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Crop Conditions

FFF 96-07
May 22, 1996

Apples are at first to second cover in the south, petal fall to first cover throughout central part of the state, and at full bloom in northern areas. Grapes have 6 to 10 inch shoots in the south, 3 to 5 inch shoots in central, and 1 inch shoots northern areas. Strawberries are in petal fall in the south, and early to full bloom in central and northern areas. Blueberries are at full bloom in the north. Record cold on May 13 hurt blueberries on a few farms in low areas but slow development saved most of the crop. Some winter damage is showing up now with buds breaking. What were thought to be fruit buds are leaf buds. Some shucking of buds and stem death is being observed, probably due to the sharp temperature drop in November after a mild October. Most fruit crops are still about 10 days behind normal, but may catch up quickly if the warm weather persists.

Weather: (From Purdue Crop and Weather meeting Minutes, May 17) During the period of May 10 - 16 very heavy rainfall was experienced over most sections of the state with the northern third of the state averaging 3" above normal while the central and southern third averaged between 1" and 2" above normal.

Weather Outlook: (From Purdue Crop and Weather Meeting minutes, May 17 - Tom Priddy, University of Kentucky) Isolated thunderstorms will continue to occur, particularly in the northern section of the state through the weekend. Most of the state will appreciate some periods of sunshine and warmer temperatures as well. Low pressure similar to last weeks pattern will drop southward late Monday and into Tuesday bringing cooler, wetter weather back into the state. The pattern which we have been experiencing will then re-establish itself bringing the threat of heavier rains and cooler weather once again.

Temperatures in this period will range between the low 60's and mid 70's. The 6-10 day forecast calls for continued cool, wet weather through the period. Both the 30 and 60 day outlooks released May 16 are "very noncommittal" calling for near normal temperatures and precipitation in our area.

Eastern Flower Thrips on Strawberries: In 1994, a number of strawberry growers across the Midwest had serious problems with seedy, tan to brown, tough, hard, or rubbery fruit. At that time there was considerable debate about the cause, but most people eventually agreed that it was the result of eastern flower thrips feeding on the blooms and fruit. Last week we received reports from south central and southwest Indiana that moderate numbers (up to 8-10 per flower) of thrips had been found. It is the consensus of the fruit entomologists in the Midwest, after discussions with entomologists from around the country, that 10 thrips per

flower is a reasonable threshold. We must admit, however, that this threshold is not based on hard data, but is our best guess. We would certainly not quibble with any grower who sprayed at 8 thrips per flower. However, we all agree that it is important that growers not treat during bloom unless they have some evidence that an insecticide spray is needed. Our bee colonies are in serious trouble, so we need to protect them as much as possible. Reports from central and northern Indiana so far have provided no evidence of thrips infestations. So, we strongly recommend that growers scout for thrips in their strawberry flowers and confirm that thrips are present before applying insecticides. Thiodan appears to be the best insecticide choice for thrips control. See ID 169 Indiana Commercial Small Fruit & Grape Spray Guide for more information. Eastern Flower Thrips do not overwinter in Indiana, but are carried northward by winds from southern states. Recent strong southwest winds may be bringing this pest into the state, so growers should be scouting on a regular basis for flower thrips.

Apple Scab & Collar Rot: With all the recent rains my thoughts go to apple scab, and then to collar rot, and then to fire blight, and then to.... wet weather is what makes diseases "happen". The sterol inhibitor fungicides, Nova and Rubigan, should allow you to stay on top of the scab situation. 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, collar rot and root rot caused by *Phytophthora*. Based on the depth of tractor ruts, you can generally tell those parts of the orchard which are wetter than others. Ridomil or Aliette are recommended to treat for *Phytophthora* diseases. Ridomil may be used on bearing trees but only before growth starts or after harvest. Aliette may be applied up to 14 days to harvest. Ridomil is applied as a drench, while Aliette is

sprayed on the foliage and transported to the roots. Of course the best solution is to improve drainage in wet sites.

Fire Blight: Growers in southern Indiana should be walking their young blocks of trees checking for fire blight. Mid to late May is generally when fire blight makes itself known. Look for new growth that appears wilted and crooked at the tip with browning and wilting of leaves. Efforts to limit secondary spread by cutting out fire blight strikes are most successful if these strikes can be removed immediately after they appear. Cut out blighted twigs 10 to 12 inches below any sign of infection, being sure to sterilize pruning tools between each cut. If the infected shoot is associated with the main trunk or a major scaffolding limb you may want to try the "ugly stub" cut, deliberately leaving a naked 4 inch branch stub above the supporting limb. Marking the ugly stubs with flags or a bright colored paint when the cuts are made can help in relocating them during the winter pruning operation. Maintain good control of sucking insects which are primary carriers for secondary spread of blight. Special attention should be given to young trees and trees on M9 and M26 rootstocks or interstems.

Disease Monitoring: In addition to fire blight, growers need to be walking their orchards looking for symptoms of apple scab, powdery mildew, and rust. When looking for diseases select those blocks which are most disease susceptible. Ida red, Jonathan, and Romes are "good" trees to inspect for disease doings; they are all highly susceptible to scab, blight, mildew and rust.

Managing Summer Diseases: Control of summer diseases of apples needs to be considered from petal fall through harvest. The SI fungicides (Nova, Rubigan, Bayleton, and Funginex) are weak for controlling these diseases. This is one of the main reasons we suggest a tank mix of a protectant fungicide

with a SI after petal fall. Mancozeb and Polyram are labeled up to 77 days of harvest. Orchards where flyspeck is a perennial problem should be treated with the 3 lb/A rate of mancozeb or Polyram on a 7 - 10 day interval as long as permitted by the label.

Early Season Grape Disease Control: The most important time of the season for disease control in grapes during the early growth stages. Grape pathogens overwinter on grapevines and vineyard debris and become active between bud break and two weeks after bloom. Spores produced from these overwintering structures are the primary inoculum for the new season. If these primary spores cause infections on the new growth, secondary spores can be produced throughout the growing season, causing a high level of disease pressure whenever environmental conditions are conducive. Consequently, the early season period is the most important time of the year for disease control measures. The major diseases of concern during the early season are black rot, Phomopsis cane and leaf spot, downy mildew, and powdery mildew.

When vines are protected from primary infections by a good spray program during the early season, or if weather conditions are unfavorable for infection, the overwintering inoculum will diminish, no secondary spores will be produced, and there will be much less disease pressure during the remainder of the season. The weather conditions this year have been conducive to spore release and infection so there is a good chance that primary infections will occur on unprotected vines. Growers should be paying close attention to their spray program, applying appropriate materials at recommended rates and getting thorough coverage. The basic rule is: it is much easier to prevent a disease outbreak than to stop one in progress.

There are many factors to consider when deciding on a spray strategy, including weather conditions, disease history of the vineyard, varietal susceptibility, canopy vigor,

and so on. There are two main strategies growers can consider. The first uses the plant growth stage and calendar to determine when and what to spray, with little regard to the weather. This approach works well in most situations and is the best approach for beginning growers. It has been the standard approach for most growers for many years. The second strategy, called postinfection spraying, has come about with the advent of newer fungicides, called Sterol Inhibitors (SIs), that have the ability to cure an infection once an infection period has occurred, but before symptoms develop. Applications are timed based on weather related events. Weather must be monitored closely and sprays applied in response to specific conditions that signal an infection period. Postinfection programs may lead to a reductions in the number of sprays applied.

In the calendar strategy growers should start disease control measures once new growth reaches the 1 to 3 inch stage and continue those measures at 7 to 10 day intervals through bloom. The interval should be relatively short during periods of rapid shoot growth and wet weather to keep the new growth protected. The period from budbreak through bloom usually lasts about 4 to 6 weeks, depending on the weather so 3 to 6 sprays may be required during this time. The early season disease control program should include a broad spectrum protectant EBDC fungicide such as mancozeb (Dithane, Penncozeb, etc.) combined one of the sterol inhibitor (SI) fungicides (Nova, Bayleton, Rubigan). Mancozeb provides good protection against black rot, Phomopsis and downy mildew, but no protection against powdery mildew. SIs provide excellent control of powdery mildew and, in most cases, black rot. (Rubigan is not as effective as the others on black rot). Mancozeb is a broad spectrum fungicide that will provide protection for at least 7 days. It must be on all susceptible plant parts before infections occur. The SIs are systemic, protectant, and curative fungicides

that give good protection against infection for up to 14 days. Since the SIs provide 14 days of protection, they can be used in every other spray if applying on a 7-day schedule.

The SIs have the ability to cure infections if applied within 72 hours after the infection period has started. This allows the grower to wait until an infection has occurred, then apply a spray to stop the development of the disease. SIs will not burn out the pathogens from existing lesions. In order to follow a postinfection program, growers must have the ability and dedication to accurately measure rainfall and maximum and minimum temperatures daily. In a postinfection program, sprays are timed according to the occurrence of an infection period. An infection period for powdery mildew occurs when 0.1 inch or more of rainfall occurs and the temperatures are equal to or above 50°F. Infection periods for black rot are determined by the number of hours of leaf wetness at various temperatures. See the Spott's Chart on page 9 of the 1996 Indiana Small Fruit & Grape Spray Guide. In short, approximately nine hours of leaf wetness are required for infection to occur at temperatures between 60°F and 85°F. Once an infection period for either black rot or powdery mildew has occurred, an application of SI fungicide must be made within 72 hours after the start of the infection period. The higher labeled rates of Nova (4-5 oz/A) or Balyleton (at least 4 oz/A) should be used to insure control. The first application provides 14 days of protection. There is no need to respond to another infection period during that time. However, once the 14 days is up, weather monitoring begins again and an application is made when the next infection period occurs.

Lots of information is available to growers on disease control in grapes. ID-169, the 1996 Indiana Small Fruit & Grape Spray Guide has recommendations for the standard calendar approach to grape disease and insect control, as well as comments on postinfection programs and specific diseases. It also includes recommendations for weed control.

The recently published manual Grape IPM in the Northeast (NYSIPM No. 211) contains complete descriptions of postinfection and traditional approaches to disease and insect control and information on weather monitoring equipment. It also has sections on insect risk assessment, weed management, and environmental impact. See FFF 96-06 for information on ordering the Grape IPM manual.

Water Sprouts on Tree Fruit: Water sprouts should be rubbed off in the next few weeks. There are many benefits to the tree and to the grower in time saved pruning in the winter. A heavy leather glove is tool enough if the sprouts are young and not woody.

Fruit Tree Care: Apple trees are frequently difficult to get to grow off in the first and second year. Keeping those trees growing well requires water, which we have generally had enough or more, fertilizer, and weed control. It is all-important that the trees grow off in the best manner possible in these first few years. Under these wet conditions, weed control may be the most important practice needed now. See ID 168 for suggestions on weed control materials and rates. For the post emergence materials applications should be made when weeds or grasses are 4-6 inches tall and growing rapidly.

Do not neglect to give trees good care during this early summer period so that they do not stop terminal growth. Usually when terminal growth stops, especially on spur type trees, it is stopped for the season and we've lost much of the year's growth.

The most valuable time that a grower can spend is in training one, two, and three year-old trees. Training of young trees is most important. The use of clothespins to help develop strong crotches and spreaders or rubber bands to help in limb placement can pay big dividends. Keeping your pruners in your pocket most of the time will help to bring the trees into production sooner.

Breaking up multiple terminal shoots or leaders on young apple trees that were tipped during the dormant season or at planting time will help to concentrate growth in one leader. When these shoots are young they can be broken out, but as they get woody, they must be cut out to eliminate tearing of the tissue.

We found many years ago that limiting dormant pruning on peach, and accomplishing tree training by summer pinching of tender shoots maximized the early yields on the trees.

Indiana Winegrowers Guild Summer Meeting and Grape Workshop:

The Indiana Winegrowers Guild will hold their summer meeting in conjunction with a Purdue Grape & Wine Workshop on June 24 at Huber Orchard & Winery in Starlite, Indiana. The event will begin at 1:30 p.m. and will feature a Guild meeting, vineyard tour, and barbecue cookout / potluck dinner. A small fee will be charged to cover the cost of the barbecue dinner. Each family is asked to bring a covered dish to share, and perhaps a bottle of two of wine. The vineyard workshop will focus on canopy management for improved fruitfulness, fruit quality, and disease control. Watch for a flyer in the mail. Contact Bruce Bordelon (317-494-1301), Steve Thomas (800-948-8466), or Dave Gahimer (812-877-8227).

Ohio State University Horticulture Field Day:

The Piketon Research and Extension Center will host a Field Day on June 18, at 3:00 p.m. Tours will be conducted of research plots and facilities. Some of the highlights will include fertigation studies on peppers, muskmelons, and blueberries. Tours of the small fruit variety trials including blueberries, thornless blackberries, fall raspberries, and seedless table grapes will also be featured. Contact Tom Wall (614-289-2071 or 614-292-4900)

Illinois State Horticultural Society Summer Horticulture Field Day:

The University of Illinois South Farm in Champaign-Urbana will be the site of the Summer Field Day on Thursday, June 27, 1996. Field tours and presenta-

tions will include tree fruit, small fruit, and vegetable research with special emphasis on techniques to conserve energy. Registration begins at 8:30 a.m. and the program begins at 10:00 a.m. A two hour workshop will be offered on Wednesday, June 26 at 1:00 p.m. for growers interested in learning more about how to use the Internet and World Wide Web. Registration for the Field Day is \$15 and pre-registration is urged. The internet workshop is free, but advanced registration is required. Contact Don Naylor, Executive Secretary, I.S.H.S., at 309-828-8929 or e-mail : dhnaylor@heartland.bradley.edu.

Facts for Fancy Fruit Available Electronically:

We now have all 1996 issues of Facts for Fancy Fruit available through the Horticulture and Plant & Pest Diagnostic Clinic worldwide web homepages. To locate the newsletters on the web, go to the Horticulture homepage at: <http://www.hort.purdue.edu/hort/hort.html>, select Extension/Outreach, then Extension Bulletins and Newsletters. Or you can go directly to the Facts for Fancy Fruit Index at <http://www.hort.purdue.edu/fff/fff.html>. To access the newsletters from the Virtual Plant Disease Diagnostic Lab homepage at <http://www.aes.purdue.edu/ppdl/p&pdlwww.html>, select Newsletters, then Facts for Fancy Fruit.

In addition, a listserv is set up so you can subscribe and unsubscribe to the email version. To subscribe send a message to almanac@ecn.purdue.edu. Your message should consist of this single one-line message: "subscribe FFF_L <your name>" without the quote marks. To unsubscribe follow the same procedure: "unsubscribe FFF_L <your name>". Do not include anything else in the message. Note that the address to subscribe and unsubscribe is not the same as the return address for FFF_L. If you reply to a newsletter message you receive from FFF_L, all recipients of the list will get the message. If you have any problems contact me at bb@hort.purdue and I'll try to help.

Coming Meetings/Events:

June 6 — Eastern Indiana Fruitgrowers Meeting. Cook's Orchard near Gas City, IN. Contact Harold Brown (317-747-7732)

June 7 — Plant Diagnostic Workshop. Purdue University ARB 116. Contact Gail Ruhl (317-494-4641) or Jim Chatfield Phone: 330-263-3831. FAX: 330-263-3667. E-mail: chatfield.1@osu.edu

June 11 — Blueberry Growers of Indiana Summer Meeting. Zylstra's Blueberry Farm, Demotte, IN. Contact Kevin Goin (219-896-2283).

June 18 — Ohio State University Picketon Research and Extension Center Horticulture Field Day. 3:00 p.m. Contact Tom Wall (614-289-2071 or 614-292-4900)

June 19 — Southeast Indiana Fruitgrowers Summer Tour. Apple Junction, Batesville, IN. Contact Karen Witt (317-647-3511) or John Ewart (812-926-1189).

June 20 — Southwest Missouri State Fruit Experiment Station Viticulture Field Day. Mt. Grove, MO. Contact (417-926-4105)

June 21-22 — Indiana Horticultural Society Summer Meeting. Friday June 21, from 3:00 p.m. - 5:00 p.m. Tour of Sunacre Orchard, New Carlisle. Saturday June 22, all day meeting at Garwood Orchards, LaPorte. Program details in this issue. Contact Dick Hayden (317-494-1301).

June 23-25 — International Dwarf Fruit Tree Association Summer Tour. Central MI. Contact Dick Hayden (317-494-1301).

June 24— Indiana Winegrowers Guild Summer Meeting. Huber Orchard & Winery. Starlite, Ind. Contact Bruce Bordelon (317-494-1301), Steve Thomas (800-948-8466) or Dave Gahimer (812-877-8227)

June 27— Illinois Horticultural Society Summer Horticulture Field Day. University of Illinois South Farm, Champaign-Urbana. Contact Don Naylor (309-828-8929) or e-mail dhnaylor@heartland.bradley.edu.

June 27 — Mechanical Raspberry Harvester Demonstration. Dale Stokes Berry Farm near Wilmington, Ohio. Contact Tom Wall (614-289-2071) or Dick Funt (614-292-8327).

July 16-20 — 4th International Symposium on Cool Climate Viticulture & Enology, Rochester Riverside Convention Center, Rochester NY. Contact William Edinger, Dept. of Food Science & Technology, NYS Agricultural Experiment Station, Geneva, New York 14456-0462, Phone: 315-787-2277 Fax: 315-787-2397 E-Mail: TH12@cornell.edu Check us out on the WEB: <http://www.nysaes.cornell.edu/fst/asev/cool-climate/>

September 15, 1996 — Ohio Valley Harvest Festival. Louisville, KY. Contact Roy Ballard (812-948-5470).

Indiana Horticultural Society Summer Meeting
Garwood Orchards and Sunacre Orchards
LaPorte county, IN
June 21-22, 1996

Friday, June 21, 1996

Meet at Sunacre Orchard, 8711 N 300 E, Rolling Prairie, IN

- 2:00 pm Assembly and registration
- 3:00 pm Tour of mature blocks of apples. Discussion of thinning and other production practices.
- 5:30 pm Depart for Garwood Orchards home place, 5911 W 50 S, LaPorte.
- 6:30 pm Cookout at Garwood's pavillion provided by Garwoods
- 8:00 pm Roundtable discussion , Dick Hayden, moderator.
- 9:30 pm Adjourn

Saturday, June 22, 1996

- 8:00 am Registration and Coffee & Donuts
- 8:30 am Tour of new variety plantings, Fuji, Gala, Braeburn, Jonagold, Ginger Gold.
- 10:30 am Tour of peach plantings and pruning demonstration on newly planted trees.
- 11:30 am Return to shed.
- 12:00 Lunch on the grounds - at the Pavillion.
- 1:00 pm IHS business meeting
- 2:00 pm Equipment Demonstration
- 3:30 pm tour of young apple blocks and newly planted blocks on Bud.9 rootstock.
- 5:30 pm Adjourn

- 7:00 pm Dinner at Roscoe's for those staying to go to IDFTA tour in Michigan on Sunday - Tuesday.

Notes:

Registration will be \$2.00 per family.

Lunch Saturday will be: Adults \$6.00, Under 12 \$3:00, and under 6, no charge.

The Cookout Friday will be provided courtesy of the Garwoods.

Motel information and a map will be in the next newsletter and in the Hort Society Newsletter.

This meeting is sponsored by the Indiana Horticultural Society and the Purdue Cooperative Extension Service and is open to anyone that wishes to attend. Membership in the Society is not required. We do ask that everyone register.

We are trying a new format this year, in that the meeting is being held on the weekend. This is because of the IDFTA meetings being held on the following week, and a number of our growers are involved. We hope that this will meet with your approval. We welcome your feedback on these arrangements.

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

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Bruce Bordelon
1165 Dept. of Horticulture
Purdue University
West Lafayette, IN 47907-1165
317/494-1298
e-mail: bb@hort.purdue.edu

Paul Pecknold
1155 Dept. of Botany & Plant Path.
Purdue University
West Lafayette, IN 47907-1155
317/494-4628
e-mail: Pecknold@btony.purdue.edu

Dick Hayden
1165 Dept. of Horticulture
Purdue University
West Lafayette, IN 47907-1165
317/494-1298
e-mail: Dick_Hayden@hort.purdue.edu

Rick Foster
1158 Dept. of Entomology
Purdue University
West Lafayette, IN 47907-1158
317/494-9572
e-mail: Rick_Foster@entm.purdue.edu

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