News you can use

Disease management
When fruit clusters become visible, protect them from Phomopsis with a fungicide application.

Insect management
Continue to scout for cutworms and grape flea beetle. Set up your monitoring traps for grape berry moth if you use these in your management.

TNRC Pheromone Trapline Data
For growers who use the trapline data from the Trevor Nichols Research Complex in Fennville, here is the link: http://www.maes.msu.edu/tnrc/emergence10curves.htm

Grower meetings this month
Mark your calendars for upcoming grower meetings. See Calendar of Events page for full details.

NW Wine Grape IPM Update
May 7 Today!
3-5PM
Longcore Vineyard, Traverse City

SW Wine Grape Meeting
May 19
12:00PM
SWMREC, Benton Harbor

SW Juice Grape Pre-bloom Meeting
May 20
1:30PM
Kerlikowske Farms, Berrien Springs

GROWING DEGREE DAYS

<table>
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<tr>
<th>Location</th>
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<td></td>
<td>5/6</td>
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<td>319</td>
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<td>4/29</td>
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<td>5/13</td>
<td>199</td>
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See enviroweather.msu.edu for more information.
Temperatures have remained warm over the past week with most of the region still well ahead of our 20-year average degree day accumulations with 234 DD50. Most of the region also received a much needed 0.87” of rain over the past week. Some varieties are at bud burst with up to 1” of green tissue exposed while others are at budswell. The early start to the season offers the chance for producing high quality grapes, but conversely provides a long window of potential cold damage. As we look toward the coming week the forecast is for a significant cooling trend with a possibility for snow over the weekend.

Things are still pretty sleepy in the vineyard in terms of pests and diseases. Growers should still be on the lookout for grape flea beetle and climbing cutworm, both of these insects feed on and damage buds.
Overall, pest activity is beginning to pick up slightly as we approach bloom. The colder temperatures predicted for next week should prevent much insect activity.

**Grape Flea Beetles.** So far this spring, flea beetles have been almost non-existent at the sites scouted for this newsletter. Usually there is at least some adult beetle activity seen, but this year we haven’t found a single beetle in the four weeks we’ve been scouting. Most vineyards in SW Michigan should be past the danger point by now, the only exceptions being frost-damaged vineyards that are just pushing out secondary clusters or later pushing wine grape varieties.

**Grape Berry Moth.** Grape berry moth (GBM) adults have started flying and are being caught in pheromone traps (see picture for GBM caught yesterday at the Van Buren Concord site). We caught the first few moths last week Thursday and have seen an increase this week. The Berrien Concord site had the highest amount so far this season with an average of 19 moths per trap, while the Van Buren Vignoles and Van Buren Concord sites have low but steady amounts of GBM being caught in traps (~1-2 GBM per trap on average). GBM adults have not been caught in traps at the Allegan Chardonnay site yet. It’s important to remember that the beginning of GBM adult emergence does not mean you have to apply insecticide sprays yet. These adult moths still need to mate and lay eggs, which in turn need to hatch before there are any larvae feeding on clusters. This usually doesn’t take place until bloom, and the cold weather this coming week is expected to stop this activity.

**Phomopsis.** So far no Phomopsis spots have been found on either the young leaves or the young shoots. We should begin to see some of the first spots showing up in the next week or so. If you have vineyards with exposed clusters that have had problems with Phomopsis in the past you may want to start thinking about applying protectant fungicides.

**Growth Stages.** Shoots are mostly at 1-3 inches at both the Allegan Chardonnay site and the Berrien Vignoles site. The Van Buren and Berrien Concord sites have some shoots at 1-3 inches and some at 4-8 inches depending on the vine and location within the vineyard.
Grape*A*Syst program gaining momentum in 2010

Paul Jenkins
Small Fruit Education Coordinator
Michigan State University

What is Grape*A*Syst?
The Grape*A*Syst program is a workbook designed to assist Michigan grape growers evaluate the level of sustainability on their farm. The program was started in 2009, and all grape growers are encouraged to go through the workbook in 2010, generating baseline data for our grape industries. This program is confidential and individual grower scores are kept anonymous by the Grape*A*Syst technicians. Many growers have already gone through the program this year.

The workbook is a series of questions that scores the sustainability level for specific production practices, and allows the grower to track progress as they improve the sustainability of their farm. There are 9 sections with a total of 97 questions. The Grape*A*Syst program was a collaborative effort between Michigan State University, the Michigan Department of Agriculture, National Grape Cooperative, and the Michigan Grape & Wine Industry Council.

How is this different from MAEAP?
MAEAP focuses on preventing or minimizing environmental agricultural pollution risks. MAEAP is a 3-phase process: education, on-farm assessment, and 3rd party verification. The Grape*A*Syst program is an on-farm assessment that is tailored to grape production in Michigan. It focuses on all three areas of sustainability. Currently, we have no 3rd party verification for Grape*A*Syst.

Why do it?
Many retail and wholesale customers of the Michigan grape industries are interested in grape products that are produced using sustainable practices. Consumers want to know where and how their food is produced, and there are increased concerns about the safety of the U.S. food supply system. As a result, Michigan grape growers are being proactive in their approach to show consumers that our farming practices are environmentally sound, economically viable, and socially equitable.

We are in the process of creating a laminated information sheet that wineries can use to educate customers in their tasting rooms.

What to do next?
Contact the Grape*A*Syst technician for your area (see below). These people are trained to assist you in completing the workbook in a confidential manner.

Who to contact?
Berrien County: Suzy Forraht
269-471-9111 X103
suzanne.forraht@mi.nacdnet.net

Van Buren County: Todd Tapper
269-569-0965
tapp3@yahoo.com

NW Michigan & other regions: Paul Jenkins
517-648-5099
jenki132@msu.edu
Lorsban Advanced receives specific label language for use in Michigan vineyards

For growers in Michigan still concerned about cutworm feeding, there is some clarification of the use pattern for Lorsban Advanced. This insecticide has received a supplemental label update (see below). The 2ee Special Recommendation label indicates that for control of cutworms, apply 1 quart of Lorsban Advanced per acre as a broadcast spray in a minimum spray volume of 50 gallons of water using power-operated ground spray equipment. Treat when cutworms first become active and when field counts indicate damaging insect populations are developing or present. Do not apply after the bloom stage of growth.

Lorsban is a restricted use pesticide in the organophosphate class. This use has a 35 day PHI, and a restriction of one application per season. For more on cutworms, please see the article from the April 23 newsletter.

Product Bulletin

Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1054 USA

RESTRICTED USE PESTICIDE
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator’s certification.

Lorsban® Advanced
EPA Reg. No. 62719-591
(For Distribution and Use Only in the States of Connecticut, Massachusetts, Michigan, and Rhode Island)

Control of Grape Mealybugs and Cutworms in Grapes

ATTENTION
This recommendation is made as permitted under FIFRA Section 2(ee) and has not been submitted to or approved by EPA.

• It is a violation of federal law to use this product in a manner inconsistent with its labeling.
• Read the label affixed to the container for Lorsban® Advanced insecticide before applying. Carefully follow all precautionary statements and applicable use directions except as specified below.
• Use of Lorsban Advanced according to this Section 2(ee) recommendation is subject to all use precautions and limitations imposed by the label affixed to the container for Lorsban Advanced.

Directions for Use

Refer to product label for Lorsban Advanced for Use Precautions and Restrictions, Mixing and Application instructions.

For control of cutworms, apply 1 quart of Lorsban Advanced per acre as a broadcast spray in a minimum spray volume of at least 50 gallons of water using power-operated ground spray equipment. Treat when cutworms first become active and when field counts indicate damaging insect populations are developing or present. Do not apply after bloom stage of growth. Consult your state agricultural experiment station or extension service specialist concerning cutworm control practices in your area.

For control of grape mealybugs, apply 1 quart of Lorsban Advanced per acre in a minimum spray volume of at least 50 gallons of water per acre using power-operated ground spray equipment only prior to late budbreak. Applications after budbreak may result in transient leaf yellowing (Concords).

Refer to the product label for Lorsban Advanced for all of the specific use restrictions for use of this product on grapes.
Use strobilurin fungicides wisely to delay fungicide resistance development

Strobilurins are fungicides that are modeled after an antifungal substance produced by a small forest mushroom called *Strobilurus tenacellus*. This mushroom grows on pine cones and uses an antifungal substance to suppress other fungi which may be competing for the same food source. Synthetic strobilurins were made to be more resistant to UV light degradation than the natural chemical produced by *S. tenacellus*. All strobilurins have the same mode of action, i.e., they inhibit the electron transfer in mitochondria, disrupting respiration and thereby causing the fungus to run out of energy and die. Strobilurins belong to the group of QoI’s (quinone outside inhibitors) based on the specific site that they inhibit. They include azoxystrobin (Abound), kresoxim-methyl (Sovran), and trifloxystrobin (Flint). The fungicide Pristine is a mixture of pyraclostrobin and bosalid. Bosalid is not a strobilurin but belongs to the carboxamide chemical class. Interestingly, some of the strobilurins also have phytotoxicity to certain plant species; e.g., Abound is phytotoxic to apples and Sovran is phytotoxic to certain sweet cherry varieties. Pristine and Flint are phytotoxic to Concord grapes. Caution must be taken when applying these products in the vicinity of sensitive crops.

Since their first EPA registration in 1997, strobilurins have become valuable tools for managing diseases in numerous crops, including grapes and berry crops, because of their systemic nature and broad spectrum of activity against different groups of plant pathogens. In berries, they are especially effective against fruit rot and foliar fungi. In grapes, they provide broad-spectrum control against powdery mildew, downy mildew, Phomopsis cane and leaf spot and black rot. They are not very strong against Botrytis, however. Strobilurins become rainfast quickly and have translaminar activity, which means that they can move from one side of a leaf to the other, providing disease control on both leaf surfaces. Strobilurins have an outstanding ability to inhibit spore germination, thus they should be most useful early in disease development. They do not have much post-infection activity. Some strobilurins (e.g., Abound and Flint) are listed as “reduced-risk” by the EPA, which means that they have relatively low mammalian toxicity. However, they are toxic to fish and other aquatic organisms, so regulations must be followed for use around bodies of water.

Since strobilurins have a site-specific mode of action, they are unfortunately prone to fungicide resistance development in target fungi because a single mutation in a fungus can block their action. Where strobilurin resistance has occurred, the pathogen strains have exhibited a high level of resistance that cannot be overcome by increasing the fungicide application rate. Continued and exclusive use of strobilurin fungicides may allow resistant strains to build up over time and may lead to control failure and loss of the fungicide as a disease management tool. In pathogenic fungi such as powdery and downy mildews that have many generations per season, resistant strains quickly become dominant in a planting or vineyard. As spores from these resistant strains spread by wind, strobilurins may become ineffective even at sites where these materials have been used sparingly in the past. Strobilurin resistance has been reported in grapevine powdery and downy mildew in various eastern US states and has not also been confirmed in grapevine powdery mildew in Michigan.

To lower the risk of fungicide resistance development, it is important to limit the number of strobilurin applications, for instance by alternating them with fungicides with a different mode of action. **Do not use more than four applications of any strobilurin fungicide per season.** A good guideline is for no more than 1/3 of the fungicide applications to be strobilurins during the growing season. In addition, regular disease scouting to determine the actual need for fungicide sprays and non-chemical management practices, such as sanitation, canopy management, and biological control are also important. The goal is not to manage resistance once it has developed, but rather to prevent or delay the development of fungicide resistance in the first place.

The labels of strobilurin fungicides limit the number of applications (total and sequential) per season (Table 1). It is advisable to alternate strobilurins with block treatments (2 to 3 sprays) of registered fungicides with a different mode of action (see E-154 Michigan Fruit Management Guide). Remember to include pre-mixes (e.g., Adament) that have a strobilurin component in your count. Tank-mixing strobilurins with other fungicides is usually not necessary or cost-effective since
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**Table 1. Summary of label information for strobilurin fungicides for grapes in 2010.**

<table>
<thead>
<tr>
<th>Product</th>
<th>Active Ingredient</th>
<th>Recommended application rate per acre</th>
<th>Max. rate or number of applications per acre per season</th>
<th>Max. number of sequential applications</th>
<th>REI (hours)</th>
<th>PHI (days)</th>
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<tr>
<td>Abound F</td>
<td>azoxystrobin (22.9%)</td>
<td>10.0 – 15.5 fl oz</td>
<td>92.3 fl oz</td>
<td>2</td>
<td>4</td>
<td>14</td>
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<tr>
<td>Flint</td>
<td>trifloxystrobin (50%)</td>
<td>1.5 – 4 oz</td>
<td>24 oz</td>
<td>2</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Pristine</td>
<td>pyraclostrobin (12.8%) + bosalid (25.2%)</td>
<td>8 – 10.5 oz; except 18.5-23 oz for Botrytis)</td>
<td>69 oz (Max 3 applications for Botrytis; 5 for other diseases)</td>
<td>2</td>
<td>12 h</td>
<td>14</td>
</tr>
<tr>
<td>Sovran</td>
<td>kresoxim methyl (50%)</td>
<td>3.2 – 6.4 oz</td>
<td>4 applications (wine and table grapes)</td>
<td>2</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 applications (other grapes)</td>
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<td></td>
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</table>
Knowing your vineyard’s condition

No person has better knowledge about the vineyard or better incentive to improve the quality of production than the vineyard owner and/or manager. That person knows the level of damage that the frost and hail events we experienced in the last few weeks made on the vines, and his/her assessment is the most accurate that you can get. Don’t make assumptions about your vineyards based on what you hear from others. The main reason for the need of individual assessment is tied to variability. Frost damage can vary significantly between vineyard sites and within the same vineyard among different vines and varieties. Microclimate can play a huge role in damaging vines in different location of the vineyard.

Fortunately, *V. labrusca* varieties (Concord and Niagara) have developed physiological systems to dodge the frequent frosts of our cool climate. Vines will produce fertile secondary buds to compensate for primary bud loss (Fig. 1).

How much do these secondary buds produce? If we consider that a primary bud has the capacity to produce 100% of a crop at that node, then the secondary bud (for Concord and Niagara) could produce about 35-40% of a crop. If both primary and secondary buds are killed by the spring frost, then a tertiary bud will produce a shoot (and a canopy) for next year’s crop. This is why it’s important to remember that it is premature to write off this year’s crop.

Another important thing to remember is that this season’s potential crop is based on last season’s vine performance. A balanced vine (not over-cropped in 2009) had the opportunity to develop fruitful secondary buds last year, setting the potential for good productivity in any vineyard where the spring frost killed the primary buds. However, a vine that was over-cropped last season may not have been able to develop fruitful secondary buds. All this should be kept in mind when thinking about the crop this year.

How can we estimate a potential crop (or the amount of damage) in a specific vineyard? This question has to be answered individually by each grower. Growers will see portions of their vineyards which have poor crop (many damaged clusters) while other parts of the vineyard will have very few damaged clusters (Fig. 2). The economic potential of these undamaged portions will be higher than those with a lot of damage. One thing a grower can do to assess the potential crop is to sample a representative number of nodes (blind nodes, live primaries, and live secondaries) in the different portions of their vineyards. This can provide a relative measure of damage; growers can then do crop estimation later in the season to figure out how much actual crop is in the vineyard. Growers can also make maps of where damage symptoms are present in their vineyards. The best time to do this is during the next few weeks as the shoots grow out and the delineation between damaged and undamaged portions of the vineyard is most visible.

*Continued next page*
Once you have an idea of where the damage is then you can plan your management of insects and diseases accordingly. The presence of clusters on both primary and secondary shoots means you will have a wide variety of growth stages within your vineyards. This can make timing your pesticide applications challenging; knowing where the damage is in your vineyards will help you make better pest management decisions.

Most importantly, don’t just ‘walk away’ from your vineyards without first determining how much crop is actually there. While the frosts and hail events we experienced may appear to have damaged a lot of acres, it is still too early to know the full extent of the damage. You should continue with some level of insect and disease management in frost-affected vineyards since you could end up with a partial crop. In the worst case, a minimal spray program will help reduce disease and insect pressure in 2011.

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**Meet Diane Brown-Rytlewski, the new Extension Educator for Berrien County**

Many of you have already had the chance to meet Diane at one of the various grape grower functions she has been involved with. Starting last June, Diane is the new Commercial Horticulture Educator for Berrien County. She has a diverse background, with experience in both plant pathology and entomology in several different cropping systems. She completed her Master of Science degree on Botryosphaeria canker diseases of apple at the University of Wisconsin with Dr. Patricia McManus. Diane has been with Michigan State University since 2000, and is a welcome addition to the Extension team in Berrien County. Please take a moment to introduce yourself the next time you see her.

Diane can be reached at the Berrien County Extension office, 1737 Hillandale Rd., Benton Harbor, Mi 49022. Phone: 269-944-4126; Email: rytlews1@msu.edu.

**2010 Grape virus survey in Michigan**

The Small Fruit Pathology lab at Michigan State University is conducting a survey on the current state of grape virus problems in Michigan. We are offering a free test of grape plant material that is exhibiting unusual symptoms that might be caused by a virus. We will be collecting samples at upcoming grower meetings in NW and SW Michigan. Stay tuned for more information.

**Questions?** Please contact:
Jerri Gillett, Research Assistant
MSU Plant Pathology
Email: gillett@msu.edu
Lab phone: 517-355-7539
2010 Northwest Wine Grape IPM Updates

Dates have been set for the Summer Grape IPM Updates. Topics to be covered include horticulture, pathology and entomology. Feel free to bring along insect and disease samples for diagnosis and management recommendations. These free updates run from 3-5 PM and Pesticide Recertification Credits will be available. More information: Erin Lizotte, 231-946-1510.

May 7
3-5PM
Longcore Vineyard, 11545 Bluff Rd., Traverse City
Annemiek Schilder will be at the Longcore Vineyard on May 7 to discuss protectant strategies for disease management, with special emphasis on powdery mildew.

Additional meetings will be held on:

June 4
3-5PM
NWMHRS
Speaker: Duke Elsner

July 9
3-5PM
2Lads Winery, OMP
Speaker: Paul Jenkins and Paolo Sabbatini

August 6
3-5PM
Ligon Farm, OMP
Speaker: Paolo Sabbatini

September 3
3-5PM
L. Mawby
Speaker: Rufus Isaacs

2010 Viticulture Field Day

The 21st Annual MSU Viticulture Field Day & Steak Cookout will be held on Thursday, July 29th! More information: Tom Zabadal, 269-944-1477.

2010 Southwest Wine Grape grower meetings

Summer wine grape meetings will resume in Berrien County in 2010. Three meetings are planned- May 19th, June 16, and August 4th. The May 19th meeting will be held at SWMREC beginning at 12noon. The meeting cost is $15.00/person, which includes lunch. Please RSVP by May 13th to Diane Miner at