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COLLEGE OF AGRICULTURE
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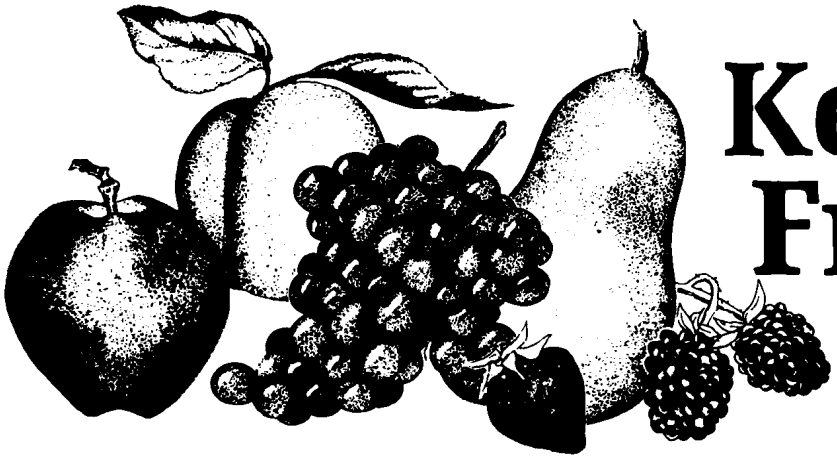


Kentucky Fruit Facts

Research & Education Center
P.O. Box 469, Princeton, KY 42445

April 2001 (4-01)
John Strang, Editor, Marilyn Hooks and Karen Shahan, Staff Assistants

Fruit Facts can be found on the web at: http://www.ca.uky.edu/HLA/fruifact/

Fruit Crop and Weather Situation

Flower bud development was well behind normal on April 1, but the abnormally warm temperatures during the first two weeks of April advanced bloom so blazingly fast (tight cluster to bloom in six days in Lexington) that many growers have missed sprays and are wondering if they are in trouble. Fortunately no serious insect problems have been noted at this point on apples. There was a scab infection period earlier in the season, but the weather has been dry and most growers are in good shape. Since most growers missed applying their pink spray for apple scab Dr. Hartman recommends that this spray be applied during bloom. The risk of fire blight was high during the second week of April and rain or heavy dew were all that was needed to produce an infection. Under a high risk of fire blight without the use of streptomycin a fungicide spray is enough to wash the fire blight bacteria from the flower pistils down into the flower nectaries and cause an infection. However, if the fungicide spray is made when the temperature is below 60°F and the temperature will remain below 60°F for the next day, no fire blight infection will occur because the fire blight bacteria do not grow below 60°F.

The freeze that hit Kentucky the morning of April 18 was fortunately not as bad as was predicted. It started off as an advective freeze with clouds and wind. Then the sky cleared off about 2:00 a.m. and it turned into a radiation freeze. Fortunately, the wind continued and a temperature inversion did not form. Consequently most of the state reached official lows between 28°F and 32°F. The exception was the Northen Kentucky area which dropped to about 26°F. These temperatures are recorded at the five foot level, consequently, the temperatures at the soil level can be several degrees lower. Most fruit growers came through this freeze with little or no injury. However, we have seen injury to the primary buds on new shoots on grapes in a number of areas. There was also some injury to strawberry flowers and fruit.

It is now apparent that San Jose scale will be more of a challenge to control this year with the loss of post-bloom Lorsban applications. On apples our best recommendations are a dormant or delayed dormant oil application followed by diazinon applications when crawlers are noted usually around the last week of May or the first week of June. On peaches a dormant or delayed dormant oil application is recommended for San Jose scale control. Diazinon can be used on non-bearing peach trees and Imidan at the 4 pound per acre rate can be used on bearing trees when crawlers are noted. It appears that Esteem, the new product for San Jose Scale and Rosy apple aphid control is not available in the central U.S.

Growers should begin scouting for orange rust on blackberries and black raspberries. Infected plants will have new shoots that are slightly spindlier than normal and leaves that are slightly chlorotic in appearance, particularly around the leaf margins. Infected plants should be dug out and burned or disposed of before the

orange rust spored become visible and spread to other plants. Please contact John Hartman 859/257-5779 or John Strang 859/257-5685 if orange rust or double blossom are noted in your planting. We are trying to map out areas of the state where orange rust and double blossom are more of a problem.

We will be interviewing three candidates for the Fruit Extension and Research position at Princeton during the latter part of April and early May. We hope to have an individual on board in the fall.

Coming Events

Apr. 19 - Square Foot Gardening, Chestnut Tree Orchards, Sustainable Agriculture Workshop, "Third Thursday Thing," Kentucky State University Farm, Frankfort, KY. Contact 502/597-6310; e-mail: msimon@gwmail.kysu.edu

Apr. 28 - Kentucky Nut Growers Association Spring Meeting, Elizabethtown Extension Office, Elizabethtown, KY. Contact Tom Evans 270/826-8953.

May 3 - Mammoth Cave Area Alternative Agriculture Field Day, Cowels Farm, Brownsville KY (Edmonton County). The Field Day begins at 4:30 p.m. CSDT and includes information on grapes and other small fruit, as well as information on marketing, greenhouse production, herbs, gourds, corn mazes, rabbits, goats, sheep and much more. Contact Matt John 270/597-3628 or Michelle Johnson 270/842-1681.

May 31 - Tennessee Orchard Show, Jack Flippens Fruit Farm, 3734 W. Shawtown Rd, Troy, TN 38232. Phone: 901/538-2933. Registration starts at 8:00 a.m. 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 p.m. in Flippen's restautant. The Flippen 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 miles to the Hillbilly Barn. Contact: Dave Lockwood 865/974-7208.

Jun. 6 - Commercial 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.

Jun. 6 - Twilight Grape meeting. Dumont Gouge farm, Walton, KY. Contact Boone County Extension Office 859/586-6101 or John Strang 859/257-5685.

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.

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 article below.)

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

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

Notes on Captan Registration and Disease Control for Fruit Crops in 2001

John Hartman, U.K. Extension Plant Pathologist

Most Kentucky growers utilize the information presented in the U.K. Cooperative Extension Service publications ID-92 *Commercial Tree Fruit Spray Guide 2001* and ID-94 *Kentucky Commercial Small Fruit and Grape Spray Guide 2001*. As many of you know, the plant disease management information in these publications is coordinated by plant pathologists representing most of the Midwestern states. We have recently learned that some of the information printed in the *2001 Guides* relating to use of Captan in fruits is not accurate.

A revised label for Captan fungicide on small fruit and tree fruit was submitted to EPA in 2000. We were under the impression that the label was approved and the Federal registration was granted so the 2001 spray guides have the recommendations for the proposed Captan label incorporated in them. As of yet, the label has not been approved and all Captan products being marketed still contain the old (2000) label information. The label is still in review and should be approved during spring or summer of 2001.

Growers need to be aware of the following differences between the *2001 Guides* and the old (2000) labels they will be using this spring:

Small Fruits:

- Captan is not registered for use on brambles until the new label is approved. Several states have 24-C registrations for Captan on brambles so it can be legally used there. The old reentry period is 4 days; under the 2001 24-C registration the reentry period is still 4 days. The new label proposes reducing the reentry interval on brambles to 24 hours.

- No change on strawberry. Captan is registered for us on strawberry and the reentry interval is 24 hours.
- On grapes, the reentry interval is still 4 days. The new label reduces the reentry interval to 3 days.
- On blueberries, the reentry internal is still 4 days. The new label reduces the reentry interval to 3 days.

Tree Fruits:

- On apples and stone fruit (peach, nectarine, plum and cherry) the reentry interval is still (2001) 4 days. The proposed new label reduces the reentry interval from 4 days to 1 day (24 hours) on apples and stone fruits. There were no other changes in Captan use for tree fruits.

We apologize for the confusion related to the erroneous Captan use information. It is important that growers remember that they must always read and follow the current label on the product they are using. Hopefully, the new registration will be approved this year. Please feel free to contact me if you have any questions related to this matter.

2001 Blueberry Market Outlook

Tim Woods, UK Agricultural Economist

Blueberries are one of Kentucky's emerging small fruit crops. Kentucky climate and market location bodes well for producers investigating fresh blueberry production as a supplement to farm income or a new crop enterprise. Nationally, fresh blueberry prices remain strong. International demand for U.S. blueberries also continues to increase. These trends should continue through the 2001 blueberry season.

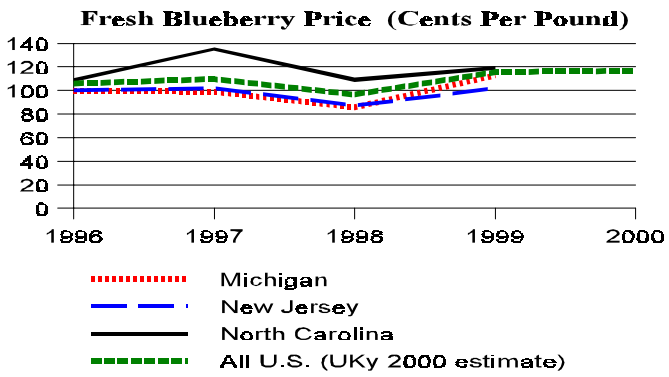
Fresh Blueberry Production

The North American Blueberry Council and the USDA both estimate total U.S. blueberry production in 2000 to have decreased about 5% to just over 200 million pounds. Much of the decline was from significant production decreases in Michigan and New Jersey, where over half of cultivated U.S. blueberries are produced.

Kentucky blueberry acreage is minimal, but increasing. According to the U.S. Census of Agriculture, Kentucky blueberry production increased from a scant 11 acres and 19,911 pounds to more than 24 acres and 36,800 pounds from 1987-1997. Total area planted is currently around 30 acres, with product being directed primarily into small local markets.

Fresh Blueberry Prices

Due to the decline in production, wholesale fresh blueberry prices increased steadily in 2000 to average over $1.15 per pound. Producers of blueberries in Kentucky can realize well over the national average price by marketing fresh, high-quality blueberries locally.



Fresh Blueberry Price, Cents Per Pound, 1996-1999
2000 U.S. Price (UK Estimate)
Source: USDA/ERS

Kentucky Market Opportunities

Kentucky's climate offers the opportunity for blueberry producers to explore production of both northern and southern blueberry varieties. Producers Larry Martin and Jean Daniels of Edmonton note faster growth and earlier harvesting on both northern and southern varieties. This may allow blueberry producers to capture local markets before blueberries are harvested in the major-producing states like Michigan. The niche for locally produced blueberries in Kentucky is largely unexplored and, currently, offers vast potential for producers.

National and International Market Opportunities

Although there was a decrease in U.S. fresh blueberry production in 2000, national and international demand stayed strong. The last official trade data available are for 1999, with blueberry trade increasing dramatically. Blueberry imports increased by 66% and exports increased by 266%. The U.S. was a net importer of blueberries in 1999, importing 32 million pounds and exporting 22.7 million pounds.

The USDA's Economic Research Service estimates fresh blueberry exports to have increased by 32% from January through June of 2000. Because U.S. fresh blueberry production decreased in 2000, this indicates less fresh blueberries remaining in the United States. This also bodes well for Kentucky and other U.S. producers wishing to explore local, fresh U.S. blueberry markets.

Conclusion

Based on national and regional production and price trends, there continues to be ample opportunity for efficient blueberry producers to capture profitable demand and price trends. Kentucky producers have an opportunity to capture a share of the fresh blueberry

market. Because Kentucky blueberry production is currently so low, there exist an enormous variety of options for fresh blueberry producers who are willing to invest the time and money into developing markets for a crop that can well grow in Kentucky.

State Definition of Agriculture Now Includes Horticulture Crops

Dewayne Ingram, Department of Horticulture Chair

As you know, state agencies and local governments often don't consider horticultural production in their working definition of agriculture. This creates problems at times for horticulture businesses when it comes to zoning, access to water, tax issues and other governmental regulations. For several years, the Kentucky Horticulture Council has been trying to expand the state's official definition of agriculture in order to reduce some of these problems. House Bill 20 was introduced by Representative Carolyn Belcher during this legislative session. Through her leadership, this bill passed the house and senate with no negative votes and was signed by Governor Patton on March 15. At the encouragement of the Kentucky Horticulture Council, Representative Belcher had sponsored a similar bill in the 2000 Legislature that died in committee but continued her effort during this legislative session to gain the passage of this bill for the horticulture industries.

The bill expanded the definition of "Agriculture" to include "the business of raising or producing horticultural crops." It also defined other commodities, such as aquaculture and timber, as part of agriculture.

"Horticulture" was defined in this law as "the business of raising fruits, nuts, vegetables, flowers, ornamental plants, shrubs, trees, herbs, and the starts or transplants needed to produce these items."

My assessment is that the industry will have to press the issue with state agencies and local governments, but now they have a statewide definition on their side.

Can Kentucky Apple Growers Avoid A Major Fire Blight Epidemic?

By John Hartman, Extension Plant Pathologist

Kentucky apple growers are familiar with fire blight disease. This highly contagious and deadly disease attacks blossoms, leaves, shoots, branches, fruits, and roots. The disease usually first enters the tree in spring through flowers during bloom (primary infection). Primary infection occurs when bacterial populations on the surface of the tree build up during warm spring weather and when rain showers wash the bacteria on the flowers into the nectary at the base of the flower. Following primary infection, fire blight becomes established in the tree and quickly invades through the current season's growth into older growth. Death of infected branches is so rapid that the leaves do not have time to fall off the tree. Young non-bearing and newly bearing trees can easily be killed by the infection while mature bearing trees may survive even if much of the new growth is killed. Heavy rainstorms, especially those with hail in spring and early summer, can spread blight, sometimes creating injuries for fire blight entry into the tree and cause what is known as "trauma" blight.

Managing fire blight. When growers are pruning their orchard, be sure that all of last year's fire blight strikes are pruned out and the cut branches removed from the orchard. Fixed copper sprays for suppressing buildup of bacterial populations in the trees should already have been applied to apple orchards. During bloom, antibiotic sprays are applied to control fire blight. Some Kentucky growers use a computer program called Maryblyt to track disease development and to time antibiotic applications. This computer program appears to work well under most Kentucky orchard conditions. The advantage of using Maryblyt is that growers can determine when primary infections are occurring or likely to occur.

The computer program only works if maximum/ minimum temperatures, rainfall, and tree growth stage are known. Although the data can simply be written down at first, at least by pink, it is essential that all the data from green tip onwards be entered into the computer. Streptomycin, the most commonly used antibiotic for fire blight control, works well if used immediately before infection or within about 12 hours (24 hours maximum) after an infection. Fire blight can still cause disaster. Last year, apple growers in southwest Michigan suffered tens of millions of dollars in losses due to fire blight. A combination of factors led to the fire blight disaster including:

- ideal weather for infection during bloom,
- several days of widespread hail and thunderstorms,
- appearance of new streptomycin-resistant fire blight strains (made even more lethal by application of streptomycin which suppressed competing bacteria),
- widespread use of highly susceptible apple rootstocks and cultivars such as Braeburn, Fuji, Gala, Idared, Jonathan, and Jonagold,
- new high-density plantings,
- and nearby abandoned orchards left by economically strapped growers .

Blight severity in these Michigan counties was such that most apple growers who planted new trees in the last five years will lose those trees. There is also concern about the health of the older orchards. All apple growers

will lose a portion of their crop for the next several years due to this fire blight epidemic.

Can we reduce the threat of fire blight in Kentucky? In Southwestern Michigan it took an unusual combination of events to all come together for this most devastating epidemic to occur. Nevertheless, Kentucky growers can learn from this disaster and take actions now that will reduce fire blight.

- In some orchards, fire blight develops when the grower mistakenly thinks that there was none there the previous season. Re-examine the orchard and cut out any and all fire blight cankers and destroy the prunings.
- Until new compounds come along in the distant future, streptomycin is about the only chemical tool available for managing the disease. We have not verified the presence of streptomycin resistance in Kentucky yet. To avoid development of bacteria with resistance, use streptomycin only when it will be effective during bloom, and then use it no more than 3-4 times a year. Where streptomycin resistance occurs, it is linked to heavy (more than 4 times per season) use of the chemical. Another antibiotic, oxytetracycline, may be used, but it must be applied before infection to be effective.
- When putting out a new orchard, be aware that most of the popular new varieties are very susceptible to fire blight. Try to select tolerant varieties. Improving current blight susceptible varieties through genetic engineering shows promise for the future, but the public's negative view of genetically altered crops may prevent use of this new technology. The new blight-resistant rootstocks will help growers most years, but only resistant varieties combined with resistant rootstocks will allow growers to avoid losses in highly blight-favorable years.
- Be aware of the disease risks when using high-density plantings.
- Where use of the tree growth regulator, Apogee, fits into orchard management, it will help reduce fire blight, but it will not substitute for other management tools.

The Second International Pawpaw Conference

September 21-22, 2001, Frankfort, Kentucky
Sponsored by Kentucky State University
and The Pawpaw Foundation

The Second International Pawpaw Conference will represent a unique experience for scientists, nurserymen, entrepreneurs, and enthusiasts to share information about the production and uses of pawpaw. The conference will focus on progress in pawpaw [*Asimina triloba* (L.) Dunal]: regional variety trials, cultivar development, seedling and clonal propagation, germplasm collection, postharvest fruit physiology and handling, marketing and product development, and anti-cancer and pesticidal compounds. In addition to presentations on pawpaw, the conference will also offer an opportunity to taste pawpaw fruit, tour the Kentucky State University pawpaw orchards, view demonstrations on how to propagate pawpaw, and allow participants a chance to sample pawpaw recipes from the chefs of one of Kentucky's finest restaurants, The Oakroom, a 5-diamond restaurant at Louisville's Seelbach Hilton.

The conference will host a combination of invited speakers and submitted talks and posters. There will also be a poster session and show-and-tell session about pawpaw for non-scientists and enthusiasts. Conference space will be limited to 180 attendees, and pre-registration will be required for both days of the conference. The deadline for pre-registration will be **August 1, 2001**. The registration cost of $150.00 will cover an abstract book, a copy of the resulting conference proceedings, transportation from Frankfort, Kentucky to the Seelbach Hilton in Louisville, Kentucky, coffee breaks, and lunch and dinner on September 21 and 22, 2001. The registration fee for PawPaw Foundation members is $135.00. There are 80 rooms ($66 per night) being held at the Holiday Inn-Capital Plaza in Frankfort, KY until August 21, 2001 for conference participants.

For registration information, either go to our web site at: http://www.pawpaw.kysu.edu/conference/default.htm , or write Dr. Kirk Pomper, Kentucky State University, 129 Atwood Research Facility, Frankfort, KY 40601, or call 502-597-6174. If you would like to make a presentation at the meeting, please indicate this with your request for registration information. Pre-register as quickly as possible; we expect conference spots will go quickly. We look forward to seeing you at this exciting event!

Preliminary Schedule of Events

Thursday, 9/20/01

10:00 am	KSU Small Farm Field Day-all day at KSU farm (Free event)

Cooperative Extension Service
U.S. Department of Agriculture
University of Kentucky
College of Agriculture
Lexington, Kentucky 40546

6:00-9:00 pm	On your own pre-conference gathering at Jim's Seafood Restaurant in Frankfort, KY

Friday, 9/21/01

8:00-9:00 am	Registration and refreshments-KSU Extension Building
9:00-9:15	Introductory remarks and welcome
9:15-9:35	Overview of KSU program
9:35-10:30	Propagation Round Table
10:30-10:45	Break
10:45-12:00	Noon Regional Variety Trial Reports
12:00-1:15 pm	Lunch
1:15 -1:30	Board buses
1:30-2:30	Trip to Seelbach in Louisville
2:45-3:30	Fruit tasting and discussion
3:30-4:45	Fruit ripening and handling 4:45 –5:00 Break
5:00- 6:00 pm	Cooking with Pawpaws –Adam Seger,Chefs Jim Gerhardt and Michae Cunha
6:00– 9:00	Dinner at the Seelbach from the Chefs of the Five Diamond Restaurant, the Oakroom PPF award presentations, show-and-tell session, and posters
9:15 pm	Return to Frankfort

Saturday, 9/22/01

9:30-10:00 am	Refreshments at KSU farm
10:00-10:30	Pawpaw Anti-cancer and Pesticide Products
10:30-12:00	Marketing Pawpaw
12:00-1:00 pm	Box lunch
1:00-2:00	Pawpaw Growers Roundtable
2:00-4:00	Submitted talks and additional posters
4:00-5:00	Orchard tours, fruit and product tasting, grafting demo, nursery production demo
5:00-8:00 pm	Closing Dinner at the KSU Farm

Conference Program Committee Members: Kirk Pomper (Chair), Robert Barney, Noland Williams, Charliese Brown, Dewayne Ingram, Snake Jones, Eddie Reed, Marion Simon, Mac Stone, Susan Templeton, Jean Ward, and Wyvette Williams Committee Advisor: Harold R. Benson; Proceedings Associate Editor: Robert Barney

Receiving Fruit Facts Electronically on the Internet

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John Strang, Extension Horticulturist