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Crop Conditions: Hot, dry conditions have been the rule over the past couple of weeks. Blueberry harvest continues in northern and central areas. The crop is excellent, but heat and lack of rain are concentrating harvest. Bramble harvest is winding down in southern areas. Blackberries are still being picked in central areas, and fall bearing raspberries are blooming. Peach harvest has begun in central areas and has been underway for about a month in southern parts of the state. Reports are of excellent crops with large fruit size. Let's hope the rest of the season follows in a similar fashion.

Apple Disease Management: Wet conditions result in high disease pressure from apple scab, sooty blotch, summer rots, flyspeck, brown rot of peach, plum and cherry, strawberry leafspot, grape black rot and the list goes on. Under such conditions sprays need to be applied on a tight schedule as long as wet weather prevails. However, as we move into drier summer months the disease pressure lessens and protectant sprays do not need to be applied on such a tight schedule. BUT, this does NOT mean you can stop applying fungicides altogether OR stretch the interval between sprays to 4 or more weeks. Remember that most fungicides are protectant, not curative, and need to be in place before infection occurs, not after. This means applying fungicides before it rains, not after. By all means, if dry conditions persist in your area, use the longest interval between sprays as recommended on the label, but for dependable disease control, maintain a regular fungicide spray program up to the preharvest restriction date.

Also, many summer diseases can further be reduced through IPM strategies that lower humidity and promote rapid drying. These include keeping grass mowed during summer and keeping trees well pruned. Tree spacing within and between rows should allow air movement between all trees. Removing adjacent woods or cutting breaks in hedgerows will also help improve airflow in the orchard. Of course it goes

without saying (so I'll say it) that all the above suggestions are pretty much a waste of time if **good sanitation** measures are not strictly followed. (Pecknold)

Apple Black Rot and White Rot: Branches which show bright yellow leaves that eventually turn brown and die are likely candidates for having black rot or white rot cankers. All such yellow "flags" should be pruned out completely several inches below any signs of obvious cankering or discolored wood as soon as they appear. Removing dead wood, mummies and cankers from the trees is critical in the management of these diseases. Current-season prunings should be removed from the orchard or chopped with a flail mower. Prunings piled on the orchard perimeter (let alone within the orchard!!) can serve as important disease sources...both this year and next! Act now to get rid of such sources. (Pecknold)

Asian Lady Beetle Problem: The Multicolored Asian Lady Beetles or "Lady Bugs" as most of us know them have become an indirect pest of grapes. There is a good article in the May-June issue of Wine East magazine. In the past couple of years, we have found them congregating on certain grapes at or near harvest and they tend to stay in the clusters through the crush and pressing operation, leading to a distinctive

“LB” odor and flavor to the wine. While a few tasters have actually preferred this herbaceous odor and flavor, most of us have learned to dislike it considerably. Indiana is not alone with this problem. Ohio has also experienced it and they are coordinating research efforts to address the problem. The problem also exists in the wine regions of Ontario. We have already done a few small experiments and have several more planned for this year. There are many unanswered questions as to the extent of the problem as well as possible solutions.

We need growers and winemakers to be our eyes and ear...noses this year. We would like to know when you notice significant numbers of Asian Lady Beetles showing up in your vineyards, what varieties they seem most attracted to, and at harvest, if they are present in harvested clusters. We'll be calling and visiting as many vineyards as possible late this summer and into fall to gather information about this pest. (Bordelon)

Tissue Analysis of Grapes and Small Fruits: Plant nutritional status is important for all phases of plant growth and has a direct effect on vigor, fruitfulness, cold hardiness, and other factors. Tissue analysis is the most reliable means of determining plant nutritional status. Combined with soil testing, tissue analysis can help pinpoint the source of problems and determine what measures may be needed to ensure proper nutrition of the crop. Tissue analysis samples should be collected at the appropriate time to give the most meaningful results. For strawberry, sample the first fully expanded leaves after renovation, usually in mid to late July. For brambles, sample leaves on non-fruiting canes (primocanes) between August 1 and 20. For blueberries sample leaves during the first week of harvest. For grapes, samples should be taken about 70 days after full bloom, usually early to mid August. Samples should be adequate in size. Collect 30-60 leaves for strawberries, brambles, and blueberries, and 100 leaf petioles for grapes (for grapes submit only the leaf petiole, or stem, for analysis, discard the leaf blade). Collect samples to represent the entire field, not just from a few plants. Sample different cultivars separately. If specific problems exist, collect separate samples from both normal and problematic areas of the planting.

There are several private companies and a few universities that provide tissue analysis. Your county extension office has a list of the ACP Certified plant and soil analysis labs in Indiana. The Midwest Small Fruit Pest Management Handbook has a chapter on tissue analysis and fertilizer recommendations. It is available for \$6.00 from the Purdue Media Distribution Center at 1-888-EXT-INFO (1-888-398-4636) or on line at <http://www.ag.ohio-state.edu/~sfgnet/> (Bordelon)

Botrytis Bunch Rot: Many grape varieties are now at

or approaching ‘veraison’, a stage when berries begin to change color, soften, increase in sugar content... in other words “ripen.” This is an important time to apply a fungicide to protect against Botrytis bunch. Botrytis is particularly severe on tight-clustered French hybrids, such as Vignoles and Seyval, and most vinifera varieties, especially Pinot noir, Riesling, and Chardonnay. Proper timing and thorough spray coverage are essential for good control. Direct the spray toward the fruit zone, and use a minimum of 100 gal/A of water. Removal of leaves around clusters before bunch closing has been shown to reduce losses caused by Botrytis.

Materials: Three products are registered specifically for control of Botrytis. It is important to realize that these fungicides are effective ONLY against Botrytis. They provide no protection against black rot, bitter rot, the mildews, etc. It is also important to remember that these fungicides are prone to resistance development in the pathogen population, so they should be used carefully. The strobilurins (Abound, Sovran, Flint) have shown some activity against Botrytis, but are not as effective as the true botrycides.

Rovral 50 WP is registered for use at the rate of 1.5 to 2 lb./A. Include a spreader-sticker, especially at the 1.5 lb. rate. Do not apply within 7 days of harvest.

Vanguard 75 WG is registered for use at 10 oz./A when used alone, or at 5 to 10 oz./A when used in a tank mix. No more than 20 oz. of Vanguard can be applied per acre per season and it cannot be applied within 7 days of harvest. Vanguard is a system fungicide that resists wash-off and has shown limited (48 hr) post infection activity against other diseases on other crops. It is classified as a ‘reduced risk’ fungicide by EPA due to its favorable environmental and toxicological properties.

Elevate 50 WG may be applied at 1 lb. per acre. No more than 3 lbs. of Elevate may be applied per acre per season. Elevate can be applied up to and including the day of harvest (0 day PHI).

NOTE: Growers in Europe and Canada have experienced loss of disease control due to the development of fungicide resistance when more than 3 sprays/year of Rovral were applied over a period of 3-5 years. Vanguard and Elevate are also at risk for fungicide resistance development. It is therefore strongly recommended that Rovral, Elevate, and Vanguard use be limited to a maximum of 3 applications per year to reduce the probability of developing strains of Botrytis that are resistant to these materials. In addition, growers should consider alternating applications of Rovral, Elevate, and Vanguard during the growing season

(Bordelon)

Grape Bitter Rot: Bitter rot is a common problem in southern Indiana, especially during wet years. Unlike black rot, which does not infect berries once they are past 5-8% sugar content (veraison), bitter rot attacks only mature berries. Both diseases result in black, shriveled (mummified) fruit, and some growers mistake bitter rot for black rot. A “rule of thumb” is that if a rot resembling black rot develops on mature berries (8% sugar or above), the cause is probably not black rot. This late season rot is likely to be bitter rot. The new systemic fungicides (Nova, Bayleton, and Rubigan) are NOT effective against bitter rot. If bitter rot is a problem, pre-harvest applications of Captan may be beneficial. However, infection likely starts at or near bloom, so good coverage in the pre-bloom and 1st postbloom spray is critical. (Bordelon)

Apple Cider Update: Last week I attended a HACCP workshop in Indianapolis run by Rich Linton and Les Bourquin. They did an excellent job in covering not only the principles of HACCP, but also the practical steps in developing a HACCP plan. I think the folks who attended left feeling that it would mean some work but was definitely achievable. For virtually all cider makers in Indiana, you have until January 2004 to comply with the new federal HACCP regulations. Until then you need to incorporate the warning label into your principal display label.

During the workshop I became aware of a provision or loophole in the law that I think will be of particular interest to state cider producers. Providing you sell all your cider retail directly to the consumer and do not sell any wholesale (to a supermarket or another farm market), then you can continue with the warning label past 2004 and will not have to institute a HACCP plan. Of course this is the law as it stands now, and it could be changed at any point subject to public comment periods, etc. (Hirst)

Abundant Harvest of Indiana: Back in April, we wrote an article in FFF on the Abundant Harvest of Indiana organization. As harvest season starts, we'd like to remind you of this group and provide some contact information. Abundant Harvest of Indiana (AHI) is a non-profit organization, based in Hancock County, devoted to increasing the quantity and quality of produce donated to Indiana food banks. Abundant Harvest of Indiana compensates Indiana produce growers that share the produce they normally till under each year with their local food bank. In exchange for the gracious donation of fresh produce by growers, AHI reimburses them for the cost of harvesting, grading, washing, packing and delivering the produce to their local food bank. If you have surplus produce that you would like to contribute to Abundant Harvest of Indiana, please contact the director, Stanley Parker: Phone 317-

861-8146, Fax 317-861-8378

No Plum Pox Found in Indiana Yet: This year we are again sampling peach orchards in the state to check for plum pox virus (actually we're testing for antibodies to the virus if you want to be picky). Last year we collected 1000 samples, all of which tested negative. This year we have collected over 600 samples so far and again they have all tested negative. Let's hope the tests continue to test negative. For peach growers across the state, negative tests are positive news! (Hirst)

Wine Grape Workshop: The Purdue Wine Grape Team will hold a workshop at Huber Orchard and Winery in Starlight on Monday August 5 from 9:00 am (Indianapolis time) until about 2 pm. Lunch will be included. Following the workshop the Indiana Winegrower's Guild will hold its summer meeting. The meeting will conclude with dinner and wine social. The workshop will include vineyard tours and a discussion of harvest parameters, hands-on wine laboratory equipment demonstrations, and a discussion of holiday marketing ideas. For complete information visit www.indianawines.org and click on Calendar. Please RSVP so we can make lunch and dinner arrangements to Jill Blume, 765-494-1749 or email blume@purdue.edu.

Upcoming Meetings:

August 5 Purdue Wine Grape Workshop and Indiana Winegrower's Guild summer meeting. Huber Orchard and Winery, Starlight. See details above.

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