

# Kentucky Fruit Facts

February 2023

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

Daniel Becker, Editor  
Christy Cassady, Newsletter Designer



**UK** University of Kentucky  
College of Agriculture,  
Food and Environment  
Cooperative Extension Service

Cooperative Extension Service  
University of Kentucky  
Horticulture Department  
N-318 Ag. Science Ctr. No.  
Lexington KY 40546-0091

## Inside this Issue:

Fruit Crop News .....	1
Upcoming Meetings .....	3
Fruit Cold Hardiness .....	4
Fruit Pest Management Guide .....	4
Fruit Scout Website .....	5
NAP Price Survey .....	6
CEU Requirements Changes .....	6
Fungicide Resistance Survey .....	7

**Note:** We have ceased publishing Fruit Facts as a hard copy or mailed newsletter. If you would like to continue receiving Fruit Facts, please sign up for email delivery as described at the end of this newsletter or contact your County Extension Office to have them print a copy for you.

## Fruit Crop News

*Daniel Becker, U.K. Extension Associate*

Another successful Kentucky Fruit and Vegetable Conference concluded on January 4. As always, the conference is a time to reconnect with growers, vendors, and specialists and to learn about innovation in the horticulture industry. I especially appreciate the in-state and out-of-state speakers who took the time to share their knowledge. The luncheon on January 4 was also a time to recognize contributions to the industry. Bill Jackson was presented with the Dr. John Strang Award in recognition of his outstanding service to Fruit Growers and the Horticulture Industry of Kentucky (Figure 1). This honor is bestowed upon growers who have contributed greatly to horticulture in Kentucky. In addition to operating Jackson's Orchard & Nursery, Bill Jackson has been a member of the Kentucky State Horticultural Society for 58 years.

Last year (2022) was one of contrasts in terms of weather, alternately cool and wet, then hot and dry (Fig-



**Figure 1.** Bill Jackson receives the Dr. John Strang Award. From left to right: Dr. John Strang, Bill Jackson, and Jonathan Price. (Photo: Cindy Finneseth, Ph.D., Executive Director, Kentucky Horticulture Council)

ure 2). However, these swings become hidden when averaged over the entire year. It is only when looking at the months separately that the variation becomes apparent. As related by Matt Dixon, UK Ag Weather Center Senior Meteorologist:

“Overall, it was a drier year with near normal temperatures, although we had our fair share of ups and downs. This included two periods of drought conditions with the more significant of the two coming during the

**Cooperative Extension Service**  
Agriculture and Natural Resources  
Family and Consumer Sciences  
4-H Youth Development  
Community and Economic Development

Educational programs of Kentucky Cooperative Extension serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expression, pregnancy, marital status, genetic information, age, veteran status, or physical or mental disability. University of Kentucky, Kentucky State University, U.S. Department of Agriculture, and Kentucky Counties, Cooperating.  
LEXINGTON, KY 40546



Disabilities  
accommodated  
with prior notification.

fall (Figure 3). In between, we saw our 4<sup>th</sup> wettest July on record with historic flooding across Eastern KY (Figure 4). As a side note: our normal annual average precipitation for the state of Kentucky is now 50.38 inches according to the 1991-2020 climate normals.”

## 2022 Temperature Analysis

Data source: Midwestern Regional Climate Center, <https://mrcc.purdue.edu/CLIMATE>

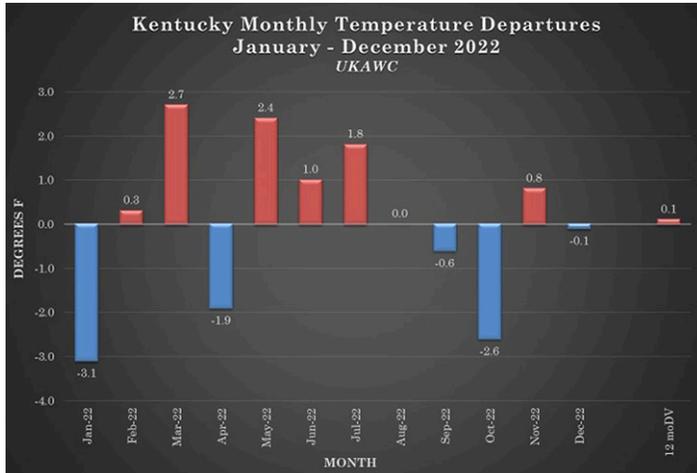
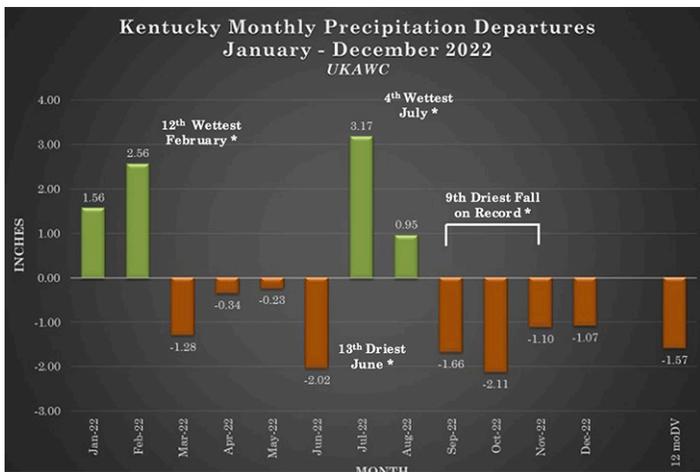


Figure 2. Monthly temperature departure from normal. (Matt Dixon, Senior Meteorologist, UK Ag Weather Center)

## 2022 Monthly Precipitation Departures

Data source: Midwestern Regional Climate Center, <https://mrcc.purdue.edu/CLIMATE>



\*Data record extending back to 1895.

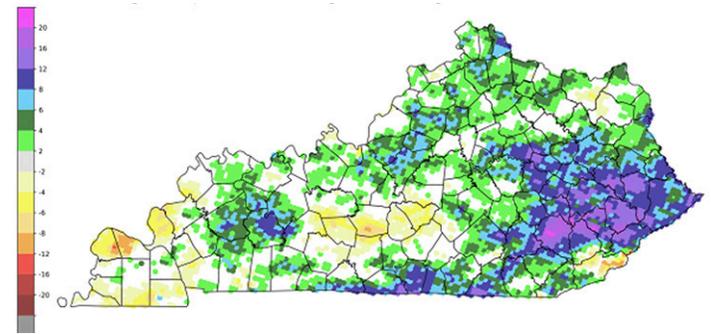
Figure 3. Monthly precipitation departure from normal. (Matt Dixon, Senior Meteorologist, UK Ag Weather Center)

December ended a difficult production year for Kentucky growers. On December 22 the entire state experienced a 40+°F drop in less than 24 hours. Daytime highs hovered around 5°F while overnight lows dropped into the low to mid-single digits the following day (Figure 5). Temperatures did not rise above freezing in many areas until the 27<sup>th</sup>.

For tree fruit growers, damage to the peach crop is a major concern. I performed flower bud and twig injury

## Multi-sensor Precipitation Analysis

Year-to-date Departure-from-Normal Precipitation ending 8AM December 30, 2022

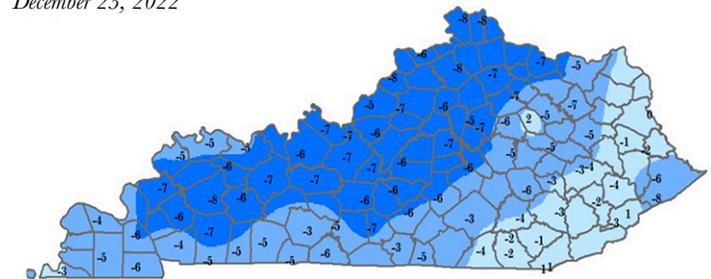


Precipitation Data Courtesy: NWS AHPS, <https://water.weather.gov/precip/>

Figure 4. 2022 precipitation departure from normal. Blues and purples indicate higher than normal precipitation. (Barry Farmer, Engineer Associate, UK Department of Biosystems & Ag Engineering)

## Extreme Minimum Temperatures

December 23, 2022



\*Data Courtesy: National Weather Service and Kentucky Mesonet

Figure 5. Lowest temperatures (°F) experienced across the state. (Matt Dixon, Senior Meteorologist, UK Ag Weather Center)

assessments on trees in several counties in far Western Kentucky following the protocol outlined in <https://extension.psu.edu/orchard-frost-assessing-peach-bud-injury>. ‘Redhaven’ had 2-7% bud survival from three sites, ‘Contender’ had 2%, ‘Reliance’ 5%, and ‘GaLa’ had 9% uninjured. Many shoots exhibited patches of xylem browning with a few exhibiting cambium and phloem browning, indicating that some dieback may occur in the spring. While these numbers seem dire, I try to remain optimistic and think there is still potential for a partial crop on the hardiest cultivars. Peaches can lose around 90% of their flower buds and have a full crop. Even with 2-3% of the buds alive there is potential for a partial crop. However, we still have a long way to go to get through the rest of winter and the spring frost season.

Apples should be fine, 83% of flowers inside buds were uninjured when I checked trees on station in mid-January. European pears, raspberries, thorny blackberries, and protected well-hardened strawberries should also be okay. European plums, Asian pears, and tart cherries may have some injury as they are interme-

diate in hardiness. I suspect that less hardy nectarines, Asian plums, sweet cherries, erect thornless blackberries, southern highbush and rabbiteye blueberries have substantial amounts of injury. See Dr. Shawn Wright's thoughts on fruit hardiness after the upcoming meetings section.

Pruning of apples and other hardy fruit should be ongoing when field conditions permit. Prune as normal considering the likelihood that there is still potential for a full crop. Pruning of intermediately hardy fruits should follow later, closer to bud break. Peach and other tender crops should be delayed as long as possible until the full extent of injury is known. Sometimes, pruning can wait until bloom or even fruit set if a partial crop is expected, so as to remove as few fruits as possible while also working on the canopy. Smaller growers with a few trees can practice delayed pruning to try to maximize a partial crop. Larger growers must use their labor when it is available, though it might be possible to practice staggered (rough then fine) pruning.

Tree fruit growers can apply an oil spray anytime during dormancy. While oil can be applied whenever the temperature is above 32°F, it is best to wait to spray until the temperature is forecast to be above 40°F for the following two days. An early "dormant" oil spray is effective at controlling San Jose Scale though control increases closer to the apple green tip and peach bud swell stages. If scale was not a problem last year in the orchard, the oil spray can be delayed until apple half-inch green which will provide better mite and aphid control. Producers will want to apply a fixed copper spray to clean up fire blight bacteria on apples and pears, and bacterial spot and leaf curl on peaches (if no fall spray was applied) to get a good start on the season. Fixed copper can be mixed with the oil spray, but copper sulfate is not compatible with dormant oil. A more in-depth discussion of early season spray compatibilities and cautions will be covered in the next newsletter.

I reached out to Stuart Brenneman of Nutrien Ag Solutions for his outlook on pesticide availability for the rest of the year. He said that supply is in a better position going into 2023 compared to at the start of 2022 and there are no real concerns about supply chain issues. Last year was more difficult than any other that Stuart can remember for meeting grower demand, but as of January, there is about as much product sitting in storage than at any other time in recent memory. Prices of most chemicals have only gone up slightly. Another bright spot is that the cost of glyphosate and glufosinate has fallen and is about half of what they were last year;

Stuart does not anticipate limited availability of these two chemicals.

The Employment and Training Administration of the Department of Labor has issued a notice in the Federal Register announcing the 2023 Adverse Effect Wage Rates (AEWR) for H-2A workers. The updated hourly AEWR for Kentucky is \$14.26. The notice is available at <https://www.govinfo.gov/content/pkg/FR-2022-12-16/pdf/2022-27332.pdf>. To view a map of AEWR rates by state go to <https://www.dol.gov/sites/dolgov/files/ETA/oflc/pdfs/AEWR-Map-2023.pdf>.

### Upcoming Meetings

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

**Feb. 8. Southern Illinois Fruit and Vegetable School.** 8:00 AM– 4:00 PM CT. Mount Vernon Hotel and Event Center, 222 Potomac Blvd, Mt. Vernon, IL 62864. For conference details, visit <https://extension.illinois.edu/events/2023-02-08-2023-southern-il-fruit-vegetable-school>.

**Feb. 9. Beginning Apple Grower Webinar Series.** 1:00 PM ET/12:00 PM CT. Starting on Feb. 9 and continuing Feb. 23, Mar. 9, Mar. 23, Apr. 6, and Apr. 20 this multi-state extension webinar will cover the basics of apple production for beginning growers. For a list of sessions and to register for each, visit: <https://fruit.wisc.edu/webinars/>.

**Feb. 15. Pests and Progress: Trapping and Development of Degree Day Model for Missouri Berry Crops.** 1:30 PM ET/12:30 PM CT. This webinar will focus on using degree day modeling to predict spotted wing drosophila activity. The webinar is free, but you must register to receive the link: [https://zoom.us/webinar/register/WN\\_j7jtZbmiRw-QT4SxkeS4vA](https://zoom.us/webinar/register/WN_j7jtZbmiRw-QT4SxkeS4vA).

**Feb. 16. High Tunnel Berry Production Webinar Series.** 1:00 PM ET/12:00 PM CT. Starting on Feb. 16 and continuing Mar. 2, Mar. 16, Mar. 30, and Apr. 13 this multi-state extension webinar will cover the basics of high tunnel berry production for beginning growers. For a list of sessions and to register for each, visit: <https://fruit.wisc.edu/webinars/>.

**Feb. 16-18. Pick Tennessee Conference.** Cool Springs Marriott, 700 Cool Springs Blvd., Franklin, TN 37067. For a schedule and to register, visit <https://www.picktnconference.com/>.

**Feb. 24. Eastern Kentucky Grower-Buyer MeetUp.** 10:00 AM – 12:00 PM ET, check-in starts at 9:30 AM. This will be the single largest event bringing together

buyers and agricultural food producers in Eastern Kentucky. The event is free, but you must pre-register at <https://www.eventbrite.com/e/2023-eky-grower-buyer-meetup-tickets-523919566527?aff=efbeventix&fbclid>.

**Feb. 24 and 25. Missouri Blueberry School.** Darr Agricultural Center, 2401 S. Kansas Expressway, Springfield, MO 65807. Educational sessions are scheduled for Friday, Feb. 24 (8:00 AM – 6:00 PM CT) with farm tours on Saturday, Feb. 25 (8:00 AM – 1:00 PM CT). Registration costs \$50 and includes lunch on Friday; sign up to attend at <https://extension.missouri.edu/events/missouri-blueberry-school>.

**Mar. 8. IPM Training School.** 8:00 AM – 3:45 PM CT. McCracken County Extension Office, 2025 New Holt Rd., Paducah, KY 42001. Sessions are divided into field crops (morning) and horticulture crops (afternoon). Starting at 1:00 PM, six horticulture specialists will talk about advanced concepts in fungicides, diseases in forest trees, root-knot nematode management, soil water monitoring, invasive insects, and wildlife management. This event offers CEU's to pesticide applicators and certified consultant advisers for each session. Registration for virtual and in-person attendees is through Zoom: [https://uky.zoom.us/meeting/register/tZYqduitrjIsGdZ-k53kIXjUTc\\_vgNdkT-bBp](https://uky.zoom.us/meeting/register/tZYqduitrjIsGdZ-k53kIXjUTc_vgNdkT-bBp). Onsite registration will also be available for in-person attendees.

**Mar. 16. Apple & Pear Grafting Workshop.** 6:00 – 9:00 PM CT. Lyon County Extension Office, 231 W. Main St., Eddyville, KY 42038. Contact Susan Fox, Lyon County Extension Agent for Agriculture and Natural Resources for details: [susan.fox@uky.edu](mailto:susan.fox@uky.edu) or (270) 388-2341.

**Mar. 21. Blueberry Pruning Presentation and Field Demonstration.** 2:00 PM CT. For further details contact Dee Brasher Heimgartner, Crittenden County Extension Agent for Agriculture and Natural Resources: [deanna.brasher@uky.edu](mailto:deanna.brasher@uky.edu) or (270) 965-5236.

**Apr. 29. Kentucky Nut Growers Association Spring Meeting.** 9:30 AM ET in Conference Center Room C at the Hardin County Extension Office, 111 Opportunity Way, Elizabethtown, KY 42701.

**Jun. 14-16. Missouri Elderberry Conference.** Columbia, MO. Schedule TBD.

## A Few Thoughts on Fruit Cold Hardiness

*Dr. Shawn Wright, Extension Specialist, UK Department of Horticulture*

Cold weather can have a significant impact on fruit

plants. Considerations involve how cold it is, how long it is cold, health of the plants, and dormancy stage of the plants. Wind chill values are not relevant to plants directly as they don't lose heat to the wind. Wind can increase desiccation from plants, particularly evergreens.

For tree fruit, apples, pears, and pawpaw will be the most hardy though if they are recently grafted they may be more susceptible to damage than mature trees. Peaches are the least hardy of the tree fruit grown here, and plum and cherry intermediate. For grapes, *V. vinifera* are the least hardy and the native *V. labrusca* are the most hardy with the French-American hybrids intermediate in hardiness.

There is some varietal difference for strawberries, but this is usually reflected in the production system. Varieties like 'Chandler' and 'Camerosa' that are typically grown in the annual plasticulture system are less hardy than traditional matted row varieties. Some of the newer varieties like 'Ruby June' we don't have much experience with. I am hopeful that the majority of our matted row growers were mulched and the plants were dormant prior to the December cold weather event. For plasticulture growers, floating row covers should have provided some protection provided that they were not blown off during the high winds.

For brambles, red raspberries are the most winter hardy, blackberries the least, and black raspberry are intermediate. There is significant difference with blackberries in terms of winter hardiness. Temperatures below 10°F can injure the buds of the least hardy cultivars, and temperatures below -15°F can injure the buds of the most hardy cultivars.

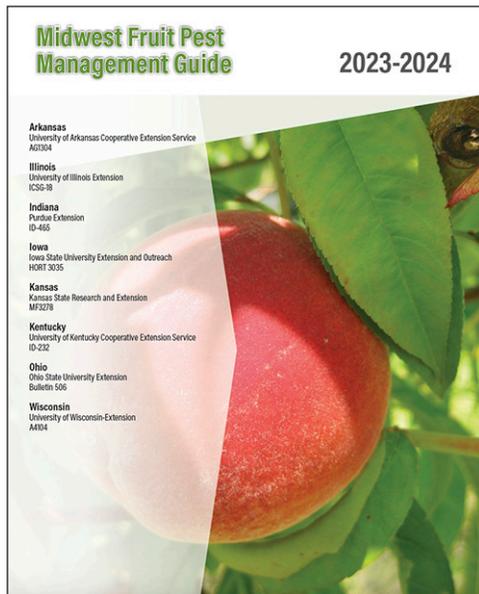
Blueberries also show some varietal hardiness differences but most of the northern highbush varieties should be okay. Southern highbush are less hardy as a general rule.

## Midwest Fruit Pest Management Guide 2023-2024 (ID-232)

The Midwest Fruit Pest Management Guide 2023-2024 was recently revised to keep up with the latest management and pesticide recommendations for tree fruit and small fruit (Figure 1). This publication for commercial producers was developed by the Midwest Fruit Workers Group, which includes University of Kentucky Extension specialists from Plant Pathology, Entomology, and Horticulture, as well as specialists from seven other universities. The updated guide is available online at [https://ag.purdue.edu/department/hla/extension/\\_docs/id-465.pdf](https://ag.purdue.edu/department/hla/extension/_docs/id-465.pdf).

For additional publications on fruit diseases, visit the UK Plant Pathology Extension Publications webpage: <https://plantpathology.ca.uky.edu/extension/publications>.

**Figure 1.** Midwest Fruit Pest Management Guide 2023-2024. (Cheryl Kaiser, Plant Pathology Extension Support, UKY)



## New Fruit Scout Website Allows Easier Access to IPM Scouting Guides

*Kim Leonberger, Plant Pathology Extension Associate and Nicole Gauthier, Extension Plant Pathologist*

The IPM Scouting Guide publications for fruit crops were converted into mobile compatible websites beginning in 2017. Now accessing this information is even easier with the creation of the Fruit Scout Website (<https://fruitscout.ca.uky.edu>). This new website provides access to the information found on the Apple, Bramble, Grape, Peach, and Strawberry Scout websites all in one place. The Fruit Scout Website is available for grower, agent, and homeowner use and can be accessed from any phone, tablet, iPad, or computer. The website provides users the opportunity to first select a crop based scouting guide (Figure 1). Next, the home page for each crop (Figure 2) allows visitors to select a problem area. Finally, users select from a menu of various diseases, pests, or problems to obtain more information and view images (Figure 3).

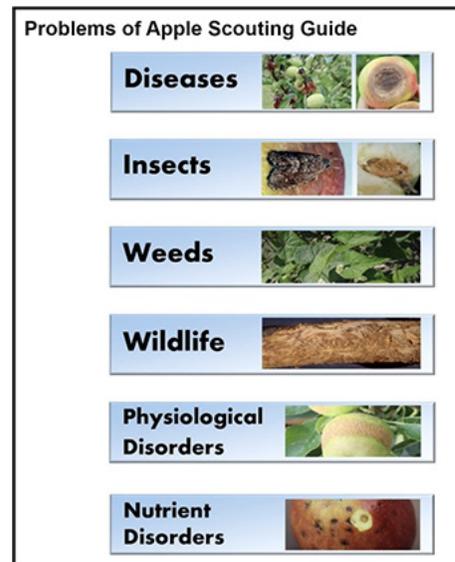
Please note that as of February 28, 2023, the following websites will become inaccessible and will be permanently replaced by the Fruit Scout Website (<https://fruitscout.ca.uky.edu>). Be sure to bookmark this website for easy access in the future.

- Apple Scout - <http://applescout.ca.uky.edu/>
- Bramble Scout - <https://bramblescout.ca.uky.edu/>

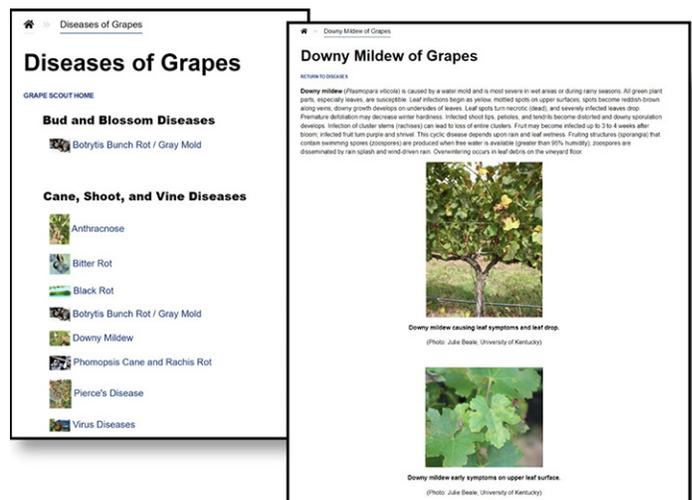
- Grape Scout - <https://grapescout.ca.uky.edu/>
- Peach Scout - <https://peachscout.ca.uky.edu/>
- Strawberry Scout - <https://strawberryscout.ca.uky.edu/>



**Figure 1.** Fruit Scout website home page. (Kim Leonberger, UKY)



**Figure 2 (left).** Visitors select a problem area within each crop group. (Kim Leonberger, UKY)



**Figure 3 (below).** Users can select a specific disease or pest to obtain more information. (Kim Leonberger, UKY)

## Non-Insured Assistance Program Fruit Crop Price Survey, 2022 Growing Season

*Delia Scott, Agriculture Extension Associate,  
Beginning Farmers – Fruit and Vegetable*

As participants in the NAP program, Kentucky growers are required to provide price figures and yields from prior cropping years to their Farm Service Agency office (FSA) to calculate the assistance funding that they receive. If a grower does not have price figures, national wholesale prices are used, which are substantially lower than those that Kentucky growers who market retail receive.

The Kentucky State FSA office will accept prices provided by UK Extension if a Kentucky grower does not have historical orchard price records. In order to acquire this data, KSHS is collecting annual price records, which will be averaged. The average will be provided to the state FSA office.

Please provide the average prices for which you marketed your fruit for the 2022 season below. The information that you supply will only be presented as group averages and your identity will remain confidential. To take the survey, visit <https://www.surveymonkey.com/r/22FruitNAP>.

**TAKE THE KY NAP\* FRUIT PRICING SURVEY**

**\*NONINSURED CROP DISASTER ASSISTANCE PROGRAM**

Help KY fruit growers set a local pricing basis for crop insurance claims!

Without KY specific data, growers will have to use national data that may be significantly lower than local prices.

No NAP coverage required to take the survey!



SCAN THE CODE TO TAKE THE QUICK SURVEY

## Changes to CEU Requirements for Commercial Applicators in 2023

*Ric Bessin, Entomology Extension Specialist*

New laws and regulations governing the sale, use, and storage of pesticides, as well as changes to training and certification standards, were approved earlier this year and will be implemented in 2023. This is the most significant change to the program since 1978. In Sep-

tember, I outlined some of the more important changes for the Private and Commercial Applicator Programs in two Kentucky Pest News articles. In this article, I will explore the changes to the CEU requirements for commercial applicators and how these changes can affect recertification and relicensing.

### ***New Category Structure and Recertification***

Beginning in 2023, there will be fewer commercial categories; several have been consolidated or split and a few have been eliminated. In terms of those that have been consolidated, the old categories 3 (Lawn and Ornamental), 18 (Golf Course), 19 (Interior Plantscape Pest Control), and 20 (Athletic Turf) will be consolidated into the new Category 3, now called Turf, Lawn, and Ornamental Care. People certified in any of those 4 categories will be issued a new Category 3 certification without having to retest.

The previous fumigation categories of 1b (Ag Fumigation) and 7b (Structural Fumigation) have been separated into the new categories of Category 7b (Structural Fumigation), Category 12 (Soil Fumigation), and Category 13 (Non-Soil Fumigation). This new Category 13 covers fumigation of structures which are not habitable, such as grain bins and grain cars, while Category 7b, Structural Fumigation, also addresses fumigation of habitable structures. Persons holding current Category 1b certification will be certified in both Categories 12 and 13 without having to retest.

The categories being eliminated are 12 (Pesticide Retail Sales Agent), 13 (Anti-Fouling Marine Paint), 14 (Consultant), 15 (Anti-Microbial), and 16 (Sewer Root Control). While retail pesticide sales agents will not be certified, the business must be registered and maintain and submit necessary records to the KDA.

### ***General CEUs Eliminated***

In the past, commercial applicators had to earn 9 general and 3 category-specific CEU credits by the end of their certification period to be eligible to recertify. With the new system, they need to earn 12 CEU credits with at least one in each of the categories they are certified in. So, in the future, applicators do not need to keep track of general and category-specific CEU hours. In order to deliver the general information to commercial applicators, presenters applying for CEU credit will need to identify what general pesticide safety and use educational material they will cover in their presentation. They must cover some core pesticide information in order to receive approval.

### ***Annual CEU Requirement***

What has changed regarding CEUs is that each year with relicensing (licenses are valid for one year and certifications last for 3 years), applicators must have 12 CEUs in the previous 3 years. In the past, applicators only had to meet this requirement when they recertified every 3 years. This new requirement is to ensure that applicators receive more frequent pesticide updates. For people that have just taken the test for the first time and passed, they will be awarded 12 CEU hours that first year, which will cover that requirement until they recertify in 3 years. Applicators will need to earn their CEU credits by November 30 in order to receive credits for the current year.

### ***License Renewal Grace Period Shortened***

In the past, commercial applicators had 90 days to pay the annual fee and renew their licenses online. That grace period has been shortened to 30 days beyond the expiration of the license. Persons not renewing their license before the end of the 30-day period will not be able to apply pesticides and will have until November 30 to pay their license fee or have to retest.

### ***Penalty for not Earning CEUs***

Commercial applicators that have not earned the necessary 12 CEUs in the previous 3 years will need to retest and will be subject to a \$200 recertification fee. This is to encourage commercial applicators to stay up to date in their areas by earning CEU credits. The best practice for applicators will be to earn at least 4 CEU hours each year, and for persons organizing training sessions for pesticide education credit, to offer at least 4 CEU hours.

### **Is Fungicide Resistance an Issue? Let Us Know!**

*Kiersten Wise, Plant Pathology Extension Specialist*

The University of Kentucky is inviting you to take part in a survey of current understanding of fungicide resistance issues. Fungicide resistance is a growing concern in agriculture and also in human fungal pathogens. Improving our understanding of knowledge gaps in understanding of fungicide resistance will help us provide better Extension resources to clientele. Although you may not get personal benefit from taking this survey, your responses may help us understand more about how the University of Kentucky can best serve agricultural clientele now and in the future. This survey should

take about 10 minutes to complete. If you are interested in participating, take the survey at [https://uky.az1.qualtrics.com/jfe/form/SV\\_00MNKePBFL6rDG6](https://uky.az1.qualtrics.com/jfe/form/SV_00MNKePBFL6rDG6).

If you do not want to participate, you do not need to take the survey. If you do not feel comfortable answering certain questions, you may skip them and/or discontinue the survey at any time. You will not be penalized in any way for skipping questions or discontinuing the survey. Participation in the survey is voluntary and your decision on whether or not to participate will not affect your affiliation with the University of Kentucky. Please fill out the survey only if you are 18 years of age or older. Your response to the survey is anonymous, which means no names, IP addresses, email addresses, or any other identifiable information will be collected with the survey responses. We will not know which responses are yours if you choose to participate. We will make every effort to safeguard your data, but as with anything online, we cannot guarantee the security of data obtained via the Internet. Third-party applications used in this study may have Terms of Service and Privacy policies outside of the control of the University of Kentucky.

Please fill out the survey to the best of your knowledge. If you have questions about the survey, please feel free to contact Kiersten Wise at [Kiersten.wise@uky.edu](mailto:Kiersten.wise@uky.edu).

### **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: [listserv@lsv.uky.edu](mailto:listserv@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](mailto:owner-ky-fruit-facts@lsv.uky.edu)