



September 8, 2009 -- Vol. 24, No. 17



Fruit Crop Advisory Team Alert

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Apple maturity information available

Bill Shane, District Extension Fruit Educator

Michigan State University fruit educators provide information on apple variety ripening each season to help the apple industry anticipate and plan harvest activities. The first information resource is the estimated harvest dates (Table 1), which are available for the current and past years at the MSU Enviro-weather web site (www.enviroweather.msu.edu). The Enviro-weather apple maturity predictor uses the same computation method used by MSU apple extension educator Phil Schwallier over the years to predict the peak harvest date for McIntosh, Jonathan, and Red Delicious. Harvest dates for other varieties are obtained by comparisons with these three and experience. (see Table 1.)

The estimated harvest dates for Macs, Red Delicious and Jonathans are based on

the observed or predicted full bloom dates and max/min temperatures for the 30 days following bloom.

Many other factors such as frosts, crop load, mid-summer rainfall, and temperatures can influence apple ripening. MSU personnel in conjunction with the post-harvest laboratory of Dr. Randy Beaudry measure key apple characteristics for the major apple varieties important for Michigan. These findings for the major production regions are posted at the MSU apple site (apples.msu.edu/maturity.htm). To receive reports or alerts of new web postings, send a request to be added to the email list to one or more of the following in the Table 2. below. **IPM**

Table 1. 2009 predicted peak harvest date

Full bloom date				Predicted harvest date			
Station	McIntosh	Jons	Reds	McIntosh	Jons	Reds	Observer
SWMREC	3-May	5-May	6-May	4-Sep	24-Sep	2-Oct	Shane
Deerfield	4-May	9-May	6-May	5-Sep	29-Sep	2-Oct	Tritten
Romeo	9-May	12-May	13-May	12-Sep	3-Oct	8-Oct	Tritten
Peach Ridge	9-May	12-May	12-May	12-Sep	4-Oct	10-Oct	Schwallier
Ludington	17-May	20-May	20-May	21-Sep	11-Oct	17-Oct	Danilovich
NWMHRS	18-May	21-May	22-May	24-Sep	8-Oct	15-Oct	Rothwell

For complete article see the June 30 *Fruit CAT Alert* article "[Predicted peak 2009 apple harvest dates](#)" by Phil Schwallier and Amy Irish Brown.

Table 2. Contact person for regional apple maturity report

Region	Contact person	Email address
Southwest	Bill Shane	shane@msu.edu
Southeast	Bob Tritten	Tritten@msu.edu
Grand Rapids	Amy Irish-Brown	Irisha@msu.edu
West central	Mira Danilovich	bulatovi@msu.edu
Northwest	Nikki Rothwell	rothwel@msu.edu

Cancellation of plum pox virus quarantine in Michigan

Bill Shane, District Extension Fruit Educator

In July 2006, Michigan Department of Agriculture (MDA) inspectors detected plum pox virus, a stone fruit disease previously unknown within Michigan and detected in only one other state in the United States.

The MDA imposed quarantine on May 16, 2007, centered in southwest Michigan prohibiting the movement of susceptible stone fruit nursery stock, out of, within and into the quarantined area

of approximately nine square miles. In addition, regulated species of susceptible nursery stock within a 7.2 mile radius (Nursery Stock Regulated Area) of the site of the original positive find could not be used to propagate new plants.

Three years (2007, 2008 and 2009) of comprehensive survey using USDA sampling protocols in commercial and homeowner plantings in southwest Michigan have revealed no additional

plant material testing positive for PPV. On the basis of these tests, on September 2, 2009, MDA director Donald Koivisto declared Michigan to be plum pox-free and rescinded the state quarantine. Growers within the quarantine zone will receive an official letter from the MDA releasing them from the Emergency Action Notice. **IPM**

ReTain tips for use 2009

Phil Schwallier, MSU Extension educator

This article was originally published to the Fruit CAT Alert web site on August 26, 2009.

ReTain is an ethylene blocker in apple and thus when applied delays apple maturity. Ethylene is involved in the ripening process of apples. The following six tips for use are to remind you of its use in apple.

1) ReTain is dose dependent. Cutting the rate will reduce the delay in apple maturity.

2) Maximum ReTain response is obtained by applying ReTain at 30 days before anticipated harvest at full rate per acre.

3) Reducing the rate is often performed to manage harvest and is often used on sensitive varieties, such as Gala, Jonagold.

4) When temperatures are hot during August, some varieties will not respond as expected to ReTain. This year was not a hot year, thus we predict your normal

rates should provide good results.

5) Reduced ReTain rates will still provide a benefit of cracking, greasiness, water core, bleeding and stop drop.

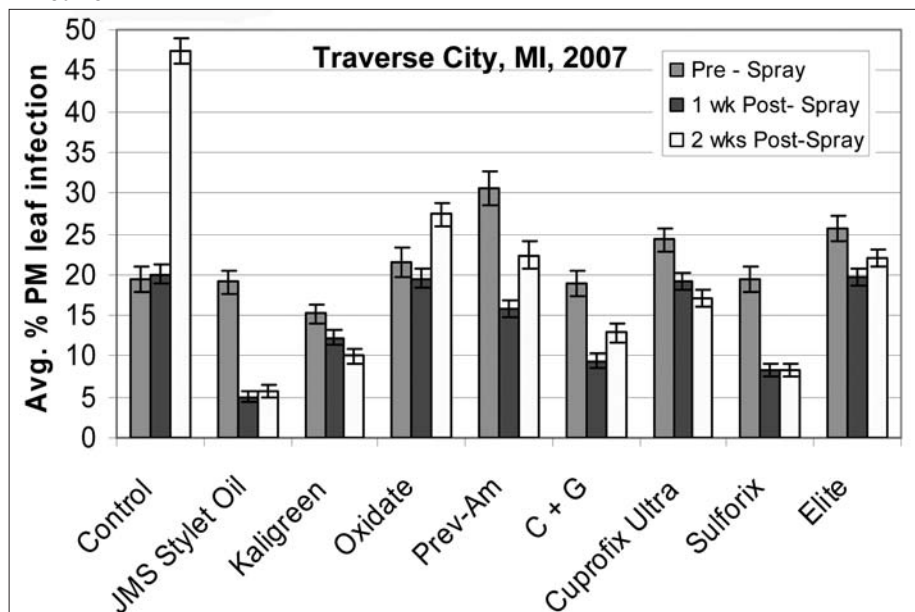
6) Applying the organic silicone surfactant is required with ReTain, but the surfactant may increase the uptake of Captan and some leaf injury may result if Captan is applied near ReTain, (closer than four days before or after ReTain). **IPM**

Late-season control of powdery mildew in grapes: Eradicative treatments

Annemiek Schilder, Plant Pathology

The general approach to powdery mildew management is to apply preventative fungicide sprays and canopy management. But sometimes a situation can get out of control even in the best vineyards, particularly if rain and wind have prevented application of fungicides at critical times. Powdery mildew is a disease that is difficult to control once it gets a foothold. While we have many effective fungicides for preventative and curative control of powdery mildew in grapes, (e.g., Nova, Elite, Flint, Abound, Sovran, Pristine, Quintec, Endura, etc.), not many fungicides can eradicate existing colonies. In fact, spraying systemic fungicides on raging infections is not very effective and can encourage fungicide resistance development. At most, you can expect to suppress sporulation while you keep infections from spreading to healthy clusters

Effect of post-infection (Sep 19) spray on foliar powdery mildew severity on Pinot noir

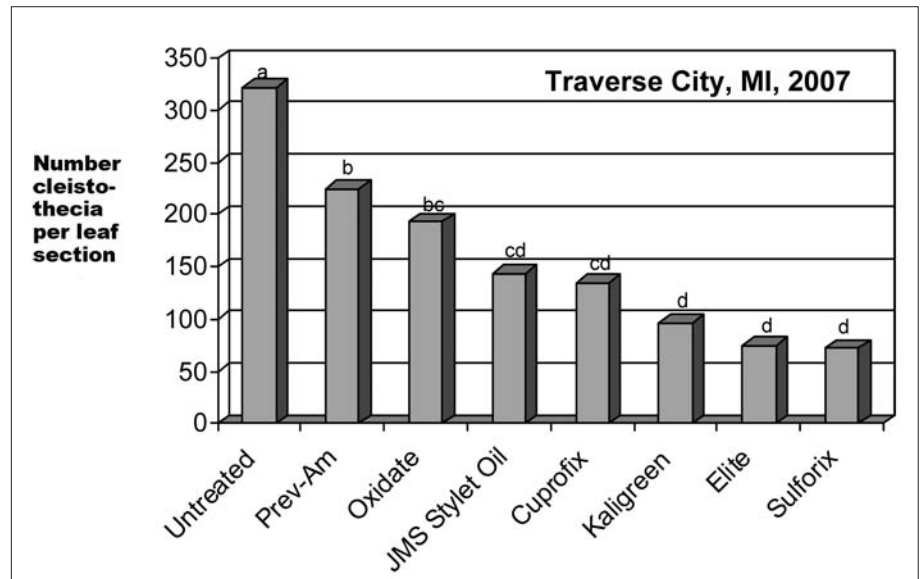


and leaves. Small plot efficacy trials in grapes have shown that Stylet Oil, Sulfurix, and Kaligreen have good eradivative properties and can reduce the number of visible colonies (see graphs). To reduce the number of cleistothecia (overwintering structures), Sulfurix, Elite, and Kaligreen appeared most effective. Do not apply Sulfurix to sulfur-sensitive varieties. More than two applications of Stylet Oil may suppress brix accumulation.

A few things to remember when applying eradivative sprays:

- Apply treatments as soon as possible after symptoms are seen (regular and careful scouting is important).
- Waiting a little longer to ensure good spray conditions is better than spraying immediately under poor spray conditions.
- Remove infected clusters (if possible) and leaf pull to ensure good spray coverage of fruit zone and reduce humidity around clusters.
- Ensure thorough coverage of leaves and bunches, which means increasing spray volume (50-100 gal/acre) and spraying every row.

Effect of post-infection spray on cleistothecium formation



- Ensure forward protection of healthy plant parts by tank-mixing or applying materials that have good protective activity.
- Always read the label for the pre-harvest interval, incompatibility with other products, and other restrictions.
- Scout again to see if your treatment was effective. Also check for possible phytotoxicity. **IPM**

Update on GAP audit snafus

Erin Lizotte and Nikki Rothwell, NWMHRS; Amy Irish-Brown, CHES; Dawn Drake, MACMA

This article was originally published to the Fruit CAT Alert web site on August 26, 2009.

During this first year of USDA GAP audits in the fruit industry, the learning curve has been steep. However, many growers have passed their audits successfully. Those growers that have been through the USDA GAP audit process have helped us construct the following pointers based on their experiences. We hope this continued collaboration will result in further audit success. Due to the differences in GAP manual organization, these suggestions are listed under the section names utilized by the USDA GAP and GHP Audit Verification Checklist.

Implementation of a food safety program

Maps. Indicate on your maps how you or your farm workers identify the individual blocks. For example, if you have an aerial photo, simply identify (whether it is by number or name) each

block. You can simply handwrite the information on the picture/document. This step is an important part of satisfying Questions G1 and G2 and is also important for Part 5 – Traceback.

Worker health and hygiene

Farm policies checklist. A grower had a file of his signed **Spanish** farm policy pages in a file folder, but when the auditor looked at the file folder he could not understand the policy pages as he was not fluent in Spanish. Growers should make sure to include a copy of the **English** version of the policies as well the Spanish version to ensure the auditor knows what the checklist or policy the workers were signing includes.

Field Harvest Visitor

Policy. Growers should instruct the auditor to follow the guidelines set up in the Field Harvest Visitor Policy, which may include washing hands before beginning the inspection. The auditor may be looking for this request and

you will be demonstrating your Visitor Policy (G7).

Field sanitation facilities. Wording in this section of the food safety plan should be amended to define how often the facilities are serviced (cleaned, pumped out, etc.) to satisfy Question G10.

Product contamination from blood/body fluids. At this time, there is variability between MACMA and MSU manuals on this point, but the policy wording should include the following verbiage “destroy the product, clean any equipment, and remove/replace any clothing that may have been contaminated” in order to satisfy Question G13.

Manure and municipal biosolids

If your farm does not use manure or municipal biosolids (Option C as defined in the USDA Audit), include a policy in the plan that states that no manure or

Continued on page 5.

Do the chilly temperatures have you wondering just how cold it got last night?

Beth Bishop, Enviro-weather coordinator

This article was originally published to the Fruit CAT Alert web site on September 1, 2009.

Check out the overnight temperatures tool at www.enviroweather.msu.edu. This tool displays overnight temperatures recorded by area weather stations during the previous night. It also shows forecasted low temperature for the upcoming night. Late afternoon/early evening dewpoints are also provided. (See Figure A).

To access the overnight temperatures tool, select a weather station from the Enviro-weather home page and then click on the overnight temperatures tool under Weather observations and summaries on the lower part of the page (see Figure B). You can also access the tool from any of the crops pages (fruit, vegetables, field crops, etc.) Again click on overnight temperatures under "Weather Summaries," in this case located at the bottom right of the page (see Figure C).

We hope this tool is useful to you as the days get shorter and the nights cooler. As always, if you have questions or comments about Enviro-weather, please contact me, Beth Bishop, Enviro-weather coordinator at bishopb@msu.edu or (517) 432-6520. **IPM**

Figure A. Overnight temperatures tool.

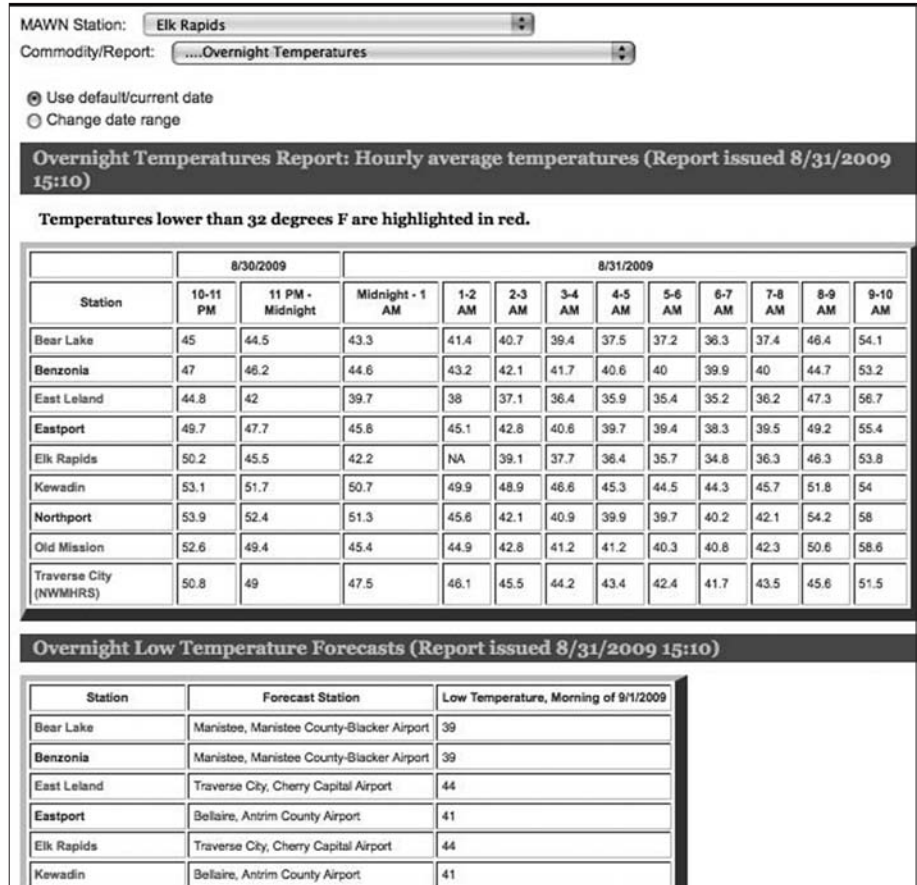


Figure B.

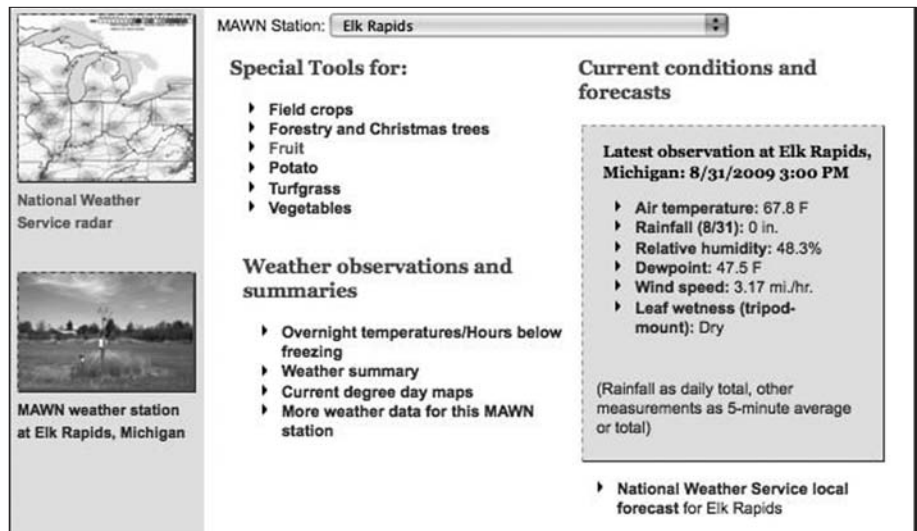
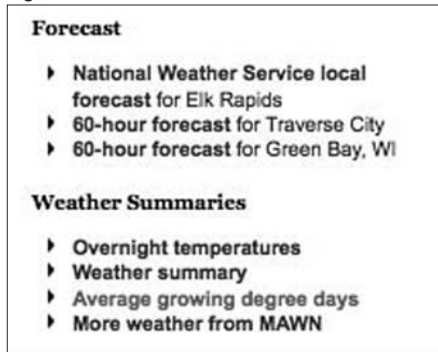


Figure C.



biosolids are utilized in order to satisfy Question 1-22. Remove the other pages under this tab that reference Options A or B.

Field harvesting and transportation
Light bulbs and glass. Clear packing tape placed across the light bulbs would be considered taking steps

to satisfy Question 2-9 and protect the produce in case of breakage.

Traceback

Be sure to include a completed bin/tank tag as an example - a blank tag will not work. All bins should be tagged in the field or before they leave the farm as part of your policy for “traceback.” You

should include a policy for traceback as well as a mock recall procedure (an example of a mock recall can be found in the MSU USDA GAP manual under the Traceability Policy). Include this policy or a similarly crafted policy in the manual that fits your operation. **IPM**

Farmers invited to submit proposals to NCR-SARE

This article was originally published to the Fruit CAT Alert web site on September 1, 2009.

The 2009 North Central Region - Sustainable Agriculture Research and Education Program (NCR-SARE) Farmer Rancher Grant Call for Proposals is now available online at <http://sare.org/ncrsare/cfp.htm>.

Farmers and ranchers in the North Central Region are invited to submit grant proposals for projects to explore sustainable agriculture solutions to problems on the farm or ranch. Proposals should show how farmers and ranchers plan to use their own innovative ideas to explore sustainable

agriculture options and how they will share project results.

Sustainable agriculture is good for the environment, profitable, and socially responsible.

Projects should emphasize research or education/demonstration. Grants can range from \$6,000 for individual farmers up to \$18,000 for groups of three or more farmers.

NCR-SARE expects to fund about 50 projects in the twelve-state North Central Region with this call.

The deadline for proposals is Thursday, December 3 at 4:30 PM.

For more information, contact Joan Benjamin, NCR-SARE Farmer

Rancher Grant Program Coordinator, at jbenjamin2@unl.edu or 402-472-0809 or (800) 529-1342.

The NCR has funded more than 700 farmer rancher grants worth more than \$4.3 million since the inception of this program.

Each state in SARE’s North Central Region has one or more State Sustainable Agriculture Coordinators who can provide information and assistance to potential grant applicants. The contact for Michigan is MSU’s Dale Mutch, 269-671-2412, ext. 224, mutch@msu.edu. **IPM**



I – Southwest

Mark Longstroth, Bill Shane and Diane Brown-Rytlewski

Weather

The weather has been cool with highs in the 70s and lows in the 40s and 50s. No significant rain occurred, but some early morning fog and misty rain provided some leaf wetness. Rain at the end of August brought about two inches of water. Most sites have fair to good soil moisture. Some areas continue to be dry. We continue to lag about eight days behind normal in heat units accumulated, but only slightly later than last year.

Tree fruit

Japanese beetle numbers are low. Asian ladybird beetles are present in

Southwest Michigan growing degree day totals March 1 through September 7				Grapes, April 1
Location	GDD 42	GDD 45	GDD 50	GDD 50
SWMREC	3332	2871	2149	2113
Fennville	3105	2655	1950	1925

fruit plantings. Oriental fruit moth trap catches are up, signaling the flight of the third generation.

In **peaches**, we are harvesting Cresthaven, PF25, Loring, Glowingstar, PF19-007, PF23, PF24-007, PF24C, Allstar, Blushing Star, Redkist, Baby Gold and Redskin. Quality continues to be good with relatively few split pits. Summer pruning may be needed to increase red skin color of older varieties such as Cresthaven. Brown rot is common in some orchards and fungicide treatments for brown rot are needed as fruit color. Tarnished plant bug and stinkbugs are common in orchards with broadleaf weeds.

In **plums**, harvest of NY9, Italian, Red Heart and Vision is underway. Ripening plums should also be protected from brown rot. Apple maggots are a problem in ripening plums. Scout for damage from white apple or potato leafhoppers.

In **apples**, harvest of Gingergold, Williams Pride, Zestar, Mollies Delicious, Jonamac, McIntosh and Gala is underway. Empires and Jonathans are being harvested for caramel apples. The southwest Michigan, the apple maturity report is being posted weekly on Wednesdays from now through early October at the SW Michigan Research and Extension Center web site fruit newsletters. The reports are also posted on the MSU Apples web site (www.apples.msu.edu). Sunscald-like symptoms are appearing on Gala. Sooty blotch and flyspeck are relatively rare. Codling moth trap catches have declined for most orchards and Oriental fruit moth trap catches are significant in some orchards. Oriental fruit moth is generally the insect of most concern during the month of September in southwest Michigan.

In **pears**, Bartlett harvest for direct market sales continues with the winter pears Anjou and Bosc also being picked.

Harrow Sweet harvest is expected next week, depending on the site and the market. Growers should protect against the second generation of codling moth, which attacks pears just before harvest. Pear scab, *Fabraea* leafspot and sooty blotch are the primary diseases of concern.

Small fruit

Blueberry harvest is essentially over. Some growers are still harvesting Elliott. Blueberry maggot and alternaria fruit rot are the primary problems for the remaining fields being harvested. Annemiek Schilder’s lab is still collecting samples of blueberries with suspected virus or virus-like problems. Sample collections will continue through the first week in October. Annemiek is also interested in plants with symptoms of blueberry stunt, caused by a phytoplasma. Plants infected with stunt have bushy branches at the base of the plant, leaves with chlorotic edges and interveinal areas that cup downward, and fruit ripens late, or not at all. Plant samples with virus symptoms can be sent to Jerri Gillett

at MSU. Please phone or email Jerri at 517-355-7539 or gillett@msu.edu, for instructions on sending samples. Growers can hear more about viruses at the Virus Update Meeting, September 24 at Trevor Nichols Research Complex near Fennville from 9:00 AM to 12:00 PM.

In **grapes**, harvest of Mars, Fredonia, Himrod, Vanessa, and Marquis are underway. Niagara harvest is projected to begin around September 20-21 and Concords in October. Soluble solids (sugar) content are lagging with Niagara at 8 and Concord at 9. The diseases of greatest concern now are botrytis and downy mildew. Wet conditions spread botrytis, so susceptible varieties should be protected at veraison and whenever soaking rains are conducive to the disease. Low nighttime temperatures have been a common occurrence lately, resulting in extended periods of wet foliage and fruit in the morning. This weather is favorable for the spread of downy mildew, so fungicides against downy mildew are required during the summer season when there are morning

dews. Growers should continue to watch for the third generation of grape berry moth, which is still active. Stings and tunnels can be found on the fruit. Japanese beetles numbers are declining.

Fall **raspberry** and **blackberry** picking continues. Raspberry varieties include: Jaelyn, Caroline and Polana. Fall blackberry varieties being picked include: Chester, Triple Crown, Prime-Jan® and Prime-Jim®. A significant disease of brambles in the fall is Botrytis fruit rot (gray mold). Although the frequent morning dew and ground fog we’ve experienced are favorable for this disease, the temperatures have been cool. The pathogen prefers temperatures closer to 70°F. Most fruit production is likely to wrap up by the end of the month. Many diseases such as anthracnose, cane blight, rust and botrytis overwinter on infected canes. Pruning out all old fruited canes and infected primocanes after harvest, removing it from the field and destroying it is an important part of disease management. **IPM**

2 – Southeast

Bob Tritten

Weather

With generally cool conditions persisting over the region, our season is running about nine to 12 days behind normal in terms of degree day totals. When I look at the season in terms of beginning harvest dates for most of our fruit crops however, our season is running just a few days behind normal.

Most areas of the region have had about one inch of rainfall over the last two weeks. Soil moisture is generally fair to adequate. However there are some isolated areas in the region where soil moisture is still below normal.

Tree fruit

Apples continue to size very well with the exception of unirrigated blocks. Fruit size is 2.75 to 3.25 inches for most varieties. Honeycrisp size is very good this year, in fact in some cases a bit too large. Apple growers are just beginning to harvest a few of the earlier maturing strains of McIntosh; Gala for the most part are not mature. A few growers have taken their first picking of Honeycrisp off, but they too are immature. Growers are looking for just a few more days before they really begin McIntosh harvest in earnest. This year McIntosh are definitely ahead of Gala and Honeycrisp in terms of maturity. Fruit color has continued to improve over the last two weeks.

The pressure from apple insects is lessening as we move toward the end

of the season. The notable exception is codling moth, which is a large question mark. It is difficult to say if codling moth emergence has been delayed due to cool temperatures, or if we have just passed their natural time when they can mature and are not a threat for the remainder of the season. I am a bit concerned about late maturing apple varieties possibly being infected with codling moth. This is a great year to be trapping for codling moth emergence. For growers not trapping, you need to watch for this late damage. Apple maggot populations are generally on the decline. Woolly apple aphids have moved to the tips of the terminal branches and even on to fruit stems over the last two weeks. This has been an emerging pest in many blocks over the last three weeks or so. Japanese beetle populations have declined

dramatically over the last two weeks. There are few remaining, but their numbers are low. For the most part, our predator populations

Southeast Michigan growing degree day totals for March 1 to September 7			
Location	GDD42	GDD45	GDD50
Commerce (Oakland)	3183	2728	2025
Emmett (St Clair)	3051	2605	1927
Flint (Genesee)	3084	2641	1961
Lapeer (Lapeer)	3078	2634	1957
Petersburg (Monroe) *	3304	2840	2136
Romeo (Macomb)	3198	2743	2044

*Missing data has been estimated from Hudson and Toledo for July 23-31

have declined over the last week.

Over the last two weeks, I continue to see more of black rot symptoms show up in fruit as it is beginning to mature. The classic black rot symptoms will start as a small black or reddish spot that will quickly enlarge to a quarter-size, or even consume the entire apple. Captan or other fungicide applications are needed to control this disease, even late in the season. Sooty blotch and fly speck symptoms are showing up in a few blocks of apples, however it is not prevalent this year. Cedar apple rust symptoms continue to be seen in ever increasing amounts at several farms.

Pears were harvested over the last week at most farms with the exception of winter pears which still have a week or so to mature. We have had a fairly good Bartlett harvest this year.

Peach harvest is quickly winding down across the region with most growers telling me that they will be finished late this week. Several growers report peach scab showing up in a limited number of blocks across the region. Bacterial spot was also very active this year in many peach blocks, causing early defoliation. Lastly, there was a fair amount of tree collapse

continuing to show up all the way through harvest.

Plum harvest continues across the region with the first picking of Stanley's taking place in the last few days. Many growers are waiting for the rest to ripen a bit before they strip the trees.

Small fruit

Strawberries have an unusually high amount of leaf curling in both newly planted and renovated fields this year. The leaf curling earlier in the season was due primarily to potato leaf hopper feeding. Many plantings of strawberries have shown symptoms of powdery mildew which also caused severe leaf curling. Depending on the strawberry variety, powdery mildew will also cause some blackening or reddening on the back of the leaf surface. In many cases, I have recommended a fungicide application to control it. The *Michigan Fruit Management Guide* (E-154) has an informative table that lists the fungicides that are most effective on powdery mildew.

Raspberry harvest continues for fall red raspberries. Ripening has been slow at many farms, and I continue to hear reports of farms closing for several

days for ripening. There have been several reports of grey mold or Botrytis in raspberries over the last week. Again consult the *Michigan Fruit Management Guide* for various control options. There have been several plantings, particularly the new ones that have been infected by powdery mildew as well. Lastly, I have had a good number of reports of wasps feeding on raspberries this year. Don't confuse wasps and honeybees. Honeybee activity has been very strong in fall red raspberries over the last two weeks. I have seen wasps that are feeding on overripe berries at several farms. As a general rule of thumb, honey bees that are pollinating raspberries are not aggressive and generally have not been an issue for pickers. However, wasps need to be respected as they tend to be more aggressive and can be an issue particularly at pick-your-own farms. Cane removal is pretty much complete in summer red, purple and black raspberries.

Blueberry harvest is winding down across the region. Most growers report that their berry size has dropped off to a point where picking has not been up to par. Most farms will wrap up blueberry harvest in the next week or so. **IPM**

3 – Grand Rapids Area

Amy Irish Brown, Phil Schwallier and Carlos Garcia-Salazar

Tree fruit -- Amy Irish-Brown and Phil Schwallier

We have continued to lose ground with degree day accumulations. For the Sparta station, degree day totals for base 42 are 3,050, which is nine days behind normal averages; base 50 is 1,895, which is 15 days behind normal. We have had no rainfall in the last week, but soil moisture levels are adequate from earlier rainfall.

Peach harvest continues, but is winding down. Peach quality and size

are excellent overall for 2009. For apple harvest, Gingergold and Paula Red harvest is complete with many growers reporting picking out longer than expected. Even though degree day accumulations have been much less than average, the predicted apple harvest dates from earlier in the summer are still quite accurate for this area. MacIntosh harvest will start this week with Galas starting next week.

In blocks with **apple** scab lesions present, growers should consider adding fungicides for scab back into their programs if we get any extended rain events. More than 24 hours of wetting could cause further infections on fruits

and lead to pinhead scab on apples coming out of storage next year. The infections that cause pinhead scab take place while fruit is still hanging on the tree and they usually cannot be halted by the fungicides in a dip tank once they get started in the orchard.

Growers should have already applied second summer disease sprays to prevent sooty blotch and fly speck symptoms from showing up on fruits. We are way past the 250 hours of wetting with an additional two inches-plus of rain and that warrants additional fungicides.

A regional codling moth biofix was set for May 21, 2009 (260 GDD 50 since January 1). We've accumulated 1,635 GDD 50 past that biofix. We should be past peak egg hatch for second generation, but trap numbers have been very low in many blocks and are not over threshold that warrant spraying. This year it is very important to use your own trap data to base spray decisions on.

European red mites continue to be present in rather high numbers in some

Summary of the weather station data using July 1 as a date when first summer disease fungicides went on.

Station	Rain since petal fall	Rain since last fungicide application (July 1)	Wet hours after 2 inches of rain since last fungicide application
Sparta	12	7.4	352
Belding	11.6	7.9	515
Fremont	9	6.1	327

blocks. Bronzing is starting to become easier to see. At this point, the benefit of applying a miticide is probably not worth the extra cost. European red mites will be a pest to monitor for early in 2010.

Obliquebanded leafroller summer generation flight was relatively light and should be coming to an end. Very few larvae are being reported.

Very few Japanese beetles are still present, but they are harder to find.

Apple maggots continue to be trapped here and there, but numbers are still quite low and not consistent across the region.

Oriental Fruit Moth regional biofix was set on May 9. We have accumulated 2,290 GDD base 45 since May 9. This indicates third generation egg hatch is probably just beginning and cover sprays would be necessary in blocks with high trap numbers (40-plus moths

per week). In the Grand Rapids area, third generation Oriental fruit moth could cause some damage in apples in blocks with high trap counts, but, overall, Oriental fruit moth is not a big threat in this area for this generation. It is suggested that apple blocks that are under mating disruption for codling moth, should be monitored for activity to determine potential problems.

Blueberry report – Carlos García-Salazar

The blueberry harvest has continued in blueberry fields north of Allegan County. Growers are harvesting blueberry fields planted with the Elliott variety. In most fields, this is the third harvest. Fruit quality is very good and prices for blueberries are improving in comparison to those observed at the beginning of the season.

Major problems observed so far are mainly related to diseases. We continue seeing blueberry fields with plants that have extensive defoliation, leaf burn and, in general, symptoms similar to those observed on virus infected plants. So far, in most plant samples analyzed laboratory results are not showing indications of virus or bacterial pathogens. However, we will continue trying to find the reason for those symptoms.

Again, the demand for processing berries is low. This is causing problems for small producers that rely entirely on the mechanical harvest to harvest their fields. This problem is hitting producers hard that machine harvest 70 percent or more of their crop every year. In spite of this, the demand for fresh blueberries remains strong. But in comparison with 2008, prices for fresh blueberries are low. **IPM**

4 – West Central

Mira Danilovich

Weather and crop development

August ended with cooler than normal temperatures and with rain. Temperatures were mostly into the 60’s for highs and 40’s to the low to mid-30s for lows. The first week of September couldn’t have been better! We had mild temperatures, mainly into the 70’s for highs and 30’s and 40’s for the lows.

Tree fruit

All fruit benefited from the rains. Size is very good to excellent. **Peach** harvest is still going on strong. **Apples** are looking excellent. Generally, fruit size is very good to excellent and color is developing very nicely in response to the cool nights. **Plums** size and color is excellent. Castleton harvest is over. NY 6 is ready for harvest and Stanley plums are about a week away.

Growing degree day totals from March 1 as of Monday, September 7

Location	GDD 42	GDD 45	GDD 50	Rainfall August 25 – September 7	Rainfall for the period of April 1 – September 7
Hart	2834	2400	1739	1.14	16.91
Ludington	2657	2233	1594	0.69	15.03
Bear Lake	2704	2286	1655	0.63	16.66

Heavy dew is contributing to brown rot development in stone fruit. It is still necessary to keep the blocks covered to prevent further development and spreading of disease. There are a few symptoms of summer diseases in apples. **Cherry** blocks are beginning to lose the leaves due to the cherry leaf spot.

Scouts report codling moth to be above the threshold in most orchards during the first week of the last two-week period. The second week is showing significant drop in codling moth numbers. The average trap count across the district is less than one

moth per trap. American plum borer trap catches are showing an increase in their numbers during the first week and significant drop last week. Greater peachtree borer trap catches remain high and relatively unchanged. Lesser peachtree borers are quite active with reported catches of slightly over six per trap. Spotted tentiform leafminer numbers are still high. Apple maggot numbers have declined slightly, but still remain high. Oriental fruitmoth numbers have gone up significantly. Japanese beetles are present in most of the blocks. **IPM**

Weather news

Jeff Andresen, Agricultural Meteorology and Geography

Medium-range forecast guidance suggests the formation of a cut-off trough or low somewhere across the central or eastern United States. With circulation features largely cut-off from the main jet stream flow, these weather

systems are sometimes not handled well by computer model guidance and, sometimes exhibiting little or no movement, are notoriously difficult to forecast. The exact location of the cut-off feature is critical, as resulting surface weather could range from warmer and drier than normal (if the center remained west of Michigan) to cool, showery, and unsettled (if the center were over or just east of Michigan). Current expectations

are that the center will be close to Michigan, so the NWS medium range outlooks generally call for cooler and wetter than normal weather.

The official Climate Prediction Center **6-10 day outlook** for September 13-17 calls for below normal mean temperatures statewide and for a range of precipitation totals from near normal in western sections of Upper Michigan to above normal levels elsewhere.

During the **8-14 day** period, September 15-21, the outlook calls for mean temperatures to range from below

normal levels across southern sections to near normal levels across the north. Precipitation totals during this time

frame are forecast to reach above normal levels statewide. **IPM**

Michigan State University Cooperative Agricultural Weather Service
Cumulative Precipitation Summary For 09/07/2009

STATION OR DISTRICT	ACTUAL AND PREDICTED DEGREE-DAY ACCUMULATIONS SINCE MARCH 1 2009 (*)				PRECIPITATION TOTALS SINCE				04/01/09 (since Apr. 1)
	AS OF 09/07 2008	BY 09/12 2008	BY 09/17 2008	BY 09/12 2009	09/01/2009 (Last week)	08/25/2009 (Last 2 weeks)	08/11/2009 (Last 4 weeks)	Actual Dev. Norm.	
WEST UP NORMS**	2442	2239	2312	2388	1479	1299	1341	1376	
MARQUETTE	2668	2753	2822	2388	1686	1737	1773		
EAST UP NORMS	2722	2483	2515	2583	1470	1516	1550		
CORNELL	2543	2329	2406	2488	1718	1478	1527	1568	
SSMARIE	2940	3036	3119	2988	1529	1339	1383	1420	
N. W. LP NORMS	3128	2799	2883	2988	1904	1965	2014		
BEULAH	3105	2790	2874	2979	2033	1713	1765	1821	
BINGHAM	2775	2483	2558	2651	2037	1724	1776	1833	
NORTHPORT	2983	2656	2736	2836	1750	1471	1515	1564	
OLDMISSION	2879	2970	3050	2806	1940	1610	1658	1712	
N. E. LP NORMS	2921	2629	2707	2806	1843	1900	1946		
ALPENA	2963	2615	2693	2791	1866	1606	1653	1704	
ROGERCITY	3197	3302	3394	3234	1902	1578	1624	1675	
W. CENT. LP NORMS	3207	3029	3126	3237	2111	2179	2234		
FREMONT	3084	2884	2976	3082	2095	1893	1958	2020	
HART	2919	2785	2894	2894	1992	1725	1836	1894	
LUDINGTON	3200	2980	3177	3087	1842	1623	1678	1732	
CENT. LP NORMS	3284	3389	3480	3177	2187	2254	2308		
ENTRICHAN	3200	2980	3177	3087	2087	1852	1909	1969	
E. CENT. LP NORMS	3310	3419	3515	3280	2208	2280	2339		
BADAXE	3260	2902	3109	3142	2154	1874	1875	1942	
SAGINAW	3430	3209	3312	3438	2294	2047	2116	2191	
S. W. LP NORMS	3479	3422	3521	3632	2449	2531	2600		
BHARBOR	3278	3184	3276	3397	2337	2219	2285	2367	
FENNIVILLE	3497	3408	3506	3636	2159	2021	2082	2156	
GLENDORA	3588	3510	3611	3745	2347	2213	2279	2361	
GRANDJUNC	3687	3579	3682	3818	2433	2307	2376	2461	
HOLLAND	3328	3396	3494	3623	2519	2373	2444	2531	
KENTCITY	3242	3070	3159	3275	2201	2207	2273	2354	
SPARTA	3497	3408	3506	3636	2118	1912	1969	2040	
WATERLIET	3532	3465	3542	3644	2347	2213	2279	2361	
S. CENT. LP NORMS	3263	3063	3153	3268	2143	1918	1977	2046	
BELDING	3516	3483	3586	3716	2358	2283	2353	2435	
COLDWATER	3442	3318	3416	3540	2312	2128	2194	2269	
ELANSING	3915	3712	3822	3960	2403	2481	2547		
S. E. LP NORMS	3597	3235	3331	3451	2706	2463	2539	2627	
DETROIT	3299	3129	3222	3338	2441	2062	2126	2199	
FLINT	3446	3232	3328	3448	2179	1969	2030	2100	
MILFORD	3560	3320	3418	3542	2305	2070	2134	2208	
ROME0	3846	3716	3826	3964	2412	2147	2214	2290	
SALINE					2660	2472	2549	2637	
TOLEDO									

* Since weather data for some agricultural stations are not available prior to April 1st, GDD values for those stations during February and March are estimated with closest available station data.
** District normals were calculated as the mean of daily GDD totals at several stations within each district for the period 1951-1980.
Report generated at 08:57, 09/08/09

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Crop Advisory Team Alerts

Integrated Pest Management Program
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The Crop Advisory Team Alerts are published by the Michigan State University IPM Program

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Crop Advisory Team Alert subscriptions are \$35 or free on the Internet at:

www.ipmnews.msu.edu/fruit

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Additional support provided by the MSU Fruit Team.