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FFF 96-06  
May 8, 1996

## *Crop Conditions*

Apples are at full bloom to petal fall in the south, at early bloom throughout central part of the state, and at tight cluster to pink in northern areas. Grapes have 1 to 3 inch shoots in the south, and are at full swell to bud break in central and northern areas. Blueberries are at full bloom in the south and white tip in the north. Mummy berry mushrooms are being found on a limited basis in the north and should increase in numbers with warm weather predicted for this week. Strawberries are in early bloom in the south, and just beginning to push flower clusters in central and northern areas. Hailstorms in southern Indiana on May 4-5 caused damage in some crops. Most crops are still about 10 days behind normal.

**Weather:** (From Purdue Crop and Weather meeting Minutes, May 3 - Ken Scheeringa. Review of the last two weeks weather shows significant wetting in the southern portions of the state with some areas receiving up to 11 inches of rain, most of it coming in one or two events. The Salem, Seymour, Paoli areas received significant rainfall on April 29 as did the Evansville, Mt Vernon areas. These areas received varying rainfall amounts in this event of up to 9". Statewide over the last two weeks there has been a definite north-south trend in precipitation with the northern third of the state receiving double the normal amount of rain while the central third received 3 times the normal amount and the southern third received more than 4 times the normal precipitation amounts during the same time period. Meanwhile temperatures statewide have continued the 3-4 degree below normal trend which has

been in place over the past couple of months.

For the entire month of April the figures look a little better with near normal precipitation north, about 1 1/2 times normal in the central portion of the state and 2 - 2 1/2 times normal in the southern third. Again, most of the precipitation came during the two episodes mentioned above, April 19 and April 29. Temperature trends for the month are the same as for the past two weeks with temperatures averaging 3-4 degrees below normal statewide. Overall, this was the 3rd wettest April since 1895 and the 17th coldest.

Soil temperatures at the 4 inch level should stay above the 50 degree level over the southern half of the state based on the forecast but not in the northern half as yet. In the northern half look for minimum soil temperatures in the 40 degree range and maximums to be near 60 degrees.

**Weather Outlook:** (From Purdue Crop and Weather Meeting minutes, May 3 - Tom Priddy, UK) Several Systems have passed through the Ohio Valley during the last couple of weeks resulting in significant wetting in some areas. A ridge building over the Great Plains and in the Ohio Valley could bring a major change in the jet stream beginning on Wednesday, May 8. This change should bring much warmer temperatures and some drying, particularly central and south. Over the period of May 13 - 17 look for this warmer drier trend to continue. As the jet stream shifts north the possibility of wetting increases north while decreasing south and central. The current thirty day outlook calls for no departure from normal in either temperature or precipitation.

**SAVE THE BEES:** Do not apply insecticides or miticides during bloom since these pesticides are toxic to bees. Those bees that are not killed by direct contact in the orchard often carry the pesticide back to the hive where it may kill the brood. Choose 'soft' insecticides that are less toxic to bees. Mow row middles that have flowering plants (such as dandelions) prior to insecticide applications. Apply insecticides late in the evening after bee activity has diminished. Remove bees from the orchard as soon as adequate pollination has been achieved, and certainly before the petalfall spray is applied. With current concerns about survival of bees over the winter and resulting low bee populations, be extra careful, please.

**Final Pruning and Shoot Removal in Grapes:** Pruning grapes is done to balance the amount of fruit production with the amount of vegetative growth to promote high yields of high quality fruit. Pruning severity is based on the strategy of 'balanced pruning' which dictates the correct number of buds to retain based on the vine's pruning weight and the pruning formula for the cultivar. Many growers are reluctant to completely prune vines during the dormant season in case there is a late frost or freeze that damages some of the buds which

could result in a situation of too few live buds and resultant low yields and high vegetative growth. For that reason, growers practice 'safe' pruning, leaving extra buds during the initial pruning to hedge against late spring frosts or winter injury. Now that the danger of frost and freeze is mostly behind us, and grape buds are beginning to grow, growers can begin to go back through the vineyard and adjust the number of shoots per vine by shortening spurs or removing shoots. Either way is acceptable. New shoots are easily broken off by hand without the need for pruners.

Growers should pay close attention to shoot growth to determine if it is from primary or secondary buds. Shoots from primary buds have full fruiting potential, whereas secondary buds produce shoots with little or no fruiting potential, depending on cultivar. Typically, all secondary shoots are removed during final pruning adjustment or later at cluster thinning. However, in a year such as this one, where mid-winter temperatures were cold enough to cause damage to primary buds of some cultivars, it may be necessary to leave secondary shoots for fruit production. Many French hybrid cultivars will produce a good crop on secondary shoots, and full yield is possible, even if few or no primary buds are alive. However, this requires that the grower leave many more shoots than normal, often resulting in shading problems and lower quality fruit. Shoots should be spaced evenly along the trellis if possible and at a density of about 6 shoots per foot. If only secondary shoots are retained, it may be necessary to have 9 to 12 shoots per foot in order to achieve a normal yield. The resulting shading problems would have to be controlled with leaf removal and shoot positioning. It takes more management on the part of the grower, but the rewards (a full crop) are worth the trouble.

**Fire Blight:** We continue to receive warnings from our fellow pathologists on the potential for severe fire blight. The latest comes from Paul Steiner of Maryland, who states: "The

situation in Maryland and the surrounding territory this year with respect to fire blight potential appears similar to the scenario in 1995 - one of the most severe outbreaks in recent history. While green tip arrived nearly 10-14 days later than usual, the sudden change to warm weather and the rush into flowering has increased our risks for blossom infections considerably. Cumulative degree hour totals >65F are increasing at an incredible rate with some sites already registering 600+ hrs 4-5 days into the bloom period.” Fire blight watchers know that this mean BIG time potential for severe blight. While we are a long way from Maryland, our situation in respect to stage of development is not that different. Stay alert, stay prepared!

***Peach Survey:*** In late March a pesticide use survey questionnaire on peaches was sent to Indiana peach growers. If you grow peaches and did not receive a questionnaire, please contact Rick Foster (317-494-9572) and a questionnaire will be sent to you. If you received a questionnaire but have not sent it in, it's not too late. We would still like to have your input. If you completed the questionnaire and sent it in, thank you. The information we received from you is valuable and much appreciated.

***Strawberry Diseases:*** Strawberry gray mold and leather rot are most apt to occur under cool, wet, cloudy conditions. Keep an eye on your prevailing weather conditions and act (spray) accordingly. As previously mentioned, bloom is a key time to apply preventative sprays for these diseases. See ID-169, “1996 Indiana Commercial Small Fruit & Grape Spray Guide”, for further information.

***Spotted Tentiform Leafminers:*** Most reports so far have been that spotted tentiform leafminer adult catches in pheromone traps have been relatively low. I have observed one orchard that did have high moth populations. Insecticide applications directed at the adults

(Thiodan is a good choice) should be made when moths are at peak flight. Pheromone traps are the most effective method for determining flight activity.

There are two new insecticides available for leafminer control. Provado, which was labeled last year, can be used after petal fall and all the reports I have received from growers is that it did a good to excellent job. Agrimek, the newly labeled miticide, will control leafminers as well. Some states are recommending using Agrimek at petal fall to provide both leafminer and mite control. With the loss of Omite, I would prefer to hold Agrimek in reserve for any later season mite outbreaks, rather than using it routinely at petal fall. However, Agrimek is a good option for leafminer control if necessary.

***Apple Thinning:*** In southern and central Indiana, thinning time is upon us, in spite of the wet weather. The heavy cloudiness will cause pollination to be tenuous and fruit set to be difficult to predict. Thinning will probably be easier than usual. Furthermore in many blocks of apples in Indiana the apparent fruit bud density is lighter than expected. This will make the decisions on thinning more difficult in those blocks where some level of thinning is needed.

While we have been concerned about finding the correct fruit size, it appears now that finding the best temperatures and weather conditions early in the thinning window may be much more important. Sunny days in the range of 70°F to 75°F would be ideal.

For varieties that exhibit severe biennial bearing habit, e.g. Golden Delicious, the application of a minimal dose of NAA (2 1/2 - 3 ppm) can help in obtaining return bloom even if thinning is not desired. Sevin does not affect return bloom the following year.

Growers should consider possibly using Accel for thinning varieties like Empire, McIntosh, Jonagold and others. See the label. Note that the labeled rate has been increased for 1996. Recognize that the material will be

expensive, but consider the alternatives before making the decision to spray or not. Keep good records of usage including rate, timing and weather including temperature and amount of sunlight on the several days before and after application.

The 1996 Fruit Tree Spray Guide (ID 168) has suggestions for thinning. Also, see comments on Apple Thinning Guide in this issue. It is suggested that both sources of information be consulted to gain the best perspective.

***New Apple Thinning Guide:*** The apple thinning guide, by Phil Schwallier mentioned in the last issue of FFF appears to be an excellent treatment of most of the factors involved in thinning of apples. It is suggested as a good guide for growers to help in collecting and digesting the information needed to make an informed decision on thinning.

Indiana growers should remember that this publication was written for Michigan conditions and the dates listed will not apply to Indiana. However the information on weather and dates related to bloom and petalfall should be applicable all across the state.

Crop load, temperatures, sunlight, management practices are all considered. Phil makes the important point that while many factors are important, temperature is the most important factor in the success of chemical thinning applications. However, thinning remains an art and prior experience is important in doing a good job. This publication gives a good “art” lesson for growers in doubt about thinning techniques. See FFF 96-05 for source and price.

***Nitrogen Fertilization on Grapes:*** (Adapted from Finger Lakes Vineyard Notes ‘96 #5 by David Peterson) Grape growers (and other fruit growers for that matter) do not need to be in a rush to apply nitrogen fertilizer. Active root growth is required for uptake of nitrogen and other nutrients from the soil. Root growth does not begin until a few weeks after bud break.

Since nitrogen fertilizers are quickly available and prone to leaching, application prior to bud break is inefficient and may lead to ground water contamination. Mid- to late-May applications should result in more efficient uptake. Try to apply nitrogen when rain is expected in the day or two following application. This is especially important with urea, as it volatilizes into the air, especially under warm conditions. Ammonium nitrate is usually preferred for this reason. Avoid applications close to bloom as fruit set may be reduced. Split applications are generally better than a single application. Applying half to two thirds of the expected total in mid-May, followed by the remainder after fruit set (about 4 weeks later) allows more efficient nitrogen use and better assessment of the need for fertilizer. Often the second application can be skipped, depending on the crop load. Nitrogen can be banded or broadcast in mature vineyards, but should be banded on young vines. Banded applications are probably better on deep soils, where root growth does not extend laterally into the row middles. Rates of up to 100 pounds of actual N are commonly used and there seems to be little justification for exceeding that rate. On deep, fertile soils typical of Indiana vineyards, 50 pounds may be adequate. Foliar analysis does not provide a good measure of nitrogen status unless samples are taken at full bloom (rather than 70 days after full bloom as is recommended for other nutrients). The best indicators of nitrogen status are shoot growth, vigor, leaf color, etc. Experience is the best guide. Excessive nitrogen fertilization leads to excess vigor, poor fruit set, poor fruit quality, and inadequate hardening off in fall. By splitting applications growers have more chances to adjust for various conditions and avoid over fertilization.

***Open Burning Law:*** A question was asked at a recent twilight meeting about the open burning law. That law was passed in 1993 and took effect on July 1, 1993. It was House bill 1078 and became Section 1. (C 13-1-1.2) of the Indiana Code as a new chapter (Chapter

1.2). The text of the bill was presented in FFF 93-10, dated 5/1/93.

This law does permit open burning of prunings and “vegetation from a farm, orchard, nursery, tree farm or drainage ditch.” The law also states that “All burning must comply with other state and federal laws.” Where there is a question, growers might want to obtain a copy of the law for reference.

Remember that we as growers need to be good neighbors and good citizens. It is always a good idea to contact your local fire department when you are planning to burn prunings.

***Grape IPM Manual Available:*** A new grape IPM guide has been released by Cornell University. In conjunction with a USDA/ES grant on IPM implementation a manual titled Grape IPM in The Northeast was developed in an attempt to bring all pest related information together in one place. The manual contains Cornell IPM Disease and Insect Fact Sheets, Penn State University Weed Identification Sheets, The Grape Facts series Managing Weeds in New York Vineyards, Grape Berry Moth and Leafhopper Management Bulletins, a vineyard pest management calendar, sections on setting up and using weather equipment in disease management and much more. Though the manual was specifically developed for the Northeast US, growers in Indiana should find the information very useful. This is an excellent collection of information for grape growers throughout the US east of the Rockies. The manual is available through the Finger Lakes Grape Program office for \$30. For information on ordering contact the Finger Lakes Grape Program, 110 Court Street, Penn Yan, NY 14527-1130 Phone: 316-536-5134 Fax: 315-536-5117

***Mechanical Raspberry Harvester Demonstration:*** The Ohio Fruit Growers Society will host a field demonstration of a Littau mechanical berry harvester on the Dale Stokes Farm a few miles west of Wilmington, OH. The

demonstration will begin at 5:00 p.m. followed at 6:30 p.m. by a program discussing the harvester, how to handle berries following harvest, and a raspberry product buyer. In 1995 the mechanical harvester was field tested by the Small Fruit Team at The Ohio State University. Based on an average speed of one foot per second, the harvester was able to pick up to 1,000 pounds per hour of ‘Bristol’ black raspberries at an estimated cost of \$0.17 to \$0.33 per pound. The program is sponsored by Ohio State University Extension, the Ohio Agricultural Research and Development Center and the Ohio Small Fruit team. Contact Tom Wall (614-289-2071) or Dick Funt (614-292-8327).

***4th International Symposium on Cool Climate Viticulture & Enology:*** July 16 - 20, 1996. Rochester Riverside Convention Center, Rochester NY. The first Cool Climate Symposium was held in Oregon in 1984 attracting 600 attendees and a large number of exhibitors from the US, Canada and Europe. After successful shows in New Zealand and Germany, the CCS is coming to Rochester, NY in 1996, hosted by the Eastern Section of the American Society of Enology and Viticulture. The Cool Climate Symposium will offer workshops and seminars designed to bring the most current methodology to industry personnel. Technical sessions presenting current research, a large trade show at the Rochester Riverside Convention Center, and many opportunities to sample wines and foods from diverse grape growing regions of the world will be featured. All commercial grape growers and winemakers are encouraged to attend this valuable symposium. Additional information and registration materials may be obtained from: ASEV/ES, 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 or Check us out on the WEB: <http://www.nysaes.cornell.edu/fst/asev/cool-climate/>

**Summer Meeting of the Indiana Horticultural Society:** Due to unforeseen circumstances, the summer meeting schedule has been changed from what we previously reported. On Friday June 21, from 3:00 p.m. - 5:00 p.m. there will be a tour of Sunacre Orchard, New Carlisle. On Saturday June 22, there will be a meeting at Garwood Orchards, LaPorte. The meeting schedule and details TBA. (Note the change in locations.) All fruit growers are welcome to attend. These are different days from our usual practice. The dates are intended to mesh with the Dwarf Fruit tree Association meetings in Michigan on Sunday-Tuesday, June 23-25.

**Plant Diagnostic Workshop:** The next workshop (#25) will be a joint Indiana-Ohio Plant Diagnostic Workshop, co-sponsored by OSU Extension and Purdue University. It will be held on Friday, June 7, at Purdue University in ARB-116. This workshop is for professional plant problem diagnosticians (anyone who is expected to diagnose plant problems for others— thus —Extension educators are welcome). The day (10:00-4:00) will include morning presentations on diagnostic issues, lunch (approx. \$6), a walking tour of problem plants (time permitting), and afternoon roundtable “Clinic Catharsis” discussions, slides, and sample reviews. More information will be forthcoming as the date nears, but if you have questions please feel free to call Gail Ruhl (workshop coordinator for 1996) 317-494-4641 or Jim Chatfield (workshop originator) Phone: 330-263-3831. FAX: 330-263-3667. E-mail: chatfield.1@osu.edu

**Facts for Fancy Fruit Available Electronically:** We will have all 1996 issues of Facts for Fancy Fruit available through the Horticulture and Plant & Pest Diagnostic Clinic worldwide web homepages in the near future. In addition, a listserv is being set up so you can subscribe and unsubscribe to the email version. Watch for an announcement in the coming newsletter for details.

### **Coming Meetings/Events:**

**May 19 — Indiana Nutgrower’s Association Grafting Meeting.** Indianapolis. Contact Gene Wild (317-849-0273) or Charles Spurgeon (317-297-1326).

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

**June 21-22 — Indiana Horticultural Society Summer Meeting.** NEW DATE & LOCATION 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 later. 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 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).

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