

Kentucky Fruit Facts

John Strang, Extension Fruit Specialist, Editor
Denise Stephens, Newsletter Designer

Fruit Crop News

John Strang, U.K. Extension Horticulturist

At our last Fruit Grower Orchard Meeting at Reid's Orchard growers agreed that floral development was right on target to be an average year. The apple crop looks good and fruit thinning will be a major concern in no time. The peach crop in western Kentucky is quite variable from site to site and variety to variety ranging from no crop to having to thin some varieties. In areas of the state where it was much colder there is no peach crop and trees should be pruned heavily, but not cut back extremely severely leaving branch stubs. Where February temperatures reached -10 °F or a little colder thornless blackberry canes are leafing out and appear to look good, but the canes are injured to just below the snow line or down to the ground depending on how cold it was. Surviving buds will look good and continue to produce new growth until we have hot weather and then the new foliage will collapse and dry up on the injured portions of the canes. These plants may be pruned back to the live portions of the canes to produce a small crop. Alternatively the canes may be cut at ground level where temperatures reached -18 to -27°F and the canes are killed to the ground. The plant crown and root system are not injured and are now vigorously producing new growth for next year's crop.

We had a frost/freeze on the morning of April 24th that caused damage in some areas to strawberry flowers and new grape growth. It did not seem to get cold enough to injure apple and pear flowers.

As far as diseases are concerned, fire blight is showing up on pears and we have seen some peach leaf curl symptoms. The wet weather has been very conducive for scab and cedar apple rust infections on apples.



Welcome Dr. Emily Pfeufer

Emily Pfeufer started as an Assistant Extension Professor in the Department of Plant Pathology at the University of Kentucky on April 15, 2015. Her extension and applied research program covers vegetables and tobacco. Through her Ph.D. program at Penn State, Emily worked to improve integrated disease management of several bacterial rots of onion, which she completed in August, 2014. Prior to her vegetable experience, Emily's M.S. thesis detailed resistance to DMI/SI fungicides in the apple scab pathogen in Pennsylvania, completed through Penn State in 2010. Emily is originally from Pennsylvania and enjoys hiking, cooking, and reading in her spare time. She may be contacted through email at emilypfeufer@uky.edu or phone 859-218-0721.



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Upcoming Meetings

(All meetings are Eastern time unless specified.)

May 14 Fruit Grower Orchard Meeting,

Hillview Farm & Orchard, 4161 Franklinton Rd.,
Pleasureville, KY 40057. Contact Henry County Extension
Office, 502-845-2811. Meeting announcement follows.

May 16 Pecan Grafting Workshop,

Western Chapter of KNGA, Shearouse Farm, 3474 State Route
1684, Boaz, KY 42027 Contact Jennie Shearouse,
270-210-3169. See meeting announcement below.

Jun. 25 Third Annual Horticulture Open House,

UKREC, 1205 Hopkinsville St., Princeton, KY 42445.
Contact Winston Dunwell Phone: 270-365-7541 X 209
email: wdunwell@uky.edu Website: http://www2.ca.uky.edu/HLA/Dunwell/UKRECHortOpenHouse_Save_the_Date_Jun252015.pdf

Jul. 11-12 Kentucky Farm Fest in Oldham

County, The Maples, Crestwood, KY. 100 + How to
Workshops, Experts, Live Cooking Demos., Homesteading,
Farm & Foodie Market, Organics, Hands-on Exhibits,
Distilling & Brewing and Bluegrass Music. Sponsored by
the Oldham KY Tourism & Conventions. Website: www.kyfarmfest.com

Jul. 28 University of Kentucky Horticultural

Research Farm Field Day, 4321 Emmert Farm Rd.,
Lexington, KY 40514. This will be an evening tour of fruit
and vegetable research plots. Field day specifics will be
provided in a future issue.

Nov. 7 Kentucky Nut Growers Association Fall

Meeting, Henderson County Extension Office, 3341 Zion
Rd., Henderson, KY 42420. Contact: Danny Ganno
270-860-8362

Jan. 4-5, 2016 Kentucky Fruit and Vegetable

Conference, Embassy Suites Hotel, Lexington, KY.
Contact: John Strang, 859-257-5685; email: jstrang@uky.edu

Fruit Grower Orchard Meeting - Thursday, May 14

Hillview Farm & Orchard

Paul Tokosh owner
4161 Franklinton Rd.
Pleasureville, KY 40057
Phone: 502-845-0043
Email: tokoshky@gmail.com

Directions:

Exit I-64 at exit 35 and turn north proceeding approx 19
miles through New Castle on highway 55.
Turn right onto highway 202 and take this approximately 5
miles
Turn right onto Bullitt Hill Road and drive 2 miles to
intersection with 1360.

Turn left onto Hwy. 1360 and proceed approx. one half
mile
Hillview Farm & Orchard will be on the left.

Program:

All times EDT

- 10:00 a.m. Tour of Hillview Farm & Orchard –
Paul Tokosh
- 10:45 Small Fruit Diseases –
Nicole Ward Gauthier
- 11:15 Apples & Blueberries –
John Strang
- 11:45 Grower Round Table Discussion –
Dana Reed, moderator
- Noon **Lunch will be available at cost
for those that preregister.**
- Preregister for lunch by calling Pam
Compton at 859-257-2909** between 8:00
a.m. and 4:30 p.m. EDT weekdays by
Tuesday, May12, and give her a count for
the Fruit Grower Meeting at Hillview Farm
& Orchard
- 12:45p.m. Sprayer Calibration and Coverage –
Ric Bessin

Pecan Grafting Workshop, Western Kentucky Chapter, Kentucky Nut Growers Association

Saturday, May 16
Shearouse Farm
Skip and Jennie Shearouse, Owners
3474 State Route 1684
Boaz, KY 42027
Phone: 270-210-3169
Email: shearouse@wk.net

Directions:

From I-24: Take exit 11 to Husbands Road (HWY 1954)
and travel south for 3+ miles to stop sign, then turn left on
HWY 348. Proceed about 2 miles to Hardmoney: keep right
on HWY 1684; going past Hardmoney Church travel 2+
miles to the Shearouse home on the left. Meeting will be in
the white metal shop building.

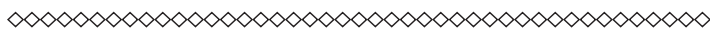
From Mayfield go north on US 45, take HWY 849 then,
turn left on HWY 1684 N. Travel north 2+ miles to the
Shearouse home on right just past Whitis Road.

A pecan grafting workshop will be conducted May
16, 2015 at the farm of Skip and Jennie Shearouse. The
event will start at 8:00 am with coffee and donuts. Dr. John

Strang, Extension Horticulturist at University of Kentucky, will demonstrate the grafting of pecan trees. Following the demonstration will be a light lunch of grilled hot dogs (drinks, chips, and desserts will be pot-luck).

After lunch there will be a short meeting to discuss the next meeting of the Western Kentucky Chapter of KNGA. We welcome any input as to the frequency and content of future meetings. Trent Murdock, Agent for Agriculture and Natural Resources from the Graves County Cooperative Extension Office has offered his support and use of the Extension Office for meetings.

Please call, text or e-mail Jennie if you plan to attend or have any questions.



2015 Midwest Tree Fruit Spray Guide Alert!

Growers should be very careful in using the 2015 Midwest Tree Fruit Spray Guide this year. A number of editing errors occurred in the lining up of the Material and Rate/Acre columns. There are a number of places throughout the guide where the Rate/Acre column is shifted upward so that the correct pesticides and rates do not line up. Please account for these discrepancies when consulting the guide.



Spotted Wing Drosophila Update

By Ric Bessin, Extension Entomologist

Posted on April 7, 2015

Despite the lingering cool weather, spring is upon us, and fruit set is underway with plasticulture strawberries. This is the first of the spotted wing drosophila (SWD) susceptible crops, which also include blueberries, blackberries, raspberries, cherries, and grapes. Last year, many producers noted that SWD infestations did not appear to be as bad as they were during 2013. I don't know if this was due to lower population levels or because producers were better prepared to manage SWD. Despite lower levels, this is a threat that requires monitoring, and producers should be prepared to manage SDW as needed.

While spotted wing drosophila can be a serious pest of strawberries in southern or western regions of the country, we have not seen SWD activity in Kentucky until after the harvest period of June bearing strawberries is com-

plete. That being noted, we only have 2 years of experience managing SWD in Kentucky, so I encourage strawberry producers to monitor for SWD before and throughout the harvest period with adult traps.

Traps

The trap (Figure 2) we are recommending is a clear 1-liter deli container, with two 3 x 1.5-inch windows cut in the side and plastic screening glued in place. Each trap should contain about ½ cup apple cider vinegar; add one drop of dish soap as a drowning solution. On the inside of the lid, hang a commercial SWD lure to attract the flies. The lure only needs to be replaced monthly; used lures should not be disposed of in the field.



Figure 2. Spotted wing drosophila traps are hung inside the canopy of susceptible crops and checked weekly. (Photo: Ric Bessin, UK)

Identifying Spotted Wing Drosophila

Many different types of flies and species of drosophila are captured in these traps. To identify SWD, the flies should be poured into a light colored pan and examined with a hand lens. The males (Figure 3) are recognized by the single black spot on each wing.



Figure 3. Male SWD are relatively easy to identify with the single, large spot near the tip of each wing. (Photo: Ric Bessin, UK)

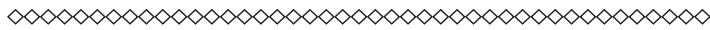
The female SWD (Figure 4) has a hardened and enlarged ovipositor (egg layer), amber body color, and continuous dark banding on the abdominal segments.



Figure 4. An SWD female with amber colored body and enlarged ovipositor (left) compared to another drosophila species (right). (Photo: Ric Bessin, UK)

Management

The threshold for treatment is one trapped SWD on a farm. If SWD is not trapped, then sprays for SWD are not necessary. However, when SWD is captured, weekly sprays are recommended on susceptible crops during the harvest period. See the publication Spotted Wing Drosophila Management (ENTFACT-230) for recommendations. This summer, cooperators in about 22 Kentucky counties will be trapping for SWD in various small fruit crops. Results will be posted weekly on the SWDinKY Facebook website.



Brood XXIII Due in West Kentucky

By Dr. Lee Townsend, U.K. Extension Entomologist

Brood XXIII of the periodical cicada is due to emerge along the Mississippi River Valley (Figure 5). In Kentucky, the bulk of this 13-year brood should occur west of I-65; the insects should be most abundant in counties along the river.

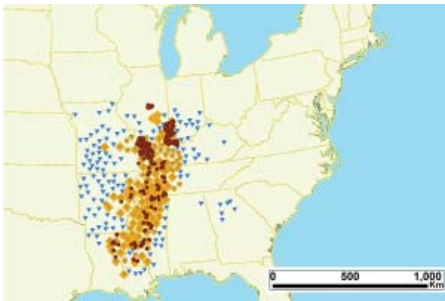


Figure 5. Brood XXIII of the periodical cicada (map from, http://www.magicicada.org/magicicada_2015.php)

Prior to emergence, cicada nymphs living in very wet soil may build mud chimneys similar to those made by crawdads (Figure 6). The chimneys allow the nymphs to move to drier air in order to molt, while also remaining protected from predators and desiccation. Nymphs can begin to leave the ground in late March to find vertical surfaces to cling to while molting to the adult stage. Soon after emergence, the cicadas will accumulate in the tree tops and begin their rhythmic chorusing that may continue into early June.



Figure 6. Cicada tunnels under shed from 2008 emergence. (Photo: Lee Townsend, UK)

Egg laying is the real danger from periodical cicadas, so their emergence is the signal to begin watching to determine if plant protection will be needed. A week or so after emergence (Figure 7), females are ready to lay eggs.



Figure 7. Emerging cicada adult; this usually occurs at night. (Photo: Lee Townsend, UK)

Cicada Damage

Periodical cicadas feed little, but in large numbers, they can be very destructive. Physical injury occurs when females slit the bark on pencil-sized twigs and lay their eggs inside the wounds (Figure 8). They prefer grapevines, oak, hickory, apple, peach, and pear trees about the diameter of a little finger; however, they are not limited to those species. The damage causes “flagging” due to broken twigs that die and turn brown.



Figure 8. Fresh egg-laying scars of the periodical cicada. Twigs can snap at these weak points. (Photo: Lee Townsend, UK)

Young trees may be severely misshaped from leader or branch breaks. More mature trees and shrubs usually survive even dense emergences of cicadas and continue to grow during subsequent years. This can be difficult to believe in the month or so following a large emergence because branch terminals of many deciduous trees will turn brown due to injury.

Cicada nymphs spend years feeding on sap taken from the roots of trees and shrubs. Over time, large numbers of them can take a toll. During the first few years, there usually are no apparent signs. However, the nymphs grow and gradually take increasing volumes of sap as they feed. During the last few year of their development, this can affect tree and shrub growth and vigor, and production of fruit trees. The impacts are subtle and probably would be noticeable if there were nearby uninfested trees.

Protecting Plants

Plants can be protected from cicada damage in three ways: (1) covering, (2) spraying, or (3) pruning. There is no effective means of controlling nymphs in the soil.

Covering Plants

Small trees can be covered with protective netting or cloth. Be sure to secure the bottom around the trunk. This covering will have to stay on for the next 4 to 6 weeks, or until egg laying is complete.

Spraying with Insecticides

Insecticides may not provide much protection against cicada damage, especially for trees near heavily wooded areas that provide a continual supply of replacement cicadas. Sprays that hit the insects directly are likely to be more effective than residues on treated surfaces. Several synthetic pyrethroid insecticides are labeled for landscape trees and shrubs. Often, these insecticides may have a repellent effect that causes insects to leave treated surfaces shortly after landing.

Nurseries under a routine spray schedule should be sprayed according to intensity of the outbreak, which can range from a few cicadas in some areas to massive numbers in other areas. During low to moderate outbreaks, twice weekly applications may be enough. During massive outbreaks, damage will potentially occur even with daily applications. Continued cicada flight to landscapes and nurseries from surrounding woods keeps re-infestation pressure high.

Pruning

The most serious consequence for nursery plantings will be the injury to branches that provide the basic plant shape and structure. Increased pruning may be needed if cicada damage destroys the current year's growth. One or 2 years of growth may have to be removed in order to

have quality trees to harvest. In extreme cases, some trees near the end of their production cycle may be unmarketable the fall after emergence or during the next year.



Blueberry Pollination: Cross vs. Self-Pollination

By Daniel Becker, UK Extension Associate

A short review of available literature reveals much variation in the characteristics of blueberry pollination in regards to self-fertility vs. self-sterility of commercially grown cultivars. This variation and some of the resulting confusion in cross-pollination needs may be attributed to differences in the species from which blueberry cultivars arise. Eck and Childers (1966) establish that the entirety of commercial plantings in the United States consist of lowbush (*Vaccinium augustifolium* L.), rabbiteye (*Vaccinium ashei* Reade), and highbush (*Vaccinium corymbosum* L.) blueberries, therefore focus will concentrate on these types.

Lowbush blueberries have been reported as being self-sterile (Westwood, 1993), however, very little current research has been published on the subject. Aalders and Hall (1961) reported that of 21 clones of lowbush blueberries only 9 showed any degree of self-fertility, while the other 12 were completely self-sterile. Of those that were shown to have some degree of self-fertility, none produced greater than 52% fruit set and most produced only ~20% fruit set along with viable seed production (Aalders and Hall, 1961).

Rabbiteye blueberries have also been reported as being self-sterile (Westwood, 1993). Ehlenfeldt and Kramer (2012) showed that the percentage of fruit set of self-pollinated rabbiteye and northern adapted rabbiteye blueberries was reduced 31 and 34%, respectively, compared to those that were cross-pollinated. Self-pollination was also reported to reduce berry weight by 15 and 25%, respectively, for these two rabbiteye types (Ehlenfeldt and Kramer, 2012). The findings by Ehlenfeldt and Kramer (2012) indicate that while rabbiteye blueberries are not completely self-sterile the requirement that at least 80% of blossoms set fruit annually for commercial production (Shutak and Maurucci, 1966) necessitates that cross pollination is essential for economic profitability.

In contrast to lowbush and rabbiteye, highbush blueberries appear to be universally regarded as being self-fertile (Ehlenfeldt, 2001; Lang and Danka, 1991, Shutak and Marucci, 1966; and Westwood, 1993). Self crosses of 'Bluecrop' were found to either reduce fruit set by 5% (Ehlenfeldt and Kramer, 2012) or surprisingly increase fruit set by 13% (Ehlenfeldt, 2001). Ehlenfeldt (2001) also reported that 'Legacy' and 'Nelson' showed high levels of

self-fertility with a minor 15 and 8% reduction in fruit set, respectively. However, a high amount of self-fertility is not uniform across all cultivars of highbush blueberries as it was noted in the same study that ‘Sierra’ and ‘Toro’ experienced a 68 and 32% reduction in fruit set, respectively when self-pollinated and would likely not perform well in solid blocks (Ehlenfeldt, 2001).

While highbush blueberries are more-or-less self-fertile, cross-pollination has a significant positive effect on fruit weight. Of nine highbush blueberry cultivars (‘Bluecrop’, ‘Bluegold’, ‘Duke’, ‘Legacy’, ‘Nelson’, ‘Rubel’, ‘Sierra’, ‘Sunrise’, and ‘Toro’), Ehlenfeldt (2012) found that cross-pollination produced an average 27% increase in fruit weight compared to fruits produced by self-pollination. Similar conclusions were noted by Ehlenfeldt and Kramer (2012) as well as Lang and Danka (1991) who reported that cross-pollinated fruit weight of ‘Bluecrop’ and the southern highbush cultivar ‘Sharpblue’ were 11 and 14% greater, respectively, than when self-pollinated.

Cross-pollination has also been shown to hasten fruit maturation in some cases by three or more days across a number of cultivars (Ehlenfeldt, 2001). This hastening of maturation as found by Lang and Danka (1991) results in a greater proportion of fruit being harvested earlier during the ripening season rather than later. The authors further established that cross-pollination of ‘Sharpblue’ with ‘Gulfcoast’ in contrast to self-pollination increased the harvest percentage of early-ripening fruits by 140%, resulting in a 43% increase in premium early market crop, an estimated value gain of \$5180 per hectare (Lang and Danka, 1991).

The major benefit of inter-planting blocks with different cultivars appears to be related to assurances of consistently large crops of adequate sized, early maturing berries being produced to the full potential of a planting. This will be expected to negate any disadvantage that a mixed planting will have compared to the efficiencies gained from simplifying the cultural and harvesting operations of a solid block. It is likely that solid block plantings will be most beneficial in areas that have a consistent climate year-to-year with optimum weather during blooming and little chance of frost, i.e. much of the blueberry growing regions of the western United States. Solid block plantings in the eastern U.S. may be at a disadvantage over mixed plantings due to the more variable climate which may result in a greater probability of crop failure in some years. The assurances inherent in mixed plantings lead Beckwith (1930) to infer that cross-pollination was essential for superior blueberry production.

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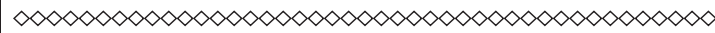
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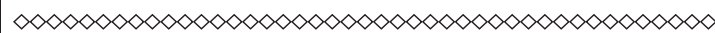
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High Tunnel Webinar Series

By Miranda Combs, U.K. Senior Extension Associate

The Center for Crop Diversification is pleased to announce that our six-part High Tunnel Webinar Series has been completed and all of the recordings are available on our new webinars page: <http://www.uky.edu/Ag/CCD/webinars.html>. Each of the recordings is available, along with the resources presented during each webinar. Feel free to contact the Extension and research specialists who presented information during the series. Their contact information is available in each presentation. They are happy to help you move forward with your high tunnel questions. Overall, the series went very well; we had a great response from participants, and hope that this information has helped you get started growing in your high tunnel this year! These webinars will be available to you anytime, for free. Enjoy, and we hope they are helpful!



2014 Fruit Prices

By John Strang, U.K. Extension Horticulturist and Chris Smigell, U.K. Extension Associate

The following 2014 tree and small fruit prices were collected from Kentucky growers for the Farm Service Agency as a basis for the Non Insured Assistance (NAP) program. Average, high and low prices are listed for both retail and wholesale markets. The prices are broken down

by market container sizes and also converted to price per pound. Prices tend to be higher close to larger cities as compared to more rural areas. Fruit quality also affects the prices that are received.

The polar vortex in early January of 2014, coupled with a late spring frost caused substantial yield losses for some crops and consequently some prices were not available. Hopefully this data will help in determining prices for the 2015 season.

Table 1. 2014 Tree Fruit Grower Prices

Crop	Mkt.	Sales Unit	Avg (\$)	High (\$)	Low (\$)	Avg (\$/lb)	High (\$/lb)	Low (\$/lb)
<i>Apple</i>	Retail	bu	56.39	100.80	30.00	1.34	2.40	0.71
	Wholesale	bu	30.70	50.00	16.56	0.73	1.19	0.39
<i>Pear</i>	Retail	bu	85.58	125.00	50.00	1.71	2.50	1.00
	Wholesale	bu	50.00	*	*	1.00	*	*
<i>Peach</i>	Retail	bu	70.45	100.00	36.00	1.44	2.25	0.72
	Wholesale	bu	38.31	50.00	24.00	0.77	1.00	0.48
<i>Nectarine</i>	Retail	bu	100.00	*	*	2.00	*	*
	Wholesale	bu	45.00	*	*	0.90	*	*
<i>Plum</i>	Retail	½ bu	68.00	100.00	42.00	2.34	3.45	1.45
	Wholesale	½ bu	28.00	*	*	0.97	*	*
<i>Cherry, tart</i>	Retail	qt	3.45	5.40	3.15	2.85	3.60	2.10
	Wholesale	qt	*	*	*	*	*	*
<i>Pawpaw</i>	Retail		*	*	*	*	*	*
	Wholesale		*	*	*	*	*	*
<i>Apple Cider</i>	Retail	gal	7.16	8.50	6.75			
	Wholesale	gal	5.25	5.50	5.00			

*Insufficient data

Table 2. 2014 Small Fruit Grower Prices

Crop	Mkt.	Avg (\$/qt)	High (\$/qt)	Low (\$/qt)	Avg (\$/lb)	High (\$/lb)	Low (\$/lb)
<i>Blackberry</i>	Retail	5.78	8.00	3.75	3.85	5.33	2.50
	Wholesale	5.09	8.00	2.58	3.39	5.33	1.72
<i>Blueberry</i>	Retail	7.83	9.10	6.60	4.12	4.79	3.47
	Wholesale	5.81	7.60	3.72	3.25	4.44	1.96
<i>Raspberry</i>	Retail	8.75	12.00	6.75	5.83	8.00	4.50
	Wholesale	6.00	*	*	4.00	*	*
<i>Strawberry, Matted Row</i>	Retail	4.35	5.00	3.50	2.90	3.33	2.33
	Wholesale	2.74	3.50	1.38	1.82	2.33	0.91
<i>Strawberry, Plasticulture</i>	Retail	5.25	5.50	5.00	3.50	3.67	3.33

*Insufficient data



Receiving Fruit Facts on the Internet

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