

Kentucky Fruit Facts

August-September 2023

<http://www.uky.edu/hort/documents-list-fruit-facts>

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Fruit Crop News

By Daniel Becker, U.K. Extension Associate

Since the last newsletter, a dry June has turned into a wet July. The Caldwell County mesonet station, located at the UKREC recorded 11.2 inches of rain fell during the month. Other areas have received less and some more depending on how the storms tracked. The amount of rain that fell over some parts of the Purchase Area on July 19 was exceptional, stations in Ballard and Graves Counties both recorded over nine inches of precipitation for the day.

Frequent rainfall and wet soil conditions are making field work difficult. It has been necessary to apply cover sprays more frequently, up to every seven days to combat diseases and insect pests before harvest. As a general rule, 1" of rain is estimated to wash off 50% of the residue from a contact (protective) fungicide. Spraying again soon after is essential, especially if more rain is



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forecasted. Remember that contact fungicides, those in class M that are the backbone of any disease control program will only protect against new infections if a barrier of residue is in place.

With the storms have come strong winds. I have heard from several growers that have lost trees broken off at the graft union. Most of these trees were young and the rootstock was G.41, which is well known for having weak unions. Issues in nursery beds with budded trees popping off at the graft may mean that fewer nurseries are willing to work with this rootstock unless contracted to do so. My feeling is that G.41 could eventually go by the wayside like G.65, G.16, and G.30 before it. Fortunately, G.11 and G.214 have done well in trial and are similar in size, if slightly larger than G.41 under Kentucky conditions.

I have noticed that cane and leaf rust is active on blackberry primocane leaves (<http://plantpathology.ca.uky.edu/files/ppfs-fr-s-06.pdf>). This disease should not be confused with orange rust which is incurable. Plants do not need to be removed if infected with cane and leaf rust as pruning to promote good air circulation and use of fungicides throughout the growing season will provide control. Ponca seems to be more prone to infection than other cultivars due to its shortened internodes and denser canopy structure.

Growers treating woolly apple aphid and other small, soft bodied insects should note that Corteva is no longer producing Closer (a.i. sulfoxaflor). It is being replaced with Transform which has the same active ingredient. Along with an expanded label, Transform is formulated as a wettable granule (WG). Wettable granules, also known as water dispersible granules (WDG)

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form a suspension after mixing with water and require constant agitation to prevent settling. Alternatives for controlling wooly apple aphid are listed in the apple spray schedule and generic insecticides sections of the Midwest Fruit Pest Management Guide, https://ag.purdue.edu/department/hla/extension/_docs/id-465.pdf.

Plasticulture strawberry growers wanting to use flumioxazin (Chateau and generics) for control of winter annual weeds in planting holes need to start site preparation soon. Flumioxazin can be applied to the soil surface of pre-formed beds prior to laying plastic, but this must be done at least 30 days before transplanting. If this window is missed, napromide (Devrinol and generics) can be applied in a similar manner before laying plastic, but it is best to wait until closer to the normal mid-September transplanting time.

Congratulations to Bill Jackson of Jackson's Orchard & Nursery on winning the Apple Grower of the Year award for the Midwest region. The award celebrates outstanding producers that have shown their dedication to quality production, management, and marketing, and through their active involvement in fruit grower associations. You can read an excerpt from the award announcement after the upcoming meetings section.

Upcoming Meetings

Times are listed in Central Time (CT) or Eastern Time (ET) depending on location.

Aug. 12. Chestnut Production and Packing Farm Tour. 12:00-3:00 PM ET. 4300 Germano Rd. SE (Route 9), Carrollton, OH 44615 (Carroll County). Ohio Ecological Food & Farm Association (OEFFA) Tour. For details, visit <https://news.oeffa.org/farm-tours-2023/?eType=EmailBlastContent&eId=c76b215f-05de-49f6-9c3c-39fd0d42276b>.

Aug. 14. Disease & Insect Integrated Pest Management of Fruit Crops Webinar. 12:00-1:00 PM ET. Topics include IPM of Fruit Diseases (Dr. Nicole Gauthier, UKY Extension Plant Pathologist); Spotted Wing Drosophila and African Fig Fly: How two invasive flies come together in your berries (Ellie McCabe, UKY Entomology Graduate Student); and IPM of Insects of Fruit Crops (Dr. Ric Bessin, UKY Extension Entomologist). To register, visit https://uky.az1.qualtrics.com/jfe/form/SV_dgpxJt54U6XtB6S.

Dec. 5-7. Great Lakes EXPO. DeVos Place Convention Center, 303 Monroe Ave. NW, Grand Rapids, MI 49503. Schedule of events TBD.

Jan. 2-4, 2024. Kentucky Fruit and Vegetable Conference. Mark your calendars, the Kentucky Fruit and Vegetable Conference returns to the Sloan Convention Center at 1021 Wilkinson Trace in Bowling Green, KY 42103. The event will start with a pre-conference workshop on Tuesday, Jan. 2 with the main conference educational sessions and trade show being held on Wednesday and Thursday, Jan. 3 and 4.

Jan. 17-19, 2024. Illinois Food, Farmers Market & Specialty Crop Conference. Crowne Plaza, 3000 S. Dirksen Parkway, Springfield, IL 62703. Schedule TBD.

Bill Jackson Wins Apple Grower of the Year Award for the Midwest Region

Excerpt from Growing Produce: <https://www.growingproduce.com/fruits/apple-grower-of-the-year/here-are-the-2023-apple-grower-of-the-year-award-winners-by-region/>

William "Bill" Jackson has dedicated much of his life to promoting the apple growing industry in Kentucky. The owner of Jackson's Orchard & Nursery in Bowling Green has influenced and, even at age 86, continues to counsel peers across the state, according to one such younger grower, Jeremy Hinton.



William "Bill" Jackson (Photo courtesy of Jackson's Orchard & Nursery).

“In addition to his innovation and quality production on his own orchard, the quality that most makes Bill deserving of this recognition is his contribution to the industry as a whole through his generous sharing of experience and advice,” Hinton says. “He has been a tremendous mentor for new growers in the industry.

“When I first started in the business 21 years ago, he was a regular call for me to get advice on production and marketing matters. He has always been encouraging to me and other growers starting in the business and is a resource for all growers in our area. I count Mr. Jackson as a major contributor to our family’s success in the orchard business and know many others in Kentucky who share that same sentiment.”

Growing up in southern Illinois in the shadow of many orchards, Jackson began his professional career selling chemicals to orchards across Illinois and Michigan. At each stop, he took note of the things he liked and would do himself should the day come when he had his own orchard. That dream became a reality when he and wife Shirley purchased what is now Jackson’s Orchard & Nursery in 1966. He began planting trees on the property in 1969 and continues to plant new trees today.

Bitter Rot Season is Upon Us

By Kimberly Leonberger, Plant Pathology Extension Associate, and Nicole Gauthier, Plant Pathology Extension Specialist

While fruit rots have a variety of causes, the most common fungal fruit rot of apple in Kentucky is bitter rot: <https://plantpathology.ca.uky.edu/files/ppfs-fr-t-24.pdf>. The disease results in rotten, inedible fruit. It is distinct from other fruit diseases of apple: <http://plantpathology.ca.uky.edu/files/ppfs-fr-t-02.pdf>. Fungicides are available for management; however, sanitation is critical for disease prevention: <http://plantpathology.ca.uky.edu/files/ppfs-gen-05.pdf>.

Bitter Rot Facts

Symptoms begin as small, slightly sunken lesions that enlarge and eventually develop a bull’s-eye pattern (Figure 1). Cutting into infected fruit reveals an internal rot with a V-shaped pattern (Figure 2). Symptoms may not appear immediately after infection and may take several months to become visible. Initial infection begins as early as bloom and may continue through harvest. The fungal pathogen overwinters in fallen fruit, dried fruit (mummies), and in crevices in bark and dead wood. Bitter rot is caused by multiple species of the fungus *Colletotrichum*.



Figure 1. Sunken lesions with bull’s-eye appearance are common symptoms of bitter rot on apple. (Photo: Nicole Gauthier, UK).



Figure 2. Internal V-shaped rot in apple caused by bitter rot. (Photo: Nicole Gauthier, UK).

Management Options

Remove and discard diseased fruit immediately. At the end of the season, remove fallen fruit from the ground and prune out cankers and dead wood that may harbor fungi. Plant cultivars that are less susceptible to bitter rot. Information on cultivar susceptibility can be found in the publication Disease Susceptibility & Resistance of Common Apple Cultivars (PPFS-FR-T-28): <https://plantpathology.ca.uky.edu/files/ppfs-fr-t-28.pdf>.

Homeowners can apply fungicides that contain captan or mancozeb beginning soon after petal fall and continuing every 10 to 14 days until harvest following the Backyard Apple & Pear Disease, Pest, and Cultural Practices Calendar (PPFS-FR-T-21): <http://plantpathology.ca.uky.edu/files/ppfs-fr-t-21.pdf>.

Commercial growers should use the Commercial Apple Fungicide Spray Schedule Worksheet & Sample Spray Guides (PPFS-FR-T-19, <https://plantpathology.ca.uky.edu/files/ppfs-fr-t-19.pdf>). This, along with

the Midwest Fruit Pest Management Guide (ID-232, https://ag.purdue.edu/department/hla/extension/_docs/id-465.pdf) can be used to develop a spray program. Always follow label directions when utilizing fungicides.

Buzzy Beetles Descend on Kentucky

By Johnathan L. Larson, Entomology Extension Specialist

In yards, gardens, and parks across Kentucky, people have noticed a loud insectoid buzz in the air. At first, this noise is mistaken for a squad of bumble bees arriving in force. However, this particular buzz isn't from bees, it's produced by a large handsome scarab known as the green June beetle (Figure 1). These are some of the larger, stouter beetles that can be found in Kentucky and their appearance can make some uneasy. Luckily, these gentle giants don't necessarily pose a hazard for most, though they can cause damage in specific industries.



Figure 1: Adult green June beetles mimic the sound of bumble bees in flight and are big beetles. Their shiny coloration sets them apart from other scarabs in Kentucky. (Photo: Kansas Department of Agriculture, Bugwood.org).

Green June Beetle Biology

As adults, green June beetles (GJB) are about an inch long and are a bright metallic green with gold accents on the outside edge of their body (they are kind of dressed like Notre Dame fans). They also have “lamellate” antennae, meaning that instead of looking like a long thread like other insects' antennae, they end with finger-like projections that can open and close. Despite their name, the adults tend to show up in July and begin flying around looking for one another. Male beetles tend to be the ones swarming in the air; they are sensing female beetles in the grass and ground below them and are dive bombing them, trying to mate.

After mating, the female June beetle will go into the

soil to lay eggs. They tend to prefer areas that have higher amounts of organic matter. This means that gardens that have received compost could be more attractive to the beetles. Once the new grubs emerge from their eggs, they will tunnel through the soil and feed on decaying organic matter and develop through three larval instars. In the final instar, they are over 1.5 inches long (Figure 2). If you have ever found a big honking grub in your lawn or garden, it was most likely this species. One other interesting factoid about green June beetle grubs is that they sometimes come to the surface of the lawn, particularly after it rains. They will then move about by flopping onto their back and scooching their body rather than using their legs. The large grub will overwinter deeper in the soil and prepare to pupate in the following year in May. The larvae will make a soil chamber to pupate in.



Figure 2: Green June beetle grubs can be over 1.5 inches long when ready to pupate. They are also known to crawl on their back rather than use their legs. (Photo: Jim Baker, North Carolina State University, Bugwood.org)

Possible Damage

Green June beetles aren't known for being prolific pests annually, though they do cause some damage every year. Primarily, the grubs are turf pests like other white grubs, but for a different reason. Rather than feeding on the roots of turf, like a Japanese beetle would, the big grubs of the June beetle create physical damage, like a mole when it tunnels. This causes more problems when grass is maintained at a low height, like sports fields or golf courses. Drought can also exacerbate the problem. Adults GJB have dull, spoon like mandibles. They are attracted to overripened fruit, like peaches, grapes, apples, and pears, and they scoop the mushy fruit into their mouth. Past research at the University of Kentucky showed that green June beetles may be attracted to grapes damaged by Japanese beetles. The Japanese

beetle has sharper mandibles and can pierce unripen fruit and contaminate them with yeast. Subsequently, GJB may detect this and take advantage of the other beetle's damage to feed on fruit it otherwise couldn't.

Management

Human intervention isn't always needed for green June beetle. They are usually kept in check by various natural enemies, particularly a type of digging wasp that lays their eggs in GJB. Sports fields, golf courses, and home lawns that receive treatment for other white grub problems will likely have little issue with green June beetle grubs. Occasionally, a curative treatment for large grubs in the late summer or early fall may be performed using products like carbaryl or trichlorfon. These products can have impacts on non-targets and result in stinky piles of dead grubs above ground.

As for adults, they generally don't need to be managed. Swarms of beetles are temporary, dissipating as mating is completed, and the adults can't bite or sting. For fruit growers, the removal of rotting and overripened produce can cut down on attraction. Row covers and netting can also exclude adult beetles. Insecticides can be tricky to use near ripe fruit due to pre-harvest intervals on the label.

Purdue, USDA Release Online Freeze-date Tool for Growers in 25 States

From Purdue University Agriculture News

WEST LAFAYETTE, Ind. — A new interactive online tool for visualizing and exploring freeze-date trends and other climate patterns is now available, thanks to a partnership between Purdue University's Midwestern Regional Climate Center and the U.S. Department of Agriculture's Midwest Climate Hub. The tool covers 25 states in the upper Midwest, the Northeast and Appalachia, including Kentucky.

The tool, which will be updated annually, draws upon Applied Climate Information System (ACIS) data from 1950 to 2021. Weather stations across the U.S. feed data to the ACIS, but there are gaps in the network. "This tool isn't itself tracking what's happening in the current season. But it helps you put into perspective what has been happening in the past," said Melissa Widhalm, associate director of the climate center.

Climate change has affected agriculture, noted Dennis Todey, director of the climate hub. Among those changes are first fall freezes coming later and final spring freezes happening earlier. "We talk about that,

but we didn't have any graphics, easily accessible data or visualizations to show people at a local level. And agricultural producers like to see something more local," Todey said.

The tool may interest producers of tree fruits, grapes and row crops such as corn and soybeans to help them take advantage of longer growing seasons. Agricultural advisors, weather forecasters, university extension staffers and state climatologists also have expressed interest in the tool. Homeowners may also consult the tool to help them decide when to bring in their plants when fall arrives or begin planting in the spring.

"When you think about freeze, you immediately think 32 degrees. But when it comes to agricultural applications, you might be interested in values that are colder or warmer," Widhalm said. Corn and soybeans, for example, can survive 28 degrees, while fruit trees are more sensitive to freezing or near-freezing temperatures. And the freeze-date tool allows users to query their desired temperatures.

To read the entire article, visit <https://www.purdue.edu/newsroom/releases/2022/Q4/purdue,-usda-release-online-freeze-date-tool-for-specialty-crop-growers-in-25-states.html>.

To go directly to the interactive freeze date tool, use https://mrcc.purdue.edu/freeze/freedatetool.html?_ga=2.256974220.68145435.1667941032-24301578.1667325584.

El Niño has Arrived!

By Matt Dixon, Meteorologist, UK Ag Weather Center

A hot topic in the weather-world recently has been the arrival of El Niño. What is it and what does it mean for Kentucky?! In short, El Niño is the warm phase of a global climate pattern called the El Niño - Southern Oscillation (ENSO for short). ENSO is just one of many oscillations across the world that can impact global weather circulations.

This climate pattern is mainly based on sea surface temperatures (SSTs) in the Equatorial Pacific Ocean. Whether the SSTs are warmer or cooler than normal can have an impact on the AVERAGE position of the Jetstream, which ultimately determines our storm track. There are three phases to this oscillation: El Niño (warmer than normal SSTs), La Niña (cooler than normal), and neutral conditions (Figure 1).

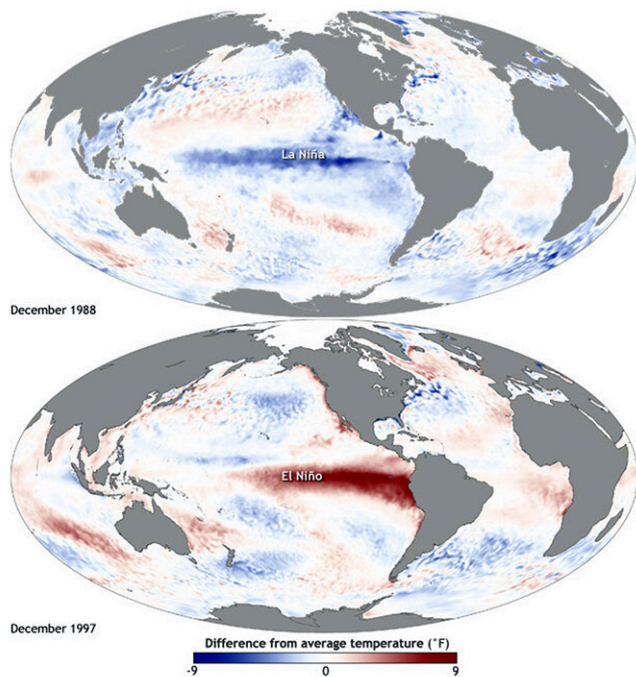


Figure 1. A couple examples of SST anomalies associated with a strong El Niño and La Niña. (Courtesy: [NOAA Climate.gov](https://www.noaa.gov))

The latest data shows that El Niño conditions are now present (Figure 2). 2023 will actually be the first time we’ve seen El Niño in quite a while. In fact, we just saw three straight years of La Niña. Below is a look at the average position of the Jetstream during El Niño events and the associated impacts across the United States during the winter months (when the climate pattern typically reaches peak intensity). We tend to run drier in Kentucky as the average position of the Jet stream is suppressed farther to the south. There’s not much of a strong signature in terms of temperatures. More on this subject at [U.S. winter temperatures for every El Niño since 1950 | NOAA Climate.gov](https://www.noaa.gov).

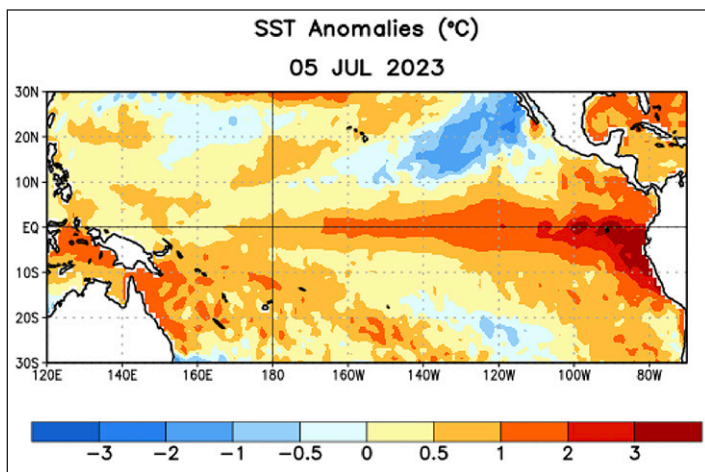


Figure 2. Average seas surface temperature (SST) anomalies (°C) for the week centered on 5 July 2023. Anomalies are computed with respect to the 1991-2020 base period weekly means. (Courtesy of the [Climate Prediction Center](https://www.cpc.ncep.noaa.gov)).

WINTER EL NIÑO PATTERN

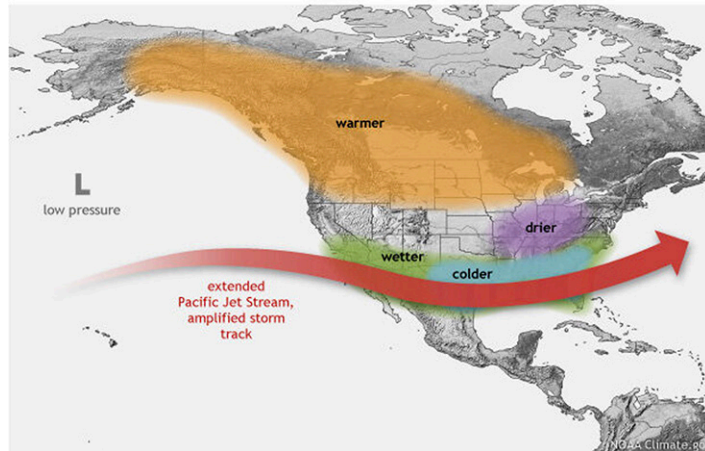


Figure 3. This map illustrates the typical impact of El Niño on U.S. winter weather. (Courtesy: [NOAA Climate.gov](https://www.noaa.gov))

Whether we see dry conditions or not has a lot to do with the intensity of the oscillation. A “strong” El Niño would most likely exhibit the conditions in the map above. Variability will rise with a “weak” El Niño in place. Saying that, chances currently favor a moderate to strong El Niño. The images from [NOAA Climate.gov](https://www.noaa.gov), show the winter precipitation anomalies associated with every El Niño event since 1950. Again, most of the time, we tend to run drier in the Lower Ohio Valley, but it’s not a guarantee. In addition to ENSO, other atmospheric patterns across the globe can have an impact on our storm tracks too (Arctic Oscillation, North Atlantic Oscillation, etc.).

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