



Researcher Resources



ABOUT

NEWS & STORIES

AFFILIATED PROGRAMS

PROJECTS

Home

Background
& Projects

Calendar

Directions

InfoVideos

Links

Extension
Expert Search

Publications

Staff

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Agricultural & Regional Viticulture Agent

September 4, 2012

[Bill Klein](#)

Farm Mgr, NWMHRS

GROWING DEGREE DAY ACCUMULATIONS through September 3rd at the NWMHRC

Year	2012	2011	2010	2009	2008	2007	22 yr. Avg.
GDD42	3713	3158	3574	2727	3046	3405	3095.5
GDD50	2530	2125	2400	1674	1998	2243	2029.0

Wine Grapes Report

The earliest cultivars in our area are ready for harvest. A number of cultivars are showing signs of leaf senescence, especially the most shaded leaves inside the canopy. Bird damage is common on vines that have not been netted. Bee and wasp problems are also on the upswing. Some vineyard managers are reporting heavy powdery mildew on the inner, shaded leaves where canopies are too dense.

How far ahead are we in the north? Here are just a couple of comparisons with 2011:

Cultivar	brix Sept. 27, 2011	brix Aug. 30, 2012
LaCrescent	23.6	23.0
Pinot Noir clone 113	19.4	19.0

The LaCrescent was harvested on October 3rd in 2011, we are anticipating harvesting it this week!

STARCH CHART FOR HONEYCRISP APPLE FRUIT

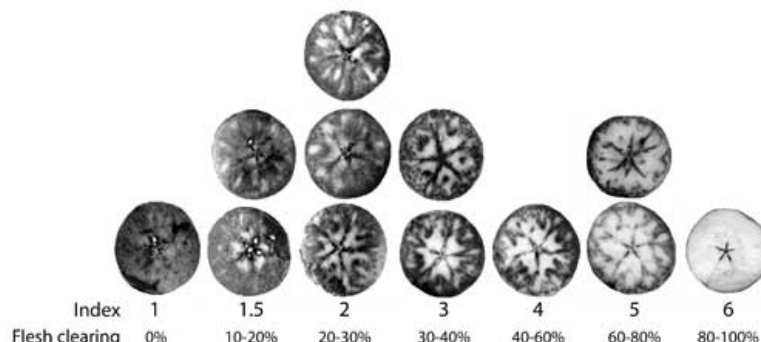
New starch chart available from Washington Treefruit Research Commission specifically for Honeycrisp apples.

Posted on **August 29, 2012, MSU-E News**, by **Randy Beaudry**, Michigan State University Extension, Department of Horticulture

Ines Hanrahan of the [Washington State Tree Fruit Research Commission](#) has recently developed a starch chart for Honeycrisp apples (see figure). The starch index ranges from 1 to 6 on this chart, which differs from that of the more commonly used chart from Cornell, which ranges from 1 to 8. In both charts, the higher the index, the less dark staining of starch by iodine so that as fruit ripen, starch is converted to sugar (sugar does not stain) and the starch index rises.

Starch Iodine Index for Honeycrisp

[View larger image](#)



One of the difficulties in the estimation of the starch index of Honeycrisp is that occasionally the staining of the core area does not clear until the cortex (flesh) has undergone significant starch loss. This can be seen in the top image for the starch index of 5 in the figure. For this reason, we have altered the Honeycrisp chart slightly by adding in estimates of clearing (non-stained areas) for the flesh of the fruit, ignoring the staining of the core.

In some ways, it may be more intuitive to refer to changes in starch content of the fruit as "starch clearing" for the core and the flesh tissues rather than a less

descriptive "starch index." When first learning about the use of a starch index, people are often confused as to why an index for starch increases while the content of the starch declines. Most indexes increase as the measured variable increases and decrease as the measured variable declines. An index of starch clearing, which increases as the index increases, provides a more logical association and is provided on the figure.

It is worth mentioning that starch index is a highly useful but inherently variable maturity index. We often recommend the use of several maturity indices including harvest order, red coloration, background color, ethylene content if available and fruit firmness.

The unusually high temperatures of this growing season year (2012) has provided some challenges in the estimation of fruit maturity, so taking several indices into account when making harvest and storage decisions is certainly warranted.

Dr. Beaudry's work is funded in part by MSU's AgBioResearch

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LENTICEL INFECTIONS AND BITTER ROT OF APPLES

Two relatively uncommon diseases of apples, lenticel infection and bitter rot, show up in the stressful weather conditions of 2012 in Michigan.

Posted on **August 29, 2012**, **MSU-E News**, by **Bill Shane**, Michigan State University Extension

The hot and dry weather conditions during 2012 have not only reduced crops in Michigan, but caused somewhat uncommon diseases to occur when trees are under these stresses. One type of disease that has shown up on apples this season appears as numerous small, dark spots, arranged somewhat uniformly on the skin surface. Initially, the spots are quite shallow, but over time they often become wider and deeper into the fruit. These infections are more common on the side of the fruit receiving direct sunlight. Isolations from these tissues show a range of fungi such as *Cladosporium* and *Alternaria*; all of these fungi are generally considered to be weak.

We hypothesize that the combined heat and sunlight weakened the lenticels of the skin, allowing the weak pathogens to colonize the area. Lenticels can also be weakened by an extended dry period followed by rain, a situation that will also cause peach skin to split. Lenticels that "split" appear as enlarged and roughened lenticels on fruit at harvest.



Lenticel infections of Honeycrisp fruit.

No spray program is particularly effective against lenticel spot although routine calcium sprays help to strengthen fruit tissue and Surround (kaolin clay) applications have been shown to help reduce direct sunlight damage to apple fruit.

Bitter rot, caused by the closely related fungi *Colletotrichum gloeosporioides* and *Colletotrichum acutatum*, can also show up in hot years. Although bitter rot is well known in warmer, humid apple growing regions such as the southeast United States, the disease is rare in Michigan.

The symptoms are more common on light or bicolored fruit such as Empire, McIntosh, Sunrise, Paulared and Jonagold. Bitter rot spots usually appear on the side of the apple directly exposed to the sun. Lesions are light to dark brown, flattened, and may have a pink, slight orange to light tan mass of spores.



Bitter rot symptoms of apple fruit. Flattened and concentric lesions are characteristic of this disease.

Captan or Flint during late July and August are effective for controlling bitter rot. Topsin M is not effective for bitter rot control. The disease overwinters in dead limbs and mummified fruit. If bitter rot reoccurs in an apple block, more thorough dormant pruning is recommended. Large diameter wood from pruning should be removed from the orchard to minimize the spread of the disease.

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Bill Klein, kleinw@msu.edu

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Home

Background
& Projects

Calendar

Directions

InfoVideos

Links

Extension
Expert Search

Publications

Staff

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September 5, 2012

LATE-SEASON CONTROL OF POWDERY MILDEW IN GRAPES: FOCUS ON INOCULUM MANAGEMENT

At this time of year, the focus of powdery mildew management should be on reducing inoculum production for next year, which typically peaks in mid-September. Eradicant sprays are best applied to visible colonies in early September.

Posted on **September 4, 2012, MSU-E News**, by **Annemiek Schilder**, Michigan State University Extension, Department of Plant, Soil and Microbial Sciences

Powdery mildew colonies are starting to become more apparent on grape leaves in a number of vineyards. While dry weather is generally considered favorable for powdery mildew, the heat and high solar radiation of the 2012 growing season have actually been detrimental to powdery mildew development. Temperatures of 95 degrees Fahrenheit and above are lethal to powdery mildew colonies. In this case, the temperature of the leaf surface is the most important to consider as this represents the immediate environment to which the powdery mildew colony is exposed. Leaf temperatures can be considerably higher than the surrounding air during sunny days.



Recently observed powdery mildew infection on grape leaves.

Photo credit: Annemiek Schilder, MSU



Powdery mildew colonies. Photo credit: Annemiek Schilder, MSU

The most common approach to grapevine powdery mildew management is to apply preventative fungicide sprays. A more sustainable and cost-effective management approach is to aggressively protect the fruit during its most susceptible period (from bloom until five to six weeks after bloom) and then take a more relaxed approach to protecting the foliage in order to keep the leaves functional during fruit ripening. Frequent scouting will be needed as well as eradicated sprays once powdery mildew colonies start to appear.

At this time of year, the focus of powdery mildew management should be on reducing inoculum production for next year. In August and September, the fungus switches to producing overwintering structures called cleistothecia. They can be seen as small, yellow, brown and black specks on the surface of the powdery mildew colonies. Even if substantial powdery mildew occurred in a vineyard during the growing season, there is a window during which cleistothecium production can be nipped in the bud as most cleistothecia are produced in the first half of September in Michigan. Conversely, even if you had decent control of powdery mildew during the growing season, putting the sprayer away soon can allow the fungus to make a late comeback and still produce considerable numbers of cleistothecia before the leaves fall off. Lower numbers of cleistothecia going into the winter result in a delay in the onset of powdery mildew epidemics and overall lower disease pressure the following

season.

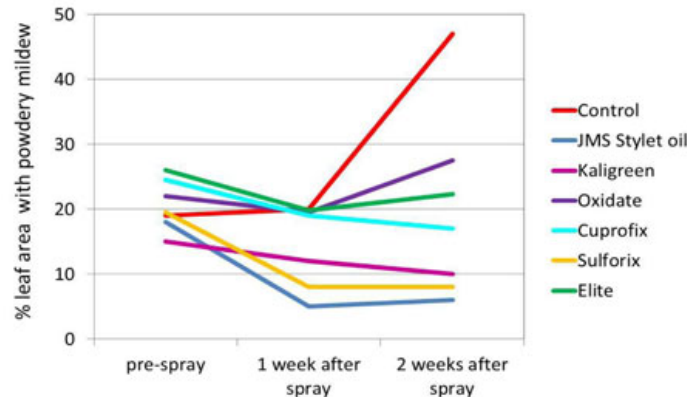


Powdery mildew cleistothecia on vein of grape leaf. Photo credit: Laura Miles

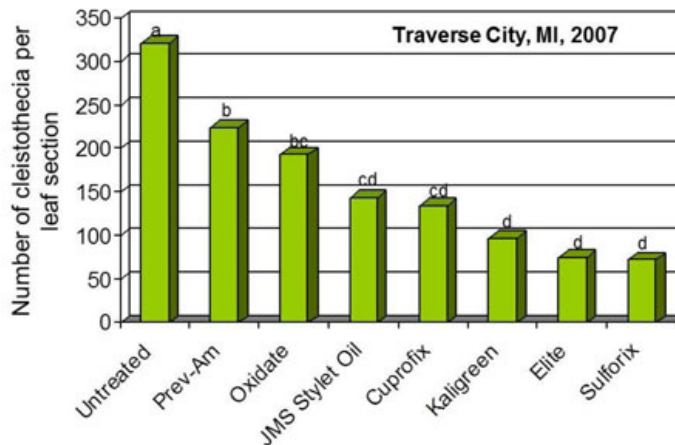
While we have many effective fungicides for preventative and curative control of powdery mildew in grapes, not many fungicides can eradicate existing colonies. In fact, spraying systemic fungicides on raging infections is not very effective and can encourage fungicide resistance development. At most you can expect to suppress sporulation while you keep new infections from taking place on healthy tissues. Small plot efficacy trials in grapes have shown that JMS Stylet Oil, Sulfurix and Kaligreen have good eradicated properties and can reduce the number of visible colonies (see graphs). To reduce the number of cleistothecia, Sulfurix, Elite and

Kaligreen appeared most effective (Elite did not eliminate existing infections, but prevented new infections). Do not apply Sulfurix on sulfur-sensitive varieties or close to harvest, as sulfide residues may interfere with the fermentation process. More than two applications of Stylet Oil are thought to suppress brix accumulation but we are evaluating this premise in Michigan in 2012.

Effect of post-infection (Sept. 19) fungicide spray on powdery mildew severity on Pinot noir leaves in Traverse City, Mich.



Effect of a single post-infection spray on cleistothecium formation



A few things to remember when applying eradicated sprays.

Apply treatments as soon as possible after symptoms are seen (regular and careful scouting is important).

For cleistothecia prevention, apply an effective eradicator on visible powdery mildew colonies between now and early September.

Ensure thorough coverage of leaves and bunches, which means increasing spray volume (50 to 100 gal/acre), driving slower and spraying every row.

Since coverage is so important, waiting a little longer to ensure good spray conditions is better than spraying immediately under poor spray conditions.

If needed, ensure forward protection of healthy plant parts by including fungicides with good protective activity in the spray mixture. Fungicides that have broad-spectrum activity can also protect against late season downy mildew and Botrytis bunch rot development.

Always read the label for the pre-harvest and restricted entry intervals, incompatibility with other products, and other restrictions.

Scout again to see if your treatment was effective.

Dr. Schilder's work is funded in part by [MSU's AqBioResearch](http://www.msu.edu/AqBioResearch).

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FALL-HARVESTING BERRYGROWERS NEED TO MONITOR AND MANAGE SPOTTED WING DROSOPHILA

Ripe fruit and cooler days provide conditions for pest buildup.

Posted on **September 4, 2012, MSU-E News**, by **Rufus Isaacs**, Michigan State University Extension

With fall red raspberry harvest getting underway, it is important that Michigan raspberry growers take the time and effort to monitor for a new invasive pest: the [spotted wing Drosophila](#) (SWD). This small, vinegar fly can lay its eggs into ripening and ripe berries, and it has been found in all the major fruit-producing regions of the state.

With the currently increasing density of ripe fruit in raspberry fields and the more moderate temperatures that are conducive to fly development, berry producers should take this threat seriously and monitor for SWD and initiate control activities if it is detected. If not controlled, this pest has the potential to cause fruit contamination.

The [Michigan State University](#) guidelines for management of SWD for blackberry and raspberry growers have been updated recently and are available online at the [MSU IPM Control Recommendations for Spotted Wing Drosophila](#) website. *Dr. Isaacs' work is funded in part by [MSU's AgBioResearch](#).*

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HONEYCRISP LEAF YELLOWING SHOWING UP ON MICHIGAN APPLES

Leaf yellowing on Honeycrisp apples looks severe, but seems to have no detrimental effect on the trees.

Posted on **September 4, 2012** by **Phil Schwallier**, and Amy Irish-Brown, Michigan State University Extension

During July and August, Honeycrisp will develop leaf yellowing that in some years can be quite severe (Photo 1). This disorder is a genetic characteristic of Honeycrisp and is caused by excessive buildup of carbohydrates in the leaves. Yellowing is greatest on light crop load trees and limbs where there is no fruit to collect the carbohydrates from the leaves. The excessive carbohydrates cause the reduction of photosynthesis and leaf chlorophyll levels declines, turning the leaves yellow. This yellowing seems to have no detrimental effect on the trees, but looks severe. Some other varieties can get this yellowing (Photo 2), but this leaf yellowing also resembles leafhopper burn – Honeycrisp leaf yellowing is not caused by leafhoppers.



Photo 1. Light crop load Honeycrisp with leaf yellowing.

Photo 2. Pink Lady leaf yellowing. Photo credit: Bill Shane, MSUE

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AZINPHOS-METHYL PHASE-OUT UPDATE

Distribution of Azinphos-methyl (AZM), also known as Guthion, is prohibited after September 30, 2012, but product use is extended until 2013.

Posted on **September 4, 2012, MSU-E News**, by **Amy Irish-Brown**, Michigan State University Extension



Many have heard that azinphos-methyl (AZM), commonly known as Guthion, is due to be phased out September 30, 2012, and earlier this season you were encouraged to use up any remaining supplies by that date. Work has been afoot by apple industry leaders to maintain AZM uses as it is now.

On behalf of the Michigan Apple Industry, [MACMA](#) and the [Michigan Apple Committee](#), with the help of [Michigan State University](#) researcher [Larry Gut](#), submitted a rebuttal letter to [EPA](#) addressing concerns regarding the September 30, 2012, phase-out of AZM. Michigan's Apple Industry is of the belief the total phase-out of AZM would not only disrupt current integrated pest management (IPM) practices and increase financial loss to producers, but also impact markets.

EPA held a conference call with stakeholders on August 30, 2012, and announced the following:

"...As a result of this year's abnormal weather events, growers have been left with unused stocks that cannot be used unless EPA modifies the existing cancellation order to permit additional use of the existing stocks in growers' possession."

EPA believes it is appropriate to allow growers to use the remaining stocks in their possession – for another use season – through September 30, 2013 – and therefore is today modifying the existing cancellation order to permit growers to use stocks in their possession for another year.

For the reasons explained above, EPA hereby modifies the cancellation order of February 20, 2008, to permit use of AZM products until September 30, 2013. **The distribution and sale provisions remain unchanged and therefore any distribution or sale of AZM products is prohibited after September 30, 2012 ..."**

Growers are urged to assess their existing inventories immediately and contact their spray consultant if they have excess. **No transfers can take place after September 30, 2012.**

You can read the above decision in its entirety at [Azinphos-methyl: Notice of Receipt of Request for Label Amendments](#), as well as read the [EPA news release](#).

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FRUIT FARM FINANCIAL SUMMARY TOOL TO PREP FOR DIASTER LOANS

Farm financial business summary and analysis forms are now available for farms to download.

Posted on **September 4, 2012, MSU-E News**, by **Dennis Stein**, Michigan State University Extension

The impacts of the 2012 Fruit Freeze and the Summer Drought have had an impact on nearly every farm in the state of Michigan on the crop production side and nearly every aspect of the farm business. In an effort to help farms compile their farms financial and basic production information [a special downloadable form is now available](#) from Michigan State University Extension.

This publication is designed to walk a farm producer through the steps to compile a balance sheet - net worth statement, income statement and gather some vital production about the farm as a whole. By putting this information together in one location, the farmer can establish how the farm did financially and do some basic benchmarking of the farms performance. Taking the time to compile your farm's 2011 data can be one for the first steps in building a financial package that will be required for a farm to apply for either the UDSA Farm Service Agency – Disaster Loan or when available, the Michigan 1 percent Disaster Loan.

Many farms will be seeking one or both of these loans as a means to help them cover the income shortfall created by reduced crop yields as a result of the 2012 disasters. Farms are now challenged with the task of creating their own budgets and planning how they will finance their farm and family financial needs through 2012 and until the 2013 crops can be harvested and marketed.

[Michigan State University Extension](#) has several extension educators that are skilled in working with farm financial forms and helping make multi-year cash flow projections. Farms and families have a resource that they may want to utilize early in the process of building their farm financial plan and putting together the financial packages to utilize the disaster loan programs as a management tool.

Some of those resources can be found at [MSU Extension News](#). Other resources can be found on [Dennis Stein's website](#), which contains a variety of farm management, fruit freeze and drought resources and links. If you have difficulty locating these resources, contact me, Dennis Stein, directly by email at: steind@anr.msu.edu to direct you to the information or resources that you are looking for.

Additional Information

MSU Extension's [Drought Resources](#)

MSU Extension's [2012 Fruit Freeze Resources](#)

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SEPTEMBER 25 FIELD DAY WILL FOCUS ON FRUIT FIELD RESEARCH AND EFFICACY TRIALS

MSU Extension event at Trevor Nichols Research Center will show results of 2012 fruit insect and disease research.

Posted on **September 4, 2012, MSU-E News**, by **John Wise**, Michigan State University Extension, Department of Entomology

We will be having a research field day at the [Trevor Nichols Research Center](#) on Tuesday, September 25, from 1 to 4 p.m. The field day will focus on insect and disease research and efficacy trials that were carried out this season by Michigan State University's [Larry Gut](#), [Rufus Isaacs](#), [Annemiek Schilder](#), [George Sundin](#), [Mark Whalon](#) and [John Wise](#).

The [Trevor Nichols Research Center](#) is located at 6237 124th Ave. in Fennville, Mich. ([view map and directions](#)). *Dr. Wise's work is funded in part by [MSU's AgBioResearch](#).*

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Home

Background
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Calendar

Directions

InfoVideos

Links

Extension
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Publications

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Agricultural & Regional Viticulture Agent

September 11, 2012

[Bill Klein](#)

Farm Mgr, NWMHRS

RECORD NUMBER OF SPOTTED WING DROSOPHILA IN FALL RED RASPBERRY

We are finding record numbers of spotted wing *Drosophila*. Fall red raspberry growers must trap for this pest or check for infested fruit.

Posted on **September 10, 2012**, **MSU-E News**, by **Bob Tritten**, Michigan State University Extension

In the last four days (as of Monday, September 10), I have had a good number of phone calls and emails from fall red raspberry growers who are finding larvae or worms in fruit. In some cases, growers have discovered the fruit infestations themselves and many other growers have discovered wormy fruit when they have had calls from customers with wormy fruit.

In the last week, we have had record numbers of [spotted wing *Drosophila*](#) (SWD) caught at traps, indicating that pressure is building rapidly from this pest. Our small fruit entomologist at [Michigan State University](#), [Rufus Isaacs](#), is calling this the "SWD Tsunami." This term is well said.

I also have had a good number of growers that have had a few adults caught in traps, but when they checked for infested fruit, have found a good number of fruit infested with larvae. **This is what is so concerning to me!**

If you have not been trapping for SWD, or checking for infested fruit, I am encouraging you to do so immediately.

Here is some information on a simple technique for sampling for larvae in fruit using a fruit dunk flotation method. Collect a standard sample of fruit (maybe fruit for marketing, or suspicious fruit). Place the fruit in a plastic zip-lock bag and crush lightly to break the skin. Make a salt solution by dissolving 1 Tbsp. of salt in 1 cup of water and add this solution to the bag to cover the berries. After 30 minutes, examine the liquid to see if larvae are visible in the liquid. Larger SWD larvae will be visible as small, white pieces floating through the colored liquid. Placing this mix on a dark-colored tray is also an effective method for scoring the sample for SWD contamination. Detection of small larvae may require the use of a hand lens.

Isaacs has updated the publication [Spotted Wing *Drosophila* Management Recommendations for Michigan Raspberry and Blackberry Growers](#). There is information in this guide on controlling this pest. The [MSU IPM Spotted Wing *Drosophila*](#) website also contains a great deal of other information on trapping and controlling SWD.

If you have questions concerning SWD trapping, identification or control, don't hesitate to contact me via [email](#), call my office at 810-244-8555, or call or text my cell phone at 810-516-3800.

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DISASTER LOAN PROGRAM ASSISTANCE MEETING

We will host a meeting at the NW Michigan Horticultural Research Center on **Tuesday, September 25th, 1:00-5:00 p.m.**, to assist growers in preparing for disaster loan applications. This important program is designed to help gather and develop appropriate materials needed to apply for the newly available disaster loans. The program is open to all growers and their families. MSU Extension will follow up this meeting with one-on-one counseling for those growers needing further assistance. Those dates will be announced at the Sept. 25th meeting, and we are requesting that growers make appointments with Extension educators for this individualized help. This program is the first in a series of wintering programming that is designed to help growers with the crop loss of 2012. This meeting is *free* and supported in part by Cherry Republic and the Leelanau Conservancy.

Program Schedule

1:00-1:45 Introducing the Basics of The FSA Emergency Loan Program
Jim Monroe, Farm Loan Manager, USDA, Farm Service Agency

- 1:45-2:30 Preparing To Meet With Your Lender: What Documents, Forms, and Information Do You Need To Be Ready For That Visit
Gordon Tulgestke, Senior Financial Services Officer, GreenStone, FCS
- 2:30-2:45 BREAK
- 2:45-3:30 Tools To Help Prepare Growers For Loan Applications
Stan Moore, Extension Educator, MSU
- 3:30-4:00 Health Tips That Help a Positive Outlook
Dr. Phil Siemer, MD, Suttons Bay
- 4:00-4:20 Helping Growers Transition Orchards: Discussion On Industry Needs
Susan Cocciarelli, MSU Center for Regional Food Systems, Northwest MI Council of Governments
- 4:20-5:00 General Question and Answer Session With Follow-up Meeting Discussion
Nikki Rothwell, District Horticulturist, NWMHRC, MSU
Stan Moore, Extension Educator, MSU

FARMS NEED TO START YEAR-END FINANCIAL PLAN NOW, AVOID PROBLEMS LATER

Farm income swings can create both short-term, and long-term challenges.

Published on: Sep 6, 2012

By Dennis Stein, Michigan State University Extension.

With current commodity prices at record levels and crop yields still unsure, 2012 will be a year where farms will want to do some early, year-end financial planning.

Allowing too much of an income swing can push a farm into higher income tax brackets that will require a farm to pay more income taxes, which can result in an intense downward income swing for the farm the following year. This potential for low or negative income in 2013 may create a situation that would not allow the farm to take advantage of some basic tax deductions.

Farms Need To Start Year-End Financial Plan Now, Avoid Problems Later

In the past few years, crop farms in the Thumb and Saginaw Valley regions of Michigan have had strong commodity prices and good crop yields. Many farms have managed income by marketing much of the year's crop production in the winter of the following year. In this situation farms would have carried the bulk of the 2011 crop production into 2012, which allowed the farm to take advantage of some very good commodity prices and fixed the 2012 crop sales income early in the year. In this case, these farms would then carry the bulk of the 2012 crop into 2013 for marketing. This is where the droughts impact on 2012 crop production will impact 2013 farms with reduced bushels to market during the winter months.

Farms that expect to have less 2013 income may want to evaluate options to decrease the projected 2013 expenses. One method to reduce next year's expenses is to claim this year's supplies as a pre-paid expense. There are a few rules to consider when using pre-paid expenses when claiming expenses as 2012 deductibles. The best recommendation is to review your situation with your tax advisor who can help with recommendations in building your year-end plan and define the requirements for putting the plan into action.

It is key to have the cash flow to handle the purchase of pre-paid expenses before the end of the year. Some farms have used their operating line of credit to fund these purchases with the ability to pay these borrowed funds back shortly after the start of the new year with crop sales. In many cases the early seasonal discounts offered by some of the seed, fertilizer, chemical and other supply companies have more than offset the credit cost of borrowing the funds for three to five months. However, if you see that the drought will reduce your crop carry forward this may limit the cash income that will be generated by the winter sales of 2012 crops. Implementation of a plan now may be needed to avoid cash flow or credit problems as the year rapidly closes after fall harvest is completed.

It seems common that when fall harvest kicks in farms have little time or ability to focus on other risk or management activities so now is the time to develop year-end plans.

Farms have often depended on last minute equipment purchases as an expense management tool in the past. However, for 2012, because equipment purchases will do little to help reduce the 2013 production expenses, you may want to consider another option. Every farm needs to expand their window of financial cash-flow planning into a multi-year framework to obtain the farms very best potential results.
Stein writes for Michigan State University Extension

MSU EXTENSION EDUCATORS ASSIST COMMERCIAL AGRICULTURAL PRODUCERS IN MAXIMIZING CASH FLOW

Good records and accurate financial accounting provide the information to reduce income tax liability and increase cash flow.

Posted on **September 6, 2012, MSU-E News** by **Curtis Talley Jr.**, MSU Extension

[Michigan State University \(MSU\) Extension](#) farm management educators stress to commercial producers the importance of

good financial records. These records are necessary for accurate financial accounting, correct and complete income tax filing, farm business analysis, estate and business succession planning and long term business planning. Using these records and a program created by the [MSU Income Tax School](#), farm management educators assisted commercial agricultural producers in projecting their taxable income. Most of these producers subscribe to the [Telfarm system of business accounting](#). The income tax projection considers business and personal income and calculates business and personal deductions including depreciation of capital equipment. In most cases, several scenarios are projected in order to optimize the tax liability for the financial benefit of the farm. These scenarios also provide substantial teachable moments for explaining the income tax ramifications of a potential change in accounting.

Each participant's financial situation is unique and the workshop program utilizes each participant's individual situation. A farm specific report is produced indicating the various scenarios and results. These results can be utilized in concert with an accountant or tax preparer in calculating income tax liability. These work sessions are offered throughout the state in November and December. Session location is dependent on the number of participants in that area. Some are offered in each county and some are offered for multi-counties.

A total of 177 farms representing 788 full time equivalent employees participated recently. The total positive measured change in the economic situation of all participating farms was \$5,095,532 or \$28,788 per farm. This increased business capital is utilized differently by each business depending on their long range business plan. It can be used to upgrade equipment, provide seed money for a business expansion resulting in the creation of new jobs or retaining the funds for the future.

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

FERTILIZER PRICES TOO HIGH?

If you are interested in learning more on how you can reduce your fertilizer costs, why not attend the program on **September 18th**, from 11:00-1:30 at the Boardman River Nature Center? This program is co-sponsored by Morgan Composting, Inc. and the Grand Traverse Conservation District. For more details, see the [attached flyer](#).

LEELANAU COUNTY HOUSEHOLD HAZARDOUS WASTE & ELECTRONICS COLLECTION

The last Household Hazardous Waste & Electronic Collection of 2012 will be held **September 22**, in Peshawbestown. For more details, see the [attached brochure](#).

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:

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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>

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& Projects

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InfoVideos

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

[Nikki Rothwell](#)

District Horticulturist

[Duke Elsner](#)

Agricultural & Regional Viticulture Agent

September 12, 2012

[Bill Klein](#)

Farm Mgr, NWMHRS

EXCITING NEW APPLE HARVESTER DEMONSTRATION TO BE HELD

The DBR Vacuum Apple Harvester will be demonstrated at the Evans Brothers Farm in Frankfort on **Friday, September 21**. The demonstration will begin at 9am, is *free*, and open to all. This cutting edge piece of equipment was developed by Phil Brown Welding, Conklin, MI, and has the potential to bring about landmark change in apple harvest technology. We are fortunate to have such an innovator in Michigan, and we hope that you will take the time to check out this exciting new technology.

To read more about the apple harvester: <http://www.goodfruit.com/Good-Fruit-Grower/December-2010/Vacuum-harvester-passes-bruising-tests/>

Evans Brothers Farm is located at 5273 Joyfield Road, Frankfort, MI. We will meet at the entrance of the farm next to the pesticide containment facility at 9 am, then head back straight south into a block of apples.

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Agricultural & Regional Viticulture Agent

September 18, 2012

[Bill Klein](#)

Farm Mgr, NWMHRS

Wine Grapes

Duke Elsner, Grand Traverse County MSUE

Recent rains have helped to improve our moisture deficient soils, but the incidence of mildews and cluster rots has increased. Overall, the fruit quality is still outstanding, and the crop load is excellent in many vineyards.

Fruit for sparkling wines has been harvested, we are now into the harvest of early cultivars for still wines. Pinot Noir, Pinot Gris and a few others have made it well into the 20+ brix range and many cultivars are approaching 20 brix at the research station vineyard in Leelanau County. We have ripened Syrah successfully at the station this year – perhaps the best we have ever seen with this cultivar.

Wasps, bees, ants and Drosophila fruit flies are the insects of concern at this point. Bird and raccoon damage is now quite common on both red and white cultivars that have not been netted. At the research station, we have had very good results with only perimeter netting around vineyard blocks.

SAN JOSE SCALE ALERT IN APPLES AND PEACHES

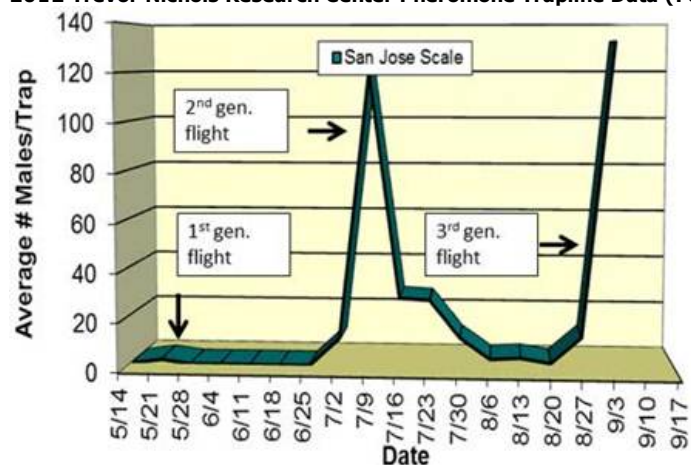
Third generation San Jose scale is making a strong surge in this hot season.

Posted on **September 12, 2012**, **MSU-E News**, by **Bill Shane**, and Bob Tritten, Michigan State University Extension, and John Wise, Michigan State University Extension, Department of Entomology

Due to the hot 2012 season, the third generation of [San Jose scale](#) could be significant in orchards where earlier generations were not controlled. Traditionally, this insect has been thought to have two generations per season in Michigan. However, trapping information later than September 1 for this insect is generally not available for past years.

San Jose scale cause damage to fruit and branches of all tree fruit through feeding and toxin injected during feeding. The feeding on fruit is conspicuous on apples and peaches where scales cause bright red spots. Over the last few seasons, growers have been seeing more fruit damage from this pest.

2012 Trevor Nichols Research Center Pheromone Trapline Data (Fennville, Mich.)



The concern is that a third generation may cause problems in orchards where the second generation was not controlled sufficiently. Each female from the second generation could potentially bear 150 to 500 new offspring.



San Jose scale causes red spots on peach fruit.

The San Jose scale biofix for the third generation was set at August 27 for the [Trevor Nichols Research Center](#) near Fennville in southwest Michigan. A growing degree day (DD) base of 51 degrees Fahrenheit is used for San Jose scale, with 2,503 degree days accumulated from January 1. Crawlers for this generation are expected 400 to 450 DD base 51F after this biofix, which is 2,903 to 2,953 DD base 51 F from January 1 at the [Bainbridge/Watervliet Enviro-weather station](#). Based on the Enviro-weather forecast for this station, we estimate that crawlers of this insect should begin emerging approximately September 21 for the southwest region. Hot or cold weather

could push this prediction earlier or later.

Elsewhere in the state we do not have the detailed San Jose scale trap information to pinpoint the start of the generations. However, we can expect the San Jose scale generations to be behind those in the warmer southwest. Looking at the degree accumulations at Enviro-weather stations around the state, these other stations lagged six days (Romeo) to 15 days (Traverse City) behind southwest Michigan to reach the similar degree day accumulation starting on January 1 (Table 1).

Table 1. Comparison of degree day accumulations base 51 F from January 1 for four Enviro-weather stations in 2012.

Weather station	Michigan region	Date to reach 2,503 DD51 from January 1 in 2012*
Bainbridge/Watervliet	Southwest	8/27/2012
Romeo	Southeast	9/2/2012
Belding	West Central	9/6/2012
Traverse City	Northwest	9/11/2012

*** 8/27/2012 was the date that the third generation of San Jose scale male flight began in southwest Michigan.**

The take-home message is that growers and scouts should check their orchards for evidence that San Jose scale has been active this year, and if so, consider control options based on the amount of scale and opportunities for treatment. If new scale numbers are very small and the fruit crop is gone, treatment of scale in the early spring of 2013 may make more economic sense. Information on control options for San Jose scale can be found in the MSU Extension article [Time for San Jose scale](#).

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

DISASTER LOAN PROGRAM ASSISTANCE MEETING

We will host a meeting at the NW Michigan Horticultural Research Center on **Tuesday, September 25th, 1:00-5:00 p.m.**, to assist growers in preparing for disaster loan applications. This important program is designed to help gather and develop appropriate materials needed to apply for the newly available disaster loans. The program is open to all growers and their families. MSU Extension will follow up this meeting with one-on-one counseling for those growers needing further assistance. Those dates will be announced at the Sept. 25th meeting, and we are requesting that growers make appointments with Extension educators for this individualized help. This program is the first in a series of wintering programming that is designed to help growers with the crop loss of 2012. This meeting is *free* and supported in part by Cherry Republic and the Leelanau Conservancy.

Program Schedule

- 1:00-1:45 Introducing the Basics of The FSA Emergency Loan Program
Jim Monroe, Farm Loan Manager, USDA, Farm Service Agency
- 1:45-2:30 Preparing To Meet With Your Lender: What Documents, Forms, and Information
Do You Need To Be Ready For That Visit
Gordon Tulgestke, Senior Financial Services Officer, GreenStone, FCS
- 2:30-2:45 BREAK
- 2:45-3:30 Tools To Help Prepare Growers For Loan Applications
Stan Moore, Extension Educator, MSU
- 3:30-4:00 Health Tips That Help a Positive Outlook
Dr. Phil Siemer, MD, Suttons Bay
- 4:00-4:20 Helping Growers Transition Orchards: Discussion On Industry Needs
*Susan Cocciarelli, MSU Center for Regional Food Systems,
Northwest MI Council of Governments*
- 4:20-5:00 General Question and Answer Session With Follow-up Meeting Discussion
*Nikki Rothwell, District Horticulturist, NWMHRC, MSU
Stan Moore, Extension Educator, MSU*

FALL HERBICIDE APPLICATION IMPROVES WEED CONTROL IN FRUIT ORCHARDS

Fruit growers have the opportunity to experiment with fall herbicide application.

Posted on **September 14, 2012, MSU-E News**, by **Bernard Zandstra**, Michigan State University Extension, Department of Horticulture

With little or no fruit to harvest this fall (2012), Michigan fruit growers have the opportunity to experiment with fall herbicide application. Growers often comment that they don't have time to apply herbicides in fall because they are too busy with harvest and shipping. This year with the frost-reduced or eliminated crop, they may consider trying new and different herbicides and methods of weed control.

Fall is a good time to apply herbicides for control of many weeds, but especially persistent weeds and late-germinating weeds that usually escape or tolerate preemergence herbicides, as well as perennial, biennial and winter annual weeds. Weeds such as [horseweed](#), [yellow rocket](#), [mallow](#), [wild carrot](#), [dandelion](#), [white campion](#) (cockle) and [quackgrass](#) are more

susceptible to herbicides in fall than in spring. Most of the residual pre-emergence herbicides registered for tree fruit, bush berries and grapes are labeled for fall or spring application.

Fall herbicides should be applied after frost has killed most annual weeds and new growth has ended for the year and before soil freezes. November is normally a good time to apply. Fall rains help to move the herbicides into the soil and "activate" them. Cool soil temperatures reduce herbicide dissipation and degradation of the active ingredients.

Kerb (pronamide) is very effective against quackgrass when applied in fall. Kerb may be used on pome, stone fruit and blueberries. Apply up to 4 lbs. product/acre in a band on both sides of the row. Kerb suppresses quackgrass up to about July 1. Kerb should be applied with another herbicide such as Chateau or Alion to expand the weed control spectrum. Inclusion of glyphosate (Roundup or generic) in the tank-mix will kill emerged weeds.

Chateau (flumioxazin) is very effective against most annual weeds when applied in the fall. It does not control horseweed (maretail) adequately when applied in the spring, but fall Chateau application plus glyphosate provides good, overall weed control until mid-July. Chateau may be used on pome, stone, blueberries and grapes. An early spring application of a photosystem II (PS II) inhibitor, such as Karmex (diuron) or Princep (simazine), will broaden the weed control spectrum. Another application of glyphosate in late May or June will kill most emerged weeds and provide bare ground into August.

Sinbar (terbacil) is labeled for both fall and spring application in apples, peaches and blueberries. (Sinbar should only be used on trees that are 3 years or older. It is moderately soluble and should not be used on sand with less than 1 percent organic matter.) Sinbar suppresses many annual grass and broadleaf weeds, and if applied with glyphosate in the fall, it will control most weeds for two to three months in the spring. Sinbar does not control common groundsel and loses control of pigweeds by mid-season. Sinbar is a PS II inhibitor and should be used in alternate years to avoid weed resistance.

Sandea (halosulfuron) may be applied in the spring in apples and blueberries at 1 oz per acre. It will suppress most broadleaves and also improve yellow nutsedge control. Sandea may be applied again later in the season at 1 oz per acre for post-control of broadleaves and yellow nutsedge. Sandea in the spring after Sinbar in the fall controls most annual broadleaves and grasses.

Solicam (norflurazon) is effective when applied in the fall. It provides good suppression of most annual grasses and yellow nutsedge. It should be combined with or followed the next spring by Karmex or Princep for broader and longer weed control.

September is a good time to apply Stinger (clopyralid). Weeds in the Asteraceae (composite) family, such as dandelion, Canada thistle, common groundsel, horseweed, fleabane, goldenrod and white heath aster are susceptible to clopyralid (Stinger, Spur, other generics). Legumes (alfalfa, clover, trefoil) and nightshades (eastern black nightshade, hairy nightshade, ground cherry, horsenettle) also are susceptible to clopyralid. Fall is a good time to kill these very tough weeds with clopyralid. The weeds should be sprayed while they are actively growing so that they absorb and translocate more of the herbicide. Wait at least two to three weeks after Stinger application before applying residual herbicides and glyphosate. Stinger currently is labeled on stone fruits and blueberry.

Some herbicides are more effective when used in the spring. The mitosis inhibitors Prowl (pendimethalin), Surflan (oryzalin) and Devrinol (napropamide) are effective preemergence annual grass herbicides. They are good tank-mix partners with PS II inhibitors in the spring. They are non-phytotoxic to young and recently-transplanted trees and bushes, and can be applied soon after planting trees.

As a general practice for fruit weed control, use at least two residual herbicides with different modes of action each year (fall or spring) plus a post-emergence herbicide at least twice (fall and spring). Change the herbicides each year so that tolerant weeds do not build up.

There are several other herbicides labeled for some or all the fruit crops, which can also be included in the rotation. Check [MSU Extension](#) bulletin E-154, [2012 Michigan Fruit Management Guide](#), for all fruit crop herbicide recommendations. *Dr. Zandstra's work is funded in part by [MSU's AgBioResearch](#).*

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

FIXED CANOPY FIELD DAY

Ever wished you could spray without a tractor? Come see MSU's 1st year progress on the development of a commercial scale fixed canopy spray system! The field day, held **October 3, 2012** from **9:00 a.m. till noon** at the MSU Clarksville Research Center, will begin and end with a live demonstration of a functioning prototype system. Project researchers will be on hand to explain how the system works and answer your questions on potential applications in apples and sweet cherries. For more details, see the attached flyer.

FALL-LIKE WEATHER PATTERN AHEAD

Could there be a chance for the first frost and freezing temperatures in September?

Posted on **September 17, 2012**, **MSU-E News**, by **Jeff Andresen**, Michigan State University Extension, Department of Geography

A cold front marking the boundary of the coolest air mass of the season thus far will pass through the Upper Great Lakes region late Monday (September 17) into Tuesday (September 18), bringing a period of rain and possible thundershowers in Michigan. The frontal passage signals the development of a deep upper air troughing-feature across the region that will lead to cool, unsettled and very fall-like weather for much of the upcoming week. Look for temperatures Wednesday through Friday (September 19-21) to fall back to well below normal levels from the upper 60s far south to the low and mid-50s north. Low temperatures will generally be in the 40s except for Wednesday morning, when relatively clear, calm conditions may lead to frost and freezing conditions across areas of the Upper Peninsula.

Given northerly flow and subfreezing temperatures only a few thousand feet above the ground surface, lake effect rain showers are likely on a daily basis through the end of the week, especially in the favored lee sides of Lake Superior and Lake Michigan. Rainfall totals through Saturday morning (September 22) are expected to remain less than 0.25 inches in most areas, with somewhat heavier, 0.25 to 0.50 inches totals across northern sections of the state. Another cold frontal passage and reinforcing shot of cold air is expected by late Friday or early Saturday, possibly leading to a more widespread threat of frost and freezing temperatures across at least northern and central sections of the state Sunday and Monday morning (September 23-24), given the development of clear, calm overnight conditions (monitor latest forecasts for more details).

Recent medium-range forecast guidance has been consistent in calling for the upper air trough across the Great Lakes region and this week's cool weather. Both the current [NOAA Climate Prediction Center](#) 6-to-10- and 8-to-14-day outlooks (for September 22-26 and September 24-30) call for below normal mean temperatures and near to above normal precipitation totals. However, the latest version of the medium range forecast guidance hints that the upper air trough may shift eastward and out of the region by near the end of next week. Should that occur, we would be looking at warmer (potentially even above normal) temperatures.

Despite the outlooks calling for relatively cool weather in the next week or two, the majority of recent, long lead forecast guidance suggests that the next few weeks and the majority of the fall season will be warmer than normal. NOAA Climate Prediction Center [30-day](#) (for September) and [three-month](#) (for September through November) both call for increased odds of above normal mean temperatures for Michigan and the entire Midwest region. Note that even during relatively warm falls, there are nearly always occasional outbreaks of cold, Canadian-origin air into the region (such as during the upcoming week), which means it is very difficult if not impossible to forecast the first freezing temperatures of the season with any accuracy more than several days in advance.

There is relatively less direction in the precipitation outlooks with a forecast of the climatology "equal odds" scenario of below-, near- and above normal levels during September for all of the state except the western half of the Upper Peninsula, where below normal totals are expected. During the September through November period, the equal odds scenario is forecast state- and region-wide. As noted in earlier articles, warmer than normal sea surface temperatures across eastern sections of the equatorial Pacific suggest the potential development of an El Niño episode during the next several weeks. If the event does materialize as expected, and is at least moderate intensity, the climatological statistics favor the upcoming winter and early spring seasons to trend milder and drier than normal.

This is the current thinking at the [Climate Prediction Center](#), with the official outlooks for the winter season currently calling for milder than normal mean temperatures across nearly all of the northern continental USA including Michigan, and for normal to below normal precipitation totals across much of the Ohio Valley and southern Great Lakes regions.

Dr. Andresen's work is funded in part by MSU's AgBioResearch.

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NCR-SARE ANNOUNCES 2013 FARMER RANCHER GRANT CALL FOR PROPOSALS

Here's an opportunity to evaluate those farming questions you discovered this summer!

Posted on **September 12, 2012**, **MSU-E News**, by **Dale Mutch**, Michigan State University Extension

The 2013 [North Central Region Sustainable Agriculture Research and Education](#) Program (NCR-SARE) [Farmer Rancher Grant](#) call for proposals is now available.

Farmers and ranchers in the North Central Region are invited to submit grant proposals to explore sustainable agriculture solutions to problems on the farm or ranch. Proposals should show how farmers and ranchers plan to use their own innovative ideas to explore sustainable agriculture options and how they will share project results. Sustainable agriculture is good for the environment, profitable and socially responsible.

Projects should emphasize research or education and demonstration. There are three types of competitive grants: individual grants (\$7,500 maximum); partner grants for two farmers/ranchers from separate operations who are working together (\$15,000 maximum); and group grants for three or more farmers/ranchers from separate operations who are working together (\$22,500 maximum). [NCR-SARE](#) expects to fund about 45 projects in the 12-state north central region with this call. A total of approximately \$400,000 is available for this program. Grant recipients have 25 months to complete their projects.

Interested applicants can find the call for proposals [online](#) as well as useful information for completing a proposal. You can find more information about sustainable agriculture at www.sare.org or take a free [National Continuing Education Program online course](#) about the basic concepts.

Proposals are due on Thursday, November 29, at 4:30 p.m. at the NCR-SARE main office in Saint Paul, Minnesota.

Potential applicants with questions can contact Joan Benjamin, Associate Regional Coordinator and Farmer Rancher Grant Program Coordinator, at jbenjami@umn.edu or 573-681-5545 or 800-529-1342. A hard copy or an emailed copy of the call for proposals is also available by contacting Joan Benjamin. We make revisions to our calls for proposals each year, which means it is crucial to use the most recent call for proposals.

Each state in SARE's North Central Region has one or more state sustainable agriculture coordinators who can provide information and assistance to potential grant applicants. Interested applicants can find their [state sustainable agriculture coordinator](#) online. In Michigan, contact [Dale Mutch](#) at 269-467-5645.

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[Duke Elsner](#)

Agricultural & Regional Viticulture Agent

September 19, 2012

[Bill Klein](#)

Farm Mgr, NWMHRS

Fall Foliar Nitrogen Applications Should be Applied Now

Stressed sweet and tart cherry trees would benefit from fall foliar nitrogen applications

Nikki Rothwell, NWMHRC

Greg Lang, Dept. of Horticulture, MSU

There have been many challenges in maintaining cherry tree health this season, even without a fruit crop. Sweet cherry orchards have endured severe bacterial canker infections, and many tart cherry orchards had outbreaks of cherry leaf spot—both of these diseases have caused substantial defoliation throughout the season. Additionally, orchards without irrigation are under drought stress at this time, resulting in very little photosynthesis or nutrient uptake. Therefore, as we head into winter, if trees still have the majority of their leaves, we are recommending fall foliar nitrogen applications in orchards that have had any leaf loss or drought stress this year. Fall foliar nitrogen applications have been shown to increase winter hardiness as well as improve tree growth and fruiting in apples and cherries the following season.

Nitrogen (**N**) and carbohydrates are stored in tree tissues in fall and are vital for fruit tree growth and development in spring. Fruit trees accumulate carbohydrate and N reserves prior to leaf drop, which are stored through the winter until they are remobilized to growing points (flower buds, new shoots, and expanding spur leaves) the following spring. Reserves provide trees with the necessary energy for new growth when leaves are not yet present for photosynthesis and roots have not yet begun taking up adequate amounts of N from the soil.

Ayala and Lang (2004) investigated carbohydrate reserves in sweet cherry and found that stored carbohydrates are used for the development of fruiting and non-fruiting spur leaves during the first few weeks after budbreak, whereas new shoot leaves develop using carbohydrates from the current season's photosynthetic activities later in the spring and summer. Further work shows that spur leaf size and the total leaf area per spur increased with foliar urea applied the previous fall. Spur leaves play an important role in sizing fruit, since larger leaf area close to the fruiting clusters equates to larger fruit. Spur leaves also play a role in development of Montmorency tart cherries. The Montmorency study also showed that tree winter hardiness actually improved with fall foliar nitrogen applications. Therefore, if trees are heading into winter under substantial stress, fall foliar applications are likely to improve winter hardiness as well as promote strong early season growth in 2013.

The recommended rate for foliar sprays is a total of 40 lb of urea, split into two applications; growers should apply this spray to the leaves (not ground applied) and be sure the product is formulated for foliar applications (i.e., a low biuret urea). In research trials at Clarksville (Ouzounis and Lang, 2011), optimum application timing was early September on followed by a second application 1-2 weeks later. However, good results also were found at Clarksville and at Traverse City for split applications in early October. Since the growing season began very early in 2012, we recommend that growers make their first application as soon as possible and follow that with a second spray within two weeks, if adequate leaves are still on the trees. Trees with substantial leaf loss will not benefit from these applications because the leaves need to absorb the material and translocate it down to the storage tissues in the buds, bark, and roots.

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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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Researcher Resources



ABOUT

NEWS & STORIES

AFFILIATED PROGRAMS

PROJECTS

Home

Background
& Projects

Calendar

Directions

InfoVideos

Links

Extension
Expert Search

Publications

Staff

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

[Nikki Rothwell](#)

District Horticulturist

[Duke Elsner](#)

Agricultural & Regional Viticulture Agent

September 26, 2012

[Bill Klein](#)

Farm Mgr, NWMHRS

ASSISTANCE SERVICE FOR COMPLETING MICHIGAN DISASTER LOAN APPLICATIONS

GreenStone is dedicating 4 days in October to complete applications for the Michigan Disaster Loans. These four days are October 3, 4, 24, and 25 at the GreenStone Traverse City office; 3491 Hartman Rd.

While funding has not been appropriated by the State as of yet we do believe it will be approved late this week or early next.

These early appointment dates in the program are in an effort to ensure fruit producers receive priority funding under the Michigan Disaster Program as GreenStone may consider other crops if disaster funds are available.

In GreenStone's effort to ensure you receive timely service and priority access to these disaster funds, please contact GreenStone at 231-946-5710 by September 28th if you are able to make an appointment on October 3rd or 4th to ensure GreenStone has the appropriate resources in place and GreenStone will send you an application packet.

For the dates of October 24th and 25th please contact GreenStone by October 16th to ensure appropriate resources are onsite.

Ben Mahlich

GreenStone Farm Credit Services

RVP - Sales and Customer Relations

3491 Hartman Rd., Suite A | Traverse City, MI 49685

Work: 231-946-5710 x15018 | **Cell:** 517-242-3030 | **Fax:** 231-946-0217

NMLS# 635903

WEBSITES OF INTEREST

[CIAB Weekly Harvest Report Week 9](#)

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/>

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