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Crop Conditions: Blueberry harvest is getting underway in the main production areas of North Central Indiana. Japanese beetles have emerged in force and are attacking the fruit. Bramble harvest continues in all areas of the state. Japanese beetles and anthracnose are the main problems at this time. Strawberry renovation should be completed as soon as possible. Hail has been public enemy number one for fruitgrowers this year. One grower I know of has suffered damage in four different hail events this year. Hail fell on parts of the state again this past Sunday.

A Fantastic Summer Meeting: Kudos to Sarah and Rick Brown for hosting one of the best and well attended Hort. Society summer meetings in recent years. Those who attended saw that I wasn't exaggerating in describing The Apple Works as "one of the best managed orchards in the state." I heard from a number of folks who were inspired by seeing how it's supposed to be done and giving them something to aim for. Sarah and Rick, we thank you and your staff for the time and dedication in making the arrangements, which were flawless. The apple dumplings were also pretty hard to fault!! (Hirst)

Necrotic Leaf Blotch On Golden: Generally we first start noticing necrotic leaf blotch (NLB) on Golden Delicious in late June or July, when the weather becomes hot and sticky. Symptoms of NLB are leaf yellowing and drop; often patches of brown blotches develop along with leaf yellowing. Symptoms develop suddenly, almost overnight, and in waves, generally from June through August. The cause of NLB is not known; however, the disorder is thought to be related to air temperature,

light intensity and soil moisture. It is most severe when a cool, rainy period of 4 - 5 days precedes several hot, sunny days. Although it appears NLB is not fungal caused, the disease is reduced when ziram is included in the cover sprays. (Pecknold)

Late Season Grape Disease Control: The first of July signals the shift from early season to late season disease control strategy in grapes. From now until harvest the spray interval can generally be extended to 14 to 21 days (depending on rainfall) and growers must change fungicides. On most grape cultivars the last application of mancozeb is recommended two weeks post-bloom because it has a 66 day pre-harvest interval. One of the other protectant fungicides must be substituted for mancozeb for the remainder of the season. Materials currently available for late season disease control are captan, ferbam, ziram, and copper. Ziram has been granted a 24c label (Special Local Needs) for Indiana that allows its use during the late season (21 day PHI). The protectant should be combined with one of the sterol inhibitors (SIs) such as Nova, Bayleton,

Rubigan, etc. Another option is one of the new strobilurin products such as Abound, Flint, or Sovran. However, these may be a better choice for the bloom and post bloom sprays because of economics.

We are approaching bunch closing so it is time to make an application for Botrytis bunch rot control on varieties that are susceptible such as tight-clustered hybrids (Vignoles, Seyval) and most vinifera, especially Riesling and Pinot noir. Use either Rovral, Vangard, or Elevate and follow the guidelines on page 10 in the 2001 Indiana Commercial Small Fruit and Grape Spray Guide (ID-169). (Bordelon)

Japanese Beetles: Japanese beetles have emerged in southern and central areas. It's difficult to predict how much of a problem they will be this year, but they will likely be a problem on blueberries, brambles, and in new grape plantings. Though they seem to eat everything, Japanese beetles are particularly fond of grape and plum foliage, and blueberry, raspberry, and peach fruit. Scout often and apply an insecticide registered for your particular crop if damage is bad enough to warrant an insecticide application (the economic threshold is reached). Beetles can cause serious losses in blueberries and brambles by feeding on fruit. Fruit are damaged, but not completely consumed by beetles in a single feeding. The next feeding the beetles select clean, undamaged fruit, so that a single adult may damage dozens of berries in its lifetime. Multiply that by thousands of beetles and the losses can become significant. One problem with applying pesticides near harvest is the potential for visible residue on the fruit, especially with dark colored fruit such as blueberries. Growers may want to consider using formulations of insecticides that do not leave as much visible residue as wettable powder formulations (e.g. Sevin XLR). The pre-harvest interval (PHI) is another consideration when applying pesticides close to harvest. For Sevin, the PHI on small fruits is 7 days. Imidan has a 3 day PHI and a SLN (Section 24) registration for blueberries in Indiana that allows up to 5 applications. Though Imidan isn't quite as effective against Japanese beetles as Sevin, it seems to persist a little longer and some growers claim it reduces bird damage. Imidan is not labeled for use on brambles, so raspberry and blackberry growers will have to rely on Sevin or malathion. During

harvest, Sevin is not a viable option because of its 7 day PHI. Malathion is less effective, but has a 1 day PHI. Some formulations of malathion may have a 3 day PHI, so be sure to check and follow the instructions on the label. Check the small fruit spray guide for a complete list of registered insecticides, their PHIs and relative effectiveness. (Bordelon)

Obliquebanded Leafrollers: For the second year in a row, we have caught obliquebanded leafroller moths in pheromone traps in northern Indiana. This insect has been a serious pest in New York, Michigan, and other apple growing regions, but has not been a problem here in Indiana. Last season, I received some samples of damaged apples at harvest from northern Indiana that appeared to have been damaged by obliquebanded leafrollers. Because we did not see the insects, I can't say for sure what insect caused the damage, but obliquebanded leafrollers are the likely culprit.

The male moths (the ones you will catch in pheromone traps) have a wingspan of about 3/4 inch. The moths have bands on their wings of various colors, ranging from tan to chocolate brown. The larvae get to be around 1 inch long with yellowish green bodies. The heads are dark brown or black. They overwinter as larvae and will feed on both fruit and leaves. The damage is often around the stem end of the apple, with deep gouges in the fruit. Some of these fruit will fall off the tree, but the more mature fruit will remain. The adults begin flying around June 10 and continue to fly through August. The first generation larvae prefer to feed on water sprouts but will move to fruit. The second-generation adults fly from early August until late September. The larvae from this generation can also feed on leaves or fruit. This is the generation that will overwinter. If you have extension publications from Michigan or New York, they will have pictures of the insects and damage. You can also find pictures on Michigan State University and Cornell University web sites.

One of the primary reasons that obliquebanded leafrollers are a serious concern is that in many areas they are resistant to most of the organophosphate insecticides, including Guthion and Imidan. As a result, your regular spray program may not control these pests. We do not know yet if the obliquebanded leafrollers in Indiana are resistant to the OPs or not.

Control is best achieved by killing the overwintering generation at pink or petal fall, but it is also important to control the later generations. Growers in the southern two thirds of Indiana should not worry about obliquebanded leafrollers for now. I would recommend that growers in the northern part of Indiana stick with their normal spray schedule until we determine the resistance situation. Make sure that you do not skip sprays late in the season when you get busy harvesting earlier varieties. Be sure to adhere to pre-harvest intervals (PHIs).

If you are monitoring for obliquebanded leafrollers with pheromone traps and think you have caught some, please let me know or send me the trap. If you see damage at harvest that you think might be from obliquebanded leafrollers, again, either let me know or send me some samples. It would also be helpful if you let me know what your spray schedule has been. Obliquebanded leafrollers can be a serious problem and may cause some of us to change our spray programs, but we have the tools we need to control it even if they are resistant to the OPs. (Foster)

Doors Closed at Stark Bros. Nursery: As of June 29, Stark Brothers Nursery, MO, ceased operations. I know many growers in the state have purchased trees from Stark's in the past and will be sorry to hear of their closing. Apparently they are looking for a buyer, and if one emerges operations may be continued. (Hirst)

Brown Rot Of Stone Fruits: As peach harvest approaches, be aware of the need for sprays to control brown rot. Warm, wet, humid weather is particularly favorable for brown rot. Pre-harvest sprays for brown rot should be started no later than 3 weeks before harvest or when fruit begins to color. For information on fungicides and timing of spray applications see ID-168, "2001 Indiana Commercial Tree Fruit Spray Guide". In addition to maintaining sprays for brown rot, also maintain sprays for insect pests that may injure fruit and allow brown rot to gain a foothold. Use care in the picking and handling of fruit to avoid punctures and skin abrasions. Any break in the skin of the fruit enables brown rot to more easily cause infection. (Pecknold)

Indiana Winegrower's Guild Summer Meeting:

The IWG will hold its summer meeting at Butler Winery and Vineyards in Bloomington on Saturday July 14. The board of directors will meet at 12:30 pm and the general membership will meet at 3:00 pm. Dinner will be held afterward at a cost of \$10 per person. There is an important issue to discuss during the business meeting (Bond to Bond bulk wine sales) so the board is urging all members to attend. The meeting is open to IWG members and anyone interested in Indiana grapes and wine. The meeting will be at Butler Vineyard, 6200 East Robinson Rd. Directions from SR 37: Exit SR 37 onto Sample Road (Wylie Floor Covering Warehouse is at the corner) follow Sample Rd. until it ends at Old 37. Go right for two miles. After the bridge, take the first left onto Robinson Rd. (up-hill). Travel 3.5 miles to the vineyard on the right. For a detailed map visit www.butlerwinery.com. Please RSVP to make dinner arrangements to 812-339-7233.

Upcoming Meetings:

July 10-13 - American Society for Enology and Viticulture – Eastern Section Annual conference and symposium "Space Age Winegrowing" Niagara-on-the-Lake, Ontario. Contact Ellen Harkness. 765-494-6704. email: harkness@foodsci.purdue.edu

July 14 - Indiana Winegrower's Guild Summer Meeting. Butler Winery and Vineyard. Bloomington, IN. Contact Jim Butler 812-339-7233 email: vineyard@bluemarble.net

July 25 - Southwest Michigan Research and Extension Center Viticulture Field Day and Steak Cookout. Benton Harbor, MI. Contact SWMREC at 616-944-1477 ext 200

July 23-25 - Developing and Implementing HACCP for Juice and Cider Industries. A workshop being held at Kellogg Biological Station, Hickory Corners, MI. Contact Peter Hirst for more details.

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