



Northern Michigan FRUITNET 2000

Weekly Update

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

July 5, 2000

GROWING DEGREE DAY ACCUMULATIONS through July 4th at the NWMHRS

Year	2000	1999	1998	1997
GDD42	1507	1657	1686	1237
GDD50	858	1019	1026	735

GROWTH STAGES:

Pear: Bartlett -- 26mm

Apple: Red Delicious -- 36mm

Sweet Cherry: Napoleon -- 20mm, coloring

Tart Cherry: Montmorency -- 20mm, coloring

Grapes: Chardonnay -- bloom

WEATHER

By Jim Nugent

This past week, precipitation at the NWMHRS was 0.21", with evaporation at 1.61." Generally, moisture has been quite good this season, but some areas are beginning to show signs of moisture deficit. Rainfall and evaporation weekly totals since May 3rd at the NWMHRS are as follows:

Date	Weekly Rainfall	Weekly Evaporation	Rainfall vs Evaporation +1	Rainfall vs 75% of Evaporation +/-
5/9	0.63	1.85	-1.22	-0.76
5/16	1.24	1.08	0.16	0.43
5/23	0.98	1.06	-0.08	0.19
5/30	0.10	1.14	-1.04	-0.76
6/6	0.56	1.09	-0.53	-0.26
6/13	0.66	1.59	-0.93	-0.53
6/20	0.54	1.41	-0.87	-0.52
6/27	1.00	1.39	-0.39	-0.04

7/4	0.21	1.61	-1.40	-0.38
Total	5.92	12.22	-6.30	-2.63
for				
Period				

Note that rainfall has not equaled 75% of evaporation for the past six weeks. The 75% of pan evaporation is of importance as it has generally been found to be an approximation of fruit tree water needs for many crops. High density apples (M26 or smaller) are better approximated using a 100% estimation, except Mark which needs 150% of e-pan. Dr. Jim Flore, MSU Dept of Horticulture, says that recent research is finding that replacing 100% of e-pan evaporation for other high yielding crops may be more important than formerly thought, however, this data is not for cherry. For now, I suggest that irrigation scheduling take into account crop load; i.e., with heavy crop plan to increase water.

INSECTS AND DISEASES

By Gary Thornton, District Fruit IPM Agent

CHERRY LEAF SPOT – Despite numerous wetting periods, cherry leaf spot pressure has been low this year. Growers should continue to keep their leaves protected through harvest.

BROWN ROT – Sweet and tart cherries are at their most susceptible stage now. Elite, Orbit and Indar are all excellent for controlling this disease. They don't control alternaria, though, which infects fruit wounded from hail or cracking. Captan is the only fungicide currently labeled that will control it at this stage of growth. If you have Rovral with the old label on it, it can be used. Check the pre-harvest interval on the label.

APPLE MAGGOT – Last week the first adult was caught in the East Leland area. This week three more flies were caught in the Suttons Bay area. Growers should get their red sticky spheres out if they plan to trap for apple maggot flies. If you are not trapping, then you need to have an insecticide on by the end of the week to ensure clean fruit.

CHERRY FRUIT FLY – Many growers are finding adults in commercial orchards now. If you are not trapping, you need to have an insecticide on from now through harvest.

CODLING MOTH – Trap catches continued to drop for the third week. We averaged one per trap at the NWMHRS and at the abandoned orchard.

SPOTTED TENTIFORM LEAFMINER – Trap catches dropped off to 372 per trap, down from the previous two weeks. The sap feeding stage should be showing up soon.

GREEN APPLE APHIDS continue to be a problem in a few blocks.

EUROPEAN RED MITES are in low numbers in most blocks, but a few blocks are already seeing bronzing in the hot spots. Predators are not as abundant as in the last two years.

TWO SPOTTED SPIDER MITES – The wet weather has kept the orchard middles lush up until now. As a result, the two-spotted spider mite has not migrated in full force into the tart cherries. They can be found, but mostly in low numbers. If the dry weather trend continues, this could rapidly change.

MISCELLANEOUS

SEAGULLS

By Jim Nugent

Ring-billed gulls are causing more problems than ever for many cherry growers. Managing seagulls generally remains a combination of tactics that includes harassment of some sort (e.g. exploding shells, cannons, etc.) with shooting. Shooting ring-billed gulls requires a federal permit from the U.S. Fish and Wildlife Service (Dept. of the Interior, Minnesota). This permit also requires the approval of the USDA's Michigan State Director of Animal Damage, Tony Duffiney. To expedite a process that usually takes many days, the following process has been put in place for cherry growers in NW Michigan so you can get approved in one working day.

- Get the permit application. This can be done either by having Tony Duffiney's office fax it to you, or by getting a copy of the application from your local Extension office or the NWMHRS. Tony's office is in Okemos, MI, phone 517/336-1928.
- Fill out application, being sure to indicate other efforts (besides shooting) to harass the seagulls, even if it's just driving through the orchards, etc.
- Write out a \$25 check for the permit application fee.
- Fax a copy of the application and check to Tony Duffiney at 517/336-1934. If you don't have a fax, any Extension office or the NWMHRS will fax this in for you.
- After faxing, send the application and check as indicated into the U.S. Fish & Wildlife Service in Minnesota.
- You should get a phone or fax response in 24 hours, otherwise contact Tony.
- Once the permit is received, Tony suggests targeting seagulls early in the morning as they are coming into the orchard. If using something like exploding shells, fire these just before or after killing a few gulls. Leave the dead gulls at the site. Later when exploding shells are fired, they will correlate these with death of birds. Preferably begin as soon as birds are coming into the orchards.

Once a permit is received, I understand it is easier in subsequent years to get a renewal.

Shell crackers are made to either fit 12 gauge shot guns (single short or double-barreled guns work better than guns with magazines) or with a pistol. Possible sources for shell crackers are: The local DNR office (922-5280) and ask for Tim Webb, Tony Duffiney (USDA Animal Damage Office), 517/336-1928, Critter Control in Traverse City at 947-2400 and Reed-Joseph in Missouri at 800-647-5554. Contact the NWMHRS if you have any questions.

GRAND TRAVERSE COUNTY EXTENSION OFFICE TO MOVE

The MSU Extension office for Grand Traverse County will be moving to a new location on *July 14th*. The new address will be 520 W. Front Street in Traverse City. The new facility is a county owned office building attached to the fire station on the north side of Front Street. The office should re-open for business on *July 19th*.

Telephone: 231/922-4620

Fax: 231/922-4633

E-mail: grandtra@msue.msu.edu

ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE February 15, 2000 (*)

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@pilot.msu.edu

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Northern Michigan FRUITNET 2000

Weekly Update

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

July 11, 2000

GROWING DEGREE DAY ACCUMULATIONS through July 10th at the NWMHRS

Year	2000	1999	1998	1997
GDD42	1668	1821	1836	1346
GDD50	971	1135	1128	798

GROWTH STAGES:

Pear: Bartlett -- 32mm

Apple: Red Delicious -- 47mm

Sweet Cherry: Napoleon -- 23mm, coloring

Tart Cherry: Montmorency -- 20mm, coloring

Grapes: Chardonnay -- buckshot berries

WEATHER

Rainfall this past week amounted to 0.19", while evaporation totaled 1.43". Evaporation exceeds rainfall by 1.24" for the week and by 10.18" for the growing season.

Date	Weekly Rainfall	Weekly Evaporation	Rainfall vs Evaporation +/-	Rainfall vs 75% Evaporation +/-
5/9	0.63	1.85	-1.22	-0.76
5/16	1.24	1.08	+0.16	+0.43
5/23	0.98	1.06	-0.08	+0.19
5/30	0.10	1.14	-1.04	-0.76
6/6	0.56	1.09	-0.53	-0.26

6/13	0.66	1.59	-0.93	-0.53
6/20	0.54	1.41	-0.87	-0.52
6/27	1.00	1.39	-0.39	-0.04
7/4	0.21	1.61	-1.40	-0.38
7/11	<u>0.19</u>	<u>1.43</u>	<u>-1.24</u>	<u>-0.88</u>
Total	6.11	13.65	-7.54	-3.51
for				
Period				

PESTS AND DISEASES

By Gary Thornton, District Fruit IPM Agent

Apple growers, in some cases, are seeing high trap catches for **codling moth**. We should be approaching the end of the first generation by now, but I have given up trying to predict this pest! Growers should treat trap catches accumulating in greater than 5 moths per trap as a biofix. Sprays should be applied 250 DD base 50 after the biofix. Pears are not susceptible at this time. **Apple maggot** was first caught on June 29th in NW Michigan. Growers who are not trapping should be controlling for it at this time. Growers who will be trapping for it should hang their red sticky spheres out now. **Aphids** continue to build in untreated blocks. **Spotted tentiform leafminer** trap catches have been quite high, but, no mines have shown up yet from this generation. **White apple leafhopper** adults can be found but not in high numbers in most cases.

Cherry fruit fly adults are now commonly showing up in commercial cherry blocks. Cherry growers should continue to control for **brown rot**, **leafspot** and **alternaria**. The high humidity is ideal for fruit to fruit spread of brown rot. Ten day schedules for brown rot are appropriate for this time of year. Leafspot pressure is slowing as the terminal buds continue to set. Despite numerous wetting periods, the actual leafspot infections have been very low so far this year. Two spotted spider mites are just starting to build as the ground cover dries up.

Plums are starting to see an increase in **mite** pressure as well. *Pyramite* is now labeled for use in plums, with a 7 day PHI. It is excellent on European red mites and good for controlling two spotted spider mites.

MISCELLANEOUS

Possible Crop Disaster Programs

by Jim Bardenhagen, Leelanau MSU Extension Director

While it's way too soon to tell, there is a chance that Congress may make some crop disaster assistance programs (some familiar, some revised, some new) available this year through the

assistance programs (some familiar, some revised, some new) available this year through the Farm Service Agency (FSA). This is due to light crop yields and other crop disasters in the US. In order to ensure eligibility for maximum benefits, it's important that growers certify their 2000 crops with FSA and provide past actual production history (APH) to FSA for your crops by July 17th. Crops covered under the crop insurance program may not need certification or past production information - ask FSA to be sure.

We know that everyone's busy with harvest, but you may want to call FSA at 941-0951 to be sure that you have met the filing requirements before it's too late.

The Northwest Michigan counties, via FSA, have already filed reports requesting crop disaster assistance programs for 2000 fruit, maple syrup and hay crops.

Apple Leafminer

By Gary Thornton

Apple leafminer is a pest that is becoming more common in NW Michigan. It first showed up in Benzie county apples and has now been reported in cherry. The following information is taken from Scaffolds No. 16, 7/3/00, written by Art Agnello, Dept. of Entomology, Cornell University.

Apple Leafminer, *Lyonetia prunifoliella*

This lepidopteran pest was formerly known as *L. speculella*, and it has been most evident in the upper Hudson Valley in recent years, particularly around the Capital District. Larval food plants recorded for this species are apple, plum, cherry (including pin cherry), birch and grape. Female moths oviposit in tender new foliage by piercing the undersides of leaves and depositing single eggs inside the leaf tissue. The hatched larvae form serpentine mines, which are visible as wavy brown lines on the tops of leaves. As the larvae grow, they enlarge their mines into brown blotches, within which they consume all of the leaf tissue between the upper and lower epidermis. Larvae eject their black feces through slits in the bottom of the blotches. When they become full-grown (third instar), they leave their mines to pupate, usually by descending to lower leaves on a silken thread. Just before pupating, the larvae spin silken cocoons, which are suspended by threads and resemble a hammock. There are probably 4-6 generations per year in this area, but only the late summer larvae are noticeable (or problematic); moths are generally never even caught before the end of July.

Larval feeding is confined to the youngest foliage, particularly terminal leaves of vigorously growing shoots. Root initials or water sprouts that are partially shaded are the preferred sites for feeding and pupation. Severely mined leaves turn brown and die; most such leaves drop off prematurely, thereby decreasing the number of some of the most photosynthetically active leaves. The potential for damage is greater in young orchards than in mature ones, and vigorous trees (i.e., those on dwarfing rootstocks) usually suffer more injury than do less vigorous ones.

Populations of apple leafminer normally do not attain high abundance and cause noticeable damage until the beginning of the harvest period. Insecticidal control of larvae or adults may not be a reasonable tactic because of the pre-harvest intervals of most candidate materials (i.e., carbamates that are used against STLM). Broad-spectrum insecticides used in cover sprays are unlikely to control larvae or adults because leafminer numbers have increased in orchards that have been sprayed regularly with these chemicals. A 1990 field trial in West Va. compared the effectiveness of different insecticides applied 2 times (7-day interval) in August against different life stages of this insect. All the materials tested - Asana, Thiodan, Lannate, Vydate, Cygon, and (to a lesser extent) Carzol - effectively reduced population levels of larvae and pupae, and Asana also had some effectiveness against egg numbers.

Two cultural practices may affect the amount of larval damage obtained. The preferred food of the miners is the new growth of vegetative shoots. The removal of root and water sprouts may greatly reduce the amount of available food for larvae, and thereby control the growth of moth populations. Another practice that may influence leafminer abundance is fertilization. Application of fertilizer in excess amounts or late in the season would enhance vegetative growth, particularly late in the growing season. Abundant larval food at this time would permit additional generations of the insect. These leafminers cause very little injury to unfertilized apple trees with poor or moderate shoot growth. For the present, a good pruning program and restraint in fertilizer use may be the best available means to control populations of this leafminer.

[ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE February 15, 2000 \(*\)](#)

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@pilot.msu.edu

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Northern Michigan FRUITNET 2000

Weekly Update

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

July 25, 2000

GROWING DEGREE DAY ACCUMULATIONS through July 24th at the NWMHRS

Year	2000	1999	1998	1997
GDD42	2002	2247	2264	1754
GDD50	1193	1449	1444	1094

GROWTH STAGES:

Pear: Bartlett -- 39mm

Apple: Red Delicious -- 57mm

Tart Cherry: Montmorency -- 22mm

Grapes: Chardonnay -- berries touching

WEATHER

By Jim Nugent

Drought conditions have continued to get more severe in NW Michigan. At the NWMHRS rainfall this past week amounted to 0.11", while evaporation totaled 1.16". Evaporation exceeds rainfall by 1.05" for the week and by 13.21" for the growing season.

Evaporation and rainfall rates at the NWMHRS are as follows (for irrigation scheduling purposes we have included the 75% of evaporation vs rainfall calculation):

	Evaporation	Rainfall	Evaporation less Rainfall	75% of Evaporation	75% Evaporation less Rainfall
Past 2 weeks	3.19	0.16	3.03	2.39	2.23
Past 4 weeks	6.23	0.56	5.67	4.67	4.11
Since May 1	17.12	6.51	10.61	12.84	6.33

PESTS AND DISEASES

By Gary Thornton, District Fruit IPM Agent

Tart cherry growers only need to be worried about controlling **cherry fruit fly** if harvest is more than four or five days away and if they are above threshold. **Cherry leaf spot** pressure continues to be low. Post harvest sprays can go on now for blocks that are finished with harvest, however, it is debatable whether or not one is needed where control has been excellent. Growers should keep in mind that harvest ended early this year. **Two spotted spider mites** are at low levels in tarts, but growers should watch closely for increasing numbers if the dry weather continues. **Plum nursery mite** populations are high in some tart cherry blocks, giving those blocks a brownish cast to the foliage (not "bronzed", as with spider mite damage). High mite populations of either Eriophyid or spider mites, when combined with serious water stress, often lead to "firing" of limbs in tart cherries.

Codling moth is between generations, however, **apple** growers may have to treat now if their trap catches were above threshold in the last few weeks. **Apple maggot** emergence has been slow, with very few showing up in commercial blocks to date. Some apple and plum blocks are above threshold on mites. **Spotted tentiform leafminers** are in the sap feeding stage. **Green apple aphids** are common, but predators are common, also.

Peach growers should be controlling **brown rot** on early varieties. Even with dry weather fungicides will improve shelf life after harvest.

Pear psylla pressure has been high this year. Sucker growth is slowing, and thus the ideal feeding sites are declining in number. If growers are still seeing high nymph numbers, then an additional control may be needed. All stages of pear psylla exist now.

MISCELLANEOUS

Tart Cherry Update

By Jim Nugent

- Mira Danilovich, West Central District Horticulture Agent, reported this morning that the crop in West Central Michigan is picking long.
- Be sure to apply for diversion credit for blocks that do not get harvested due to quality problems or lack of yield.
- Reminder that diversion credit is also available for partial blocks, if crop is diverted in whole rows from either side of a block.

If you are interested in the weekly CIAB raw product report, you can access it at CIAB's website: www.cherryboard.org

ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE February 15, 2000 (*)

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@pilot.msu.edu

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