



# Newsletter Extension

## Fruit ICM News

Volume 6, No. 18  
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## Calendar

**July 10: Ohio Fruit Growers Society Summer Tour**, Hirsch Fruit Farm, Chillicothe, OH. Registration for the Summer Tour begins at 8:00 a.m. Member fees are \$15 per family & \$10 per individual; nonmember fees are \$20 & \$15. Orchard tours will begin as soon as the first tour wagon is full. Registrants will be able to purchase morning refreshments and a noontime meal. As an extension of the Summer Tour, OSU's Piketon Research & Extension Center has scheduled an afternoon tour of their facilities. Beginning at 3 p.m., there will be tours of horticulture & soil & water demonstration plots, aquaculture research, and business & learning center facilities. More information about the centers at Piketon is available at <http://www.ag.ohio-state.edu/~prec/>. For more info about the summer tour, call Tom Sachs at 614-249-2424.

**July 23: Licking County Twilight Fruit School**, Branstool Orchards. Contact Howard Siegrist at 740-349-6900 for more information.

## EPA Says Class of Pesticides Mostly Safe

*Source: Eric Pianin, Washington Post staff writer, via Joe Kovach, OSU IPM Coordinator*

An Environmental Protection Agency study of the cumulative risks of organophosphate pesticides used in agriculture and some home gardening has concluded that most of the chemical compounds meet federal food safety standards, the agency announced. The study was launched following passage of the Food Quality Protection Act in 1996 and constitutes the first government study of the cumulative effects of the chemical compounds on humans, rather than focusing on individual pesticides. Manufacturers phased out a number of these pesticides in recent years following reports that the chemicals could harm the human nervous system.

Of the 30 chemical compounds studied by EPA scientists, only two, DDVP used in pest strips, and Dimethoate, used to treat fruits and vegetables, have raised concerns, according to EPA officials. "The conclusions strongly support a high level of confidence in the safety of the food supply," said Stephen L. Johnson, an assistant EPA administrator for pesticides.

## Fire Blight Information on the Web

*Source: Paul Pecknold, Purdue Plant Pathologist, Facts for Fancy Fruit, June 7, 2002* Editor's note: With scattered reports of fire blight coming in from Ohio orchards, the following resources are important.

The late Dr. Paul Steiner, of the University of Maryland, made enormous contributions to our understanding of fire blight and posted some excellent articles about fire blight on the World Wide Web at <http://www.caf.wvu.edu/kearneysville/wvufarm10.html>. I highly recommend you visit this web site and make these articles part of your permanent bookmarks.

### Topics included are:

- Problems in Managing Fire Blight in High Density Orchards on M-9 and M-26
- How Good are Our Options with Copper, Bio-controls, & Aliette for Fire Blight Control?
- The Biology & Epidemiology of Fire Blight
- Managing Fire Blight in Apples
- A philosophy for Effective Fire Blight Management

## Plant Tissue Analysis in Grapes

*Source: Tony Wolfe, Virginia Poly Tech*

Tissue analysis is one of several means of monitoring plant nutritional needs, avoiding nutrient deficiency symptoms, or correcting nutrient deficiencies. Bloom-time (or close to bloom) is the recommended time for collecting grape tissue samples in Virginia. An in-depth discussion is provided in the *Mid-Atlantic Winegrape Grower's Guide* <http://www.ces.ncsu.edu/resources/winegrape/>.

Leaf petioles (75 to 100) are collected, dried, and submitted to either a commercial or university lab for mineral analysis. The diagnostic sample concentrations are compared to standard concentrations associated with nutrient adequacy. On the basis of that comparison, the lab can indicate whether your vines are at deficient, adequate, or surplus levels for each of the tested elements. Tissue analysis should

be used in combination with a visual assessment of vine growth and with periodic soil sampling. Besides the routine bloom-time sampling, tissue sampling would also be recommended to help diagnose potential nutrient deficiency symptoms that develop later in the season.

At \$18 per sample, the Penn State service is still about the best bargain, but may not be quite as rapid as a commercial lab. If you wish to use the Penn State lab, give me a call and ask for a/some submission kits (one kit per sample). The three labs listed below are three that we've used; however, there are others available. Readers in North Carolina should check with North Carolina State University for in-state service. **Labs conducting grape tissue analysis:**

A & L Eastern Agricultural Labs, Inc.  
Richmond, VA  
804-743-9401  
<http://www.al-laboratories.com/lab-richmond.htm>

Agricultural Analytical Services  
The Penn State University  
University Park, PA  
814-863-6124

Brookside Analytical Lab  
New Knoxville, OH  
419-753-2448  
<http://www.blinc.com>

A comprehensive listing of plant and soil labs, some focusing on biological and organic matter analyses, can be found at <http://www.attra.org/attra-pub/soil-lab.html>. (Source: *May-June Viticulture Notes*, 2002)

## **Grape Disease Management 2002 Putting it All Together**

*Source: Dr. Wayne Wilcox, Cornell University, as reported in Massachusetts Berry Notes, Vol. 14, No. 8, June 6, 2002, Sonia Schloemann, Editor*

This article represents the conclusions presented from a longer and very thorough discussion of disease management in grapes for 2002 which can be found at:  
<http://www.ext.vt.edu/news/periodicals/viticulture/02mayjune/02mayjune.html>

**1-Inch Shoot Growth:** A Phomopsis cane & leaf spot (Phom) spray may be warranted if wet weather is forecast and the training system or recent block history suggests high risk.

### **Options:**

1. Nothing
2. Captan or mancozeb

**3-5-Inch Shoot Growth:** This is a traditional time to control Phom shoot infections. Perhaps more importantly, our recent evidence indicates that this also is an important time to control rachis infections, which can occur once clusters emerge. Since the late 1980's, we've considered this the time to start control of powdery mildew (PM) on vinifera varieties if temperatures consistently remain above 50°F.

It's a hard thing to prove, but I'm not so sure this spray is that important in vineyards that were "clean" last year (little overwintering inoculum). If you're spraying anyway for Phom, it won't hurt to add something for PM, but this is probably the least important PM spray of the season. It's more likely to be important under relatively warm conditions (>65°F), less important if cool. Black rot (BR) control is seldom justified unless you're trying to clean up a real problem block **and weather is wet**.

**Options:**

1. Nothing.
2. Mancozeb (BR, Phom).
3. Captan (Phom). Easier on predator mites than mancozeb (or ziram), but not as effective against BR (which seldom matters at this time).
4. Nova or Elite (PM, BR). Use 3 oz/A for economy with so little foliage now, but remember that coverage becomes even more important when you're working with lower tank rates.
5. Rubigan (PM). At 2 fl oz/A (minimal labeled rate), cost is only about \$4. Cheaper than Nova and Elite, especially if BR control isn't an issue.
6. Sulfur (PM). Not very active at temps below 60°F, but neither is the PM fungus. Doesn't control other diseases.
7. JMS Stylet Oil (PM). Should eradicate young infections **if thorough coverage is provided**. Can use with mancozeb (or ziram), but not with captan (phytotoxicity).
8. Nutrol (PM). Should eradicate young infections **if thorough coverage is provided**.
9. Serenade, if you want to experiment with minimal risk.
10. One of the PM products plus mancozeb or captan for Phom.

**10-Inch Shoot Growth:** Traditionally, we've recommended not to wait any longer to control BR. Continued experience tells us that this recommendation is conservative (the spray generally isn't needed) unless BR was a problem last year (inoculum levels are high) and weather is wet and warm. Don't wait any longer to control PM on susceptible varieties (but wait until immediate prebloom on Concord). This is one of the best times to use an SI, also a possible time to experiment with "alternative" materials. DM control will be needed on highly susceptible varieties if disease was prevalent last year and rains of at least 0.1 inches at temps >52°F occur. Rachis infections by Phom are a danger in blocks with a history of the disease.

**Options:**

1. Abound, Sovran, or Flint (PM, BR, some Phom; also, variable downy mildew (DM)). Legal, but not the most efficient time to apply these materials. Expensive and increases resistance pressure if you intend to use them later, when they're really needed.
2. Mancozeb (BR, Phom, DM). A broad spectrum, economical choice if PM isn't a serious concern. Or tank mix with a PM material. Excessive use sometimes leads to mite problems by suppressing their predators.
3. Nova or Elite (PM, BR).
4. Rubigan (PM). Poor BR (usually not a problem if effective materials are applied in the next three sprays) but cheaper than Nova and Elite.
5. JMS Stylet Oil (PM). If (and only if) coverage is thorough, this spray should eradicate early PM colonies that may be starting if previous PM sprays were omitted. At a retail cost of \$11/gal, a use rate of 1% (1 gal oil /100 gal water), and 50 gal/A spray volume, cost is about \$5.50/A. But don't waste your money if you can't cover thoroughly. Also may help with mites.
6. Sulfur (PM). Reduced activity (of both the sulfur and fungus) at low temperatures can still be an issue at this time of year.
7. Mancozeb (BR, Phom, DM) + a PM material (SI fungicide, sulfur, JMS Stylet Oil, Nutrol). Choose PM material based on previously-discussed characteristics and cost.

**Immediate Prebloom to Early Bloom:** A critical time for PM, BR, DM, and Phom (fruit infections). A good time to use a strobilurin on PM susceptible varieties. This and the first postbloom spray are the most critical sprays of the season. **Don't cheat on materials, rate, or coverage!!**

**Options:**

1. Abound, Sovran, or Flint. Abound is very good to excellent against PM, DM, and BR, although the other two are a bit stronger against PM. Sovran is marginal against DM under pressure. Flint is outstanding against PM, inadequate against DM. All are equivalent against BR. The best choice in most Finger Lakes vineyards where SIs have been used for a number of years against PM, particularly if multiple disease control is needed. Should also provide some Botrytis control if a wet bloom period. Either Nova, Elite, or Rubigan plus mancozeb (PM, BR, Phom, DM). Nova and Elite are the biggest guns against BR, so might be the best choice if pressure is high and BR control is more important than PM. Nova and Elite provide post-infection activity against BR, so would be first choice if significant unprotected infection periods occurred within the previous week. Rubigan is (was?) cheaper than Nova or Elite, but doesn't provide nearly the same BR control; however, mancozeb should be adequate if post-infection control isn't required. If wet, mancozeb (or captan) should be included for control of Phom fruit infections in blocks where this has been a historical problem (processor restrictions and poor BR control with captan).
2. Mancozeb + sulfur (PM, BR, Phom, DM). Cheap and reasonably effective but not the strongest choice at a time when the strongest choice is most justified. Potential mite problems.

**Mid-to-Late Bloom:** Vanguard or Elevate for Botrytis control may be beneficial in certain years, particularly in problem blocks if weather is persistently wet. Abound, Sovran, or Flint applied recently may be adequate.

**First Postbloom:** (10-14 days after immediate prebloom spray). Still in the most critical period for PM, BR, DM, and Phom (fruit). Same considerations and options as detailed under Immediate Prebloom. Juice grape growers can substitute Ziram (very good BR and Phom, only fair DM) for mancozeb if necessary.

**Second Postbloom:** BR control still advisable under wet conditions and important if infections are evident on the vine. Fruit are less susceptible to PM now, but vinifera varieties (and susceptible hybrids?) still need PM protection, particularly to guard against fruit rots and promote wine quality. New foliage remains highly susceptible to PM. Avoid SI and strobic fungicides if more than a little PM is easily visible. Phom danger is mostly over unless very wet. Primary DM should be over, but continued protection may be needed on susceptible varieties if weather is wet, especially if disease already is established (look and see).

**Options:**

1. Abound, Sovran, or Flint. Provides good residual control of the listed diseases if used now, but avoid overuse to promote resistance and wallet management. Should provide some Botrytis control.
2. Nova or Elite (BR, PM) + captan or mancozeb (66-day preharvest restriction, mites) if DM and Phom control are needed.
3. Rubigan (PM) + either (a) mancozeb (if more than 66 days before harvest) for BR, DM, and Phom; or (b) captan (DM, Phom, some BR); or (c) ziram (BR, Phom, some DM).
4. Sulfur (PM) + either (a) mancozeb (if still allowed, mites have been considered) or (b) captan. In most years, lessening disease pressure makes this economical option increasingly practical as the season progresses.
5. Copper + lime (some PM, DM). Adequate PM control for Concords, not enough for vinifera and susceptible hybrid varieties.

**Additional Summer Sprays:** Check the vineyard regularly to see what's needed, the main issues will be PM and DM. On vinifera and other cultivars requiring continued PM control, use sulfur as an economical choice to maintain control; SIs and strobilurins are options if they haven't been overused earlier **and little disease is evident**. Both provide the advantage of longer residual activity than sulfur, especially in wet weather. For DM, copper + lime or captan are economical standards; Abound is a viable option if general disease pressure or other conveniences justify its cost; Ridomil can be used in case of emergency. BR should not be an issue after the second postbloom spray, except in unusual circumstances (disease is established in the clusters of vinifera varieties, wet weather is forecast, and it's possible to direct sprays onto the clusters). Phom should not be an issue. See previous discussion for Botrytis at veraison, and preharvest. (*Source: May-June Viticulture Notes, 2002*)

## Pest Phenology

| Coming Events  | Degree Day Accum. Base 50F |
|--|----------------------------|
| STLM 2 <sup>nd</sup> flight begins                         | 449-880                    |
| Obliquebanded leafroller 1 <sup>st</sup> flight peak catch | 506- 87                    |
| Peachtree borer flight peaks                               | 506-1494                   |
| San Jose scale 1 <sup>st</sup> generation crawlers present | 569- 84                    |
| Oriental fruit moth 2 <sup>nd</sup> flight peak            | 577-2066                   |
| Apple maggot adult 1 <sup>st</sup> catch                   | 629- 297                   |
| Redbanded leafroller 2 <sup>nd</sup> flight begins         | 656-1381                   |

Thanks to *Scaffolds Fruit Journal* (Art Agnello)

## SkyBit® Fire Blight Prediction for North-Central Ohio

### Observed:

June 1-2, 9-10: not active

June 3-4, 6-8: active, but no infection

June 5, 11-12: possible infection & damage

### Predictions based on weather forecasts:

June 13-16: possible infection & damage

June 17-22: active, but no infection

## Degree Day Accumulations for Ohio Sites June 12, 2002

| Location                | Degree Day Accumulations Base 50F |        |
|-------------------------|-----------------------------------|--------|
|                         | Actual                            | Normal |
| Akron-Canton            | 589                               | 627    |
| Cincinnati              | 878                               | 942    |
| Cleveland               | 593                               | 598    |
| Columbus                | 828                               | 752    |
| Dayton                  | 780                               | 780    |
| Kingsville Grape Branch | 512                               | 518    |
| Mansfield               | 589                               | 614    |
| Norwalk                 | 556                               | 596    |
| Piketon                 | 885                               | 941    |
| Toledo                  | 641                               | 589    |
| Wooster                 | 650                               | 571    |
| Youngstown              | 588                               | 552    |

## SkyBit® Apple Scab Prediction for North-Central Ohio

### Observed:

June 1-2, 9-10: active, but no infection

June 3-8, 11-12: possible infection & damage

### Predictions based on weather forecasts:

June 13, 20-22: active, but no infection

June 14-19: possible infection & damage

## Fruit Observations & Trap Reports

**Insect Key**

AM: apple maggot  
CM: codling moth  
ESBM: eye-spotted budmoth  
LAW: lesser apple worm  
LPTB: lesser peachtree borer  
OBLR: obliquebanded leafroller  
OFM: oriental fruit moth  
PTB: peachtree borer  
RBLR: redbanded leafroller  
SJS: San Jose scale  
STLM: spotted tentiform leafminer  
TABM: tufted apple budmoth  
VLR: variegated leafroller

Site: Waterman Lab, Columbus  
Dr. Celeste Welty, OSU Extension Entomologist

**Apple:** 6/5 to 6/12/02  
RBLR: 41 (up from 0)  
STLM: 63 (up from 32)  
CM (mean of 3 traps): 15.3 (down from 16.7)  
TABM: 8 (up from 7)  
SJS: 0 (same as last week)  
VLR: 1 (down from 4)  
OBLR: 8 (down from 14)

**Peach:** 6/5 to 6/12/02  
OFM: 12 (down from 17)  
LPTB: 10 (up from 5)  
PTB: 0 (same as last week)

**Site: Wayne County**  
Ron Becker, IPM Program Assistant

**Apple:** 6/6 TO 6/13/02  
STLM: 665 (up from 0)  
CM (mean of 3 traps): 4.9(down from 12.2)  
RBLR: 0 (same as last week)

**Peach:**  
OFM: 0 (same as last week)  
LPTB: 0 (down from 5)  
PTB: 0 (same as last week)

Fireblight was found in several blocks of apples and in a block of pears. There was one scab infection period on June 6th.

**Site: East District: Erie & Lorain Counties**



Source: Jim Mutchler, IPM Scout

**Apple:** 6/4 to 6/11/02

CM (mean of 3 traps): 9.2 (down from 11.2)  
STLM: 6.0 (down from 20.8)  
SJS: 0 (same as last week)  
OFM: 0.0 (same as last week)  
RBLR: 0.0 (same as last week)  
ERM (infested leaves per 20 leaf sample): 0.1

**Peach:** 6/4 to 6/11/02

OFM: 0 (down from 1.0)  
RBLR: 0 (down from 0.3)  
LPTP: 28.7 (up from 28)  
PTB: 0.3 (same as last week)

Beneficials present - native lady beetles, green lacewing eggs and adults

**Site: West District:Huron, Ottawa, & Sandusky Co.**

Source: Gene Horner, IPM Scout

**Apple:** 6/4 to 6/11/02

CM (mean of 3 traps): 3.2 (down from 15.4)  
STLM: 4.0 (down from 6.4)  
OFM: 4.3 (down from 12.6)  
RBLR: 0.2 (up from 0)  
SJS: 0 (first report)  
ERM (infested leaves per 20 leaf sample): 1.5

**Peach:** 6/4 to 6/11/02

OFM: 1.6 (down from 3.0)  
RBLR: 0.0 (same as last week)  
LPTB: 6.4 (down from 10.4 )  
PTB: 1.2 (down from 2.0)

Beneficials present - native lady beetles, green lacewing eggs and adults, banded thrips

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Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

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