

# Agriculture Natural Resources Newsletter MAY, 2023

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

**Cooperative Extension Service**  
Mercer County  
1007 Lexington Road  
Harrodsburg, KY 40330  
(859) 734-4378  
Fax: (859) 734-4379  
mercer.ca.uky.edu



*Linda McClanahan*

Linda McClanahan, Mercer County Agent  
for Agriculture & Natural Resources



## Tomato Production

**May 18**  
**10:00am**

Please call 859-734-4378  
to RSVP.

Do you deal with disease  
and insect issues on your  
tomatoes? Do they decline  
early in the season? Join  
us as we share the secrets  
to productive tomatoes all  
summer long!



**Free Tomato Plants**

**May 18**

9:00am-4:00pm *or until supplies last*

*Courtesy of the  
Mercer County Cooperative Extension Horticulture Program*

**Mercer County Extension Office**  
1007 Lexington Road—Harrodsburg, KY 40330  
859-734-4378

## Mercer County Farmers Market Opening Day



**Saturday, May 6**  
**9:00am-1:00pm**

Mercer County Farmers Market  
is located at the  
Mercer County Fairgrounds.  
560 Linden Ave - Harrodsburg, KY 40330



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

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LEXINGTON, KY 40546



Disabilities  
accommodated  
with prior notification.



KATS is holding the **Field Crop Scouting Clinic** on May 18, 2023, at the UK Research and Education Center in Princeton, KY. This will be a great workshop for interns, agents, and producers. \$105 registration fee, lunch provided.

Topics will include:

- Corn and soybean diseases and growth staging
- Scouting for insect pests of corn and soybeans
- Weed ID
- Soil nutrients and their influence on crop growth

Visit <https://2023KATScropscoutingclinic.eventbrite.com> for more information and to register.

### **Corn Planting in 2023** *Chad Lee, PhD, Grain Crops Extension Specialist*

Corn planting is underway and the number of acres should increase rapidly. Most years, the weather, forecast, and soil conditions are more important than the calendar for planting corn. Generally, soil temperatures at or above 50 F for 3 to 4 days with a good forecast is acceptable for the start of corn planting. Warmer soil temperatures will encourage faster and more uniform germination and emergence. Cooler soil temperatures will delay emergence and cause more erratic emergence.

The two primary goals of planting corn are to get uniform seed depth and excellent soil-to-seed contact. All other attachments and adjustments to a planter are designed to achieve these two goals. Modern planters, sensors, and attachments greatly improve the odds of placing 28,000 to 36,000 seeds per acre into furrows with excellent depth, spacing, and soil-to-seed contact. Planting into wet soils increases the risk of sidewall compaction. Spiked-tooth closing wheels, adjustments to down-pressure, and modified gauge wheels can reduce the risk of sidewall compaction, but they do not fully overcome soil conditions.

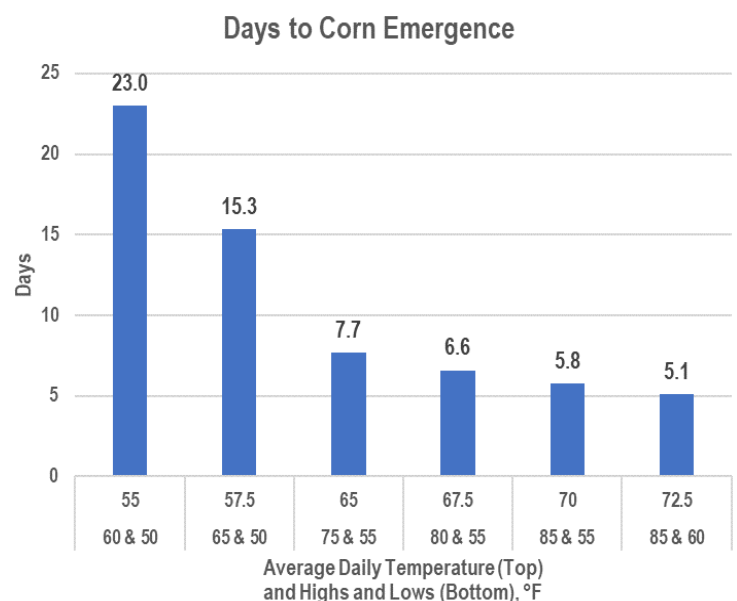
Check seed placement often! Even with the attachments and in-cab adjustments and the monitors, nothing fully replaces getting off the tractor and checking seed placement, sidewall structure, and row closing. Taking a few minutes to check seed placement is worth the investments put into each field.

In most Kentucky soils, seeding depths of 1.5 to 2 inches is sufficient. In soils with higher sand content, seeds can be placed as deep as 3 inches. Shallower planting will prevent proper anchoring of the corn plant and could result in lodging later in the growing season.

Shallower planting often leads to potassium deficiency in young corn plants. Deeper seeding depths delay emergence. Rapid, uniform emergence is desired. Most farmers who have upgraded planters are doing so to improve emergence uniformity. Corn that emerges quicker usually emerges more uniformly than corn that requires more time to emerge. Corn seeds usually need about 115 growing Degree Days (GDD's) accumulated for emergence. Warmer soils accumulate GDD's faster than cooler soils. That faster emergence usually results in more uniform emergence.

Corn will emerge in 6 days if soil temperatures average 68 F and accumulate 18 GDD's each day. Corn will emerge in 10 days if soil temperatures average 62 F and in 13 days if soil temperatures average 59 F.

For more information about planting corn, check Chapter 5 in ID-139: A Comprehensive Guide to Corn Management in Kentucky.



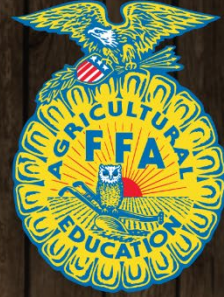


## **FORT HARROD GOAT ASSOCIATION**

Tuesday, May 16<sup>th</sup>, Mercer County Extension Office  
6:30pm Board Meeting, 7:00pm Regular Meeting  
Nutrition Speaker, TBA



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



# MERCER COUNTY DAIRY BREAKFAST



Saturday, May 20<sup>th</sup>  
6:30-10:00 AM

Mercer County Extension Office  
Harrodsburg, Kentucky

Come celebrate National Dairy Month with the Mercer  
County dairy community.  
Proceeds benefit the Mercer County Dairy Show.

Tickets are \$5 each

Door prizes given throughout the morning.

**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



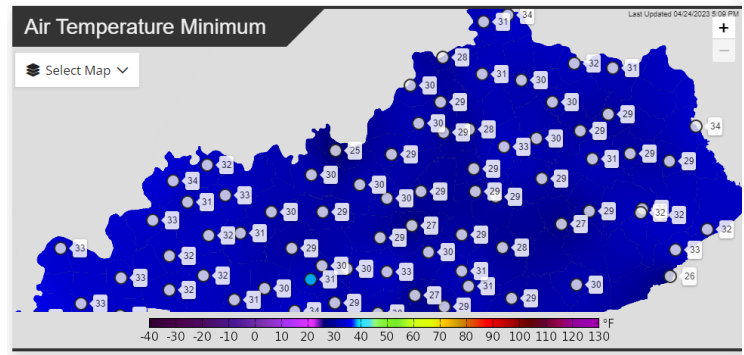
Disabilities  
accommodated  
with prior notification.

# Potential Effect of Weekend Freezes on Corn and Soybean

Chad Lee, Conner Raymond, and Carrie Knott – University of Kentucky

Freezing temperatures were recorded across Kentucky Monday morning, April 24, 2023. The coldest temperatures were mostly in central and eastern Kentucky, but freezing temperatures were as far west as Trigg and Webster counties. Temperatures fell to or slightly below freezing in the following counties from Sunday to Monday: Butler, Caldwell, Carroll, Christian, Crittenden, Graves, Grayson, Hardin, Logan, Meade, Ohio, Taylor, and Webster counties (Table 1, at the end of this article). Webster and McLean County were the coldest at 30°F. Frosts likely occurred west of these counties. The good news is that soil surface temperatures likely stayed in the low 50's to mid-40's. This is based on soil surface temperatures measured at UKREC in Princeton, KY. About 36% of corn acres and 20% of soybean acres were planted as of April 23, according to USDA-NASS.

**Figure 1.** Kentucky Mesonet recordings of lowest air temperatures since midnight April 24, 2023.



## Corn and Soybeans at Risk

Corn and soybeans are at more risk to death from the freeze events at specific growth stages and in certain conditions. The following scenarios go from greatest risk to least risk of plant death from the freeze events.

Soybeans at the “crook” stage where the stem is emerged and bent over like a shepherd’s crook were the most susceptible to the freeze (Figure 1). These plants were most likely to be killed by the freeze or frost. At crook stage, typical damage is along the stem with some yellowing of the cotyledon. This will be followed by plants snapping off where damage was observed (Figures 2 and 3).

*Figure 2. Soybean plants at the ‘crook’ stage. Stems are fully exposed, but cotyledons have not moved above soil surface yet. (Soybean images by Conner Raymond and Carrie Knott)*



*Figure 3. Early signs of freeze damage observed on a soybean plant after 3-4 days of active growth. When freeze damage occurs at crook stage, yellowing of cotyledon and stem damage are visible. (Soybean images by Conner Raymond and Carrie Knott)*

*Figure 4. Final stage of crook freeze damage to plant appears after 7-10 days of active growth. Top portion of plant has broken off at site of damage. Soybean images by Conner Raymond and Carrie Knott)*



Corn and soybean seeds and seedlings in furrows that were not fully closed are at risk of being killed by the freeze.

Corn or soybean seeds that were planted shallow had a slight risk of freeze damage, although plant death from the freeze is unlikely.

Corn plants emerged may have tissue above the soil surface die off from the freeze, but the growing points should have been insulated beneath the soil surface. Those corn plants should recover well. No yield loss is expected.

(continued)



Figure 5. Emerged corn seedling with freeze damage at the very top of the emerged seedling, but no damage closer to the soil surface or below it. (Image by Chad Lee)

Soybean plants that have FULLY emerged and are at the [VE growth stage \(emergence\)](#) should survive the freeze event, based on observations during freeze events in late April 2021 and early May 2020. If the soybean cotyledons survive, the soybean plants will survive, and no yield loss will occur. If the cotyledons do not survive, the plant will not survive, either.

Corn and soybean seeds at proper planting depths are at very little risk from the freeze. Corn and soybean radicles (shoots emerging from seeds) that are still below the soil surface likely were insulated and will survive.

We need about 5 days of warm weather before symptoms are easy to see. Based on current forecasts, it may take six or seven actual days to get the 5 days of good growing conditions. Plants or plant parts that have turned black or brown and have lost turgor pressure are easy to identify.

Corn plants need to be examined from the seed upward. We are assuming that the roots are deep enough to not be a concern. Dig up some corn plants and look for any signs of brown/black areas from the seeds upward. If plants are white to yellow beneath the soil and turgor pressure is good, then the seedlings are likely to survive.

### Maybe Just a Chill

Corn and soybean seeds that are in the process of germinating during the freeze are at risk of taking in cold water (imbibitional chilling) within the first 24 to 48 hours after planting. If the soil temperatures were below 50F for an extended period during those 24 to 48 hours, then the seeds are more likely to be damaged. There is some debate about how long the soils need to stay below 50F before severe damage is done from the imbibitional chilling. We can say those seeds are at risk. At this point, either the seeds were damaged, or they were not from imbibitional chilling. Emergence will be slower in these fields. The fields can be scouted in about five days or so to determine the health of germinating seeds and/or emerged plants.

**Table 1:** Low temperatures recorded across the state from 4/21/23 through 4/24/23. Freezing temperatures are highlighted in light blue. Weather data from the Kentucky Mesonet.

| KY Mesonet Site | Low Temperature °F |         |         | 3 Day Average Low Temperature |
|-----------------|--------------------|---------|---------|-------------------------------|
|                 | 4/21-22            | 4/22-23 | 4/23-24 |                               |
| Adair           | 48                 | 41      | 34      | 41                            |
| Boyle           | 47                 | 42      | 33      | 41                            |
| Bullitt         | 47                 | 39      | 34      | 40                            |
| Casey           | 48                 | 42      | 33      | 41                            |
| Clark           | 48                 | 42      | 36      | 42                            |
| Fayette         | 48                 | 41      | 35      | 41                            |
| Franklin        | 47                 | 38      | 35      | 40                            |
| Hardin          | 47                 | 39      | 32      | 39                            |
| LaRue           | 47                 | 41      | 34      | 41                            |
| Lincoln         | 47                 | 41      | 34      | 41                            |
| Madison         | 51                 | 44      | 36      | 43                            |
| Marion          | 47                 | 41      | 33      | 40                            |
| Mercer          | 48                 | 41      | 34      | 41                            |
| Pulaski         | 49                 | 42      | 34      | 42                            |
| Shelby          | 47                 | 35      | 35      | 39                            |
| Taylor          | 48                 | 42      | 32      | 40                            |
| Warren          | 48                 | 39      | 36      | 41                            |
| Wayne           | 49                 | 44      | 36      | 43                            |

## Resources

Coulter, Jeff. 2021. Spring Freeze Injury in Corn. University of Minnesota Extension. <https://extension.umn.edu/growing-corn/spring-freeze-injury-corn>

KY Climate Center. 2023. Kentucky Mesonet. <https://www.kymesonet.org/> accessed April 24, 2023.

Lee, C.D. Evaluating early season frost damage to corn. AGR-192. Univ. of Kentucky Cooperative Extension Service. <http://www2.ca.uky.edu/agcomm/pubs/agr/agr192/agr192.pdf>

Nielsen, R.L. 2020. Assessing Frost/Cold Temperature Injury to Young Corn. Corny News Network. <http://www.kingcorn.org/news/timeless/FrostedCorn.html>

Nielsen, R.L. 2020. Cold Soils & Risk of Imbibitional Chilling Injury in Corn. Corny News Network. Purdue Univ. <https://www.agry.purdue.edu/ext/corn/news/timeless/ImbibitionalChilling.html>

Staton, Michael. 2021. Assessing frost/freeze damage to emerged soybeans. Michigan State University Extension. <https://www.canr.msu.edu/news/assessing-low-temperature-injury-to-soybeans>

Taylor, M., A. Nygren, J. Rees., J. Specht and A. Timmerman. 2020. Evaluating freeze and chilling injury in corn and soybeans. Nebraska Cropwatch. <https://cropwatch.unl.edu/2020/evaluating-freeze-and-chilling-injury-corn-and-soybeans>

USDA-NASS. 2023. USDA-NASS. Crop Progress and Condition. [https://www.nass.usda.gov/Statistics by State/Kentucky/Publications/Crop Progress & Condition/cw23/CW042423.pdf](https://www.nass.usda.gov/Statistics%20by%20State/Kentucky/Publications/Crop%20Progress%20&%20Condition/cw23/CW042423.pdf)



## GRILLED RIBEYE STEAKS AND POTATOES WITH SMOKY PAPRIKA RUB

Smoky seasoned steak and wedged potatoes grilled to perfection. Served with a simple sour cream and onion sauce.

### INGREDIENTS:

2 beef Ribeye Steaks Boneless, cut 1 inch thick (about 12 ounces each)  
2 tablespoons vegetable oil  
1/2 teaspoon salt  
2 large russet potatoes, cut lengthwise into 8 wedges each  
1 tablespoon minced green onions  
Sour Cream and Onion Sauce (recipe follows) (optional)

### Seasoning:

2 tablespoons smoked or Spanish paprika  
1-1/2 teaspoons sugar  
1-1/2 teaspoons chili powder  
1 teaspoon ground black pepper  
1/2 teaspoon ground red pepper

### COOKING:

1. Combine seasoning ingredients in small bowl; remove and reserve 2 tablespoons. Press remaining seasoning evenly onto beef steaks; set aside. Combine reserved seasoning, oil and salt in large bowl. Add potatoes; toss to coat.
2. Place steaks on grid over medium, ash-covered coals; arrange potatoes around steaks. Grill steaks, covered, 10 to 14 minutes (over medium heat on preheated gas grill, 9 to 14 minutes) for medium rare (145°F) to medium (160°F) doneness, turning occasionally. Grill potatoes 14 to 17 minutes (over medium heat on preheated gas grill, 13 to 15 minutes) or until tender, turning occasionally.
3. Carve steaks into slices; season with salt, as desired. Sprinkle green onion over potatoes. Serve potatoes with Sour Cream and Onion Sauce for dipping, if desired.

**Sour Cream and Onion Sauce:** Combine 1/2 cup dairy sour cream and 2 tablespoons minced green onion. Sprinkle with smoked or Spanish paprika, as desired. *Yield: 1/2 cup*

### NUTRITION:

404 CALORIES



4g SAT FAT



32g PROTEIN



3.7 mg IRON



5.8 mg ZINC



## **Spring Weather Can Bring Heavy Rain and the Risk of Flooding**

By Derrick Snyder – National Weather Service Paducah, KY

As we head deeper into spring, we wanted to talk to you about something that's on our minds this time of year: flash flooding. Now, we know Kentuckians are no strangers to heavy rain and overflowing creeks, but it's important to be prepared for the worst.

So, what can you do to stay safe during a flash flood? Here are a few tips to keep in mind:

1. **Keep your eyes and ears open:** Listen for weather reports and stay alert for any signs of flooding in your area. If you see water starting to rise, don't wait until it's too late to take action.
2. **Have a plan in place:** Talk to your family about what you would do in case of a flood. Make sure everyone knows how to get to high ground and where to meet up if you get separated.
3. **Don't take any chances:** Never try to drive or walk through flooded areas. The water might look shallow, but it could be a lot deeper and faster than you realize. It only takes 12 inches of water to cause your vehicle to lose traction, and only 6 inches of water to sweep you off your feet.
4. **Get your homestead ready:** If you live in a flood-prone area, make sure you have sandbags or other barriers on hand to protect your home. Keep your gutters clean and your downspouts pointed away from your house.
5. **Stay safe during the flood:** If a flood does happen, get to higher ground as quickly as possible. And if you have to wade through water, be sure to wear rubber boots and stay away from downed power lines.

But there's one more thing you can do to help keep your community safe during floods: report rainfall measurements to the National Weather Service. Measuring and reporting rainfall can help the Weather Service better predict and prepare for flash floods. Here's how to do it:

1. **Get a rain gauge:** You can buy a rain gauge at a hardware store or online. Make sure it's placed in an open area away from trees or buildings. You can obtain a high-quality rain gauge by becoming an observer with a nationwide network known as the Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS). Learn more at [cocorahs.org](http://cocorahs.org) or call your local National Weather Service (NWS) office.
2. **Measure rainfall:** After a rainfall event, go outside and check the gauge. Write down the amount of rainfall in inches, to the nearest hundredth of an inch. Don't forget to dump your gauge so it's ready for the next event!
3. **Report the measurement:** You can report the rainfall measurement to the NWS by calling your local weather office or by visiting their website. Be sure to include your name, location, and the amount of rainfall you measured, as well as the period for which you measured the rain.

Reporting rainfall is a simple and important way to help your community stay safe during floods. We hope you'll consider doing your part to keep everyone informed.

**3 SIMPLE STEPS FOR  
FLASH FLOOD SAFETY**

During a flood, water levels and the rate at which the water is flowing can quickly change. Remain aware and monitor local radio and television.

**1 GET TO HIGHER GROUND**  
Get out of the areas subject to Flooding

**2 DO NOT DRIVE INTO WATER**  
Do NOT drive or walk into flooded areas. It only takes 6" of water to knock you off your feet.

**3 STAY INFORMED**  
Monitor local radar, television, weather radio, internet or social media for updates.

WHEN FLOODED TURN AROUND DON'T DROWN

[weather.gov/flood](http://weather.gov/flood)



**University of Kentucky**  
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 1007 Lexington Road  
 Harrodsburg, KY 40330

RETURN SERVICE REQUESTED



**May is National Beef Month**

- May 4 Fort Harrod Backcountry Horsemen Meeting, 7pm
- May 14-19 International Forage & Grassland Congress, Covington
- May 16 Fort Harrod Goat Association, 6:30pm
- May 18 Field Crop Scouting Clinic, Princeton
- May 20 Mercer County Dairy Breakfast
- May 25 Mercer County Cattlemen’s Association Scholarship Deadline
- May 29 Extension Office Closed, Memorial Day

**June is National Dairy Month**

- June 1 Fort Harrod Backcountry Horsemen Meeting, 7pm
- June 3 Harrodsburg District Dairy Show, 9:30am
- June 17 Vintage Dad’s Day, Shaker Village
- June 19 Juneteenth Holiday, Extension Office Closed
- June 20 Fort Harrod Goat Association Meeting, 6:30pm