



# Kentucky Fruit Facts

Research & Education Center

P.O. Box 469, Princeton, KY 42445

Oct 2000 (10-00)

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

## Fruit Crop and Weather Situation

The 2000 apple harvest is winding down and fall sales and festivals are proceeding at full tilt. Apples have been moving well and prices are good. However, many growers have a short supply of apples this season.

We are actively working to put the finishing touches on the Annual Fruit and Vegetable Growers program, which will be in the November Fruit Facts issue.

Luke and Julie Lovell recently purchased Dudley Lacey's orchard in Christian county. Dudley will work with Luke and Julie to teach them the intricacies of the operation. We welcome Luke and Julie to our select group of Kentucky apple growers.

Jerry Brown is continuing to improve and has moved to the Lourdes Hospital, 1530 Lone Oak Road, Paducah, KY 42003, for additional therapy. The receptionists phone number there is 270/444-2444. (Strang)

## Meetings

**Oct. 19 - Sustainable Agriculture Workshop,** Land Grant Initiatives that are of Interest to Small Farms: Sustainable Vegetable Research; Insect Pest Management Research in Stored Grain; Gooseberry, Current, Grape, and Pawpaw Research, Botanical and Synthetic Pesticides/Water Quality Research and Tour; Overview of UK Applied Horticulture, Beef Cattle and

Sheep Research Projects. Kentucky State University Research Farm, Frankfort, KY. Contact 502/597-7871.

**Oct. 28 - Fall Kentucky Nut Growers Association Meeting,** Immanuel Baptist Temple, Henderson, KY, located on the corner of 2<sup>nd</sup> & Adams Street.

**Directions: From East or North** – approaching on US60, turn left at the 3<sup>rd</sup> stop light onto 2<sup>nd</sup> street and proceed 3 blocks to the church.

**From Penyrile Parkway** – take the 1<sup>st</sup> Henderson exit. Turn right at the bottom of the ramp onto 2<sup>nd</sup> Street. Proceed 6-7 blocks to the church.

**From the West on US60** – turn right at the 4<sup>th</sup> stop light onto 2<sup>nd</sup> Street. Proceed 3 blocks to the church.

**Oct. 28 - Fall Kentucky Vineyard Society Meeting,** Napa River Grill, Louisville, KY. Dr. Tony Wolf, Viticulture Extension Specialist, Virginia Polytechnic Institute and State University and author of the Mid-Atlantic Winegrape Growers Guide will be the featured speaker. The meeting will include a gourmet dining experience (reservations \$37 each). RSVP (w/check) Raymond Meyer, Treasurer, 1546 Pine Creek Trail, Shepherdsville, KY 40165  
(No reservations after Oct. 20.)

**Dec. 11-13 - Southeast Vegetable and Fruit Expo and AgTech 2000,** Sheraton Greensboro Hotel at Four Seasons, Greensboro, NC. The Southeast Vegetable and Fruit Expo will focus on produce issues. AgTech 2000 will focus on new technologies and opportunities, such as precision farming and biotechnology in all types of agriculture including cotton, tobacco, soybeans etc. Contact Allan Thornton phone 910/592-7161 E-mail:

athornto@sampson.ces.ncsu.edu

**Jan. 7-9 - Annual Fruit and Vegetable Grower Meeting**, Holiday Inn North, Lexington, KY. Contact John Strang 859/257-5685.

**Jan 19-21 - Southern Sustainable Agriculture Working Group (SSAWG) 2001 Conference**, Chattanooga Choo-Choo Holiday Inn. Contact Ann Bell 859/263-0086 for fee-waver applications through Nov. 1, 2000.

**Jan 29-31 - Indiana Horticultural Congress**, Indianapolis, IN. Contact Mario Morales 765/494-0342.

## Blackberry Packaging and Produce Auction Prices

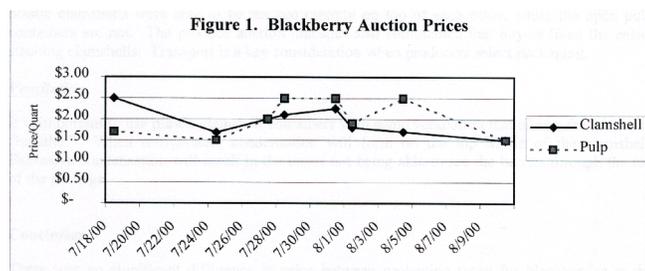
A marketing study was conducted in the summer of 2000 as an initiative of the New Crops Opportunities Center to determine price sensitivity for blackberry packaging in a product auction market. One-quart plastic clamshell containers were provided to a producer who was already marketing 1-quart pulp containers for comparative pricing purposes. The study was conducted at the Fairview Produce Auction, Fairview, KY.

The different container types (168 quarts in clamshells and 209 quarts in fiberboard containers) were marketed over 8 auctions in the three-week period between July 18 and August 10. All berries were picked and refrigerated within 30 hours of transport to market. Berries were separated at auction by container type and offered for sale in lot sizes ranging from 6 to 24 quarts.

Average prices for each container over the 3-week period are shown in Table 1:

Container Type	Average Price
Pulp	\$2.01
Plastic Clamshell	\$1.94

Significant price differences occurred on July 18, when clamshells averaged \$2.50 per quart and pulp averaged \$1.70 per quart; and August 4, when clamshells averaged \$1.70 per quart and pulp averaged \$2.50 per quart. For all but one day of the study, the lots selling first in the auction garnered the highest price between the difference packaging types.



**Discussion** – Since this study indicates no significant difference in price due to packaging type, producers will have to weigh the pros and cons of each package in their individual situations.

**Container Cost** – Plastic clamshell quart berry containers with an absorbent pad placed in the bottom may cost between \$0.06 and \$0.10 per container, depending on the quantity and container type purchases.

Pulp quart containers for berries vary greatly in price, depending on supplier used and quantity purchased. The pulp containers used in this study cost the producer approximately \$0.05; however, other kinds of one-quart pulp containers have been priced as much as \$0.20 apiece.

A survey of regional packaging distributors indicates some difference in the one-pint size. Prices for the 2000 season indicate one-pint pulp containers may cost about \$0.05 less than their clamshell counterparts.

**East of Picking and Transport** – The producers found the pulp containers easier and faster to pick into than the clamshells because:

- # There is no lid to open and shut on the pulp containers.
- # There is no absorbent pad to place in the bottom of the pulp containers.

However, the clamshells had a significant advantage in transport. The quarts in this study were sold in lots packaged in open aluminum beverage can boxes, which are more cost effective in small-scale production than the berry master boxes usually used for wholesale packaging. The plastic clamshells were able to be stacked directly on top of each other, while the open pulp containers are not. The produce auction manager also commented that buyers like the easier stacking clamshells. Transport is a key consideration when producers select packaging.

**Ventilation** -- It is important to use plastic clamshell containers with some ventilation that allows the berries to “breathe”. When refrigerated, condensation will form on the top inside of the clamshell. Excessive condensation will result in the buyer not being able to see the berries through the top of the package.

**Conclusion** -- There was no significant difference in price between packaging types for blackberries at the Fairview Produce Auction in 2000. Price differences were due to certain lots being offered first in the sale order. Packaging preferences are best determined by producer and consumer preference, paying particular attention to packaging cost differences and end consumer preferences.

**Acknowledgements** – Special thanks to producer/cooperators Mr. and Mrs. H.K. Reynolds of Madisonville and Amy Fulcher, Extension Horticulture Agent, Hopkins County, for their cooperation in this blackberry marketing project.  
(Matt Ernst, Tim Woods)

# Yield and Fruit Quality Results for the Year 2000 from the 1998 Wine Grape Cultivar Trial at UKREC, Princeton, KY.

A wine grape cultivar trial was established at the UKREC, Princeton, KY in 1998 to test some of the European varieties released under post entry quarantine at the University of Missouri. After recording data on yield, cluster size (as weight in grams per cluster), berry size (as weight in grams per berry), pH, and Brix (as percent soluble solids), the grapes were distributed to cooperating wineries for evaluation of the wine quality produced from these grape varieties. Yield, fruit quality components, and the cooperators receiving particular varieties are listed in the following table.

Cultivar	Harvest date	No. of vines	Yield T/A	Grams/ cluster	Grams/ berry	Brix	pH	Wine makers
XX-15-51	8-11	15	1.5	300	1.14	21.0	-	Gari Thompson
Rubin t	8-11	14	2.6	433	1.62	19.0	-	Eddie O'Daniel
Iskorka	8-14	14	3.9	400	1.52	21.0	-	Dave Miller
Bianca (N <sup>1</sup> )	8-14	15	3.0	367	1.80	21.0	3.6	Dave, Eddie, & Thomas Walker
Bianca (S)	8-14	15	2.1	233	1.75	21.6	3.6	Dave, Eddie, & Thomas Walker
I 31/67	8-14	12	2.0	500	1.34	18.0	3.6	Eddie O'Daniel
Rani Riesling	8-17	14	0.5	500	1.25	18.0	3.4	Butch Meyer
Toldi	8-17	14	2.4	500	3.19	19.0	3.5	Butch Meyer
Petra	8-17	13	1.1	300	1.28	21.4	3.7	Gari Thompson
XIV-1-86	8-17	13	4.7	533	2.05	16.4	3.3	Dave, Butch, & Gari Thompson
Malverina	8-17	11	2.9	567	1.86	18.0	3.4	Dave and Butch
XIV-11-57	8-19	10	2.4	210	1.05	18.8	3.6	Eddie O'Daniel
Liza	8-21	14	1.2	333	1.08	19.0	3.1	Butch Meyer
M 39-9/74	8-21	14	2.4	600	2.26	19.2	3.5	Eric Durbin
Laurot	8-21	15	1.8	367	1.01	18.2	3.3	Eric Durbin
Kozma 55 (N)	8-21	12	0.8	333	1.46	19.0	3.3	Chris Nelson
Kozma 55 (S)	8-21	13	0.4	233	1.77	19.6	3.6	Chris Nelson
Kozma 525	8-21	14	1.5	467	1.45	-	3.6	Chris Nelson
34-4-49	8-21	15	1.2	467	1.22	19.0	3.2	Butch Meyer

<sup>1</sup> An "N" or "S" indicates from North or South part of row, respectively. (Wolfe, Brown, Strang).

## Grape Crown Gall

With the need to diversify their crops many Kentucky farmers have planted grapes. To successfully grow grapes, growers need to be aware of grape diseases. In previous newsletters, cane, foliage and fruit diseases have been discussed. In the plant disease diagnostic laboratory, grape specimens with crown gall are now being observed, thus a discussion of this important trunk disease is warranted. There are more than 600 types of plants susceptible to crown gall disease. Crown gall is especially devastating to grapes in Kentucky and some vineyards have been lost due to the disease, but it can also affect other fruits such as apples, stone fruits, and brambles.

**Symptoms.** The disease is characterized by galls or knobby overgrowths that form on susceptible plant tissues. New galls first appear in early summer as white, fleshy, callus growth. Galls turn brown by late summer and in the fall become dry and corky. The woody tumors may be gnarled with rough surfaces. Galls can develop rapidly and completely girdle a young vine in one season, or they may take a few

years to develop. Galled vines frequently produce inferior shoot growth, and portions of the vine above the galls may die. When galls are numerous or when they are located on the major roots or on the root crown, they disrupt the translocation of water and mineral elements, leading to poor growth, gradual dieback, and sometimes death of vines. In general, affected plants are more susceptible to adverse environmental conditions, especially winter injury.

**Cause and biology of the disease.** Crown gall is caused by the soil-borne bacterium, *Agrobacterium tumefaciens*. The bacterium survives for long periods of time in soil, and also in galls and in diseased plants. The crown gall bacterium is widely present in Kentucky soils and may be systemically present in many grape vines, but seldom causes disease unless the vine is injured. Galls develop following an injury permitting entrance of the pathogen and may appear on the roots, trunk, and arms of grape vines. Such injuries may occur during intermittent freezing and thawing weather common to Kentucky each winter. Such frequent freezing and thawing may not occur in other grape

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growing regions such as New York or California. Overwintering bacteria may be spread to wound sites by splashing rain, running water, on cultivation implements or on pruning tools. Contaminated nursery stock may be another source of the disease. Bacteria can survive in the soil for many years.

**Disease management.** Use disease tolerant cultivars. In general, *Vitis vinifera* grapes are more susceptible than *V. labrusca*. Highly susceptible cultivars include Baco Noir, Cabernet Franc, Cabernet Sauvignon, Chancellor, Chardonnay, Gewürtztraminer, Limberger, Merlot, Muscat Ottonel, Pinot Blanc, Pinot Gris, Pinot Meunier, Pinot Noir, Riesling, and Sauvignon Blanc. Less susceptible cultivars include Catawba, Concord, Delaware, Foch, Fredonia, Ives, and Steuben.

Select planting sites with no history of crown gall, or wait at least 5 years before replanting such sites. Plant vines in well drained soil. Minimize root injuries during planting. Using northeast facing sites may reduce freeze injury. Plant only certified, disease-free nursery stock; discard plants with galls. The biological control microbial antagonists used for crown gall at planting do not work for grapes. Soil fumigation is generally not effective for destroying the pathogen.

Adopt management practices that minimize wounding. Hill up soil or mulch around vinifera grapevines or otherwise protect the graft union in fall to reduce winter injury and resulting wound sites needed for infection. Hilling also ensures the development of new scion shoots that may be needed for trunk renewal. In some areas growers bury young vines in the fall to reduce freeze injury.

Gerald Kushner, Broad Run Vineyards and Winery, Louisville, KY grows his vinifera grapes using multiple (3-5) trunks. He retains a short renewal spur at the graft union for trunk renewal. This fan shaped training system was also recommended by Garth Cahoon, Ohio State University Viticulturist emeritis for vinifera grapes. Gerald feels that thinner diameter multiple trunks have smaller freeze cracks and heal much faster than larger older trunks, thus making them less prone to crown gall infection. If a trunk becomes infected with crown gall it can be easily removed with

little loss in production. Although there are no studies in the literature to support this, this system has worked well for Gerald and he has lost few vines to crown gall over the past 15 plus years.

Generally, infected plants are removed and destroyed however, galls on the upper parts of the trunk or on canes can sometimes be pruned out.

Grape vines with poor vigor are more susceptible to winter injury, thus it is important to manage the crop and other grape diseases so as to insure maximum vine vigor. (Hartman)

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