

# Kentucky Fruit Facts

September-October Newsletter 2018  
<http://www.uky.edu/hort/documents-list-fruit-facts>

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## Inside this Issue:

Fruit Crop News .....	1
Vegetables Crops Extension & Research Website. . .	1
Upcoming Meetings. ....	1
Peach and Nectarine Cultivars at UKREC, Princeton, KY. ....	3
Update on the 2010 Apple Rootstock Trial at UKREC Orchard, Princeton, KY. ....	4
Receiving Fruit Facts on the Internet .....	6

## Fruit Crop News

John Strang, U.K. Extension Horticulturist

This has been an exceptionally cool summer up until September and fruit are ripening about a week later than our expected harvest dates. Early maturing apple color is spectacular as can be seen in the masthead photo of Pixie Crunch. This is a scab resistant variety that is smaller in size, sweet and crunchy and can be harvested over a period of about a month. It has done well marketed to children.

Grower concerns over irrigation are pretty much a distant memory and fruit are sizing well. The apple crop is quite variable across the state with many growers having full crops, but others with substantially reduced crops. Sooty blotch and flyspeck are persistent problems because of the rain and high humidity and brown marmorated stink bugs are of concern because they are difficult to see in the orchard and will feed until frost kills them. Fortunately, they have quit egg laying and they are now beginning to prepare for winter.

Very few growers had a peach crop this year because of freeze losses in the spring. We expected a peach crop at the UKREC in Princeton, KY, but most of the fruit dropped off and a number of fruit failed to size up. Figure 1 shows these pigmy fruit cut in half. This fruit was injured in a freeze after they set and



does not contain gel in the seed cavity, which explains why the fruit failed to size, but remained on the tree (Figure 1).



Figure 1. Pigmy peaches lacking gel in the seed cavity as a result of a freeze.

## Vegetable Crops Extension & Research Website

Dr. Rachel Rudolph, UK Extension Vegetable Specialist, and Senior Extension Associate Joshua Knight have created a new website to help Kentucky commercial vegetable growers. The website, titled Vegetable Crops Extension & Research, is intended to provide growers with current production resources. The website also has information on upcoming events around the state related to vegetable production. New information and events will be added often. View the website at <https://veg crops.ca.uky.edu>

## Upcoming Meetings

All times EST unless noted

**Sept 15 Apple Orchard Field Day, Browning Orchard, 10955 Wallingford Rd., Wallingford, KY.**  
Hosted by Morehead State University and University

Cooperative Extension Service  
Agriculture and Natural Resources  
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College of Agriculture,  
Food and Environment  
Cooperative Extension Service



Disabilities  
accommodated  
with prior notification.

of Kentucky District 1 Cooperative Extension Service Offices  
Program (Rotating Sessions for commercial and home apple orchardists)

10:00 a.m. Insect Pest ID & Management/Disease ID & Management - *Dr. Ric Bessin* and *Dr. Nicole Gauthier*

12:00 p.m. Lunch

12:30 p.m. Variety Tasting/Marketing & Tree Planting Basics - *Dr. John Strang*, *Macy Fawns* and *Philip Konopka*

Registration \$10/person covers lunch and materials  
Contact 606-564-6808 to register.

**Sept. 15 Equipment Operating Workshop**, West Virginia University Animal Science Farm, 100 Animal Science Farm Rd., Morgantown, West Virginia 26505. This workshop will provide intro level agriculturists and other agriculturists that would like to expand their knowledge base with information on how to select, operate and maintain equipment on their operations. Participants will get hands on experience with small tractor, three point hitch implements, agricultural UTV's and other equipment vital to an operation. Experts will be in attendance to teach of the importance of safety, how to do maintenance, the understanding of equipment systems and proper equipment selection. Registration is free. This program is funded in part by the USDA, Risk Management Agency. 10:00 a.m. - 3:00 p.m. EDT. To register and for directions see: <https://www.regonline.com/builder/site/Default.aspx?EventID=2529907>

**Sept. 20 Food Safety Modernization Act (FSMA) Grower Training Course**, Larue County Extension Office, 807 Old Elizabethtown Rd., Hodgenville, KY 42748. 8:00 a.m. - 5:00 p.m. The course is for fruit and vegetables growers and others interested in learning about produce safety, Good Agricultural Practices (GAPs), co-management, and the proposed FDA's Food Safety Modernization Act (FSMA) Produce Safety Rule. Any growers who would like to meet the proposed Produce Safety Rule requirement outlined in 112.22 (c) *At least one supervisor from the farm must complete food safety training at least equivalent to the standardized curriculum recognized by the FDA.*

### **What to Expect at the PSA Grower Training Course**

The trainers will spend approximately seven hours of instruction time to cover content contained in these seven modules:

- Introduction to Produce Safety
- Worker Health, Hygiene, and Training;
- Soil Amendments
- Wildlife, Domestic Animals, and Land Use
- Agricultural Water
- Postharvest Handling and Sanitation
- How to develop a Farm Food Safety Plan.

Parts of the proposed FSMA Produce Safety Rule requirements are outlined within the modules. There will be time for questions and discussion, so participants should come prepared to share their experiences and produce safety questions they have.

### **Benefits of Attending the Course**

The course will provide a foundation of Good Agricultural Practices (GAPs) and co-management information, proposed FSMA Produce Safety Rule standards and details on how to develop a farm food safety plan. Training cost is \$90/person and includes lunch, training materials, trainer fees and a certificate through AFDO. The registration deadline is Sept 12. To register contact Daniel Carpenter 270-358-3401. Please make your check payable to University of Kentucky and mail it to the Larue County Extension Office or hand it to Daniel Carpenter at the training. For more information about scheduled PSA Grower Training Courses in Kentucky visit the Food Systems Innovation Center website at <http://www.uky.edu/fsic>

**Sept. 17 Early Apple Tasting**, Bullitt County Cooperative Extension Office, 384 Halls Lane, Shepherdsville, KY 40165. 6:00 p.m. Preregister by calling 502-543-2257.

**Sept. 20 Pawpaws, Pimocane Fruiting Blackberries and Sorghum, Sustainable Agriculture Workshop**, "Third Thursday Thing", Kentucky State University Harold R. Benson Research and Demonstration Farm, 1525 Mills Lane, Frankfort, KY. 10:00 a.m. - 3:00 p.m. Contact Marion Simon Phone: 502-597-6325; Email: [marion.simon@kysu.edu](mailto:marion.simon@kysu.edu)

**Sept. 22 UK Robinson Center Mountain Fest Field Day**, Robinson Center for Appalachian Resource Sustainability, 176 Robinson Rd., Jackson, KY 41339. Featuring food vendors, craft exhibitors, agricultural tours and much more 10:00 a.m. 130 Robinson Road, Jackson, KY 41339. Contact Phone: 606-666-2438 or Email: [bammerman@uky.edu](mailto:bammerman@uky.edu)

**Sept 22 Hart County Farm, Hunting and Garden Expo**, Hart County Fairgrounds, 2384 S Dixie Hwy (31W), Munfordville, KY 42765 Home

Production of Strawberries, Brambles and Blueberries. 10:20 a.m. CDT. Contact 270-524-2451.

**Oct. 11 Clark County Plasticulture Strawberry Field Day**, Kirt and Karen Fallis farm, 3070 Ecton Rd (Hwy 1960), Winchester, KY. 4:00 p.m. Contact Clark County Extension Office 859-744-4682.

**Oct. 15. Late Apple Tasting**, Bullitt County Cooperative Extension Office, 384 Halls Lane, Shepherdsville, KY 40165. 6:00 p.m. Preregister by calling 502-543-2257.

**Oct. 27 Fall Kentucky Nut Growers Association Meeting**, Hardin County Extension Office, 201 Peterson Dr., Elizabethtown, KY 42701. 9:30 a.m. Bring a dish for the potluck luncheon and nuts to exhibit. Contact Danny Ganno 270-860-8362.

**Nov. 13-15 Kentucky Small, Limited Resource Minority Farmers Conference**, Reflections on the Past Looking Towards the Future: 20 Years in the Making, Capitol Plaza Hotel and Kentucky State University Harold R. Benson Research and Demonstration Farm, Frankfort, KY. For more information and to register contact [shelly.spiggle@kysu.edu](mailto:shelly.spiggle@kysu.edu), 502-597-6325.

**Jan. 7-8, 2019 Kentucky Fruit and Vegetable Conference**, Embassy Suites Hotel, 1801 Newtown Pike, Lexington, KY 40511. Contact John Strang Phone: 859-257-5685; Email: [jstrang@uky.edu](mailto:jstrang@uky.edu)



## Peach and Nectarine Cultivars at UKREC, Princeton, KY

*By Dwight Wolfe, Research Specialist, UK Research and Education Center, Princeton, KY*

Two trees of eleven named peach and nectarine cultivars from John Clark’s breeding program at Clarksville, Arkansas, were planted in November, 2015. These cultivars along with their average ripening dates and Brix reading at the Clarksville, Arkansas experiment station are listed in Table 1. All of the nectarine trees except for ‘Westbrook’ and three of the peach cultivars had some fruit this season despite the spring freezes. Our block of ‘Redhaven’ trees (separate from the cultivar planting) was almost completely frozen out this year. Most trees in our cultivar trial fruited but had only a few to a couple dozen fruit per tree. One of the two trees of ‘Amoore Sweet’ had over 150 fruits. However, its Brix reading in Kentucky was relatively low compared to that for Arkansas. In any case, all tasted good, but

‘Bowden nectarine’ and ‘White Diamond’ peach were particularly sweet (Figures 2 and 3, respectively).

**Table 1. Peach and Nectarine Cultivars from John Clark’s Breeding Program planted at UKREC.**

Nectarine Cultivars	Average Ripening Date in Arkansas*	Date Fruit was Harvested **	Average Brix Reading in Arkansas*	Average Brix Reading in KY**
Amoore Sweet	July 6 ± 7 days	July 12	15.2 ± 2.6	12.7 ± 0.6
Arrington	June 30 ± 8 days	July 2	13.6 ± 4.0	12.0 ± 0.6
Bowden	July 4 ± 7 days	July 12	13.8 ± 2.3	14.7 ± 2.4
Bradley	July 1 ± 7 days	July 12	12.2 ± 2.4	13.1 ± 1.7
Westbrook	June 15 ± 6 days	--	9.3 ± 3.7	--
Peaches				
Souvenirs	July 6 ± 5 days	--	12.6 ± 1.6	--
White Cloud	July 5 ± 11 days	July 17	11.7 ± 1.6	12.9 ± 1.6
White Country	July 17 ± 5 days	July 23	12.9 ± 1.9	12.6 ± 1.9
White Diamond	July 31 ± 5 days	August 7	14.6 ± 1.4	14.6 ± 1.4
White River	July 20 ± 5 days	--	12.2 ± 1.3	--
White Rock	July 29 ± 6 days	--	11.3 ± 2.1	--

\* At Clarksville experiment station, ARK. Averages from over several years of testing. See *HortScience* 36(6):1164-1167. 2001; and *HortScience* 46(4):665-667. 2001.

\*\* At UKREC, Princeton, KY, in 2018. Brix readings are averages of two readings per, three fruit per tree, and two trees per cultivar.



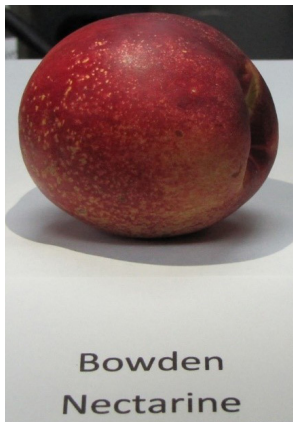
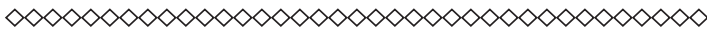


Figure 2. 'Bowden' nectarine. Photo by Virginia Travis.



Figure 3. 'White Diamond' peach. Photo by Virginia Travis.



### Update on the 2010 Apple Rootstock Trial at UKREC Orchard, Princeton, KY

By Dwight Wolfe, UK Horticulture Research Specialist

Regular readers of Kentucky's Fruit Facts Newsletter are aware that Kentucky is a participant along with 29 other states, three Canadian provinces, Mexico, and Chile in the Cooperative Regional NC-140 Project entitled, "Improving Economic and Environmental Sustainability in Tree Fruit Production through Changes in Rootstock Use." In spring of 2010, a planting of 31 different apple rootstocks was established in the orchard at the University of Kentucky Research and Education Center orchard, Princeton, KY. The scion cultivar is 'Aztec Fuji' (Figure 4).



Figure 4. 'Aztec Fuji' Photo by G. Travis.

This trial was one of the topics discussed at the 2017 annual NC-140 committee meeting, in November 14-15, 2017. Normally, NC-140 rootstock trials are carried out through their tenth leaf, but a number of problems with this trial have resulted in it being terminated a couple of years early. First, some of the trees were damaged by a freeze (19.4°F on October 10 & 11, 2009) in the nursery prior to being dug and distributed to cooperators for planting. When planted at the research sites, most trees performed very well, but about 10% either leafed out or died very soon after planting in 2010 or they never leafed out at all. For example, more than 50% of the trees on CG.2034, CG.4013, and PiAu 9-90 never leafed out or died very soon after planting. Likewise for about 33% of the trees on CG.4814 and CG.5087.

Further, among the 31 rootstocks in the trial (Table 2), there were too many in which the tree size potential and performance were unknown. Typically, rootstocks are classified as either a dwarfing or a semi-dwarfing rootstock and the subsequent trials compare those stocks just within their size classification. One reason for this is that trees on dwarf rootstocks are spaced closer together within a row than are the semi-dwarf trees, and having them in separate trials avoids many problems with shading and spacing which complicates the statistical analysis. In the case of this trial, too many of rootstocks turned out to be in the semi-dwarf category and their size confounded the performance of many of the dwarf rootstocks. Likewise, the performance of the semi-dwarfing rootstocks was compromised given the close spacing (six feet between trees) used in this trial.

There were also some inconsistencies with the tissue culture derived Geneva rootstocks (designated by "TC" after the rootstock name) compared to stool-bed produced trees (designated by "N"). For example, G.202 N stocks were larger than the G.202 TC stocks (Table 2), contrary to previous studies where tissue cultured produced trees were larger than the stool-bed produced ones.

Finally, Marini et al (1) have shown that six to seven years is all that is needed to classify rootstocks according to their appropriate vigor class. The vigor classification of rootstocks in the 2010 apple rootstock trial are shown in Table 1 based on their relative size to M.9 NAKBT377. Other data for 2017 from this trial can be found in the Fruit and Vegetable 2017 Annual Report (2).

## References

1- Marini, R.P., W.R. Autio, B. Black, J. Cline, W.P. Cowgill, Jr., R.M. Crassweller, C. Hampson, M.M. Kushad, R. Moran, M. Parker, R.L. Perry, G.L. Reighard, T. Robinson, D. Wolfe. 2016. Time required for classifying rootstock vigor in multi-location rootstock trials. *J. of Amer. Pomological Society* 70(2):82-91.

2-Wolfe, D., D. Archbold, J. Johnston, and G. Travis. 2017. Rootstock Effects on Apple and Peach Tree Growth and Yield. *Fruit and Vegetable 2017 Annual Research Report*. University of Kentucky College of Agriculture, Agriculture Experiment Station publication PR-739:16-19. <http://www2.ca.uky.edu/agcomm/pubs/PR/PR739/PR739.pdf>

**Table 2. Categorization of apple rootstocks in the 2010 NC-140 apple rootstock Trial at Princeton, KY.**

Size Category-1	Rootstock	Trunk Cross-Sectional Area (Sq. in.)	Cum. Yield Efficiency (2012-2017) Lbs./in.-2 TCSA	Clone Status-2	Percent Size Relative to Size of M.9 NAKBT337
standard size	B.70-20-20			NR	
large semi-dwarf	PiAu 9-90	21.9	8.1	NR	251
	B.7-3-150	18.3	10.2	NR	211
	B.70-6-8	17.5	8.6	NR	201
moderate semi-dwarf	B.64-194	16.8	8.4	NR	193
	PiAu 51-11	16.6	10.4	NR	191
	B.67-5-32	15.2	10.8	NR	175
	M.26 EMLA	14.6	11.7	Named	168
	G.935 TC3	13.3	12.0	Named	152
small semi-dwarf	G.202 N3	12.5	15.3	Named	144
	G.222	11.4	16.2	Named	131
large dwarf	CG.3001	10.2	11.4	NR	117
	CG.4814	10.1	19.9	NR	116
	G.935 N	9.8	24.0	Named	113
	M.9 Pajam2	9.7	18.5	Named	111
moderate dwarf	CG.4004	8.9	26.4	NR	102
	G.11	8.8	18.0	NR	101
	M.9 NAKBT337	8.7	23.0	Named	100
	CG.4214	7.7	17.9	NR	89
	G.202 TC	8.4	21.3	Named	96
	CG.5087	7.3	23.1	NR	83
	B.10	7.3	21.7	Named	83
	Supp.3	7.1	19.9	NR	82
small dwarf	CG.4013	6.9	22.0	NR	79
	G.41 TC	6.4	21.8	Named	73
	G.41 N	5.3	28.6	Named	61
	CG.4003	5.0	25.1	NR	57
	CG.2034	3.7	20.0	NR	42
sub-dwarf	B.9	2.6	30.2	Named	30
	B.7-20-21	2.6	12.1	NR	30
	B.71-7-22	1.8	25.3	NR	21

1-Categories based on relative size of trunk cross-sectional area to that of M.9 NAKBT337: 0-40%, sub-dwarf; 40-80%, small-dwarf; 80-110% moderate dwarf; 110-130%, large dwarf; 130-150%, small semi-dwarf;

2-NR, not released. For the Geneva Rootstocks, see <http://www.citl.cornell.edu/plants/GENEVA-Apple-Rootstocks-Comparison-Chart.pdf>

3-TC and N indicate Tissue culture produced and Bench propagated, respectively.

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