

# Field Crops Newsletter

Granville and Person County  
Mikayla Berryhill

## Soil Temperature Impact on Planting

MARCH 2023

Each crop that is grown in Person and Granville County has planting recommendations based on soil temperature. Tobacco, corn, and soybeans either need the soil to be warm enough before planting or enough GDDs (growing-degree-days) accumulated for successful germination. Here are some things to keep in mind in regard to what environmental conditions, namely soil temperature, you want to see to begin planting.

### TOBACCO

In tobacco, soil temperature can greatly impact root and shoot growth, nutrient availability, and in some cases disease pressure. Tobacco growth is greatly improved as soil temperature is increased from 60°F to 75°F, so it is safe to say that warm soil (or soil at or greater than 65°F) is the best to plant into. Historically, the soil reaches this temperature sometime around late April. Take a look at the figure below to see the average daily soil temperature for April 15<sup>th</sup> to May 15<sup>th</sup> over the past 5 years at the Oxford Research Station. As you can see, the point in time that the soil temperature reaches 65°F is about April 28<sup>th</sup>.

It is not always reasonable to wait for the soil temperature to warm up to transplant tobacco. If you are planting into colder than ideal soils, it would be beneficial to add about 5 pounds of phosphorus per acre. Phosphorus is not as available in cool, damp growing conditions, so a small phosphorus charge can help the plant get up and running.

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This newsletter is designed to give you up to date information on crops from NC State University and other sources. For more information:

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## DID YOU MISS IN-PERSON GAP TRAINING?

GAP Connections has developed an online version of training for those who were unable to attend in person training events. Go to [gapconnections.com](http://gapconnections.com) and log in. Go to your grower dashboard and select "GAPC Online Annual Tobacco and Hemp Training."

### Key Points from GAP Connections:

- This is not a sit down and watch a recorded training video approach
- There are 3 categories, and the grower must complete 3 courses in each of the 3 categories
  - Crop & Environmental (26 course choices)
  - Labor (19 course choices)
  - GAPC Overview (5 course choices)
- The grower must score 100% on the course quiz and may retake the quiz until scoring 100%
- 3 categories x 3 courses = a total of 9 videos and quizzes to complete 2023 Annual GAP Training Online
- 2023 Annual GAP Training must be completed by June 30, 2023

# Soil Temperature Impact on Planting (continued)

## SOYBEANS

Soil temperature is not typically something that growers need to consider when planting soybeans, but it can potentially become an issue as growers begin planting full-season beans earlier in the year. Full-season soybeans are usually planted around late April at the earliest, when soils have begun to warm up, but there has been recent interest in NC to plant full-season beans before Mid-April.

In any case, soil temperatures should not be any lower than approximately 55°F-60°F because some germination and disease issues can arise. Seedling diseases, like Phytophthora Root Rot and Fusarium Wilt (See photo to the right) are more severe in fields where beans were planted into low-temperature soils. If you are planting into soils that are cool and damp, it is recommended to use a fungicidal seed treatment to ward off any seedling diseases.

\*Side note – it has been found that an insecticidal seed treatment is not beneficial for soybeans planted at any time.



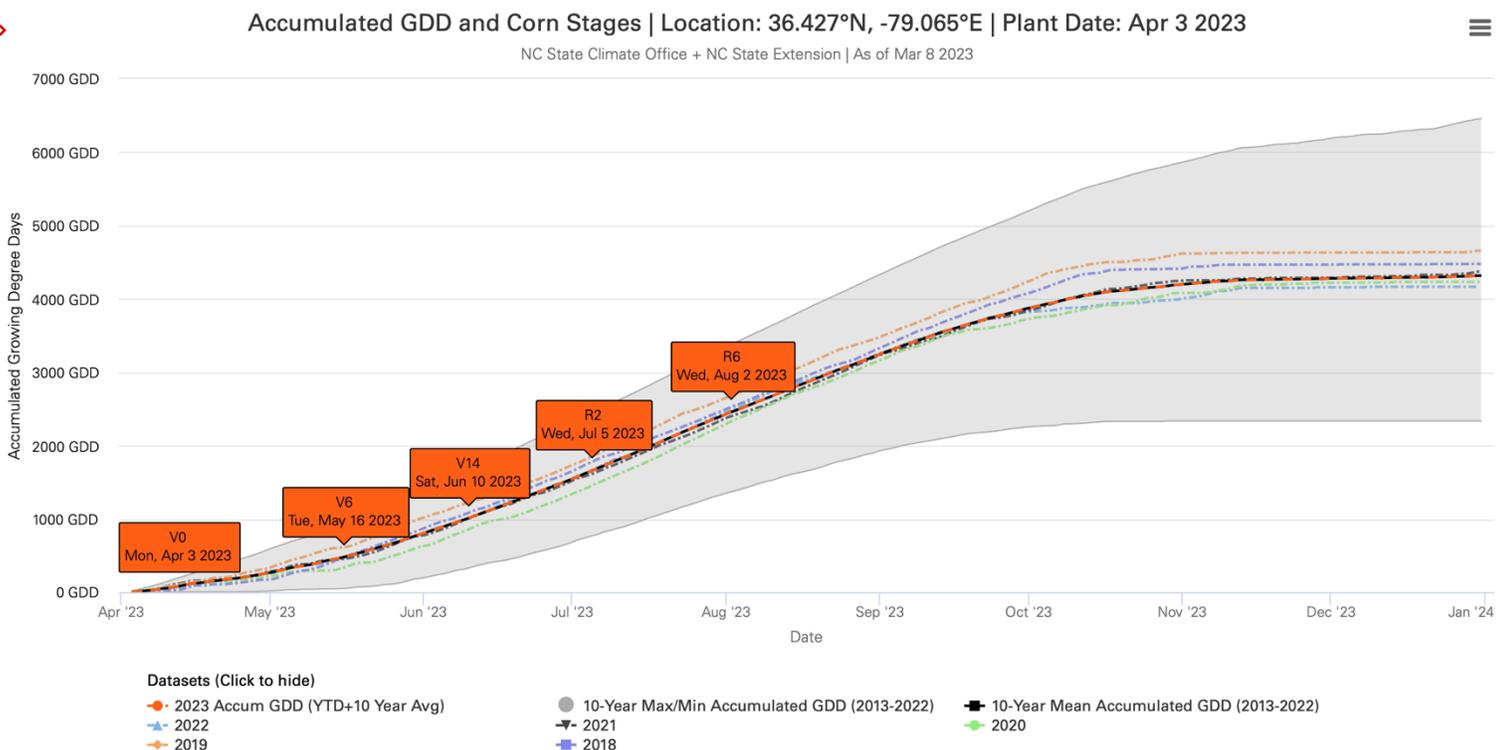
Vascular discoloration caused by Fusarium in lower stem tissue (top) compared to healthy root (bottom). Photo by Lindsey Thiessen, NC State.

## CORN

Put simply, corn needs a soil temperature of at least 50°F in order to germinate. However, there is another factor that can also impact corn germination, and new tools are available online to monitor this factor.

Growing Degree Day (or GDD) accumulation is vital for corn germination. This is a measure of heat accumulation and can help predict development rates of many living things, including crops. In order to germinate, corn needs an accumulation of 40-50 GDD's over the 4-5 days after planting. The NC State Climate Office recently developed a "Planting Guidance Chart" that calculates and predicts GDD accumulation at your specific location based on past patterns and current weather predictions. It will also develop an Accumulated GDD and Corn Stages chart (pictured below) if you input your location and intended planting date. This will give you an estimated prediction of when your corn will reach certain growth stages based on historic GDD data. I encourage you to check this tool for your location as you get close to planting to determine the optimal planting dates for the most successful corn crop. If you have any questions about using this tool, or cannot access the tool but would like a GDD update, please contact me!

You can access this tool by going to this website: <https://products.climate.ncsu.edu/ag/corn/>



# Keys to Early Season Soybean Success Webinar Series

Join us on your lunch break the last three Fridays in March for our series on early season soybean management. The free webinars are being offered by Science for Success, a national team of soybean extension specialists led by Dr. Rachel Vann, NC State's Soybean Extension Specialist.

The content will be focused on the new research and materials that we have recently released specifically for US soybean producers. Each virtual event will include a live Q&A session so that you can get answers straight from the source!

All Events will be held at Noon Central, 1:00 p.m. Eastern Time

For more details on each event click on the registration links:

- March 17, 2023: When Early Planting Doesn't Work Out – Do I Replant, Repair-Plant or Leave This Pitiful Stand? [go.ncsu.edu/replantregister](http://go.ncsu.edu/replantregister)
- March 24, 2023: What's New In Planter Technologies? Register Online for the Planter Technologies Session [go.ncsu.edu/plantingregister](http://go.ncsu.edu/plantingregister)
- March 31, 2023: N-Fixation and Sulfur Fertility In Soybeans Register Online for the N-Fixation Session [go.ncsu.edu/nitrogenregister](http://go.ncsu.edu/nitrogenregister)

Learn more about Science for Success at [soybeanresearchinfo.com/science-for-success/about-science-for-success/](http://soybeanresearchinfo.com/science-for-success/about-science-for-success/)

## Should We Be Concerned About Cereal Leaf Beetle in 2023? By Dominic Reisig – NC State Extension Entomology Specialist

Cereal leaf beetle growth and population development can be tracked using a simple temperature-based model. Based on the temperatures in Salisbury, NC, this week (March 5-11, 2023) should be the time of peak egg-lay for cereal leaf beetle. On average, peak larval densities follow 17.7 days later, corresponding to the week of March 19-25. However, given the cooler forecast for the rest of this week, peak larval densities might be the last week of March.

We also ran the model for Lumberton and Plymouth. Both of these locations have experienced much more heat than Salisbury and should be well past peak egg lay at this time. If growers in eastern North Carolina have not seen cereal leaf beetle yet, there is a good chance that they will not in 2023. This tracks well ahead of the 30-year average.

Once peak egg-lay occurs, many fields will need only a single scouting for eggs and larvae. Wait about a week following the peak egg lay. If the proportion of eggs in the sample is 50% or greater then sample again in 5-7 days.

Insecticides are effective only on the larvae, not the eggs. Keep in mind rain and other weather events can kill eggs. It's better to time your spray when a few small larvae have hatched. The threshold is 25 eggs plus larvae total per 100 tillers (this is an average of one per each of four tillers or 0.25 eggs plus larvae per tiller).

Any insecticide sprayed prior in February will not have an effect on cereal leaf beetle. Insecticide sprayed after this date might only slow the rate of infestation down. So it's a good idea to scout your fields even if you've sprayed. Remember that cereal leaf beetle can still overwhelm your field if they invade in high densities. Insecticide residual for this insect runs out after about a month.

Cereal leaf beetle tends to be worse in thin stands. Contrary to common opinion, this is not because cereal leaf beetle prefers thin wheat (they actually prefer thick and healthy wheat), but because there are simply more beetles per tiller in thin stands compared to thick ones.

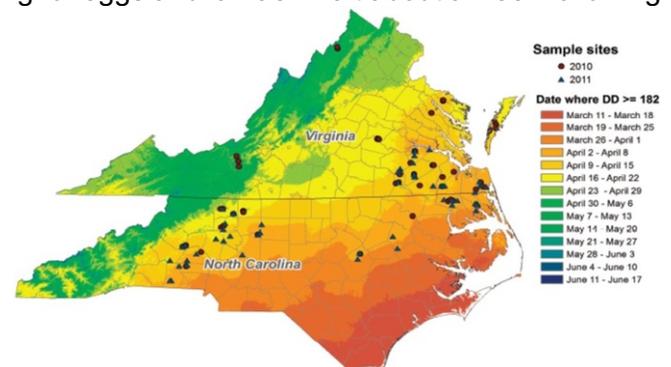


Figure from [Phillips et al. 2012](#) shows typical peak egg-laying dates in Virginia and North Carolina. Note that 2023 has been much warmer and peak egg lay will occur sooner than normal.

# Upcoming Events:

## Upper Piedmont Grain Meeting

Wednesday, March 15<sup>th</sup> @ 9:30AM

- IN PERSON at the Rockingham County Center (525 NC-65, Reidsville, NC)
- Snacks and drinks will be provided.
- 2 hours of N, D, O, and X pesticide recertification credits offered.
- Registration required: go to <https://go.ncsu.edu/upperpiedmontgrain2023> or call your local extension office.

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## Upper Piedmont Corn Meeting

Thursday, March 23<sup>rd</sup> @ 8AM

- IN PERSON at the Granville County Expo and Convention Center (4185 US-15, Oxford, NC)
- Snacks and drinks will be provided.
- 2 hours of N, D, O, and X pesticide recertification credits offered.
- Registration required: go to <https://go.ncsu.edu/upperpiedmontcorn2023> or call your local extension office.

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## 2023 Wheat Whistle Stop Field Day

April 12<sup>th</sup>, 2023 @ 8:30AM

- IN PERSON at 4092 Salem Road, Oxford, NC 27565
- Come and see the NC State Official Variety Trial Plots for wheat! This is where the data for the Variety Selection Tool (<https://ncovt.medius.re>) comes from.
- Breakfast will be provided.
- N, D, O, and X pesticide recertification credits offered.
- Registration required: go to <https://go.ncsu.edu/2023whistlestop> or call your local extension office.

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## Women's Tractor & Truck/Trailer Workshop

Friday, May 5<sup>th</sup> @ 8:45 AM – 4:30 PM

- IN PERSON at the Butner Beef Cattle Field Lab (8800 Cassam Rd., Bahama, NC)
- \$25 per person
- Lunch and snacks will be provided.
- Registration required: go to [go.ncsu.edu/2023womenstractor](https://go.ncsu.edu/2023womenstractor) or contact Kim Woods at 336-599-1195 or 919-603-1350 or [kim\\_woods@ncsu.edu](mailto:kim_woods@ncsu.edu).

### ABOUT N.C. COOPERATIVE EXTENSION

North Carolina Cooperative Extension is a strategic partnership of NC State Extension, The Cooperative Extension Program at N.C. A&T State University, USDA-NIFA, and 101 local governments statewide. Extension professionals in all 100 counties and the Eastern Band of Cherokee translate research-based education from our state's land-grant universities, NC State and N.C. A&T, into everyday solutions. Extension specializes in agriculture, youth, communities, food, health and the environment by responding to local needs.