

Kentucky Fruit Facts

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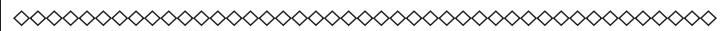
Fruit Crop News

John Strang, U.K. Extension Horticulturist and Matt Dixon, U.K. Ag Meteorologist

An excellent peach season is finished up and apples are being removed from trees across the state. The high August and September temperatures have not been conducive to the development of high colored fruit. However, Dana Reed sent me several photos of Ruby Mac that he was harvesting and the color was impressive for a McIntosh apple type. The dry weather has substantially improved fruit sugar contents and I have seen some water core development. Fruit rots, particularly bitter rot have been a problem in many orchards mostly because of the excessively wet early and mid-portion of the season. We have quite a few fruit in our University Orchard in Lexington that have not sized up despite the rain. When these fruit are cut we often find only one seed, a result of rain during bloom and inadequate pollination.

The National Weather Service predicts above normal temperatures and normal to slightly below

normal rainfall through mid-October. The three-month outlook is for normal to slightly above normal temperatures and normal precipitation levels. The predicted La Nina development for the fall appears to be fading making predictions difficult.



Upcoming Meetings

(All meetings are Eastern time unless specified.)

Oct. 1, Mountain Proud Field Day, U.K.
 Robinson Center, 130 Robinson Rd., Jackson, KY 41339. Tours run from 10:00 a.m.-2:00 p.m. and involve: Hemp & Chia Hayride, Kale & Horticulture Hayride, Bird Feeder Workshop, Saddle Up Safety, Quicksand History Hayride and a Forest Research tour (Robinson Forest). The Taste of the Mountains Lunch begins at 11:30 a.m. with many food vendors doing demonstrations and providing samples. Contact Jackie at 606-666-2438 Ext 0.

Oct. 8, Kentucky Nut Growers Association Fall Meeting, Henderson County Extension Office, 3341 Mt Zion Rd., Henderson, KY 42420 270-826-8387. Contact Danny Ganno Phone: 270-860-8362; email: danganno@gmail.com

Oct 23, Commercial Pecan Harvest and Processing, Voss Pecans, 10101 Slant Rd. Carlyle, IL 62231. Contact Ralph Voss for meeting specifics. Phone: 618-594-4122; Email: VossPecans@Hotmail.com; Web: Vosspecans.com Note: GPS and iPhone Map/Directions will take you "Close" on Slant Road in the middle of a field 3 miles from the farm. Just stay on Slant Road heading West (toward Bartelso) until you see the Voss Pecans sign at the Farm.

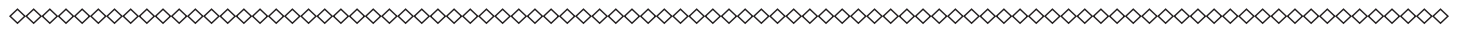
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Nov. 15-17, Small, Limited Resource, Minority Farmers Conference, Land, Legacy, and Way of Life, Capitol Plaza Hotel and Harold R. Benson Research and Demonstration Farm, Kentucky State University, Frankfort, KY. Registration fee is \$50.00 per person and should be received by October 15, 2016. To obtain a registration form, conference program, and hotel accommodations, contact Louie Rivers 502-597-6327 louie.rivers@kysu.edu or Ms. Shelly Spiggle at 502-587-7325 or shelley.spiggle@kysu.edu.

Nov. 15, Chilling Requirements of Perennial Fruit Crops in Kentucky, Special meeting to honor Dr. Elmer Gray, Emeritis Professor Agriculture WKU, Western Kentucky Botanical Garden, 25 Carter Rd., Owensboro, KY 42301. 11:30 a.m. CT. Complementary lunch served, Reservations 270-852-8925 wkbkg@bellsouth.net

Jan. 9-10, 2017 Kentucky Fruit and Vegetable Conference - Embassy Suites Hotel, Lexington, KY. Contact John Strang 859-257-5685; email: jstrang@uky.edu



Thornless Erect Blackberry Cultivar Trial

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

Three thornless erect blackberry named cultivars (Natchez, Osage, and Ouachita) and two selections (A-2434T and A-2491T) all from John Clark’s breeding program at the University of Arkansas are being evaluated at the University of Kentucky Research and Education Center, Princeton, KY. Plants were established in the spring of 2013 in 2.5 x 12.5 ft. plots within rows spaced 18 ft. apart. Results based on the current recommended row spacing of 14 ft. are summarized in Table 1 for 2015 and 2016.

Table 1. Summary of results for 2015 & 2016 from the Blackberry Cultivar Trial at UKREC, Princeton, KY.

Cultivar	2015 Yield (lbs./acre)	2016 Yield (lbs./acre)	2015 Size (grams/berry)	2016 Size (grams/berry)
Osage	4,654	11,858	4.9	3.7
A-2434-T	4,988	7,567	6.6	4.8
Ouachita	3,961	5,545	5.1	3.6
Natchez	4,953	3,054	9.0	4.8
A-2491-T	4,036	2,263	4.4	2.8
Mean	4,519	6,057	6.0	3.9
LSD (0.05)*	1,618	2,337	0.5	0.4

*Means greater than the least significant difference are not statistically significant at 0.05 probability level.

Yields varied significantly among cultivars in both years, although 2016 yields were lower than last year for Natchez and A-2491-T, they were higher for A-2434-T, Osage, and Ouachita (Table 1). During February of 2015 plants were exposed to -13°F and yields were very good for thornless erect blackberries despite the low temperature. In 2016 winter temperatures were very mild so we expected to see yield increases for 2016. This season, Osage produced significantly more fruit than all other cultivars. A-2434-T and Ouachita were significantly more productive than Natchez and A-2491-T. A-2434-T, and Natchez (Figure 1) had significantly larger berries than all other cultivars/selections in both years. However, berry size (as measured by weight per berry) for all cultivars averaged about 2 grams smaller this year compared to last year, and most plants had smaller leaves, especially Natchez and A-2491-T (Figure 2). John Clark has suggested that this may be the result of highly productive cultivars such as Natchez and A-2491-T, not having sufficient reserves in the crowns and roots for growing good leaves due to an excessive crop load. Some cane blight and/or injury to the cane bases from spring herbicide applications may also have affected leaf and berry size and yield. Primocane growth in 2016 was vigorous and leaf size was very good.

All berries in this trial ripened over about a four-week period from about June 22 through about July 18.

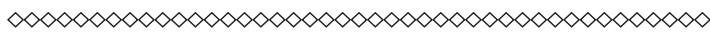
Data on taste was not collected in 2016, but for those who tasted them, taste was deemed to be rather poor during the beginning of the season but seemed to improve as the season progressed.



Figure 1. Natchez fruit and leaf size in 2014 and 2015



Figure 2. Typical berry size in 2016. Note small floricane leaves



Brown Marmorated Stink Bug

By Ric Bessin, U.K. Extension Entomologist

While fall brings wonderful weather, it also signals the start of the insect invasion period. One of the early-fall home invaders is the brown marmorated stink bug (BMSB) which clusters on the sides of buildings searching for entry points throughout the month of September. BMSB activity in the home can last until early May. The key to controlling these in the house is to keep them out in the first place.

Figure 3. BMSB often gather on various types of trees around homes before moving onto buildings (Photo: Ric Bessin, UK)



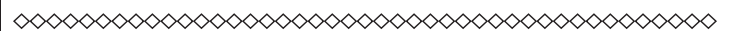
On warm sunny days in September, BMSB adults can be found gathering on trees and shrubs near buildings (Figure 3). Frequently they move to the higher portions of the building to find entry points. Homes with a past history of BMSB need to be checked for entry points where these insects can get into the attic, eaves, or other parts of the house. This needs to be done before they begin their movement indoors. Mike Potter has a factsheet on how to pest proof you home (EntFact-641). Research at UK has found that screening materials to exclude BMSB adults need to be 1/6" or smaller in size (Figure 4). Chimneys, ventilation openings to the attic, and cracks around doors and windows serve as common entry points.



Figure 4. Screens with 1/4 openings and larger failed to exclude BMSB (photo: Ric Bessin, UK)

Beneficial Stink Bugs

Not all stink bugs are bad. Kentucky has three species of beneficial stink bugs that can be common in some fields: spined soldier bug, anchor bug, and two-eyed stink bug. These predaceous stink bugs don't feed on plants; they dine on insects, including many insect pests.



End of Endosulfan Phaseout/Cancellation

By Ric Bessin, U.K. Extension Entomologist

The Environmental Protection Agency (EPA) and endosulfan registrants have been phasing out uses of this insecticide for several years. July 31, 2016, was the end of the phaseout period, which started in 2012. This product cancellation was due to unacceptable health risks to farmworkers and wildlife. It is now unlawful to use the product. Any remaining endosulfan should be disposed of through county-based unwanted pesticide disposal programs.

2016 Fungicide Costs per ACRE **

By Nicole Gauthier, UK Extension Plant Pathologist and Kimberly Leonberger, UK Plant Pathologist Extension Associate

Apple & Pear

Fungicide	FRAC	Average price (\$ per)	rate pome low	rate pome high	Price per application pome low (\$)	Price per application pome high (\$)
<i>Bactericides</i>						
Agri-Mycin 17 (streptomycin)	25	27.03 /lb	1.5	3.0	23.32	34.97
Apogee (growth regulator)		4.44 /oz	18.0	36.0	79.88	159.75
Champ 2 (copper hydroxide) 5.00	M	5.00 /pt	5.3	10.5	26.65	52.50
C-O-C-S (copper oxychloride sulfate)	M	4.95 /lb	8.0	15.5	36.60	76.63
Copper Sulfate (bluestone)	M	2.50 /lb	5.0		12.5	
Harbour (streptomycin)	25	14.75 /lb	1.5		22.13	
Kocide 3000 (copper hydroxide)	M	9.15 /lb	3.5	7.0	32.03	64.05
Mycoshield (oxytetracycline)	41	30.00 /lb	1.0	30.0		
<i>Fungicides</i>						
Captan 50 WP	M	5.13 /lb	4.0	8.0	20.50	41.01
Captan 80 WDG	M	6.17 /lb	2.5	5.0	15.44	30.87
Dithane 45 (F-45) Rainshield	M	8.95 /qt	2.4	4.8	21.48	42.96
Eagle 20EW	3	1.48 /oz	4.0	6.0	5.94	
Flint	11	12.15 /oz	2.0	2.5	24.30	30.38
Fontelis	7	1.79 /oz	14.0	20.0	25.11	35.88
Indar	3	2.40 /oz	6.0	8.0	14.39	19.19
Inspire Super	3+9	1.63 /oz	12.0		19.50	
Luna Sensation	7+11	7.65 /oz	4.0	5.8	30.60	44.37
Luna Tranquility	7+9	3.19 /oz	11.2	16.0	35.73	51.04
Manzate Pro-Stick (mancozeb/penncozeb 75)		4.71 /lb	3.0	6.0	14.12	28.24
Merivon	7+11	6.71 /lb	4.0	5.5	26.84	36.90
Microthiol Disperss (sulfur)	M	1.67 /lb	10.0	20.0	16.67	33.33
Omega 500F	29	3.48 /oz	10.0	13.8	34.84	48.08
Polyram	M	4.93 /lb	6.0		29.60	

Apple & Pear continued

Fungicide	FRAC	Average price (\$ per)	rate pome low	rate pome high	Price per application pome low (\$)	Price per application pome high (\$)
Pristine	7+11	3.58 /oz	14.5	18.5	51.96	66.29
Procure 480 SC	3	4.11 /oz	8.0	16	32.88	65.75
Rally 40 WSP	3	3.33 /oz	5.0	8.0	16.63	26.60
Scala	9	2.88 /oz	7.0	10.0	20.18	28.83
Serenade Optimum	--	1.85 /oz	14.0	20.0	25.96	37.08
Sovran	11	4.50 /oz	4.0	6.4	18.00	28.80
Syllit	U	7.90 /pt	1.5	3.0	11.85	23.70
Topguard	3	1.68 /oz	8.0	13.0	13.45	21.86
Topsin M WSB	1	10.50 /lb	1.0	1.5	10.50	15.75
Vanguard WG	9	3.77 /oz	3.0	5.0	11.31	18.85
Ziram	M	5.20 /lb	6.0		31.20	
<i>Water Mold Products</i>						
AgriFos	33	7.75 /qt	1.3	2.5	9.68	19.36
Aliette	33	14.25 /lb	2.0	5.0	28.50	71.25
Phostrol	33	3.10 /pt	2.5	5.0	7.75	15.50
Ridomil Gold SL	4	6.17 /pt	2.5	5.0	15.44	30.87

**Product rates are for cost example purposes, only. Refer to label for approved crop, rate, and time of application.

Generics: Bravo (Equus, Chlorothalonil); Topsin M (T-Methyl, Thiophanate Methyl); Ridomil (Metastar); Rally (Sonoma); Aliette (Legion)

Peach & Stone Fruit

Fungicide	FRAC	Average price (\$ per)	rate stone low	rate stone high	Price per application stone low (\$)	Price per application stone high (\$)
<i>Bactericides</i>						
Champ 2 (copper hydroxide)	M	5.00 /pt	5.3	10.5	26.65	52.50
C-O-C-S (copper oxychloride sulfate)	M	4.95 /lb	12.0	15.6	36.60	76.73
Kocide 3000 (copper hydroxide)	M	9.15 /lb	3.5	7.0	32.03	64.05
Mycoshield (oxytetracycline)	41	30.00 /lb	1.0	30.0		
<i>Fungicides</i>						
Abound	11	1.63 /lb	12.0	15.5	19.55	25.25
Bravo Weather Stik	M	6.47 /pt	3.1	4.1	20.06	26.68
Captan 50 WP	M	5.13 /lb	4.0	8.0	20.50	41.01

Peach and Stone Fruit continued

Fungicide	FRAC	Average price (\$ per)	rate stone low	rate stone high	Price per application stone low (\$)	Price per application stone high (\$)
Captan 80 WDG	M	6.17 /lb	2.5	5.0	15.44	30.87
Captevate 68 WDG	M+17	12.62 /lb	3.8		47.32	
Elevate 50 WDG	17	41.75 /lb	1.0	1.5	41.75	62.63
Fontelis	7	1.79 /oz	14.0	20.0	25.11	35.88
Gem	11	8.45 /oz	1.9	3.8	16.06	32.12
Indar	3	2.40 /oz	6.0		14.39	
Inspire Super	3+9	1.63 /oz	16.0	20.0	26.00	32.50
Luna Sensation	7+11	7.65 /oz	5.0	5.6	38.25	42.84
Merivon	7+11	6.71 /lb	4.0	6.7	26.84	44.95
Pristine	7+11	3.58 /oz	10.5	14.5	37.63	51.96
Procure 480 SC	3	4.11 /oz	12.0	16.0	49.31	65.75
Quadris Top	3+11	1.93 /oz	12.0	14.0	23.21	27.08
Quilt Xcel	3+11	1.16 /oz	14.0		16.23	
Rally 40 WSP	3	3.33 /oz	2.5	6.0	8.31	19.95
Scala	9	2.88 /oz	9.0	18.0	25.95	51.89
Syllit	U	7.90 /pt	1.5	3.0	11.85	23.70
Sulfur, yellow jacket	M	0.72 /lb	30.0	65.0	21.50	46.58
Topguard70WP (specialty crops)	3	1.68 /oz	14.0		23.54	
Topsin M WSB	1	10.50 /lb	1.0	1.5	10.50	15.75
Vanguard WG	9	3.77 /oz	5.0	10.0	18.85	37.70
Ziram 76DF	M	5.20 /lb	4.5	8.0	23.40	41.60
<i>Water Mold Products</i>						
Aliette	33	14.25 /lb	3.0	5.0	42.75	71.25
Phostrol	33	3.10 /pt	4.5		13.95	
Ridomil Gold SL	4	6.17 /pt	4.0		448.29	
**Product rates are for cost example purposes, only. Refer to label for approved crop, rate, and time of application						

Phomopsis Twig Blight & Stem Canker of Blueberry

By Kim Leonberger, Extension Associate and Nicole Ward Gauthier, Extension Specialist

Phomopsis twig blight and stem canker is becoming more common in Kentucky blueberry. Stressed plants are more susceptible to this disease, and reports are often associated with fields that have a history of Phytophthora root rot or severe abiotic disorder such as high pH.

Phomopsis Disease Facts

- Symptoms first appear in spring as blighted twigs that result in flower bud loss (Figure 5). Necrotic, reddish-brown lesions may develop around blighted areas and spread downward. Wilting and flagging is observed as stems die (Figure 6).

Girdling cankers can often be observed lower on stems. Leaf spots can also occur on foliage, and fruit may ripen prematurely or rot.

- Disease is favored by warm, moist periods. Plants damaged by freezing temperatures or stressed by poor planting sites are more susceptible to disease.
- Caused by the fungus *Phomopsis vaccinii*.
- The pathogen survives winter in dead or infected twigs.



Figure 5: Symptoms first appear as blighted twigs. (Photo: Annemiek Schilder, Michigan State University)



Figure 6: Infected plants exhibit wilting and flagging as stems die. (Photo: Mary Ann Hansen, VPI, Bugwood.org)

Management Options

- Select resistant cultivars such as ‘Bluetta’ and Elliott’
- Prune out infected twigs by cutting a minimum of 6 inches below infected tissue. Discard cuttings; never leave them in the field.
- Avoid planting sites prone to frosts.
- Maintain plant health with proper fertilization, irrigation, and weed management.
- Avoid wounding stems.
- Fungicides may be applied preventatively (before infection) beginning at bud break and continuing through full bloom for plantings with high infection risk. Homeowners may use fungicides that contain the active ingredients captan or propiconazole. Contact a county Extension agent for more information on fungicide use.
- Fungicides do not cure *Phomopsis* tip blight.

Additional Information

- Backyard Berry Disease & Pest Management Using Cultural Practices (with Low Spray, No Spray, & Organic Options) (PPFS-FR-S-25)
- Blueberry Diseases (PPFS-FR-S-10)
- Commercial Fruit Pest Management Guide (ID-232)
- Disease and Insect Control Programs for Homegrown Fruit in Kentucky (ID-21)
- Fruit, Orchard, and Vineyard Sanitation (PPFS-GEN-05)
- Midwest Blueberry Production Guide (ID-210)

FRUIT HUMOR

**How Did the Jack
'O' Lantern Make
Himself Happy?**



**He Cut a Smile Out
of His Face!**

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