

# Northern Michigan FruitNet 2014

## Northwest Michigan Horticultural Research Center

### Weekly Update

June 3, 2014

#### CALENDAR OF EVENTS

- 6/3**            **IPM Update**  
Leelanau Co.– Bardenhagen Farm
- 6/3**            **IPM Update**  
Grand Traverse Co. – Wunsch Farm
- 6/4**            **IPM Update**  
Antrim Co. - Jack White Farms
- 6/4**            **IPM Update**  
Blaine Christian Church
- 6/6**            **Parallel 45 / MSUE First Friday Meeting Series**  
NWMHRC
- 6/7**            **NW Michigan Saskatoon Berry Farm Tour**  
Start at NWMHRC
- 7/2**            **IPM Updates End**
- 7/22-24**       **35<sup>TH</sup> Annual Ag Expo**  
Michigan State University
- 9/4**            **NWMHRC Open House – 35<sup>th</sup> Anniversary**  
**Please note change in date from 8/21 to 9/4**

#### GROWING DEGREE DAY ACCUMULATIONS AS OF June 2 AT THE NWMHRC

Year	2014	2013	2012	2011	2010	2009	24 Yr. Avg.
<b>GDD42</b>	576	643	976	572	965	599	677.6
<b>GDD50</b>	301	369	535	279	534	275	347.0

## **Growth Stages at NWMHRC (June 2, 2014, 3:30 p.m.)**

**Apple:** Red Delicious – Petal fall  
Gala – Petal fall  
Yellow Delicious – Petal fall  
**Pear:** Bartlett: In the shuck  
**Sweet Cherry:** Hedelfingen: 10 mm fruit  
Napoleon: 9 mm fruit  
Gold: 8 mm fruit  
**Tart Cherry:** Early shuck split  
**Balaton:** Early shuck split  
**Apricot:** 14 mm fruit  
**Grapes:** 1-3" shoots

## **NORTHWEST MICHIGAN REGIONAL REPORT**

E. Pochubay, N. Rothwell, and D. Elsner, Extension Educators

With cherries coming out of the shuck and rain in the forecast, growers are protecting from diseases and insects.

**Weather Report.** Weather conditions across the region continue to shake things up: we went through a long slow start to the spring right into summer-like conditions. Last week, temperatures were slightly above average, and most days were sunny, clear and in the low 70s. By Thursday, 29 May, daytime temperatures increased, and we have remained in the 80s through 2 June. Cooler temperatures are predicted for the coming days, which will be welcomed by those working outside in the somewhat suddenly hot and humid conditions. With the recent warm up, we have jumped in our degree-day accumulations; we have accumulated 576GDD base 42 and 301GDD base 50. When we compare our GDD in 2014 to our 24-year average, we are only ~50GDD (base 50) and ~100GDD (base 42) behind our average, which is considerably different than where we were two weeks ago.

Rain was predicted on Sunday 1 June through Tuesday, and the region received varying amounts of rainfall. At the NWMHRC, we received only 0.06" of rain but in Northport, they received 0.31" of rain. The Bear Lake and Benzonia weather stations received 0.14" and 0.31" respectively. Growers have reported higher amounts of rainfall at their farms than what was reported at the weather stations. A hard rain fell in many parts of the region on Monday 2 June. After the afternoon rain, the NWMHRC received just under one inch of rain in less than an hour and a half.

**Crop Report.** With the soaring daytime temperatures, bloom came and went quickly. At one point during the past week, we had late sweet cherries at the end of bloom, tart cherries in fully bloom, and early apple varieties had king blooms opening. Sweet cherries likely had a good pollination period as many orchards had open bloom during the warm and sunny days last week. Tart cherries also had a good window for pollination, but the time between first bloom and petal fall was much shorter. Apple bloom in our warmer areas or early blooming varieties had good pollination weather. Later varieties or cooler areas of our region will have to contend with the heavy rainfall on Monday. Most growers protected against fire blight over the weekend when much of the apple bloom were susceptible to this disease with temperatures in the mid to high 80s. Growers were also covering the fast growing foliage

for other diseases over the weekend. Conditions for spraying were good as wind speeds were relatively low in the mornings and into the evening hours.

Even with sweet cherry bloom was in full swing last week, green cherry fruit are already visible on the trees. Tart cherries are also coming out of the shuck, and at first glance, fruit set appears to be off to a good start. We have had reports of lighter return bloom in tart cherries where blocks had a heavy crop in 2013, particularly in orchards where fruit hung for a while to ensure proper ripening. Growers are also moving from pollination and bloom to protecting fruit from pest insects. Insecticides will likely be going on in most cherry blocks this week.

**Pest Report. Fire blight** bacteria overwinter on and around cankers formed during the previous season, and these bacteria rapidly develop during warm conditions, beginning when temperatures reach 65 degrees F. Rain, hail, dew, heavy wind and pollinators visiting flowers can transfer fire blight bacteria to flower pistils. Recent temperatures were very high with daytime highs reaching into the mid- to high- 80s over the weekend, and these conditions were conducive for rapid growth of fire blight bacteria on open flowers. Heavy rain on Monday may have washed the fire blight bacteria into open flowers, and infection can move systemically, particularly on susceptible apple varieties. Many growers sprayed for fire blight over the weekend in anticipation of rain predicted for Sunday-Monday.

In areas with streptomycin resistant bacteria, oxytetracycline and Kasumin (in counties where it is permitted by Section 18 exemption: Grand Traverse, Leelanau, and Antrim) is the best option for control. Growers need to be sure that they have used a registered alternative for fire blight control *prior* to the first application of Kasumin. In counties that do not have a Section 18 exemption for Kasumin use, streptomycin and oxytetracycline are the best options for fire blight control.

Minimizing shoot growth on apples reduces susceptibility to fire blight and the spread of fireblight bacteria to healthy tissue. Apogee is a locally systemic gibberellin biosynthesis inhibitor that slows shoot extension and reduces the potential for shoot blight. The optimal timing for application of Apogee is at king bloom petal fall. This tool is important in helping to minimize shoot blight infections and a great overall management strategy.

Yesterday's rain resulted in the potential for apple scab infections across the region. At the NWMHRC, we were at green tip in McIntosh on 9 May, and according to the apple scab model, 87% of apple scab spores are mature and 57% have been dispersed. The end of primary scab is not forecasted for the coming week and we are still catching spores in the field. Following evening rain on 1 June and morning rain on 2 June, spore counts were at 55 spores per spore rod, and following the heavy afternoon rain on 2 June, we found an average of 130 spores per spore rod at our site in Leelanau County.

Growers are currently covering for both fire blight and **apple scab**, and recent heavy rains have likely washed bactericides and fungicides from foliage. Growers need to continue to protect from apple scab infection and for fire blight if varieties are still in bloom. We recommend that growers should prioritize managing fire blight in fire blight susceptible varieties if possible and follow these applications with scab sprays. These warm conditions coupled with the potential coming rain will necessitate covering tissue for apple scab and powdery mildew. With forecasted warm and wet conditions, growers will need to be diligent about good coverage.

We have received reports of **cherry leaf spot** lesions on bract leaves in both Balaton and Montmorency tart cherry, and we hypothesize that these infections are likely a result of the infection period on 20 May. If we are observing infection now, the cherry leaf spot conidia on the undersides of infected leaves will be quickly spread to nearby leaves during wet periods for the duration of the season; growers will need to be diligent about adequately covering new tissue if CLS signs are present on bract leaves. We have had

substantial growth in the last week and newly expanded leaves are susceptible to potential cherry leaf spot infection and will need to be protected with more rain in the forecast. During the recent rain, we had cherry leaf spot infection periods across the region, and heavy rains on Monday likely washed off fungicides that were applied prior to rain. Therefore, growers may need to reapply fungicides to protect from possible cherry leaf spot infection as there is rain forecasted for Tuesday evening into Wednesday this week. Growers need to be sure to check labels for re-application intervals for fungicide sprays.

**Codling moth** (CM) began flying during warm nights over the weekend. Although we have not captured codling moth at the NWMHRC, 20 codling moths were reported in a trap at a CM hotspot site in East Leland. **Plum curculio** (PC) are also active, and we received reports that PC are laying eggs in apricot fruits that are out of the shuck over the weekend. No PC stings have been observed or reported in cherries, but sweet cherries are at shucksplit and tart cherries have just coming out of the shuck. Growers should be protecting fruit against PC as this insect can target fruit as it just emerging from the shuck. **American plum borer** and **lesser peach tree borer** are active; this is our second consecutive week of APB capture (11.3 moths/trap) and the first LPTB were caught this week (2.3 moths/trap). No **green fruit worm** moths were captured this week and **spotted tentiform leafminers** are still active (127.5 moths/trap). This is the second consecutive catch of **Oriental fruit moth** (4.5 moths/trap).

### **Wine Grapes**

It is now very plain to see which varieties are going to show any significant shoot growth from buds which above the snow line during our coldest temperatures. Riesling and Chardonnay are still looking better than most other *vinifera* varieties. We have many varieties at the research center which only have shoot growth at the very base of the vine, and we will be cutting out the trunks and the rest of the dead wood soon.

Where there is significant shoot growth, sucker shoots are in the 6-12 inch range, while higher shoots are in the 1-5 inch stage. **Powdery mildew** is the only disease threat at this time, with many fungicide choices available at this point in the season.

### **Saskatoons**

Bushes are in the green fruit stage and the crop looks good. The first **rust** infections on fruits and **apple curculio** adults appeared during the last week. This is a critical time for protecting the berries from diseases and insects.

## PROTECTING DEVELOPING FRUIT FROM PLUM CURCULIO

Emily Pochubay, Nikki Rothwell, MSUE Educators, and John Wise, Dept of Entomology, MSU

This season's first report of plum curculio activity in northwest Michigan was two weeks ago, and more recently, we have received reports that PC females were ovipositing (laying eggs) into apricots over the weekend. The plum curculio (PC) female makes a crescent-shaped wound on the flesh of developing fruit and oviposits an egg into the scar. White larvae with a dark head capsule hatch from eggs, bore into the developing fruit and feed inside the fruit until they are mature. Mature larvae exit the fruit and pupate in the soil. Management approach for PC should target adults to prevent oviposition in fruit and feeding damage. At this time, cherries are coming out of the shuck, and growers should be actively protecting fruit from PC. Here are some tips and reminders when considering materials for PC management this season:

- The organophosphate insecticide Guthion is no longer available for use.
- Organophosphates (OP) and pyrethroids work primarily as lethal contact poisons on PC adults in the tree canopy. Avaunt also works primarily by lethal activity, but this insecticide must be ingested by the adult weevils. The optimal timing for these chemistries is petal fall.
- Neonicotinoids are highly lethal to plum curculio via contact for the first several days after application. These systemic compounds also move into plant tissue and protect fruit from plum curculio injury by deterring egg laying and preventing feeding. The optimal timing for neonicotinoid use is after fruit set in pome fruits and shuck-split in stone fruits.
- If growers miss the optimal timing for PC, neonicotinoids and OP's can be used as rescue treatments because they have curative action that can kill eggs and larvae that are already present in fruit.
- The recommended rate of Actara for PC is 4.5 to 5.5 oz per acre.
- Voliam flexi can be used for PC control, but only the neonicotinoid (Actara) component will be effective against PC. The recommended rate of Voliam flexi for PC control is 6 to 7 ounces in cherry and 4 to 7 in apple, and growers should be sure to apply an adequate amount of Voliam flexi to meet the recommended rate.
- Leverage (imidacloprid + cyfluthrin) and Voliam Xpress (Chlorantraniliprole + Lambda-cyhalothrin) are other pre-mix materials labeled for PC control.

For organic growers, Surround WP can reduce plum curculio injury to fruit if applied to attain a heavy coating on the tree canopy; this kaolin clay product works as a PC repellent. Building up and maintaining several coats of the clay on fruit as the fruit continues to grow is key to successful use of this product. Several other compounds, like Rimon, Esteem and Delegate, are commonly used in tree fruit pest management programs and have limited activity on plum curculio. Rimon, when targeted to control obliquebanded leafrollers or codling moth at petal fall, will sterilize PC eggs when adults are exposed to residues in the tree canopy. These sub-lethal effects will *not* prevent injury to fruit from adults but will result in nonviable PC eggs, thus no live larvae. Delegate, when ingested by PC adults, will cause moderate levels of mortality. Esteem, when used approximately two weeks post-harvest in cherries (San Jose scale crawler timing), will reduce female PC overwintering viability. However, Rimon, Esteem and Delegate are **not** labeled for stand-alone PC control, but when used in pest management programs may contribute to overall PC population management.

## Summary of control materials for plum curculio

Compounds <sup>2</sup>	Chemical class / activity	Crop	Rate	Crop stage and initial control timing (DD <sub>50</sub> )
Imidan 70W**	Organophosphate	Pome fruit	3 lb	Petal fall (approx. 250 DD)
	Lethal via contact	Stone fruit	2 1/8 lb	Petal fall (approx. 175 DD)
Actara 25WG**	Neonicotinoid	Pome fruit	4.5 oz	Petal fall + 3-5 days (approx. 300 DD)
	Lethal, Antifeedant and Curative	Stone fruit	4.5 oz	Shuck-off (approx. 250 DD)
Calypso 480SC**	Neonicotinoid	Pome fruit	4 oz	Petal fall + 3-5 days (approx. 300 DD)
	Lethal, Antifeedant and Curative	Stone fruit	4 oz	Shuck-off (approx. 250 DD)
Assail 30SG**	Neonicotinoid	Pome fruit	6 oz	Petal fall + 3-5 days (approx. 300 DD)
	Lethal, Antifeedant and Curative	Stone fruit		Shuck-off (approx. 250 DD)
Belay 2.13SC**	Neonicotinoid	Pome fruit	6 oz	Petal fall + 3-5 days (approx. 300 DD)
	Lethal, Antifeedant and Curative	Peach		Shuck-off (approx. 250 DD)
Delegate 25WG*	Spinosyn	Pome fruit <sub>1</sub>	6 oz	Petal fall (approx. 250 DD)
	Lethal via ingestion	Stone fruit <sub>1</sub>		Petal fall (approx. 175 DD)
Avaunt 30WG	Oxadiazine	Pome fruit <sub>1</sub>	5 oz	Petal fall (approx. 250 DD)
	Lethal via ingestion	Stone fruit <sub>1</sub>		Petal fall (approx. 175 DD)
Surround WP	Particle film Repellent	Pome & Stone Fruits	Usually 16 lb by First Cover	Multiple applications starting before bloom to achieve complete coverage
Pyrethroids	Asana, Warrior, Baythroid	Pome fruit	Variable	Petal fall (approx. 250 DD)
	Lethal, repellent	Stone fruit		Petal fall (approx. 175 DD)
Rimon* (targeting codling moth, OBLR)	IGR	Pome fruit	20-40 oz	Petal fall (approx. 250 DD)
	Egg sterilization	Stone fruit		
Esteem* (targeting scale)	IGR	Pome fruit	5 oz	Post-harvest
	Adult sterilization	Stone fruit		
Leverage 2.7F	Pyrethroid + Neonicitinoid	Pome fruit	4.4-5.1 oz	Petal fall (approx. 250 DD)
	Lethal, Repellent, Curative	Stone fruit	4.5-5.1 oz	Shuck-off (approx. 250 DD)
Voliam Xpress	Pyrethroid + Diamide	Pome fruit	6-12 oz	Petal fall (approx. 250 DD)
	Lethal, Repellent	Stone fruit	6-12 oz	Petal fall (approx. 175 DD)

Voliam flexi	Neonicotinoid + Diamide	Pome fruit	6-7 oz	Petal fall (approx. 250 DD)
	Lethal, Antifeedant, Curative	Stone fruit	6-7 oz	Shuck-off (approx. 250 DD)

## CONSIDERATIONS FOR OBLIQUEBANDED LEAFROLLER MANAGEMENT

Emily Pochubay and Nikki Rothwell, MSUE Educators

In spring, overwintering obliquebanded leafroller (OBLR) larvae cause damage in apple, pear, cherry, plum, peach and some small fruits by feeding on flower buds and leaves. Later in the season, OBLR cause damage by feeding on fruit. In cherries, the summer generation of OBLR larvae coincides with cherry harvest, and these larvae are potential contaminant pests that may be shaken from trees into tanks. In recent years, OBLR has been observed more commonly in both sweet and tart cherry. We hypothesize that the increase of this pest population in cherry is due to the development of OBLR resistance to organophosphates, which were until recently the backbone of a cherry insecticide program.

Growers that have had issues with OBLR in previous seasons have adopted a program for OBLR that targets overwintering OBLR larvae early in the season and/or insecticides that target the summer generation larvae at harvest. Populations of OBLR have been variable among orchards in previous seasons, and determining whether OBLR will be a widespread problem in 2014 is challenging. Since the crop loss in 2012, OBLR populations were reduced in 2013, and we are unsure of the populations as we head into this season.

If possible, growers should scout orchards by looking at 20 clusters/tree in five trees per orchard for larvae and or feeding sites. An insecticide should be applied if 2+ larvae or feeding sites per tree are observed. Larvae are small at this time in the season, but if populations are relatively high, they can be observed in the terminals of sweet and tart cherries. Scouting for larvae is difficult, but detecting larvae will help growers determine whether or not early season OBLR control is warranted.

Materials effective against this life stage are Delegate, Belt, Altacor, Voliam flexi, Voliam Xpress, RImon, Entrust, and *Bts*. Results from 2011 efficacy trials of Bexar, Belt, Proclaim, Entrust, and Voliam flexi for early season OBLR control at the NWMHRC show that all treatments except Bexar caused significant mortality of OBLR larvae after 4 days compared to the untreated check (UTC). All treatments except Bexar resulted in lower larval infestations at harvest 3 Aug (Table 1.).

Growers should not expect OPs or pyrethroids (due to OP-cross resistance) to provide effective control

Table 1.

### Obliquebanded leafroller efficacy trial 2011

Treatment/ formulation	Rate/ amt prod/acre <sup>a</sup>	Pre-count 2 Jun	4 Day 6 Jun		11 Day 13 Jun		62 Day 3 Aug
		No. infested <sup>b</sup>	No. damaged <sup>c</sup>	% dead <sup>b</sup>	No. damaged <sup>b</sup>	% dead <sup>b</sup>	No. infested <sup>c</sup>
Untreated check		1.0a	6.5a	20.1c	7.5a	22.7b	2.8ab
Voliam Flexi 40WG	6 oz	1.3a	2.3b	87.5a	1.8b	29.2b	0.0c
Entrust 80 WP	2.5 oz	1.5a	3.3ab	100.0a	2.0b	75.0ab	1.3bc
Proclaim 5 WDG + R-11	3.5 oz 0.25 % v/v	1.8a	5.0ab	100.0a	0.8b	50.0ab	0.7bc
Proclaim 5 WDG + R-11	4.5 oz 0.25 % v/v	2.8a	3.0ab	75.0ab	1.5b	75.0ab	0.3c
Bexar 15 SC	21 fl oz	1.0a	1.8b	30.0bc	2.8b	45.8ab	1.3bc
Bexar 15 SC	24 fl oz	2.0a	3.0ab	33.3bc	5.8a	33.8b	3.8a
Belt 480 SC	4 fl oz	1.8a	3.3ab	85.4a	2.5b	100.0a	0.7bc

Means followed by same letter do not significantly differ ( $P > 0.05$ , LSD)

<sup>a</sup>All test materials were applied on 2 Jun.

<sup>b</sup>ANOVA performed on arcsine square-root transformed data; data presented are actual counts

<sup>c</sup>ANOVA performed on square-root transformed data; data presented are actual counts

Wise et al. 2012

because of insecticide resistance, and MSUE does not recommend use of OPs for OBLR control. Additionally, growers should not expect that Lorsban applications made early in the season for green fruitworm or other early season pests had an impact on overwintering larvae due to resistance issues.

There are two generations of OBLR per season and growers should be mindful of properly rotating classes of insecticides for both OBLR generations to minimize the development of resistance. For example, Belt and Altacor are in the same class of insecticides, so using one now and the other at harvest would not be rotating chemistries. Both Entrust and Delegate are in the spinosyn class. Growers should also be careful when using pre-mix insecticides (Hero, Turismo, Voliam flexi, and Voliam Xpress) as one of the materials in the mix may no longer be effective against OBLR larvae due to resistance or because the amount of active ingredient of one material may be too low to provide adequate OBLR control.

## **SUGGESTIONS FOR AN INSECT MANAGEMENT PROGRAM IN CHERRY**

Emily Pochubay and Nikki Rothwell, MSUE Educators

**Notes:** Do not use Imidan or Lorsban on sweet cherry due to phototoxicity. Use full covers. Older cherry trees are very large with dense canopies and good coverage is necessary because many new insecticides require ingestion to be effective.

**Petal fall spray:** Avaunt has excellent efficacy against PC, but needs to be ingested to be effective. Therefore, in a PC management program, Avaunt should be used prior to Actara, which is an anti-feedant with excellent efficacy against PC.

**Shuck-split:** Belt or Altacor plus Actara (anti-feedant) may be an effective mix for targeting obliquebanded leafroller (OBLR) and PC. Belt and Altacor have excellent efficacy against OBLR.

**First cover:** A second application of Actara or Assail; both have excellent efficacy on PC.

**Third cover:** An imidicloprid insecticide such as Provado plus the spinosyn Delegate may be an effective mix for targeting cherry fruit fly and obliquebanded leafroller.

## **PARALLEL 45 / MSUE FIRST MEETING SERIES**

**June 6, 2014, 3-5 p.m.**

**Northwest Michigan Horticultural Research Center**

### **“What your weeds are telling you about your soil”**

Our guest speaker will be Jay L. McCaman, author of “Weeds and Why They Grow” (the new edition is titled “When Weeds Talk”). This book contains tables of weeds listed by both common name and scientific name and the soil conditions that they prefer. He’ll discuss how to use weed identification at a site to determine the soil conditions such as pH, nutrient content, salinity, etc. Jay will have his book on hand for sale for \$25 cash or check.

Weather permitting, this will be followed by some hands-on identification of weeds in the vineyards and orchards of the research center.

For more information on this program and future First Friday meetings, contact Duke Elsner at [elsner@msu.edu](mailto:elsner@msu.edu) or 231-922-4822.



## **APPLE THINNING POINTS 2014**

Written by Phil Schwallier & Amy Brown  
MSU Extension Educators

### **Thinning Points 2014**

This 2014 thinning season factors are unique, as always, and will need consideration before performing thinning. It is particularly noted that this long extreme cold winter may cause some winter damage. Plan on making multiple thinning treatments this year to achieve your target cropload. Plan on starting you thinning early at petal fall. We have a good bloom this year, better than expected after the large crop last year. Some varieties have no or only light return bloom (Goldens, Fuji, Honeycrisp)

Trees appeared weak up until the warm weather moved in which greatly improved the appearance of the bloom and the foliage. Some trees are showing signs of a lighter set (Empire). Frost damage is not present this year and Kings are all alive. Bee activity, pollination and even fertilization were wonderful.

### **Thinning Factors:**

1. **Heavy crop 2013 (Easier to thin, 2014).**
2. **Good bloom, many large showy flowers.**
3. **Abundant leaves (“green” snowball bloom, strengthens set).**
4. **Good bee activity, predicted good pollination and fertilization.**
5. **No frost damage.**
6. **Some varieties and trees with areas of reduced bloom.**
7. **Leave CHECK trees.**
8. **Use Precision Cropload Management or “Nibble” thinning, thin early and often to gradually reduce the crop.**
9. **Multiple Thinning.**

### **Precision Cropload Thinning or Nibble Thinning**

Precision Cropload Management thinning is a strategy to chemically thin often and multiple times throughout the bloom and fruitset window. Technically “nibble” thinning begins with blossom thinning (Lime-Sulfur & Oil or ATS). This treatment seems to be less successful in Michigan and thus is not practiced very much. The real first thinning period occurs at petal fall to 6 mm. At petal fall trees are not very sensitive to thinning, most years no significant thinning occurs. This year with warm temperatures forecasted for the next several days, some good thinning is predicted, perhaps perfect thinning. This first thinning will remove off perhaps up to half of the target thinning cropload. Usually additional thinning will be required at the 10 mm stage. The next chance to thin will occur at the 10 to 12 mm and the last will be at 18 mm. This process of reducing the crop gradually will result in a better consistent thinning with a reduce risk of over-thinning or under-thinning.

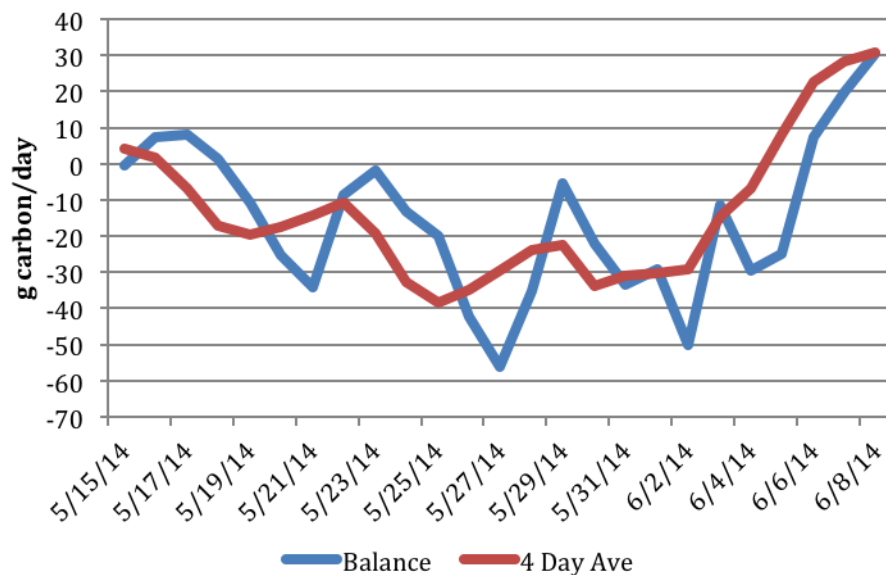
### **Other Considerations:**

1. **Oil** can be added to thinners to increase the thinning by 10%.
2. **Oil** is not compatible with Captan and Sulfur. Where this is a concern, use a surfactant instead of oil.
3. Agri-Mec & **Oil** can cause additional thinning when mixed with thinners.
4. Cloudy warm weather will increase fruit drop.
5. Sunny cold weather will increase set.

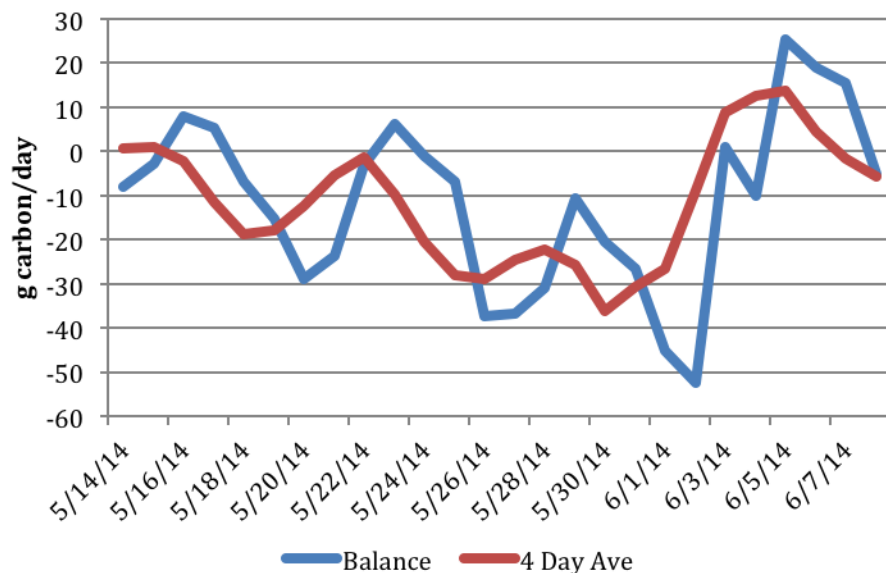
**Table 1. Thinning Materials and Recommendation for Multiple Thinning.**

Variety		Petal Fall to 6 mm	10 to 12 mm Stage		Variety Comment
			If needed	If more aggressive thinning is needed.	
Damage	<b>Kings dead</b>	Sevin or NAA 10 ppm	Standard Rates		
	<b>Significant Damage</b>	Wait to access set.	Tops only, mild rates	Standard Rates	
Easy to thin varieties	<b>Cortland, Gingergold, Idared, Jonathan, Jonagold, McIntosh</b>	Use Standard Rates Sevin or NAA 10 ppm	NAA 10 ppm	Sevin + NAA 5 ppm	Easy to thin
	<b>Jonathan with MaxCel</b>	Sevin	Sevin	Sevin + MaxCel 50 ppm	Small Fruited Easy to thin
Intermediate to thin varieties	<b>Empire</b>	Sevin + MaxCel 100 ppm	Sevin + MaxCel 100 ppm	Sevin + MaxCel 150 ppm	Small Fruited
	<b>Honeycrisp</b>	Sevin + NAA 10 ppm	Sevin + NAA 10 ppm	Sevin + NAA 15 ppm	Tend to set multiple fruits/cluster, biennial
	<b>Reds</b>	Sevin + MaxCel 100 ppm	Sevin + MaxCel 100 ppm	Sevin + MaxCel 150 ppm	Biennial, Sensitive to NAA
Difficult to thin varieties	<b>Gala</b>	Sevin + MaxCel 100 ppm	Sevin + MaxCel 100 ppm	Sevin + MaxCel 150 ppm	
	<b>Goldens, Paulared</b>	Sevin + NAA 10 ppm	Sevin + NAA 15 ppm	Sevin + NAA 15 ppm	Biennial
	<b>Rome</b>	Sevin + NAA 10 ppm	Sevin + NAA 15 ppm	Sevin + NAA 20 ppm + 1 qt Oil	Tend to set multiple fruits/cluster.
	<b>Fuji</b>	Sevin + MaxCel 100 ppm	Sevin + MaxCel 150 ppm	Sevin + MaxCel 150 ppm + 1 qt Oil	Biennial, Sensitive to NAA

### NW Carb 2014 6-2-14



### Hart Carb 2014 6-2-14



## NORTHWEST MICHIGAN SASKATOON BERRY FARM TOUR JUNE 7

Learn about this new fruit crop on Saturday, June 7, 2014, by touring saskatoon berry farms in Northwest Michigan.

Posted on May 22, 2014, MSUE News, by [Duke Elsner](#), Michigan State University Extension



[Michigan State University Extension](#) and the [Saskatoon Berry Institute of North America](#) are hosting a tour of five saskatoon berry production sites in Grand Traverse and Leelanau counties on Saturday, June 7. The tour will begin at 8:30 a.m. at the [Northwest Michigan Horticultural Research Center](#) at [6686 Center Highway, Traverse City, MI](#). After some morning stops, the tour will return to the center for lunch, including saskatoon pie! The tour will then continue until 5 p.m.

There is a \$10 fee for the tour and registration is required by June 4 by calling 231-715-6022. Further details on the tour can be found at the [Saskatoon Berry Institute of North America](#).

This article was published by [Michigan State University Extension](#). For more information, visit <http://www.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

## SASKATOON BERRY PESTICIDE RECOMMENDATIONS

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**Insecticide, fungicide and herbicide listings for 2014 are now ready for distribution to saskatoon growers in Michigan.**

Posted on **May 22, 2014**, MSUE News, by [Duke Elsner](#), Michigan State University Extension



One of Michigan's newest commercial fruit crops is saskatoons, also known as Juneberries. In support of growers, lists of suggested insecticides, fungicides and herbicides and suggested timings of use have been prepared for the 2014 growing season.

This was a collaborative effort with [Michigan State University Extension](#) small fruit entomologist [Rufus Isaacs](#), small fruit pathologist [Annemiek Schilder](#) and weed scientist [Bernie Zandstra](#).

Since saskatoons are a new crop to Michigan, relatively little information is known about the potential pest management problems that may be encountered. There is also limited information on the efficacy of registered pesticide products against saskatoon diseases and insects under Michigan conditions. Therefore, some of the suggested pesticide products and rates are based on recommendations from Canadian provinces and New York.

If you wish to receive the 2014 saskatoon berry pesticide recommendations, please contact Duke Elsner at [elsner@msu.edu](mailto:elsner@msu.edu) or 520 W. Front St., Suite A, Traverse City, MI 49684.

This article was published by [Michigan State University Extension](http://www.msue.msu.edu). For more information, visit <http://www.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

## **MSU CLARKSVILLE RESEARCH CENTER ANNUAL TREE FRUIT RESEARCH SHOWCASE FIELD DAY**

The MSU Clarksville Research Center (CRC) will be holding its 2014 tree fruit research showcase and field day on **July 10** from **9AM to 5PM**. Come join us to see the latest, cutting edge research from the MSU tree fruit team. Phil Schwallier and Dr. Ron Perry will discuss and demonstrate hedging systems for high density fruit and discuss new thinners. Dr. Amy Iezzoni will show and discuss some of the latest tart cherry selections being developed and tested at CRC including selections resistant to leaf spot and the strategy for breeding for Armillaria resistance. Dr. Greg Lang will showcase high density training systems for sweet cherry and other stone fruits and the use of protective covering systems, such as high tunnels, for fruit production. Drs. Ron Perry, Matt Grieshop and others will demonstrate Solid Set Canopy Delivery Systems in apples and cherries and highlight the innovative applications of these systems for pest management and microclimate modification. Lunch will be provided and the event is free to the public. More information, an event flyer and a (free) registration form will be released in mid-June.

## **UPDATED REGISTERED PESTICIDE LIST FOR CHESTNUT PRODUCERS FOR 2014**

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### **New pesticide quick reference available for Michigan chestnut growers through Michigan State University Extension.**

Posted on **May 22, 2014**, MSUE News, by [Erin Lizotte](#), Michigan State University Extension



In an effort to assist [chestnut](#) growers in making pesticide decisions, a new quick reference for [pesticides registered for edible chestnuts in 2014](#) has been created and is available for download at the [Michigan State University Chestnuts website](#) under [Pest Management](#). Chestnuts belong to Crop Group 14 (Tree Nuts) as defined by the [Environmental Protection Agency](#) (EPA). Crop groups have helped streamline

the pesticide registration and labeling process and are based on similar biological traits, edible parts, dietary consumption, geographical distribution, economic importance and growing practices. For example, the Tree Nut crop group contains other edible nuts including almonds and pecans. Tolerance information for a given pesticide is based on research in a representative crop and may be extended to similar crops within the same crop group. This has allowed for a substantial increase in the accessibility of pesticides to specialty crop producers.

There are two types of pesticide labels that can apply to chestnut trees: Agriculture/Crop Protection labels for trees from which nuts will be harvested for consumption, and Turf and Ornamental/Non-Crop labels which apply to ornamental trees from which nuts will not be harvested for consumption. Specific products may be labeled for chestnut trees that fall into one or both of these categories, but for the legal use of a pesticide on chestnuts for nut production it must have an Agriculture/Crop Protection label. The practices surrounding proper use may vary greatly between these two label types and growers should read and closely follow the Agriculture/Crop Protection label carefully.

[Michigan State University Extension](#) encourages growers to reference the [Crop Data Management Systems website](#) to retrieve the latest labels and determine if the product is meant for food or nonfood crop application. For more information on how to read a pesticide label, refer to the Pennsylvania State Extension article, "[What you need to know about reading a pesticide label.](#)" This fact sheet is [also available in Spanish](#). See more [additional resources regarding pesticide safety](#) from Pennsylvania State Extension.

To protect you, others and the environment, always read the label before applying any pesticide. Although efforts have been made to check the accuracy of information presented, it is the responsibility of the person using this information to verify that it is correct by reading the corresponding pesticide label in its entirety before using the product.

This article was published by [Michigan State University Extension](#). For more information, visit <http://www.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

## **SOIL TEST RESULTS AND MSU FERTILIZER RECOMMENDATIONS**

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**A web-based tool is available to compare fertilizer recommendations from your service provider with that of Michigan State University.**

Posted on **May 23, 2014**, **MSUE News**, by [George Silva](#), Michigan State University Extension

[Michigan State University Extension](#) promotes soil testing as a best management practice to determine fertilizer requirements of crops. Soil scientists have formulated MSU fertilizer recommendations following many years of field research and taking into consideration the economic, agronomic and environmental implications for Michigan. In addition to the [MSU Soil and Plant Nutrient Laboratory](#), there are several private soil testing laboratories and fertilizer or pesticide dealerships that offer this valuable service to Michigan growers. While acknowledging that no two fertilizer recommendations from two different organizations are exactly alike, in a vast majority of cases the figures fall in an acceptable range.

Every year, however, farmers bring to our attention some instances where the fertilizer recommendation offered by an outside agency does not make sense and is out of the ordinary. In most cases, these recommendations call for higher rates of a single nutrient or a group of nutrients compared to MSU. In other cases, unnecessary micronutrients are recommended. Sometimes these recommendations

contradict widely accepted principles of nutrient management adapted by MSU and other land-grant colleges.

If you encounter such a situation with your soil test, there are few things you can do to double check. Sometimes discrepancies can be traced to incorrect information submitted with the sample. Are the yield goal and previous crop correct? If yes, you can generate a corresponding MSU recommendation using the nutrient analysis data associated with the soil sample and its report. Simply visit the [MSU Fertilizer Recommendation Program](#) and start entering the nutrient analysis data provided by your provider. Use the drop -down menu to enter the current crop and insert the yield goal. Also, choose the right units for nutrients, “lbA” or “ppm.” Finally click on the Calculate Recommendations to generate a report. If you notice big discrepancies when you compare the two recommendations, you should consult your service provider. If there is an error or oversight, you may be able to save money on your fertilizer bill.

Another use for this web-based program is if you are participating in the [MAEAP Crop A Syst](#) program which mandates the use of MSU nutrient recommendations. You can still retain your service provider for soil testing, but instead use the data and the online program to generate the MSU recommendations.

This article was published by [Michigan State University Extension](#). For more information, visit <http://www.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

## **TREE FRUIT IPM UPDATE SERIES – 2014**

Emily Pochubay and Nikki Rothwell  
Michigan State University Extension

After a one-year break, Michigan State University is back to offering on-farm IPM workshops in Leelanau, Grand Traverse, Antrim, and Benzie counties in northwest Michigan for the 2014 season. Workshops begin the first week of May in hopes of providing commercial tree fruit growers with a review of good practices for developing sustainable pest management programs as well as key information on early season disease protection. Workshops through the first week of July will highlight management of the season’s current potential pest challenges dictated by weather and pest biology. Attendees are encouraged to bring examples of pests and damage found on the farm to these workshops for identification and discussion. These IPM workshops are free and do not require registration. Certified crop advisor continued education credits and pesticide recertification credits will be available. Tree fruit growers are welcome to attend meetings at any location and time that is most convenient. We are looking forward to interacting with you all at these meetings. For more information, please contact Emily Pochubay at [pochubay@msu.edu](mailto:pochubay@msu.edu) or (231) 946-1510.

### IPM Update Locations

#### **Leelanau County**

Location: Jim and Jan Bardenhagen, 7881 Pertner Rd, Suttons Bay  
Dates: May: 6, 13, 20, 27; June: 3, 10, 17, 24; July: 1  
Time: 12PM – 2PM

#### **Grand Traverse County**

Location: Wunsch Farms, Phelps Road Packing Shed, Old Mission  
Dates: May: 6, 13, 20, 27; June: 3, 10, 17, 24; July: 1  
Time: 3PM – 5PM

### **Antrim County**

Location: Jack White Farms, 10877 US-31, Williamsburg  
(south of Elk Rapids on the southeast side of US-31)

May: 7, 21; June: 4, 18; July: 2

Time: 10AM – 12PM

### **Benzie County**

Location: Blaine Christian Church

May: 7, 21; June: 4, 18; July: 2

Time: 2PM – 4PM

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### **WEB SITES OF INTEREST:**

Insect and disease predictive information is available at:

<http://enviroweather.msu.edu/homeMap.php>

This issue and past issues of the weekly FruitNet report are posted on our website

<http://agbioresearch.msu.edu/nwmihort/faxnet.htm>

60 Hour Forecast

<http://www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous46ktvc>

Information on cherries is available at the new cherry website:

<http://www.cherries.msu.edu/>

Information on apples:

<http://apples.msu.edu/>

**Fruit CAT Alert Reports has moved to MSU News**

<http://news.msue.msu.edu>