

## February 2006 Regional Fruit Grower Newsletter

### CALENDAR OF EVENTS

- 2/28            **Interested in Forming A Cooperative?**  
Gaylord University Center
- 3/3             **Pesticide Training**  
NWMHRS
- 3/6             **Farm Forum**  
Perry Hotel, Petoskey
- 3/7             **Upper Hudson/Champlain Commercial Tree-Fruit School**  
Lake George, NY  
Contact: Kevin Iungerman, 518/885-8995 or [kai3@cornell.edu](mailto:kai3@cornell.edu)
- 3/20           **Farm Forum**  
Hagerty Conf.Center  
NMC Marine Campus, Traverse City
- 3/22           **Farm Safety (a.m.)**  
**Farm Labor Update (p.m.)**  
NWMHRS
- 3/23           **Advanced Cherry IPM Training**  
NWMHRS
- 3/28-30       **Benzie-Manistee Hort Show**  
Crystal Mtn, Thompsonville
- 4/1             **Water Use Report Deadline**
- 4/11           **Spring Grape IPM Date**  
NWMHRS
- 5/5             **Antique/Neglected Apple Pruning Workshop**  
Port Oneida Rural Historic District  
Contact: Kimberly Mann 231/326-5135 ext. 501
- 5/10           **Grand Traverse Co. IPM Updates Begin**
- 5/16           **Benzie Co. Antrim Co. IPM Updates Begin**
- 5/17           **Leelanau Co. IPM Updates Begin**
- 6/24-25       **Barn Restoration Workshop**  
Port Oneida Rural Historic District  
Contact: Kimberly Mann 231/326-5135 ext. 501

## **INTERESTED IN FORMING A COOPERATIVE?**

Jim Bardenhagen, Leelanau MSU Extension

If you and other producers were thinking of forming a cooperative type business organization, the MSU Product Center can give you assistance in forming one. In Gaylord on **Feb. 28<sup>th</sup>**, from **8:30 a.m. to 4:00 p.m.**, at the Gaylord University Center, a free workshop will be held to describe the steps in forming a cooperative, compare a cooperative with other business organization forms, and outline member benefit and responsibilities. In the afternoon, there will be an opportunity to meet with business counselors to discuss your interests.

A complete program brochure and on-line registration is available on the web at: [www.aec.msu.edu/product/](http://www.aec.msu.edu/product/) then click on Educational Program. You can also contact the MSU Product Center at 517-432-8751 for a brochure or to register by phone.

## **BENZIE-MANISTEE HORTICULTURAL SHOW**

The 55<sup>th</sup> annual Benzie-Manistee Hort Show will be held at Crystal Mountain Resort, Thompsonville, on **March 28<sup>th</sup> -30<sup>th</sup>**. The co-sponsors include Michigan State University Extension and the Benzie-Manistee Horticultural Society.

The first day, March 28<sup>th</sup> will offer an afternoon session focusing on “MAEP/Phase 1” combined with “Emergency Planning”. Concurrently, MDA will be offering pesticide exams from 1:00 – 3:00 P.M. for private, commercial, or any category.

Day two will target commercial apple production, and the keynote speaker will be Dr. Terence Robinson, New York Agricultural Station at Geneva. He will be discussing “Improving Fruit Size” and “Replanting Apple Trees in High Density Orchards”. MSU resource persons that will speak on topics related to growing and marketing apples include: Dr Nikki Rothwell, James Nugent, Phil Schwallier, and Dr. George Sundin. Gretchen Mensing, communication specialist for the Michigan Apple Committee will be on hand to update the group on MAC key projects.

The Annual Banquet will be held on Wednesday night, March 29<sup>th</sup>, 6:00 – 9:00 P.M. The keynote speaker will be Greg McMaster, local meteorologist for TV 7 & 4 speaking on “Fruit, Forensics, and the Weather”. During the banquet, the Horticultural Society will honor several local growers and business owners.

The final day, March 30<sup>th</sup>, will focus on alternative small fruit crops and direct marketing tips. Speakers will include Dr. Mira Danilovich, Dr. Eric Hanson, Dr Annemiek Schilder and Dr. Rufus Isaacs. We will also feature a panel of local persons with direct marketing experience: Tim Young (Food for Thought), Mike Werp (Werp Farms) and Diane Conners (MLUI).

Approximately 20 business vendors will display goods and services during the 2006 Show. They are an integral part of the Show each year. This offers attendees an excellent opportunity to talk with agri-business reps about the newest technology and recommendations. For more information related to the 2006 Show, contact your local MSUE Office or call the Benzie Office at 231-882-0025.

## **2006 FARM WOMEN’S SYMPOSIUM**

Jim Bardenhagen, Leelanau County Extension Director

The ‘Farm Women’s Symposium’ will be held at the Park Place Hotel in Traverse City, Michigan on **March 8-10<sup>th</sup>**. They would love for you to join them for their *15<sup>th</sup> Year Anniversary and Reunion* by celebrating 15 years of bringing farm women together for fun, learning, and fellowship. This workshop will draw together women (and men) to create valuable networks, renew friendships, share information, and prepare for the start of another year in agriculture.

The three-day workshop will begin with Chris Fesko, an energetic farm woman from New York, who has dedicated her life to the positive promotion of agriculture. She will give conference participants insight on how others perceive farmers and how education can help people understand the world of agriculture. After lunch, Jamie Zimtko-Somers will speak about how Michigan's diversified agricultural products are marketed across the state and throughout the world. There will be a value-added marketing panel discussion with area agricultural business owners, and the evening will wrap up with a wine and cheese hour sponsored by the Michigan Corn Growers' Association and a banquet dinner.

Buses will leave the Park Place Hotel at 8am on Thursday, March 9, for a tour of the Traverse City area. Four stops will be made throughout the day: 1) Cherry Growers Co-op for a view of how fruit is processed; 2) Cherry Republic to have lunch and sample over 141 cherry products; 3) Leelanau Fruit Company, where Judy LaCross will host a maraschino cherry processing tour; and 4) Black Star Farms/Leelanau Cheese to taste wine and cheese and to explore their 'agri-tourist destination'. There will be an optional walking tour of Traverse City in the evening.

On Friday morning, Judy Warmington will provide the group with some advice on how to improve daily organization skills. Humorist, Greg Risberg, will speak about stressful changes in agriculture, and how to manage that strain and to relax under the pressure. The meeting will wrap-up with a noon lunch.

Scholarships are available for GreenStone Farm Credit Services members, and those interested should contact their local GreenStone office for details. For questions about the symposium or to sign up, please contact Sheryl Smith at 517-543-1360, Julie Schwab at 989-846-4764, or Agnes Talaski at 989-269-6581.

## **FARM SAFETY & FARM LABOR UPDATE PROGRAMS**

Jim Bardenhagen, Leelanau MSU Extension

Date: **March 22, 2006**

Location: NW MI Horticultural Research Station

The *morning program* will be on farm safety and will focus on understanding preparedness and response. The cost for the Farm Safety Program will be **\$10/person**. **Two Pesticide Recertification credits** are available for attending the session. The Farm Safety Agenda is as follows:

- 8:30 Registration, coffee, rolls.
- 8:40 Welcome
- 8:45 Understanding Preparedness, and Response
- 9:15 MIFACE 2004 Report on Michigan Ag Accidents
- 9:30 Pesticides: Ag Health Study Findings and MI Pesticide Data
- 10:00 MIOSHA Standards including WPS and Homeland Security
- 10:10 Break
- 10:20 Hazard Identification Issues: Pesticide application
- 10:55 Discuss Food Contamination & Security Issues
- 11:05 Large Equipment or Animal Incidents
- 11:25 Emergency Farm Plan
- 11:55 Evaluation and Certification Credits
- 12:00 Lunch

The resource people for the Farm Safety Session will be Craig Anderson, Farm Bureau Regulatory Compliance Assistance Program (RCAP); Deb Chester, MSU Medical Dept.; and Dan Busby, GT Area Ground Water Stewardship Technician.

A soup, sandwich, and fruit lunch will be available from Noon to 1:00 p.m. at **\$10/person**.

The *afternoon program* will be on Farm Labor – bringing new and updated information for Ag employers.

The Farm Labor Session will cost **\$15/person** and includes a packet of current employer forms. A **complete set of current employer poster requirements** will also be available for **\$20**.

The Farm Labor Agenda is as follows:

- 1:00 New Definition of Ag for Youth Employment
- 1:15 Impact of Recent Court Actions on Hiring Process and New Legislation in the Works
- 1:55 Projections on Seasonal Labor Availability in 2006 & Resources for Assistance
- 2:25 Record-keeping Requirements
- 2:40 Break
- 2:50 Review of Employment Forms
- 3:10 Reducing Labor Risk Through Better Management Practices
- 4:10 Evaluations
- 4:15 Close

Resource people for the Farm Labor Session will be Craig Anderson, Farm Bureau RCAP; Amador Diaz, Ag Employment Specialist @ Michigan Works; Kevin Norvolowski, Michigan Department of Labor; Vera Bitsch, Human Resource Management Specialist, MSU Ag Econ. Dept.

Please register on the form below or email ([msue45@msu.edu](mailto:msue45@msu.edu)) and pay at the door. Call Jim Bardenhagen at 256-9888 if you have any questions.

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### Registration Form

NAME(S): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ADDRESS: \_\_\_\_\_  
(street)  
\_\_\_\_\_  
(city) (state) (zip)

PHONE #: \_\_\_\_\_

EMAIL: \_\_\_\_\_

FARM SAFETY	No. _____	x \$10	= _____
LUNCH	No. _____	x \$10	= _____
FARM LABOR	No. _____	x \$15	= _____
POSTER SET	No. _____	x \$20	= _____

TOTAL = \_\_\_\_\_

Make Check Payable To and Mail To: **Leelanau MSU Extension**, PO Box 987, Leland, MI 49654.

**Registration Deadline: March 20<sup>th</sup>**

## **ADVANCED CHERRY IPM TRAINING: UNDERSTANDING PESTICIDES IN CHERRIES**

Nikki Rothwell, District Fruit IPM Educator

John Wise, Director, Trevor Nichols Research Complex

An advanced cherry IPM scout training will be held at the Northwest Michigan Horticultural Research Station. This program will feature a variety of topics that will help **growers, consultants, and chemical field representatives** understand pesticide use in cherry: 1) fundamentals of cherry insecticides and the principles of pest management performance, 2) fundamentals of fungicide use in cherries, 3) residual and systemic activity of insecticides for plum curculio control, 4) activity patterns of the cherry fruit fly and the implications of pre- and post-harvest control strategies, and 5) mode of action and experience with fungicides for controlling leaf spot and brown rot of cherry. There will also be a panel discussion for the audience to ask questions. Dr. Diane Alston, Department of Biology, Utah State University, will be our out-of-state speaker, and she will discuss her on-going research on insecticide use in cherry systems in Utah. Drs. John Wise, Larry Gut, and George Sundin, all of Michigan State, are also scheduled to present their most current cherry work.

This module will be held at the NWMHRS in Traverse City, MI on **Thursday, March 23, 2006**. Registration is from 8-9 A.M., and the presentations will take place from 9 A.M.– 4 P.M. The cost for this program includes lunch and materials. Students who have already completed Modules 1, 2, and 3 of the Cherry IPM Scout Training Program have the option of taking the Advanced Topics Module for \$15 to cover the cost of lunch and materials. Growers who have not completed base modules can participate for \$50. All other attendees will be charged a fee of \$75. Checks can be mailed to: TNRC, c/o Cherry Advanced Training Program, 6237-124<sup>th</sup> Avenue, Fennville, MI 49408. Please include participant's name and make checks payable to MSU.

**FOR QUESTIONS OR TO RESERVE A SPOT**, please contact Eric Hoffmann at (269) 561-5040 or hoffm141@msu.edu by **March 7, 2006**. Please visit the TNRC website for more details:  
<http://www.maes.msu.edu/ressta/tnrc/>

## **SPRING GRAPE IPM DAY**

Nikki Rothwell, District Fruit IPM Educator

Duke Elsner, Grape and Wine Agent, Grand Traverse County

A grape IPM workshop will be held at the Northwest Michigan Horticultural Research Station on **April 11, 2006**. This program is designed for winery owners and vineyard managers start off the growing season on the right foot! The day-long seminar, 10-4, will focus on new IPM tactics to accurately manage insect, disease, and weed pests in northwest Michigan vineyards. There will be a \$25 fee payable at the door. Recertification and CCA credits have been requested.

9:30-10:00	Registration
10:00	Welcome
10:00-10:30	Meet the Japanese Beetle--life cycle and potential for pest status ( <i>Dr. Nikki Rothwell</i> )
10:30-10:45	MDA's view of Japanese Beetles in NW Michigan. ( <i>Jane Winkler</i> )
10:45-11:15	Japanese Beetle Plan for 2006 ( <i>Dr. Duke Elsner, Jane Winkler, and Dr. Nikki Rothwell</i> )
11:15-12:00	Monitoring and scouting for insect pests in vineyards ( <i>Dr. Rufus Isaacs</i> )
12:00-1:00	LUNCH
1:00-1:30	Recent tests of insecticides and miticides in Michigan vineyards ( <i>Dr. Rufus Isaacs</i> )
1:30-2:00	Disease update and scouting techniques in grapes ( <i>Dr. Annemiek Schilder</i> )
2:00-2:45	The art and science of weed control in vineyards ( <i>Dr. Tom Zabadal</i> )
2:45-3:00	Insect odds and ends in NW Michigan vineyards ( <i>Dr. Duke Elsner</i> )
3:00-3:45	New fungicides for grapes ( <i>Dr. Annemiek Schilder</i> )

## **ART MITCHELL INTERNATIONAL CHERRY SYMPOSIUM—A SUCCESS!**

Nikki Rothwell, District Fruit IPM Educator

Jim Nugent, NWMHRS Director

All the staff at the NWMHRS would like to say thank you to those that helped make the 2006 Art Mitchell Symposium a terrific success! Researchers from around the world came to the research station for a two and a half day seminar to discuss topics relating to cherry orchard management, such as sweet cherry cracking and mechanical harvesting of tart and sweet cherries. The speakers also focused on training and pruning of tarts and sweets as well as irrigation and fertilization. Speakers hailed from around the world: New Zealand, British Columbia, England, Germany, Italy, Netherlands, Chile, and Poland. Again, thanks to everyone that made this program possible.

If you are interested in the symposium, please go to <http://www.mitchellsymposium.org/> and click on symposium proceedings. We intend to have all proceedings as well as Orchard Show presentations up on the website by *March 15*.

## **NEW PESTICIDE APPLICATOR TRAINING SEMINARS**

Nikki Rothwell, District Fruit IPM Educator

MSU Pesticide Safety Education Program is offering training seminars covering the material from the *Pesticide Applicator Core Training Manual*, and the Category 3B manual, *Ornamental Pest Management* in several convenient locations around Michigan (East Lansing, Belleville, Flint, Kalamazoo, Gaylord, and Muskegon). The seminars are being offered during the month of March and one in April.

Programs will be presented in a four-hour classroom format with one day covering *Core Training Manual* material, and one day covering *Ornamental Category 3B* manual material. These seminars will benefit individuals seeking initial pesticide applicator certification by exam and those wanting to renew their certification by seminar credit. Attendees will receive either *two* Core credits or *two* Category 3B credits at each 4-hour session. The instructor for these courses is Mr. John Stone, *Michigan Certified Nurseryman* and *Landscape Management Specialist*. John is a certified applicator with 25 years IPM experience and an Assistant Instructor for the MSU Institute of Agriculture Technology's Lawn & Landscape Management program in Grand Rapids.

The cost for the program is \$75 for one session or \$100 for both sessions offered at a particular location. The cost includes lunch. For more information and to register for a seminar visit the website: [www.pested.msu.edu](http://www.pested.msu.edu).

## **CONSERVATION SECURITY PROGRAM (CSP) CANCELLATION FOR BOARDMAN-CHARLEVOIX (GRAND TRAVERSE AREA) WATERSHED**

Nikki Rothwell, District Fruit IPM Educator

Buzz Long, District Conservationist, Leelanau County

The National Resources Conservation Service has announced that “the number of watershed eligible for CSP has been reduced from 110 to 60, and this reduction has eliminated the Boardman-Charlevoix Watershed (Grand Traverse Area) from the program. The initial selection of 100 watersheds for fiscal year 2006 was based on the President’s budget request. The Congressional appropriations process and budget reconciliation reduced funding for CSP, resulting in 50 watersheds being removed from the current sign-up.”

NRCS does recognize growers’ hard work in compiling the appropriate information to enroll in CSP for 2006, and they want us to know that our watershed remains a high priority in Michigan. They believe our efforts to attend workshops and gather fitting documentation will pay off **when** our watershed is

approved. On a positive note—an operation within this watershed area now has the opportunity to improve its conservation level in order to reach a higher tier when our watershed is selected in the future.

We are sorry to hear of this bad news, but if you have questions about this program or other NRCS opportunities, please call your local NRCS district conservationist.

### **CODLING MOTH UPDATE IN NW MICHIGAN**

Nikki Rothwell, District Fruit IPM Educator

Peter McGhee, Research Technician, Michigan State University

During the 2005 growing season, many area growers reported difficulty controlling codling moth (CM) even though they were following proper insecticide strategies. The usual suspect behind insecticide control failures is resistance, but prior to last season, we have not documented CM resistance to organophosphates (OP's) in our area. However, growers in the Grand Rapids area have verified widespread OP resistance, and for the past four years they have implemented alternative control tactics to manage CM without the standard OP insecticides. We conducted preliminary tests at three sites in northwest Michigan to determine OP resistance levels in northwest Michigan.

Codling moth traps were hung in the orchards in question prior to dusk on warm nights during the flight of second generation CM. The traps were collected early in the morning, and if a minimum of 30 moths were captured in the traps, we were able to conduct a bioassay. Moths that were captured wing-side up were doused with the recommended label rate of Guthion<sup>®</sup>. Moth mortality was calculated after 24 hours, and we were able to determine the number of moths that were 'susceptible' or 'resistant' to Guthion. We verified some level of CM resistance to OP's in two of the three orchards tested, and one orchard showed only 29% of moths were sensitive to Guthion, which is the highest level of resistance in the state thus far. We hope to continue testing for OP resistance this summer.

However, now that resistance has been identified in our area, growers will have to begin thinking of alternative ways to manage CM populations. We have compiled a general list of CM programs that could be used if a grower suspects resistance in his/her orchards. However, these spray programs are not written in stone as they will depend on pest pressure, past populations, and weather conditions as with any other orchard insect management strategy. These programs should be used as a general guide, and if more specific information is needed, please call the NWMHRS.

If a grower does not believe a particular orchard has OP resistance or it has not had any past CM problems, OP's use is still acceptable—as Pete McGhee says, “if it ain't broke, don't fix it.” Although OP's have been on the chopping block lately, they are useful tools when they are applied appropriately. Remember that Guthion or Imidan<sup>®</sup> (the currently labeled OP's) affect the egg, larval, and adult life stages, and they should be applied 250DD after biofix. Biofix is defined as the first date at which moths are caught in traps, and the moths must be captured on two successive dates—the first sustained catch of moths.

To control CM in an OP resistant orchard is a more difficult and complex situation, but here are some suggestions:

- 1.** One Rimon application at petal fall (~75-100DD after CM biofix) and another application 10-14 days later. The recommended rate for both Rimon sprays is 20oz for first generation CM. This strategy should significantly reduce the CM population for the season, and it will at least suppress the probability of late season outbreaks. Rimon is also very effective against obliquebanded leafroller (OBLR).

Rimon is an insect growth regulator (IGR), and this type of chemical is in a new class of insecticides. Rimon works in a different way than traditional insecticides as well as on different life stages of CM: 1) they suppress development within an egg, 2) they suppress larval development if a larva consumes the material, and 3) eggs laid by treated females show reduced hatch. Since eggs exhibit a diminished

capacity to hatch if they are laid on top of an IGR residue, the timing of these products is earlier than other products. Timing is crucial for proper control with these new IGR products.

2. Calypso and Assail, two chemicals in the neonicotinoid class, are good options for summer insecticide applications. These chemicals target both CM and apple maggot (AM), which can both present problems later in the season. However, research has shown that Assail has potential to be cross resistant with OP's, meaning if CM are resistant to OP's, they have a higher probability of resistance to Assail. Growers that believe they have OP resistance should use Assail judiciously as this product may increase the chances of outright OP control failure in the future.

3. Codling moth virus, *Cydia pomonella* granulovirus, is highly specific to CM; it may infect the larvae of a few very closely related species, but it is noninfectious to beneficial insects, fish, wildlife, livestock, or humans. Each virus particle is contained within a protein occlusion body (OB). Preparing a concentrated suspension of OB's using mass-reared CM larvae infected with virus produces commercial formulations of the virus. Viral OB's are very small. Indeed, over a trillion OB's are present in an ounce of formulated product. These tiny particles must be ingested by the CM larva to be effective, but it only takes a few to cause death. Upon ingestion, OB's are dissolved by the insect's alkaline gut lining, releasing the viral particles. The virus replicates itself within the gut cells and rapidly spreads to other organs. Within a few days the larva stops feeding, becomes discolored and swollen, and melts into a mass of billions of viral OB's.

There are two virus-based biological insecticides available for use by Michigan apple growers: Cyd-X® (Certis USA, L.L.C.) and VirosoftCP4 (BioTEPP Inc.). The label recommended application rate for Cyd-X is 1 to 6 fluid ounces per acre. The labeled application rate for Virosoft is 3.2 fluid ounces per acre. They can be applied up until harvest and have a re-entry interval of only four hours. Stored material should be kept refrigerated to ensure stability and potency.

Based on research at Trevor Nichols, three virus sprays at 2oz per application 5-10 days apart is very effective for first generation CM. However, because these products are living organisms, the application needs to be repeated if there is adequate rain or scorching sunshine. Although CM virus is extremely efficacious, it is slow acting. The fruit will be stung if used during this first generation timing, but these fruits will likely drop by harvest. Virus can also be used in conjunction with alternate Calypso or Assail sprays, and this approach may have added benefit than just repeat virus sprays. This method can be used for first or second generation, but a reminder that if this virus combo is used later in the summer, the injured fruit **will** be present at harvest. Lastly, one very late virus application (late August through September, or the last spray of the season) will help reduce overwintering populations of CM for the following spring.

### Codling Moth GDD Model

DD° Base 50 (Post Biofix)	Event	Action
Pink bud	Development of overwintering larvae	Set traps
0 DD° = Biofix (~200 DD° after Jan 1)	1 <sup>st</sup> sustained moth captures	Set DD° = 0
250 DD°	Start of 1 <sup>st</sup> generation egg hatch	Timing for 1 <sup>st</sup> treatment if over threshold
1000 DD°	Expected end of 1 <sup>st</sup> generation activity	
1200-1250 DD°	Start of 2 <sup>nd</sup> generation egg hatch	Timing for 1 <sup>st</sup> treatment if over threshold
2100 DD°	Expected end of 2 <sup>nd</sup> generation activity	
Chart from Dave Epstein, Larry Gut, and John Wise		



### CM Compound and Timing Table

Compound Trade Name	Chemical Class	Life-stage Activity	Optimal Spray Timing for CM	Mite Flaring Potential
Guthion, Imidan	Organophosphates	Eggs, Larvae, Adults	Biofix + 250 DD	L - M
Asana, Warrior, Danitol, Decis	Pyrethroids	Eggs, Larvae, Adults	Biofix + 250 DD	H
Rimon	IGR (chitin inhibitor)	Eggs, Larvae	Biofix + 100 DD Residue under eggs	M*
Assail, Calypso, Clutch	<i>B.t.</i> 's	Eggs, Larvae, Adults (limited)	Biofix + 150-200 DD Residue under eggs	M*
Intrepid	IGR (MAC)	Eggs, Larvae, Adults(sublethal)	Biofix + 150-200 DD Residue under eggs	L
Avaunt	Oxidiazine	Larvae	Biofix + 250 DD	L
Esteem	IGR (juvenoid)	Eggs, Larvae	Biofix + 100 DD Residue under eggs	L

\* May cause mite flaring in combination with carbaryl or pyrethroids that kill predacious mites.

Chart by Dave Epstein, Larry Gut, and John Wise

### SEASONAL IPM UPDATE SERIES

Nikki Rothwell, District IPM Educator  
 Jim Bardenhagen, Leelanau County Extension Director  
 Duke Elsner, Grant Traverse County Agriculture Educator  
 Stan Moore, Antrim County Extension Director  
 Jim Nugent, MSU District Horticulturist, NWMHRS  
 Steve Fouch, Benzie County Extension Director

A series of IPM workshops will be held throughout northwest Michigan for the 2006 growing season. Growers are encouraged to bring samples of pests found on the farm. Relevant problems and control strategies will be discussed. Credits for private, commercial IC pesticide applicator recertification have been requested from MDA. Because MDA has new rules for pesticide credits, each meeting is scheduled for two hours (2 hour program = 1 credit). We have also applied for CCA credits in pest management.

#### Leelanau County

*Location:* Larry Esch Farm, 1 mile west of Eagle Highway on Horn Road  
*Dates:* May 17, May 24, May 31, June 7, June 14, June 21, June 28, July 5  
*Time:* 1-3pm

#### Grand Traverse County

*Location:* Josh Wunsch Farm, Old Mission Peninsula, Phelps Road  
*Dates:* May 10, May 24, June 7, June 21, July 5, July 19, August 2, August 16  
*Time:* 4-6pm

#### Benzie County

*Location:* To be announced  
*Dates:* May 16, May 24, June 13, June 27  
*Time:* 3-5pm

#### Antrim County

*Location:* Dave White Farm, M-31, just south of Elk Rapids  
*Dates:* May 16, May 24, June 13, June 27  
*Time:* 10:30-12:30pm

## **RESISTANCE TO STEROL-INHIBITOR (SI) FUNGICIDES IN THE CHERRY LEAF SPOT PATHOGEN IN MICHIGAN**

George Sundin, Plant Pathology  
Nikki Rothwell, District Fruit IPM Educator  
Tyre Proffer, Plant Pathology  
Jim Nugent, District Horticultural Agent

Sterol inhibitor (SI) fungicides (also known as sterol demethylation inhibitor [DMI] fungicides) were first registered for use on cherries in Michigan in 1982 for brown rot blossom blight control. They have been in use for cherry leaf spot control (CLS) since 1989. Trade names for SI fungicides include Elite, Funginex, Indar, Nova, Orbit, and Rubigan.

In 2003 and 2004, we sampled 64 orchard sites throughout Michigan and screened a total of 1,300 leaf spot isolates. We used a plate assay to determine the resistance status of leaf spot isolates. Isolates that were not able to grow on a medium containing 0.2 ppm of the SI fungicide tebuconazole were considered sensitive. Isolates that could grow at 0.2 ppm but not at 3 ppm had a phenotype of low-moderate resistance. Isolates that could grow at 3 ppm but not 5 ppm had a phenotype of high-moderate resistance, and those growing at 5 ppm were considered highly resistant.

From the total isolates screened in the past two years, almost 100% of the isolates exhibited some level of SI fungicide resistance. The only difference among isolates from different regions around the state was in the level of resistance. For example, about 40% of isolates from Leelanau and Grand Traverse counties had phenotypes of high-moderate and highly resistant while 60% of isolates from Benzie, Manistee, and Oceana counties were either high-moderate or highly resistant. The leaf spot population in Southwest Michigan is predominantly low-moderate resistant, but overall, very few SI-sensitive isolates were recovered.

At the NW Station, experimental orchards used for CLS field trials showed a mix of SI-resistant strains similar to CLS pathogens in the NW growing region. Results of recent trials demonstrate that cover sprays of Elite, Indar, or Rubigan have either failed or provided significantly reduced control of CLS.

Our findings suggest that Michigan growers need to transition away from SI's for CLS control. Alternative chemistries for CLS control include chlorothalonil (Bravo) prior to shuck split and postharvest, strobilurins (Flint), strobilurin + Boscalid (Pristine), copper compounds, and dodine. We encourage the SI's to be tank-mixed even if a grower does not suspect resistance in his or her orchards. At this time, SI's remain an effective chemistry to manage brown rot, but we will survey cherry orchards this season to determine if SI's will continue to be a viable option for brown rot control.

## **TASTE THE LOCAL DIFFERENCE FARM FORUMS**

Jim Bardenhagen, Leelanau MSUE

On February 13<sup>th</sup>, the Taste the Local Difference (TLD) Team held a Farm Forum with school cafeteria managers, Munson Hospital & Fresh Food Partnership and over 80 Ag producers. Participants heard about the TLD Project and the results of local surveys to schools, restaurants, retail food stores and direct marketing producers. They also participated in a process to help solve local challenges in marketing local food to local schools and institutions.

There are still two more Farm Forums coming up, this time with restaurants, retail food producers and area Ag producers. One will be held on **March 6<sup>th</sup>** from 6 p.m. to 9 p.m. at the Perry Hotel in Petoskey and the other will be held **March 20<sup>th</sup>** from 6 p.m. to 9 p.m. at the Hagerty Conference Center at the NMC Marine Campus in Traverse City. A complimentary meal using local foods will be available at 6 p.m. each night. Hope those interested in marketing local can join us. If you can attend, please RSVP by calling 231-882-4723, ext. 18 to let us know.

## **TRACTOR SAFETY CLASS**

Jim Bardenhagen, Leelanau MSU Extension

While the final plans for the 2006 Tractor Safety Classes are not yet complete, we anticipate offering a class in early April again this year.

If you anticipate hiring a 14 or 15 year old youth this summer, you may want to contact them about taking a tractor safety class. Fourteen & fifteen year old youth need to obtain a Tractor Safety Certificate in order to operate tractors and other equipment considered hazardous by the Department of Labor. The only exception is children of the farm owner unless the ownership is a partnership or corporation.

Please have the youth or yourself call the Leelanau MSU Extension Office (231-256-9888) to indicate their interest in attending a tractor safety class. Then once the plans are finalized for the classes, we will contact them by letter or phone to register them. This will help in case registration is needed before the next newsletter is sent out.

## **CROP ADVISORY TEAM (CAT) ALERT LINKS**

With the growing season fast approaching, we would like to give you the links for the subscription flyer to the *Crop Advisory Team Alert* newsletter. Below is a list of where you can find the flyer for the individual editions:

Landscape: <http://www.ipm.msu.edu/landCAT.htm>

Fruit: [http://www.ipm.msu.edu/subsc\\_fruit.htm](http://www.ipm.msu.edu/subsc_fruit.htm)

Field Crop: [http://www.ipm.msu.edu/subsc\\_field.htm](http://www.ipm.msu.edu/subsc_field.htm)

Vegetable: <http://www.ipm.msu.edu/vegCAT.htm>

## **HOUSEHOLD HAZARDOUS WASTE COLLECTION**

There will be a spring Household Hazardous Waste and Farm Pesticide Collection in Grand Traverse County. This is a free disposal service for Grand Traverse County residents. **Pesticides** and **mercury** from homes and farms will also be collected *free of charge* to any resident in the state of Michigan. Call the Resource Recovery Hotline at 231/941-5555 and hit option #4 for more information or to make an appointment.