

Kentucky Fruit Facts

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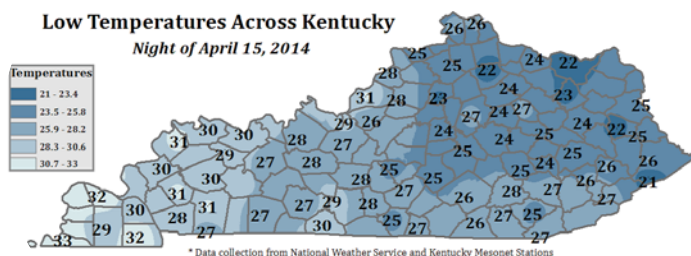
Fruit Crop News

John Strang, U.K. Extension Horticulturist; Lee Townsend, U. K. Extension Entomologist; Tom Priddy and Matt Dixon, U.K. Ag. Meteorologists

Central, northern, and eastern Kentucky fruit growers took a second hit on their dwindling flower numbers from the freeze on the night of April 15 or the morning of April 16th. Matt Wilson assembled the low temperature map found here based on Mesonet and National Weather Service stations across the state. It looks like most growers west of I-65 have little or no additional injury on all of their fruit crops. Central, northern and eastern Kentucky apple growers had good crops prior to this freeze, but in orchards where temperatures dropped to 22 °F lost most of their blooms. Most apple growers have been left with decent crops on some varieties and light or no crop on others. Peach growers in central, northern and eastern Kentucky lost all or most of their flower buds during the polar vortexes this winter. The April freeze killed most of the remaining flowers, although there are some varieties, particularly high chilling varieties that have good crops in some locations. Pear and plum losses vary from full to no crops.

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Grapes are a little slow to bud out this spring and winter injury to the European or vinifera types in central and eastern Kentucky appears to be more severe than anticipated. It looks like most French hybrid and American grapes will have decent crops despite some bud losses on the hybrids.

Most blueberry growers came through the winter and spring in good shape with slight to moderate frost losses in a few cases. A few growers lost the crop on earlier blooming varieties in the colder areas.

Many central and eastern Kentucky thorny and thornless blackberry and June bearing raspberry growers have been pleasantly surprised by the leafing out of their floricanes despite exposure to below 0 °F temperatures in January. The April frost did not seem to cause any additional damage to the floricanes. Time will tell as to how well these flower and fruit.

Black raspberries are uninjured. I expect that the June bearing raspberry canes that leafed out will produce crops. Although some varieties had their canes killed to the ground.

Matted row strawberry growers - where the flower buds were not extended and plants were covered with a straw mulch for the freeze - lost some of their primary flower buds. Most plasticulture strawberry growers that covered their plantings with floating row covers also escaped with minimal losses.

If you haven't noticed, Eastern tent caterpillars are out in larger numbers this spring. The population collapsed following the 2001 outbreak because of predators, parasitoids, pathogens, and weather factors. However, natural recovery is taking place and the numbers are growing. Cycles last 9 to 12 years and Eastern tent caterpillars like to feed on most of our fruit trees. These are relatively easy to control with most insecticide applications.



Upcoming Meetings

(All meetings are Eastern time unless specified.)

May 15 - Fruit Grower Orchard Meeting,

Bramble Ridge Orchard, 2726 Osborne Rd., Mt. Sterling, KY 40353. 10:00 a.m. Contact John Strang. Phone: 859-257-5685; Email: jstrang@uky.edu, See program below.

May 22 - Kentucky Vineyard Society Spring Meeting, University of Kentucky Horticultural Research Farm, 4320 Emmert Farm Rd., Lexington, KY 40514. The meeting will be held from 9:00 a.m. – 5:00 p.m. and cover insect, disease and weed management and include a two hour wine making session. The program and registration information will be available on the KVS web site at <http://www.kentuckyvineyardsociety.org/> and the UK Horticultural Department website under Upcoming meetings at <http://www.uky.edu/hort/?q=calendar> Contact Alicia McGuire 502-777-8777 or kvsdirector@gmail.com

The U.K. Horticultural Research Farm is located on the south side of Lexington approximately one block west of the intersection of Man O'War Boulevard and Nicholasville Road (U.S. 27). The entrance to the farm (Emmert Farm Lane) is off of Man O'War Boulevard at the traffic light opposite the entrance to the Lowe's and Walmart.

May 22 - Strawberry Field Night at OSU South Centers, 1864 Shyville Rd., Piketon, OH 45661. Workshop will cover winter protection techniques, drip irrigation and management, row cover management, cultivar evaluation, pest and disease control and integrated pest management techniques. 6-9 p.m. cost \$15.00 to attend. Registration deadline is May 19th. To register for the workshop contact Charissa McGlothlin at mcglothlin.4@osu.edu or call 740-289-2071 ext. 132.

Jun. 14 - Kentucky Nut Growers Association Pecan Budding and Grafting Workshop, Skip and Jennie Shearouse, 3474 State Route 1684, Boaz, KY 42027. The farm is located about 2 miles north of Dogwood. Contact Jennie Shearouse 270-210-3169 or Danny Ganno 270-860-8362.

Directions:

From I-24 take exit 11, Hwy 1954 (Husbands Road). Travel south for 3+ miles to stop sign then turn left on Hwy 348.

Proceed about 2 miles to Hardmoney and keep right on Hwy 1684. Going past Hardmoney Baptist Church, travel 2+ miles to the Shearouse home on the left. Meeting will be in the large metal shop building.

From Mayfield go north on US 45, take Hwy 849 to Hwy 1684, go north 2+ miles to Shearouse home on right just past Whitis road. Look for the big white metal building with the green roof.

Jun. 19 - UKREC Horticulture Open House,
Contact Winston Dunwell 270-365-7541 Ext. 209.

Jan. 5-6, 2015 - Kentucky Fruit and Vegetable Conference and Trade Show, Embassy Suites Hotel, Lexington, KY. Contact John Strang 859-257-5685; email: jstrang@uky.edu

Fruit Grower Orchard Meeting - Thursday, May 15

Bramble Ridge Orchard
Terry & Cindy Peake, owners
2726 Osborne Rd.
Mt. Sterling, KY 40353
Mobile: 859-498-9123
Website: <http://www.brambleridgeorchard.com/>

Directions:

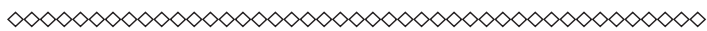
Take I-64 towards Mt. Sterling and get off at Exit 113. Proceed west on US 60 to the first stoplight (~1.5 miles). Turn left onto Rt. 686 and travel approximately ¼ mile to a stoplight. Turn left onto Old Owingsville Rd. and take the first right (~150 yards) which is Osborne Rd. Proceed 1.5 miles to Bramble Ridge Orchard (2726 Osborne Rd.) which will be on your right.

Program:

All times EDT
10:00 a.m. Registration & Tour of Bramble Ridge Orchard & Farm Market - Terry & Cindy Peake
10:45 Spraying When the Crop is Lost and Thinning - Ric Bessin, Nicole Ward Gauthier, and John Strang
11:15 Peach Scab v.s. Bacterial Spot and Apple Canker Diseases - Nicole Ward Gauthier
11:45 Fruit Insect Control - Ric Bessin
12:00 Lunch
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, May 13 and give her a count for the Fruit Grower Meeting at Bramble Ridge Orchard.

1:00 p.m	Pricing When Fruit is in Short Supply - Tim Woods
1:20	Cork Spot and Bitter Pit Management - John Strang
1:50	Grower Round Table Discussion - Jeremy Hinton, moderator



Spotted Wing Drosophila and Small Fruit Production in Kentucky

By Ric Bessin, U.K. Extension Entomologist

Last year was a disastrous year for many growers of blackberries and fall raspberries. The problem was small larvae in the berries. Frequently berries looked fine at the time of harvest, but had no shelf life and began to ooze and fall apart within a day or two of picking. This was the result of spotted wing drosophila (SWD), which is a new pest to Kentucky. It is a pest of thin- and soft-skinned fruit. While blackberries and raspberries were hard hit, some grapes and blueberries were also attacked. Last year (2013) was the first year with widespread problems in Kentucky. We don't know if this will again be the case in 2014, so growers are advised to watch for SWD in strawberries, blueberries, blackberries, and raspberries.



Figure 1. Spotted wing drosophila adults on grapes.

SWD is a serious threat to small fruit production; one agent called it a 'game changer.' While fruit flies are common, this fruit fly is different. SWD can lay eggs under the skin of otherwise sound fruit just as fruit begins to soften and ripen. This can result in numerous 1/4-inch white larvae in the fruit at harvest. In addition to damaging a large percentage of a crop, this pest also has the potential to upset customers and ruin the reputation of markets. Blackberries, raspberries, late-maturing blueberries, and some thin-skinned grapes are very susceptible to this invasive pest. However, based on the 2013 situation in Kentucky and over

a long period of time in other parts of the southeastern U.S., June-bearing strawberries have not experienced these large-scale losses and have lower risk to SWD than other later ripening small fruit crops.

Trapping and spraying versus preventive sprays without trapping

When SWD is active, commercial producers of susceptible crops must spray weekly, beginning when the fruit begins to turn color and soften. If it rains, treatments need to be reapplied. Weekly sprays are continued until harvest is finished. The difficult question is determining when SWD first becomes active. Small fruit growers producing for wholesale markets must meet a zero-tolerance level for insect contamination. Some of these growers in other southeastern states have found that beginning SWD sprays after trapping adults does not provide the consistency for their zero-tolerance markets. These southeastern growers begin sprays for blackberries, fall raspberries, and blueberries when the crop reaches the susceptible stage. Growers producing berries for local markets do not necessarily have a zero tolerance standard and are encouraged to use SWD traps and to begin sprays when the first adult is trapped. For example, one commercial KY farm with blueberries, blackberries, and raspberries used SWD traps in 2013 beginning in early summer. As soon as the traps indicated SWD was active, SWD sprays began on susceptible crops with SWD recommended insecticides on a weekly basis. Results were satisfactory. I think the keys to this success were:

- Monitoring for SWD with traps.
- Using recommended SWD insecticides when SWD was detected (See ENTFACT 230).
- Getting thorough spray coverage inside the canopy; in this case the grower used an air blast sprayer.
- Reapplying sprays to susceptible crops on a 5- to 7-day interval during the harvest period (shorter interval after rains).
- Observing pre-harvest intervals carefully.

It is notable that the grower did not wait until he found infested fruit before he began SWD sprays. Had the grower waited to begin spraying, the results may have been different. My recommendation for strawberry, blueberry, blackberry, and raspberry growers this year is to use traps to monitor for the first instance of the adults and be prepared to spray as soon as SWD is detected.

SWD traps

We are recommending a 1-quart, clear deli container filled with about 1 inch of bait solution to which one drop of liquid dish soap has been added (otherwise the flies can walk on the surface of the liquid). While sixteen 1/4-inch

holes may be punched below the rim to allow SWD to enter the trap, we prefer a pair of 3½-inch by 1½-inch windows covered with 1/8-inch screen (Figure 2). Traps must be checked weekly and bait solution changed on each visit. Do not dispose of the bait solution in the planting as this will attract SWD away from traps. Last year we used an apple cider vinegar bait, but research has shown a yeast-sugar bait catches flies 1 to 2 weeks earlier. Yeast-sugar baits are made by combining 2 tablespoon yeast, 4 tablespoons sugar, and 1 quart of water. Fresh bait must be prepared each week.



Figure 2. SWD trap with screen windows on either side. Traps should be placed inside the canopy.

Other management tools

Cool berries

Another very important practice is to immediately cool the harvested berries. This suspends the development of eggs and larvae. Prolonged cooling below 35°F for 3 or more days has been shown to provide upwards of 90% control of eggs and larger larvae. Freezing fruit will kill SWD. While washing berries is a good practice for other reasons, it will not rid berries of eggs or the larvae inside.

Clean harvest

Producers should practice clean harvest and not leave overripe, damaged, or unmarketable fruit in the field. At harvest, if the stem end of the berry looks watery, it is likely infested with SWD. Sound fruit with a dry stem end may still be infested with eggs and should be refrigerated immediately. Ideally, producers should pick using two containers; one for sale and the other for disposal. Don't bury fruit to dispose of SWD-infested berries as the insect can emerge from fruit buried up to 3 feet underground. Fruit to be disposed of should be placed in a clear plastic bag. The bag needs to be sealed and left in the sun to solarize and kill the SWD.

Mechanical exclusion

Small commercial plantings and home gardeners may choose to use mechanical exclusion using fine mesh or spun-bond materials. To exclude SWD, the fine openings need to be less than 0.9 mm, the netting needs to be in place at least 2 to 3 weeks prior to the start of harvest, and the net needs to be secured at the bottom. The netting should be left in place while picking. SWD is generally less active

during the middle of the day, so this is a good time to pick.

Backyard fruit

Home gardeners are less likely to spray regularly and do not have the same options available. I do recommend that backyard crops be harvested carefully and soft berries be discarded. Home gardeners should refrigerate fruit immediately as this will arrest the development of eggs and any small larvae that may be present inside the fruit.

Additional information

There are three factsheets on the UK entomology Web site that can provide help with SWD:

- ENTFACT 229 Spotted Wing Drosophila, Biology, Identification and Monitoring
- ENTFACT 230 Spotted Wing Drosophila Management
- ENTFACT 231 Spotted Wing Drosophila and Backyard Small Fruit Production



Untangling the Web of Copper Fungicides

By Nicole Ward Gauthier, U.K. Extension Plant Pathologist

Fire blight (Figure 1) season is mostly past. Below is a summary of copper fungicide formulations, their characteristics, and their limitations:

•Fixed Copper

- *Fixed copper is safer for plant tissue than “bluestone” copper (see below).
- *May be used throughout the growing season, but may cause fruit russetting.
- *Low solubility in water, resulting in a lower risk for phytotoxicity. High rates of fixed copper may cause plant damage, however.
- *Release copper ions slowly (with water/rain), resulting in longer residual activity. This extended release may damage plant tissue if prolonged.
- *Slow drying time (e.g. rainy conditions) increases solubility of copper, release of copper ions, and thereby phytotoxicity of copper fungicides.
- *Acidic conditions/additives also increase copper solubility, ion release, and phytotoxicity.

- Adjuvants, phosphorus acid fungicides, and mancozeb lower pH of tank mixes.
- Growers may add lime to reduce potential for plant damage.

*Use higher rates during dormancy for fire blight management (until 1/4" to 1/2" green).
 *Lower rates should be used during growing season for management of other diseases. Follow label instructions.
 *Common forms of fixed copper fungicides:

- Basic copper sulfate – Cuprofix, Basicop
- Copper Hydroxide – Kocide, Champ
- Copper oxychloride sulfate – C-O-C-S
- Cuprous oxide – Nordox
- Copper sulfate pentahydrate – bluestone
 - *Dormant spray, only.
 - *Highly soluble copper ions can be phytotoxic to exposed plant tissue.
 - *Often combined with lime to help “tie up” copper ions and slow their release.
 - *No residual activity. Copper ions are released rapidly upon application.
 - *Common brands of copper sulfate:
 - Mastercop, Phytan

Copper fungicides are not systemic and wash off with rain. Fixed coppers have more residual activity than bluestone copper because they release ions slowly. Rapid release of ions can cause phytotoxicity, so growers are encouraged to avoid acidic solutions and slow-drying situations.

Copper is an antimicrobial; it is non-selective. Exposed bacteria, fungi, and even plant tissue are susceptible to damage. Thus, high rates of copper are not recommended after green-up. Additionally, copper can accumulate in soils, where it can inhibit plant growth and adversely affect microorganisms and earthworms.

Metallic copper equivalent is the amount of copper available for fungicidal activity (different from active ingredient). Basic copper sulfate usually contains the highest metallic copper equivalent. Refer to label for more information.

Tree fruit diseases managed with copper:

- Fire blight (spray guide recommendations: dormant – label: silver tip to green tip) - Apple & Pear
- Apple scab (dormant to pink) - Pear
- Bacterial canker (after harvest and late dormant) - Peach
- Bacterial spot (dormant/budswell, pink, and petal fall) - Peach
- Peach leaf curl (dormant) - Peach
- Cherry leaf spot (after petal fall) - Cherry
- Black knot (dormant) - Plum

More information on fire blight at
<http://nicolewarduk.blogspot.com/2013/04/fire-blight-infections-occur-during.html>
http://www2.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-FR-T-12.pdf
<https://www.youtube.com/watch?v=PdcDXNftoWg>

Ever Wonder How Your Fruit is Grown?

By Nicole Ward Gauthier, U.K. Extension Plant Pathologist

UK Fruit IPM Working Group’s new Facebook page (Figure 1) aims to give consumers a window into fruit production in Kentucky. Through this page, consumers can explore life in Kentucky orchards with a first-hand view of fruit production. Followers will learn more about cultural practices, pest management, and the people who grow our local produce.

Find us at <http://www.facebook.com/lifeintheorchard>

Agents and associates are also encouraged to contribute Question and Answer (Q&A) articles, photos and albums, grower profiles, and pest alerts. This site is managed by UK Ag Extension specialists, associates, and agents. The University of Kentucky Fruit IPM working group consists of Extension professionals from Plant pathology, Entomology, Horticulture, and Family & Consumer Science.



Figure 1. Life in the Orchard Facebook page

FRUIT HUMOR

What do you get when a you eat a 'BlackBerry'?
 A Bluetooth?



Receiving Fruit Facts on the Internet

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