INDEX

Fire Blight Showing in Southern Indiana
More on Fire Blight
Important Grape Sprays
Crop Load Adjustment in Grapes
Leafhoppers
Eastern Flower Thrips
Wine Industry Input Needed
Return Bloom Fund Supports NE-183
NE-183 Wind Award from Secretary of Agriculture
IHS Summer Meeting
Correction
E-Mail Glitch
Upcoming Meetings

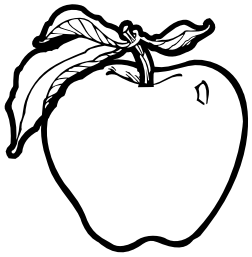
FFF01-06
May 22, 2001

Crop Conditions: The last few weeks have seen widely fluctuating temperatures. In fact just a week ago in Lafayette the daily maximum was 88 with an overnight minimum of 35. Light frost occurred in some areas on that morning (May 13). Our lowest lying grape planting at the Hort Farm suffered severe damage, but overall, damage in commercial grape plantings was minor. Blueberries were in full bloom in northern areas and some damage occurred, but it's too early to tell how much this will affect yield. This late frost damage to apples is probably not going to kill fruitlets as much as mark them, either with a frost ring or increased russet. Grapes are approaching bloom in southern areas and are at the 8-12 inch shoot stage elsewhere which is a critical stage for disease development, especially with the recent rains. See the related article below. The time for chemical thinning apples is past for all but those in the most northern parts of the state, and even there the window is closing fast. I imagine that after the cool wet weather predicted for this week, fruitlets will be too large to get much thinning effect.

Fire Blight Showing in Southern Indiana: The following article was written in response to fire blight samples sent in to our Plant & Pest Disease Clinic from county educators: "Recent reports indicate severe outbreaks of fire blight in southern Indiana (especially the New Albany, Bedford and Madison areas). Initial reports indicate the ornamental pear 'Aristocrat' and Jonathan apple are showing epidemic blossom blight. What to do? First, DO NOT bother with pesticide spraying. There are no pesticides that will cure or prevent further spread of blight. Also, at this stage DO NOT fertilize or attempt any other cultural practices that would stimulate plant growth. You want to stop (slow) further plant growth for the remainder of the year. If epidemic blossom blight is present, with nearly every branch having a majority of the blossom clusters affected, it is neither practical nor desirable to prune out affected blossoms. Extensive pruning of fire blighted trees will generally only result in spreading the disease and stimulate the growth of even more new, susceptible tissue. If only a "limited" number of blossoms or twigs are affected then prune out affected areas, cutting 10-12 inches below any symptoms of disease. Sterilize cutting tools between each cut by dipping them in a freshly made solution of 1 part liquid bleach added to 9 parts of water, however, be sure to rinse tools thoroughly with water before putting them away to prevent corrosion from the bleach water. Pruning shears may also be dipped in a solution of 70% denatured alcohol or 5% Lysol. No doubt some stem/limb death will occur over the summer. In late winter, have clients/growers go in and prune out all dead tissue (dormant pruning does not require sterilization of cutting tools). If commercial apple growers are involved, also suggest

dormant copper sprays and streptomycin sprays at bloom for the 2002-growing season."

The above article was written with ornamentals and homeowners in mind but much of what is suggested also applies to commercial apple growers. Also, for commercial growers we recommend the use of streptomycin after petal fall following a hailstorm or heavy wind damage. This "hail spray" should be made within 18 to 24 hours after the start of the storm, even if the foliage is not completely dry. Also, it is much too late for the use of Apogee to help minimize fire blight for this year. However, you might start planning now your fire blight management program for 2002, especially if you have a high risk fire blight orchard, which, as we all know, is any fire blight susceptible cultivar on M.26 or M.9. (Pecknold)



More on Fire Blight: Since I have no other diseases to talk about just now lets go over a few more points on fire blight: Growers in southern Indiana should be walking their young blocks of trees checking for fire blight. Mid to late May is generally when fire blight makes itself known. Look for new growth that appears wilted and crooked at the tip with browning and wilting of leaves. Efforts to limit secondary spread by cutting out fire blight strikes are most successful if these strikes can be removed immediately after they appear. Cut out blighted twigs 10 to 12 inches below any sign of infection, being sure to sterilize pruning tools between each cut. If the infected shoot is associated with the main trunk or a major scaffolding limb you may want to try the "ugly stub" cut, deliberately leaving a naked 4 inch branch stub above the supporting limb. Marking the ugly stubs with flags or a bright colored paint when the cuts are made can help in relocating them during the winter pruning operation. Maintain good control of sucking insects, which are primary carriers for secondary spread of blight. Special attention should be given to young trees and/or trees on M.9 and M.26 rootstocks or interstems. (Pecknold)

Important Grape Sprays: Grapes are just starting to bloom in the southern part of the state so growers should be aware that the next few fungicide applications are very important for controlling the major fruit pathogens. So far, this has been a very dry year and diseases have not been a problem. However, don't let be mislead into thinking you can skip a few sprays. The pre-bloom (or early bloom) and the first post bloom applications are the most important sprays for controlling the major grape diseases. Care should be taken to get thorough coverage of all foliage and developing fruit. Slow the tractor speed, spray every row middle, increase volume, and use full label rates. This would be a good time to use one of the new strobilurin fungicides.

The following is a small part of an article written by Wayne Wilcox, Cornell University plant pathologists, for the Finger Lakes Vineyard Notes Newsletter. It is applicable to Indiana and other areas of the Midwest. The two main differences are that the Midwest probably has less powdery mildew pressure and more black rot and downy mildew pressure than New York, and that sulfur is not commonly used for powdery mildew control in our region. Many French hybrid and American varieties are sensitive to sulfur (phytotoxicity) especially if the temperature is above 85˚F. Check Table 4 in the Commercial Small Fruit and Grape Spray Guide (http://www.hort.purdue.edu/hort/ext/sfg/) for variety sensitivity. I suggest trying sulfur on a few vines before spraying the whole vineyard. If in doubt, leave it out. (Bordelon)

10-INCH SHOOT GROWTH. Traditionally, we've recommended not to wait any longer to control black rot. Continued experience tells us that this recommendation is conservative (the spray generally isn't needed) <u>unless</u> BR was a problem last year and/or weather is unusually wet. Don't wait any longer to control powdery mildew on susceptible varieties (but wait until immediate prebloom on Concords). One of the best times to use an SI, but these aren't the only options.

Downy mildew control will be needed on highly susceptible varieties if disease was prevalent last year and rains of at least 0.1 inches at temps >50°F occur. Rachis infections by Phomopsis are a possibility, particularly if weather is wet and inoculum is present. Option A: Abound, Sovran, or Flint (PM, BR, some Ph; also, variable DM [Abound, excellent; Sovran, fair to good; Flint, poor to fair]. Not the most efficient time to apply these expensive and limited-use materials unless disease pressure is high. Option B: Mancozeb (BR, Ph, DM). A broad spectrum, economical choice if PM isn't a serious concern. Or tank mix a PM material. Option C: Nova or Elite (PM, BR). Option D: Rubigan (PM). No BR but cheaper than Nova and Elite. Option E: JMS Styl;et Oil (PM). *If (and only if) coverage is thorough*, this spray should eradicate early PM colonies that may be starting because 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. Option F: sulfur (PM). Option G: eKsPunge (PM). Short residual activity, but has eradicative activity against recent infections. Same need for thorough coverage as JMS Stylet Oil. Option H: Mancozeb (BR, Ph, DM, ALS) + a PM material (SI fungicide, sulfur, JMS Stylet Oil, eKsPunge). Choose PM material based on previously-discussed characteristics and cost.

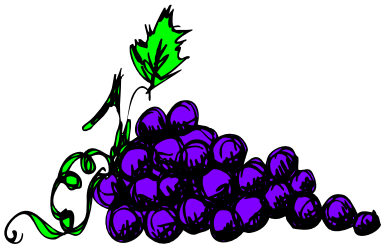
IMMEDIATE PREBLOOM (OR VERY EARLY BLOOM). A critical time for PM, BR, DM, and Ph (rachis and fruit infections)**.** Also important for ALS on susceptible varieties. A good time to use a strobilurin on PM susceptible varieties. This and the first postbloom spray are the most critical sprays of the season—DON'T CHEAT ON MATERIALS, RATE, OR COVERAGE! Option A: Abound, Sovran, or Flint (PM, BR, some Ph; also, variable DM [Abound, excellent; Sovran, fair to good; Flint, poor to fair]. The best choice if SIs have been used for a number of years against PM, particularly if multiple disease control is needed. May provide some Botrytis control if a wet bloom period. Option B: Nova, Elite, or Rubigan + mancozeb (PM, BR, Ph, 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. (Note: This is generally the situation in Indiana) Nova and Elite provide postinfection activity against BR if significant unprotected infection periods occurred within the previous 4 days. Rubigan is (was?) cheaper than Nova or Elite, but doesn't provide the same BR control; however, mancozeb should be adequate if postinfection control isn't required. Option C: Mancozeb + sulfur (PM, BR, Ph, DM). Cheap and reasonably effective but not the strongest choice at a time when the strongest choice is most justified.

BLOOM. Rovral or Vangard (or Elevate in Indiana) 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 Ph (rachis and fruit**)**. Same considerations and options as detailed under IMMEDIATE PREBLOOM. Juice grape growers (and Indiana growers under our Sec. 24 Special Local Needs label) can substitute Ziram (very good BR and Ph, only fair DM) for mancozeb if necessary.

SECOND POSTBLOOM. BR control still may be needed if disease was present last year and a spray is strongly recommended if berry infections are evident this year, particularly if weather is wet. Fruit are less susceptible to PM now, but *vinifera* varieties (and susceptible hybrids?) still need PM protection, particularly on varieties susceptible to PM. Avoid SI fungicides if more than a little PM is easily visible. Ph 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. Option A: Abound, Sovran, or Flint (PM, BR, some Ph; also, variable DM [Abound, excellent; Sovran, fair to good; Flint, poor to fair]. Provides good residual control of the listed diseases if used now. May provide some Botrytis control as bunch closure approaches. Option B: Nova or Elite (BR, PM) + captan or mancozeb (66-day preharvest restriction) if DM and Ph control is needed. Option C: Rubigan (PM) + either (a) mancozeb (if more than 66 days before harvest) for BR, DM, and Ph; or (b) captan (DM, Ph, some BR); or (c) ziram (BR, Ph, some DM). Option D: Sulfur (PM) + either (a) mancozeb (if still allowed) or (b) captan. In most

years, lessening disease pressure makes this economical option increasingly practical as the season progresses. Option E: Copper + lime (PM, DM). Adequate for Concords, not enough PM control for *vinifera* and susceptible hybrid varieties.



Crop Load Adjustment in Grapes: Annual pruning of grapes is necessary to balance the amount of fruit production with the amount of vegetative growth to insure high yields of high quality fruit. Pruning severity is based on the strategy of 'balanced pruning' which dictates the correct number of buds to retain, or 'crop load' which determines the amount of fruit to retain based on the vine's pruning weight. Many growers prune vines lightly during the early spring to assure adequate bud number in case of damage by a late frost or freeze. Now that the danger of frost and freeze is over (we hope) and grape shoots are growing rapidly, growers can go back through the vineyard and adjust the crop load by removing shoots and clusters. New shoots are easily broken off by hand without the need for pruners. Growers should pay close attention to the fruitfulness of shoots. Shoots from primary buds have full fruiting potential, whereas secondary buds and latent buds on older wood produce shoots with little or no fruiting potential, depending on cultivar. Ordinarily, all secondary shoots and shoots from older wood should be removed. However, on early budding varieties that suffered frost damage this year, the secondary shoots should probably be retained. Shoots should be spaced evenly along the trellis if possible and at a density of about six shoots per foot of row. Cluster thinning (removing one or more of the clusters on each shoot) done before bloom results in the least yield reduction because the remaining cluster(s) generally set more berries. However, on tight clustered cultivars, cluster thinning after bloom can result in looser, less rot susceptible clusters. (Bordelon)

Leafhoppers: The two main species of leafhoppers affecting tree fruits are the white apple leafhopper and the potato leafhopper. The white apple leafhopper overwinters as a egg and starts hatching around pink. The nymphs feed with their sucking mouthparts on the underside of the leaves. The potato leafhopper doesn't overwinter here and must be blown up from the southern US each spring. You can tell the two species apart because the white apple leafhopper nymph crawls straight forward and the potato leafhopper nymph crawls sideways.

I have observed moderate populations of white apple leafhoppers in apples. Potato leafhoppers have arrived from the south and may be present in apples, although I have not seen any yet. Treatment is needed if you find more than an average of 1 leafhopper nymph per leaf. Provado will provide excellent control of leafhoppers without killing the predator mites. (Foster)

Eastern Flower Thrips: As we predicted several weeks ago, the eastern flower thrips is present and feeding on strawberry flowers. We don't have a real threshold for thrips, but we suggest that growers spray if they have an average of more than 2 to 10 thrips per blossom. Brigade, Danitol, Thiodan and Lorsban will provide good control, although Lorsban has a 21 day preharvest interval. (Foster and Bordelon)

Wine Industry Input Needed: Cornell University is soliciting input on its plans for winegrape variety releases. Most growers and wineries in the Midwest recognize the importance of the New York grape breeding program to the future of the industry. The success of recent releases such as Chardonel and Traminette are testaments to the

value of this program. Public fruit breeding programs in the U.S. (primarily at Land Grant institutions) generally lack the level of monetary support that is necessary to maintain active programs. State and Federal support has dwindled. Many have opted to patent varieties in order to help support the program. However, the small amount of royalty collected on each plant does not provide enough additional support. Cornell Research Foundation is exploring options to the typical plant patent and is soliciting input from the industry. Below is a summary of the planned variety releases and proposed royalty program. I urge Midwest growers to voice their opinion about these plans. If you do not want to contact the Cornell staff directly, I'll be happy to pass your opinions on to them. Let me know what you think. (Bordelon)

From Cornell University:
There are four numbered selections that are presently being considered for release.
White wine grapes:
NY62.122.1 – produces an excellent, intensely flavored, high quality muscat wine. Own rooted vines are small and therefore grafting is recommended.
Red wine grapes:
NY70.0890.10 produces a deep red colored, medium bodied wine. Best wine quality is achieved when fruit is only lightly extracted: it shows nice cherry and blackberry fruit. When over-extracted American native flavors can appear. The vine is vigorous, healthy, and very productive.
NY73.0136.17 produces an excellent full-bodied, well-balanced wine with complete tannin structure, and distinct pepper and red fruit aromas. Vines are not as vigorous as NY70.0809.10 and downy mildew may occasionally require control.
GR7 is a highly vigorous, productive, and cold hardy vine that makes dark red wines with a classical hybrid aroma. It has better tannin structure, and better acidity and pH balance than either Baco noir or DeChaunac. It is best made as a light (not heavily extracted) wine. Use hot pressing, short skin contact time or some carbonic maceration.

Release Plans – we believe that GR7 should be released separately from the other three selections. It has been in distribution for a much longer period of time and is already being used as a component of several successful commercial wines.

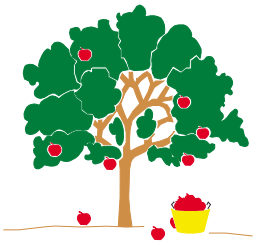
1. GR7 will be officially released in September 2002. The date allows time for nurseries to propagate in advance of release and have vines available for sales in 2001 and 2002. It also allows time to prepare release documents and bulletins.
2. Release for NY62.0122.01, NY70.0809.10, and NY73.0136.17 will be September 2006. This will allow commercially produced wine to be available in time to take advantage of release time publicity. Cornell University fully commits to this release date but reserves the right to NOT release any grape later determined to have a flaw which would be significant enough to cause harm to the industry. Flaws might be found in either viticultural or enological traits. While this is very unlikely to occur for these relatively well tested selections, it is still a possibility, and if flaws of concern are found, it would not serve the interest of either the industry or Cornell to proceed with the release.
3. We propose a new mechanism for the commercialization of these four selections. In the past, we have patented most grape varieties and licensed nurseries to sell vines with a per-vine royalty returned to Cornell. Despite the considerable expense and effort of this approach, financial returns to the program have been small. For these upcoming releases, we propose to use traditional property contracts for licensing purposes. The new varieties will remain the property of Cornell University and Cornell Research Foundation. CRF will grant, as always, licenses to nurseries to propagate and sell vines to growers with the small per vine royalty paid by the nursery to Cornell. Growers will enter into a simple bailment contract with CRF to propagate and grow vines as well as produce and sell fruit to wine producers. These contracts will allow the grower to propagate and grow as many vines as they wish but will not allow distribution of the vines or cuttings to others. CRF will have no say in any management practices regarding the vines. Aside from restricting distribution to others, the only other obligation of the growers to CRF will be to pay a royalty on sales of grapes produced from Cornell vines.
4. Royalties: In the past, under Cornell's plant patent licenses, nurseries have paid to CRF either $0.20 or $0.30 per vine sold. Sales to growers within NY state have been assessed a reduced royalty, though the nurseries have not always charged NY growers less. We plan to continue to charge this royalty on vine sales at approximately the same rate as in the past. Regarding royalty on

grapes, we have discussed various alternatives with nurseries, growers, and winemakers and have tentatively settled on a percentage of the sale price per ton. A 5% royalty has been considered as the working model but this is not firm and we look to the industry for feedback. In the formulation of this royalty mechanism, we want to build in preference to the New York industry that has done so much to support the program.
5. This royalty mechanism will require good cooperation by all participants and should generate significantly more research funding for the grape development program. We will evaluate the success of this system with the GR7 release and make adjustments as necessary for the release of the other three varieties. Cornell reserves the right to consider a royalty on wine in the future, but would only implement such a plan in a phased-in approach and only after significantly more analysis and input from industry. As with all commercial releases of Cornell varieties, Cornell Research Foundation will administer the plan that we eventually implement. Aside from a modest administrative fee of CRF, the funds will be returned directly to the research programs, representing a much higher rate of return than under the former mechanism.

There are a number of details to be worked out in this plan. Your input is most welcome and is, in fact, necessary. We have asked our two cooperating nurseries (Grafted Grapevine Nursery, Clifton Springs and Double A Vineyards, Fredonia, see http://www.nysaes.cornell.edu/hort/faculty/reisch/cultivars.html for more information) to begin distribution of the above four selections without the previous cap of 100 vines per grower. Meanwhile, a number of specific items must be considered:
1. Mechanism by which royalty based on tonnage can be accurately assessed and collected.
2. Period of collection – start and end dates. For how long is it reasonable to collect a royalty on grapes produced?
3. Plans for royalty based on production. Flat percentage? Reduced percentage after first 50 tons? Increased percentage after first 50 tons? What percentage is reasonable and fair? How do we determine a royalty rate for wineries growing their own grapes?
4. Acceptance of the new release plan by the industry in NY as well as out of state.

Comments may be sent to:

Bruce Reisch
New York State Agricultural Experiment Station
Geneva, NY 14456
birl@cornell.edu
fax: 315-787-2216
phone: 315-787-2239



Return Bloom fund supports NE-183: With help from the Return Bloom Fund, we are testing a range of new apple varieties, for their field performance, resistance to pest and diseases, and fruit quality. This is part of a cooperative project in 22 states and 3 Canadian provinces. The cooperative project is NE-183 and is to variety testing what NC-140 is to rootstock evaluation. Our planting at the Meigs farm is in its third season and includes the following varieties: Ambrosia, BC 8S-26-50, Chinook, Coop 29, Coop 39, CQR10T17, CQR12T50, Delblush, Hampshire, Jubilee Fuji, NJ 109, NJ 90, NY 75907-49, NY 75907-72, Pink Lady, Pinova, Runkel, Silken, and Zestar. Golden Delicious is included as a standard commercial variety. Some of these varieties you may know, others will be new to you. Some of these varieties may turn out to be dogs in Indiana, while others may have a place in your operation. This year will be the first year we will have fruited these trees, and over the next several years we will gather a lot of information on the suitability of these varieties for Indiana. Your support of the Return Bloom Fund paid for these custom propagated trees and also for posts used as tree supports.

NE-183 wins award from Secretary of Agriculture: The NE-183 cultivar evaluation group of cooperators from 22 states recently received a 2001 Secretary Honor Award for excellence in multi-state research. This follows the 2000-NERA Award won by the group last year. As Chairman of NE-183, Peter Hirst will be in Washington DC on June 4 to accept the award from the Secretary of Agriculture on behalf of all cooperators.

IHS Summer Meeting: The summer meeting of the Indiana Hort. Society will be held on Wednesday, 27 June with a roundtable discussion the previous evening (June 26). Our host this year is Sarah Brown of The Apple Works, Trafalgar, IN. Those that have visited this operation previously will already be aware that Sarah runs a first class operation. Her attention to detail, especially regarding tree management, sets a fine example and one that many of us can learn from. The Apple Works was also the first in the state to install UV cider pasteurization and a chlorine dioxide wash. Sarah's husband Rick is the engineer in the family and will be on hand to explain and demonstrate this equipment. In addition to the round table discussion on the evening of Tuesday 26 June, we will also have a slide show presentation of the New Zealand fruit tour that took place a couple of months ago. Write the dates on your calendar now and plan to attend. Full details will be in the next issue of FFF and also in a Hort. Society newsletter.

Correction: In the last issue we included an article about herbicides for newly planted strawberries. It has come to our attention that one of the studies was misquoted. Kathy Demchak at Penn State noted that their best herbicide treatment was a combination of Devrinol 50 WP at 4 lbs/A at planting, Sinbar 80WP at 2 oz./A on June 11, hand weeding on July 16, then Sinbar 80WP again at 2 oz./A on July 19 and Devrinol 50 WP at 4 lbs/A on September 2 (after sufficient runner plants had rooted). Percent weed cover in these plots was less than 10% which was not different from the hand weeded control plots. In the previous article we incorrectly said that the treatment included Devrinol applied on July 19. There is likely a risk that Devrinol applied at that time would adversely affect runner plant rooting. We apologize for the mistake. (Bordelon)

Email Glitch: Last issue we had a "minor" email problem that resulted in some people on the mailing list getting multiple copies. We apologize for the inconvenience. We haven't been able to determine exactly what went wrong, but we know that a certain address was returning the message and that was causing the listserve to send the message again. That's apparently why some of you got only one message and others, like me, received over 70 copies. (Bordelon)

Upcoming Meetings:

June 5 - Twilight fruit meeting, East Indiana Fruitgrowers Society. Adsit Orchard (Northern Henry County). 6.00 pm.. Adsit Orchard is located at 641 East Henry County Road 950 North. Contact Harold Brown (phone 765-747-7732) or Peter Hirst (phone 765-494-1323)

June 26-27 - Indiana Horticultural Society Summer Meeting. The Apple Works, Trafalgar, IN. Full details including a map will be in the next issue of Facts for Fancy Fruit. For further information contact Peter Hirst or Dick Hayden (dhayden@hort.purdue.edu).

Department of Horticulture&
Landscape Architecture
Purdue University
1165 Horticulture Bldg.
West Lafayette, IN 47907-1165

Bruce Bordelon
1165 Dept. of Horticulture &
Landscape Architecture
Purdue University
West Lafayette, IN 47907-1165
765/494-1301
e-mail: bordelon@hort.purdue.edu

Peter Hirst
1165 Dept. of Horticulture &
Landscape Architecture
Purdue University
West Lafayette, IN 47907-1165
765/494-1323
e-mail: hirst@hort.purdue.edu

Paul Pecknold
1155 Dept. of Botany & Plant Path.
Purdue University
West Lafayette, IN 47907-1155
765/494-4628
e-mail: Pecknold@btny.purdue.edu

Rick Foster
1158 Dept. of Entomology
Purdue University
West Lafayette, IN 47907-1158
765/494-9572
e-mail: Rick_Foster@entm.purdue.edu