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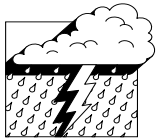
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FFF 98-08

June 17, 1998

Crop Conditions

Apple crops are looking good, although some over-thinning has been reported, probably due to chemical thinner applications being very effective in the ideal weather conditions we had at thinning time. Peaches are generally at the pit hardening stage, so we are beyond the point at which thinning will result in increased fruit size. Strawberry harvest is about over and blueberry and raspberry harvest is getting started. Frost occurred across northern Indiana on June 6 and severely damaged blueberries in some areas. Most damage occurred on older plantings on low lying muck soils. Temperature reached the mid to low 20s in some areas. Excessive rain is making it difficult for growers to apply pesticides in a timely manner.



Weather Notes: Over the last two weeks rainfall has been above normal statewide with the northern and southern thirds of

the state averaging 1 1/2 to 2 x normal for the period while central Indiana received 2 1/2 - 3 x normal rainfall. During this same time period temperatures have been on the cooler side. Temperature averages were 8 degrees below normal north, 5-7 degrees below normal central and 5-6 degrees below normal south. The 6 to 10 day outlook (June 18-22) for Indiana calls for below normal temperature and above normal precipitation. The 30 day outlook for June calls for normal temperature and above normal precipitation, and the 90 day outlook for June through August calls for above normal temperature and precipitation.

El Nino update: Sea surface temperatures have dropped from 3 degrees above normal to 3 degrees below normal over the last 30 days. This rapid shift in sea surface temperature is an indicator of the end of El Nino, and perhaps the start of La Nina. The impact of this change on the Eastern Corn Belt is

yet to be seen. -from the Purdue Crop & Weather Notes June 12.

Rain Rain Rain: Well it seems that my warnings in the last newsletter about watching that the soil in young orchards doesn't get too dry is totally irrelevant for the moment. Many places around the state recorded 3-5" of rain over the last week, with 6" reported in southern Tippecanoe County. Fruit tree photosynthesis generally decreases after 24 hours of flooding, so flooding even for a relatively short time can reduce growth. So especially in young orchards, try to ensure that standing water doesn't persist for more than a few days. - *Hirst*

Wet Weather and Diseases: With all the recent rains my thoughts go to apple scab, sooty blotch and flyspeck, black rot, bot rot, collar rot, the list never ends..... wet weather is what makes fruit diseases "happen". Don't cut rates, and don't extend spray intervals and you should be

okay. In many areas of the state the ground has been saturated with water over the past few weeks. This is a situation which encourages the development of crown rot and root rot on apple, peaches, cherries, brambles, blueberries, strawberries, etc.... you name it and the Phytophthora fungus gets it! Ridomil and Aliette are recommended to treat for Phytophthora diseases. Ridomil is applied as a drench, while Aliette is applied primarily as a foliar spray. Follow all label directions, at this time of year be especially aware of harvest restriction dates for brambles and other crops. Of course the best solution is to improve drainage in wet sites. -Pecknold



Managing Apple Summer

Diseases: Apple summer diseases are on the increase, NOW! The SI fungicides

(Nova, Rubigan, and Bayleton) do not provide good control of these diseases. Mancozeb and Polyram are excellent for control of summer diseases, however they can only be applied up to 77 days of harvest. After the 77 day to harvest restriction has passed captan and ziram remain our best options for summer cover sprays; they should be used at the full labeled rate and on a tight schedule if cool, wet summer weather prevails. We also suggest tank mixing with Topsin-M or Benlate if it turns into a 'sooty blotch/fly speck year'; however, Benlate and Topsin-M should be used sparingly (no more than once a month) to avoid harm to predator mites and lessen the possibility of the development of resistance. NOTE: Benlate, and to a lesser extent Topsin-M, are reported to cause 'scarf skin' if used within 40 days of petal fall. Scarf skin is a physiological condition in which the fruit surface develops a milky white or grayish appearance. Scarf skin has no effect on fruit quality or storage ability, but impairs the appearance and shine on a red apple.

Infection from summer diseases, especially sooty blotch and fly speck, 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 air flow 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

Mites: The cooler, wet weather has slowed down what was shaping up to be a serious mite year. Although the potential for problems have lessened, growers should be out checking their problem blocks every week or so. For the remainder of June, the threshold is 2.5 mites per leaf. -Foster

Apple Maggots: Apple maggot flies should be emerging from the soil now in areas where they are a problem. We normally consider apple maggots a problem primarily in the northern half of the state. You can monitor for apple maggots with yellow sticky boards or red sticky spheres hung in trees. You should continue to apply cover sprays to control apple maggots as long as you continue to catch flies in the traps, or until about late September. -Foster

Leafhoppers: Both white apple and potato leafhoppers are present in orchard throughout the state. Populations in most locations are low to moderate, but damaging populations are present in some places. Potato leafhoppers are relatively easy to control and are usually managing well with normal cover sprays. White apple leafhoppers are more difficult to control and often require an application of Provado, Thiodan, Carzol, Lannate, Dimethoate, or Sevin. You can tell the nymphs of potato leafhoppers because they usually run sideways on the leaf, while the nymphs of white apple leafhoppers usually go forward and back. -Foster

Japanese Beetles: With the cooler temperatures we have had the last few weeks, the development of Japanese beetles has slowed. As of June 15, in the Lafayette area Japanese beetles are in the adult stage but have not yet emerged from the soil to begin feeding. Areas further south may already be seeing beetle feeding. Everyone else should be watching for adult emergence in the near future. -Foster

Brambles-Orange Rust: Orange rust is now appearing on blackberries and black raspberries; it does not affect red and purple raspberries. The fungus grows systemically through the plant into the canes, crown, and roots. An infected plant remains infected throughout its life and will produce spores every year after it is infected. There are no controls for orange rust other than immediately removing the entire plant -roots and all- to prevent spread to healthy plants. Where spore pustules are already fully developed (which they are) and the spores are easily dislodged, bag the plants before removing them from the field. Diseased plants may appear to recover later because they produce symptomless leaves, but they are still infected. *-Pecknold*



HACCP and Cider: In the last edition of Facts for Fancy Fruit, I asked for feedback regarding a proposed HACCP workshop.

So far I haven't heard from anyone who would be interested in such a workshop, so we may postpone this and have something at the winter meeting. If you would like to have a workshop before this cider season, call me and let me know. Provided the regulations are finalized in their present form, it appears that if you make less than 40,000 gallons of cider per year, you will exempt from the HACCP and pasteurization requirements, but the warning labels will still be required. If you implement a HACCP program, then warning labels will not be required. *-Hirst*



Summer Meeting Reminder:

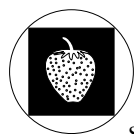
John and Debbie Beasley are all set for us to visit. The roundtable discussion is scheduled for the evening of Friday,

June 26 starting at 7.00 p.m. at the Hendricks County Community Center at the 4H Fairgrounds. Our tour of Beasleys Orchard will begin with registration at 8.00 am and the tour at 9.00 am on Saturday, June 27. Everyone is welcome to attend. For further information please call Karen Cooper at the Hort. Department at Purdue (765-494-1301). *- Hirst*



Vanguard WG Fungicide for Tree Fruits and Grapes:

A new fungicide, Vanguard WG, has recently received a national label for control of several fruit crop diseases. The fungicide is labeled for use against scab of pome fruits, brown rot blossom blight of stone fruits, and botrytis bunch rot of grapes. Vanguard may be used alone or in tank mixtures in the orchard and vineyard. It is reportedly effective against several vegetable diseases and may receive future registration for these crops. According to the manufacturer, Novartis Crop Protection, Inc., the active ingredient, cyprodinil is a fungicide with protectant and post-infection activity against important fungi in the ascomycete and fungi imperfecti groups. The fungicide inhibits penetration of fungal pathogens into the host and, because it is systemic, it also inhibits growth of the fungus inside the plant. Cyprodinil is unlike other fungicides currently in use so fungi currently resistant to another fungicide will not have cross resistance to Vanguard. *-by Dr. J. Hartman reprinted from Kentucky Fruit Facts, June, 1998*



Strawberry Renovation: Strawberry plantings must be renovated after harvest. 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. Since harvest was early this year, growers should take advantage of the opportunity to renovate early. 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 have a different formulation and are not labeled specifically for 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 under hot, humid conditions. 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 just above the crowns 3-5 days after herbicide application. 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. 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. A desirable final row width to attain at the end of the season is 12-18 inches. Wider rows lead to low productivity and increased disease pressure. 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. Wider is NOT better when it comes to strawberry beds.
 6. Cultivate: Work in straw between rows and throw a small amount of soil over the row by cultivation. Strawberry crowns continue development at the top, and new roots are initiated above old roots on the crown, so 1/2 - 1 inches of soil should be broadcast to facilitate rooting. This also helps to cover straw in the row and provide a good rooting medium for the new runner plants.
 7. Weed control: (See related story) 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. Don't let the plants go into stress. Ideally the planting should receive 1 to 1-1/2 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 not likely to produce fruit next year and is essentially 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.
- Weed Management in Newly Planted Strawberries Without Dacthal:*** As you probably have already heard, Dacthal (DCPA) herbicide will no longer be manufactured. ISK Biosciences has indicated that the capital requirements necessary to continue to meet regulatory mandates prompted the decision. The current inventories of Dacthal are expected to supply the market for 18 months,

although prices have already risen. The company intends to keep all uses registered until the supply is exhausted. The one critical use in small fruit is for newly planted strawberries. Because of this loss, growers should consider the following: Use current supplies of Dacthal only on newly planted strawberries. For uses at renovation, late summer, or prior to mulching, use Devrinol (napropamide). The maximum use rate of Devrinol is 8 lb of the 50 DF per acre per year (4 lb active ingredient per acre). Growers may want to try the stale bed technique prior to planting. Prepare the land for transplanting at least 2 to 3 weeks prior to planting. If soil temperatures are reasonably warm and if adequate moisture is present, weed seedlings will emerge. Prior to transplanting, use Roundup, Gramoxone Extra, or flaming to burn back emerged weeds. Transplant the strawberry plants with a minimal amount of soil mixing. The subsequent flush of weeds should be reduced. Be prepared to lightly cultivate the field during the first 6 weeks of growth. Keep cultivation shallow to minimize movement of deeper weed seeds to the soil surface. Devrinol 50 DF at 4 lb acre is usually recommended 6 weeks after transplanting. The soil must be free of weeds prior to applying Devrinol as it will not control emerged weeds. Fumigation is still an option for growers. While fumigation with Vapam in the fall or methyl bromide in the spring does not eliminate all weeds from a field, it does usually provide excellent control of most weeds for several weeks after transplanting. Fumigation is expensive, however, and growers who do not need to fumigate for disease control should consider stale beds or cultivation first. -by Dr. A.R. Bonanno reprinted from the *Small Fruit News of Central New York, May 1, 1998*



Pesticide Use Survey: Purdue Pesticide Programs and Agricultural Statistics Service will survey Indiana cantaloupe growers on their pest control practices. The survey results will enable regulatory agencies, public policy officials and environmental groups to discuss knowledgeable pesticide-use issues. The in-field data collected would prevent USDA and EPA from making decisions based only on worst case (default) assumptions.

The confidential survey will be conducted in the fall and results will be available in 1999. The Purdue Pesticide Program as a member of NAPIAP (National Agricultural Pesticide Impact Assessment Program) and Purdue Cooperative Extension Service will coordinate the study in conjunction with the Indiana Agricultural Statistics Service. More vegetable and fruit crops will be surveyed in the future. -from *Purdue Pesticide Programs*.



Questions and Answers:

Growers often have questions about articles that appear in this newsletter, or topics we don't cover. If you have a question or a topic you would like to see discussed, send it to one of us by mail or email and we'll be happy to do an article for the next issue of the newsletter.



Subscribing Electronically:

To subscribe (or unsubscribe) to Facts for Fancy Fruit, send a message to fff@lists.hort.purdue.edu with the subject or body "subscribe" (or "unsubscribe"). You can also use the form at the web site <http://www.hort.purdue.edu/fff/maillinglist.html> to submit your subscription. Electronic access is free of charge.

Shoot Positioning in Grapes: Sunlight exposure is crucial for fruit quality and productivity in all fruit crops. Sunlight penetration in the grapevine canopy is improved through a series of cultural practices collectively known as canopy management. This includes training system, pruning severity, nutrient management, leaf pulling, shoot positioning and so on. Now that fruit set has occurred and shoots have toughened, grapes can be shoot positioned. On high cordon trained vines typical of Midwestern vineyards, shoots that are growing laterally or upward and pulled downward. Not only does this help reduce shading in the cluster and renewal zone, but it also can also devigorate shoots, a benefit in high vigor situations. On upright growing varieties trained to a vertically shoot positioned system, catch wires are pulled up to lift shoots before their weight causes them to droop. Shoot positioning should be done as soon as possible to get the maximum benefit of improved fruitfulness in the renewal zone. - *Bordelon*

Coming Meetings

June 24 – OFGS Annual Summer Tour, begins at OARDC Horticultural Research Center, Wooster. For more information contact the Ohio Fruit Growers Society at (614) 249-2424.

June 26-27 – Indiana Horticultural Society Summer Meeting. Beasley's Orchard, Danville, IN. Contact Dick Hayden (765) 463-6587, or Karen Cooper (765-494-1301).

July 6 – Indiana Winegrower's Guild Summer Meeting and Vineyard Tour. Oliver Winery, S.R. 37, just north of Bloomington. Contact Steve Thomas (800) 948-8466 or Dave Gahimer (888) 965-WINE.

July 21 – Ohio Small Fruit Tour, begins in Piketon at the OSU Piketon Research & Extension Center. Contact Tom Wall, OSU Piketon (800) 297-2072, or Mike Pullins at (614) 249-2424 for more information.

July 22 – Cider Seminar, Reynoldsburg, Ohio. For more information contact Dr. Diane Miller at (330) 263-3824.

July 21-24 – American Society for Enology and Viticulture/Eastern Section 23rd Annual Meeting, Grand Rapids, MI. Contact: Ellen Harkness, Dept. of Food Science, Smith Hall, Purdue Univ. W. Lafayette, IN 47907-1160, Phone 317-494-6704, FAX 317-494-7953 Email: harkness@foodsci.purdue.edu.

Sept. 13 – Ohio Valley Harvest Festival, Noon to 6:00 P.M., Riverfront Plaza/Belvedere, Louisville, KY. Contact Roy Ballard, Floyd Co. Extension, 812/948-5470

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. Soil analysis can 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 but 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. 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.

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. The Midwest Small Fruit Pest Management Handbook has a chapter on tissue analysis and fertilizer recommendations. If you'd like a copy send a check for \$6.00 payable to Purdue University to Connie Holderfield, 1165 HORT, Purdue University, West Lafayette, IN 47907-1165. Request OSU Bulletin 861. - *Bordelon*

***June is
Indiana Wine
and Grape
Month***

Indiana Winegrower's Guild Summer Meeting and Vineyard Tour: The IWG will hold its annual summer meeting on July 6 at Oliver Winery, 8024 N. State Road 37, Bloomington. The IWG business meeting will begin at 1:00 PM EST. There are several important issues on the agenda, including a legislative update, symposium report and election of new officers. A tour of the Creekbend Vineyard will begin at 4:00 PM and will be followed by a barbecue dinner at 6:00 PM. Bringing wine to share with the meal is encouraged. Cost for dinner will be \$7.00 which can be paid on site, but you must pre-register or you will have to cook and do the dishes. Call Steve Thomas (800)948-8466 or Dave Gahimer (888) 965-WINE to register or for more information.

Oliver Winery is the largest winery in the state and just recently completed renovation of the sales room, offices, and storage area. It's beautiful! Bill Oliver's Creekbend Vineyard is on an excellent site and features Cabernet Sauvignon, Cabernet Franc, Chardonal and Foch, as well as the finest turfgrass row middles in the state. Peaches, apples, kiwi, and several other fruit fill the mini orchard, which is the envy of every aspiring green thumb. Don't miss this event! If we're lucky there may be a balloon ride for the daring. Various aspects of vineyard management will be discussed. This is your chance to see how it should be done and ask questions.

Directions: Oliver Winery is located on State Road 37 five miles north of Bloomington (about 10 miles south of Martinsville). Watch for the signs. We will meet at the winery and caravan to the vineyard which is about 8 miles away. Maps will be available for those adventurous types. -

Bordelon



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