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Crop Conditions

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Despite the recent warm weather, we are still 100-200 growing degree days behind normal for the season. In general, fruit crops are in good condition at this time. Strawberry harvest is over in south and central areas and just ending in northern areas. Blueberry harvest has begun in the south and will begin soon in central and northern areas. Peach harvest is underway in southern areas with early-season varieties ripening in early July and mid-season varieties starting soon.

Apple Crops Across the Country Looking Good: At this stage it looks as though good apple crops will be the norm throughout the U.S. for the 1997-98 season. Washington is believed to down a little, at 85-95 million bushels of fresh market apples, because of poor bloom on Red Delicious. The Michigan crop is estimated at 25 million bushels which is about the average for the last 5 years, but up dramatically from last years crop of 17.3 million bushels. California is expected to produce 7.6 million bushels, down slightly on last year. Crops in New York and New England look to be about average or slightly above, while the Appalachian crop is about average except for Red Delicious which is down due to cold damage.

In much of Indiana crops look to be about average or slightly down, except for Red Delicious which really took a hit from the April freeze in some places. Not only did the cold kill flowers, it also caused some russet damage, with quite a lot of damage showing up in some places. The injury varied greatly from orchard to orchard, so some orchards still have great looking crops of Reds and other varieties.

Abound Registered For Use On Grapes and Peaches In Indiana: Abound fungicide has received full registration for use on grapes and peaches in Indiana.

Abound is in a new class of fungicides called the "strobilurin" group. The Strobilurin group of fungicides has a natural origin. They were discovered as naturally occurring compounds present in a mushroom (*Strobiluris* species). They are highly effective at low rates and are safer than other materials for the handler and the environment. Perhaps the best news to growers is that this new group of fungicides controls all four of the major groups of fungi that attack grapes. Most fungicides control only one or two groups of plant pathogenic fungi. The Strobilurin compounds have a new and novel mode of action for control of plant pathogenic fungi. They inhibit the electron transport system in plant pathogens, but not in other living entities. They are very effective and very selective. This new chemical can and should be used in a resistance management program. In other words, this fungicide should be used in an alternation program with other chemicals in a seasonal disease control program. For more information contact your local ag chemical dealer or Zeneca Ag Products at 800-759-2500.

Imidan Receives 24(c) Registration For Blueberries: Imidan 70-WP has received registration for special local need within Indiana for control of blueberry maggot, cranberry fruitworm, plum curculio and Japanese beetle.

This 24(c) label allows growers to make up to 5 applications per season at 1.33 lbs./acre/application. It may not be applied within 3 days of harvest. The grower must be in possession of the supplemental label at the time of application. For a copy of the label contact Gowan at 520-783-8844, Bruce Bordelon at 765-494-8212, or Rick Foster at 765-494-9572.

Japanese Beetles: Japanese beetles are once again active throughout the state. Unfortunately, we have no new answers for the problem. Repeated sprays with residual insecticides is about the only strategy that commercial growers have available to them. Japanese beetles can be killed with many insecticides, but plants will constantly be re-infested, so repeated applications are usually necessary. A couple of questions that I am often asked are “Do Japanese beetle traps work?” and “If I kill the grubs in my turf, will it reduce the number of adults that attack my plants next year?” First, research has shown that Japanese beetle traps will usually attract more beetles than they capture, resulting in increased damage where they are used. Therefore, we do not recommend the use of these traps. Second, killing the grubs in the soil will mean that there are fewer adults next year, but the reduction will be so small that you won’t notice. If everyone around you killed the grubs in all their turf areas, you might reduce the problem, but there is just too much grass around to treat all of it. Use insecticides to kill grubs in your turf areas if they are causing unacceptable damage to the turf, but not to reduce adult numbers next year. Be sure to follow all label directions when using insecticides to control either grubs or adults.

Growers should monitor for beetle damage and make insecticide applications to control feeding adults if damage reaches the economic threshold level. Most established fruit crops can withstand considerable foliage damage with minimal impact, but damage to fruit of blueberries and raspberries will quickly result in economic losses. See ID-168 and ID-169 for a complete list of insecticides registered for use in fruit crops and their relative effectiveness.

Pyramite As A Rescue Treatment: In the last issue of Facts for Fancy Fruit, I discussed Pyramite, a newly labeled acaricide that can be used as a rescue treatment to clean up existing European red mite problems. On June 27, I applied Pyramite at a rate of 4.4 oz. per acre to apples at the Hort Farm near West Lafayette. We sampled the European red mites on July 8. The mite populations were rather low, but it appears that Pyramite will provide the control we need. The Pyramite treated trees averaged 0.3 mites per leaf, compared to 0.2 mites per leaf for Savey and Apollo and 1.85 mites per leaf in the untreated trees. We will be testing Pyramite against a heavy mite population this week, but it appears that this new material will clean up existing mite problems.

Strawberry Renovation: Now that strawberry harvest season is over, growers should renovate their plantings. For best results, renovation should be started immediately after the harvest is completed to promote early runner formation which leads to high yield potential for next year. Renovation should be completed by mid-July in normal years, but since this is a late year with delayed harvest, growers should begin renovation immediately if not already started. The following steps describe renovation of commercial strawberry fields.

1. **Weed control:** Annual broadleaf weeds can be controlled with Formula 40 (2,4-D alkanolamine salts plus 2,4-D Triisopropanolamine salt (4 lbs./gal.) at 2 to 3 pts/acre in 25-50 gallons of water applied immediately after harvest. Formula 40 is the ONLY 2,4-D formulation labeled for use in strawberries. The other amine formulations such as Weedar 64 or Amine 4 only have 2,4-D dimethylamine salt and they are not labeled specifically for strawberries. Formula 40 is the ONLY legal phenoxy herbicide that can be applied to strawberries. Be extremely careful to avoid drift when applying 2,4-D. Even though the amine formulation is not highly volatile, it will volatilize and can cause damage to desirable plants a considerable distance from the site of application. Some damage to strawberries is also possible. Read and understand the label completely before applying Formula 40. If grasses are a problem, sethoxydim (Poast) will control annual and some perennial grasses. However, do not tank mix Poast and 2,4-D. See ID 169 and the product label for rates and especially for precautions.

2. **Mow** the old leaves off 3-5 days after 2,4-D application just above the crowns. Do not mow so low as to damage the crowns.

3. **Fertilize the planting.** A soil test will help determine phosphorus and potassium needs, but foliar analysis is a more reliable measure of plant nutrition. (See related article) Nitrogen should be applied at 25-60 lbs/acre, depending on vigor. It is more efficient to split nitrogen applications into two or three applications at regular intervals, rather than all at once. A good plan is to apply about half at renovation and half again in late August.

4. **Subsoil:** Where picker traffic has been heavy on wet soils, compaction may be severe. Subsoiling between rows will help to break up compacted layers and provide better infiltration of water. Subsoiling may be done later in the sequence if crop residue is a problem or if soils are too wet at this time.

5. **Narrow rows:** Reduce width of rows to a manageable width based on your row spacing, the aisle width desired, and the earliness of renovation. 12-18 inches is a desirable final row width to attain at the end of the season. This means that rows can be narrowed to as little as 6 inches during renovation. Use a roto-tiller or cultivator to achieve the reduction. Since more berries are produced at row edges than in the middle, narrow

rows are superior to wide rows. Narrow rows will give better sunlight penetration, better disease control, and better fruit quality.

6. **Cultivate:** Work in straw between rows and throw a small amount of soil over row by cultivation. Strawberry crowns continue development at the top, and new roots are initiated above old roots on the crown, so additional soil should be added to facilitate rooting. 1/2 - 1" of soil is sufficient. This also helps to cover straw in the row and provide a good rooting medium for the new runner plants.

7. **Weed control:** Pre-emergence weed control should begin immediately. Sinbar or Devrinol are suggested materials. See ID-169 and check the product labels carefully. Devrinol must be incorporated through irrigation or cultivation to be effective. Rate and timing of Sinbar application is critical. If regrowth has started at all, significant damage may result. Some varieties are more sensitive to Sinbar than others. If unsure, make a test application to a small area before treating the entire planting. Use up to 6 oz/acre/application and no more than 8 oz/acre/year total. Sinbar should not be used on soils with low organic matter, or on sensitive varieties like Guardian, Darrow, Tribute, Tristar and possibly Honeoye. If Sinbar gets onto strawberry leaves, irrigate to wash it off.

8. **Irrigate:** Water is needed for both activation of herbicides and for plant growth. Do not let plants go into stress. Ideally see that planting receives 1 to 1.5 inches of water per week from either rain or irrigation.

9. **Cultivate** to sweep runners into the row until plant stand is sufficient. Thereafter, or in any case after September, any runner plant not yet rooted is a weed and should be removed. Coulter wheels and/or cultivators will help to remove these excess plants in the aisles.

10. **Adequate moisture and fertility** during August and September will increase fruit bud formation and improve fruit yield for the coming year. Continue irrigation through this time period and fertilize if necessary. An additional 20-30 pounds of N per acre is suggested, depending on the vigor.

Tissue Analysis 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. Nitrogen is the most commonly needed nutrient for most fruit crops, however, potassium is often deficient as well, especially in grapes. Soil analysis can also be useful when used in conjunction with tissue analysis. However, soil analysis alone is not considered a reliable indicator of plant nutritional status. Soil samples can be taken at any time of the year and gives good indications of the amounts of specific nutrients in the soil and soil pH. 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 (primocanes) between August 1 and 20. For blueberries sample leaves during the first week of harvest, usually mid-July. 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 (submit only the leaf petiole or stem for analysis, discard the leaf). Collect samples to represent the entire field, not just from a few plants. Sample different cultivars separately. If specific problems exist, collect samples from both normal and problematic areas of the planting.

Nitrogen status is most difficult to determine by foliar analysis, because levels can vary significantly within a relatively short time frame. Samples taken specifically for nitrogen status of grapes should be collected at full bloom. Growers often rely on subjective estimates of relative growth and vigor to determine the nitrogen status of crops. There are several private companies and universities that provide tissue analysis. Your county extension office has a list of the ACP Certified plant and soil analysis labs in Indiana.

Reduction In Hard Cider Tax: In their version of the tax bill, the senate have inserted language to reduce the tax on hard cider. Rep. Phil English (R-Vt.) is leading the effort to encourage the house to accept the senate's language on this issue. A reduction in the tax would make hard cider more competitive with comparable beverages such as beer, and offers the potential to significantly increase the demand for apples. It is interesting to note that in some other countries around the world, hard cider is available on tap in bars as a refreshing alternative to beer, and is gaining in popularity. And as a question to ponder - if hard cider could capture 1% of the market that Budweiser has, how many thousands of tons of apples would be required to meet the demand?

Watercore In Fuji OK: The USDA has revised the U.S. Standards for Grades of Apples prompted by a request from the Northwest Horticultural Council (NHC). The revision exempts Fuji apples from being negatively scored for the presence of externally invisible watercore. In their request, the NHC stated that exports of Fuji were limited because watercore was scored as a defect. In fact in many countries, especially in Asia, watercore in Fuji is viewed as a desirable characteristic. The Canadian Food Inspection Agency also agreed to exempt Fuji apples from the watercore requirements in its Fresh Fruit and Vegetable regulations, effective June 6. These rulings pave the way for greater sales of U.S. produced Fuji into both the Asian and Canadian markets.

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. Elite, Indar and Orbit are relatively new sterol inhibitor fungicides that give excellent control of brown rot. For further information on fungicides and timing of spray applications see ID-168, "1997 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.

Necrotic Leaf Blotch On Goldens: 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.

Apple Fruit Rots: Wet weather is ideal for most fungal diseases. If summer rains are a frequent event in your area of the state expect an increase in sooty blotch and flyspeck, black rot, bot rot, bitter rot and any other rots that might have made their way into your orchard. Maintain a tight spray schedule if wet weather persists; see ID-168, "1997 Indiana Commercial Tree Fruit Spray Guide ", for suggested fungicides. As always, **good orchard sanitation** is a must for control of summer rot disease problems. Remove and destroy all dead and/or dying wood from your orchard...NOW; this means brush piles, old prunings on the orchard floor, dead trees, dead limbs in trees, etc.

E. coli Research: Following a request from the US Apple Association, Rep Jim Walsh (R-NY) agreed to press for including in the USDA appropriations \$300,000 to fund a research position to study apple-specific *E. coli* issues. At this point it is unclear how successful this will be.

Summer Hort Meeting A Success: The summer hort meeting was a great success, with about 100 people in attendance on the first day and around 60 on the second. We are grateful to our hosts, Dave Byers and his staff,

and the Beiersdorfers for their hospitality and sharing so freely of their experiences, both good and bad. We were fortunate to be able to visit 2 first-rate operations to observe, discuss and learn. Thanks also to Dick Hayden for all his effort with the arrangements. I think we are all happy to be working in an industry that is distinguished by a spirit of cooperation rather than competition.

Indiana Nut Growers Association To Host Northern Nut Growers Association 88th Annual Meeting: The INGA is hosting the 88th Annual NNGA meeting at Indiana Wesleyan University, Marion, Indiana from August 3 to 6, 1997. This promises to be a very good meeting for anyone interested in growing nuts or rare fruits. The meeting will feature paper presentations, a field trip to Ken Dooley's plantation, barbecue dinner and banquet. For a complete program, or more information about INGA or NNGA contact Charles Spurgeon (317-297-1326).

National Pesticide Hotline Now Open Seven Days a Week: The National Pesticide Telecommunications Network (NPTN), a toll-free EPA and Oregon State University-sponsored information service on a wide variety of pesticide-related subjects, has announced that it is extending its Monday-Friday service to Saturday and Sunday, beginning on June 28. NPTN has also announced that it can now be contacted through the World Wide Web at: <http://ace.orst.edu/info/nptn/>. The address by E-mail is: nptn@ace.orst.edu. The operating hours are 10 hours a day, 9:30 a.m. to 7:30 p.m. Eastern Time, 8:30 a.m. to 6:30 p.m. Central Time. The telephone number is 1-800-858-7378; fax: 1-541-737-0761. Information is available at no cost over the phone and Internet, and non-copyrighted materials can be mailed or faxed for a nominal fee. NPTN is located at Oregon State University, Corvallis. Open to the public and professionals, NPTN provides objective, science-based information about pesticide products, pesticide poisonings and emergencies, toxicology and environmental chemistry. It is staffed by highly qualified pesticide specialists who have the toxicology and environmental chemistry training necessary to help callers interpret and understand complex toxicology and environmental chemistry information about pesticides. (EPA Press Release, June 13, 1997) From Kentucky Fruit Facts July, 1997.

Coming Meetings/Events:

July 19 — Kentucky Vineyard Society Summer Vineyard Meeting, Ed and Louisa Cooke's Beachaven Vineyards & Winery, Clarksville, TN. See Program and directions below. Contact Eddie O'Daniel 502/426-5972.

July 20-22 — IDFTA summer tour, Washington State. Registration fee of \$100 due by July 11. Contact Peter Hirst (765-494-1323) for more details.

July 23 — Commercial Apple IPM Meeting, Robert Rudd's Orchard, East Bernstadt, KY (Laural county). Contact Jerry Brown 502/365-7541 ext.204 for additional information.

July 24 — Robinson Substation Field Day, Quicksand, KY. Contact Terry Jones 606/666-2438.

July 30 — Viticulture Field Day at Southwest Michigan Research and Extension Center, all day, pre-registration required. Contact Tom Zabadal (616-944-1477 x 206).

August 2-4 — North American Farmers' Direct Marketing Association 1997 Summer Market Tour, St. Louis, MO. This excellent tour includes visits to 18 fruit and vegetable markets primarily in Missouri. Contact Jane Eckert, 618/233-0513 for further information.

August 3-6 — 88th Annual Northern Nut Growers Association meeting. Indiana Wesleyan University, Marion, IN. Contact Charles Spurgeon (317-297-1326).

August 4-6 — Kentucky Vineyard Society Grape Vineyard and Winery Tour. See article above.

August 7 — Early Season Peach Showcase at Southwest Michigan Research and Extension Center. Self-guided tours any time 3:00 - 6:00 PM, group discussion 6:30 PM. Contact Bill Shane (616-944-1477 x 205)

August 21 — Mid Season Peach and Early Season Apple Showcase at Southwest Michigan Research and Extension Center. Self-guided tours any time 3:00 - 6:00 PM, group discussion 6:30 PM. Contact Bill Shane (616-944-1477 x 205)

August 21-22 — Apple Crop Outlook and Marketing Conference, US Apple Association, Chicago. Starts 2.00 pm on August 21 with regional break-out discussions of the USDA's 1997 apple crop forecast. An updated forecast will be presented to attendees starting at 8.00 am on August 22. Registration required. Contact: US Apple Association, 800-781-4443.

September 18 — Late Season Peach and Mid Season Apple Showcase at Southwest Michigan Research and Extension Center. Self-guided tours any time 3:00 - 6:00 PM, group discussion 6:30 PM. Contact Bill Shane (616-944-1477 x 205)

November 5 — Late Season Apple Showcase at Clarksville Horticultural Research Station. Contact Clarksville Station (616-693-2193)

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