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Northern Michigan FruitNet 2012 *Weekly Update* NW Michigan Horticultural Research Center

[Nikki Rothwell](#)

District Horticulturist

[Erin Lizotte](#)

District Fruit IPM/IFP Agent

[Bill Klein](#)

Farm Mgr, NWMHRS

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Agricultural & Regional Viticulture Agent

April 3, 2012

Growth Stages at NWMHRS (4/2/12, 10:30 a.m.)

Apple: Red Delicious – Tight cluster

Gala – Tight cluster

Yellow Delicious – Early tight cluster

Pear: Bartlett: White bud

Sweet Cherry: Hedelfingen: 50% bloom

Napoleon: 80% bloom

Gold: White bud

Tart Cherry: Late bud burst

Balaton: Early white bud

Apricot: Petal fall

Grapes: Scale crack

IPM TREE FRUIT KICKOFF TO BE HELD APRIL

Erin Lizotte, IPM Educator

Please plan to join us for the annual Tree Fruit Kickoff to be held on **April 10** at the Northwest Michigan Horticultural Research Station in Traverse City Michigan from 5-7 pm. We will review label and management changes for the 2012 season that affect apple and cherry growers. This meeting is free and no registration is required. Pesticide Recertification Credits and Certified Crop Advisor Credits will be available. For more information contact Erin Lizotte at taylo548@msu.edu or (231)946-1510.

2012 HANDS-ON TREE FRUIT IPM UPDATE SERIES

Erin Lizotte, MSUE

Once again MSU will host a series of hands-on IPM workshops to be held throughout northwest Michigan during the 2012 growing season. We will get started a little early this season to accommodate the weather. Commercial fruit growers are encouraged to bring examples of pests and damage found on the farm to the meetings for identification and discussion. Each week will characterize a different time in the season and distinct weather patterns, which in turn will present a unique set of pest problems and management strategies that will be discussed. These meetings are free and do not require registration. Pesticide recertification credits and certified crop advisor continued education credits will be available. Feel free to attend the meetings at any location or time that is convenient for you! For more information, contact Erin Lizotte at taylo548@msu.edu or (231)946-1510.

Leelanau County

Location: Jim and Jan Bardenhagen, 7881 Pertner Road, Suttons Bay

Dates: May 2, 9, 16, 23, 30, June 6, 13

Time: 12-2pm

Grand Traverse County

Location: Wunsch Farms, Phelps Road Packing Shed, Old Mission Peninsula

Dates: May 2, 9, 16, 23, 30, June 6, 13

Time: 3-5pm

Benzie County

Location: Loy Putney Farms, 4286 Raymond Rd, Frankfort

Dates: May 1, 15, 29, June 12

Time: 2-4pm

Antrim County

Location: Jack White Farm, M-31, south of Elk Rapids on the southeast side of M-31

Dates: May 1, 15, 29, June 12

Time: 10-12pm

KASUMIN HAS BEEN GRANTED A SECTION 18 SPECIFIC EXEMPTION FOR FIRE BLIGHT CONTROL IN 2012

This Section 18 exemption applies only to counties where streptomycin-resistant isolates of the fire blight pathogen have been detected.

Published March 30, 2012, MSU-E News-Fruit

George W. Sundin, Michigan State University Extension, Department of Plant Pathology

[EPA](#) has granted a **Section 18 Specific Exemption** for the use of Kasumin 2L (kasugamycin) for the control of the blossom blight phase of fire blight in 2012. This use is for orchards where streptomycin-resistant fire blight bacteria are present. The Section 18 is applicable to Berrien, Cass, Grand Traverse, Ionia, Kent, Montcalm, Newaygo, Oceana, Ottawa, and Van Buren counties.

This Section 18 exemption **only applies** to counties where we have detected streptomycin-resistant isolates of the fire blight pathogen *Erwinia amylovora*. We currently have not yet detected any streptomycin resistance in Antrim or Leelanau counties or in eastern Michigan.

Kasumin 2L should be available in each region this year in time for bloom sprays. Make sure you have the Section 18 label in hand when you are applying Kasumin 2L. Do not apply Kasumin through any irrigation system.

The conditions and restrictions of the Section 18 Specific Exemption are as follows:

1. Apply Kasumin only when the pathogen is resistant to streptomycin. We have documented streptomycin resistance in all of the counties listed in the first paragraph above.

2. Kasumin 2L may only be applied when the following condition is met: only when the disease forecasting model or fire blight state expert determine that the weather conditions favor a disease epidemic. This condition is similar to last year. We have typically utilized the MaryBlyt fire blight prediction model, and have called for Kasumin applications when the Epiphytic Infection Potential (EIP) number from the MaryBlyt model **reaches or exceeds 100**. This model is available on the [Enviro-weather website](#); use the weather station closest to your orchard location to get local conditions. Make sure to document the MaryBlyt EIP prediction (by printout or screen capture) to include in your spray records. Also, make sure that you document the EIP number when you make the decision to spray – since this number is predicted for the next few days out, the number can change as current conditions and predictions change. In summary, the use of Kasumin 2L is limited to epidemic conditions; if these conditions are not present this year, other fire blight control materials such as oxytetracycline should be used.

3. A maximum of **two sequential applications** of Kasumin can be made at a rate of 2 quarts (64 fl. oz.)/acre. Applications are restricted to ground equipment and cannot be made through any type of irrigation system.

4. A maximum of **three applications** of Kasumin can be used (64 fl. oz. per acre), if authorized. Treatments can be made no later than petal fall.

5. **Alternate row applications are not allowed.** This is a new requirement of the Section 18 exemption for resistance management.

6. Do not apply Kasumin as the first spray of the season. It should be applied only after the first spray of registered alternatives.

7. Do not use in orchards in which the soil has been fertilized with animal manure. This restriction addresses concerns that kasugamycin resistance could be transferred to *E. coli* bacteria present in animal manure.

8. Upon expiration of the exemption on May 31, 2012, all unopened and unused product must be returned to the dealer where purchased or to the manufacturer or disposed of in accordance with [Resource Conservation and Recovery Act](#) regulations following the expiration of the Section 18 exemption.

Kasumin 2L (kasugamycin), from Arysta, is an alternative antibiotic for fire blight management. Kasumin 2L will work equally on streptomycin-resistant and streptomycin-sensitive strains. The label rate is 2 quarts/acre.

Please note that my lab will also be conducting resistance monitoring in selected orchards this year that use Kasumin. This is to satisfy an EPA directive that we monitor for the occurrence of kasugamycin resistance, and also the potential for resistance to other related antibiotics. We will be taking leaf and soil samples from approximately 10 orchards throughout the state. These monitoring experiments will be conducted after petal fall.

As always, I want to thank Brian Verhougstraete, Pesticide Registration Manager of the [Michigan Department of Agriculture and Rural Development](#) for his support of this Section 18 request. Brian submits our request each year and serves as our liaison to EPA.

This article was published on [MSU Extension News](#). For more information from [MSU Extension](#), visit <http://news.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

LEELANAU FARMABILITY 2012!

On April 2, 2012 applications will be accepted for Round II of the Leelanau FarmAbility Program.

Applications will be accepted on a first-come-first-served basis until 5,000 acres are enrolled.

Any eligible family may apply for a 10-year Farm Conservation Agreement (similar to Michigan's P.A. 116 Program, but without the penalties for not re-enrolling). For more about eligibility, click here: <http://leelanauconservancy.org/farmability/>

Benefits of enrollment:

Annual cash payments of \$10 per acre of active ag land; \$5 per acre for woodlots, wetlands and other acreage with conservation value. Payments are not tied to income or property tax rates.

A one-time **GAP certification cost-share benefit** of up to \$500 in matching funds for defraying the costs of GAP.

Discounts of up to \$250 annually on registration fees for approved workshops and seminars provided by sponsoring organizations.

A one-time **estate planning cost-share benefit of up to \$1,000** in matching funds for planning the transfer of the farm to the next generation for farming.

P.A. 116 farms are not excluded from enrollment.

Those interested in applying can do so in person at the offices of the Leelanau Conservation District at 112 W. Philip Street in Lake Leelanau from 9am to 3pm beginning April 2nd. Thereafter, drop-in hours will be from 10:00 am to 12:30 pm on Mondays and Wednesdays at the Conservation District Offices and from 1:30 pm to 4:00 pm on Tuesdays and Thursdays at the offices of the Leelanau Conservancy at 105 N. First Street in Leland. Drop-in hours will continue until 5,000 acres are enrolled in the program. More information about FarmAbility can be found at www.leelanauconservancy.org, by calling Tom Nelson at 256-9665, or stopping at the Leelanau Conservation District or Leelanau Conservancy offices.

Be Phosphorus Smart: Michigan Fertilizer Law Amendments Webinar

MSUE is hosting a statewide webinar on the new amendments to the MI Fertilizer Law (PA 299). These amendments went into effect January 1, 2012. These amendments are designed to focus on natural conditions of soil while protecting water quality throughout the state. Agriculture is exempt, although phosphorus levels in soils must be below 300ppm for Right-to-Farm/MAEAP protection. THE PROGRAM IS **FREE!**

How the new and proposed amendments will impact future lawn fertilizer use for municipalities, landscape professionals & homeowners

Wednesday, April 18, 2012 2—4 PM

This webinar will cover :

- History of Fertilizers laws in the US and Michigan
- New Michigan Amendments
- Soil and Nutrient Basics
- MSU Soil Testing Program
- Be Phosphorus Smart website
- Water Quality Impacts of fertilizer use

Pesticide Applicator Re-certification Credits Are Available

HOW to REGISTER: Email: Maureen.prisbe@macombcountymi.gov or call 586-469-6440. Upon registering, a registration confirmation (including web site testing instructions for first time users) will be emailed.

48 hours PRIOR to the webinar, you will receive (via email) the website address for the webinar and materials to download for the program.

REGISTRATION DEADLINE: April 15, 2012

FOR MORE INFORMATION, contact: Terry Gibb at gibb@anr.msu.edu or Bindu Bhakta at bhaktabi@anr.msu.edu

WEBSITES OF INTEREST

Insect and disease predictive information is available at:

<http://www.enviroweather.msu.edu/home.asp>

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/>

Fruit CAT Alert Reports

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

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

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

[ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1, 2012](#)

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@msu.edu

Last Revised: 4-03-12



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Northern Michigan FruitNet 2012 Weekly Update NW Michigan Horticultural Research Center

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[Duke Elsner](#) Agricultural & Regional Viticulture Agent

April 10, 2012

GROWING DEGREE DAY ACCUMULATIONS through April 9th at the NWMHRC

Year	2012	2011	2010	2009	2008	2007	22 yr. Avg.
GDD42	315	33	198	51	50	106	77.8
GDD50	168	6	82	11	15	19	26.3

Growth Stages at NWMHRS (April 9, 4:30 p.m.)

Apple: Red Delicious – Late tight cluster

Gala – Tight cluster

Yellow Delicious – Early tight cluster

Pear: Bartlett: Popcorn

Sweet Cherry: Hedelfingen: Early petal fall

Napoleon: Full bloom

Gold: 60% bloom

Tart Cherry : First bloom

Balatón: First bloom

Apricot: Late petal fall

Grapes: Scale crack

Weather Report

The weather pattern of this spring continues to cause headaches for growers in northwest Michigan. Extremely warm temperatures were followed by more seasonal temperatures for April. The cold night temperatures have been a cause for concern over the past week. April 5 had below freezing temperatures, and the morning of the 6th was particularly cold, and temperatures dipped down into the low 20s at two sites. These recent cold nights were preceded by a wind freeze event on March 26th, which caused some damage to tart cherries across the region.

The weekend was sunny but windy, with the wind coming out of the north, which made daytime temperatures feel much colder than reported. Due to the windy conditions, honeybees were not flying this weekend in blooming sweet cherry orchards. We received a small amount of rainfall over the weekend, ~0.2", and this morning, we have snow flurries potentially changing to rain by the afternoon. At this time, we have accumulated 315GDD base 42 and 168GDD base 50. Even with the cool down over the past week, we are at least four weeks ahead of our average, which is 77.8GDD base 42 and 26.3GDD base 50.

Crop Report

With last week's cool down, crops have moved along very slowly. We had first bloom in sweet cherries on March 24, and we are still in full bloom in those same varieties on April 9. Sweet cherries have made it through the wind freeze event and the recent inversion frosts better than anticipated, but growers are concerned with the cold windy conditions that have minimized honeybee activity. Forecasted temperatures for the remainder of the week will stay cool, which will reduce the pollination potential in sweet cherries. Tart cherry damage is evident throughout the northwest, and growers are trying to assess the crop at this time and estimates vary from farm to farm. However, the tart cherry crop in the north will be below a full crop for 2012. Apples also suffered some damage, particularly in early blooming varieties from the April 6 freeze; however, apples have the potential to set a good crop throughout the region.

Growers continue to clean up from the storm back in March. Spraying has been minimal as tree growth has slowed in the past week, and some growers are only applying spray materials to the tops of their trees as the lower canopies have damaged by the multiple frosts. Frost fans have been running for the past few days.

Pest Report

Cherry

As we head into bloom in tart cherry, growers are considering the pros and cons of treating for **American brown rot** considering the crop damage over the past weeks. For growers planning to treat Montmorency for blossom blight, Rovral is recommended for the spring American brown rot application. The use of Rovral will help limit the number of sterol inhibitor

(SI) sprays used in a season and better manage against resistance. Rovral is also a nice fit at this timing as it cannot be used past petal fall. Growers with varieties that are extremely susceptible to **European brown rot** (such as Balaton and Meteor) are encouraged to prevent infection as the impact of potential damage this season could affect the tree in coming years. Indar is the fungicide of choice for varieties susceptible to European brown rot as Rovral is *not* an effective European brown rot material. Indar will effectively protect against both American and European brown rot in all susceptible varieties. Regardless of the crop load, growers should plan to manage for **cherry leaf spot** and **powdery mildew** as green tissue emerges and becomes vulnerable to infection in the coming weeks. **Bacterial canker** is certainly a concern for growers as this cool weather continues and scattered snow and rain showers are predicted across the region. Unfortunately, there are no effective canker treatments at this time.

Insect activity is at a standstill as the weather is so cold--only a few **green fruitworm** moths were trapped this week.

Apple

As the weather has cooled the **apple scab** model has not recorded any infection periods. Despite the occasional precipitation, temperatures are so low that almost 24 hours of wetting are required for infection to occur. As we move into warmer weather and the potential for scab infections increase, growers should consider all their options for scab control, EBDCs tank mixed with Captan is the recommended scab application at this time in the season. EBDCs and Captan are both excellent scab protectants, and provide five to six days of protectant activity when used at full rates. Growers should remember that spray intervals should be tighter when relying on these materials. Growers should also keep in mind that strobilurin resistance has been confirmed in all major apple growing regions of the state and the mutation confers complete resistance--strobilurins will not work against apple scab and increasing the rate of a strobilurin is *not* an effective option. Regardless of crop load, growers should carefully consider their scab management program as inoculum can build quickly over a season and make control difficult in subsequent seasons.

Insect activity is minimal with just a handful of **oriental fruit moth** in the traps this week.

Grapes

Duke Elsner, Small Fruit Educator, MSU-E

Recent cool weather really slowed the bud development on all varieties. Bud stage varies a great deal across vineyards, even across vines at this time, with everything from apparently still dormant buds to late bud swell in Chardonnay and Riesling. Very early varieties are at bud burst.

Now that a few days have passed since the very cold mornings of last weekend, bud injury should be detectable by dissecting nodes and looking for darkened tissues. This requires a very sharp blade (I use a single-edge razor blade) and a good hand lens, but it is very easy and fast once you practice it a bit.

If conditions stay on the cool side and bud swell comes along slowly, there will be a greater risk of injury from climbing cutworms and flea beetles. There have been no reports of these causing problems thus far.

We are still in the proper time frame for dormant applications against **powdery mildew** and other diseases.

Parallel 45 Vines & Wines is hosting the first grape meeting of the spring this **Friday, 3-5 pm** at the Northwest Michigan Horticultural Research Center. Topics include looking at several different pruning tactics that "anticipate" spring frost injuries, dissecting nodes to check bud mortality and tasting some research wines from Spartan Cellars.

REMINDER - IPM TREE FRUIT KICKOFF TO BE HELD TONIGHT

Erin Lizotte, IPM Educator

Please plan to join us for the annual *Tree Fruit Kickoff* to be held on **April 10** at the Northwest Michigan Horticultural Research Station in Traverse City Michigan from 5-7 pm. We will review label and management changes for the 2012 season that affect apple and cherry growers. This meeting is free and no registration is required. Pesticide Recertification Credits and Certified Crop Advisor Credits will be available. For more information contact Erin Lizotte at taylo548@msu.edu or (231)946-1510.

2012 FUNGICIDE UPDATE FOR GRAPES

Anнемiek Schilder
MSU Plant Pathology

Production of quality grapes is highly dependent on fungicide use. Below is a concise update on label changes and new(er) fungicides. You can find the disease efficacy rating in the grape section of E-154 (Michigan Fruit Management Guide). Those that have not been tested in Michigan or showed poor efficacy in trials are simply listed in the fungicide section in the beginning of the book. More products are in the pipeline and may become available this season. You will be updated on new grape fungicides as they get registered for use in Michigan. For fungicide labels and material safety data sheets, go to the following website: www.cdms.net (look under the "Services" tab, then "Labels/MSDS").

Label changes

Maneb (manganese ethylenebisdithiocarbamate-EBDC) was discontinued for grapes by the manufacturer several years ago; the residue tolerance runs out on 12/31/12. Make sure to use up any stocks before then.

Rubigan (fenarimol [sterol inhibitors=SI]) and **Vintage** (fenarimol [SI]) have been withdrawn by the manufacturer (Gowan): stocks may be used up and the residue tolerance will remain in effect for several years.

New(er) fungicides

Inspire Super (difenoconazole [SI] and cyprodinil [anilino-pyrimidines]) was registered for grapes in 2011. Difenoconazole belongs to the sterol inhibitor class of fungicides, whereas cyprodinil is the same active ingredient as in Vanguard. This fungicide has preventative, systemic, and curative properties against powdery mildew, Botrytis bunch rot, black rot and anthracnose. This fungicide should not be applied to Concord, Concord Seedless and Thomcord grapes due to risk of phytotoxicity from the difenoconazole component. In addition, on *Vitis labrusca* and non-vinifera hybrids, Inspire Super by itself or in combination with foliar fertilizers or adjuvants that increase uptake can

increase the risk of leaf burning and phytotoxicity. The application rate is 16-20 fl oz per acre. For all diseases, apply before the onset of disease. Apply on a 10-14 day schedule, with no more than 2 consecutive applications before alternating to a fungicide with a different mode of action. Do not apply more than 80 fl oz of Inspire Super per acre per season and no more than 0.46 lb a.i. difenoconazole and 1.4 lb a.i. cyprodinil. The PHI is 14 days, and the REI is 12 hours. Inspire Super has shown excellent control of powdery mildew, black rot and Phomopsis in trials in Michigan.

Luna Experience (fluopyram [succinate dehydrogenase inhibitors-SDHI] + tebuconazole [SI]) is a new, broad-spectrum fungicide for wine grapes with preventive, systemic and curative properties. The label stipulates that the fungicide be used on wine grape varieties only and not on juice or table grapes. Luna Experience is labeled for control of powdery mildew, black rot, Botrytis gray mold; and for suppression of Phomopsis cane and leaf spot. Fungicide applications should be made preventively. The recommended application rate is 5 to 8.5 fl oz/acre at 14-21-day intervals. Do not apply more than 34 fl oz of Luna Experience per acre per season and make no more than 2 sequential applications of this fungicide or any fungicide in the carboxamide or SI class before switching to a fungicide with a different mode of action. Do note that Luna Experience has a Restricted Entry Interval of 10 days for grape leaf pulling and tying/training. The pre-harvest interval is 14 days. In efficacy trials in Michigan, Luna Experience has provided excellent control of powdery mildew, black rot, and Botrytis bunch rot.

Meteor (Iprodione [dicarboximides]) is a generic fungicide with the same active ingredient as Rovral. This fungicide can be used for Botrytis bunch rot control in grapes. The application rate is 1-2 pt/acre in a minimum of 50 gpa to ensure good coverage. Do not allow spray mixture to stand overnight or for prolonged periods or chemical breakdown may occur, particularly in water with a high pH. Buffer the spray mixture to pH 5.0 -7.0. Add a non-ionic adjuvant to improve coverage; always add Meteor before adding the adjuvant. The restricted entry interval is 48 hours in grapes and the PHI is 7 days. Do not apply more than once per season on table grapes, and four times per season on wine grapes. Thorough coverage of grape bunches is essential.

Mettle (tetraconazole [SI]) is a new a systemic fungicide labeled for control of powdery mildew and black rot in grapes. When a post-infection application is used for black rot, it is recommended within 72 hours of an infection period. Mettle is absorbed quickly into the plant tissue and is rainfast within 2 hours of application. Do not make more than two applications of Mettle to grapes per year. The maximum amount of Mettle allowed per season is 10 fluid ounces and there must be at least 14 days between applications. Do not apply Mettle through any kind of irrigation system. The REI of Mettle is 12 hours and the PHI is 14 days. Mettle has performed similarly to Elite in Michigan trials.

Quadris Top (azoxystrobin [strobilurins] and difenoconazole [SI]) was registered last year for use in grapes. Quadris Top is systemic and has preventative and curative properties and is labeled for control of powdery mildew, downy mildew, black rot, anthracnose, and minor foliar diseases; and suppression of Botrytis bunch rot. As such it has a very broad spectrum of control. However, this fungicide should not be applied to Concord, Concord Seedless and Thomcord grapes. In addition, on *Vitis labrusca* and non-vinifera hybrids, Quadris Top by itself or in combination with foliar fertilizers or adjuvants that increase uptake, can increase the risk of leaf burning and phytotoxicity. Also, due to the azoxystrobin component, Quadris Top is extremely phototoxic to certain apple varieties, so treat this product like you would Abound. The application rate is 10-14 fl oz per acre and can be applied on a 10-14 day schedule. Do not apply more than two consecutive sprays and a total of 56 fl oz per acre per season are allowed. The REI is 12 hours and the PHI is 14 days.

Sil-Matrix (potassium silicate [salt]) is a broad-spectrum, preventative fungicide for control of powdery mildew and Botrytis in grapes. Sil-Matrix also provides suppression of mites, aphids, whiteflies, and other insects. Sil-Matrix is QMRI-listed, so can be used in organically managed vineyards. Thorough coverage is important for control, and a 0.5% to 1.0% solution is recommended. Sil-Matrix is compatible with most commonly used agricultural pesticides. However, avoid contact with glass and remove promptly from glass surfaces. Performance can be optimized by addition of a non-ionic surfactant. Do not apply less than 7 days apart or more than 20 gal/acre per season. Do not make post-harvest applications. Sil-Matrix can also be used in alternation with conventional fungicides in a spray program. Sil-Matrix has an REI of 4 hours and a PHI of 0 days. Sil-Matrix requires more evaluation on grapes in Michigan but has shown good control of Botrytis gray mold in strawberries and powdery mildew in grapes in California.

Vivando (metrafenone [aryl-phenyl-ketones]) was registered for grapes last year and has a new and unique mode of action. It is the first in its chemical class and no crossresistance is known with other fungicides. Its specific mode of action not known. It is labeled for powdery mildew control and is a good choice in vineyards with (suspected) fungicide-resistant strains. In Michigan trials, Vivando had excellent activity against powdery mildew and also suppressed black rot and downy mildew (these diseases are not on the label, however). This fungicide prevents infections and limits fungal growth, sporulation, and spore viability. Since Vivando does not have curative activity it should be applied preventively. It can be applied at 10-15 fl oz any time after budbreak on a 14-day to 21-day schedule. With longer spray intervals, a higher dose should be used. Shorter intervals may be needed during rapid plant growth and high disease pressure. Vivando is rainfast within 1 hour and redistributes across the plant surface, providing

improved coverage. Use of a silicone-based surfactant is recommended. A maximum of 2 consecutive sprays and a total of 3 sprays is allowed. The PHI is 14 days and the REI 12 hours.

Oxytetracycline for Fire Blight Control: Use Restrictions on the Mycoshield Label

George W. Sundin, Department of Plant Pathology

Oxytetracycline (OxyTc) is an antibiotic that is used for control of the blossom blight phase of fire blight. OxyTc is not as effective as streptomycin for blossom blight control in situations where streptomycin resistance is not present. OxyTc is also not as effective as Kasumin in controlling streptomycin-resistant strains of the fire blight pathogen. The best use for OxyTc is for blossom blight control under low to moderate disease pressure and also as an alternate material in a streptomycin resistance situation if a spray is needed following 2 consecutive Kasumin applications.

There are two OxyTc materials available in Michigan: (1) Mycoshield [NuFarm] is OxyTc Calcium complex, and (2) FireLine [AgroSource] is OxyTc hydrochloride. The use rate of both materials is the same: 200 ppm or 1 lb per 100 gallons per acre. Also, both have a 60-day pre-harvest interval. However, because OxyTc is a bacteriostatic material, it should not be used after bloom. While we have not compared these materials head-to-head for blossom blight control in Michigan, data from Ken Johnson at Oregon State University indicates that FireLine has slightly better efficacy than Mycoshield.

More importantly, there are two restrictions on the Mycoshield label stating: (1) "DO NOT use treated crop or byproducts for feed" and (2) "DO NOT allow livestock to graze on treated orchards". These restrictions are present only on the Mycoshield label and are not present on the FireLine label. Thus, if OxyTc is to be used for blossom blight control on processing apples in which apple pomace may be used for animal feed, use FireLine and DO NOT use Mycoshield. Also, carefully read either label prior to using these materials.

NOW IS THE TIME TO REMOVE STRAW FROM STRAWBERRIES

Once flower trusses emerge in strawberries, it is time to remove the straw.

Published April 5, 2012, MSU-E News - Fruit

Bob Tritten, Michigan State University Extension

For strawberry growers, now is the time to remove straw from strawberries in east Michigan and across much of the state. There has been a wide spread of growth stages of strawberries across the state this season, and I have been encouraging growers to hold off with straw removal as long as possible this year due to the very early spring weather. This has helped to keep the soil cooler and slow growth as long as possible this spring, thus delaying the need for frost protection so early in the season and also delaying beginning of harvest.

The decision point for straw removal this spring has been the emergence of flower trusses from the crown of the plant.

Once this occurs, then it is time to remove straw. In grower visits I have made to strawberry farms the last few days, flower trusses seem to be emerging more frequently and consistently.

As an alternative to totally removing the straw, growers may just leave the mulch in place and let the berries grow through the mulch. This will work well only in situations where light to moderate amount of straw were applied last fall. At these farms, growers will need to walk their fields to remove straw by hand in spots where it is matted too thick, thus smothering the berries.

Lastly, I am recommending that a bit more straw be left on the strawberry row than most years. This will help keep the bed cooler, therefore delaying the beginning of harvest and will reduce weed pressure.

This article was published on [MSU Extension News](http://news.msue.msu.edu). For more information from [MSU Extension](http://news.msue.msu.edu), visit <http://news.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

NEW HERBICIDE REGISTRATION: MATRIX FOR SMALL FRUIT CROPS

Matrix labeled for blueberries and caneberries (raspberries and blackberries).

Published April 4, 2012, MSU-E News - Fruit

Bernard Zandstra, Michigan State University Extension, Department of Horticulture

[EPA](http://www.epa.gov) has approved a label for Matrix (rimsulfuron) herbicide for use in blueberries and caneberries (raspberries and blackberries). The label is a supplemental label to the Section 3 federal label, and will be incorporated into the main label whenever it is revised.

Matrix is a sulfonyleurea herbicide that is an ALS inhibitor. The only other ALS inhibitor currently labeled for fruit plantings is Sandea (halosulfuron). ALS inhibitor herbicides are active at very low rates and thus are subject to development of weed resistance. Therefore, these herbicides should not both be used in the same year.

Matrix may be applied to blueberries established in the field for at least one year. It should be applied preemergence or early post-emergence in a band on both sides of the row. The normal use rate is 4 oz of product (0.063 lb ai) per treated acre.

Matrix has good preemergence and postemergence activity on most annual broadleaves and grasses. It is weak on common lambsquarters and eastern black nightshade. It should not be applied to blueberries on soil classified as sand. There is a 21-day preharvest interval (PHI).

For raspberries and blackberries, Matrix may be applied to plants established at least one year. For mowed raspberries, it should be applied in early spring before any new growth emerges. Application over the row after new growth has emerged may result in crop stunting. For non-mowed raspberries, it should be applied in a band on each side of the row. It also may be applied later as a directed spray to control emerged weeds and to extend preemergence weed control. It should not be used on light, sandy soil. The PHI is 21 days.

Matrix should be used in rotation with other herbicides. Karmex (diuron), Princep (simazine), and Sinbar (terbacil) are good rotational herbicides with broad weed control spectrums. Tank-mixes with Surflan will improve annual grass control and tank-mixes with Dual Magnum will improve eastern black nightshade and yellow nutsedge control.

Callisto (mesotrione) and Chateau (flumioxazin) may be included in a herbicide rotation on blueberries. Casoron (dichlobenil) and Solicam (norflurazon) may be used on blueberries and caneberries. Use of several different herbicides in rotation will improve overall weed control and avoid buildup of resistant or tolerant weeds that often infest blueberries and raspberries.

This article was published on [MSU Extension News](http://news.msue.msu.edu). For more information from [MSU Extension](http://news.msue.msu.edu), visit <http://news.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-

678-3464).

SOIL BUILDING INFORMATION SESSION

Friday May 4, 2012

6:00 - 8:00 pm

Northwest Michigan Horticultural Research Center

6686 South Center Highway

Traverse City, MI 49684

Description:

This will be a solid introduction to organic small scale farming and with an emphasis on soil biology, led by Joe Scrimger. Joe is owner and operator of Bio-Systems, a Great Lakes Area soil testing and consulting business. Soil testing, amendments and how mulching leads to production quality and quantity will be discussed. Weeds, pests and diseases will also be discussed. The focus will be on farms that are 10 acres or less, but the concepts can be utilized on larger farms and in home gardens.

Admission:

\$10-\$20 Sliding Scale

Contact Info for this event:

Phone: (231) 480-4515

Email: yvonne@artmeetsearth.org

Web page: <http://www.artmeetsearth.org/events.html#24230>

Press Release

FROST ALARM AVAILABLE NOW ON ENVIRO-WEATHER

Get notified of potentially freezing conditions 24 hours a day, seven days a week.

Published April 3, 2012, MSU-E News – Fruit

Beth Bishop, Enviro-weather Coordinator

If you'd like to receive advanced warning of potential frost-freezes, [Enviro-weather's new Frost Alarm](#) may be just what you are looking for. This new, premium service is available by subscription. For \$50 per year, you can monitor weather at one or more Enviro-weather stations and choose the exact weather conditions you wish to be notified for. If the selected station records weather data meeting your specified conditions, an alarm is generated and you are notified by text message or email.

For each station chosen, you can select a combination of temperature, dew point, wind speed and temperature drop (over a three-hour period). For example, you can choose to receive a notification if the temperature at your chosen station drops below 32°F (Service #3, see image).

You can combine as many weather conditions (temperature, temperature drop, wind speed and dew point) as you wish for an alarm. For example, you can choose to be notified if the dew point is less than 32°F and the wind speed was less than 5 mph (Service #1, see image). In that case, an alarm would be generated if dew point was 29°F and the wind speed was 4 mph, but not if the dew point was 29°F and the wind speed was 7 mph.

You can also create multiple "situations" (unique combination of conditions) for a station. Each "situation" will generate a separate alarm when conditions are met. For example, you can create an alarm if the temperature is less than 35°F and the temperature dropped at least 6 degrees over the past three hours, or if the dew point was less than 33°F (Service #2, see image). An alarm would be generated if either of these two scenarios occurred.

You can also choose to monitor conditions at as many stations as you wish. The user in the image has set alarms for three different stations (Bath, East Lansing MSUHort, and Leslie).

View/Edit my Frost Alarms

Station	Start Date	End Date	Contact by	Situations that raise alert
Service #1: Active				
Bath Alternate: East Lansing (HTRC)	3/15 2012	5/31 2012	E-mail	1. Dew point < 32 ° F, and Windspeed < 5 miles/hour
View past alerts		Edit this service		Suspend alerts
Service #2: Active				
East Lansing (MSUHort) Alternate: East Lansing (HTRC)	3/15 2012	4/29 2012	Text message	1. Temperature < 35 ° F, and Temperature drop > 6 ° F over 3 hours
				2. Dew point < 33 ° F
View past alerts		Edit this service		Suspend alerts
Service #3: Active				
Leslie Alternate: East Lansing (MSUHort)	3/15 2012	5/29 2012	E-mail, Text message	1. Temperature < 32 ° F
View past alerts		Edit this service		Suspend alerts

To sign up for the Frost Alarm, please visit the [Enviro-weather Frost Alarm Service webpage](#).

For more information, please contact Beth Bishop at eweather@msu.edu , bishopb@msu.edu or 517-432-6520 with your questions, comments and suggestions.

This article was published on [MSU Extension News](#). For more information from [MSU Extension](#), visit <http://news.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

ACREAGE AVAILABLE FOR CSA

Rob Sirmine, Extension Educator

Mark Johnson from Chateau Chantal on the Old Mission Peninsula has about .75 acres of land that he would like to have turned into a CSA operation at Chateau Chantal if someone is interested. The

grower would have access to their equipment, water and other resources and the winery would also purchase CSA shares. There may also be the possibility of putting up a farm stand as well.

Please forward to anyone you know who may be interested and refer them to Mark at [231-883-6465](tel:231-883-6465).

OIL & GAS NEWSLETTER

Curtis Talley Jr., MSU Extension Farm Management Educator, Hart, MI 231-873-2129; talleycu@anr.msu.edu

This newsletter is intended for landowners and other members of the public with interest in the oil and gas industry. Each newsletter is also posted on our website at www.msue.msu.edu/oilandgas. If you would like to be added to the e-mail list to receive this newsletter, please contact the editor. You can also contact your local MSU Extension Office to obtain copies of the newsletter and other free oil and gas leasing information.

Information in this Issue

Farm Bureau an active partner in promoting oil and gas education

If I own 50% of the mineral rights and someone else owns the other 50% can I lease mine and the other party not lease theirs?

What's happening with Michigan oil and gas exploration?

Oil and gas leasing activity in Michigan

New oil and gas leasing webinar and DVD

Oil and gas leases; don't assume your title is "good"

FARM BUREAU AN ACTIVE PARTNER IN PROMOTING OIL AND GAS EDUCATION

Curtis Talley Jr. MSU Extension Farm Management Educator

Farm Bureau's Land Use and Elections Specialist Matt D. Kapp is very committed to providing landowners with educational materials to understand and negotiate changes to the lease. Farm Bureau has been the sole, or co-sponsor with MSU Extension of all the educational meetings we have held this winter. Farm Bureau regional representatives have been very active in securing meeting sites, organizing the sessions and promoting them. These meetings have been open to the public and have been well attended, with many standing room only.

IF I AM A MINERAL RIGHTS OWNER THAT OWNS 50% OF THE MINERAL RIGHTS AND SOMEONE ELSE OWNS THE OTHER 50%, CAN I LEASE MY 50% IF THE OTHER OWNER DOES NOT LEASE HIS?

Corey J. Wiggins, Attorney at Law

Michigan provides that oil, gas and other mineral ownership/rights can be severed from the surface lands. As such, it is possible for a party to own the land and another party or parties to own the minerals under the same land. A severed mineral interest owner must meet certain statutory requirements (outside of the scope of this article) in order to retain their interest. If the requirements are not met, that person's mineral interest will revert to the surface owner. It is important to note that the State of Michigan and the federal government are not subject to these requirements, and, as such, government owned minerals will not revert to the surface owner.

Assuming that the leasing mineral owner holds the leasing privilege (executive right), a mineral owner has the right to enter into a lease under terms and conditions that can be negotiated with the lessee, i.e., the person to whom the lease is being granted. The law does not require the other owners of a mineral interest in the same property to enter into the same lease or any lease at all. However, it is possible, but highly unlikely, that the lessee will refuse to enter into a lease unless all of the interest owners enter into a lease. As hinted at above, it is possible that one party may have ownership of a royalty interest in a particular property and another party may hold an executive right to enter into a lease for the same mineral interest. If another party holds an executive right, the mineral owner will be bound by the terms and conditions negotiated between the executive right holder and the lessee.

In the event that the other mineral owner does not lease, how are the royalties distributed?

In Michigan, the Supervisor of Wells is charged by the legislature with preventing waste in the production of oil and gas. To that end, the Supervisor establishes drilling units designed for the optimal production of oil and/or gas. A drilling unit is an area comprising land of a specific size and shape on which a single well to a specific formation can be drilled. Drilling units vary depending on the geographic location of the well and the formation that the well is anticipated to produce from. At times, a proposed drilling unit may include lands in which the minerals are not leased. In this case, a developer may request the Supervisor issue an order ordering the non-leased minerals be compulsory pooled into the drilling unit. However, before the Supervisor can issue his order, a public hearing must be held during which testimony and evidence will be taken to establish the need for the request. Furthermore, the non-leased owners have the right to participate in the hearing and will be given the option to participate in the cost of drilling the well or to accept a royalty interest and have their share of the cost of the well deducted from the proceeds of production over and above their royalty share. Once the cost of the well is recovered by the operator plus, generally, an additional sum to the operator in consideration of the operator taking the risk of a dry hole, the non-leased owner would receive 100% of the proceeds of production less its share of the ongoing cost of operation of the well. Operators will normally only take on the assumption of the cost associated with non-leased tracts or interests if it represents a relatively small portion of the proposed unit.

A "royalty" is the right to share in the production from an oil and/or gas well or the proceeds from the sale of the production produced from the lands subject to the lease or order, free of costs of drilling, equipping and operating the well, unless, in the case of a lease, the lease specifically provides for the deduction of post production costs. If a compulsory pooling order is entered by the Supervisor and a non-leased owner elects not to pay its share of the cost of a well out of pocket, the non-leased owner will receive a 1/8th royalty, cost free. The remaining 7/8ths will be deducted by the developer to cover the costs of drilling and production and paid pursuant to the terms of the Supervisor's order and determined by the percentage of ownership in the minerals underlying the entire drilling unit. For example, if a drilling unit consists of 100 acres and a certain owner owns one-half of the minerals under a 20-acre parcel, that person's royalty will be based on 1/10th of the production from the unit ($20/100 \times \frac{1}{2}$) times the royalty fraction.

How are the royalties distributed if we each have separate leases with separate terms?

The lessee is required to pay the royalty based on the terms contained in your lease, regardless of the terms negotiated with your co-owner. The amount of royalty paid will be based on the percentage of your ownership in the drilling unit times

your royalty fraction. In the event revenue distribution is determined by the terms of oil and gas leases, the leases may provide for production units which exceed the size of the Supervisor mandated drilling unit. In that event, the share of production proceeds will be determined by the size of the production unit.

Corey J. Wiggins is a partner at the law firm of Zirnhelt, Bowron & Wiggins, P.L.C. located in Traverse City, Michigan. Corey's practice area focuses on oil and gas, real estate and municipal law throughout Michigan. Corey can be reached at (231) 946-8630 or cwiggins@zwbwlaw.com.

WHAT'S HAPPENING WITH MICHIGAN OIL AND GAS EXPLORATION?

Dean Solomon, Senior Extension Educator, Greening Michigan Institute solomon@msu.edu

Gas and oil production may be down in Michigan, but there are still opportunities for landowners to earn income from mineral leases. There was much excitement during 2011 about new oil and natural gas exploration in the United States, and with it the prospect of lower long-term reliance on foreign sources. Pennsylvania, the center of dramatic natural gas drilling increases, saw a double-digit percentage rise.

Here in Michigan, 2011 was much more sedate. According to the Michigan Oil and Gas News, the state actually experienced a 16 percent decline in drilling activity compared to the previous year. Production, too, was down during the first half of the year (the most recent statistics available), with oil and natural gas declining five to six percent. There were bright spots in the state, especially in Jackson and Lenawee Counties due to new oil discoveries in those areas.

Also in 2011, seven wells were drilled into the Utica-Collingwood, the geologic formation that caused all the excitement (and concerns) during 2010. Those wells were or are planned to be developed using horizontal drilling and the controversial method of hydraulic fracturing (fracking). One well in Kalkaska County extended vertically approximately 8,500 feet and horizontally 8,200 feet. That horizontal leg was fracked in, reportedly, up to 30 stages. Initial test results are not public, but the Oil and Gas News reported that the Kalkaska County wells tested at "potentially commercial rates."

So what does this mean for Michigan landowners? On the one hand, drilling and production is down in Michigan. On the other, national momentum toward increased domestic oil and gas production is strong. There are still very active land men in the state purchasing oil and gas leases on private property and the potential exists for increasing drilling activity, even if not on the scale seen in Pennsylvania and other states. In many areas of the Lower Peninsula, landowners who own unleased mineral rights could be approached by oil and gas company representatives.

It is still very important for landowners to learn as much as they can before entering into oil and gas lease negotiation and to seek professional advice from an oil and gas attorney before signing a lease.

Additional oil and gas information is available at www.msue.msu.edu/oilandgas.

OIL AND GAS LEASING ACTIVITY IN MICHIGAN

Curtis Talley Jr. Michigan State University Extension Educator

Despite the reduction in drilling in Michigan, as stated by Dean Solomon above, leasing of mineral rights has been surprisingly active. We are hearing of very numerous contacts to landowners by land men in Alpena, Alcona, Calhoun, Ogemaw, Arenac, Gladwin, Ionia, Kent, Barry, Oceana, Jackson, Hillsdale and Washtenaw counties.

Landowners: I am very interested in learning about your oil and gas leasing experiences. All information I receive is kept confidential. I use this information to help other landowners by informing them of the changes that are being negotiated in leases, not the names of the people negotiating them. If you have positive or negative experiences dealing with oil and gas drilling, the payment of surface damages, post production cost deductions, working out access agreements and well site locations, please send them to the editor.

NEW OIL AND GAS LEASING WEBINAR AND DVD

Curtis Talley Jr., Farm Management Educator Michigan State University

MSU Extension has received numerous requests to have a recorded presentation of an oil and gas leasing program on www.msue.msu.edu/oilandgas. With the assistance of Department of Natural Resources Communications, a narrated slide presentation is now available. It is titled "New MSU Extension Oil and Gas Leasing Video." For those that do not have high speed internet access, a DVD is also available that can be ordered and sent to you from Curtis Talley. There is a \$10 charge.

OIL AND GAS LEASES: DON'T ASSUME YOUR TITLE IS "GOOD"

Dave Porteous, Attorney at Law

Title review is an important step in entering an oil and gas lease. Oil and gas companies have traditionally conducted their title searches after signing the lease. The company usually pays out the "bonus" after receiving an opinion that the property has "marketable title." This ready-fire-aim approach helps speed transactions along, and reduces companies' costs.

Until recently, most people involved with the oil and gas industry understood that companies must follow commonly-accepted standards when evaluating a title's marketability. In particular, most understood that certain interests, like "current" mortgages, do not render a property's title "unmarketable."

These assumptions changed when some lessors cancelled large numbers of leases in Michigan's Northern Lower Peninsula in 2010 and 2011. These cancellations prompted over 100 lawsuits. The resulting court opinions teach us lessons about negotiating oil and gas leases.

Judge Philip Rodgers Jr.'s opinion in *O'Hair v Oil Niagaran, et al.*, Antrim Circuit No. 11-8645-CK, is particularly notable. The O'Hair family entered a lease agreement with OIL Niagaran, LLC (OILN). As is common, the lease and payment order gave OILN 90 days to review and approve title. OILN gave the landowners notice of nonpayment and refused to pay their bonus. OILN did not give the O'Hairs an opportunity to cure the "defects" it found. Judge Rodgers reviewed these "defects," and found them rather weak:

OILN claimed a conservation easement on the property may have hurt its development potential. Judge Rodgers noted that the easement explicitly allowed oil and gas extraction and that it did not appear to require the easement holder's preapproval for the lessee's activities.

OILN objected to a document signed by an owner's agent under a power of attorney, because it wasn't recorded with the register of deeds. Judge Rodgers noted that a simple document request by OILN would have likely resolved OILN's

concern.

OILN claimed that a co-owner's wife hadn't released her dower interest in the property. Judge Rodgers explained that the wife had no dower right, because her husband co-owned the leased property as a "joint tenant."

Nonetheless, the court found that the lease imposed little limitation on the lessor's right to reject a lease after the title review. Under the lease's terms, it was enough for OILN to have some concern that there could be litigation regarding the property's title.

The authors of this article are aware of recent contrary opinions from other Northern Michigan courts, but landowners should assume that the rules and lease terms lean in favor of the oil and gas company. Landowners can take some lessons from *O'Hair*:

Do not assume that your lease gives you a chance to fix potential title defects. Your lease should explicitly force the lessee to give you notice of title defects, and give you time to cure them.

If your property is mortgaged or subject to an easement (particularly a conservation easement), require a provision explicitly stating that that interest does not render title "unmarketable."

Require upfront payment of the bonus.

Oil and gas leases are complicated legal documents. Title review is only one aspect. We suggest that landowners seek an attorney's advice when considering entering a lease.

About the Authors. David Porteous and Nathan Piwowarski are shareholders at the law firm of McCurdy, Wotila and Porteous, P.C. Their firm has over 60 years' collective experience in negotiating oil and gas leases for Michigan landowners. Mr. Porteous recently gave a guest lecture for an oil and gas seminar sponsored by Michigan State University Extension.

WEBSITES OF INTEREST

Insect and disease predictive information is available at:

<http://www.enviroweather.msu.edu/home.asp>

60 Hour Forecast

<http://www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous46ktyc>

Information on cherries is available at the new cherry website:

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

Fruit CAT Alert Reports

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

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

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

[ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1, 2012](#)

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@msu.edu

Last Revised: 4-10-12

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April 17, 2012

GROWING DEGREE DAY ACCUMULATIONS through April 16th at the NWMHRC

Year	2012	2011	2010	2009	2008	2007	22 yr. Avg.
GDD42	376	77	276	77	75	113	112.7
GDD50	200	40	119	20	27	62	43.0

Growth Stages at NWMHRS (April 17, 9:30 a.m.)

Apple: Red Delicious – Open cluster

Gala – Open cluster

Yellow Delicious – Open cluster

Pear: Bartlett: Full bloom

Sweet Cherry: Hedelfingen: Petal fall

Napoleon: Petal fall

Gold: Full bloom

Tart Cherry : 80% bloom

Balaton: Full bloom

Apricot: In shuck

Grapes: Early bud swell

Weather Report

The weather in northwest Michigan continues to throw growers curve balls this spring. Daytime temperatures have ranged from the 40s into the high 60s for the last week. Nighttime temperatures have dipped below freezing for multiple nights, and on the evening of 16 April, we received ½ inch of snow mixed with sleet. We have accumulated 376 GDD base 42 and 200 base 50 so far this season; we are accumulating degrees days at a much reduced pace than in past weeks. Plant development has almost come to a standstill in the past few weeks. We received a quarter inch of rainfall at the NWMHRS on 15 April, and the southern counties of the north received slightly more rain.

Crop Report

Tree phenology has moved slowly over the past week, but with elevated daytime temperatures over the weekend, more tart cherries have begun blooming. The temperatures were more conducive for honeybee flight, and we hope that this window provided pollination services for blooming sweet and tart cherries. The below freezing temperatures have continued to cause damage throughout the region, and we continue to assess the impact of the cold on our fruit crops.

PEST REPORT

Cherry

As we head into bloom in tart cherry, growers are considering the pros and cons of treating for **American brown rot** considering the crop damage over the past weeks. Even growers considering a conservative program due to crop loss should treat for the blossom phase of American brown rot as the flower parts can act as a reservoir for inoculum in subsequent years. Rovral is recommended for the spring American brown rot application in Montmorency. The use of Rovral will help limit the number of sterol inhibitor (SI) sprays used in a season and better manage against resistance. Rovral is also a nice fit at this timing as it cannot be used past petal fall.

Growers with varieties that are extremely susceptible to **European brown rot** (such as Balaton and Meteor) are also encouraged to prevent infection as the impact of potential damage this season could affect the tree in coming years; this cool and wet weather is conducive for European brown rot. Indar is the fungicide of choice for varieties susceptible to European brown rot as Rovral is *not* an effective European brown rot material. Indar will effectively protect against both American and European brown rot in all susceptible varieties. Regardless of the crop load, growers should also plan to manage for **cherry leaf spot** and **powdery mildew** as green tissue emerges and becomes vulnerable to infection after bloom. CLS overwinters in fallen leaves on the orchard floor and produce ascospores (sexual spores) in the spring with dispersal occurring after a wetting event when temperatures are between 60-85°F. Following infection, acervuli (asexual spore-bearing structures) develop on the underside of the leaf and produce a visible mass of asexual spores called

conidia. Spores are dispersed from leaf to leaf by wind or rain, and this secondary infection cycle can be repeated several times within a season, depending on conditions. Keep in mind that CLS is resistant to sterol inhibitor fungicides (Indar, Elite, Orbit) in all the major fruit producing areas of Michigan. Petal fall and shucksplit applications of chlorothalonil are recommended. Remember to alternate the use of fungicide classes during the season to manage against resistance development. **Bacterial canker** is certainly a concern for growers as the cool weather returns and scattered snow and rain showers are predicted across the region. Unfortunately, there are no effective canker treatments at this time.

The first **American plum borers** were caught this week. A large number of **green fruitworm** moths also continue to emerge. Immature larvae of the green fruitworm feed on flower buds and new foliage, but have not yet been observed in the Station trapline. Mature larvae feed on blossoms, developing fruit and leaves. Early feeding injury often causes fruit to abort. Growers should also be looking for **oblique-banded leafroller** (OBLR) as leaves expand. Overwintering OBLR larvae feed inside bud clusters prior to bloom, and begin feeding on fruit after petal fall. Targeting this overwintering generation is critical in cherry because they are small and easier to kill. At early petal fall, growers should scout their orchards by looking at 20 clusters per tree in five trees per orchard for larvae or feeding sites. An insecticide should be applied if they observe more than two larvae or feeding sites per tree. The materials that target this life stage are Delegate, Rimon, Belt, Altacor, Voliam flexi, Entrust and Bts. Growers in northwest Michigan should not expect organophosphates or pyrethroids to provide effective control because of insecticide resistance. If there is evidence of OP resistance in your area, the insect growth regulator Intrepid may also have some level of cross resistance and will not be effective. Additionally, **plum curculio** activity should start picking up soon with adults migrating into orchards from overwintering sites. Plum curculio migrate from their overwintering sites to orchards in the spring when maximum temperatures are at least 75°F for 2-3 days or when mean daily temperatures are 55°-60°F for 3-6 days. Plum curculio is often found in the orchard before fruit is present. Spring migration lasts about six weeks with peak activity and the critical time for control with organophosphates usually occurring 2-3 weeks after shuck split as young fruit develops.

Apple

With a 22-hour wetting period and warmer temperatures on 4/15-4/16, the **apple scab** model has predicted that a moderate scab infection occurred over the weekend. EBDCs tank mixed with Captan are the recommended protectant scab materials at this time in the season. EBDCs and Captan are both excellent scab protectants and provide five to six days of protectant activity when used at full rates. Growers should remember that spray intervals should be tighter when relying on these materials. Growers should also keep in mind that strobilurin resistance has been confirmed in all major apple growing regions of the state and the mutation confers complete resistance—strobilurins will not work against apple scab and increasing the rate of a strobilurin is not an effective option. Regardless of crop load, growers should carefully consider their scab management program as inoculum can build quickly over a season and make control difficult in subsequent seasons.

Insect activity is minimal with just a handful of **oriental fruit moth** in the traps this week. The first **spotted tentiform leafminers** were also trapped. Growers should be on the lookout for **oblique-banded leafroller** larvae feeding on blossom parts and can begin to gauge the potential for mites by scouting for eggs. Mites overwinter as eggs on rough bark and are most commonly found near buds, fruit spurs, and in the fork of two branches, they can be seen with the naked eye but are very small so a hand lens is recommended. The red eggs of **European red mite** are highly visible at this time.

Antrim, Benzie, Grand Traverse, Leelanau, Manistee, and Wexford Counties Receives Disaster Assistance Funding for the Emergency Conservation Program

Greg Shy, County Executive Director for the Grand Traverse Farm Service Agency (FSA) announced that Grand Traverse Area counties, will receive disaster assistance funding through the FSA's Emergency Conservation Program (ECP) to help farmers and landowners recover from excessive snow along with high winds that caused severe damage to some Grand Traverse and Leelanau County orchards on March 2, 2012.

Local FSA offices are holding a sign-up that began **April 2, 2012** and will end May 18, 2012. Producers can apply for cost-share assistance to help remove debris from orchards damaged by natural disaster.

Eligible producers can receive cost-share assistance of up to 75 percent of the cost of the approved practice, as determined by FSA county committees, based on funding allocations. Because ECP is not an entitlement program, there is no guarantee of funding for all eligible applicants.

For a producer's land to be eligible, the disaster must create new conservation problems that, if untreated, would:

Impair or endanger the land

Materially affect the land's productive capacity

Represent unusual damage which is not the type of damage to recur frequently in the same area

Be so costly to repair that Federal assistance is or will be required to return the land to productive agricultural use

Conservation problems existing prior to the applicable disaster are ineligible for ECP assistance. For more information on the ECP program, contact your local FSA office or the Grand Traverse County FSA office at (231) 941-0951 or visit the FSA's web site at: www.fsa.usda.gov/conservation.

Tart Cherries Receive 24 (c) for Use of Bravo Weather Stik (Chlorothalonil) beyond Shuck Split

Michigan growers will have extended use of chlorothalonil for cherry leaf spot control for 2012 growing season
N.L. Rothwell, District Horticulturist, NWMHRC, MSU

Because of increased cherry leaf spot (CLS) incidence and a minimal number of products to control this important disease of tart cherry, the Cherry Industry, MSU, EPA, MDA, and Syngenta have worked together to obtain a 24 (c) special local need registration (SLN) for use of Bravo Weather Stick (chlorothalonil) beyond shuck split. Traditional timing of chlorothalonil for CLS has been prohibited past the shuck split timing prior to this newly registered use. With the 24 (c), growers must follow a series of restrictions in order to use this product legally throughout the growing season to ensure that post-shuck split applications do not result in illegal residues (< 0.5 ppm).

The SLN No. MI-120001 allows for the post-shuck split application of Bravo Weather Stik to mechanically harvested tart cherries with the following restrictions:

The minimum preharvest interval (PHI) is 21 days.

Cherries must be mechanically harvested.

Cherries must spend at least 2 hours on the cooling pad.

The initial flow rate on the cooling pad must be 8-10 gallons of water per minute (gpm). After this initial period the flow rate

may be reduced to 4-6 gpm.

Rinse water generated during the cooling process must not drain or channel toward aquatic areas.

Cherries cannot be used fresh. They must be processed by a commercial processor.

Growers should know these important facts before they consider making chlorothalonil applications under this SLN registration. First, growers should be aware that cherries harvested 21 days after the last application of Bravo will have illegal residues, and to ensure the residues on the fruit are reduced to a legal level (<0.5 ppm), growers **MUST** carefully follow all label directions. The cooling pad procedures on the SLN label are key to reducing residues to a legal level. Illegal residues not only violate federal law, but they have serious consequences for the grower, the processor, and the Michigan tart cherry industry.

Although a more permanent solution is underway, for the 2012 season, growers should obtain the Training Affidavit by going to MDARD's Cherry SLN webpage (www.michigan.gov/cherrysln) and complete Steps 2 and 3. MSU Extension will be available to help growers work through this educational step to be able to use chlorothalonil beyond shuck split by using the MDARD website. Growers with questions or those in need of assistance can call the Northwest Michigan Horticultural Research Center at 231-946-1510.

2012 FRUIT INSECTICIDE REGISTRATION UPDATE

A summary of insecticide and miticide label additions, clarifications and corrections to the "2012 MSU Fruit Management Guide" (E-154).

Published April 10, 2012, MSU-E News - Fruit

John Wise, Rufus Isaacs and Larry Gut, Michigan State University Extension, Department of Entomology

Agri-chemical labels and regulations can change quickly, so use this information within the context of each compound's legal label.

Click this link for a printable copy http://aqbioresearch.msu.edu/nwmihort/e-154_insecticide_addendum12.pdf

Insecticide 2012 label additions, clarifications and corrections

Compound	Label changes/ restrictions	Crop	Target pests
Admire Pro	Labeled for foliar and soil use	Pome and stone fruits, grape, berry crops	
Beleaf 50SG	Labeled pest addition	Apples	First generation codling moth
Dimilin 2L	Label uses	Pears, peaches, plums	Psylla, leafrollers
Endosulfan	EPA Phaseout	2012 for stone fruits and strawberries	
Guthion (Azinphosmethyl)	EPA Phaseout	2012 for pome and stone fruits, blueberries	
Imidan 70W	Label rate change	Tart cherries – reduced to 2.125 lbs/acre	
Malathion 8F	Label rate change	Blueberries – reduced to 1.25 pints/acre	Japanese beetles, fruit flies
Rimon .83EC	Label Expansion	Pome and stone fruits, blueberries	Leafrollers, fruitworms
Voliam Xpress	New label	Pome and stone fruits, blueberries	Broad spectrum

New insecticide label information for compounds listed in 2012 E-154

[MSU Fruit Management Guide E-154](#) product numbers are in parenthesis ().

Admire Pro (76) (imidacloprid) is a new "thyxatropic gel" formulation of this foliar or soil-applied insecticide, and is registered for use in pome and stone fruits, blueberries, strawberries, grapes and cranberries. As a foliar spray, it is labeled for control of aphids, leafhoppers, pear psylla, mealybugs, phylloxera, scale insects, Japanese beetles, and certain *Rhagoletis* fruit flies. With soil application, it is labeled for control of aphids, leafhoppers, mealybugs, phylloxera, and the white grub complex. When Admire Pro is soil-applied, the soil should be moist and irrigated in with 0.5 to 1 inch of irrigation within 24 hours of treatment, or by chemigation to the root zone. Admire Pro contains 4.6 lbs of active ingredient per gallon of formulation product, and for soil application allows a maximum application of 14 oz per acre per season for blueberries, strawberries, grapes and cranberries, and 10.5 oz per acre per season for pome and stone fruit crops. For foliar application, the label allows a maximum application of 14 oz per acre per season for pome fruits, blueberries, strawberries, grapes and cranberries, and 8.4 oz for stone fruit crops.

Beleaf (87) (flonicamid) belongs to the pyrimidine carboxamide class of insecticides, and is registered for use in pome and stone fruit crops. This compound's anti-feedant activity provides control of aphids and plant bugs. Beleaf also controls first generation codling moth in apples. The maximum yearly amount of Beleaf 50SG that can be applied is 8.4 oz per acre.

Dimilin (98) (diflubenzuron) is an insect growth regulator (IGR) insecticide that acts by disrupting the generation of chitin in the insect exoskeleton. This prevents normal development of the insect larval instars and when in contact with eggs suppressing embryo-genesis. Dimilin has no direct activity on adult insects, but hatching of eggs laid by treated adults will be suppressed. Dimilin is registered for use in pears for the control of pear psylla, pear rust mites, leafminers and codling

moth. Dimilin is registered for use in stone fruits (excluding cherries) for the control of oriental fruit moth and leafrollers. Dimilin is restricted for pears to 4 applications and 64 oz per season, and for stone fruits to 2 applications and 32 oz per season, but after petal fall stage.

Endosulfan phaseout. EPA is taking action to end the use of the pesticide endosulfan. A formal Memorandum of Agreement with manufacturers of the agricultural insecticide will result in cancellation and phaseout of all existing endosulfan uses in the United States. A phaseout plan has been developed to allow growers time to develop and test alternative pest management tactics for the pests that endosulfan currently controls. **For fruit crops grown in Michigan and the upper Midwest**, the last use deadlines are listed below.

Last grower use	Crops
July 31, 2012	Apricots, plums, annual strawberries, tart cherries
July 31, 2012	Other stone fruits including nectarines, peaches and sweet cherries
July 31, 2013	Pears
July 31, 2015	Apples, blueberries
July 31, 2016	Perennial/biennial strawberries

Guthion (8) (azinphos-methyl) is no longer labeled for use on peaches, nectarines, plums, caneberries, and cranberries. 2012 is the final year of the EPA Phaseout of Guthion for apples, pears, cherries, and blueberries. The maximum yearly amount of Guthion 50 WP to be applied has been reduced to 3 pounds on apples, 3 pounds on pears, 1.5 pounds on blueberries, and 1.5 pounds on cherries. The pre-harvest interval (PHI) for apple and pear use is 14 days, with a 21-day PHI if the last application is greater than 2 pounds of Guthion 50 WP per acre.

Imidan 70W (9) (phosmet) is an organophosphate insecticide labeled for use in many fruit crops, including tart cherries. New commercial product will include a reduced legal rate of 2.125 lbs/acre for use in tart cherries. Older product that lists the rate of 2.5 lbs/acre can still be legally used.

Malathion 8F (13) (dymethyl dithiophosphate) is an organophosphate insecticide labeled for use in most fruit crops, including blueberries. New commercial product will include a reduced legal rate of 1.25 pints/acre for use in blueberries, with a maximum of three applications per year, and a five-day interval between sprays. Older product that lists the rate of 1.5 to 2.5 pints per acre can still be legally used.

Rimon (72) (novaluron) is an IGR insecticide that acts by disrupting the generation of chitin in the insect exoskeleton. This prevents normal development of the insect larval instars and, when in contact with eggs, suppresses embryogenesis. Rimon has no direct activity on adult insects, but suppresses hatching of eggs laid by treated adults. Rimon is registered for use on pome and stone fruits, and blueberries for the control of codling moth, oriental fruit moth, leafrollers, fruitworms, pear psylla and certain *Rhagoletis* fruit flies. Rimon is safe on most beneficial insects and has a unique mode of action for resistance management purposes. Rimon 0.83 EC is restricted to 150 oz per acre per season in apples, 96 oz in pears, 90 oz in blueberries, and 150 oz in stone fruit crops.

Voliam Xpress (99) (chlorantraniliprole + lambda-cyhalothrin) is an insecticide that combines two active ingredients as a pre-mix formulated compound. Voliam Xpress is registered for use in pome and stone fruits targeting codling moth, oriental fruit moth, leafrollers, aphids, *Rhagoletis* fruit flies, leafhoppers, leafminers, psylla, plum curculio, stink bugs, and Scarab beetles. Voliam Xpress holds the combined performance attributes of the chlorantraniliprole and lambda-cyhalothrin chemistries. For the purposes of resistance management, after using Voliam Xpress in a given pest generation, products containing either one of chlorantraniliprole or lambda-cyhalothrin shouldn't be used in the subsequent generation. The maximum yearly amount of Voliam Xpress to be applied is 31 fl oz on pome fruits or stone fruits per season.

This article was published on [MSU Extension News](http://news.msue.msu.edu). For more information from [MSU Extension](http://news.msue.msu.edu), visit <http://news.msue.msu.edu>. To contact an expert in your area, visit <http://expert.msue.msu.edu>, or call 888-MSUE4MI (888-678-3464).

WEBSITES OF INTEREST

Insect and disease predictive information is available at:

<http://www.enviroweather.msu.edu/home.asp>

60 Hour Forecast

<http://www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous46ktrc>

Information on cherries is available at the new cherry website:

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

Fruit CAT Alert Reports

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

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

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

[ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1, 2012](#)

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@msu.edu

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Agricultural & Regional Viticulture Agent

April 24, 2012

GROWING DEGREE DAY ACCUMULATIONS through April 23rd at the NWMHRC

Year	2012	2011	2010	2009	2008	2007	22 yr. Avg.
GDD42	395	84	307	112	183	191	160.0
GDD50	204	23	131	36	85	107	63.5

Growth Stages at NWMHRS (April 23, 4:00 p.m.)

Apple: Red Delicious – First king bloom

Gala – Early king bloom

Yellow Delicious – First king bloom

Pear: Bartlett: Late petal fall**Sweet Cherry:** Hedelfingen: Late petal fall

Napoleon: In shuck

Gold: Petal fall

Tart Cherry : Full bloom**Balaton:** Petal fall**Apricot:** In shuck**Grapes:** Early bud swell

Weather Report

The weather in the northwest has been cool during the day, and we continue to have frosty conditions in the overnight for many nights during the past week. The warmest temperature for the past week peaked at 59° F on Wednesday, 18 April. These cool daytime temperatures have not been good for pollination, and very few bees have been flying during the past week. These cool temperatures have been coupled with extremely windy conditions, and as the wind is coming from the north, it has made temperatures feel even cooler than reported. Cool daytime weather is predicted to continue for the coming week. Unfortunately, the frosty nights continue to reduce the crop in many of our fruits. Last Friday, 20 April, we received ~1.5" of rain across the region with some areas reporting more while other locations received less rainfall. We have accumulated 395GDD base 42 and 204GDD base 50, and these accumulations are still way above our average (160GDD base 42 and 63.5GDD base 50).

Crop Report

The cool temperatures have put crop development on hold in the past week, and the crops have not moved along much from last week's report. Damage is evident across the region, and tart cherries have been hit the hardest. Some growers have reported tart cherries in the tops of their trees, but we will have to wait to see what comes out of the shuck before we know how much fruit we will have in northwest Michigan. Sweet cherries seemed to weather the frosty conditions better than tart cherries, but pollination has been an issue--we have had very few days that are conducive to honeybee flight. There is reported damage in apples across the region, and many king blooms have been killed by frost. However, there is still potential for a full apple crop if the side blooms have a good set; we are just moving into the bloom for apples, so we will not know the outcome for a few weeks.

Pest Report

Cherry

As tart cherry bloom around the region, growers are considering the pros and cons of treating for **American brown rot** considering the crop damage over the past weeks. Even growers considering a conservative program due to crop loss should treat for the blossom phase of American brown rot as the flower parts can act as a reservoir for inoculum in subsequent years. Rovral is recommended for the spring American brown rot application in Montmorency. The use of Rovral will help limit the number of sterol inhibitor (SI) sprays used in a season and better manage against resistance. Rovral is also a nice fit at this timing as it cannot be used past petal fall. Growers with varieties that are extremely susceptible to **European brown rot** (such as Balaton and Meteor) are also encouraged to prevent infection as the impact of potential damage this season could affect the tree in coming years. Indar is the fungicide of choice for varieties susceptible to European brown rot as Rovral is *not* an effective European brown rot material. Indar will effectively protect against both American and European brown rot in all susceptible varieties.

Regardless of the crop load, growers should also plan to manage for **cherry leaf spot** and **powdery mildew** as green tissue emerges and becomes vulnerable to infection after bloom. CLS overwinters in fallen leaves on the orchard floor and produce ascospores (sexual spore) in the spring with dispersal occurring after a wetting event when temperatures are between 60-85°F. Following infection, acervuli (asexual spore-bearing structures) develop on the underside of the leaf and produce a visible mass of asexual spores called conidia. Spores are dispersed from leaf to leaf by wind or rain and this secondary infection cycle can be repeated several times within a season, depending on conditions. Keep in mind that CLS is resistant to sterol inhibitor fungicides (Indar, Elite, Orbit) in all the major fruit producing areas of Michigan. Petal fall and shucksplit applications of chlorothalonil are recommended.

Because of increased cherry leaf spot incidence and a minimal number of products to control this important disease of tart cherries, the Cherry Industry, Michigan State University, EPA, MDARD, and Syngenta have worked together to obtain a 24 (c) special local need registration (SLN) for use of Bravo Weather Stick (chlorothalonil) beyond shuck split. Traditional timing of chlorothalonil for cherry leaf spot has been prohibited past the shuck split timing prior to this newly registered use. With the 24 (c), growers must follow a series of restrictions in order to use this product legally throughout the growing season to ensure that post-shuck split applications do not result in illegal residues (less than 0.5 ppm).

The SLN No. MI-120001 allows for the post-shuck split application of Bravo Weather Stik (only Bravo Weather Stik) to mechanically harvested tart cherries with the following restrictions:

The minimum pre-harvest interval is 21 days.

Cherries must be mechanically harvested.

Cherries must spend at least two hours on the cooling pad.

The initial flow rate on the cooling pad must be 8 to 10 gallons of water per minute (gpm). After this initial period, the flow rate may be reduced to 4 to 6 gpm.

Rinsed water generated during the cooling process must not drain or channel toward aquatic areas.

Cherries cannot be used fresh. They must be processed by a commercial processor.

Growers should know these important facts before they consider making chlorothalonil applications under this SLN registration. First, growers should be aware that cherries harvested 21 days after the last application of Bravo will have illegal residues, and to ensure the residues on the fruit are reduced to a legal level (less than 0.5 ppm), growers MUST carefully follow all label directions. The cooling pad procedures on the SLN label are key to reducing residues to a legal level. Illegal residues not only violate federal law, but they have serious consequences for growers, processors, and the Michigan tart cherry industry.

Although a more permanent solution is underway for the 2012 season, growers should obtain the Training Affidavit by going to MDARD's Cherry SLN webpage and complete Steps 2 and 3. MSU Extension will be available to help growers work through this educational step to be able to use chlorothalonil beyond shuck split by using the MDARD website. Growers with questions or those in need of assistance can call the Northwest Michigan Horticultural Research Station at 231-946-1510.

Bacterial canker is certainly a concern for growers as the cool weather returns and scattered snow and rain showers are predicted across the region. Unfortunately, there are no effective canker treatments at this time. A few **American plum borers** (APB) were caught this week. Based on historical pest data, peak adult emergence of APB has yet to occur.

Growers should also be looking for **oblique-banded leafroller** (OBLR) as leaves expand. Overwintering OBLR larvae feed inside bud clusters prior to bloom, and begin feeding on fruit after petal fall. Targeting this overwintering generation is critical in cherry because they are small and easier to kill. At early petal fall, growers should scout their orchards by looking at 20 clusters per tree in five trees per orchard for larvae or feeding sites. An insecticide should be applied if they observe more than two larvae or feeding sites per tree. The materials that target this life stage are Delegate, Belt, Altacor, Voliam flexi, Entrust and Bts. Growers in northwest Michigan should not expect organophosphates or pyrethroids to provide effective control because of insecticide resistance. If there is evidence of OP resistance in your area, the insect growth regulator Intrepid may also have some level of cross resistance and will not be effective.

Additionally, **plum curculio** activity should start picking up as soon as the temperatures increase. Adults will be migrating into orchards from overwintering sites, and they migrate from their overwintering sites to orchards in the spring when maximum temperatures are at least 75°F for 2-3 days or when mean daily temperatures are 55°-60°F for 3-6 days. Plum curculio is often found in the orchard before fruit is present. Spring migration lasts about six weeks with peak activity and the critical time for control with organophosphates usually occurring 2-3 weeks after shuck split as young fruit develops.

Apple

Despite the rainfall, the temperatures were cold enough that the **scab** model did not predict an infection period but trees remain covered in the region as the risk is high for economic loss due to infections that occur at this time. EBDCs tank mixed with Captan are the recommended protectant scab materials at this time in the season. EBDCs and Captan are both excellent scab protectants, and provide five to six days of protectant activity when used at full rates. Growers should remember that spray intervals should be tighter when relying on these materials. Growers should also keep in mind that strobilurin resistance has been confirmed in all major apple growing regions of the state and the mutation confers complete resistance—strobilurins will not work against apple scab and increasing the rate of a strobilurin is not an effective option. Regardless of crop load, growers should carefully consider their scab management program as inoculum can build quickly over a season and make control difficult in subsequent seasons.

Growers should be on the lookout for **oblique-banded leafroller** larvae feeding on terminals and can begin to gauge the potential for **mites** by scouting for eggs. Mites overwinter as eggs on rough bark and are most commonly found near buds, fruit spurs, and in the fork of two branches, they can be seen with the naked eye but are very small so a hand lens is recommended. The red eggs of **European red mite** are visible at this time.

Grapes

Another week of cold weather has kept bud development at a slow pace in NW Michigan. Some earlier sites have Chardonnay at late bud swell and earlier cultivars like Cabernet Franc heading into bud burst. There are still many buds that are just getting to the scale crack stage.

A little bit of **grape flea beetle** and **climbing cutworm** feeding injury has been seen, but the level of their activity has been quite low in our cold weather. The slow progression of buds is allowing for ample time to get on dormant applications for

disease control.

I would like to hear back from vineyard managers if you are seeing any live buds that appear to have shrunk in size, perhaps from dehydration. The very unique weather patterns of this spring may bring along phenomena we have never seen before.

Saskatoons

Some sites are in full bloom now, but bee activity has been very limited in the cold and windy weather. Freeze injury to flower clusters and shoot tips was quite evident at the NW Station test planting. No pest or disease activity has been noted thus far.

PEST MANAGEMENT CONSIDERATIONS FOR FROST-DAMAGED VINEYARDS

Reduce management costs in frosted vineyards by planning responses based on potential crop load and vineyard pest history.

Posted on **April 19, 2012** by **Rufus Isaacs and Annemiek Schilder**, Michigan State University

Introduction

The full extent of frost damage to the 2012 crop may not be known for a month, but the situation in some Michigan vineyards this spring has created a need for growers to reconsider their spray programs. Guidance on an adjusted insect and disease control program for frost-damaged vineyards is presented here. The comments below are intended to help growers reduce pest management costs while maintaining a program to address critical needs for vine protection.

We emphasize that there is no "prescription." Growers need to assess their own sites, decide on whether vineyard blocks will be harvested, and then use regular scouting and knowledge of pest history to keep insect pests and diseases below levels that will cause economic injury. In a year like this, some vineyards will not need cluster protection because the crop is lost completely. These sites will then be better able to withstand leaf injury from insects so costs may be cut there, too. While the vines will also be able to tolerate more foliar disease, some level of disease control may still be needed to reduce inoculum production and ensure that the vines are healthy for 2013. Weekly scouting of vineyards, being aware of the crop load, and making decisions based on the facts will go a long way to ensure you are minimizing the cost of managing frost-damaged vineyards.

Even though the current yield loss estimates are high, it should be kept in mind that the actual remaining yield potential will not become apparent until after the secondary buds have pushed and clusters have appeared (see MSU's [Paolo Sabbatini's](#) article, "[The effects early spring had on Michigan juice grapes](#)"). These guidelines are, therefore, dependent on managers making decisions about the level of crop remaining. If shoots were heavily damaged by frost, but there are enough clusters to harvest some fruit, the focus should be on minimizing the cost of pest management inputs while maintaining quality and yield of the remaining fruit. In a year with a small crop load, the foliage will easily be able to produce sufficient sugars for maturation of the fruit as well as buds and wood for next year. Therefore, the need to protect the foliage from damage by insects and diseases is much lower. In fact, increased canopy size can become a problem due to increased shading, which leads to reduced formation of fruit buds, and increased canopy density which may impede thorough spray coverage.

Scouting

If a crop is to be harvested from a vineyard, regular scouting can help avoid any more surprises. At the very least, checking vineyards pre-bloom, post-bloom, mid-July, and early August can provide the minimum of information regarding development of key insect pests and diseases. If the cost of hiring a scout seems too much, try negotiating a lower price before canceling this service. Alternatively, walking the rows once a week can help you keep up-to-date on crop and pest development and will cut down the cost of this service. This might take as little as one hour per week. It may not seem worth it to spend any time in some badly affected vineyards, but consider this an investment in the long-term future of the vineyard. A [form to help with keeping records of your scouting](#) is available.

Insect management

Foliage pests. Decisions for insect control will depend on the expected yield from each vineyard. If it is expected to be close to normal, a typical insect control program should be maintained to guarantee the expected yield and quality. If a lower than normal crop will be harvested, juice grapevines can tolerate leaf damage and still ripen the reduced crop. Because of this, it will be much less important to control [Japanese beetles](#), [rose chafers](#), and [leafhoppers](#) than normal. If no post-bloom insecticide application is made, leafhopper infestation can be checked in mid-July to determine the need for controlling this pest. The threshold for juice grapes with a full crop at this time of the season is 10 percent of leaves infested. Although thresholds have not been developed for situations with a reduced crop, they are likely to be much higher as the crop load decreases. As mentioned above, the need for foliage protection will be low this year in frost-damaged sites, so only those vineyards where a high leafhopper infestation is discovered will need treatment.

Additionally, there are many highly effective insecticides for control of leafhoppers (see MSU Extension publication E-154, "[2012 Michigan Fruit Management Guide](#)"), so these can be controlled quickly if discovered. If no crop will be harvested this year from a block, the cost of protecting vines from leafhoppers and beetles is unlikely to be economical in juice grape vineyards. Hybrid and vinifera vines are less tolerant of insect feeding than juice grape varieties. If bearing vineyards of these varieties are infested by foliage pests, leaf protection remains important for achieving fruit ripening and vine maturation. Regular scouting can be used to determine the need for, and timing of, interventions to control foliage pests.

Cluster pests. A program for control of [grape berry moth](#), which is the main pest of grape clusters in Michigan, should remain a priority if any grapes are to be harvested. This will help minimize crop loss this year, and will reduce the risk of high infestations next year. We do not recommend use of an immediate post-bloom insecticide to vineyards because this generation causes little injury, and this pest can be controlled well by use of well-timed sprays for generations two and three. Sampling vineyards in early July (same time as leafhopper samples above) can be used to determine whether the cost of further insecticide applications is warranted. It is worth keeping the sprayer on hand after veraison, too, in case

populations of grape berry moth continue to develop closer to harvest. This happened in 2010 when a fourth generation developed.

If this occurs and berries are at risk from infestation, a well-timed effective insecticide may be warranted prior to harvest to minimize risk of infestation in harvested berries. If grape berry moth infestation is restricted to wooded borders in your vineyards, cost savings can be achieved by applying border sprays to the outer 10 rows. Cluster sampling through vineyards in mid-July can help identify vineyards where this strategy would be worthwhile.

Disease management

Foliar diseases. The main foliar diseases that are important in Michigan juice grapes are [powdery mildew](#) in Concord and [downy mildew](#) in Niagara grapes. If no fruit will be harvested, foliar diseases are the only diseases that need to be considered. As with insects, vines with a small crop load will be able to tolerate more foliar disease. The other factor to consider is the weather; warm, dry conditions will be more conducive to powdery mildew, whereas cool, wet conditions and heavy dews (more common in late summer) promote downy mildew.

In Concord grapes, control of powdery mildew may not be needed at all, unless there is a concern about inoculum production for next year. In that case, one or two mid- to late season applications of an inexpensive sterol inhibitor fungicide (e.g., a generic tebuconazole) will suffice to reduce infection and production of cleistothecia. Alternatively, a single application of a contact fungicide, such as JMS Stylet Oil (or other oil), in late August to early September can knock out cleistothecium production on existing colonies. In the latter case, thorough coverage is essential, for example, by using a higher spray volume and spraying every row.

Downy mildew is likely to be more harmful than powdery mildew, at least in 'Niagara' grapes, as it can lead to severe defoliation and reduced winter hardiness of the vine. Even though vines with a small crop load can withstand more downy mildew than heavily cropped vines, it should not be allowed to go completely out of control. This is also important from the standpoint of overwintering inoculum for next year. I would recommend scouting of vineyards in mid-July. If downy mildew lesions are observed, an application of a phosphorous acid product (i.e., Phostrol) is recommended to stop sporulation and further spread. A booster spray five days later will improve control. Scout again two to three weeks later to check if further control is needed.

Less costly protectant fungicides are copper products (for non-copper sensitive varieties), captan (not allowed on juice grapes after bloom), and Ziram. Some of the newer downy mildew fungicides, such as Reason and Forum, are also relatively inexpensive and are best applied as protectants. Obviously, the use of broader-spectrum materials will benefit control of other diseases as well and may give you more "bang for your buck" per spray application.

Fruit rot diseases. [Black rot](#) and [Phomopsis](#) are the main cluster diseases to be considered in juice grapes if there is sufficient fruit to harvest, especially if there is a lot of overwintering inoculum. If your vineyard had low disease pressure last year, fungicide applications may not be as critical this year. Black rot control should be focused around bloom, with the first and second post-bloom sprays being most important. There is generally no need to protect the fruit beyond the second post-bloom spray, because the berries become naturally resistant to infection about four to five weeks after bloom. An inexpensive sterol inhibitor fungicide will suffice; ziram may be added to broaden the control spectrum to include Phomopsis and downy mildew.

Phomopsis control becomes important as soon as the flower clusters become visible, which will happen a little bit later this year and may be variable as we will rely more on the secondary buds. Phomopsis spores will be released during most rain events from bud break until about bunch closing. A peak in spore production usually occurs around the first and second week in May, which may be a good time to protect shoots from infection. During dry spells, fewer sprays will be necessary. The first post-bloom spray is also an important spray for Phomopsis and can be combined with the black rot spray. Mancozeb is a cost-effective material for use against Phomopsis prior to bloom, and Ziram or a phosphorous acid fungicide can be used after bloom. For growers who have already applied a dormant spray, this will help reduce disease pressure of Phomopsis and black rot through the season.

Coverage

Because cluster protection is the main focus of a reduced insect and disease control program for frost damaged sites, it is best to target sprays to the fruiting zone to maximize the effectiveness of sprays. Coverage is particularly important as increased canopy size due to a small crop may impede spray penetration. For effective grape berry moth and fruit rot control, spray deposits must reach the whole cluster. This becomes more challenging as the vine canopy grows and so as the season progresses, spray volume should be increased and every row should be treated. Field trials with an airblast sprayer have shown that a spray volume of 50 gpa achieved substantially better disease control, particularly with protectant fungicides, than a spray volume of 20 gpa. The same result was found for control of grape berry moth – increasing gallonage to 50 gallons provided better control than 20 gallons. Although this will take more time, getting the maximum effect out of every spray is particularly important when yield is expected to be low.

Product selection

Under times of financial challenge, the temptation may be to choose the least expensive option to achieve control. This may seem the best choice, but it is good to keep in mind other factors. For example, is the product effective under the current and predicted weather conditions; how long does it last; and how well will it control the target pest or disease? In the long run, it may be more cost-effective to use a slightly more expensive product that lasts longer than the cheapest option.

Timing

When cutting back on sprays, make every one count. Making sure that applications are made at the optimal stage for control of your target pest is another way to help cut costs. It may take a little more time to check vineyards closely every few days, but doing this can be a cost-effective way to improve the impact of your spray program. By doing this, you may also find that pests and diseases are not as bad as expected, and the cost of an application can be saved.

Adjusted insect and disease control approaches in frost-damaged juice grape vineyards with no
--

harvest or partial harvest*		
Timing	No harvest	Partial harvest
Budswell/1- to 2- inch shoots	Sprays of lime sulfur, sulfur or copper at this time may be an inexpensive means to reduce powdery mildew pressure during the growing season.	Sprays of lime sulfur, sulfur or copper at this time can provide a substantial reduction in Phomopsis and black rot pressure; powdery mildew will also be reduced by sulfur; in some years, we have seen a reduction in downy mildew from a copper dormant spray.
Pre-bloom	No insect or disease control needed.	Control of Phomopsis needed only if it was a problem last year. No insect or disease control needed.
Bloom/ Post-bloom	No insect or disease control needed.	Insect control not needed. If field has history of black rot or Phomopsis, this is the best time to apply at least one spray for control. First post-bloom most important.
Mid-season	Foliage protection from insect pests is unlikely to be needed. Scout for downy mildew and treat if infections are common.	Foliage protection from insect pests is unlikely to be needed. Check clusters for grape berry moth infestation. The MSU model predicts egg laying starting at 810 degree days after wild bloom. If controlling black rot and Phomopsis, stop after second post-bloom spray. Scout for downy mildew and treat if infections are common.
Late-season	Foliage protection from insect pests is unlikely to be needed. Scout for downy mildew and powdery mildew and treat if infections are common (downy mildew) or to reduce inoculum production (powdery mildew)	Check clusters for grape berry moth infestation. The MSU model predicts egg laying starting at 1620 degree days after wild bloom. If a fourth generation occurs, this is predicted to start egg laying at 2430 degree days after wild bloom. Scout for downy mildew and treat if infections are common. At this time, it is unlikely that powdery mildew will have a negative impact, but an eradicant application can be made to reduce inoculum production.
* Guidelines should be complemented by weekly scouting for pests.		

Drs. Isaacs and Schilder's work is funded in part by [MSU's AgBioResearch](#).

SEEING A LOT OF BUTTERFLIES LATELY?

Erwin 'Duke' Elsner, Small Fruit Educator

A lot of folks have been reporting seeing a particular butterfly in higher than usual numbers this spring. The species that is having a great start this year is the "red admiral" butterfly, *Vanessa atalanta*. This butterfly has bold orange-red stripes across an almost black background on the upper surface of its wings. The underside has more of a mottled appearance with a less intense orange band on the front wings. It is a close relative of the painted lady butterflies which have also begun their activity this spring.

Red Admirals over-winter as adult butterflies, so they can show up just about any time the temperature reaches 40 degrees or more in the spring. I have seen them perched on snow banks. The adult males are rather feisty creatures, choosing territories and boldly flying towards any other creature that enters their space, even potential predators such as birds, and humans – they will often land on people. Adults feed on the nectar of many flower species and are especially fond of sap flows on trees. The caterpillars feed on many plants in the nettle family and also on hops, feeding in small groups amongst leaves they roll and tie together with silk.

Why so many red admirals this year? There is some evidence that suggests that red admirals are not really very cold hardy compared to other butterflies that overwinter here as adults. The relatively mild winter of 2011-2012 may have allowed for a much greater number of them to survive and show up in the spring. This butterfly is also known to make short-range migratory flights (nothing like the long-distance Monarch), which allows it to repopulate northern areas in large numbers quite rapidly.



MONTMORENCY TREES AVAILABLE

Wanda Heuser Gale, International Plant Management, said that they have 2000 ½" Montmorency/Mahaleb, Willow Drive trees in Northport that are looking for a home. If you know anyone that might be interested, have them give Wanda a call at 800-424-2765.

MSU EXTENSION TO OFFER SPOTTED WING DROSOPHILA WORKSHOPS THIS SPRING

Learn how to monitor and manage spotted wing Drosophila in 2012.

Posted on **April 23, 2012** by **Rufus Isaacs and Carlos Garcia-Salazar**, Michigan State University Extension, Department of Entomology

[MSU Extension](#) will provide three in-depth workshops on spotted wing Drosophila (SWD) biology and management this spring, designed for crop scouts, consultants and fruit growers. This invasive insect was detected in Michigan in late 2010 and in many other eastern US states in 2011 and is now found in most major fruit producing regions of the country. Spotted wing Drosophila is a pest of berries and other soft fruits, and will require active management by growers to minimize its economic impact.

This workshop will include the latest research information as well as hands-on training in monitoring, identification and fruit sampling. The workshop has been developed to help integrate SWD management into IPM programs. It will be led by members of the [MSU Department of Entomology](#) who have been studying this insect since its arrival in Michigan.

There is a registration fee of \$30 for the workshop. This covers the workshop plus attendance at the hands-on training on the afternoon of June 12. Space is limited to 25 attendees per workshop, so please sign up in advance. Call or [email](#) Judy Hanson at 616-994-4548 or to register for one of the workshops. The workshops will be held at the [Trevor Nichols Research Center](#), 6237 124th Avenue, Fennville, Mich. ([see map](#)). Classroom workshops (each the same) will be held on **April 24 at 1 to 4 p.m., May 15 at 1 to 4 p.m., and June 12 at 9 a.m. to noon**. For attendees at all these workshops, a follow-up, hands-on field training will be held on **June 12 at 1 to 3 p.m.**, also at the [Trevor Nichols Research Center](#).

These workshops are made possible by funding from [Project GREEN](#) and the [US-EPA](#).

GROWERS SHOULD CONTACT STATE LEGISLATORS REGARDING FRUIT CROP DAMAGE

Due to the recent damage in Michigan fruit crops caused by unprecedented spring weather, the Michigan legislature is considering legislation that would provide five-year interest free loans to fruit growers that have been impacted by the 2012 spring. We are encouraging growers that have sustained damage to contact their legislator and ask what he or she can do to provide support for those that have incurred damage. This type of legislation could be particularly important for new growers in the business or smaller farms that are not able to obtain lines of credit or other stop-gap measures in a bad fruit year. We know that spring is a busy time for all growers, but a few quick calls to our legislators could prove to be particularly beneficial in a tough year like 2012.

EDUCATIONAL SESSION ON MICHIGAN'S COTTAGE FOOD LAW

The Leelanau Farmers Market Association & MSU Extension are proud to present an educational session on Michigan's **Cottage Food Law** on **Monday, May 7, 2012** from **1-4 pm** at the Northwest Michigan Horticultural Research Center (6686 S Center Highway, Traverse City, MI 49684).

Michigan's Cottage Food Law was approved in 2010. This law allows those with an entrepreneurial spirit the opportunity to prepare and sell certain homemade foods prepared in home kitchens. Cottage foods are basically non-hazardous foods. They can be safely kept at room temperature and do not require refrigeration. [Examples](#) include: jams, jellies, breads and similar baked goods, cookies, cakes, fruit pies, vinegars and other non-potentially hazardous foods.

The objectives of this workshop are to provide information on how to safely make, label and sell cottage foods. MSU Extension educators **Wendy Wieland**, Business Consultant and Agriculture Specialist and **Jennifer Berkey**, Food Safety Educator, will present the business and food safety aspects of preparing and selling cottage foods. The registration fee is \$20 per person and the registration deadline is **Friday, May 4**. Register online at: <http://web2.msue.msu.edu/cottagefoods>. For more information, contact Rob Sirrine at MSU Extension at 231-256-9888.

ISLAND HOLDS FRUIT TREE GRAFTING WORKSHOPS

The Institute for Sustainable Living, Art and Natural Design will hold two separate tree grafting workshops this month. The first will be on **April 28**, from **9 a.m. to 1 p.m.** on its Bellaire property, located at 2550 Orchard Hill Road. The second

will be on **April 29**, from **1 to 5 p.m.** at Ware Farm, located at 9094 Alkire Road in Bear Lake.

Brenin Wertz-Roth from Giving Tree Farm and Nursery will teach aspiring home orchardists skills that will open a whole new world of gardening possibilities. Wertz-Roth began his work with trees at Bullock's Permaculture Homestead and in Orcas, Washington. He has been a farmer and nurseryman in the Pacific Northwest and in northern Michigan for the past six years.

"It's not just the cost-savings through creating a home orchard that draws me to grafting and working with fruit trees," Wertz-Roth said. "It's also the unique taste of old varieties and the importance of saving trees from a conservation standpoint, as well as increasing the diversity of food plants in northern Michigan."

Workshop participants will get hands-on practice matching the specifics of a site, including soil characteristics and exposure to sunlight, to considerations of particular varieties, from the size of the tree to its natural resistance to disease. Participants also will practice repairing real trees with severely damaged bark and reworking established trees with new varieties. They will learn how to train and care for seedlings in their vulnerable first years, as well as how to re-graft trees that have problems. Everyone will leave the class with understanding and practical experience, their own grafting knives, and four new apple, plum, peach, pear or quince trees.

"Most fruit trees and many ornamental plants are created through the art of grafting, but very few gardeners are familiar with the techniques that make this time-honored craft possible," Brad Kik, cofounder of ISLAND, said. "With access to distinctive varieties right at their fingertips, backyard orchardists will be able to take their pick from flavorful, old-world heirlooms like Ashmead's Kernel, to newer, cold-hardy cultivars like Zestar."

The cost of each workshop is \$65 per person or \$110 per couple. Individuals will take home a grafting knife and four trees, and couples get one knife and six trees. Class size is limited and pre-registration is required by April 25. Snacks are included.

These events are made possible by a partnership between ISLAND, the Natural Resources Conservation Service, and the Northern Michigan Small Farm Conference. For more information or to register, call [231-622-5252](tel:231-622-5252).

JUSTICE FOR OUR NEIGHBORS WORKSHOPS

Friday April 27 7:00 PM to 8:00 PM

Presentation on "**Immigration 101**" This presentation will provide a basic overview of current immigration laws and how they affect our community. This is also an opportunity to learn more about how *Justice for Our Neighbors* provides direct services, education, and advocacy on the topic of immigration around the country. To be held at Central United Methodist Church in Traverse City at 222 Cass Street.

Saturday, April 28 9:00 AM. to 1:00 PM

U.S. Citizenship Clinic. People with green cards, who qualify for naturalization, can get help with forms, copying documents, and putting packets together for review by an onsite immigration lawyer. Pre-registration at 946-5191 is required; free child care and translation services will be available. Held at Central United Methodist Church in Traverse City at 222 Cass Street. Questions - call 946-5191.

Citizens for Immigrant Rights - Northern Michigan Clinic

Sunday May 20th from 2:00 PM to 5:00 PM

Immigration Law Clinic. Local attorneys, trained volunteers, and interpreters will be on hand to assist local migrant and immigrant families with immigration related questions. Including assistance with:

- * Power of attorney forms to have your children cared for in the event of an immigration detention or other unexpected event;
- * Basic immigration and/or visa adjustment questions; and
- * How to get birth certificates, passports and other identification documents.

Free consultations will be provided by volunteers; however, follow up legal work may require payment, depending on the nature of the case. Please bring documents that could help prove the following:

- 1) Length of residence in US (utility bills in your name from many years ago, pay stubs, etc)
- 2) US Citizen Children (birth certificates)
- 3) Marriage to a US Citizen (marriage license)
- 4) Any immigrant visa paperwork
- 5) Passports from home country

Held at Presbyterian Church, 701 Westminster Rd, Traverse City. Take Front Street to Munson. Just east of 8th Street, turn on Airport Access Road. Located off of Airport Access Road, one half mile north of the airport between Munson Ave (M31/M72) and Parsons Road.

Questions - Call Fr. Wayne Dziekan [231-409-1387](tel:231-409-1387) or Marian Kromkowski [231-271-4990](tel:231-271-4990)*

WEBSITES OF INTEREST

Insect and disease predictive information is available at:

<http://www.enviroweather.msu.edu/home.asp>

60 Hour Forecast

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

Information on cherries is available at the new cherry website:

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

Fruit CAT Alert Reports

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

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

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

[ACTUAL AND PREDICTED DEGREE-DAY
ACCUMULATIONS SINCE MARCH 1, 2012](#)

Please send any comments or suggestions regarding this site to:

Bill Klein, kleinw@msu.edu

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