

## CALENDAR OF EVENTS

5/7-9/10	<b>IPM Updates – Old Mission</b>
5/15	<b>IPM Updates begin – Leelanau Co.</b>
5/21, 6/4, 6/18,6/25	<b>IPM Updates – Benzie Co.</b>
5/28	<b>IPM Update – Grand Traverse Co.</b>
6/10	<b>IPM Update – Antrim Co.</b>
6/19	<b>Organic Apple Field Day</b> Clarksville Hort Expt Station
6/20	<b>USDA Cherry Estimate</b>  <b>Cherry Administrative Board Meeting</b> Radisson Hotel, Kalamazoo
7/6-7/13	<b>National Cherry Festival</b>
7/8-7/12	<b>Cherry Connection</b> NW Mich Hort Res Station

## CURRENT INFORMATION FOR FRUIT GROWERS

Gary Thornton and Jim Nugent

Over the years we have tried to expand the quantity and quality of real-time information available to our fruit industry. Following is a quick reference to the information that is available and how to access it. Funding for the PestNet Forecast is provided by Project GREEN. Funding for FruitNet and code-a-phone provided by area horticultural organizations.

<b>Program</b>	<b>Purpose</b>	<b>How to Access</b>	<b>Cost to Subscribe</b>	<b>Comments</b>
PestNet Forecast	Provide weather information linked to pest prediction	1. E-mail <sup>1,4</sup> 2. Fax <sup>1</sup> 3. Phone <sup>2</sup> – See Code-a-phone	E-mail: Free Fax: \$25/season <sup>3</sup> Phone: No charge	Sent up to twice/day during wetting events
60 Hour Weather Forecast	Provide daily weather forecasts	1. E-mail <sup>1</sup> 2. Fax <sup>1</sup> 3. Web <sup>2</sup>	E-mail: \$20/season <sup>3</sup> Fax: \$30/season <sup>3</sup> Web: No charge	Email updated 2 x/day Fax updated 1x/day Web address: <a href="http://www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous14ktvc">http://www.agweather.geo.msu.edu/agwx/forecasts/fcst.asp?fileid=fous14ktvc</a>
FruitNet	Weekly grower newsletter from area agents	1. E-mail <sup>1</sup> 2. Fax <sup>1</sup>	E-mail: Free Fax: Free in NW Michigan	
Code-A-Phone Messages	Provide up-to-date comments on pest & crop issues	Phone (touch-tone) 947-3063 (local) or 877-763-3300 (toll free)	None	Updated once or twice/week, depending on time of season

- <sup>1</sup> Subscribe by contacting the NWMHRS at 946-1510 or 888/749-3019, via fax at 946-1404 or via e-mail at [nwmihort@msue.msu.edu](mailto:nwmihort@msue.msu.edu)
- 2 No subscription required
- 3 Make checks payable to Michigan State University
- 4 Email version of PestNet requires Adobe Acrobat which is available at the following web address: <http://www.adobe.com/products/acrobat/readstep2.html> *Fill out steps one and two and click on download. You may consider "unchecking" the boxes in step that will prevent them from contacting you with new product info.*

## PHONE SYSTEM FOR LOCAL CODE-A-PHONE MESSAGE

By Gary Thornton

Last year the Code-A-Phone system was updated to provide fruit growers from throughout the state with quicker access, improved information and a broader range of options. This system is known as a telephony system and works similarly to how you access bank information. You will need a touch-tone phone to access this system.

To access, call:

**947-3063 (Local to Traverse City)**  
**1-877-763-3300 (Toll free statewide)**

Options this year include the following by pressing the corresponding number:

1. Stone Fruit Information
2. Pome Fruit Information
3. Weather conditions and Disease Forecasts (including wetting events from 23 weather stations throughout Michigan with 9 of those in NW Michigan)
4. Listing of Weather Station Numbers (required for access to your local weather station info).

*For example:* A grower could call up and hear, "Welcome to the Northwest Michigan Horticultural Research Station Information Network. Please press 1 for stone fruit information, 2 for pome fruit, 3 for weather conditions and disease forecasts, including wetting events, or 4 for a list a weather station numbers. You may return to this main menu at any time by pressing the star key." Then you might press 1 to listen to the stone fruit information. At that time it would say, "Press 1 for the stone fruit message, press 2 for a refresher on the 'postponed insecticide treatment strategy for plum curculio' or press 3 for recommendations on the use of pheromone disruption for controlling lesser and greater peach tree borers." For starters, it will only say "Press 1 for the stone fruit message." By pressing the star key you can back out of the menus to get to additional menu options.

The highlight of the system is the access to the latest information on current wetting events. This is being made available through a GREEN grant with MSU and SimpleSoft, Inc. cooperating. This information will be updated twice daily during a wetting event and thus can be accessed from wherever you have access to a touch-tone phone. The system will ask for the weather station that you want the information from, so you will need to know the code of that station and punch it in when asked. Listed below are the stations that will be available as of the week of **April 15<sup>th</sup>** and their respective codes. Write these down!! If you happen to loose them, they will be available via menu selection 4.

### **PestNet Code-A-Phone Station Info**

<b>Station Name</b>	<b>PestNet #</b>
Bainbridge (Coloma)	#320
Belding	#270
Benzonia	#180
Clarksville	#280
East Lansing	#340
East Leland	#140
Eastport	#100
Elk Rapids South	#200
Fennville	#300
Fremont	#360
Grand Junction	#310
Hart	#250
Kewadin	#210
Manistee	#230
Mason	#240
Northport West	#120
NWMHRS (Traverse City)	#160
Old Mission	#190
Petersburg	#350
Sparta	#260
SWMREC (Benton Harbor)	#330
West Olive	#290
Yuba	#110

This year the phone system will have statewide codes listed as well, so you may hear of some unfamiliar places.

### **GROWER ASSISTANCE PROGRAMS**

By Jim Bardenhagen, Leelanau County Extension

#### **Apple Assistance Program**

The USDA has now announced the sign up period, beginning April 29<sup>th</sup>, for the Apple Assistance Program. The program will provide about \$75 million in payments to eligible growers on their 2000 apple crop production. There is a maximum of 5 million pounds of production that will be eligible for each apple operation.

The program is easy to apply for. You only have to fill out a simple 1-page form (CCC-891) that asks for your name and address, 2000 apple production pounds, and a few other questions.

The form is available at your local Farm Service Agency (FSA) Service Center (1501 Cass St. for Grand Traverse Area; phone: 941-0951) or on the USDA/FSA website at [www.fsa.usda.gov](http://www.fsa.usda.gov); choose e-mail forms. No deadline has been announced yet.

## **Non-insured Disaster Assistance Program (NAP)**

The NAP Program is a program of the USDA Farm Service Agency (FSA) designed for crops grown that are not eligible for crop insurance policies written by private insurance providers. FSA has been taking applications since last fall. Tart cherries and sweet cherries are eligible for this program.

Sweet cherries are eligible even though there is a pilot crop insurance available in our area since it is a revenue based and not a production based crop insurance.

The policies cost \$100/crop and there is a maximum cost of \$300 for a farm or \$900 for all farms under one ownership in a county. This is very economical coverage for a disaster crop situation, and I would encourage growers to consider it for risk management.

The hard news is that the sign-up period for the 2002 NAP Program ended on April 18<sup>th</sup>. However, due to recent bud damage due to frosts on cherries and the economic loss likely to the fruit growers, several of our US Legislators will be requesting the Farm Service Agency to re-open the sign-up period for this NAP Program. Several growers have said they were unfamiliar with the program availability. We will get the word out as soon as we hear anything about the program re-opening.

For those growers who are signed up to the 2002 NAP Program, it is very important to note that the program requires a grower to file a Notice of Loss (form CCC-576) within 15 calendar days after the date of the disaster condition occurred or when damage to the crop became apparent. Since the tart/sweet cherry damage occurred on April 21-27, growers need to get these notifications during the week of **May 6<sup>th</sup>**. FSA has sent out packets including the form CCC-576 plus other related forms to every grower who has signed up. You can get the form by calling the local FSA office or off the web from the USDA/FSA website at [www.fsa.usda.gov](http://www.fsa.usda.gov); then click on on-line forms, then enter CCC-576 for the form number.

## **Low-Interest USDA Loans**

The Farm Service Agency (FSA) has filed a 24-hour flash report on the extensive bud damage to the cherry crop in NW Michigan. This goes to the FSA State office, then to the Governor, then to USDA. If USDA declares NW Michigan a disaster area as a result, then low-interest USDA loans may become available to growers. This process usually takes several months.

## **REGIONAL IPM UPDATE SESSIONS**

### Old Mission

**Host:** Duke Elsner

**Location:** Josh Wunsch farm, Phelps Road, 1/4 mile west of Peninsula Drive

**Selected Tuesdays** (5/7, 5/14, 5/21, 6/4, 6/11, 6/18, 7/2, 7/16, 8/6, 8/20, 9/10);

**Topics:** tree fruit and grape integrated crop management. For more information, contact Duke Elsner at 922-4822 or [elsner@msue.msu.edu](mailto:elsner@msue.msu.edu)

### Leelanau

**Host:** Gary Thornton and Jim Bardenhagen

**Location:** Larry Esch farm, 6764 E. Horn Road, 1/2 mile west of Eagle Hwy, E. Leland

**Day of Week:** **Wednesdays** beginning **5/15** until sweet harvest.

Benzie

**Host:** Gary Thornton and Andy Norman

**Locations:** To be announced

Grand Traverse

**Host:** Gary Thornton

**Day of Week:** Tuesday, **May 28<sup>th</sup>**

**Location:** Dave & Doug White's "LaLone" Farm, end of Yuba Road – East of Bates Road

Antrim

**Host:** Gary Thornton and Stan Moore

**Day of Week:** Monday, **June 10<sup>th</sup>**

**Location:** Glenn Paradis Farm, 5313 Powell Road, Kewadin

**Notes:** MDA recertification credits have been applied for. In the past, one credit has been granted per session. All sessions will begin at **1:00 p.m** and last about an hour. Growers are encouraged to bring problem samples with them.

**LEELANAU FARMERS MARKETS**

By Jim Bardenhagen

The Leelanau Farmers Markets will soon be starting their second season! The markets present a great opportunity to market farm produce and products retail direct to the consumer. The Leelanau Farmers Markets look forward to your participation. The markets had a great start-up season in 2001 with 10-19 vendors at the various markets and up to 450 consumers per day. The markets are anticipating a bigger and better season in 2002 and with hopefully lots of product diversity. An aggressive advertising campaign is in place to make the community more aware of the markets and their schedule.

There will again be three markets - one in Empire (downtown near the Post Office), one in Leland (parking lot across from The Bluebird), and one in Suttons Bay (Suttons Bay Township Park/ice skating rink at Broadway & Lincoln). The dates and hours of operation will be as follows:

Empire	Saturdays	8 am - 12 pm	June 15 - September 29
Leland	Tuesdays	8 am - 12 pm	June 18 - Aug. 27 plus Labor Day 9/2
Suttons Bay	Saturdays	8 am - 12 pm	May 25 - October 26

The Suttons Bay Market will start early on May 25<sup>th</sup> to accommodate vendors who have plants and early products available.

The vendor rates will be:

- \$10 for the daily fee
- \$100 for a seasonal reservation at one location
- \$150 for a seasonal reservation at all locations

Each market has a Market Master that vendors can communicate and work with on a weekly basis.

A list of Market Masters, market rules and an application form is available by contacting the Leelanau

MSU Extension office (256-9888 or e-mail: [leelanau@msue.msu.edu](mailto:leelanau@msue.msu.edu)). We can send, fax or e-mail them to you. You can also download them from our website at [www.msue.msu.edu/leelanau/agriculture.html](http://www.msue.msu.edu/leelanau/agriculture.html) and click on *Leelanau Farmers Markets*.

The Leelanau Farmers Markets will include products from Leelanau, Benzie or Grand Traverse counties.

The Leelanau Farmers Market Committee hopes you will join them in making the 2002 season a great one!

## **MAINTENANCE SPRAY PROGRAM FOR TART CHERRY ORCHARDS WITH NO CROP**

By: Gary Thornton, District Fruit IPM Agent

With this year's predicted crop losses in some of the growing areas of Michigan, it appears that some blocks will not have enough fruit to justify the expense of harvest. If this ends up being the case, growers should start the year off by trying to minimize expenses wherever possible. Reducing the spray bill is the logical place to start.

There are disadvantages though in reducing the pesticides that one applies to their orchard. The reduction in control of diseases or insects this year may well lead to higher levels of those pests the following year. Thus next year's spray bill could be higher than normal and/or crop could be reduced. This may, in part, offset the advantages of reducing your input costs this year. Having said that, the following are some key areas to consider in designing this year's spray program for tart cherries, if that crop is not to be harvested.

### ***Key points:***

**Minimize or eliminate insecticide sprays.** Keep in mind that insect populations may increase in the 2003 season as a result of this, assuming you have some cherries in the trees. A half cover of Guthion for cherry fruit fly applied at the time that would be considered mid harvest and a half cover for plum curculio will greatly reduce populations for the next season. If you do not have a crop at all neither of these sprays will do you any good and should be avoided.

**Some weeds in the fall are okay.** The main time that weeds compete with the trees is in June and July. Fall weed cover does very little to hurt the trees, except in drought situations. Tight mowing in the fall will reduce cover for voles.

**Trunk sprays.** Even without a crop, trunks of tart cherry trees are susceptible to the borer complex. Tart cherries are not as susceptible to injury as sweet cherry or peach. Many growers do not apply these every year. Perhaps to help with cash flow this spray could be skipped, but that remains a personal decision.

**Gibberillic Acid sprays.** With out a crop the tree will grow vigorously which induces more vegetative buds in tart cherry. If you have been using Gibberellic acid sprays, they **SHOULD NOT** be discontinued, as this will set up the 2003 season for an over cropping situation that would result in poor fruit quality. The rates can be reduced though, based on the vigor that you are seeing in the individual blocks, and still expect to achieve the same results.

**Foliar nutrients.** In a year with little to no fruit on the trees, growers should only consider foliar

nutrients in situations where they have either chronic problems or leaf analysis has shown a deficiency. Typical foliar maintenance programs of zinc, potash, nitrogen and magnesium can be avoided in most cases. Boron should be spared with the exception of post harvest applications where boron is required.

**Bloom Sprays for blossom brown rot in tart cherry.** Even in cropping years these sprays are of questionable value in many locations. If your crop is so short that harvest will not take place, they should be avoided.

**Cherry leaf spot control.** Keep the leaves for as late into the fall as possible. Carbohydrate reserves are necessary to aid in the set of the crop in 2003 and they also are necessary to provide the tree and buds with cold hardiness so they survive the winter. Without a crop this season, however, the reserves will be higher than normal going into the winter. So if you defoliate somewhat earlier than you usually like to, it shouldn't make much difference. Expect a heavy set with lots of early vegetative growth next spring. The bloom will have lots of green in it next spring, due to the high level of carbohydrates that is pushing lots of large blossoms and foliage as well.

**Petal fall** - Typically it is early in the petal fall period when the first leaves are fully expanded and thus susceptible to the cherry leaf spot fungus. Early control is important to prevent the buildup of inoculum early in the season within the orchard. Chlorothalonil (Bravo) is by far the best material for controlling cherry leaf spot and should be used at this time in a full cover spray. The rate could be reduced to some degree based on the limited amount of leaf material in the orchard at this time. Keep in mind that this is a protectant and will not provide any back action, so the material has to be applied prior to any infection periods - particularly high and moderate ones.

**Shuck split** - Chlorothalonil should again be applied, this time at the higher end of the rate. Depending on rainfall and coverage, the material can be applied full cover or half cover. Full covers are preferred, as you will see benefits from this spray well into the future.

Bravo formulations labeled for use on cherry read that "Bravo is NOT TO be applied after shuck split and before harvest". In the case where no harvest is taking place this obviously leads to a gray area that growers will have to interpret for themselves.

**Post shuck split** - Once the grower has decided to switch away from chlorothalonil, consider going to a reduced rate of a sterol inhibitor fungicide plus 3 lbs of Captan. This provides the best control on a protectant basis and I believe the most economical for the benefit you get. You will also get some mildew control if Elite or Nova is used. An example would be 4 oz of Elite plus 3 lbs of Captan.

**Post Harvest** - The time of harvest with no crop could certainly be considered as soon as the first tart cherries in your area are mature. At this time growers should evaluate their blocks. If it is clean of leaf spot, growers may want to consider bypassing any further sprays. If there are any levels of leaf spot in the orchard, a final "post harvest" chlorothalonil, applied as a protectant, should be considered.

## REDUCING FERTILIZER COSTS FOLLOWING FROST DAMAGE

From *Fruit CAT Alert*, April 30, 2002

Eric Hanson, Horticulture Dept, MSU

Jim Nugent, District Horticulturist, MSUE

Fruit trees, grapevines and blueberry bushes require a certain amount of nitrogen (N) and potassium (K) to support vegetative growth and fruit production. If the fruit are lost to frost damage, the nutrient requirements are also reduced. Here are some thoughts on fertilizing following frost damage.

The amount of nutrients that accumulate in the fruit of these crops is one estimate of how much fertilizer can be reduced if the crop is frosted out (Table 1). The N content of the fruit ranges from 8 lb per acre (blueberries) to as high as 50 lb per acre (15 ton per acre peach crop). The K contents range from 8 to 80 lb per acre. In the event of a crop failure, fertilizer rates can be reduced by at least these amounts. Since these plants obtain only part of their nutrients from added fertilizer (the rest from soils supplies), fertilizer rates can be reduced even more in some cases.

Crop	N	K	
Apples	18-20	30-80	
Blueberries	8	8	
Cherries	18	16	
Grapes	28	40	
Peaches	50	80	

If the fruit of apples or grapes is lost to frost, N rates can be reduced by 50 % (on lighter, sandier soils) to 100% (heavier, fertile soils) of typical applications. In cherries, peaches and blueberries where the entire crop has been lost, N rates can safely be reduced by a third on sandier soils, to as much as a half on heavier soils. Reduce rates proportionately in the case of partial crop failures.

The effect of crop loss on K requirements is difficult to estimate. Fruit are strong sinks for K, so the K demand is clearly reduced when the crop is lost to frost. Frost-damaged plantings on heavier soils likely will not benefit from K additions this year. Plantings on sandy soils with a low K reserve or where tissue analysis has indicated a need for K, may benefit from K, but will require lower rates, perhaps half of the typical application. Application of K could be discontinued this year in situations where K levels in the soil are moderate to high and an annual maintenance of K is typical.

## BENLATE CANCELLED - AN UPDATE

By Gary Thornton

DuPont has voluntarily cancelled Benlate. Cancellation was effective on **Aug. 8, 2001** for products sold and distributed by DuPont. Benlate products in the channels of trade will be permitted to be sold by dealers and distributors until Dec. 31, 2002. There is no end of use date for growers, but EPA has proposed cancellation of tolerances for various crops between Jan. 1, 2006 and Jan. 1, 2009. These dates are based on an assumption by EPA that the last use of Benlate products by growers will be in the 2003 growing season (ending December 31, 2003). While it will not be illegal to apply Benlate products to crops after the 2003 growing season, commodities with residues of benomyl (the active ingredient) in them after the tolerance has been cancelled will be illegal unless it can be demonstrated that the Benlate was applied before the end of 2003.



Any product not used by the end of the 2003 growing season can be returned to DuPont for disposal, but DuPont will not reimburse the grower for the unused product and the grower must pay all shipping costs.

## **A REVIEW OF STRATEGIES FOR CONTROLLING APPLE SCAB AND MILDEW IN 2002**

Dave Rosenberger, Plant Pathology, Cornell University Extension  
*Scaffolds Fruit Journal*, April 1, 2002, Vol. 11, No. 3

Fungicide strategies for controlling apple scab and powdery mildew remain mostly unchanged from those recommended for the 2001 season and published in *Scaffolds* last year (see citations at the end of this article). This article provides a brief summary and update of the recommendations published last year. A follow-up article next week will cover the latest information on fungicide resistance problems and strategies for minimizing selection pressures that contribute to fungicide resistance.

Key recommendations for early-season disease control on apples in 2002 include the following:

**1. Start early!** Plan to use contact fungicides (mancozeb, Polyram, captan) beginning at the green tip bud stage and again 7-10 days later. Appropriate spray intervals will vary depending on temperature (i.e., tree growth rate), rainfall, and predicted infection periods. Copper applied at green tip to suppress fire blight inoculum provides scab control equivalent to that of a mancozeb spray. None of the protectant fungicides (including copper) have postinfection activity. Therefore, scab infections that occur at green tip will not be controlled if the first spray is not applied until half-inch green.

Delaying the first spray beyond green tip is risky except when apple scab ascospore maturity is considerably delayed compared with "average" years or where orchards had virtually no scab the previous season. The latter can be determined only by carefully observing terminal leaves for scab symptoms during October. Growers should not assume that they have "clean" orchards just because they failed to notice scab from the tractor seat.

Sprays between green tip and tight cluster can prevent early scab infections that would otherwise generate secondary inoculum for infecting leaves and fruit between bloom and first cover. In most cases where significant fruit scab is present at harvest, the origins of the problem can be traced to poor scab control during the prebloom period.

Even the best fungicides will often fail when the following three conditions occur simultaneously:

1. Trees are growing rapidly, thereby generating large quantities of susceptible tissue.
2. Extended rains favor scab and interfere with spraying during the period between late bloom and second cover.
3. Primary scab lesions are visible at petal fall, thereby providing huge quantities of inoculum.

The first condition occurs every year during the spring growth flush that begins near petal fall. The second condition is both unpredictable and uncontrollable. Therefore, the only fool-proof way to avoid a scab disaster is to prevent condition #3. Careful prebloom scab control is the key to ensuring that no secondary inoculum is available during the interval between petal fall and second cover.

For powdery mildew, starting "early" means including a mildewcide in the spray program starting at the tight cluster bud stage, or at the very latest, by the pink bud stage. When the SI fungicides were first introduced, they sometimes provided adequate mildew control when applied only in the petal fall and first cover sprays. In most orchards, the SI fungicides are less effective against mildew now than they were 10-12 years ago, so mildew control must be initiated earlier before inoculum from primary mildew infections can spread to new foliage. Remember that powdery mildew can spread in the absence of rainfall or leaf wetting. Therefore, new foliage should be protected with fungicides even when no scab infection periods are predicted.

We can expect high levels of overwintering mildew in 2002 because the mild winter will have allowed most mildew-infected buds to survive. For 2002, delaying mildewcide applications until petal fall will be somewhat like closing the barn doors after the horses have run away.

**2. Strobilurin or SI+contact fungicide sprays should be introduced at tight cluster or pink.** Sovran and Flint are strobilurin fungicides; Nova, Rubigan, and Procure are SI fungicides. A strobilurin or SI fungicide should be used at tight cluster and/or pink to ensure adequate mildew control and to ensure complete control of apple scab during this critical period. The strobilurin and SI fungicides have postinfection and anti-sporulant capabilities that are lacking in contact fungicides. The time between tight cluster and petal fall usually encompasses the peak of scab ascospore discharge, the period of most rapid leaf expansion, and the period when any primary infections that became established shortly after bud-break will begin to produce conidia. Dollars paid out for fungicides between tight cluster and petal fall often pay dividends by reducing the need for fungicides to control secondary scab and mildew during summer.

Apple growers with low-inoculum orchards and good management skills may be able to save on fungicide costs by using only contact fungicides until petal fall. However, scab programs built exclusively on contact fungicides are likely to fail in orchards with high inoculum levels and in years when weather conditions favor severe scab and limit preventive spray timing. Furthermore, none of the contact fungicides control powdery mildew. If no mildewcide is applied before petal fall, mildew control may be compromised and selection pressure for fungicide resistance will be increased.

**3. Consider an alternating program of strobilurin and SI+contact fungicide sprays.** There is no single "correct" scheme for configuring strobilurin and SI+contact fungicide sprays during the period between tight cluster and second cover. However, an alternating program (e.g., stroby, then SI+contact, then stroby, then SI+contact) may be slightly more effective than blocking programs wherein two or three applications of one chemistry are followed by several sprays of the alternative chemistry. This is especially true where the strobilurins are applied alone and rust diseases are prevalent. As suggested last year, a "fill-in" spray of mancozeb or captan alone may be needed to bridge the period between strobilurin or SI+contact sprays applied at pink and petal fall.

**4. Should the strobilurin fungicides be applied in combination with contact fungicides?** No one has a definitive answer for this question. An obvious reason for using strobilurin+contact combinations is to gain better control of rust diseases than that provided by strobilurin fungicides used alone. If one assumes that contact fungicides will redistribute better than strobilurin fungicides, then tank mixes might perform better than a strobilurin fungicide applied alone in situations where spray coverage was incomplete or rapid terminal growth might leave new leaves unprotected. However, we currently have no data to prove that contact fungicides have better redistribution capabilities than strobilurin fungicides. Tank-mix combinations of strobilurin+contact fungicides have been proposed as a resistance management strategy for apple scab, but that assumption is now questionable based on recent work by Dr. Wolfram Koeller. (The details of fungicide resistance management will be discussed in next week's article.)

If growers opt to use strobilurin fungicides in combination with a contact fungicide, it is imperative that the rate of strobilurin in the mixture be maintained at the same level as for sprays where the strobilurin is applied alone. Tank-mix combinations involving a contact fungicide plus a full rate (minimum label rate) of a strobilurin fungicide can be expensive, but they may provide enough risk-reduction to warrant consideration during the critical period between pink and first cover.

**5. Regardless of tree-row volume calculations, never apply Flint at less than 1 oz/A or Sovran at less than 2 oz/A.** These minimum rates for small trees have been adjusted upward since last year due to changes on product labels and concerns about fungicide resistance. The only exception is that if trees are sprayed to drip with a hand-held wand, then rates of 0.67 oz of Flint/100 gallons or 1.33 oz of Sovran/100 gallons are sufficient. When directed sprays are applied with a hand wand, then the actual rate per acre might drop below the minimum rates recommended for airblast applications.

6. On mildew-sensitive cultivars, mildewcides will be needed until shoot growth slows or terminates. After four or five applications of strobilurin and SI fungicides, sulfur may be useful for suppressing mildew infections during June and early July.

**The bottom line:**

Focus on preventing early infections of scab and mildew. Over the past 20 years, many of us have proposed IPM strategies for controlling scab and mildew that involved omitting early fungicide applications or stretching spray intervals during bloom. Based upon what we are learning about fungicide resistance, many of those strategies now appear unwise and unsustainable. We are increasingly aware that fungicides with post-infection activity are valuable tools that will be quickly compromised if they are overused or misused. Next week's article on fungicide resistance will help to explain the basis for our renewed emphasis on controlling primary infections of scab and mildew and will include more information on effects of strobilurin rates and spray timing.

**Citations:**

Rosenberger, D.A. 2001. Fungicide strategies for control of apple scab and mildew in 2001. Scaffolds Fruit Journal 10(2):1-3. On-line at [www.nysaes.cornell.edu/ent/scaffolds/2001/3.26\\_disease.html](http://www.nysaes.cornell.edu/ent/scaffolds/2001/3.26_disease.html).

Rosenberger, D.A. 2001. Fungicide strategies for control of apple scab and mildew in 2001 - Part II. Scaffolds Fruit Journal 10(3):1-3. On-line at [www.nysaes.cornell.edu/ent/scaffolds/2001/4.2\\_disease.html](http://www.nysaes.cornell.edu/ent/scaffolds/2001/4.2_disease.html).

**ORGANIC APPLE FIELD DAY**

The Clarksville Horticulture Experiment Station is hosting a field day at the Organic Apple Plot on Wednesday, **June 19<sup>th</sup>**, from 1-4 p.m. The five acre site has over 2500 trees, now in the third growing season. The plot offers opportunities to practice and study organic soil building techniques, as well as organic pest and disease management strategies. Discussion topics for the field day afternoon include:

- 1) building soil quality, fertility, and biological diversity
- 2) orchard floor management options
- 3) disease control strategies, including use of compost tea
- 4) insect monitoring and management strategies
- 5) certification procedures and information on organic production and marketing.

For more information, call CHES at 616/693-2193, or e-mail the station at: [huntjan@msu.edu](mailto:huntjan@msu.edu)

**CAT ALERTS**

By Gary Thornton

The CAT Alert Newsletter will be available to growers again this season. It is a weekly newsletter that hopes to give growers timely information on insect and disease pressure and control options. It also has pertinent and up to date articles on selected horticultural topics. In addition to the statewide topics, the NW station crew submits a weekly update on the local pest pressures.

To subscribe to the print versions, go to the following web site and follow directions. The cost is \$35/season: [http://www.msue.msu.edu/ipm/subsc\\_fruit.htm](http://www.msue.msu.edu/ipm/subsc_fruit.htm)

Or you can call us at the Station for a subscription form. The Cat Alert is also available online for no charge. You can also request to receive an email reminder every time a new issue is posted on the web. To view the online version or subscribe to the "reminder email," go to the following web site:

<http://www.msue.msu.edu/ipm/fruitCAT.htm>

### **ANNUAL RECORD BOOKS AVAILABLE**

This is a reminder that annual record books are available from your County Extension office. While many of you may be using computers for record keeping, these paper books may be helpful for activities that occur in the field. Two sizes are available, one that will fit in a shirt pocket, and one that can be carried in the cab of a tractor or pickup truck. The pocket sized Annual Record Book for Crop Production, E-2341, costs \$3.00. The larger book, Recordkeeping System for Crop Production Annual Record Book, E2342, is a real bargain, \$1.00, due to subsidizing by the MI Groundwater Stewardship Program.