if temperatures are expected to be below normal, rates slightly higher than normal may be used.

10) Questions always arise about tank mixing ethephon. While there is no research data regarding tank-mixing ethephon, according to experience there appears to be no problem tank mixing ethephon with the fungicides and insecticides commonly used at this time. However, it is possible that materials in the tank may act as a buffer to the ethephon thereby causing some loss in activity. This could be overcome by acidifying the tank mixture prior to the ethephon being added. Do **not** tank mix with foliar nutrients or compounds such as crack inhibitors, bird repellents, etc. Avoid the use of surfactants unless prior experience has indicated their effect on the ethephon.

11) Ethephon has a 48-hour worker protection re-entry interval (REI).

Sweet Cherries

1. **Light Varieties**

A. When applied concentrate (80 gal water/acre or less), 1 to 2 pts/acre applied about 14 days before anticipated harvest should provide adequate loosening. Vary the rates depending on temperatures, days before harvest, tree stress and past experience. The full rate of 3 pts/acre will result in tree damage some years.

B. When applied dilute, use no more than the full rate of 1 pt/100 gallons.

2. **Dark Canners**

A. When applied concentrate, suggest using 1 1/2 to 2 1/2 pts/acre applied 12-14 days prior to anticipated harvest. Rates as low as 1 pt/acre have been used successfully by growers, but results have been less consistent. The full rate of 4 pts/acre is generally not necessary and will result in tree damage some years.

B. When applied dilute, use no more than the full rate of 1 1/3 pts/100 gallons.

Tart Cherries

A. When applied concentrate, use 1/2 to 1 pt/acre applied 8 to 14 days prior to anticipated harvest.

B. When applied dilute, apply no more than 1/3 pint/100 gal.

Under certain conditions, ethephon may promote softening of tart cherries. This seems to be most apt to occur when a period of extended cool weather follows the application of ethephon. It **may** be possible to minimize this effect by delaying application during exceptionally cool weather until closer to anticipated harvest, then using a relatively higher ethephon rate, thereby shortening the time cherries are exposed to ethephon, but this technique has not been researched.

NW Michigan Horticultural Research Station
Insect Trap Count Averages - 1999

DATE	Codling Moth	Spotted Tentiform Leaf Miner	Lesser Peach Tree Borer	American Plum Borer	Oblique Banded Leafroller	Grape Berry Moth	Greater Peach Tree Borer
5/18	0	660	8	30			
5/24	0	88	1.3	14.3	0		
6/1	.6	85	17	4.6	0	9	
6/8	2	14.7	17.3	2.7	0	7.7	
6/14	1	342	11	0.3	7	4.3	6

ACTUAL AND PREDICTED DEGREE-DAY
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Northern Michigan FRUITNET'99

Weekly Update

James E. Nugent Gary E. Thornton William M. Klein
NW Michigan Horticultural Research Station
Michigan State University

JUNE 22, 1999

WEATHER

Evaporation this past week totaled 1.39". For irrigation scheduling purposes, this implies the need for approximately 1.04" of moisture. Precipitation this past week at the NWMHS totaled 0.03".

GDD 50: 657; GDD 42: 1139

GROWTH STAGES:

Apricot: Harcot – 28mm

Plum: Stanley – 19mm

Apple: Red Delicious - 32mm

Sweet Cherry: Napoleon – 16mm

Tart Cherry: Montmorency – 15mm

Grapes: Bloom

COMMODITY/PEST REPORT

Codling moth trap catches were down this past week, indicating that the adult flight is between generations. Apple growers may need to apply a second insecticide spray for the first generation, depending on their trap numbers. **Potato leafhoppers** are common in grapes, apples and plums. **European red mites** and **two spotted spider mites** can be found on the interior of apple and tart cherry trees, but numbers remain low so far. **Apple maggots** have not yet been trapped but are expected some time in the first week of July.

The first **cherry fruit fly** adult was caught in an abandoned orchard in ***Benzie County*** on ***Wednesday, June 16th***, and at the ***NWMHRS on the 17th***. Growers should put traps out immediately if they are planning to do their own trapping. Growers who will not be scouting for cherry fruit fly need to have their first spray on 7-10 days after the first catch, which would be by **June 23rd**. A cherry fruit fly adult was caught on ***Monday, 6/21***, in a commercial orchard in ***Leelanau County***.

Cherry leaf spot has had no infection periods this past week but continues to be a problem in some tart cherry blocks. An occasional sweet cherry block also has leaf spot. Growers should use a full cover of an appropriate sterol inhibitor and Captan to slow its spread, if the disease already has a start in the orchard. **Brown rot** pressure will be high this week as temperatures rise and humidity increases. Appropriate fungicides should be used on a protectant basis, particularly on sweet cherries. **Powdery mildew** symptoms are common on tart cherries.

With more hot weather predicted, **tarnished plant bug** will remain a concern on **peaches**.

Plums are very susceptible to **potato leaf hopper** injury; all plums should be scouted for it. Guthion or Imidan can easily control this pest.

Grapes (By Duke Elsner): Some vineyards now have foliar symptoms of **powdery mildew**, **downy mildew** and **black rot**

Grapes (By Duke Elsner): Some vineyards now have foliar symptoms of **powdery mildew**, **downy mildew** and **black rot**. This is an important time to protect clusters from infection by these diseases. **Potato leafhopper** adults and nymphs are widespread, starting to cause cupping and yellowing of leaves and shortened internodes. **Forester moth** larvae are now nearing maturity, over one inch in length. Larvae of the larger **sphinx moths** should be active now -- check young vines for their defoliation. **Phylloxera** and other leaf galling insects are active on wild vines.

MISCELLANEOUS

Ethephon and Heat
By Jim Nugent, District Horticulturist, MSU-E

It is always tough to decide what to do about ethephon application in hot weather. My suggestion is this:

1) If temperatures are expected to be in the lower to mid 80's for the next two to three days, then decrease the ethephon rate by about 25%. This should achieve comparable response to normal rates when highs are expected in the 70's.

2) If temperatures are expected to be in the upper 80's and/or 90's, then delay application until temperatures decrease.

Wanted: Volunteers for Orchard Study
By Jim Nugent

This summer the NWMHRS will be studying pH and nutrient levels in orchard soils to ascertain the potential value of precision applications of fertilizers. The study will be run in cherry and apple orchards of at least 5 acres in size and 15-30 years of age in the 5 county area of NW Michigan. We want one or two blocks per grower. Blocks will be mapped and sampled in sub-units based on soils and tree growth to assess nutrient variability. Participants will be provided with the results. Growers interested in volunteering may do so by calling 231/946-1510.

Phytotoxicity on Tarts
By Jim Nugent

I have observed a problem with phytotoxicity on tarts that early assessment indicates may have been caused by a combination of Syllit and a calcium chloride product applied during a period of high temperatures. The temperature at the actual time of application was only approximately 70ºF, but the high later in the day reached the mid to upper 80's. The injury is a brown speckling on fruit, with more of a bronzing on the underside of the leaves. Because other products were also in the spray mix, I can not be absolutely sure of the cause, but strongly suggest that this combination be avoided until more is understood about the problem.

NW Michigan Horticultural Research Station
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6/8	2	14.7	17.3	2.7	0	7.7		
6/14	1	342	11	.3	7	4.3	6	
6/21	.33	511	10	0	2.3			

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Northern Michigan FRUITNET'99

Weekly Update

James E. Nugent Gary E. Thornton William M. Klein
NW Michigan Horticultural Research Station
Michigan State University

JUNE 29, 1999

WEATHER

High winds, accompanied by highly variable rainfall, hit NW Michigan on Monday evening. Evaporation rates were quite high this past week at 1.95". June evaporation has totaled 6.13". Rainfall this week at the NWMHRS was 0.57" (including the 0.48' Monday evening). June rainfall totaled 2.96", with 2.06" falling in the first 10 days of the month.

GDD 50: 657; GDD 42: 1139
(Two days behind last year's DD Base 42, and one day behind last year's DD Base 50)

GROWTH STAGES

Apricot: Harcot – 29mm
Plum: Stanley – 22mm
Apple: Red Delicious - 38mm
Sweet Cherry: Napoleon – 19mm
Tart Cherry: Montmorency – 19mm
Grapes: Buckshot berries

COMMODITY/PEST REPORT

Apple growers who have young plantings should check for and remove **fire blight** strikes while the cool weather lasts. Blocks with many strikes should be left alone and cankers cut out in a dormant pruning. **Codling moth** flight is down, as they are between generations. **European red mites** and **two spotted spider mites** are up but remain low overall. **Potato leafhoppers** remain high. Young orchards, even if sprayed two weeks ago, may need re-treating.

Sweet cherry harvest is beginning for a few early varieties. Ethephon is being applied on some **tart cherry** blocks. Tart cherry growers who are finding **leaf spot** in their orchards should tighten up their spray schedules and increase rates if they have been cutting back. Post harvest Bravo applications will be very important immediately after harvest. **Brown rot** is showing up now in unsprayed sweet cherry blocks. **Cherry fruit fly** adults continue to emerge and have been reported in many commercial orchards, with heavy pressure in a few blocks. Growers who diverted fruit last year and left the fruit in the orchard for some time after harvest could have high numbers of adults emerging directly in the orchard. **Two spotted mites** are increasing, but they still remain quite low in numbers.

In **plums two spotted spider** mites are low, but growers should check their populations before cherry harvest begins. Vendex is the only option for controlling mites in plums and should be applied if you are somewhere between 5 and 10 mites per leaf.

MISCELLANEOUS

Phytotoxicity On Tart Cherries
By Jim Nugent, District Horticulturist, MSUE

By Jim Nugent, District Horticulturist, MSU-E

Due to a recent phytotoxicity problem related to spray injury observed on tart cherries, we tried a few combinations of materials in an unreplicated trial at the NWMHRS, applied under similar conditions and at the same rates.

Applications were made in the morning at temperatures of approximately 74 degrees F on a day when the temperature rose to a high of 83 degrees, followed by a high of 87 degrees the next day. The results were as follows:

Treatment 1: Syllit (2 lbs./A) plus calcium chloride (35% $CaCl_2$ liquid @ 1 gal./A = 3.8 lbs. ai/A) -

No phytotoxicity.

Treatment 2: Syllit (2 lbs./A) plus Asana (5oz./A) -

Slight phytotoxicity on leaves. (4-10% of leaves damaged; 1-3% of fruit damaged)

Treatment 3: Syllit (2 lbs./A) plus Asana (5oz./A) plus $CaCl_2$ -

Significant damage to leaves and fruit. (41-70% of leaves damaged; 1-3% of fruit damaged)

Treatment 4: Syllit plus Asana plus $CaCl_2$ plus Guthion (0.75 lbs./A) plus Nova (5oz./A) -

Results same as treatment 3 (31-50% of leaves damaged; 1-3% of fruit damaged)

Conclusion: While this was not a replicated trial, it implies that the combination of high temperatures and a tank mix that included Syllit plus Asana plus $CaCl_2$ caused significant phytotoxicity to leaves and fruit of tart cherries. Until other data redefine this conclusion, I suggest that this combination of materials under warm conditions **not** be applied.

CIAB to Meet
By Jim Nugent

The CIAB will meet tonight, Tuesday, June 29th, beginning at 7 p.m. at the NWMHRS. Based on the USDA crop estimate of 260 million lbs., there will not be the need for a diversion in 1999. If the crop picks out above approximately 288 million lbs., however, then a diversion will be established. More details will be available at the meeting.

Wanted: Volunteers for Orchard Study
By Jim Nugent

Last week we announced that the NWMHRS is planning to study nutrient levels in soils in older orchards this summer. The purpose of the study is to ascertain the potential value of precision applications of fertilizers. The study will be run in cherry and apple orchards of at least 5 acres in size and 15-30 years of age in the 5 county area of NW Michigan. We want one or two blocks per grower in a total of about 20 orchards. Blocks will be mapped and sampled in sub-units based on soils and tree growth to assess nutrient variability. Participants will be provided with the results. We are still looking for volunteers, particularly in counties other than Leelanau. Growers interested in participating may do so by calling 231/946-1510.

NW Michigan Horticultural Research Station

Insect Trap Count Averages - 1999

DATE	Codling Moth	Spotted Tentiform Leaf Miner	Lesser Peach Tree Borer	Greater Peach Tree Borer	American Plum Borer	Oblique Banded Leafroller	Grape Berry Moth	Dogwood Borer

5/18	0	660	8		30			
5/24	0	88	1.3		14.3	0		
6/1	.6	85	17		4.6	0	9	
6/8	2	15	17.3		2.7	0	7.7	
6/14	1	342	11	6	.3	7	4.3	
6/21	.33	511	10	5	0	2.3	1	
6/28	.75	455	6.3	1.6	.75	2.3	16.3	10.6

ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1 1999 (*)

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

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