Field Crops Newsletter

Granville and Person County
Mikayla Graham

July 2022

Irrigation at the Oxford Tobacco Research Station. *Photo by Mikayla Graham.*

INSIDE

Irrigation – it's dry folks!

I had the opportunity to see some tobacco being irrigated at the Oxford Tobacco Research Station in late June and have to admit it was a very pretty sight. However, it was also a painful sight - since it was an indication of how incredibly dry it is.

I was discussing the situation with Matthew Vann while at the station, and he had some very sound advice for growers with the ability to irrigate. Focus on your most productive fields, and SOAK THEM. Don't just give them a small drink of water, allow the irrigation to run for a long period of time. Focusing on your most productive land may save more of your potential yield than spreading that precious water to places that may not be quite as productive. In general, at least 1 inch of water on finer soil types, and up to 1.5 inches of water on sandier soils is a good place to start.

So, if you can, get that irrigation equipment out and continue to hope for rain in the meantime.

REMINDER – FSA Crop Reporting Cutoff Date for Soybeans and Tobacco is JULY 15th

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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How to Scout and Manage Stink Bugs Pre-Tassel

Dominic Reisig, NCSU Extension Entomologist

With corn shooting up, some fields are not too far away from tasseling. It is critical to scout all corn when the primary ear is growing and to protect it during the two weeks prior to tasseling.

Our threshold* for this stage of corn growth is based on sampling only a small part of the plant and is relative to the position of the primary ear. Furthermore, to properly use the threshold (and to prevent banana ear), the ear must be protected prior to tasseling and ear emergence. Therefore, finding the primary ear is a necessary part of scouting. Note that the location of the primary ear will depend on hybrid and environmental conditions. So, it's important to note this for each field that's scouted.

This video (https://www.youtube.com/watch?v=IUXf15Q-VuU&t=76s) details how to scout stink bugs in pre-tassel corn. To find the primary ear, locate where on the plant you expect the primary ear to form and begin carefully removing leaves by pulling back the collars. Except near the top of the plant, a small ear shoot should be visible behind each leaf. These ear shoots will be smaller lower down in the plant. Early in ear development, the top-most and largest of these ear shoots will begin to grow rapidly and, as the ear develops, you will be able to dissect it out of the ear shoot. If you can identify this area of the plant, then you have located the primary ear. If a secondary ear is forming, you will also notice ear shoot development in the node directly below the primary ear.

Primary Ear Shoot. *Photo by Domonic Reisig.*

Growth Stage	Area to sample	Do not treat	Take more samples	Treat
V1 to V6	Base of plant on stalk below lowest green leaf	≤6	>7 to 12	≥13
V14 to VT	Stalk from first leaf above and below primary ear	≤4	>5 to 9	≥10
R1 to R2	Stalk at one leaf above and two leaves below primary ear	≤14	>15 to 27	≥28

*Table of NCSU thresholds for corn through different growth stages. *From https://corn.ces.ncsu.edu/stink-bug-management-in-corn/*

Southern Green Stink Bug (top) and Brown Stink Bug (bottom). *Photos by Domonic Reisig.*

Soil Compaction and Hardpan Management Methods

Soil compaction and hardpans (or plowpans) can cause many issues in field crop production. This typically occurs in sandier soils (Sandy Loam, Loamy Sand, or Sand) rather than finer soils (Sandy Clay Loam, Loam, Silt Loam, and other Clays). Soil compaction is a result of field traffic and heavy machinery use, usually in no-till situations. This process causes decreased water movement, nutrient uptake, and root development in crops. Hardpans, or plowpans, develop as a result of repeated plowing of fields year after year. The soil is again compacted, but in a layer 12-18 inches below the surface, directly below where tillage equipment puts high amounts of pressure on the soil.

Why should you care? Because soil compaction and hardpans can severely impact the vertical growth of roots (see the photo below and to the left), which can have severe impacts on crop yield by decreasing water availability, nutrient uptake, and crop hardiness. Both soil compaction in no-till fields and a hardpan in tilled fields can have these issues. There are some practices that you can implement to manage these two problems on your farm.

Let's start with soil compaction. The best way to deal with it is to avoid it. A sure-fire way to compact the soils in your field is to drive heavy equipment across it when it is wet or saturated. The bad thing is, you can't always avoid this situation. More than likely, you will have a situation where you just can't wait for soils to dry out before going into a field. Here are a few other options to avoid or limit compaction in your soils:

- Pay attention to the traffic pattern for your fields. Enter the field in the same set of rows each time and move across the field in the same direction. GPS and precision farming technology can help develop this plan.
- Match equipment widths where feasible. For example, if a sprayer is 3 or 5 times as wide as your planter, it will travel on soil already driven over during the planting operation.
- Use flotation tires on equipment. These reduce the pressure per square inch on the soil.
- Maintain appropriate tire pressure on your equipment. Higher pressures in tires cause compaction deeper into the soil than lower tire pressures.

Avoidance isn't always possible, so if you do have soil compaction in a no-till field, your best option will be to till that field up. Preferably strip or conservational tillage, to keep the benefits of no-till by reducing residue removal.

As for hardpans, the best option is going to be to rip the land up, or any other form of deep tillage. This is most effective in sandier soils. Breaking that hard layer of soil will allow root growth below that point and improve water movement within the soil. Keep in mind that ripping soils will not break up compaction. Alternatively, shallowly tilling the soil will not help with a hardpan. Ripping is a solution for hard pans below the surface and tilling is a solution for upper surface soil compaction.

Lateral root growth from soil compaction. *Photo by Della King.*

Farm equipment tires causing soil compaction. *Photo from NC State Extension.*

UPCOMING EVENTS

NC State Fiber Hemp Field Day

Tuesday, July 19th, 2022 @ 9:00 AM

- In-person at the Piedmont Research Station (8530 Sherrills Ford Rd, Salisbury, NC 28147)
- Register at https://www.eventbrite.com/e/nc-fiber-hemp-field-day-tickets-349864101947

2022 NC State Tobacco Field Day

Tuesday, July 26th, 2022 @ 9:00 AM

- In-person at the Cunningham Research Station (200 Cunningham Rd, Kinston, NC 28501)
- Register at https://go.ncsu.edu/2022tobacco_fieldday
- Contact Matthew Vann (mcvann@ncsu.edu) for additional information.

Blackland Farm Managers Tour

Wednesday, August 3rd, 2022 @ 8:00 AM

- 3385 Swindell Road, Pantego NC 27860
- Speakers: Jolene Brown, Drs. Ron Heiniger, Rachel Vann, Guy Collins, and Luke Gatiboni
- Including educational presentations on corn, soybean, cotton production and management and farm transition!
- Breakfast and lunch provided.

Person/Granville Corn and Soybean Field Day

Tuesday, August 9th, 2022 @ 8:00 AM

- In-person at the Oxford Tobacco Research Station
- Speakers: Ryan Heiniger and Drs. Rachel Vann and Ron Heiniger
- Registration TBD – more information to come!
- At least 1 hour of N, O, D, and X NCDA&CS credit offered
- Breakfast will be provided!

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.