



Kentucky Fruit Facts

Research & Education Center

P.O. Box 469, Princeton, KY 42445

June 1998 (6-98)

Prepared by John Strang, Terry Jones, Jerry Brown, and Brent Rowell, Extension Horticulturists; Kirk Pomper, KSU Principal Investigator of Horticulture; John Hartman, Extension Plant Pathologist; Ric Bessin, Extension Entomologist; Laura Powers and Steve Isaacs, Dept. of Agr. Economics; John Strang, Editor, Marilyn Hooks and Elizabeth Griffin, Secretaries.

<http://www.uky.edu/Agriculture/HLA/> follow the link to Extension programs & Publications and click on Fruit Facts

Fruit Situation

In western Kentucky most apple growers had a heavy bloom and heavy set on most varieties and a frustrating time trying to thin them under cold rainy weather conditions. Most growers in central and eastern Kentucky feel that they have decent crops. They had a good bloom, but drop was heavy due to poor pollination. This has been a better strawberry year than the last two years. Yields were generally up in central and eastern Kentucky, but yields were relatively low in western Kentucky due to injury from the March freeze and rain reduced U-Pick customer traffic across the state. Many growers have been dissatisfied with the second and third year crops on 'Earliglow' strawberries due to small fruit size.

Outside of Kentucky many eastern states are reporting lighter apple crops, based on the Apple-Crop list serve and personal communications, due to frost, rainy weather, poor pollination and excessive drop. It's a little early to tell in ME and VT, but the crop looks light at this point. MA reports virtually no 'McIntosh'. Set in the Northeastern portion of Connecticut is poor due to rainy weather during pollination. NY reports a variable crop, the Hudson Valley is OK, while the Northern Champlain Valley and Western NY have a lighter crop due to frost. The crop is variable in NJ, substantially below average in PA and better in VA. WV has had a poor fruit set and a heavy drop on most varieties. The crop in NC looks promising on apples. There was a light return bloom on many 'Red Delicious' and some hail damage. MI reports that the 'Red Delicious' and 'McIntosh' are light due to frost, but the 'Rome' and 'Golden Delicious' crop looks very good. IN has a heavy set on apples and peaches. IL reports fair to very good crops on apples and peaches in the south and southwest, with a light fruit set on 'Red Delicious' and 'Jonagold' and a variable crop on 'Golden Delicious', 'Jonathan', 'McIntosh', and 'Empire' (variability from tree to tree) in the north. TN

indicates that they have a decent apple crop and some peaches. The world wide apple crop is expected to be up 1% this year.

Pest pressure on apples differs from that of last year on apples. Rosy apple aphid was moderate to heavy this spring and the 13 year cicadas have been out in force in western Kentucky. (See article below on cicadas.) Codling moth trap catches have been fairly heavy across the state, while plum curculio was late, but at normal levels. Stinkbug and tarnished plant bug numbers and damage are at fairly high levels in many orchards. Scab and fire blight are at very low levels or absent in most commercial orchards, while the incidence of rust diseases is higher than normal. Frog-eye leaf spot is showing up in many orchards due to the wet weather. Several growers have encountered yellowing leaves on groups of trees in their orchards due to pine vole girdling of the trees below the ground.

More mite problems were noted, particularly in western Kentucky this season on strawberries and European corn borers were noted in strawberry petioles in one field. The incidence of grey mold, strawberry leaf spot and strawberry leaf blight are higher than normal this season. (Strang, Brown, Bessin and Hartman)

Meetings

Jun. 14 - Kentucky Herb Festival, Lakeview Park, Frankfort, KY. Contact Sue Clifford 606/234-1452.

Jun. 17 - Fairview Produce Auction Vegetable Growers' Field Day, Fairview, KY. Tour begins at 11:00 A.M. C.S.D.T. at the auction. Following lunch at 1:00 P.M. there will be a tour of several of the growers fields with Ric Bessin, U.K. Extension Entomologist and Brent Rowell, UK Extension Vegetable Specialist. Directions: From Hopkinsville, take Hwy. 68 east approximately 10 miles and turn left on Hwy. 1843.

From Elkton, take Hwy. 68 west, go past Fairview approximately ½ mile and turn right on Hwy. 1843. Watch for signs. Contact Harold Eli 502/886-6328.

Jun. 18 - Strawberry Field Day at Virginia Tech, 1-4 P.M., Kentland Research Farm. See bare root strawberry transplants set through plastic and other equipment used for plasticulture strawberry production. Contact Donna Long 540/231-5545, e-mail donna@vt.edu

Jun. 23-26 - Kentucky's Fruit Industry Tour of Ohio. See April Fruit Facts for the itinerary and registration form. Registration is \$160 per person. Contact Jerry Brown 502/365-7541 ext. 204 or John Strang 606/257-5685.

Jul. 16 - University of Kentucky All Commodities Field Day, UK Research and Education Center, Princeton, KY. This year's field day offers something for everyone. There will be over 40 educational exhibits under the big tent, youth activities, and home economics taste testing and displays. There will be 18 walking, wagon, and bus tours, which will run continuously throughout the day. Contact Lloyd Murdock 502/365-7541 ext 207.

Jul. 16-19 - International Herb Association Annual Conference, "Herb Smart Day" open to the public, July 19. Contact International Herb Association 847/949-4372, www.herb-pros.com.

Jul. 22-24 - 23rd Annual Meeting American Society for Enology and Viticulture, Eastern Section, Crown Plaza Hotel, Grand Rapids, Michigan. Contact Ellen Harkness 765/494-6704 or Harkness@foodsci.purdue.edu

Jul. 25 - Beginning Beekeeping Workshop, Getting Started Session 3, 1:00 to 4:00 P.M. Kentucky State University Farm, Frankfort, KY. This session will emphasize honey harvesting and preparation for winter. Beekeeping techniques will be demonstrated and hives will be opened to remove honey, weather permitting. Bring your bee veil! Contact Tom Webster 502/227-6351.

Sept. 6 - Central Kentucky Harvest Festival, Noon to 6:00 P.M., The Red Mile, Red Mile Rd., Lexington, KY.

Sept. 13 - Ohio Valley Harvest Festival, Noon to 6:00 P.M., Riverfront Plaza/Belvedere, Louisville, KY.

Jan. 4-5 - KVGA/KSHS Annual Meeting, Holiday Inn North, 1950 Newtown Pike, Lexington, KY.

Introducing Dr. Kirk Pomper

Dr. Kirk W. Pomper is the new Principal Investigator of Horticulture in the Land Grant Program at Kentucky State University. His research project will continue KSU's ongoing effort toward developing pawpaw [*Asimina triloba* (L. Dunal)] as a new commercial tree fruit crop for Kentucky and the United states. This research will include: 1) conducting a pawpaw variety trial at KSU in cooperation with other sites across the nation, 2) developing commercial fruit production recommendations, 3) examining clonal and seed propagation methods for pawpaw, and 4) developing a pawpaw information web site on the internet for use by the public. He will also serve as the Curator of the USDA National Clonal Germplasm Repository for *Asimina* spp. located at KSU. Dr. Pomper was previously a Post-doctoral Research



Associate in fruit physiology with USDA-ARS at the Children's Nutrition Research Center in Houston, TX. He received his Ph.D. in fruit physiology at Oregon State University in Corvallis, OR.

His mailing address is: Dr. Kirk W. Pomper, Principal Investigator of Horticulture, Curator, USDA National Clonal Germplasm Repository for *Asimina* spp., Atwood Research Facility, Kentucky State University, Frankfort, KY 40601, Phone: 502/227-5942, Fax: 502/227-6381, Email kpomper@uky.campus.mci.net

We are happy to welcome Kirk and his wife, Colleen to Kentucky.

Weed Management in Newly Planted Strawberries Without Dacthal

As you probably have already heard, Dacthal (DCPA) herbicide will no longer be manufactured. ISK Biosciences has indicated that the capital requirements necessary to continue to meet regulatory mandates prompted the decision. The current inventories of Dacthal are expected to supply the market for 18 months, although prices have already risen. The company intends to keep all uses registered until the supply is exhausted. The one critical use in small fruit is for newly planted strawberries. Because of this loss, growers should consider the following:

Use current supplies of Dacthal only on newly planted strawberries. For uses at renovation, late summer, or prior to mulching, use Devrinol (napropamide). The maximum use rate of Devrinol is 8 lb of the 50 DF per acre per year (4 lb active ingredient per acre). Growers may want to try the stale bed technique prior to planting. Prepare the land for transplanting at least 2 to 3 weeks prior to planting. If soil temperatures are reasonably warm and if adequate moisture is present, weed seedlings will emerge. Prior to transplanting, use Roundup, Gramoxone Extra, or flaming to burn back emerged weeds. Transplant the strawberry plants with a minimal amount of soil mixing. The subsequent flush of weeds should be reduced.

Be prepared to lightly cultivate the field during the first 6 weeks of growth. Keep cultivation shallow to minimize movement of deeper weed seeds to the soil surface. Devrinol 50 DF at 4 lb acre is usually recommended 6 weeks after transplanting. The soil must be free of weeds prior to applying Devrinol as it will not control emerged weeds.

Fumigation is still an option for growers. While fumigation with Vapam in the fall or methyl bromide in the spring does not eliminate all weeds from a field, it does usually provide excellent control of most weeds for several weeks after transplanting. Fumigation is expensive, however, and growers who do not need to fumigate for disease control should consider stale beds or cultivation first. (by Dr. A.R. Bonanno), Gerald R. Brown (reprinted from the Small Fruit News of Central New York, May 1, 1998)

Vanguard WG Fungicide for Tree Fruits and Grapes

A new fungicide, Vanguard WG, has recently received

a national label for control of several fruit crop diseases. The fungicide is labeled for use against scab of pome fruits, brown rot blossom blight of stone fruits, and botrytis bunch rot of grapes. Vanguard may be used alone or in tank mixtures in the orchard and vineyard. It is reportedly effective against several vegetable diseases and may receive future registration for these crops.

According to the manufacturer, Novartis Crop Protection, Inc., the active ingredient, cyprodinil is a fungicide with protectant and post-infection activity against important fungi in the ascomycete and fungi imperfecti groups. The fungicide inhibits penetration of fungal pathogens into the host and, because it is systemic, it also inhibits growth of the fungus inside the plant. Cyprodinil is unlike other fungicides currently in use so fungi currently resistant to another fungicide will not have cross resistance to Vanguard. (Hartman)

The 13 Year Cicadas Have Arrived!

Cicadas lay their eggs on the terminal end of branches. This wounding causes the limbs to die from the section where the eggs were laid to the tip, giving the forest view a brown cast.

In 1991, we conducted a study measuring periodical cicada mortality when they were confined on treated apple foliage. The apple foliage was dipped into final spray solutions (labeled rates) of the insecticides and allowed to dry.

The mortalities of the periodical cicadas are as follows:

	4 hour mortality	48 hour mortality	72 hour mortality
Sevin 50W			
@ 2 lb/100gal	43.3%	88.3%	98.3%
Orthene 75S			
@ 1 lb/100gal	1.7%	10.9%	36.4%
Lorsban 50W			
@ 10 oz/100gal	1.7%	8.8%	22.8%
Asana XL			
@ 4 fl.oz/100gal	91.7%	98.3%	100.0%
Untreated	3.3%	3.5%	10.5%

Sevin and Asana XL provided good control of cicadas, however, Asana XL is a restricted use chemical. Note that Orthene is NOT labeled for apples and was used just for comparison. In all treatments, we observed that the males were more easily killed than females. An orchardist interested in this product may have to have it ordered by their dealer. Asana XL is likely to cost about \$0.80 per fl. oz. We are currently testing a few addition insecticides for cicada control. However, orchardists needing to control cicadas should understand that while both Sevin and Asana XL will provoke mite problems, Asana appears to upset mite management more than Sevin. Homeowners may still want to protect young trees with cheese cloth or other fine netting. The eggs that have been deposited in the branches should begin hatching and the nymphs will drop to the ground shortly.

Homeowners can place a barrier of plastic over the ground beneath infested trees and prevent the nymphs from reaching the ground and feeding on the tree roots for the next 13 years. Cultivation or placing an organic mulch beneath the trees will not reduce nymph populations. (Bessin)

Commercial Vegetable Crop Recommendations for 1998-99 Now Available

The new edition of ID-36 Commercial Vegetable Crop Recommendations for 1998-99 is available now from the Ag. Comm. Home Page at <http://webdocs.ca.uky.edu/agc/pubs/pubs.htm> Both the pdf (Acrobat) and html formats are found on the Ag. Comm. site.

The printed version has just come off the presses. It may take a some time to get it out to all the County Extension Offices. This edition has many revised and expanded sections including new chapters on Pumpkins and Squash and new, simplified fertigation recommendations for tomatoes, peppers, summer squash, and muskmelons. Also new is a section on insect management in greenhouses and many additions to the disease management sections.

For information on where to get daily market prices, postharvest cooling, packing, and USDA grading standards, look at the new Appendix A, which lists links to a number of excellent sites on the internet for this information. (Rowell, Strang, and Jones)

Frogeye Leaf Spot is Appearing on Apple

Symptoms of frogeye leaf spot are plainly evident on leaves of apple and crabapple throughout Kentucky. In many plantings in eastern Kentucky, frogeye leaf spot will be more prevalent than other diseases such as scab or rust which are also visible now.

The symptoms appearing now on leaves are small (1/8 - 1/4 inch) distinct circular, brown spots. The center portion of the spot may become tan colored, while the outer edge remains dark brown, giving it a frogeye appearance. By contrast, apple scab develops as dark brown to black diffuse spots without sharp margins, and rust spots will have a distinct yellow-orange color. Signs of disease in the form of tiny black pycnidia (fungal fruiting bodies) of the causal fungus may develop in the center of the spot. Pycnidia can be examined with the aid of a hand lens and will appear as tiny black "pimples" when viewed through the magnifier. These pycnidia contain thousands of spores that are the source of continued infections. As leaf spots become more numerous and coalesce, leaves yellow and fall.

The cause of frogeye leaf spot and also black rot of the fruit and a canker disease of apple twigs and branches is a fungus called *Botryosphaeria obtusa*. This fungus is capable of attacking over 100 different kinds of trees and shrubs in Kentucky, so inoculum is quite wide-spread. The infections now being seen on the leaves most likely originated from cankers on dead twigs and branches in the tree. The black rot fungus frequently invades last year's infections of fire blight, still

another disease, causing a canker of the branch or twig. Such cankers may weaken the limb to the extent that the branch breaks under a heavy fruit load, or is killed outright. Often a cone-shaped area of affected leaves will appear just beneath such a canker.

In trees with many cankers and spotted leaves, fruit infections have probably already occurred, but fruit decay will not appear until fruits mature.

Infections usually begin in the blossom end of the developing fruit. As the fruits enlarge, a brown decayed area appears. The decay is often characterized by a series of concentric rings alternating from black to brown on the fruit surface. Pycnidia are scattered over the surface of the decayed fruit. Eventually, the rotted fruits dry out and mummify, sometimes hanging on the tree until the next season. Control suggestions include:

- * Prune out and destroy all dead twigs and branches. When pruning, promote rapid wound closing by not leaving stubs or making flush cuts.
 - * Thin out branches to promote good air movement.
 - * Remove mummified fruit (infected the previous year).
 - * Protect the fruits from injury caused by insects or harsh spray materials.
 - * Promote optimum robust growth.
 - * Protectant fungicides used to control scab are generally effective against frog-eye leaf spot.
- (Hartman)

Survey of Agricultural Input Prices, Spring 1998

The following phone survey was conducted in February and March 1998. Prices were gathered from various agribusiness firms throughout Kentucky. The survey reports the maximum, minimum, and average prices of selected agricultural inputs. The number of responses is reported for each item. This survey can be used to update horticulture budgets distributed by the University of Kentucky Cooperative Extension Service. This survey was reduced to materials used in fruit production for this publication. The complete survey covering inputs for many agricultural crops can be found on the Dept. of Ag. Economics homepage at: <http://www.uky.edu/Agriculture/AgriculturalEconomics/aechome.html>

ITEM	Unit	Average Price	Number of Responses	Minimum Price	Maximum Price
Fertilizers					
10-10-10	ton	\$140.79	6	\$107.00	\$171.00
20-10-20 (water soluble)	bag	\$0.67	2	\$0.64	\$0.69
5-20-20	ton	\$191.95	6	\$147.00	\$250.00
19-19-19	ton	\$221.15	6	\$202.00	\$253.00
Ammonium Nitrate	ton	\$201.09	7	\$155.00	\$277.60
Boron	lb	\$0.43	6	\$0.39	\$0.56
DAP 18-46-0	ton	\$262.33	8	\$249.16	\$279.00
Lime (Custom Spread)	ton	\$13.00	3	\$12.00	\$14.50
Liquid Nitrogen 28%	ton	\$117.08	6	\$110.20	\$128.00
Phosphate 0-46-0	ton	\$245.11	8	\$235.00	\$260.00
Potash (Muriate) 60%	ton	\$161.07	7	\$148.50	\$172.30
Potash (Sulfate) 50%	ton	\$278.73	6	\$260.00	\$295.00
Sulfur	lb	\$0.26	7	\$0.13	\$0.40
Urea 46%	ton	\$181.81	8	\$156.00	\$202.00
Herbicides					
2,4-D Amine	gal	\$14.06	7	\$11.05	\$17.49
2,4-D Ester	gal	\$16.93	7	\$13.70	\$24.57
Crop oil Concentrate	gal	\$5.36	7	\$3.30	\$8.75
Crossbow	gal	\$46.74	7	\$39.79	\$50.28
Dacthal	lb	\$13.52	5	\$12.00	\$15.00
Devrinol 2E	gal	\$45.07	5	\$38.50	\$50.00
Devrinol 50DF	lb	\$10.50	6	\$7.99	\$19.00
Fusilade DX	gal	\$121.91	8	\$115.90	\$134.95
Goal	gal	\$94.59	2	\$85.20	\$103.98
Gramoxone Extra	gal	\$35.62	8	\$32.05	\$39.65
Karmex	lb	\$4.96	6	\$4.69	\$5.35
Kerb 50W	lb	\$21.58	2	\$19.50	\$23.65
Methyl Bromide	lb	\$2.82	6	\$2.61	\$3.00
Nonionic Surfactant	gal	\$14.34	8	\$3.33	\$26.00
Poast Plus 1E	gal	\$48.71	7	\$45.90	\$53.18
Poast	gal	\$82.38	7	\$68.85	\$117.18
Princep 4L	gal	\$16.26	6	\$15.45	\$17.58
Princep 90DF	lb	\$3.64	8	\$3.35	\$4.00
Roundup Ultra	gal	\$50.40	8	\$44.15	\$59.58
Simazine	gal	\$14.57	7	\$13.38	\$15.98
Sinbar	lb	\$24.59	3	\$22.95	\$27.59

Surflan	gal	\$73.14	4	\$61.05	\$80.38
Treflan 4MTF	gal	\$31.35	7	\$27.70	\$33.9
<i>Insecticides</i>					
Agri-Mek 0.15 EC	gal	\$620.00	1	\$620.00	\$620.00
Ambush 2E	gal	\$125.40	6	\$105.10	\$133.95
Apollo 4SC	pint	\$160.20	1	\$160.20	\$160.20
Asana XL	gal	\$133.40	3	\$125.50	\$147.95
Carzol SP	lb	\$32.00	2	\$30.00	\$34.00
Diazinon	lb	\$3.38	2	\$3.00	\$3.75
Diazinon 4E	gal	\$36.69	6	\$27.45	\$55.95
Dimethoate 4EC	gal	\$30.95	2	\$28.00	\$33.90
Dipel	lb	\$14.52	5	\$8.60	\$18.50
Di-Syston 15G	lb	\$1.73	7	\$1.44	\$2.10
Guthian 3F	gal	\$47.99	2	\$44.00	\$51.98
Imidan 70 WP	lb	\$5.53	2	\$5.45	\$5.60
Kelthane 4L	gal	\$49.55	1	\$49.55	\$49.55
Lannate 90 SP	lb	\$18.12	7	\$16.87	\$20.98
Lorsban 15G	lb	\$1.77	7	\$1.29	\$2.22
Lorsban 4E	gal	\$47.48	7	\$43.20	\$56.78
Lorsban 50 WP	lb	\$7.55	1	\$7.55	\$7.55
Malathion 57EC	gal	\$24.07	7	\$22.45	\$28.95
Methoxychlor 25 WP	lb	\$15.25	1	\$15.25	\$15.25
Morestan 25W	lb	\$12.95	1	\$12.95	\$12.95
Pounce EC	gal	\$177.14	8	\$162.70	\$210.95
Sevin 50W	lb	\$4.10	5	\$3.28	\$5.08
Sevin XLR	gal	\$25.96	4	\$23.65	\$29.98
Superior Oil	gal	\$3.00	1	\$3.00	\$3.00
Thiodan 3EC	gal	\$37.97	8	\$32.00	\$47.95
Vendex	lb	\$25.87	2	\$22.25	\$29.49
Vydate L	gal	\$57.70	3	\$50.50	\$71.18
<i>Growth Regulators</i>					
Ethrel	gal	\$41.37	2	\$39.95	\$42.78
<i>Fungicides</i>					
Aliette 80 WDG	lb	\$11.78	2	\$9.05	\$14.50
Bayleton 50 DF	lb	\$60.54	7	\$53.95	\$76.48
Benlate 50% WP	lb	\$16.94	7	\$15.75	\$20.00
Benomyl 50WP	lb	\$15.75	1	\$15.75	\$15.75
Captan 50WP	lb	\$3.36	5	\$2.8	\$3.69
Copper Sulfate	lb	\$0.96	2	\$0.80	\$1.12
Dithane DF	lb	\$3.69	8	\$3.08	\$5.99
Ferbam 76WP	oz	\$3.99	1	\$3.99	\$3.99
Fixed Copper	lb	\$2.40	1	\$2.40	\$2.40
Kocide	lb	\$2.32	3	\$2.00	\$2.55
Maneb 80%	lb	\$2.8	4	\$2.46	\$3.38
Nova 40 WP	lb	\$65.60	2	\$60.80	\$70.40
Orbit 41.8 L	qt	\$88.00	1	\$88.00	\$88.00
Penncozeb	lb	\$3.90	1	\$3.90	\$3.90
Polyram 30 WP	lb	\$2.95	1	\$2.95	\$2.95
Ridomil + Bravo	lb	\$14.78	3	\$14.78	\$14.78
Ridomil Gold	gal	4652.83	7	\$610.15	\$748.95
Ronilan 50WP	lb	\$18.75	1	\$18.75	\$18.75
Rovral 50WP	gal	\$14.32	5	\$10.60	\$25.48
Rubigan 1EC	qt	\$65.00	1	\$65.00	\$65.00
Streptomycin 17W (bactericide)	lb	\$16.60	4	\$11.48	\$23.98
Sulfur 90WP	lb	\$0.33	2	\$0.33	\$0.33
Thiram 65 WP	lb	\$3.72	1	\$3.72	\$3.72
Topsin-M 70 WSB	lb	\$17.83	2	\$15.90	\$19.75
Vapam	gal	\$5.99	1	\$5.99	\$5.99
Ziram 76DF	lb	\$2.75	1	\$2.75	\$2.75

(Powers and Isaacs)

COOPERATIVE EXTENSION SERVICE
U.S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF KENTUCKY
COLLEGE OF AGRICULTURE
LEXINGTON, KENTUCKY 40546

AN EQUAL OPPORTUNITY EMPLOYER

BULK RATE
POSTAGE & FEES PAID
USDA
PERMIT NO. G268

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

Receiving Fruit Facts Electronically on the World Wide Web

Fruit Facts is now available 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 UK College of Agriculture's Almanac Server.

To subscribe, send an e-mail message to "almanac@ca.uky.edu". Be sure that your from: address is correct. The body of the message must contain the line, "subscribe fruitfacts" with a blank line after it, nothing more.

To unsubscribe, send an e-mail message to "almanac@ca.uky.edu." The body of the message should say "unsubscribe fruitfacts" with a blank line after it, nothing more.

John Strang, Extension Horticulturist

