

Kentucky Fruit Facts

March 2013/ (3/2013)

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

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Fruit Crop News

By John Strang, U.K. Extension Horticulturist

Growers don't need to be told that the month of March was extremely cool, averaging about 4°F below normal. Tom Priddy in the U.K. Ag Weather Center points out that the North Atlantic Oscillation, based on pressure patterns in the North Atlantic has been in a blocking pattern which maintained low pressure over the Eastern U.S. This made us much more susceptible to Canadian and Arctic outbreaks. The good news is that these cool temperatures have substantially slowed bud development making us much less prone to late spring flower frost losses unlike the last two springs. The low temperatures experienced across the state on March 21 and 22 that reached 13.6°F in some parts of eastern Kentucky do not seem to have caused any appreciable damage to the peach crop. A warm up is expected in April and for the three month outlook through June. Furthermore above normal rainfall is predicted into June. This means that growers that intend to make new plantings should keep a careful eye on soil moisture levels and be ready to work their soil and plant on a moment's notice when the soil dries out enough.



There is still time to apply the dormant and/or delayed dormant oil spray to several of the tree fruit crops. However, it may be getting a little late to apply on peaches and plums in some areas. It was brought to my attention that some of the dormant oil materials were labeled as mineral oil. Mineral oil is a non-vegetable distillate of petroleum. It is mostly a by-product from the distillation of crude oil to produce gasoline and other petroleum based products. Mineral oil is transparent, colorless and has a low sulfur content. The low sulfur content is critical to avoid foliage burning for the delayed dormant and summer oil sprays.

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Upcoming Meetings

Apr. 3 Fruit Tree Pruning Demonstration, Clark County, Winchester, KY. 1:00 p.m. ET Contact David Davis 869-744-4682.

Apr. 4 Climate Change: Values, National Security, and Free Enterprise, UK Student Center Ballroom, UK Campus, Lexington, KY. 7 p.m. ET. Please see: <http://www2.ca.uky.edu/environment-files/ccflyervincelli.pdf> & <http://news.ca.uky.edu/article/forum-examine-climate-change-through-another-lens> Contact Paul Vincelli, 859-218-0722.

Apr 1, 3, 29 Homebased Processing and Microprocessing Videotaped Workshops at County Extension Offices around the state. Registration \$50. Please see the website for locations and times on the Family Consumer Sciences website: <http://www.ca.uky.edu/agcomm/micro/>.

Apr. 11 Fruit Grower Orchard Meeting, Mulberry Orchard, Matt and Amanda Gajdzik operators, 1330 Mulberry Pike, Shelbyville, KY 502-220-7309. 10:00 a.m. ET. Contact John Strang 859-257-5685; email: jstrang@uky.edu See program below.

Apr. 24 Small Fruit Production & IPM Short Course, Franks Extension Community Building, Boyd County Fairgrounds, 1758 Addington, Road, Ashland, KY. Directions - From Lexington on I-64 take exit 181 US 60) and turn left at the end of the exit ramp. Travel approximately 1 mile and turn left at the ADD CAR sign. Take the left fork in the road. Contact Lori Bowling 606-739-5184. See Program below.

Apr. 27 Kentucky Nut Growers Association Spring Meeting, Harden County Extension Office, 201 Peterson Drive, Elizabethtown, KY. 9:00 a.m. – 3:30 p.m. ET Contact Danny Ganno 270-860-8362.

May 15 Fruit Grower Orchard Meeting, Nelson County Extension Office, 317 S. Third St., Bardstown, KY 502-348-91204 and Fegenbush Farms, Maurice Fegenbush owner, 4940 Plum Run Road, Bloomfield, KY. 502-252-5316. 10:00 a.m. ET. Contact John Strang 859-257-5685; email: jstrang@uky.edu

Jun. 27 UKREC Horticultural Field Day, Princeton, KY. Contact Winston Dunwell 270-365-7541 X 209.

Jan. 6-7, 2014 Kentucky Fruit and Vegetable Conference and Trade Show, Embassy Suites Hotel, Lexington, KY. Contact John Strang 859-257-5685; email: jstrang@uky.edu

Persimmon Pollination – Correction

By John Strang, U.K. Extension Horticulturist

Oops! I made a mistake in our last issue of Fruit Facts in editing Shawn Wright's Persimmon Production article concerning persimmon pollination just before it went to press. Persimmon pollination is complicated and Jerry Lehman our Midwest authority on persimmons from Terre Haute, IN with many

controlled persimmon crosses to his credit and a large planting that is producing commercially graciously explained what is known about the subject.

Most American persimmon trees are dioecious, which means that there are staminate trees that bear male flowers and pistillate trees that bear female flowers and fruit. However as in most biological systems there are exceptions. Some staminate trees occasionally produce flowers that range from all male to perfect (contain both male and female parts) and will produce small fruit usually from the king flower. Staminate trees never produce all female or pistillate flowers. Some pistillate varieties such as Early Golden and her progeny will produce a few all staminate flowers, but these normally don't produce enough pollen to pollinate the tree.

So how does that lone persimmon tree growing out in the middle of the field produce fruit? Well, most American persimmons are parthenocarpic and will produce seedless fruit without being pollinated. Observation indicates that persimmons normally produce heavy crops without pollination.

To complicate the matter further there is a 90-chromosome type that is native to the northern U.S. and a 60-chromosome type that is native to Kentucky and the southern U.S. In the south 60-chromosome types pollinated by 90-chromosome types are seedless and in the north the reverse is true. Then there are crosses made through embryo rescue between Oriental and American persimmons by the Russians. It is amazing that persimmon trees produce fruit! Thanks Jerry for your valuable insight.

Fruit Grower Orchard Meeting

Thursday, April 11 -- Mulberry Orchard
Matt and Amanda Gajdzik operators
1330 Mulberry Pike, Shelbyville, KY 40065
Market: 502-655-2633; Mobile: 502-220-7309
Website: <http://mulberryorchardky.com/>

Program:

All times ET

- | | |
|------------|-------------------------------------------------------------------------|
| 10:00 a.m. | Registration & Tour of Mulberry Orchard & Farm Market – Matt Gajdzik |
| 10:30 | Orchard Scouting for Insects & Diseases – Ric Bessin & Nicole Ward |
| 11:00 | Fire Blight – Nicole Ward |

- 11:45 a.m. Brown Marmorated Stink Bug and Spotted Wing Drosophila
- Ric Bessin
- 12:00 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. ET weekdays by Tuesday, April 9 and give her a count for the Fruit Grower Meeting at Mulberry Orchard.
- 1:00 p.m. MyTrapps.com – Codling Moth, Oriental Fruit Moth, Peach Tree Borers
– Ric Bessin
- 1:30 Fruit Thinning – John Strang
- 2:00 Grower Round Table Discussion
– Jeremy Hinton, moderator

Directions:

From Frankfort: Take I-64 toward Louisville. Take Exit 43 toward Waddy/Peytona and turn right on KY-395. (7.7 mi). Turn left onto Bagdad Rd/KY-12 (4.8 mi.). Turn right onto Cropper Rd/KY-43 (1.3 mi.). Turn left onto Bellview Rd. (0.1 mi.). Take first right onto Mulberry Pike (1.3 mi.) Mulberry Orchard, 1330 Mulberry Pike is on the right.

From Louisville: Take I-64 to Exit 35 and turn left onto KY-53/Mt Eden Rd. (2.0 mi.). Stay straight to go onto Boone Station Rd./KY-55-BR (1.2 mi.). Turn right onto Cropper Rd/KY-43 (5.7 mi.). Turn left onto Bellview Rd. (0.1 mi.). Take first right onto Mulberry Pike (1.3 mi.) Mulberry Orchard, 1330 Mulberry Pike is on the right.

Small Fruit Production and IPM Short Course

April 24, 2013
Franks Extension Community Building
1758 Addington Rd., Ashland, KY 41129

This small fruit production and IPM Short Course will provide basic production and marketing

information as well as bring current growers and Extension Agents up to date on the latest pests and pest control strategies. The course will cover matted row strawberries, blueberries, blackberries and raspberries. Extension Agents may obtain five in-service training hours and pesticide applicators may obtain 3 general and 1 specific hours (Categories 1A, 10 & 12).

Program:

All times ET

- 9:00 a.m. Pre Test
- 9:10 Retiring the Hoe, Weed Control
– Dr. Shawn Wright,
Extension Horticulturist
- 10:15 Break
- 10:30 You Can't Plant Just Anywhere, Site Selection and Culture
– Dr. John Strang,
Extension Horticulturist
- 11:30 a.m. There are Some New Ones, Insect Pests
– Dr. Ric Bessin,
Extension Entomologist
- Noon Lunch
- 12:30 p.m. Continued - Dr. Bessin
- 1:00 They Can Steal Your Crop, Disease Pests
– Dr. Nicole Ward,
Extension Plant Pathologist
- 2:00 Break
- 2:15 Variety Selection, A Key to Success
– Dr. John Strang,
Extension Horticulturist
- 3:15 Bulk Bins Won't Do, Marketing
– Dr. Tim Woods,
Extension Agricultural Economist
- 4:00 Post Test
- 4:15 Adjourn

→ Please register so that we may make lunch arrangements by contacting the Boyd County Extension Office - Lori Bowling 606-739-5184.

Directions:

From Lexington on I-64 take exit 181 (US 60) and turn left at the end of the exit ramp. Travel approximately 1 mile and turn left at the ADD CAR sign at the Boyd County Fairgrounds. Take the left fork in the road.

Fire Blight Season is Approaching – Preventative Copper is Recommended

By Nicole Ward, U.K. Extension Plant Pathologist

As apple flowering-season approaches, growers should begin thinking about management of fire blight. This bacterial disease can cause severe damage on apples, pears, and related ornamental plants during warm, rainy spring weather.

There is no single method that will provide consistent and reliable control. Management of fire blight requires an integrated approach that relies primarily on cultural practices and is supported by the judicious use of bactericides.

Disease Development: The fire blight bacterium overwinters primarily in cankered or diseased branches and trunks. During spring, bacteria-laden ooze is exuded from canker margins. Splashing rain and insects carry the pathogen to blossoms (Fig 1), and bees further spread the pathogen as they pollinate.



Fig. 1. Blossom blight phase of fire blight in which bacteria infect blossoms during bloom.

If weather is warm and rainy, populations of the causal bacterium (*Erwinia amylovora*) double every few hours, and more than a million bacterial cells can colonize a single floral stigma. Rain or dew then washes the bacteria into openings at the base of blossoms. Resulting symptoms are called blossom blight. Infections can spread from blossoms to supporting spurs and branches, causing cankers that eventually kill entire branches (Fig 2).

Even if there is no blossom infection, shoot infections may occur. Bacterial cells infect externally through shoot tips, as young, succulent tissue is susceptible during periods of rapid growth. This phase of fire blight is called shoot blight or shepherd's crook.



Fig. 2. Flower and shoot infections can spread to branches, causing cankers that eventually kill entire limbs. The fire blight bacterium overwinters in cankers and dead wood.

Bactericides: During bud swell (late dormancy), an application of copper fungicide (e.g. Kocide or other fixed copper) should be applied, especially if fire blight was severe last year. This copper application should reduce amounts of bacterium present on the surfaces of branches and spurs, reducing risk for disease development. Do not apply copper after ¼ inch green leaf stage, as it can be phytotoxic (cause foliar burn).

During bloom, beginning at the first sign of open blossoms, a bactericide such as streptomycin (e.g. Agri-strep) should be applied at 4- to 5-day intervals through petal fall. A minimum of two applications is recommended. Another type of bactericide, oxytetracycline (e.g. Mycoshield) may be substituted, but it is not as effective as streptomycin. Oxytetracycline may be mixed with streptomycin bactericides to help reduce the risk for resistance development. Disease risk assessment sites (see below) may be used to improve timing and efficacy of bactericide applications. Note: Home orchards are usually not sprayed with antibiotics, so the preventative copper spray is critical.

After bloom, certain weather conditions can increase risk for shoot infections. This shoot blight phase can be severe during rapid shoot development, especially under warm, rainy conditions. The growth regulator prohexadione calcium (e.g. Apogee) reduces terminal growth, reducing succulent tissue that is most susceptible to infection.

Pruning: Growers should remove all damaged, dead, or diseased wood from trees during dormancy, before bacteria become active this spring. This will help eliminate large amounts of infective inoculum.

Disease Risk Assessment & Weather Models: Plant disease prediction models utilize weather data to analyze disease risk. Western Kentucky University maintains weather stations and U.K. incorporates this data into disease risk predictions models. Models can be found at http://www.wagwx.ca.uky.edu/plant_disease.html

More information: See also our newest fact sheet Fire Blight http://www.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/PPFS-FR-T-12.pdf

Midwest Tree Fruit Spray Guide [http://www.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/MW_tree_fruit_spray_guide_ID-92_\(2013\)\[1\].pdf](http://www.ca.uky.edu/agcollege/plantpathology/ext_files/PPFShtml/MW_tree_fruit_spray_guide_ID-92_(2013)[1].pdf)
Disease and Insect Control Programs for Home-grown Fruit in Kentucky <http://www.ca.uky.edu/agc/pubs/id/id21/id21.pdf>

Perennial Canker of Peach

By Nicole Ward, U.K. Extension Plant Pathologist

Perennial canker of peach is a fungal infection of fruiting twigs, scaffold limbs, or trunks. The disease may also be referred to as *Cytospora* canker, *Leucostoma* canker, perennial canker, valsa canker, or peach canker. A common symptom is oozing gum from canker sites, so symptoms may also be referred to as gummosis (Fig 3).



Fig. 3. Perennial Canker Of Peach Limb, Advanced Symptoms With Oozing Sap. (Photo Penn State)

The causal fungi, *Leucostoma* spp., are weak pathogens that infect stressed or wounded plants. Infections cause cankers, or stem lesions, that enlarge every year, creating annual rings or

target-like growths. These cankers expand until limbs become girdled and die. Cankers often ooze gummy sap (gummosis) that eventually hardens (Fig 4).



Figure 4. Infection of peach twigs, early symptoms. (Photo West Virginia University)

Gummosis can also be caused by other plant injuries such as bacterial infection (bacterial canker of peach), boring or sucking insects, and mechanical damage. It is important to properly diagnose the cause of gummosis before considering management options.

The fungi that cause peach canker produce spores during spring. Fungal spores ooze from cankers during cool rainy weather. Consequently, disease is often more severe during rainy years. Prevention of peach canker begins with vigorous plants and proper orchard sanitation.

- Retain plant vigor. Maintain soil moisture, fertilize according to soil tests, and mulch properly.
- Avoid plant wounds such as mower damage, sun scald, winter injury, and insect injury.
- Make clean, sharp pruning cuts that heal quickly. Avoid jagged cuts.
- Prune peach trees during late winter, preferably during late-February or March.
- Prune during dry weather only. Fungal spores spread during wet conditions.
- Maintain a clean orchard by pruning dead and damaged wood. Remove cuttings from

the orchard; bury, burn, or move them at least 100 yards from peach plantings.

- Some peach cultivars are less susceptible to peach canker than others. Use resistant or tolerant trees when possible.

If peach canker becomes a problem in the orchard, strict sanitation should be implemented. There are no fungicide treatments available for management of peach canker.

- Remove diseased twigs and limbs, making clean cuts at least 6 inches below cankers. Remove diseased cuttings from the orchard.
- Infected trunks may require “surgery.” Using a knife or chisel, remove bark at least one inch around each disease lesion. There is no need to cut into hardwood. Do not paint affected area with wound dressing, paint, or oil.
- Prune during dry weather, only.
- Disinfest pruners and tools between cuts using a commercial sanitizer, 10% bleach, or 10% Lysol® concentrated disinfectant.
- Apply fungicides to open pruning wounds as a preventative. Captan, iprodione (Rovral), and thiophanate-methyl (Topsin M) may be applied after pruning (delayed dormant phase), after petal fall, and after shuck split to prevent new infections.

Sanitation and increased plant vigor are the primary disease management options for peach canker. Growers should be aware of potential risks for infection and prevent disease outbreaks by following the guidelines above. Once trees become infected, the pathogen can spread through orchards in just a few years. Fungicides do not cure peach canker, and cultural practices are the primary means for disease management.

Spotted Wing Drosophila Management in KY

By Ric Bessin and Patty Lucas, U.K Entomology

Spotted wing Drosophila (SWD) was detected in two locations and confirmed by the USDA APHIS this past fall. This puts Kentucky on the long list of states where this insect has become a very serious invasive pest. SWD was first identified in California in 2008 and has since spread to many states on the west and east coasts and central states where it is a pest of small fruit crops and other soft skinned fruits. I've gleaned the information in this article from a number of extension resources around the country in order to provide our 'best' management recommendations for 2013.

While SWD was found in apple cider vinegar traps that were put out in Daviess and Warren Counties, a commercial grower in Larue County also reported having maggots in raspberries that were frozen this past summer for use in processing. It is very possible and likely that this insect is also in other counties in Kentucky: at this point we don't know. We will be conducting a survey in strategic locations throughout the state and have received support from the Kentucky Horticulture Society for this effort.

SWD attacks a number of different fruiting crops and weeds, notably raspberries, blackberries, blueberries, and strawberries. In 2010 it caused over \$300 million in losses to west coast strawberries alone. What makes this fruit fly a problem is the ovipositor (egg layer) which is pointed and can penetrate into otherwise undamaged fruit. Fruit become vulnerable during the ripening process as they begin to soften and turn color. So management and the possible need for insecticide sprays occur just before and during harvest.

An apple cider-baited trap is used to monitor for this insect in commercial plantings. If no SWD are found then sprays targeting SWD during the harvest period are not recommended. If SWD is detected then weekly insecticide sprays during this period will help to reduce losses. The trap is made of a one-quart deli container with a half cup of apple cider vinegar. Sixteen ¼ inch holes are punched below the rim to allow the SWD to enter and traps

are checked weekly, and vinegar is changed weekly. The trap is reported to work more effectively when placed in a dense part of the plants with shade. This trap will capture a large number of fly species and several unimportant fruit fly species. It is critical



Figure 5. A SWD male with the characteristic wing spots.

to identify the collected specimens carefully with a powerful hand lens or dissecting microscope. The male SWD are recognized by the single black spot (Fig. 5) on each wing and the two dark combs on the front legs. The females are recognized by their ovipositor which is hardened and pointed.

To sample fruit for SWD larvae a simple floatation method can be used. Place a small number of ripe, apparently undamaged fruit into a gallon bag. Add sugar syrup (mixture of ½ cup sugar mixed into 1 quart of water) to the bag and seal the bag. Mash the berries, then let the berries settle to the bottom of the bag, any small, white larvae present should float to the top.

SWD Management for Commercial Plantings

- Monitoring plantings with apple cider vinegar traps in the three weeks leading up to harvest.
- Reduce alternate host plants (wild brambles, poke, nightshade, wild mulberry) in surrounding habitat if practical
- If spotted wing drosophila is NOT found, DO NOT use SWD insecticides before or during harvest

- If SWD IS found, treat crop on 5 to 7 day intervals as fruit begin to color and soften through the end of harvest with a recommended insecticide
- Know and obey pre harvest intervals (PHI) for each insecticide you use very carefully. Small fruit crops are not normally treated with insecticides during the harvest period
- Rotate among insecticide chemistries for resistance management
- When on a spray program for SWD, continue to monitor with traps and fruit sampling to determine effectiveness
- Use clean harvest to collect and remove spoiled, damaged, and fallen fruit from the planting on a regular basis. Bag or bury unwanted fruit to reduce SWD fly populations.
- Consider a postharvest clean-up spray to reduce the SWD population

Insecticides available for SWD in commercial small fruit (insecticides must be used to prevent infestations with SWD) plantings are listed in ID-94. Some insecticides used during the harvest period may result in noticeable residues or odors on harvested fruit.

Receiving Fruit Facts Electronically on the Internet

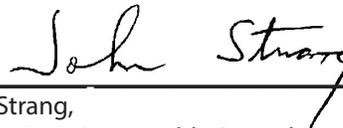
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