

Fruit Facts can be found on the web at: <http://www.ca.uky.edu/fruitfacts/>

June 2003 (6/03)

John Strang, Extension Fruit Specialist, Editor
 Marilyn Hooks & Karen Shahan, Staff Assistants

Fruit Crop News

by John Strang, Extension Horticulturist

Most fruit growers are indicating that they have set good crops and that their fruit look good. Grape growers are the exception to this in central and northern Kentucky, where the April 23 frost killed many primary buds and the crop is mostly from secondary buds. Several apple growers have sustained some fairly serious hail damage. Currently raspberry, blueberry and thorny blackberry harvest is in full swing.

This has been a difficult year for disease control with all the rain. Not only have we had numerous infection periods, but it has been difficult to keep the spray material on the plants unless systemic materials were used. In Lexington we have had 5 fireblight, 11 cedar apple rust, and 7 scab infection periods on apples and 11 black rot infection periods on grapes.

In the insect area it won't be long until Japanese beetles begin to show up. Apple and



peach growers that used Esteem for San Jose Scale control have been very pleased with the results. Apple growers should be watching for the second generation of codling moth. Grape growers that are producing fruit this year should be applying an insecticide for grape berry moth at the shatter stage (stage at which berries drop off that were not pollinated) and again 10 days later if this insect has been a problem in the past. Another application of insecticide should be made at veraison (period when the fruit begins developing color).

The excessive rain has saturated our soils and sites with less than perfect soil drainage have fruit crops where the leaf color tends to be slightly yellow. Plants do not like wet feet and a lack of oxygen in the soil causes nutrient uptake problems. This situation should improve with dry weather.

County Extension offices should have the 2003 version of Disease and Insect Control Programs for Home Fruit in Kentucky Including Organic Alternatives (ID-21). There are a number of changes that have been made since the 2002 version. These include the loss of Benlate, Diazinon, Imidan, and Methoxychlor for the home fruit grower.

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Upcoming Meetings

Jun. 20 Grape Field Day, Connie Queen's Vineyard, Lawrence County. Contact John Sparks 606/638-9495.

Jul. 8-11 American Society for Enology & Viticulture - Eastern Section, 28th Annual Conference, Radison Hotel Corning, Corning NY. For program and registration information visit the ASEV- Eastern Section website: <http://www.nysaes.cornell.edu/fst/asev> or contact Ellen Harkness: phone 765/494-6704; e-mail: harkness@foodsci.purdue.edu

Jul. 15 Commercial Apple IPM Meeting, Princeton Research and Education Center, Princeton, KY. Contact Joe Masabni 270/365-7541 ext. 247. (See program below.)

Jul. 17 Small Fruit (Blackberries and Blueberries) Workshop, Robinson Station, Jackson, KY. 10:00 a.m. - 3:00 p.m. Contact Terry Jones 606/666-2438 ext. 234 to preregister. (See program below.)

Jul. 22 Fruit and Vegetable Twilight Tour, Horticultural Research Farm, Lexington, KY. Tour fruit, vegetable and ornamental research plots. 6:00 p.m. until dark. Contact John Strang 859-257-5685.

Oct. 18 Kentucky Vineyard Society Fall Meeting (tentative meeting date).

Oct. 25 Kentucky Nut Growers Association Fall Meeting, Scott County Extension Office, Georgetown, KY. 9:30 a.m.- 3:00 p.m. Contact Hugh Ligon 270/827-9044.

Nov. 15 New Crops Opportunity Conference, Sheraton Suites Hotel, Lexington. 9:00 a.m.- 5:00 p.m. Contact Christy Cassidy 859/257-2859.

Jan. 5-6, 2004 Kentucky Annual Fruit and Vegetable Conference and Trade Show, Holiday Inn North, Lexington, KY. Contact John Strang 859/257-5685.

Commercial Apple IPM Meeting - July 15

Princeton Research and Education Center
Host: Joe Masabni; 270/365-7541 Ext. 247

Directions: Meet at Research & Education Center -- See map below.

Program

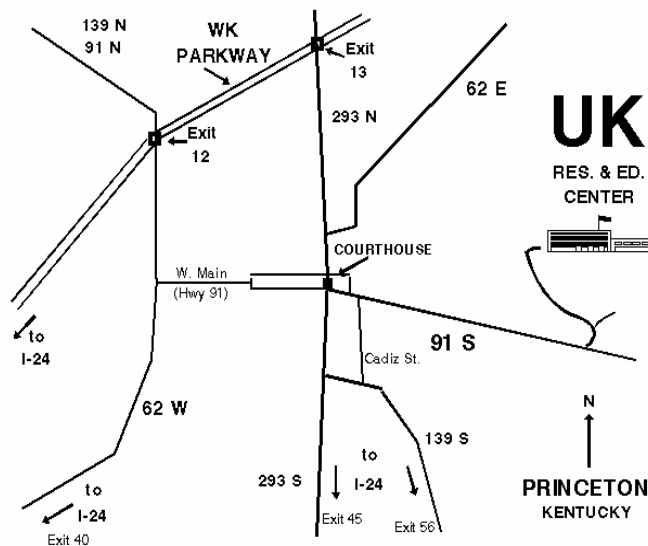
All times - CDT

- 10:00 am Registration
- 10:15 Apple grower round table discussion
- 11:00 Facing Diseases at Harvest on Peaches and Apples - John Hartman
- 11:30am Codling Moth and Oriental Fruit Worm Research Studies - Ric Bessin
- 12:00 Lunch

Lunch will be available at cost (in the \$6.00 range) for those that preregister.

Preregister for lunch by calling Mary Ann Kelley at 270/365-7541 Ext. 216 between 8:00 a.m. and 4:30 p.m. CDT weekdays by July 14 and give her a count for the REC Apple IPM meeting.

- 1:00 pm Apples and Peaches, Orchard Research Tour - Joe Masabni
- 2:30 Stop-Drop Sprays and Harvest - John Strang
- 3:00 pm Adjourn



Robinson Station Horticulture Tour and Workshop

July 17, 2003

The faculty and staff at Robinson Station, University of Kentucky College of Agriculture, would like to welcome you to the All Commodity Field Day. Robinson Station conducts research and educational programs in the areas of Forestry and Wood Technology, Agronomy (corn, tobacco, forages), Horticulture (vegetables, small fruit, other supplemental crops) and Family and Consumer Science Programs to meet the needs of people throughout Kentucky and Appalachia. There are many excellent workshops and tours planned for this event.

Fruit Workshop

10:00 a.m. – 3:00 p.m. EDT

Robinson Station, Jackson Kentucky

- 10:00 am Blueberry Production Practices.
Dr. John Strang, Extension Horticulturist
- 10:20 Blueberry disease problems and recommended controls.
Dr. John Hartman, Extension Plant Pathologist.
- 10:40 Pollination Requirements for Small Fruit Crops.
Dr. Ric Bessin, Extension Entomologist.
- 10:55 Insect Pest Problems for Blueberries.
Dr. Ric Bessin, Extension Entomologist.

- 11:10 Irrigation Recommendations and weed and bird control for blueberries and blackberries.
Dr. Joe Masabni, Extension Horticulturist.
- 11:30 Managing Production Costs in Blueberries.
Dr. Tim Woods
- 11:50 am Marketing Opportunities for Blueberries in Kentucky.
Mathew Ernst
- Lunch** Box lunch provided for those who have pre-registered.
- 1:00 pm Blackberry Production Practices.
Dr. John Strang, Extension Horticulturist.
- 1:20 Blackberry disease problems and recommended controls.
Dr. John Hartman, Extension Plant Pathologist.
- 1:40 Insect Pest Problems of Blackberry Crops.
Dr. Ric Bessin, Extension Entomologist.
- 2:00 Managing Production Costs in Blackberries.
Dr. Tim Woods
- 2:30 p.m. Marketing Opportunities for Blackberries in Kentucky.
Mathew Ernst

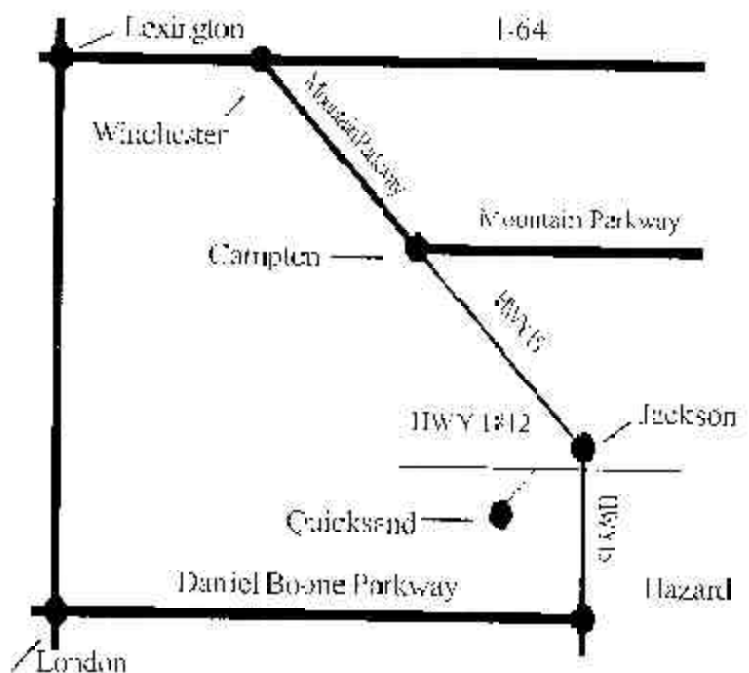
*** Midwest Small Fruit Pest Management Handbook will be provided to participants.

Directions From Lexington:

- I-64 to Mountain Parkway
- Mountain Parkway to Exit 43
- Highway 15 South to HWY 1812 West
(One mile past Jackson)
- Right on HWY 1812 West
- Immediate left onto Robinson Road
- Over Blue Bridge
- Follow signs to events

Directions From London:

- East on Daniel Boone Parkway
- Go North on HWY 15 toward Jackson
- Turn left onto HWY 1812 West



2:00 p.m.

- * Registration Begins
- * Exhibits open
- * Antique Garden Tractor Show
- * Research Equipment Demonstrations

3:30 p.m.

- * All tours start at the registration area
- * The All American Garden Exhibit will be available to visitors at any time between 3:30 – 6:30 p.m.

Dr. Richard Durham – Extension Horticulturist for Consumer Horticulture

6:30 p.m.

- * Dinner will be served in the Auditorium

Horticulture Tours

3:30 – 6:30 p.m.

Tour A (60 minutes)

Tour Guide -- Chris Lindon, County Extension Agent for Agriculture

1. Pumpkins, Gourds and Fall Decorations: This stop includes a pumpkin cultivar trial and plantings of various gourd and ornamental corn species. -- Charles T Back, UK Research Assistant for Horticulture
2. Fresh Market Staked Tomato Cultivar Trial: This trial will be looking at several new and numbered tomato cultivars for earliness, yield, quality and disease resistance. -- Dr. Brent Rowell, UK Extension Specialist for Horticulture
3. New Potato Cultivar Trial This cultivar trial will discuss eighteen gourmet potato cultivars that may have speciality market potential for Central and Eastern Kentucky. -- Ms. Amanda Ferguson, Horticulture graduate student
4. Hydrangeas as Cut and Dried Flowers: This stop shows the results of cultivar, mulch and weed control studies on hydrangeas grown for sale as cut or dried flowers. -- Sharon Bale, UK Extension Specialist for Floriculture, and Todd Leeson, Horticulture graduate student.

Tour B (60 minutes)

Tour Guide Thomas McClure, Extension Agent for Horticulture.

1. Highbush Blueberry Cultivars for Kentucky. This stop looks at 13 named and five numbered blueberry cultivars. -- Dr. John Strang, UK Extension Specialist for Horticulture
2. Disease control Recommendations for Kentucky Blackberries and Blueberries. -- Dr. John Hartman, UK Extension Plant Pathologist
3. Thorny and Thornless Blackberry Cultivars for Kentucky. -- Dr. Joe Masabni Extension Specialist for Horticulture

Kentucky Apple and Grape Alerts

by John Strang

For the last year or two we have been providing alerts via e-mail that deal primarily with insect and disease developments on apples and grapes for Kentucky growers. These alerts are based on computerized predictors at our Research and Education Center in Princeton and our Horticultural Research Farm in Lexington, which are operated by Dwight Wolfe and April Satanek respectively. Many growers find that this information is very useful in giving them a heads up on disease developments across the state and on what they should be spraying to control these problems.

We make a point of not sending out too many messages, because of the overabundance of e-mail in all of our boxes.

If you would like to be placed on either or both of these lists to receive these messages, please send an e-mail message to or call Dr. Joe Masabni at jmasabni@uky.edu, phone 270-365-7541 ext 247. Provide Joe with your name, e-mail address, which list you would like to be placed on and finally your phone number just in case we have problems with your e-mail address.

Foliar Analysis

by John Strang, Extension Horticulturist

Growers should be making preparations for taking foliar analyses now before the pressures of harvest allow this opportunity to slip by. Foliar analysis shows which nutrients the plant is actually absorbing and allows for fine tuning of the fertilization program. It lets the grower know when an element is becoming deficient before symptoms show up and allows for correction of the problem before fruit quality and yield suffer. It is not necessary to sample a block every season, because the nutrient levels do not change that rapidly. A three year sampling period is generally recommended

Since the University of Kentucky does not have a facility for conducting plant analysis for growers, Joe Masabni and I have decided to recommend that you send your plant analysis samples to the Penn State Agricultural Analytical Services Laboratory for several reasons. The plant sampling periods and types of samples taken correspond closely with our midwest recommendations and the cost looks good, \$18.00 for the standard analysis of 10 elements: nitrogen, phosphorus, potassium, calcium, magnesium, manganese, iron, copper, boron, and

zinc. Growers can obtain a sampling form from the Penn State web site at <http://www.aasl.psu.edu/PA.HTM>, and send their sample in with a check or they can ask the lab to send a sampling kit and be invoiced for the sample. If a grower sends a sample in using the form off of the web site, the sample should be placed in a paper bag or envelope for mailing. Samples should not be send in using plastic bags.

Agricultural Analytical Services Laboratory
The Pennsylvania State University
University Park, PA 16802

Phone: 814/863-0841

The time of sampling is extremely important, since the nutrient levels in the leaves change almost continually as the plant grows. The sampling periods recommended in Table 1 correspond to the time for which we have nutrient level standards and are periods where levels are somewhat stable.

Select only healthy leaves from healthy trees. Collect leaves at random throughout a block from one cultivar on one rootstock on a similar soil type. Sample no more than two leaves from a shoot and an equal number of leaves from each plant sampled. Leaves from young (nonbearing) and old (bearing) plants of the same cultivar should not be mixed, since the

Table 1. Fruit crop leaf sampling periods and crop specifications

CROP	SAMPLING TIME	NUMBER	PART SAMPLED
Strawberries--			
New and 2nd season plasticulture plantings--	June 15-July 1	60	Youngest fully expanded mature leaves, remove petioles and send only the leaves.
Renewed matted row plantings--	July 15-Aug. 15	60	First fully-expanded leaves after renovation, remove leaf petioles and discard. Send only the leaves.
Blueberries --	~June 15-July 15	80	Sample leaves during first week of harvest. Remove leaf petioles and discard. Send only the leaves.
Grapes--	July 1-Aug. 1	50-75	Select only the first fully expanded leaves on fruiting shoots located halfway between the ground and highest trellis wire. Detach petioles from leaf blades and send in only the petioles.
Apples, Peches, Nectarines, Pears, Plums--	July 15-Aug. 15	60-70	Select shoots that make a vertical angle of 45 to 60 degrees from the ground. Select shoots at eye level from around the outside of trees. Remove one or two leaves from the mid-portion of new growth. No more than 10 trees should be used for each sample.
Blackberries & Raspberries --	Aug1 1-20	60	Fully matured leaves from mid-portion of nonfruiting canes. Remove leaf peiotles and discard. Send only the leaves.

nutritional needs of young and old plants are different.

Dust and pesticides on the leaves will affect the analysis particularly for zinc, manganese and iron. Select clean leaves or the leaves may be washed. Dirty leaves should be washed very quickly in water with a small amount of liquid dishwashing soap and then rapidly rinsed through three containers of distilled water. Leaves should then be air dried on a paper towel.

Proper interpretation of the foliar analysis requires that a soil sample be taken at the same time or there should be a recent analysis from the block. The laboratory will send the results of the foliar analysis directly to the grower with recommendations. **Kentucky growers should request that the lab send a copy of the analysis to either Joe Masabni or myself for additional interpretation with their soil sample.**

Joe Masabni
Research and Education Center
P.O. Box 469
Princeton, KY 42445
phone 270/365-7541 ext 247

John Strang
Department of Horticulture
N 318 Ag. Science Bldg. North
Lexington, KY 40546
phone 859/257-5685

Spraying Grapes for Disease Management

John Hartman, U.K. Extension Plant Pathologist

In the spring of 2003, Kentucky grape growers faced the following:

- Black rot, *Phomopsis* cane and leaf spot, anthracnose and downy mildew
- excessively moist spring weather
- Delayed fungicide applications and failure to prevent primary infections.
- Inadequate repeat fungicide applications.

One new grower was said to have complained recently, "I sprayed twice already this spring and I am still seeing disease on my grapevines." Experienced growers know that perhaps 6 or 7 or

more applications of fungicides would have been made at 7-14 day intervals during the past two months since grapes began new growth. One grower reports that because of all the rain, he has had to apply fungicides more than a dozen times due to having to reapply his sprays following rainy periods. He also reports having no diseases on his grapevines.

- Poor fungicide coverage due to inefficient equipment or inadequate fungicide volume.

Fungicide choices. For suggestions of fungicides to use and timing, commercial growers should consult U.K. Cooperative Extension bulletin ID-94, Kentucky Commercial Small Fruit and Grape Spray Guide 2003. The following list is derived from this publication.

- Black rot, caused by the fungus *Guignardia bidwellii*. The fungicides Abound, Bayleton, Elite, Ferbam, Flint, Mancozeb, Nova, Sovran, and Ziram provide excellent control. Fungicides such as Procure, Ridomil Gold MZ, and Rubigan also provide moderate control.
- Phomopsis cane and leaf spot, caused by the fungus *Phomopsis viticola*. Captan and Mancozeb provide excellent control whereas Benlate, Topsin-M, and Ziram provide moderate control.
- Anthracnose, caused by the fungus *Elsinoe ampelina*. Liquid lime-sulfur applied late in the dormant season is an important first step. During the season, Benlate and Topsin-M provide excellent control while Ziram, Mancozeb, and Captan provide moderate control.
- Downy mildew, caused by the fungus *Plasmopara viticola*. Fungicides such as Abound, Captan, fixed copper, Mancozeb, Ridomil Gold MZ and Ridomil Gold Copper provide excellent control. Sovran and Ziram provide moderate control.
- Powdery Mildew, caused by the fungus *Uncinula necator*. Excellent control is provided by Abound, Benlate, Elite, Flint, JMS Stylet Oil, Nova, Procure, Rubigan, Sovran, Sulfur, and Topsin-M. Fixed copper and Ridomil Gold Copper provide moderate control.

Growers wanting to manage diseases following this wet spring will want to continue fungicides for black rot, downy mildew, and powdery mildew from now until veraison. Then, growers will need to begin using fungicides to manage Botrytis bunch rot and bitter rot. Spraying frequency will depend on the weather.

Managing Summer Fruit Diseases in the Apple Orchard

John Hartman, U.K. Extension Plant Pathologist

There are several important diseases of apple fruits in Kentucky. These diseases typically appear in the summertime and are favored by the warm, humid weather present here. Inoculum build-up is often possible on non-apple host plants growing in fence rows or woods near the orchard.



Black rot causes the typical “rotten apple” and is caused by the fungus *Botryosphaeria obtusa*. This disease causes three different kinds of symptoms on apple - rotten fruit (above photo), frog-eye leaf spots, and twig and branch cankers. The black rot fungus often invades branches killed by fire blight and the resulting cankers become sources of inoculum for leaf spot and fruit rot. Last year’s fire blight cankers which were not pruned out this past winter have led to more black rot potential. In addition, fruit mummies from last year and left in the tree are sources of inoculum this year.



Sooty blotch and flyspeck. There are many different fungi involved in the sooty blotch and flyspeck complex. These fungi cause symptoms ranging from superficial sooty or cloudy blotches or smudges on the surface of the fruit to sharply defined tiny, shiny black spots found in groups (see photo bottom left). The fungi causing both of these diseases overwinter and grow on twigs of many different woody plants including wild brambles. Sooty blotch and flyspeck often appear together on the apple fruit about mid-season, depending on the wetness of the growing season. In most Kentucky locations, the threshold of accumulated leaf wetness that favors this disease complex was reached in early June so growers are involved from now until harvest applying fungicides that are effective against this disease complex.



White rot of apple. White rot is caused by the fungus *Botryosphaeria dothidea*. White rot causes a light brown soft watery decay of the apple fruits and the decay extends all the way to the core. On the surface the disease often appears as a tan spot with reddish margins (above photo). This disease is favored by hot weather. The white rot fungus can also cause twig and branch infections which form cankers. This disease has sometimes been difficult to control, in Kentucky but with application of the new fungicides Sovran and Flint, disease management may be enhanced.

Bitter rot. Bitter rot is caused by the fungus *Colletotrichum gloeosporioides*. This fungus is also favored by hot weather. Under humid conditions, the fungus produces large



amounts of pinkish colored spores on the surface of the decayed area (photo, top left). These masses of spores are sometimes arranged in concentric circles. Inside the decayed fruit, bitter rot has a darker appearance than white rot and is not as soft and watery. The apple decay pattern (photo on right) can be seen by slicing an apple through the decay. Bitter rot takes on a cone shape inside the rotted fruit (right in photo), unlike the cylindrical shape of white rot (left in photo). Bitter rot is also difficult to control with fungicides, so growers need to use primarily those chemicals which are known to be effective.

- Fruits growing in clusters are especially vulnerable.
- Slow down travel speed while applying sprays to increase the volume of water.
- Mancozeb fungicide is good against all the summer diseases, but can only be used until 77 days prior to harvest. Benlate and Topsin M both provide good control of all the fruit rots except for bitter rot. Ziram and Captan provide good protection against bitter rot, so Benlate or Topsin-M are best used when mixed with Captan or Ziram. Strobilurin fungicides such as Flint and Sovran are excellent for control of all the apple fruit rot diseases and sooty blotch and flyspeck.



Managing summer fruit diseases.

- In so far as possible, remove and destroy nearby vegetation that could provide inoculum for disease outbreaks. Wild brambles such as blackberries are especially noted for harboring some of these fungi.
- Remove dead wood from apple trees.
- Remove rotted fruit mummies left from the previous season.
- Calibrate the sprayer and orient the nozzles properly. Complete spray coverage in the tops and centers of trees is essential.
- Summer pruning will help reduce diseases by opening the tree canopy to allow more rapid foliage drying and better spray penetration.
- To conserve on fungicide and application costs, delay second cover fungicide applications for sooty blotch and flyspeck until after 175 hours of leaf wetness have accumulated since first cover, especially if the season is not wet. If leaf wetness detectors are available, more precise timing like this is possible.
- Russeted fruit varieties and Redfree are not susceptible to sooty blotch and flyspeck.

The Most Accurate Local Weather Forecast Available for Kentucky Fruit and Vegetable Growers

by John Strang

Tom Priddy, University of Kentucky College of Agriculture's agricultural meteorologist has recently developed a web site that provides weather forecasts for Kentucky growers on a county basis. The forecasts are updated four times daily, making this the most accurate timely forecast that you can obtain. This is the only site like this in the United States.

From a fruit grower's perspective, this forecast provides a two day plus forecast of local temperature, dew point, relative humidity, wind direction, wind speed, cloud cover, the probability of precipitation (based on expected aerial cloud coverage in your county), expected rainfall amounts, snow accumulations (in winter), chance of rain showers, chance of thunder storms, spraying conditions, drying conditions, leaf wetness periods and all of this is provided at

three hour intervals. Please note the Precision Agriculture Weather Forecast for Fayette County Kentucky below, which depicts this.

These forecasts were made possible through new modeling capabilities supplied by the National Weather Service and by September the forecasts are expected to be provided for an area as small as one square kilometer, further increasing the precision. In addition UK specialists are providing modeling data for fruit pests and we may have some pest prediction capabilities in the future.

These forecasts are now helping growers to determine when rain or heavy dew amounts are expected, aiding in more timely streptomycin applications for fire blight control on apples and pears, as well as the best time frame in which to apply pesticides.

To find these forecasts go to the UK Agricultural Weather Center at <http://www.wagwx.ca.uky.edu/> On the left of the screen below Forecast Shortcuts, select your county and then click on the Precision Ag F-cast. There is lots more on this page than I have described.

ISSUED AT 443 AM EDT ON TUE MAY 13 2003

DAY	TUESDAY						WEDNESDAY						THU			
HR	6A	9A	12P	3P	6P	9P	12A	3A	6A	9A	12P	3P	6P	9P	12A	3A
TEMP	52°	61°	67°	71°	69°	57°	47°	47°	51°	61°	69°	74°	73°	56°	59°	56°
DP	4°	41°	39°	39°	39°	40°	40°	39°	41°	43°	46°	48°	49°	50°	51°	51°
RH	66%	48%	36%	32%	34%	53%	77%	74%	59%	52%	44%	40%	43%	57%	75%	84%
WIND DIR	W	W	W	W	W	W	SW	S	S	S	S	S	S	SE	S	S
WIND SPD	10	15	15	15	10	5	5	2	5	10	10	13	10	10	10	10
CLOUDS																
POP 12HR	0 %			0 %			20 %			50 %						
NGM QPF	0.00-0.01 in.			0.00-0.01 in.			0.25-0.49 in.			0.25-0.49 in.						
RAIN SHWRS	-	-	-	-	-	-	-	-	-	-	-	-	Chance	Chance	Chance	Chance
TSTMS	-	-	-	-	-	-	-	-	-	-	-	-	Chance	Chance	Chance	Chance
Spraying Cond.	FAIR	POOR	POOR	POOR	FAIR	GOOD	GOOD	GOOD	GOOD	GOOD	FAIR	FAIR	FAIR	POOR	POOR	POOR
Drying Cond.	FAIR	GOOD	GOOD	GOOD	GOOD	FAIR	FAIR	FAIR	FAIR	FAIR	FAIR	GOOD	GOOD	GOOD	FAIR	FAIR
Leaf Wet/Dew	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
L. Heat Stress	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

Receiving The Fruit Facts News-letter Electronically on the Internet

Fruit Facts is available electronically on the web in the pdf format. To get notification of the monthly Fruit Facts posting automatically and approximately two weeks earlier than it would normally be received via mail, you can subscribe to the University of Kentucky Listserve.

To subscribe, send an e-mail message:

Addressed to: listserv@lsv.uky.edu

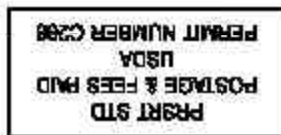
Subject: Fruit Facts

Message: subscribe ky-fruitfacts, followed by a blank line

You will receive two responses, the first notifying you that your request has been received and to wait for the second message. The second message describes how to confirm your request. You must confirm your request using one of the three ways shown (web access, e-mail reply or new e-mail message). Upon successfully confirming, you should get a welcome message.

To unsubscribe, send an e-mail message as above, but with a message of, "unsubscribe ky-fruitfacts, followed by a blank line.

John Strang
Extension Fruit Specialist



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