



INDEX

Crop Conditions
 IHS Summer Meeting
 Managing Apple Summer Diseases
 Brambles-Orange Rust
 Strawberry Fruit Rots
 Strawberry Renovation
 Shoot Positioning in Grapes
 Pesticide Use Survey
 June is Indiana Wide and Grape Month
 Indiana Winegrower's Guild Summer Meeting
 New Zealand Trip Postponed
 Pesticide Container Recycling
 Questions and Answers
 Subscribe Electronically
 Coming Meetings

FFF 99-08
 June 16, 1999

Crop Conditions: Heat and humidity over the past week or so put a lot of stress on growers and their crops. The heat wave has finally broken, but summer isn't over. Take precautions against heat stress on those hot days. Drink plenty of fluids, rest often, and work during the cooler times of the day. The heat wave shortened the strawberry season considerably and reduced interest from pickers. Summer raspberry harvest is underway in the south and just getting started in central Indiana. Overhead irrigation during fruit ripening can cool the plants and improve fruit flavor if high temperatures exist. Apple fruit are continuing to grow at a rapid rate with the warm weather we've experienced. Now that drop and thinning effects can be seen, crop loads range from heavy to very light. While some of this seems to be attributable to biennial bearing, in other cases there appears to be no rhyme nor reason to the crop loads we have. Pollination conditions were generally pretty good, so that doesn't seem to explain the variable fruit set.

IHS Summer Meeting: Our summer meeting is only 2 weeks away. Planning at County Line Orchard is complete and I'm sure that Dave and Bonnie McAfee will be excellent hosts. Remember, the meeting starts on Tuesday, June 29 with a hamburger cookout at 6.00 pm followed by a roundtable discussion at 7.00 pm. Our meeting continues the following day starting with registration and coffee at 8.00 am. County Line Orchard is in Hobart, IN (Lake County), about 1.1 miles south of S.R. 6 on County Line Rd. For further details see the previous issue of Facts for Fancy Fruit or call Peter Hirst (765-494-1323).

Managing Apple Summer Diseases: Apple summer fruit rot and blemish diseases (sooty blotch & flyspeck, black rot, white rot and bitter rot) are now on the increase. The SI fungicides (Nova, Rubigan, Procure 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 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*

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*

Strawberry Fruit Rots: An excellent cultural practice to help avoid strawberry fruit rot problems is to maintain a thick layer of straw mulch between rows. If dry weather persists throughout harvest, fungicide sprays for gray mold should not be required. If extended rain is in the forecast growers should be applying fungicides on a regular protectant schedule as outlined in ID-169. Be sure to check labels for harvest and re-entry restrictions. -*Pecknold*

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. The early a runner gets set, the higher its yield potential. 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 apply it 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 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 cover straw in the row and provides 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 by irrigation, rainfall, 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 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. -*Bordelon*

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 should be 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 early as possible to get the maximum benefit of improved fruitfulness in the renewal zone. -*Bordelon*

Pesticide Use Survey: Purdue Pesticide Programs and Agricultural Statistics Service will conduct a survey Indiana grape growers. During June and July the Agricultural Statistics Service will be contacting growers by telephone. The survey results will present information on grape production in Indiana and highlight current pests and pest control methods. The survey results will enable regulatory agencies, public policy officials and environmental groups to discuss pesticide-use issues more knowledgeably. The survey is confidential. All grape growers are encouraged to participate.

June is Indiana Wine and Grape Month: Wineries from the shores of Lake Michigan to the banks of the Ohio River will be offering visitors a chance to get away and help celebrate this special month! Proclaimed by Governor Frank O'Bannon as Indiana Wine and Grape Month, many of the state's 19 wineries will be celebrating by hosting special activities. For more information and a free Indiana Wineries brochure, contact the Indiana Wine Grape Council at 800-832-WINE or 765-494-3842.

Indiana Winegrower's Guild Summer Meeting: The IWG will hold its summer meeting at Huber Orchard and Winery in Starlight on Sunday June 27. The board of directors will meet at 11:00 am and the general membership will meet at 1:00 pm. Tours of the winery and vineyards will begin at 2:30 pm and will be followed by a tasting of Indiana wines. Pizza and salad dinner will be served at 5:00 pm. Dinner will cost \$6.95. The meeting is open to IWG members and anyone interested in Indiana grapes and wine. Come see what all the excitement is about!

New Zealand trip postponed: First the good news: the fruit growers tour to New Zealand is definitely still on. The bad news is that it will be postponed for a year, so we are now planning for late February 2001. There are a few reasons for this, but in the end it came down to the choice of an average tour in 2000 or an excellent tour in 2001, and I'd much rather do the latter. The delay does have a positive aspect in that it will give interested folks another year to save up for the tour. Preference will be given to those associated with the Indiana fruit industry, although others will also be welcome, space permitting. At this stage there is no specific sign up sheet, and all details will be communicated through Facts for Fancy Fruit. If however you are interested and have specific ideas on what you would like to see and do, of course I am open to suggestions.

Pesticide Container Recycling: The Office of the Indiana State Chemist is offering pesticide container recycling at several locations across the state August 3 through September 9. Contact the OISC at 765-494-1594 for the date of a location near you.

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 Factsfor 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.

Coming Meetings:

June 22-23 - North Central Horticultural Risk Management Workshop, Marriott Hotel, 305 E. Washington Center Road, Exit 112 off I-69, Fort Wayne, Indiana. The focus of this workshop is "managing the variations in profits and protecting business equity" and is intended for Extension Educators and Specialists. Contact David Petritz at 765-494-8494 for additional information.

June 27 - Indiana Winegrower's Guild Summer meeting, Huber Orchard & Winery, Starlight, IN. Contact Bruce Bordelon at 765-494-8212.

June 29-30 - Indiana Hort. Society Summer Meeting, County Line Orchard, Hobart. Indiana Hort. Society Summer Meeting, County Line Orchard. BBQ and round table discussion starts at 6.00 pm on June 29. A farm tour and demonstration of marketing initiatives and presentations will begin with registration at 8.00 am on June 30. Contact Peter Hirst at 765-494-1323.

July 8 - Southeast Indiana Fruit Growers Twilight Orchard Tour. Chateau Pomije Winery, New Alsace. Contact Dan Baugh at 812-926-1189 or Karen Witt at 765-647-3511

July 14-17 - American Society for Enology and Viticulture/Eastern Section 24th Annual Conference and International Oak Symposium, St. Louis, MO. 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.

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

First Class
Presort Mail
U.S. Postage
PAID
Lafayette, IN
Permit No. 221

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

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

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

Disclaimer: Reference to products in this publication is not an endorsement to the exclusion of others which may be similar. Any person using products listed in this newsletter assumes full responsibility for their use in accordance with current label directions of the manufacturer.