



July 2022

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What's inside

Weather update 3
Fire ants in Kentucky ... 4

Coming up

Aug. 9 - Specialty Crop Insurance Webinar Series, Online Resources for Growers. 12:30 p.m. EDT. Brought to you by the Kentucky Horticulture Council. To register, [click here](#).

Aug. 9 - CANCELLED
Kentucky First Farm Workshop, RCARS, Jackson. 9 a.m.-4 p.m. EDT.

Aug. 12 - MarketReady Buyer Tour, Louisville, 10 a.m.-3 p.m. EDT. Free. For more information, see **Page 3**.

Aug. 19 - MarketReady Buyer Tour, Lexington, 10 a.m.-3 p.m. EDT. Free. For more information, see **Page 3**.

UK, Tennessee students collaborate on study of hydroponic lettuce

By Aimee Nielson, UK Agricultural Communications Specialist

The relationship between the University of Kentucky and the University of Tennessee is commonly seen as a sports rivalry, but not for some undergraduate agriculture students who put the competition aside this summer to jointly study how light affects hydroponic lettuce.

Garrett Owen, assistant horticulture professor for the UK College of Agriculture, Food and Environment, teamed up with Kellie Walters, assistant professor for the UT Department of Plant Sciences, to give students this research opportunity.

“One of our seniors, Natalia Wright, was looking for a capstone project, and she is very interested in hydroponic food crops,” Owen said. “I’m interested in lettuce, so we came up with this project. Kellie Walters and I were trained by the same major professor in graduate school, and we’ve remained friends. She had a student interested in a capstone project as well.”

Owen’s team planted red and green lettuce in the greenhouse at UK’s Horticulture Research Farm in south Lexington. The plants take about 14 days to grow to transplant size and then another 14 days until harvest.

Hydroponic plants do not need soil. They use a growing medium, water and nutrients in a controlled greenhouse environment. Re-

Continued on Page 2



Continued from Page 1

searchers control light, water and temperature as plants mature toward harvest.

“I brought up doing lettuce for this project because it’s fast and easy for hydroponics,” said Wright, who grew up in St. Louis, Missouri. “I’ve never done a project in a greenhouse before or had any greenhouse experience. It’s really interesting, even something as simple as shade makes a difference that you can see pretty quickly.”

The UK team is leading an applied research study of how daily light influences plant growth and quality, and the UT team is taking samples of the lettuce and looking at secondary phytonutrients within the plant leaf tissue. Researchers see benefits for commercial growers, greenhouse growers and students learning how to conduct laboratory and field research.

Recently, the UT team came to the UK farm to collect plants they will take back to Knoxville for further study. Walters said the collaboration helps students in multiple ways.

“Learning how plants are grown and different lab analysis techniques are a really rich hands-on experience regardless of what the focus of that experience is,” she said. “Sometimes they don’t get that during their undergraduate career. The other part that I think is really unique about this collaboration is that the students can work together. So, it’s not just in our UT bubble or the UK bubble, but we’re collaborating across institutions where the students can meet each other and expand their networks and learn how to be professionals and collaborate with other folks.”

UT plant science senior William Smith is concentrating his studies in plant genetics and biotechnology. Originally from Raleigh, North Carolina, Smith is looking forward to the results of the joint research.

“This is the first harvest we’re doing; we’re doing two more later in the fall,” he said. “I will be performing the lab tech lab analysis extracting water soluble vitamins, recording photosynthetic measurements and more. It’s a really neat way to get exposure to these biological processes.”



Photo by Aimee Nielson, UK Agricultural Communications Specialist

UK horticulture professor Garrett Owen, left, works with UT plant science senior William Smith to study hydroponic lettuce at the UK Horticulture Research Farm.

Owen said the results could benefit the commercial greenhouse industry.

“We’re hoping that we can determine the optimal daily light interval for red or green oak leaf lettuce grown hydroponically for the state of Kentucky, but we are also looking at some of the health benefits that these lettuces are producing under different daily light intervals,” he said. “So overall we’re really looking at how we can manipulate the light environment to improve overall quality from a grower perspective, but also from a human health and quality perspective.”

To see a video about this project, visit <https://www.youtube.com/watch?v=d2hEntZLW3w>.



Photo by Aimee Nielson, UK Agricultural Communications Specialist

UK horticulture seniors Natalia Wright, left, and Lark Wuetcher, hold a tray of red hydroponic lettuce.

MarketReady hosting Buyer Tours in Louisville, Lexington

By Savannah Columbia, Extension Associate, Agricultural Economics

Have you heard? The MarketReady Producer Training Program is hosting two Buyer Tours in Louisville and Lexington, KY. During each tour, we will visit buyers for a grocery and retail market, restaurant, farm to school or institution, and wholesale distribution warehouse. The Buyer Tour allows growers and producers to get a behind-the-scenes look at what happens at these various marketplaces. Growers and producers will be able to ask questions, talk with buyers, and get first-hand experience with what it is like to bring product to a grocery or retail store, restaurant, or institutional buyer.



This is a great opportunity for growers or producers to make connections with buyers, see what selling to schools, grocery, retail, restaurant, etc. is all about, and make everlasting connections in the local food space. This tour is only for those interested in selling product to the grocery, retail, restaurant, or school marketplace. There is limited space so please register only if you can attend this in-person event.

Logistics and details: both tours are free and will provide transportation to each of the tour stops

from a central meet-up location. Please RSVP on our website here: <https://marketready.uky.edu/events>. You can also find the specific tour spots on each tour's event page, which can be found on our [Upcoming Events](#) page. Any questions can be directed to Savannah Columbia at savannah.columbia@uky.edu.

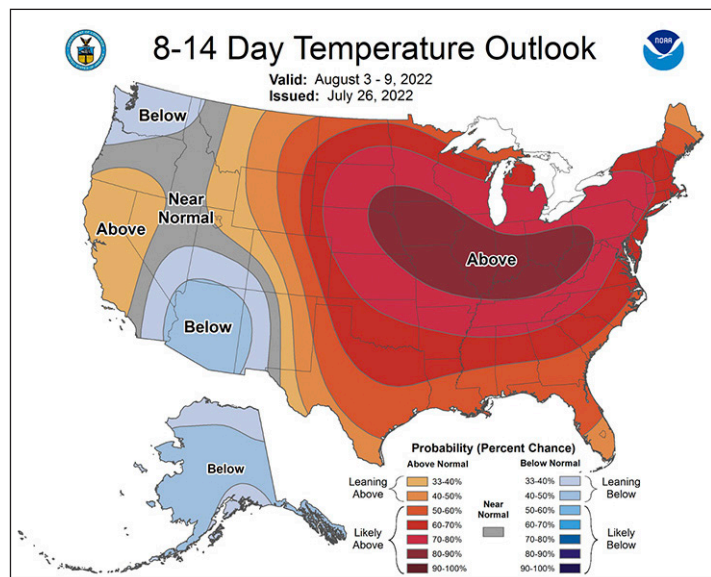
P.S. MarketReady has received a website update, accompanied by a new URL – so go check it out! The new URL is: <https://marketready.uky.edu>. We have put lots of time and thought into this website update, so we hope you enjoy it!

Wetter than average start, but drier conditions return in warm August

By Joshua Knight, Sr. Extension Associate, Horticulture

The first few days of August are expected to be slightly wetter than average, but that pattern is not projected to last. For most of the commonwealth, specifically the central, northern, and western parts of Kentucky, the forecast calls for drier than average conditions. Much of the U.S. is experiencing persistent drought at this time, and the current models show this is expected to expand into the western parts of the state.

The University of Kentucky College of Agriculture, Food and Environment has launched a new resource for drought-related resources and tools. It is available at <https://drought.ca.uky.edu/>.



Overall, the temperature forecast is clear: above average temperatures are expected to dominate

the entire month of August, and this goes for much of the continental U.S.



Figure 1: Fire ant workers are usually between 1/8th- and 1/4th-inch long and can be dark red or dark brown. The easiest way to identify them in the field is if the nest is touched the ants are famous for “boiling out” of the mound to find the intruder.

Photo by Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Fire ants are gaining a foothold in Kentucky

By Joe Collins, Deputy State Entomologist and Jonathan L. Larson, Extension Entomology Specialist

Fire ants have long been found farther south of Kentucky. Since 2000, there have been issues in the Land Between the Lakes area of our state. Surveys in that area have found multiple mounds of ants, but Kentucky has not been fully listed as “invaded” as these mounds are eliminated once found. While regulatory efforts were focused on the western side of the state, the fire ants were also unknowingly gaining traction on the eastern side. Earlier in 2022, a call from McCreary County Extension led to the confirmation of fire ants on a private residence in that county. The mounds there were treated and followup inspections showed that the treatment had been successful. Unfortunately, this turned out to not be the only site. As of July 2022, there are now multiple confirmed finds in both McCreary and Whitley counties .

Fire ant basics

There are two main species of fire ants that are considered invasive species in the U.S. The red imported fire ant is the more widely distributed pest, becoming widespread in the U.S. during the 1940s. The less famous species, the black imported



Photo by Rebekah D. Wallace, University of Georgia, Bugwood.org

Figure 2: Fire ant mounds are often found in sunny areas with well-drained soil. They can be in urban and rural areas and are often 18-24 inches tall.

fire ant, is more cold tolerant than its red cousin. Further complicating the situation, these species can mate and hybridize, creating an even more cold hardy species. The ants found in eastern Kentucky have been hybrids.

Fire ants are known for building large mounds. These are easiest to see in the spring when not hidden by taller grass. During field visits, inspectors in Kentucky have noticed that nests are typically in open sunny areas or on south-facing slopes for warmth. Nests can most often be found in disturbed environments and they like cities, suburbs and rural areas. Inside of the nest there can be

Continued on Page 5

RCARS TWILIGHT TOUR CANCELLED DUE TO FLOODING

The Twilight tour previously scheduled for August 11th at Robinson Center for Appalachian Resource Sustainability (RCARS) in Jackson, KY (Breathitt County) has been CANCELLED due to the destructive flooding in the region.

Continued from Page 4

hundreds of thousands of workers.

How did they get here?

Most likely the pests were imported with the movement of material like pine straw, mulch/compost or possibly soil. Fire ants can be inadvertently moved around thanks to goods like these but can also be moved in hay bales or even heavy machinery such as earth moving equipment. They can also float as an ant "life raft" when there are floods. It is thought that may be how they arrived in Western Kentucky. Once they were introduced, the colonies have gotten larger and eventually reproduced by sending out new queens to found their own nests.

Why is this an issue?

The biggest issue with fire ants is their medical hazard. They will defend their nest by biting the offending animal and while clamped on, each individual ant can sting multiple times. The sting area tends to hurt and burn, then turn red, and eventually a pustule will form that can resemble a pimple. However, some individuals are allergic to fire ant stings, which increases the health threat.

Beyond their sting hazard, they can impact our economy as well. Kentucky is not considered an "infested" state. With the western counties periodically experiencing new colonies, new locations in the east could lead to quarantines put in place to try and curb the spread. This would lead to restrictions in the movement of certain goods out of quarantined counties. If implemented, a quarantine would limit the movement of nursery stock as well as hay, construction equipment, and other goods.

Fire ants have also been found to feed on some

crop plants, reducing their yields and marketability. They can also be an added stressor for some livestock.

What to do?

If you suspect you have a fire ant mound on your property, or know where one might be, please report it so that we can properly identify areas where they are occurring. To report a mound, it is helpful to send a picture along with an address or GPS coordinates. Reporting can be done in several ways:

Email Joe Collins at joe.collins@uky.edu

Contact the UK Entomology Facebook page through [Kentucky Bugs](#).

Your [local county extension office](#) can help put you in contact with us as well.

Thanks for reading!

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