

Northern Michigan FruitNet 2013

Northwest Michigan Horticultural Research Center

Weekly Update

January 15, 2013

2013 NORTHWEST MICHIGAN ORCHARD & VINEYARD SHOW

Grand Traverse Resort & Spa

Costs: **Registration Fee: \$30/person for both days**
 Fruit Industry Luncheon, Jan. 21: \$15
 CMI Luncheon, January 22: Free to cherry growers; pre-register with CMI

Sponsors: **Grand Traverse Fruit Growers' Council**
 Cherry Marketing Institute
 Michigan State Horticultural Society
 Parallel 45 Vines & Wines Inc.
 Michigan State University Extension
 Michigan State University AgBioResearch

Educational sessions coordinated by:

Dr. Nikki Rothwell

Northwest Michigan Horticultural Research Center Coordinator & Educator, MSUE

Dr. Duke Elsner

Small Fruit Educator, MSUE

Monday, January 21

8:00 **Registration Desk Opens**

8:00 – 10:30 *Coffee and Rolls in Exhibit Hall*

Tree Fruit Session – Governors Hall

Moderator: **Dr. Nikki Rothwell**

9:00 – 9:10 **Welcome and Overview**

Paul Hubbell, Grand Traverse Fruit Growers' Council

9:10 – 9:35 **First Year Report on Bird Damage Studies in Tree Fruit**

Dr. Catherine Lindell, Michigan State University

9:35 – 10:00 **MAEAP: Updates and Opportunities for 2013**

Garrett Coggon, MAEAP Technician

Jessica Rasch, MAEAP Technician

10:00 – 10:30 **After 2012, How Do I Prepare for the Future**

Curtis Talley, Michigan State University Extension

10:30 – 11:00 **VENDOR BREAK**

11:00 – 11:30 **Delaying Bloom in Montmorency Cherries**

Dr. Jim Flore, Michigan State University

11:30 – 12:00 **Life Without AZM: Pest Management Options for
Cherry Growers in 2013**

Dr. Larry Gut, Michigan State University

12:00 – 1:30 **FRUIT INDUSTRY LUNCHEON**

Keynote: Dr. Fred Poston, Dean,

College of Agriculture & Natural Resources, MSU

Emcee: Duke Elsner, MSUE

1:30 – 2:00 **VENDOR BREAK**

Moderator: **Dr. Nikki Rothwell**

- 2:00 – 2:45 **Mechanical Harvesting of Tart Cherries and Other Fruits**
Dr. Richard Holownicki, Research Institute of Horticulture, Skierniewice - Poland
- 2:45 – 3:15 **Cherry Leaf Spot: The Challenges of Managing this Disease in 2012**
Dr. George Sundin, Michigan State University
- 3:15 – 3:35 **Fireblight Update**
Dr. George Sundin, Michigan State University
- 3:35 – 4:05 **High Density Sour Cherry Tree Management**
Dr. Richard Holownicki, Research Institute of Horticulture, Skierniewice - Poland
- 4:05 – 4:35 **High Density Tart Cherries in Michigan: Progress so Far**
Dr. Ron Perry, Michigan State University
Dr. Dan Guyer, Michigan State University
Ken Engle, Engle Ridge Farm
Ed Oxley, Oxley Farms
- 4:35 – 5:05 **Why Michigan Apple and Cherry Growers Should Care About International Maximum Residue Limits**
Dr. Mark Whalon and Dr. Julianna Wilson, Michigan State University
- 5:05 **Fill Out Pesticide Recertification Credits**
- 5:15 **Beverages & Hors D'Oeuvre Social Hour**
Concurrent Grape & Wine Session- Michigan A & B
Moderator: Dr. Duke Elsner
- 9:00 – 9:10 **Welcome and Overview**
Jay Briggs, Parallel 45 Vines and Wines Inc.
- 9:10 – 9:40 **Grape Acreage & Production Survey Results**
Jay Johnson, USDA National Agricultural Statistics Service, Michigan Field Office
- 9:40 – 10:40 **New Wines from New Vines**
Paolo Sabbatini, Dept. of Horticulture, MSU
- 10:40 – 11:10 **VENDOR BREAK**
- 11:10 – 11:35 **First Year Report on Bird Damage Studies in Vineyards**
Dr. Catherine Lindell, Michigan State University
- 11:35 – 12:00 **Bird Netting and Other Bird Management Practices**
Grower Panel - to be determined
- 12:00 – 1:30 **FRUIT INDUSTRY LUNCHEON**
Keynote: Dr. Fred Poston, Dean, College of Agriculture & Natural Resources, MSU
Emcee: Duke Elsner, MSUE
- 1:30 – 2:00 **VENDOR BREAK**
- Monday Afternoon Grape & Wine Session**
Moderator: Dr. Duke Elsner
- 2:00 – 2:25 **Parallel 45 Vines & Wines Inc. Annual Business Meeting**
Jay Briggs, President
- 2:25 – 2:55 **Parallel 45 Activities in 2012**
Parallel 45 Board of Directors
- 2:55 – 3:25 **MAEAP & Your Vineyard Operation: Updates and Opportunities**
Garrett Coggon-MAEAP Technician
Jessica Rasch-MAEAP Technician
- 3:25 – 3:50 **Managing Grapevine Brush**
Tom Zabadal, Southwest MI Research & Extension Center
- 3:50 – 4:30 **A Novel Approach for Controlling Cluster Compactness and Fruit Rot in Wine Grapes**
Tom Zabadal & Jenny Wells, Southwest MI Research & Extension Center
Duke Elsner, Small Fruit Educator, MSU Extension
- 4:30 – 5:00 **Spotted Wing Drosophila and Other New Insects**
Steve Van Timmeren, Dept. of Entomology, MSU
- 5:00 **Fill Out Pesticide Recertification Credits**

5:15 **Beverages & Hors D'Oeuvre Social Hour**
Tuesday Morning, January 22
8:00 Registration Desk Opens

8:00 – 10:30 *Coffee and Rolls in Exhibit Hall*

8:15 – 9:00 **NWMHRC Foundation Board Meeting
(open to the public)**
Moderator: Mollie Woods, Ag Economics, MSU
9:00 – 9:35 **Frost Protection Methods in Michigan**
Amy Irish-Brown, Michigan State University Extension

9:35 – 10:10 **CLIMARK: A Project Looking at Long-Term
Weather and Growing Tart Cherries**
Dr. Julie Winkler, Michigan State University

10:10 – 10:30 **VENDOR BREAK**

10:30 – 11:00 **What to Consider when Evaluating the Purchase of Crop Insurance**
Dr. Roy Black, Michigan State University Extension

11:00 – 11:30 **Have Weather Issues Affected Growers' Decisions on the Farm**
Veteran Growers' Panel:
Jim Bardenhagen, Bardenhagen Farms
Ken Engle, EngleRidge Orchards
Don Gregory, Cherry Bay Orchards
Emerging Growers' Panel:
Patrick McGuire, Royal Farms
Travis Bratschi, Bratschi Orchards
Bruce Veliquette, Cherry Ke Orchards

11:30 – 12:00 **CMI Report to the Industry**
Phil Korson, President, Cherry Marketing Institute

12:00 – 2:00 **CHERRY MARKETING INSTITUTE LUNCHEON**

2:00 – 2:30 **VENDOR BREAK**

Moderator: Dr. Duke Elsner
2:30 – 2:50 **2002 and 2012: A Look at Supply, Price and
Demand of Tart Cherries**
Mollie Woods, Michigan State University

2:50 – 3:10 **MI Apple Committee Update – Looking Ahead to the Referendum**
Diane Smith, MI Apple Committee

3:10 – 3:50 **Tall Spindle Performance at the Clarksville
Horticulture Research Station**
Phil Schwallier, Michigan State University

3:50 – 4:20 **How Long Will It Take to Recover from 2012?**
Dr. Roy Black, Michigan State University

4:20 – 4:55 **What is the Impact of the Quality Deer Management (QDM) Program?**
Ashley Autenrieth, Deer Program Biologist, Michigan DNR
Grower Panel:
Ben LaCross, Leelanau County
Greg Shooks, Antrim County
Isaiah Wunsch, Grand Traverse County

4:55 – 5:15 **The Challenges of Bacterial Canker: How will we Deal with this
Disease in the Future?**
Tiffany Lillrose, Dept of Horticulture, Michigan State University

5:15 **Fill Out Pesticide Recertification Credits**

TREE FRUIT IRRIGATION/FERTIGATION/FROST 2013 WORKSHOPS

Sponsors: Michigan Pomesters, Michigan State Horticulture Society, TrickI-Eez, MSUE

Dates: Feb. 4, 5, and 6

Locations:

Monday, 4th Trickl-Eez, 4266 Hollywood Road, St Joseph
Tuesday, 5th NWMHRC, 6686 S. Center Highway, Traverse City
Wednesday, 6th Mamrelund Lutheran Church, 4085 Lutheran Church Rd., Kent City
*Local meetings may have slightly different speakers (see dates after speaker names).

RSVP: By Feb 1st to: Trickl-Eez, (269)429-8200 • Fax (269)429-6669 info@trickl-eez.com or Philip Schwallier (616) 490-7917 or schwalli@msu.edu

9:00 a.m. Registration and Coffee

Welcome and Introduction

Climate Changes & Trends, Growth Stages Changes, Enviroweather

Ridge: Amy Irish-Brown, Philip Schwallier, SW: Bill Shane, Mark Longstroth, NW: Nikki Rothwell

9:45 Combining irrigation and frost control using under-the-tree micro sprinklers.

Engineering information, water requirements, orchard layout, etc.

John Nye, Trickl-Eez Company, Saint Joseph, MI (*Feb. 4, 5, 6*)

10:15 Break

10:30 Netafim's pressure compensating micro sprinklers for frost control

Johan Oostenbrink, Netafim Irrigation, Fresno, CA (*Feb. 4, 5, 6*)

11:00 How Nelson Irrigation's under-the tree sprinklers have helped Washington growers with a return crop every year

John Rowley, Director of Rotator Division, Nelson Irrigation, Walla Walla, WA (*Feb. 4, 5, 6*)

11:40 My 8 years of experience with under-the-tree micro sprinklers for frost control

Mike Wittenbach, Belding, MI (*Feb 4 & 6; Information presented on Feb. 5*)

by P. Schwallier)

11:55 How under-the-tree micro sprinkling gave me a crop in 2012 but soaked my ground after 14 nights of sprinkling

Tom Heffron, Belding, MI (*Feb 6 only*)

12:05 Meal (Courtesy of Trickl-Eez, Nelson, Netafim)

1:00 New technologies and methods in tree crop irrigation and fertigation

John Rowley, Director of Rotator Division, Nelson Irrigation,

Walla Walla, WA (*Feb. 4, 5, 6*)

1:45 The principles of fertilizing tree fruit through our irrigation systems

John Nye, Trickl-Eez Company, Saint Joseph, MI (*Feb. 4, 5, 6*)

2:15 Irrigation field trial result in cherry at the NW Research Center

Nikki Rothwell, District Extension Horticulturist and NWMHRC Coordinator (*Feb 5 only*)

2:40 How I have increased fruit color and firmness by injecting potash through my trickle irrigation system

Ron Rasch, Grand Rapids, MI (*Feb 5 & 6*)

3:00 Adjourn

NEW VIDEO RESOURCES IN TREE FRUIT PATHOLOGY FROM MSU

Tree fruit growers can watch a wide range of instructional videos covering many major diseases of apples and cherries, as well as fungicide resistance management.

Posted on **January 9, 2013, MSUE News**, by **George Sundin**, and Gayle C. McGhee, Michigan State University Extension, Department of Plant, Soil and Microbial Sciences

The Michigan State University [Tree Fruit Pathology Lab](#) has recently released 12 short instructional videos on a variety of subjects. Major diseases of apples and cherries are covered, including apple scab, fire blight, apple canker disease and cherry leaf spot. Separate videos covering fungicide resistance management and in-depth summaries of individual fungicide groups will also be presented. The videos are available on YouTube through the channel called "[Tree Fruit Pathology](#)."

Individual videos currently available

Fire blight

- [Early season buildup of the fire blight pathogen *Erwinia amylovora*](#)
- [Fire blight – shoot blight development](#)
- [Fire blight – pruning shoot blight strikes](#)
- [Fire blight and cankers](#)
- [Biological control of fire blight](#)

Apple scab

- [Apple scab disease management](#)
- [Fungicides and spray guide](#)

Fungicides

- [SDHI fungicide premixes – resistance management strategies for the SDHIs](#)
- [Evaluation of SDHIs for control of cherry leaf spot, powdery mildew, and American brown rot](#)

New apple canker disease in Michigan

- [Outbreak of canker disease and associated shoot dieback on new McIntosh apple cultivars](#)

Bacterial canker

- [Blossom blast and bacterial canker on sweet cherry](#)
- [Chemical control options for bacterial canker of sweet cherry](#)

Current plans over the winter months will be to upload an additional 10 to 15 instructional videos covering topics related to diseases and disease management, including:

- Multi-site fungicides for apple
- Single-site fungicides for apple scab management
- Reducing apple scab spore load
- Anilinopyrimidine fungicides for apple scab management
- Strobilurin fungicides for tree fruit disease management
- Second-generation sterol-inhibitor fungicides for apple scab management
- SDHI fungicides for apple scab management
- Use of Apogee for shoot blight management

In addition, we will be releasing additional videos as the 2013 season develops that will accompany our tree fruit pathology-related [Michigan State University Extension](#) News articles.

Dr. Sundin's work is funded in part by [MSU's AgBioResearch](#).

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

2012 INSECT ACTIVITY AND ITS EFFECTS ON 2013 FRUIT MANAGEMENT PROGRAMS – Part II

The 2012 weather significantly affected the fruit, but also had an impact on insect levels. Let's explore the potential effects on obliquebanded leafroller numbers and how management may be impacted.

Posted on **January 8, 2013, MSUE News**, by **Larry Gut**, Michael Haas and Peter McGhee, Michigan State University Extension, Department of Entomology

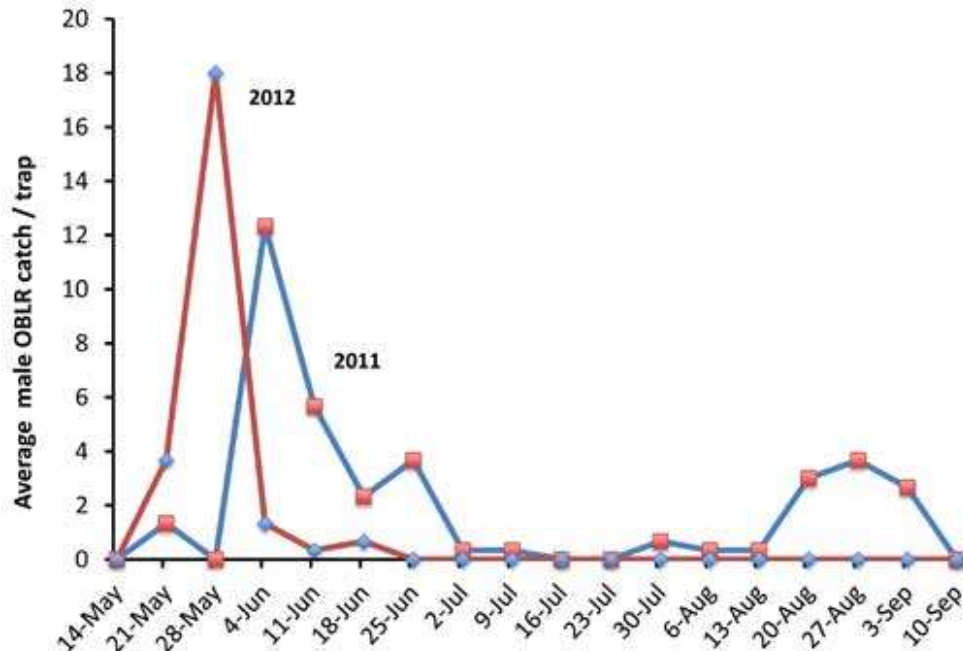
Our review of the entomological impacts of the 2012 weather continues with a pest of many tree fruit crops, the obliquebanded leafroller. Apple growers have dealt with this pest on a regular basis for many years, as larval feeding on fruit renders it unmarketable. Obliquebanded leafrollers have recently become a serious concern for cherry growers as well. Severe economic losses occur when obliquebanded leafroller larvae are dislodged along with the cherries, contaminating the harvested bins of fruit.

Obliquebanded leafrollers spend the winter as young larvae in a shelter they build called a hibernaculum. The shelters are typically found in protected places on the tree, such as old pruning scars or bark crevices. On apples, young larvae become active in the spring as fruit buds develop. They voraciously feed on the expanding buds and later on fruit clusters and expanding leaves. In a typical year, overwintering obliquebanded leafrollers pupate in May and moth captures hit their peak in June for the first flight. Summer generation larvae feed on leaves and fruit in July with the second flight normally taking place in August and into September.

The spring and summer of 2012, however, was far from a normal year for obliquebanded leafrollers. From the start, this pest proved hard to find. Numbers were so low in spring samples that our obliquebanded leafroller research plans had to be dramatically altered or postponed. Growers can take partial credit for low obliquebanded leafroller levels as they have integrated new efficacious insecticides, such as Altacor and Delegate, into their leafroller control programs. But Mother Nature deserves credit as well. Warm spring temperatures activated young larvae earlier in the spring than normal. Most, if not all, larvae had moved out of their protected shelters prior to the freezes that occurred before and during bloom. We suspect some young larvae succumbed to the below freezing temperatures.

Survivors of the unusual weather emerged as adults in mid-May, a few weeks earlier than normal (Figure 1). Flight of the overwintering generation took place over a relatively short period. The most unique feature of the 2012 flight compared to that in a normal year (e.g., 2011) was the near complete absence of a second generation. Apparently, conditions in the summer were not favorable for obliquebanded leafroller development. Predators likely had a hand in this as a buildup of [beneficial insects](#) known to feed on eggs and young lepidopteran larvae (caterpillars) accompanied the limited application of insecticides. Heat and dryness through the summer also took its toll on larvae. Early setting of terminal growth as trees compensated for the hot, dry conditions resulted in a paucity of succulent foliage, the preferred food for developing obliquebanded leafroller larvae.

Figure 1. Average weekly obliquebanded leafroller moth captures in pheromone-baited traps at the [Trevor Nichols Research Center](#) in 2011 and 2012.



The atypical pattern of obliquebanded leafroller activity in 2012 will likely have ramifications for the 2013 season, both in terms of expected pest pressure and management programs. The near absence of a second flight makes a strong case for very low numbers of overwintering larvae to start the 2013 season. A spray specifically targeting obliquebanded leafrollers may not be warranted. Many of the materials used to control first generation codling moth will also impact obliquebanded leafrollers, and may be all that is needed to achieve control.

Michigan growers and consultants are well aware of the propensity of obliquebanded leafrollers to develop resistance to insecticides. The older chemistries, including Guthion and the pyrethroids, are no longer very effective. Now is the time to start conserving the new effective materials. One of the ways to do this is to refrain from applying unwarranted calendar-based sprays.

Monitoring for obliquebanded leafrollers has proved difficult, but may be worth the effort in 2013. The first opportunity comes when overwintering larvae, if present, mature and begin feeding on newly expanding terminals. At this time their presence is easy to detect, and if at least 1 percent of the shoots are infested, then this is a good indication that an insecticide treatment will be needed to control the summer generation larvae in July.

Pheromone traps offer a second means of assessing the need for a summer obliquebanded leafroller control measure. Pheromone traps for obliquebanded leafrollers are generally only useful for establishing the start of flight because they attract moths from neighboring or more distant orchards and native habitats. Thus, high moth catches may or may not indicate that the orchard being monitored has a leafroller problem.

However, they are better predictors when obliquebanded leafroller population densities are low, as should be the case in 2013. In this scenario, very low catches of less than five per week strongly hint that obliquebanded leafrollers are scarce and damage is unlikely to occur in the absence of a spray.

The usefulness of the predictions and the various scenarios outlined in the previous Michigan State University Extension article for [codling moth](#), in this one for obliquebanded leafrollers, and in future articles for other insects are dependent upon good monitoring information. The order of the degree of reliability of a management decision, from strongest to weakest, follows the order of the origination of

the underlying information as follows:

The orchard in question > the farm containing the orchard > local data > regional data > historical information

In other words, taking advantage of the impact of the unusual 2012 weather on insects will require monitoring as many individual orchards as possible this coming season.

Related MSU Extension articles

- [2012 Insect activity and its effects on 2013 fruit management programs – Part I](#)

Dr. Gut's work is funded in part by [MSU's AgBioResearch](#).

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

NORTHERN MICHIGAN SMALL FARM CONFERENCE YOUTH TRACK JANUARY 26, 2013

**\$20/youth, ages 8-18, lunch included
(Register by January 19)**

Youth sessions are designed for youth and presented by youth!

Session I, 9:00 – 10:15am: Story of a Successful Farm Start-up, Fred Monroe, Monroe

Family Organics: Monroe Family Organics is a small farm (5 acres in the first season) with a CSA that went from 0-90 members within a few months of their first year. In this workshop Fred will share the success, failures, and methods on the path to a profitable first season.

Youth Panel, 10:30 – 11:45am: How We Got Started: Learn from the experiences of AJ McArthur, owner of AJ's Berry Farm, Jon Plummer of Moomer's, and from the staff and students of The Children's House Montessori school in Traverse City and how their involvement in food and farming are making a difference in their communities, their businesses and in their lives.

Afternoon Skill-Share, 1:30 – 4:30pm: Come see, hear and touch what some of the area's youth are up to in food, farming and sustainable living projects. Demonstrations taught by youth will highlight: beekeeping, hoop houses, aquaculture, SEEDS after-school programs, and Ellsworth High School's Agriculture class.

CHILDCARE

Parents' space: ages 0-5

(children must be supervised by parent)

Youth activity space: ages 5-8

(supervision provided, 9-12 and 1:30-4:30)

FORTIFIED WINE PRODUCTION WORKSHOP

The next enology workshop will be on fortified wine production on **February 12, 2013** in East Lansing at the new Artisan Distillation Facility (2000 Merritt Road). For your convenience, this workshop is on the day before the [Michigan Grape and Wine Conference](#) in East Lansing (February 13-14, 2013 - Kellogg Center Hotel on campus). This day-long workshop will be taught by some of our own in-state expertise, and will cover the entire spectrum of fortified wine production. The workshop will be part classroom style and part hands-on experience. Please note: due to the hands-on nature of this workshop, we are limiting attendance to 30 people.

Online registration here: <http://store.chateauchantal.com/store/product/3009/MSU-Fortified-Wine-Workshop/>

2013 MSU TREE FRUIT SCHOOL

Posted on **January 4, 2013, MSU-E News**, by **Julianna Wilson**, Michigan State University Extension, Department of Entomology

The [2013 MSU Tree Fruit School](#) will be held at the [Eberhard Center](#) in downtown Grand Rapids, Mich., on Feb. 13-15. The motto for the 2013 MSU Tree Fruit School is *be nimble*. Faced with new pests, new restrictions on old management tools and climate instability, nimble orchard managers rely on technology to help stay on top. This two and a half day program will explore the use of current and innovative technologies for improving pest management control strategies, harvesting, orchard maintenance and laborsaving tools.

Included in the program will be two hands-on workshops: one on the [spotted wing Drosophila](#) fly and another on the [brown marmorated stink bug](#). Participants will learn how to identify, monitor and manage these important emerging pests. Participants will be able to earn [MDARD](#) pesticide applicator recertification credits for both private and 1C commercial applicators.

Registration is \$210 per person, or **\$310 after January 29**, which includes breakfast, lunch and snack breaks on Wednesday and Thursday (Feb. 13-14), breakfast and snack break on Friday (Feb. 15), a binder with all course materials, classroom facilities in the Eberhard Center and speaker expenses. Dinner is on your own and lodging is separate.

To pay by check or money order, please download and complete the [registration form](#) and be sure to send it with your payment post-marked by January 29. To pay by credit card over the phone, please call Carolyn Devereaux at 517-884-0392.

A block of rooms is being offered at a special rate at the [Holiday Inn Downtown Grand Rapids](#), just across from the Eberhard Center. Please call the hotel directly to make your reservation **by January 29** and be sure to ask for the MSU Tree Fruit School room rate. Room rates are \$100/night for a double or \$110/night for a triple quad plus applicable taxes. Call the hotel directly at 616-235-7611.

For more information about the program, please contact [Julianna Wilson](#) at 517-432-4766 or visit the [program webpage](#).

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

2013 INTEGRATED PEST MANAGEMENT ACADEMY

*IPMA13 will take place **February 19-20** at the Okemos Conference Center in Okemos, MI*

Michigan State University Extension is pleased to announce the second annual Integrated Pest Management Academy (IPMA13). IPMA13 will address the weather challenges of the 2012 production season with the help of **Dr. Jonathan Comstock** from the Department of Horticulture at Cornell University. Dr. Comstock will address shifting weather patterns and the related impacts affecting agricultural producers. Dr. Comstock is a climate change expert and is co-author of both the Agriculture and Ecosystems chapters of the recent [NY ClimAID Report](#), which looks at climate change vulnerabilities and adaptation strategies. Michigan State University experts will also be on hand to discuss irrigation, frost protection and changing weather patterns in Michigan.

On the second day of the event participants will opt into two, half-day sessions on the topics of their choice. Morning sessions include Apple and Cherry IPM, Deciduous Tree IPM, Scouting Techniques for Field Crops and Forages, and Vegetable IPM. Afternoon sessions include Check it Out; MSU Resources for Hops, Saskatoons and Chestnuts, Conifer IPM, Emerging Issues in Field Crop Pesticide Resistance, IPM in Small Fruit Crops, and Vegetable IPM. For more information on what these sessions include, please visit <http://events.anr.msu.edu/event.cfm?folder=IPMAAcademy2013>

Participants will receive a notebook with program material and a complimentary IPM-related MSU bulletin. Michigan pesticide recertification credits will be available. The cost of this event is \$225; please note that snacks, lunch and parking are included. Lodging is not included but special rates are available. **Registration is open December 3 through February 12**, but space is limited so to learn more and register today, go to <http://events.anr.msu.edu/event.cfm?folder=IPMAAcademy2013>. For more information, or to request a paper registration form, please contact Erin Lizotte at taylo548@msu.edu or call 231-944-6504.

This program was developed with support from the Sustainable Agriculture Research and Education (SARE) program, which is funded by the U.S. Department of Agriculture — National Institute of Food and Agriculture (USDA-NIFA). USDA is an equal opportunity provider and employer.

INTERESTED IN STARTING A WINERY? ATTEND THE FEBRUARY WINERY DEVELOPMENT PRECONFERENCE

Prospective winery owners will obtain basic information about starting a winery in Michigan by participating in the one-day winery development conference to be held Feb. 13, 2013 at Michigan State University.

Posted on **December 13, 2012**, MSU-E News, by **Joanne Davidhizar**, Michigan State University Extension, Michigan State University Product Center

With both wine grape acreage and winery numbers hitting all-times highs in Michigan, the state's winery industry continues to grow. To assist potential entrepreneurs in understanding the elements of a successful winery business launch, a one-day winery development preconference will be held February 13 in association with the 2013 [Michigan Grape and Wine Conference](#). The session will be held 9:30 a.m. to 3:30 p.m. at the [Kellogg Hotel and Conference Center](#), East Lansing, MI 48824.

Preconference sponsors, [Michigan Grape and Wine Industry Council](#), [Michigan Department of Agriculture and Rural Development](#), and [Michigan State University Extension, Michigan State University Product Center, Michigan State University Institute of Agricultural Technology](#), and [Viticulture and Enology Science and Technology Alliance \(VESTA\)](#) will provide basic information about starting a winery in Michigan. Topics include wine grape suitability, industry trends, business planning, marketing, licensing requirements, local zoning considerations, finance, owner experiences and resources.

Over 85 percent of participants in a 2009 winery development conference lead by these partners were able to learn the specifics of starting a winery and network with successful industry people. These attendees took action toward starting 16 wineries, creating an estimated 121 new jobs and investing \$4.375 million according to a survey report by The [Michigan State University Center for Economic Analysis](#).

Dr. Miguel Gómez of the [Charles H. Dyson School of Applied Economics and Management](#) at Cornell University is the session's featured speaker. Dr. Gómez will address basic business planning, cash flow, return on investment, and related financial factors for small wineries in the Great Lakes region.

For more information or to the register for the session, go to: www.michiganwines.com/conference. The preconference registration fee is \$80 per person or \$100 per person after Feb. 1, 2013. Participants are invited to attend the full conference February 14-15 to further their learning and networking opportunities.

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

ANNUAL SOUTHWEST MICHIGAN HORTICULTURAL DAYS SLATED FOR FEB. 6-7

Sessions include a presentation about farm safety for fruit and vegetable operations, programs for grape and winegrape growers, as well as weather impacts on fruit production in southwest Michigan.

Posted on **January 16, 2013, MSUE News**, by **Diane Brown**, Michigan State University Extension

Winter brings many opportunities for grower education. A perennial favorite is the [Southwest Michigan Horticultural Days](#), held annually at [Lake Michigan College's Mendel Center](#), 2755 East Napier Avenue, Benton Harbor, Mich. ([view map](#)). This meeting is sponsored by the Michigan Grape Society, [Michigan State University Extension](#) and [Lake Michigan College](#).

Registration is open at 8 a.m. both days (Feb. 6-7) and programs begin at 9 a.m. A trade show with vendors and door prizes is open each day and is included in the registration cost. There are programs for grapes, winegrapes, vegetables, tree fruits and blueberries, with several featured out-of-state speakers.

The general session begins at 9 a.m. on Feb. 6 and features [Michigan Farm Bureau's](#) Craig Anderson with a presentation about farm safety for fruit and vegetable operations, and state meteorologist Dr. [Jeff Andresen](#) who will speak on weather impacts on fruit production in southwest Michigan.

Restricted-use pesticide recertification credits have been requested for all sessions. [Pre-registration](#) cost is \$25 per person and includes lunch for both days. Deadline for pre-registration is postmarked Jan. 30. Mail [registration](#) to:

ATTN: Allan Zelmer
Michigan Grape Society
P.O Box 151
Baroda, MI 49101

Make checks payable to Michigan Grape Society. Registrations postmarked after Jan. 30 and at the door will be \$30 per person.

For additional registration information, contact Allan Zelmar at 1-269-870-5265 or info@fruitfulvinetours.com. In case of severe weather, please phone 1-269-944-1477 to check the status of Southwest Horticulture Days.

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

GET FARMING! ANNOUNCES WHOLESALE SUCCESS WORKSHOP

The Michigan Land Use Institute's *Get Farming!* program has partnered with MSU Extension, USDA, the NW Michigan Council of Governments and FamilyFarmed.org to offer a workshop on succeeding in the wholesale marketplace.

Wholesale Success is scheduled for **Monday, February 11, 8:30 a.m. - 5:30 p.m. at the NW Michigan Horticultural Research Center** near Traverse City, Michigan.

This intensive seminar covers topics of interest to producers seeking to enter or enhance their success in the wholesale marketplace. Much of the information will be useful at any scale of production or marketing strategy. Participating producers receive a free copy of FamilyFarmed.org's *Wholesale Success* Manual. A \$70 value, this 312 page manual includes more than 100 crop profiles with crop-specific information on harvesting, cooling, storing, and packing according to industry standards. For information or to register contact Jim Sluyter, 231-889-0199 or email jimsluyter@mlui.org. Information and registration is available online at www.mlui.org.

WINTER COLD HARDINESS IN MICHIGAN FRUIT CROPS

Michigan fruit plants are well adapted to withstand a Michigan winter.

Posted on **January 16, 2013, MSUE News**, by **Mark Longstroth**, Michigan State University Extension

The perennial fruits grown in Michigan can withstand most of the conditions of a Michigan winter. They withstand several months of temperatures below freezing and generally show little injury to the winter cold. They do this by becoming dormant and cold hardy.

In the fall, plants enter a dormant period called endo-dormancy (see the [Michigan State University Extension](#) article, "[Fall color show and winter dormancy in woody plants](#)"). During endo-dormancy, plants slowly accumulate chilling units to track the passage of time in the winter (see the MSU Extension article "[Winter dormancy and chilling in woody plants](#)"). When the plants are in endo-dormancy they acclimate to the cold conditions around them. The plant's basic cellular components and metabolism change to withstand cold and freezing. As colder temperatures become more common, the plants acclimate to the increased cold. Extreme winter cold will cause little or no damage if the plants, including trees, vines or bushes, are acclimated. Most acclimated fruit plants can easily withstand cold temperatures 10 to 20 degrees Fahrenheit colder than the temperatures they are experiencing. The maximum cold hardiness of Michigan fruit crops ranges from about 0 or -5 F for cold tender wine grapes to -35 F for cold hardy apples.

One of the reasons Michigan is such an outstanding fruit production region is Lake Michigan. One of the effects of Lake Michigan in the winter is to moderate the temperature of the cold air passing over it. Temperatures close to the lake are seldom below zero while temperatures down to -10 or -20 F are common inland away from the lake. This is why cold tender fruits like wine grapes, peaches, blueberries and cherries are grown in the so called Michigan Fruit Belt along Lake Michigan's eastern shore. Under the moderating influence of Lake Michigan, winter cold seldom damages the crop, assuring regular harvests.

Sudden drops in temperature of 20 degrees or more may cause damage or winter injury (i.e., when the low temperature one night is 20 degrees colder than the night before). This is especially true if the cold snap is preceded by warm weather. When warm weather with temperatures above freezing occurs in the winter, the plants lose the extra cold hardiness they have accumulated. If warm temperatures occur before a cold snap, injury is more likely. Plants lose their enhanced cold hardiness

and revert to what I call the base cold hardiness. This is the minimum hardiness that a plant has during endo-dormancy. The minimum cold hardiness of most Michigan plants is around 10 to 0 F, depending on the plant. My rule of thumb is that if we have one day when the temperature stays above freezing, we have lost a lot of our cold hardiness, and if we have 48 hours or more of warm weather above freezing, then most plants are at their minimum cold hardiness.

Renewed cold will cause the plant to reacquire its lost cold hardiness. Plants acclimate to the cold much more slowly than they lose their cold hardiness. While they can lose all their cold hardiness in a day or two, they only acquire 1 to 4 degrees of enhanced cold hardiness for every day below freezing. There is a maximum cold hardiness that a plant can attain and temperatures below this are damaging or fatal to the plant. There are also different levels of cold hardiness for different plant parts. Often flower buds are more susceptible to winter cold injury. For example, peach flower buds begin to freeze and die at -13 to -15 F and most are gone by the time the temperatures are below -16 F, but the tree itself is not damaged until the temperature drops below -20 or -25 F. This relatively wide range of injury varies for each plant species.



The peaches in the foreground of this picture were damaged by winter cold that collected in the cold pocket in the low areas of the orchard. The temperatures were cold enough to kill the flower buds, but left the tree relatively undamaged. Photo credit: Mark Longstroth, MSUE

During the winter, a plant in Michigan will gain and lose cold hardiness several times. The temperatures before a freeze are very important in determining if a given plant will be damaged. The worst conditions are when we have several days above freezing followed by a cold snap with temperatures dropping into the single digits or below zero. It is even worse if a second cold snap drops low temperatures well below zero. Temperatures into the negative teens make many growers nervous. Temperatures to -20 F or lower worry all fruit growers.

In almost 20 years of working with the Michigan fruit industries, I have seen widespread damage due to extreme winter cold only once in the winter of 1993-94 when temperatures fell -20 F and below. Injury is more likely to occur in the late winter after the chilling requirement has been met and growth begins. Once growth begins, the cold tolerance to the buds and shoots is dependent on their stage of development.

Related MSU Extension articles

- ["Forcing cuttings to determine the end of dormancy in fruits and other plants"](#)
- ["Winter dormancy and chilling in woody plants"](#)
- ["Fall color show and winter dormancy in woody plants"](#)
- ["Freeze damage depends on tree fruit stage of development"](#)

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

WINTER DORMANCY AND CHILLING IN WOODY PLANTS

A warm winter means woody plants will be ready to grow when the weather warms up.

Posted on **January 16, 2013, MSUE News**, by **Mark Longstroth**, Michigan State University Extension

Since most plants do not grow during the winter, we say they are dormant. There are actually two types of dormancy during the winter. One is called endo-dormancy. In endo-dormancy, the plant will not grow even under good, warm, growing conditions. Endo is a Greek word meaning inside. In endo-dormancy, something inside the plants is inhibiting growth. The other is called eco-dormancy and occurs when the plant is ready to grow but the environmental conditions are not right, usually too cold. Endo-dormancy occurs first. Short days and freezing temperatures in the fall induce endo-dormancy in the plant. (See the [Michigan State University Extension](#) article, "[Fall color show and winter dormancy in woody plants](#).")

As the plant enters endo-dormancy, it tracks chilling units to track the passage of the winter. Chilling units are hours of time spent above freezing. The number of hours required for chilling varies for different plants from less than 500 to 1,500 hours or more. Many people think the plant is tracking hours below freezing. It is not. Hours below freezing have no effect on chilling, but will increase cold hardiness. If warm weather occurs before the plant completes its chilling requirement, no growth occurs. Chilling and endo-dormancy normally prevent plants from beginning growth during warm spells in the middle of the winter. Not all hours above freezing are equal. Temperatures between 40 and 50 degrees Fahrenheit (5 to 10 degrees Celsius) are most effective. Temperatures just above freezing and above 50 F are less effective and temperatures above 60 F often have a negative effect on chilling.



These peach buds appear dormant, but have completed their chilling requirement and are waiting for warmer weather to begin growth.

Photo credit: Mark Longstroth, MSUE

Plants from the south or far north have relatively short chilling requirements. In the far north, it is below freezing for a long time and the spring warm-up is relatively short. Likewise winters in the south are short and mild. Plants from the middle temperate regions like Michigan have relatively long chilling requirements that keep them dormant through the long stretches when the temperatures cycle above

and below freezing in a Michigan winter. Most of the fruit crops we grow in Michigan have chilling requirements of 700 to 1,300 chilling units. We normally complete endo-dormancy here in Michigan in January, early January in the south and late January in the north. Of course, there are big differences between winters. Some are long and cold, others are warmer. The relatively warm winter we are experiencing in 2013 is allowing many plants to accumulate their chilling earlier than normal.

Another important thing happens during endo-dormancy. The plants are cold hardy. As long as the trees, bushes or vines are in endo-dormancy, they have the ability to acclimate to cold weather; we call this cold hardiness. As long as the temperatures are below freezing, the plants are ready for really cold temperatures. Maximum cold hardiness occurs when plants have been subject to cold, subfreezing temperatures for several days or more. As long as the plants are in endo-dormancy they have the ability to acclimate to colder temperatures and withstand winter cold.

After chilling is completed the plants are no longer in endo-dormancy. They are now in eco-dormancy. The plants are dormant only because of cold or cool weather. Warmer temperatures into the mid-40s will cause them to begin growth. Once the plants start to grow, they lose the ability to readjust to colder temperatures. There is usually a slow progression of development when the plant begins to grow as the temperatures slowly rise. Growth first becomes apparent when buds swell and then green tissue emerges from the bud. The plants actually begin growing before we notice the buds swelling.

Related MSU Extension articles

- "[Forcing cuttings to determine the end of dormancy in fruits and other plants](#)"
- "[Winter cold hardiness in Michigan fruit crops](#)"
- "[Fall color show and winter dormancy in woody plants](#)"
- "[Freeze damage depends on tree fruit stage of development](#)"

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FORCING CUTTINGS TO DETERMINE THE END OF DORMANCY IN FRUITS AND OTHER PLANTS

Woody plants may be ready to grow. Forcing cuttings can tell you when dormancy is completed.

Posted on **January 16, 2013, MSUE News**, by **Mark Longstroth**, Michigan State University Extension

Since most plants do not grow during the winter, we say they are dormant. There are actually two types of winter dormancy. One is often called endo-dormancy and is when the plants will not grow even if the conditions are warm enough for growth. The other is eco-dormancy and is when the plant does not grow because the conditions are too cold. Endo-dormancy typically prevents plants from growing during winter warm spells.

During endo-dormancy, plants accumulate chilling units when air temperatures generally are above 35 degrees Fahrenheit and below 50 F. Temperatures below freezing or warm temperatures above 55 or 60 F have little effect on chilling hour accumulation. The chilling hours required varies for different plants from 700 to 1,300 hours or more. Chilling and endo-dormancy normally prevent plants from beginning growth during warm spells in the middle of the winter.

The mild weather we have had this winter makes me think that some plants may have already completed their chilling requirement and are ready to start growing. The return of seasonably cold

temperatures may keep growth from occurring. Once growth begins, the plant cannot increase its ability to withstand cold and can be injured by very cold weather. In the deep winter when plants are in endo-dormancy, they can become cold hardy to -10 or -20 F or below. Once growth begins, they lose the ability to withstand these extreme cold events.



There is no doubt these buds are swollen and the plant is growing. Photo credit: Mark Longstroth, MSUE

According to [Michigan State University Extension](#), there is one very easy way to know if endo-dormancy has been completed. You can take cuttings from the plants you are interested in and bring them inside to see if they will grow under warmer conditions. Collect several healthy shoots from the plants and place them in a vase or glass of water to provide consistent warm temperatures. If the buds begin to swell and grow within a week to 10 days, then you know the plants have completed their chilling requirement and warm weather will cause them to grow. You may need to do this several weeks in a row. I usually start collecting shoots in early to mid-January and generally see growth here in southwest Michigan in mid- to late January. Often the first time I see growth, the growth is ragged and not all the buds break and start to grow. This indicates that not all the buds have completed their chilling requirement, but several have and are ready to grow.



It is hard to tell if these buds are swollen or not. Forcing them will give you an answer in a few days. Photo credit: Mark Longstroth, MSUE

Once the plants have completed their chilling and moved into eco-dormancy, growth depends on the heat units they accumulate. If we get warm temperatures and growth begins, then the temperatures falling into the teens or below might cause damage. If you force some cuttings, you will have a good idea of how worried about winter cold you need to be.

Related MSU Extension articles

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- [“Winter cold hardiness in Michigan fruit crops”](#)
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WEBSITES OF INTEREST

Insect and disease predictive information is available at:
<http://enviroweather.msu.edu/homeMap.php>

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 have moved to MSU News
<http://news.msue.msu.edu>