



Kentucky Fruit Facts

Research & Education Center

P.O. Box 469, Princeton, KY 42445

May 2001 (5-01)

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Fruit Crop and Weather Situation

Results of the freeze the morning of April 18th and the 19th are still being evaluated. On the 18th lows in the range of 25 and 26°F were predicted due to the low dew point. (The dew point is the temperature at which water condenses out of the air and releases some heat during the phase change of water from a gas to a liquid. A high dew point slows the rate of temperature drop.) Actually the freeze started out as an advective freeze in which a cold polar air mass moved into Kentucky with considerable wind making the use of frost protection techniques very difficult. In Lexington around 2:00 AM the sky cleared off and the freeze turned into a radiation freeze, where long wave heat radiation held in plant material and the soil radiates out to the sky. Without clouds this heat moves out into space and the plant and ground temperatures drop. Typically a temperature inversion forms on calm nights and a warm air layer forms some distance above the trees. In our case the wind continued in the 5 to 6 mph. range and this kept the air closer to the ground warmer. Consequently, the

temperature did not drop to the predicted lows in most areas. Thus the recorded lows across the state were mostly between 28 and 33°F. On poorer low lying sites temperatures may have dropped considerably lower than this. Initially we thought that we had come through the freeze with little or no injury, based on the 28° recorded temperature and our critical temperature tables for the floral developmental stages. However the extremely warm weather for the week preceding the freeze evidently forced rapid succulent growth, which was particularly cold tender.

Most Kentucky apple orchards had little or no damage. However, in some apple orchards damage was severe and some varieties (particularly earlier blooming varieties) sustained substantial damage. We have essentially no crop on Fuji and Red Stayman in our University orchard in Lexington.

Asian pears generally sustained severe injury and most growers have very light crops. Peaches seemed to come through the freeze extremely well and most growers report excellent crops or crops that won't need to be thinned on most varieties.

Many grape growers found that their primary shoot leaves were burned on the edges on good sites or the shoots were outright killed by the freeze. In the latter case secondary buds will produce this year's crop.

Strawberries lost a lot of primary buds if they weren't protected. The growers that I have talked with feel that they still have decent crops. The warm spring has accelerated growth and strawberries will ripen considerably earlier than normal this year and have excellent flavor.

Blueberries, raspberries and blackberries should have full crops. The freeze may have burned a few leaves on these though.

Tom Priddy reports that this January through April is the 6th driest in the past 107 years and the 3rd driest since 1941 with only 1985 and 1986 drier for the past 60 years. The driest January through April year was 1941 at 8.12 inches of rainfall. This year the state received 11.75 inches in this time period. As of early May, most of Kentucky was classified as being in severe hydrologic drought according to the Palmer Drought/Crop Moisture Indices.

Growers should be particularly careful to keep new plantings watered as there is very little moisture left in the upper level of the soil in most areas. Strawberries will benefit from irrigation to increase fruit size.

If you tried to apply Apogee at one to three inches of terminal growth to control growth on vigorous apple trees this spring, you found that the trees grow extremely rapidly when this material needs to be applied. If the first application of this growth regulator is applied much after three inches of growth, less desirable reductions in shoot growth are obtained. Jim Schupp from Cornell points out that, "shoot growth begins about full bloom, quickly enters the phase of the most rapid growth, then gradually slows and usually ends by mid- to late July. To get the best growth control from Apogee, it must be applied before the start of the rapid growth phase." He suggests that growers plan to apply Apogee at petal fall.

Coming Events

May 31 - Tennessee Orchard Show, Jack Flippin's Fruit Farm, 3734 W. Shawtown Road, Troy, TN 38260. Phone 901/538-2933. Registration starts at 8:00 AM and will be followed by an orchard tour and equipment demonstrations. Program information will cover peaches, apples, pears, and farm markets. There will be an informal get-together Wednesday May 30 at 6:00 PM in Flippin's restaurant. The Flippin Fruit Farm and Hillbilly Barn is 16 miles from Union City. Turn off Hwy. 22, 8 miles west of Union City onto Shawtown Road and go 8 more miles to the Hillbilly Barn. Contact Dave Lockwood 865/974-7208.

Jun. 6 - Apple IPM meeting, Kaenzig Orchard, Paula Austin and Scott Smith operators, Versailles, KY. Contact Patty Savage 859/873-4601 or John Strang 859/257-5685. See program below.

Jun. 6 - Grape IPM Program. Dumont Gouge farm,

Walton, KY. 859/485-6453. 5:30 P.M. Contact Boone County Extension Office 859/586-6101 or John Strang 859/257-5685. See program below.

Jun. 9 - 2001 Kentucky Herb Festival, Lakeview Park, Frankfort, KY. Workshops, for a modest charge, will be held at the Franklin County Extension office. Workshops include, Making and Flavoring Vinegars, Herbal Skin Healing Strategies, Candlemaking, Cooking with Stephen Lee, and Soap Making Basics. Contact Bonnie Williams 502/223-3743.

Jun. 23 - Kentucky Vineyard Society Summer Meeting, Springhill Winery, (Eddie and Phyllis O'Daniel) 3205 Springfield Road, Bloomfield, KY 502/252-9463, e-mail: kywine@aol.com Contact Dave Loney 606/763-6120.

Jul. 19 - Robinson Station Field Day, Quicksand, KY. Contact Terry Jones 606/666-2438 ext. 234.

Jul. 24 - Commercial Apple IPM and Cider Sanitation Workshop, Jackson's Orchard, Bowling Green, KY. Contact Michelle Johnson 270/842-1681 or John Strang 859/257-5685.

Aug. 14 - University of Kentucky Horticultural Research Farm Twilight Tour, Lexington, KY Contact Brent Rowell 859/257-3374.

Sept. 20 - Small Farm Field Day, Sustainable Agriculture Workshop, "Third Thursday Thing," Kentucky State University Farm, Frankfort, KY. 9:30 a.m. - 5 p.m. Contact 502/597-6310; e-mail: msimon@gwmail.kysu.edu

Sept. 21-22 - Second International Pawpaw Conference, Frankfort, KY. Advance registration required. Contact Kirk Pomper 502/227-5842, e-mail: kpomper@dcr.net See April Fruit Facts for program particulars.

Oct. 18 - Brambles and Grapes, Sustainable Agriculture Workshop, "Third Thursday Thing," Kentucky State University Farm, Frankfort, KY Contact 502/597-6310; e-mail: msimon@gwmail.kysu.edu

Oct. 27 - Kentucky Nut Growers' Fall Meeting, Kentucky State University, Frankfort, KY. Contact Hugh Ligon 270/827-9044 or Kirk Pomper 502/227-5842, e-mail: kpomper@dcr.net

Jan. 7-8, 2002 - Annual Meeting of The Kentucky State Horticultural Society, The Kentucky Vegetable Growers Association and Kentucky Grape and Wine Short Course. Holiday Inn North, Lexington, KY. Contact John Strang 859/257-5685.

Apple IPM Program Schedule

Kaenzig's Orchard and Farm Market,
1400 Pinckard Pike, Versailles
June 6, 2001, all times EDT

10:00 am - Registration

10:15 am - Welcome and tour of fruit plantings
Patti Savage, Woodford County Extension
Agent for Horticulture

Paula Austin and Scott Smith, growers
11:00 am - Fruit disease, insect and cultural problem

specimen identification (Bring problem samples from your orchard.)

J. Strang, R. Bessin, and J. Hartman

- 11:15 am - Grower round table discussion
President, Kentucky Horticultural Society
- 12:15 pm - Lunch will be available at cost for those that preregister. The cost will be in the \$6.00 range.
Preregister by calling Mary Ann Kelley at 270/365-7541 Ext. 216 between 8:00 AM and 4:30 PM CDT weekdays by June 4 and give her a count for the Apple IPM meeting at Kaenzig's orchard. Please preregister as it is very difficult to plan a catered meal without knowing how many will show up.
- 1:00 pm - Spray water testing for pH and soluble salts
Growers: Please bring a pint of the water you normally add to your spray tank.
R. Bessin, J. Hartman, and J. Strang
- 1:15 pm - Early summer insect management
R. Bessin
- 1:30 pm - Apple foliar analysis results
J. Strang
- 1:45 pm - Early summer disease management
J. Hartman
- 2:00 pm - Apple yields and prices
J. Strang
- 2:15 pm - Discussion
- 2:30 pm - Adjourn

Directions to Kaenzig's:

From Bluegrass Parkway (from Harrodsburg, Elizabethtown). Take the first Versailles exit - Hwy. 33. At the top of the ramp, turn right. Take 169, Pinckard Pike left off of Hwy. 33 and watch for Kaenzig's on the left.

From Lexington: Take U.S. 60 (Versailles Rd) from Lexington. Turn left onto Shannon Run Road (Hwy 1967) at the light at the castle. Stay on Shannon Run Road until it "T's" at Pinckard Pike (169). Turn right and follow signs to Kaenzig's on the right.

From Louisville/Frankfort: Take I64 to the Frankfort/Versailles exit, Hwy 60. Turn right and go approximately 10 miles to Versailles. Take 60 Business exit through town. Stay on that road as it becomes Main St. which eventually becomes Hwy. 33. At 169, exit left and follow the signs to Kaenzig's Orchard on the left.

All UK Cooperative Extension programs are open to everyone.

Grape IPM Program Schedule

Dumont Gouge farm, Walton, KY
June 6, 2001, all times EDT

- 5:30 pm - Registration and informal light supper of cold cuts. **Please preregister for supper by calling Mary Ann Kelley by June 4 at 270/365-7541, ext. 216 between 8:00 AM and 4:30 PM CDT weekdays and give her a count for the Grape IPM meeting at Dumont Gouge's farm.**
- 6:00 pm - Welcome and tour of one and two year old

grape plantings

Mike Klahr, Boone County Extension Agent for Horticulture and Dumont Gouge, grower

- 6:30 pm - Grape disease, insect and cultural problem specimen identification - Bring insect and disease problems from your vineyard.
J. Strang, R. Bessin, and J. Hartman
- 6:45 pm - Spray water testing for pH and soluble salts
Growers: Please bring a pint of the water you normally add to your spray tank.
R. Bessin, J. Hartman, and J. Strang
- 7:00 pm - Cultural practices for new grape plantings
J. Strang
- 7:15 pm - Early summer grape disease management
J. Hartman
- 7:30 pm - Grape nutrition
J. Strang
- 7:45 pm - Frost and freeze injury to grapes
J. Strang
- 8:00 pm - Early summer grape insect management
R. Bessin
- 8:15 pm - Grower discussion
- 8:30 pm - Adjourn

Directions to Dumont Gouge farm near Walton, KY:

From Lexington: Take I-75 north to the Walton exit (Exit 171). Exit west (left) and travel to the first intersection where there is a 4-way stop. Turn right (north) on 1292 and proceed for 4 miles. The farm is on the left and has a black board fence and 2 eagles at the driveway entrance.

From Louisville: Take I-71 north to I-75 south. Travel south on I-75 to the Walton exit (Exit 171). Exit to the right and travel to 1292 and turn right (north) on 1292. Follow 1292 for 4 miles. The farm is on the left and has a black board fence and 2 eagles at the driveway entrance.

All UK Cooperative Extension programs are open to everyone

Codling Moth Activity Increases

by Ric Bessin, Extension Entomologist

Codling moths have begun to show up in pheromone traps this spring. Now is the critical time to monitor for the moths in commercial orchards. Be sure that traps have fresh pheromone lure (less than one month old) and check traps daily until the biofix is reached. The biofix is the date when the fifth codling moth is trapped.

After the biofix has occurred, degree days are calculated on a daily basis and a running total is kept (see Predicting Insect Development Using Degree Days in ENTFACT-201). The codling moth has a 50 °F threshold temperature. These degree day accumulations are summed until they reach 250. At 250 DD an insecticide is applied for control which coincides with egg hatch. If codling moth are abundant (more than 10 per trap per week), a second spray may be necessary 7 to 10 days later.

Codling moth trap catch records need to be maintained throughout the summer to monitor additional generations. However, after the initial biofix it is only necessary to examine the traps twice a week. A threshold of five moths per trap per week is used to determine if there are sufficient levels of moths to warrant an insecticide application.

Fruit Disease Observations and Management

by John Hartman, Extension Plant Pathologist

Cedar rusts. Although moist weather has been rare during recent weeks, when there is moisture, cedar-apple rust galls and cedar-quince rust cankers on twigs and branches have been producing spores to infect apples. Unless more leaf wetness periods develop in the coming weeks, rust levels on apple and related hosts such as hawthorn may be low this year.

Apple scab. A few lesions on leaves of susceptible apples were observed recently in western areas of the state. These infections were initiated during the first week in April when the apple foliage was just beginning to emerge (green tip). Apples in the western and southern parts of Kentucky may be showing more symptoms than apples grown elsewhere because the emerging foliage would have been farther along at that time, thus posing a greater risk of apple scab infections. If the weather turns wet, these few primary infections can quickly develop into many secondary infections.

Fire blight. Fire blight symptoms are just beginning to appear statewide. In many trees, the "burned" shoots are not yet visible, but initial wilting of shoots associated with infected clusters is now visible. These shoots will soon die. Infected flower (fruitlet) clusters may show only one fruitlet with a blackened pedicel while the others are still green. Peeling the bark from the woody twig subtending an infected flower/fruit cluster will reveal internal browning and streaking indicating that the bacteria have already moved into the twig. Such twigs will show wilting shoot tips, early symptoms of fire blight.

Blackberry orange rust. Orange rust is appearing on shoots of blackberries statewide. Infected shoots may be stretched and deformed. Bright orange signs of the rust fungus are visible on leaf edges and on leaf undersides. Blackberries in commercial and backyard plantings which show rust symptoms should be removed and destroyed; infected blackberries growing in fencerows and weedy areas nearby should also be removed and destroyed.

Strawberry gray mold fruit rot. If growers intend to manage gray mold fruit rot with fungicides, the best time to make fungicide applications is when the strawberries

are in bloom. Sprays made nearer to harvest after the fruits have formed or when they begin to ripen are not as effective.

For fruit disease management suggestions, the following publications are available from your County Extension Office:

- ! Kentucky Commercial Tree Fruit Spray Guide 2001 (ID-92)
- ! Kentucky Commercial Small Fruit and Grape Spray Guide 2001 (ID-94)
- ! Disease and Insect Control Programs for Homegrown Fruit in Kentucky Including Organic Alternatives (ID-21)

Select 2EC Herbicide Supplemental Label for Strawberry

by Richard C. Funt, Extension Small Fruit Specialist, Ohio State University, Columbus.

Previously, Prism, which is a post-emergence, selective herbicide for non-bearing strawberry production, was to be applied no later than one year before harvest. Now Select 2EC herbicide (same product as Prism) has been labeled for bearing strawberries and can be applied within 4 days of harvest. At the rate of 6 to 8 ounces per acre, Select 2EC plus a non-ionic spreader can control such grasses as quackgrass, crabgrass, foxtail, and barnyard grass. Generally, grasses need to be 4 to 6 inches or taller for maximum absorption. Grasses should be actively growing, which indicates good soil moisture and temperatures above 55 F. Repeat applications may be necessary. Select can be effective if applied one hour before rainfall. The supplemental label indicates that the use of crop oil with a 17% emulsifier is to be added to the tank mix. Crop oil can cause some injury to strawberry plants at certain temperatures (below 45 F or above 80 F). Ohio State specialists generally recommend a non-ionic spreader rather than crop oil. A non-ionic spreader can be just as effective as crop oil, with less risk of leaf damage; however, Valent Corporation indicates that crop oil can be more effective on weed control and will not accept responsibility for the use of a non-ionic spreader, if control is unsatisfactory to the grower.

DuPont Halts Sale of Benlate Fungicide

by John Hartman, Extension Plant Pathologist

Fruit growers who are relying on Benlate (benomyl) for disease management will find that once supplies run

out, this fungicide will no longer be available for use. The DuPont Company recently stated in a news release that it is stopping sales of the controversial fungicide Benlate, which has been the cause of hundreds of lawsuits and cost the company more than \$1 billion in litigation expenses. The company said the move was not a product recall, but a "voluntary business decision" based on financial and legal problems associated with Benlate. The company said it is still confident the product is safe when used as directed.

In Kentucky, fruit growers use Benlate for managing many diseases. Examples of diseases controlled and potential substitutes for the loss of Benlate are shown in the table below.

In general, Topsin-M, having similar chemistry, can be thought of as a substitute for Benlate. For most fruit crops, there are plenty of additional substitute fungicides to replace Benlate. However, for raspberries and blackberries, there are few substitutes. Indeed, for rosette (double-blossom) disease Benlate is the only product labeled.

Fruit growers with Benlate on hand can continue to use the product for fruit disease management. Continue to follow instructions on the label.

Crop	Disease	Effective Benlate substitutes
Apple	scab	Captan, Flint, Nova, Procure, Rubigan, Sovran, Syllit, Topsin-M
	powdery mildew	Bayleton, Nova, Procure, Rubigan, Topsin-M
	black/white rot	Captan, Flint, Mancozeb, Polyram, Sovran, Topsin-M
	sooty blotch/flyspeck	Flint, Mancozeb, Polyram, Sovran, Topsin-M
Peach	brown rot	Elite, Indar, Orbit, Rovral, Topsin-M
	scab	Bravo, Captan, Sulfur, Thiram, Topsin-M, Ziram
Cherry	leaf spot	Bravo, Indar, Nova, Rubigan
Strawberry	gray mold fruit rot	Elevate, Topsin-M
	powdery mildew	Nova, Topsin-M
	leaf spots and blights	Captan, Nova, Topsin-M, Thiram
Grape	cane and leaf spot	Captan, Mancozeb, Thiram
	powdery mildew	Abound, Elite, Flint, JMS Stylet Oil, Nova, Procure, Rubigan, Sovran, Sulfur
	bunch rot	Abound, Elevate, Flint, Rovral, Sovran, Vanguard
Raspberry, Blackberry	anthracnose and cane cankers	Captan
	rosette (double-blossom)	none
	botrytis fruit rot	Captan, Rovral

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John Strang, Extension Fruit Specialist