Kentucky Fruit Facts

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https://www.uky.edu/hort/documents-list-fruit-facts

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Fruit Crop News

Daniel Becker, U.K. Extension Associate

With the start of autumn, it appears that 2024 is following a pattern similar to 2022 and 2023. Months with wet conditions have been interspersed with dry months. Some areas have been fortunate enough to experience scattered thunderstorms or have received much needed rainfall from frontal weather systems bringing precipitation totals closer to normal for this time of year (Figure 1).

Here in Western Kentucky and especially at the UKREC we are very dry. July 17 was our last substantial rainfall and since then there has only been 1.13 inches of precipitation according to the local Mesonet station. Crops that have not been irrigated are showing symptoms of drought stress with curling leaves and leaf drop (Figure 2). Even irrigated crops have been showing signs of stress. Because of their shallow root system and fine, thread-like roots that lack root hairs, blueberries are especially sensitive to drought injury. At various times this year I have noticed young, tender shoots that have curled, and older leaves that have developed marginal browning or internal brown splotches. Some ailing bushes even collapsed entirely.

Figure 1. *60-day precipitation totals. Courtesy: Kentucky Mesonet, Western Kentucky University)*

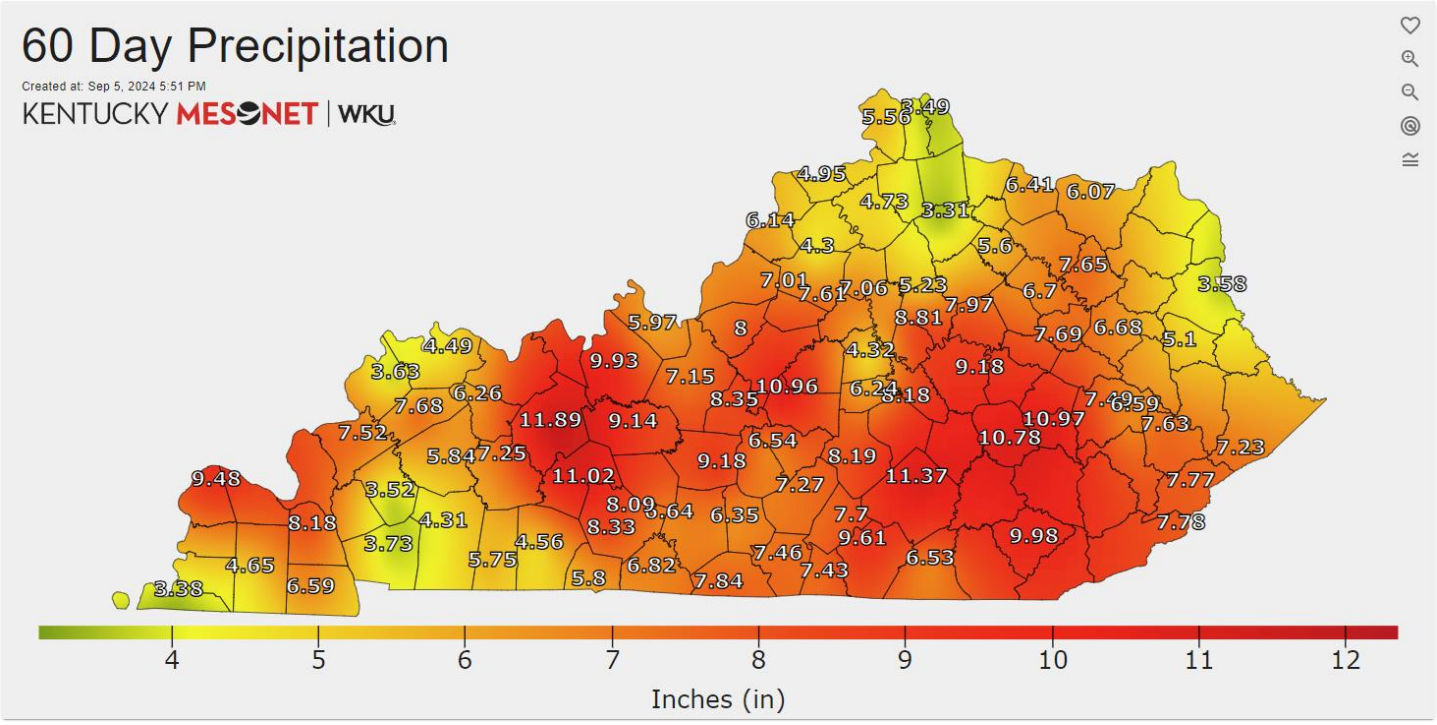

Figure 2. *Peach leaf rolling in response to drought stress. Rolling reduces the leaf surface area to sunlight interception and transpirational water loss. (Photo: Daniel Becker, UK)*

Irrigating going forward will be important as there is a below normal chance of precipitation, and above normal temperatures predicted for the rest of September. Several short irrigation cycles may wet the upper soil profile, but if the lower soil is very dry, then an extended operating time is necessary. The upper profile must be saturated (pore spaces filled) before water starts moving downward. The best way to ascertain soil moisture is by using well-placed tensiometers or granular matrix sensors.

The prolonged dry weather, punctuated by sometimes intense downpours has increased fruit sensitivity to cracking. Pears and apples as they begin to soften and approach harvest are most at risk. Some cultivars are worse than others because they have thinner skin and cuticle layers. Those that come first to mind include Honeycrisp (prone to calyx end splitting), Golden Delicious, Fuji, and Pink Lady. Gala is another one that will crack around the stem end in response to differences in growth rates between skin and flesh cells (Figure 3).

Periods of hot weather and high solar radiation caused some apple fruits to develop sunburn/sunscald. Sunburn causes exposed tissues to degrade into a tan or brown patch on the skin, and most often occurs on the sun-exposed cheek of fruit in the outermost portion of the canopy. Fruit can almost look as if they have been rolled around on a hot stove. The fruit in Figure 4 may have sunburn or could be exhibiting internal breakdown disorder caused by calcium deficiency. Calcium is moved on the transpirational stream within fruit crops and drought stress will negatively affect its transport within the plant.

Figure 3. *Stem end splitting in Gala apples. (Photo: Daniel Becker, UK)*

Figure 4. *Possible sunburn or internal breakdown of Gala apples. (Photo: Daniel Becker, UK)*

It's not all bad, though. According to growers I have talked with, crop quality has been good. June-bearing blackberries had excellent yield with the harvest season lasting longer than expected. Same for early blueberries. Peach fruit size was large where there was a crop, undoubtedly helped along by some blossom thinning during the March freeze earlier this year. The color on early apple cultivars has been very good. Mostly this can be attributed to unseasonably cool nights, in part due to low humidity, throughout much of August. Cool, sunny weather assists in the accumulation and retention of pigments in the skin which results in redder fruit. Flavor has also been exceptional, especially for some of the newer cultivars released through the Midwest Apple Improvement Association. Many of these have Honeycrisp in their background, which should give an indication of their potential for quality.

Wooly aphids have been flying around the western end of the state. Some evenings when the light is just right, they become easier to spot and look like tiny bits of lint floating in the breeze. The population has been high enough to merit notice from homeowners and there have even been several articles written about them in local newspapers. I have noticed them most in the blackberry planting we have here and around hackberry trees. They have not shown much interest in apple trees, which is good.

There are several meetings of note coming up. Of particular interest to tree fruit growers is an orchard field walk on September 18 at the UK North Farm. More details and a link to register can be found in the upcoming meetings section. The dates and venue have been set for the 2025 Kentucky Fruit & Vegetable Conference, so mark your calendars for January 5-7 and plan to attend the sessions in Lexington.

Upcoming Meetings

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

Sept. 13-15. Ohio Pawpaw Festival. Lake Snowden, 5900 US-50, Albany, OH 45710. For festival details, camp site reservation, parking, and tickets visit https://ohiopawpawfest.com/.

Sept. 17. Float Bed Workshop. 5-8 p.m. ET. 1005 KY Hwy 946, Ezel, KY 41425. This on-farm workshop led by the Greenhouse/CEA Horticulture Extension group is for growers, agents, and ag service providers who are familiar with float-bed transplant production but new to commercial horticulture. Growers can register and inquire about the program using this link, by email (arundathi.sharma@uky.edu), or by phone (747) 777-3542. Agents/specialists may register through KERS to attend and receive three hours of in-service credit.

Sept. 18. Orchard Field Walk. 4-6 p.m. **ET**. University of KY North Farm, 1925 Research Farm Rd., Lexington, KY 40511. The event will begin with an open house/self-guided tour starting at 4 p.m., then a guided tour and group discussion starting at 5 p.m. New growers and existing producers interested in starting orchards or learning the most up-to-date techniques will need to register to attend (required). County Agriculture and Horticulture Agents can enroll in this training event and earn one hour of in-service credit available through KERS by following this link. For more details see the flier at the end of this newsletter. For questions, contact Delia Scott, delia.scott@uky.edu, (859) 257-8605.

Oct. 19. Fall Kentucky Nut Growers Association Meeting. The meeting will be held on Saturday at the Owensboro Extension office from 9:30 a.m. to 3:00 p.m. **CT**. Program schedule TBD. For questions, contact John Strang, jstrang@uky.edu (859) 396-9311.

Dec. 10-12. Great Lakes EXPO. DeVos Place Convention Center, 303 Monroe Ave. NW, Grand Rapids, MI 49503. Registration is now open. Book your room early as ones near the convention center sell out quickly. For more information, visit https://glexpo.com/.

Jan. 5-7, 2025. Kentucky Fruit & Vegetable Conference. Marriott Griffin Gate, 1800 Newtown Pike, Lexington, KY 40511. Pre-conference events will begin on Sunday, January 5, with educational sessions and trade show being held on Monday and Tuesday, January 6 and 7. Program schedule TBD.

Jan. 29-31. From Food to Flowers: Illinois Everything Local Conference. Bank of Springfield

Center, 1 Convention Center Plaza, Springfield, IL 62701. Program schedule TBD.

Feb. 3-6. North American Raspberry & Blackberry Association (NARBA) & Northa American Strawberry Growers Association (NASGA) Conference. OUTRIGGER Kona Resort & Spa, 78-128 Ehukai St., Kailua-Kona, HI 96740. The conference will start with an opening reception on Monday with general sessions on Tuesday and Wednesday. On Thursday an Island of Hawai'i agricultural tour will be offered. For details, visit https://www.raspberryblackberry.com/conference/2025-kona/.

Dacthal Stop Use Order

Shawn Wright, Horticulture Extension Specialist, University of Kentucky

On August 6th, the U.S. Environmental Protection Agency announced the emergency suspension of all registrations of the preemergent herbicide Dacthal (DCPA or dimethyl tetrachloro-terephthalate) under the Federal Insecticide, Fungicide and Rodenticide Act. This is the first time in almost 40 years EPA has taken this type of emergency action. The EPA has taken this action because unborn babies whose pregnant mothers are exposed to DCPA, sometimes without even knowing the exposure has occurred, could experience changes to fetal thyroid hormone levels, and these changes are generally linked to low birth weight, impaired brain development, decreased IQ, and impaired motor skills later in life, some of which may be irreversible.

DCPA was registered to control weeds in fruit, vegetable, and non-agricultural settings, but is primarily used on crops such as broccoli, Brussels sprouts, cabbage and onions in the larger vegetable producing states. It has seen relatively little use in Kentucky in agricultural production and most DCPA use on turf was voluntarily canceled by AMVAC in December 2023. The impact to growers in Kentucky is expected to be minimal, but for any that had been using it, they are required to cease all use of the product.

When serious risks are identified, EPA can take action under FIFRA to suspend or cancel a pesticide. Taking such action is resource and time intensive, partly due to the procedural requirements of FIFRA. A cancellation proceeding may take at least several months (if uncontested by the registrant) or potentially several years (if contested by the registrant, thus triggering an administrative hearing and any subsequent appeal of a cancellation order). FIFRA also allows EPA to seek a suspension of a pesticide product while cancellation proceedings are ongoing if the Administrator determines it is necessary to prevent an imminent hazard. EPA Administrator Regan has determined that, due to the serious and imminent harm posed by DCPA, an emergency exists such that this order of suspension effective immediately is necessary. EPA intends to issue a notice of intent to cancel the DCPA products within the next 90 days.

EPA determined that the continued sale and use of DCPA products during the time it would take to follow the normal cancellation process poses an imminent hazard to unborn babies. While AMVAC has attempted to address these concerns, EPA has determined there are no practical mitigation measures that can be put in place to allow DCPA's continued use.

Kentucky Strawberry Growers at Risk for Neopestalotiopsis Disease

Nicole Gauthier, Plant Pathology Extension Specialist, University of Kentucky

In late August, Neopestalotiopsis disease was confirmed in strawberry cuttings across Kentucky. Some cuttings showed symptoms quickly, while others developed symptoms several days after becoming infected.

Neopestalotiopsis disease is caused by a fungus that can infect both cuttings and mature plants. Symptoms can range from leaf spots (Figure 1) to crown and root rots to fruit infections (Figure 2). The pathogen overwinters in debris and as melanized spores in soil. Once introduced to fields, it can survive 3 to 5 years.

Figure 1. *Neopestalotiopsis leaf spots symptoms. (Photo: P. Brannen, University of Georgia)*

Figure 2. *Neopestalotiopsis fruit rot symptoms. (Photo: N. Peres, University of Florida)*

Symptoms

Symptoms on leaves begin as light-colored spots with dark borders; spots expand rapidly to cause blighting and plant dieback. Leaf symptoms are easily confused with strawberry leaf spot and strawberry leaf blight. Fruit symptoms begin as tan lesions that turn orange and sunken. Fruit become mummified and develop large black fruiting bodies. Fruit symptoms can resemble anthracnose fruit rot. Symptoms progress rapidly under warm, humid conditions (68 to 85°F, 90 to 100% RH).

Spores are spread short distances by water splash and long distances by movement of infected plants. In Kentucky, Neopestalotiopsis disease was introduced by rooted cuttings and propagation material.

Management

- Avoid planting symptomatic plants or those sourced from a supplier with a history of Neopestalotiopsis disease.
- Infected plants **cannot be cured**.
- If you have been contacted by your cutting producer regarding potential infection, it is recommended to destroy plants immediately.
- Take extra caution to sanitize surfaces and tools. Avoid tracking soil/media to clean greenhouses and fields. The following resources provide additional information on best practices for sanitation.
    - Fruit and Orchard Sanitation (PPFS-GEN-05)
    - Greenhouse Sanitation (PPFS-GH-04)
    - Cleaning and Disinfesting Commercial Greenhouse Surfaces (PPFS-GH-07)
- Growers who need disease confirmation should work through their local Extension agent for diagnostic sample submission.
- Fungicides Switch and Thiram can suppress disease, but research trials have documented only 50% effectiveness in the highest rated spray treatments.
- Healthy plants can be protected with Switch, Bravo, or one of the fungicides listed in the *Southeast Regional Strawberry IPM Guide*.
- Organic producers should protect healthy plants with a rotation of Serenade Opti and Actigard. Organic management options are limited.

Additional Resources

- Southeast Regional Strawberry IPM Guide (Link)

- Neopestalotiopsis disease in strawberry: what do we know? (Southern Region Small Fruit Consortium)
- Pestalotia Leaf Spot and Fruit Rot of Strawberry (University of Florida)

Protect Others, the Environment and Your Investment by Storing Pesticides Properly

Ric Bessin, Entomology Extension Specialist, University of Kentucky

Pesticides are not cheap and represent a significant investment for many agricultural producers and others who use pesticides regularly. Generally, most pesticides are intended to have a 2- to 3-year storage life. Too much time in storage or poor conditions during storage can ruin many pesticides. This can cost producers substantial time and money. In addition, pesticide storage areas should have easily visible signage to alert others and must be secured properly to keep out unwanted visitors. Mishaps may happen in storage, so those storing pesticides should plan accordingly to ensure that storage procedures provide containments in case of leaks or spills. This article highlights the basics elements of good pesticide storage.

Security

Pesticide storage areas should have easily visible signage to alert others and must be secured properly to keep out unwanted visitors (Figure 1). Post pesticide-warning signs on doors and windows to alert people that pesticides are stored there. Durable, high-visibility signs are available commercially. Only store pesticides in a locked cabinet, room, or building. This prevents children, animals, and other unauthorized people from having access to pesticides. Never transfer pesticides to containers that might cause children and others to mistake them for food or drink. Pesticides should always be transported and stored apart from fertilizers, other chemicals, feed, and seed.

Figure 1. *Pesticide storage areas need to be keep locked with clear signage. (Photo: Ric Bessin, UK)*

Protect Your Investment

As pesticide quality can degrade over time, try to purchase only the amount of a pesticide you intend to use within the year, maybe two. While this may sound easy, pesticide needs and available container sizes do not always align. So, you can protect your left-over products by carefully reading the Storage and Disposal section of each label for those pesticides you plan to store.

Different formulations of the same product often have different storage requirements. Storage areas should be cool, dry, and well-ventilated. Always store pesticides in their original containers. Regularly check containers for leaks, corrosion, or deterioration. Many dry materials should be stored in a cool, dry location with good ventilation. Partially used bags of dry formulated pesticides can be stored in clear, sealable plastic bags to keep moisture out to avoid clumping or caking. Check to make sure caps on liquid containers are secured properly. Many liquid pesticides must be stored above a specific temperature to avoid crystallization, separation, or active ingredients otherwise falling out of solution. It may not be possible to re-suspend these materials for future use. Temperature requirements during storage are found on individual pesticide labels and will vary by product. Mark each pesticide container with the date of purchase before it is stored. Use older materials first.

Keep liquids on lower shelves and dry formulations above them. Maintain a current inventory of your pesticides; this will let you manage ordering new products more effectively. I find it helpful to place pesticide containers into plastic tubs, so that if a leak occurs, it is contained to a small area (Figure 2).

Figure 2. *Placing liquid containers into plastic totes is a method to separate herbicides, fungicides, and insecticides. (Photo: Ric Bessin, UK)*

Protect Yourself

Pesticide storage areas should be well ventilated and dry (Figure 3). Without proper ventilation, pesticide storage areas will collect volatiles from opened containers. Storage areas should have adequate lighting so that labels can be easily read. A well-lit area also helps to reduce accidents. Keep the area uncluttered; this reduces tripping hazards when working with pesticides. Have single-use towels, soap, eye-wash supplies, and change of clothes available. While larger facilities may have an eye-wash station, smaller storage areas may have bottles of eye wash solution. Store your Personal Protective Equipment (PPE) apart from your pesticides. Reusable PPE should be cleaned after each use and air-dried before storage, as well as stored in areas away from pesticides to avoid contamination during storage.

Figure 3. *Proper ventilation reduces pesticide exposure. (Photo: Ric Bessin, UK)*

Protect Others

Only store pesticides in a locked cabinet, room, or building. This prevents children, animals, and other unauthorized people from having access to pesticides. Never transfer pesticides to containers that might cause children and others to mistake them for food or drink. Post pesticide-warning signs on doors and windows to alert people that pesticides are stored there. Durable, high-visibility signs are available commercially. Pesticides should always be transported and stored apart from fertilizers, other chemicals, feed, and seed.

Protect the Environment

Store pesticides in an area with an impervious floor (Figure 4). The floor of the storage site should be made of sealed cement, glazed ceramic tile, no-wax sheet flooring, or another easily cleaned impervious material. The area should be self-contained with no

drains leading out of the area. Larger storage areas with more than 300 gallons of liquid pesticides are considered commercial facilities and need to have a curb around the floor that can contain a minimum of 110% of the volume of the largest container in storage. In these larger facilities, a sump will collect spills and pump them into a storage tank. Inspect the storage site to determine the likely path of pesticides in case of spills, leaks, drainage of equipment wash water, and heavy pesticide runoff from firefighting or floods.

Figure 4. *Pesticide storage areas must have an impervious floor. (Photo: Ric Bessin, UK)*

Be Prepared

Have materials on hand to respond to spills and leaks (Figure 5). Spills and leaks will happen, so plan on them! Absorbent materials like kitty litter, sawdust, or floor-sweep compound are used to clean up spills. Use the 3 C's to manage spills; Control, Contain, then Cleanup. Control means to stop the leak at the source. For example, if a container has a leak on the bottom, invert the container to stop the leak. Contain means to limit the spread of materials that have leaked by surrounding the spill with absorbent material. The final step is to clean up the spill. Be sure to use all necessary PPE as listed on the pesticide label.

Figure 5. *Have the spill kit readily available. (Photo: Ric Bessin, UK)*

It is a legal requirement to store pesticides properly and in a secure place to meet regulations and keep persons and the environment safe. With the growing season winding down before winter, now is a good time to review your pesticide storage and update inventories.

Receiving Fruit Facts on the Internet

By subscribing to the email notification service you will receive an email announcement when each new issue is posted on the web with a link.

To subscribe, send an email message:

TO:	listerv@lsv.uky.edu
SUBJECT:	Fruit Facts
MESSAGE:	subscribe KY-FRUITFACTS
	Followed by a blank line
	OR to unsubscribe, the lines:
	Signoff KY-FRUITFACTS
	Followed by a blank line

You should receive confirmation by return email. If you have a problem, or if you wish to communicate with a person about "fruitfacts", the owner's address (the TO: line of the message is: owner-ky-fruit-facts@lsv.uky.edu.

ORCHARD FIELD WALK

September 18, 2024
4 – 6 p.m. (EDT)
University of KY North Farm
1925 Research Farm Road
Lexington, KY 40511

Join us for an orchard walk at the new Modern Orchard Systems and Climate Resilience Research and Extension Orchard at the University of Kentucky's North Farm in Lexington. The event will begin with an open house/self-guided tour starting at 4 p.m. (EDT), then a guided tour and group discussion starting at 5 p.m. Participants will learn about new training systems and production techniques in apples, pears, and peaches as well as special considerations for pest and disease control in young orchards from UK extension faculty in horticulture, plant pathology, and entomology. This event will be useful for new growers interested in starting orchards and for existing producers who want to learn the most up-to-date techniques. Spanish translation will be provided for both written and oral materials; please bring a cell phone with head phone/ear bud capabilities.

Registration is required and can be found here:
https://uky.az1.qualtrics.com/jfe/form/SV_0CHafwgWqeuZ5Ua