Field Crops Newsletter

Granville and Person County
Mikayla Berryhill

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It Is a Drought! When Should I Give Up on My Corn Crop?

By: Dr. Ron Heiniger

Corn with rolled leaves due to heat and drought. *Person County.*

Sometimes the things we fear most happen. For a corn farmer the thing they fear most is a prolonged drought during the silking stage of corn development. It is not uncommon to see this occur in a given region of North Carolina but it is rare when it happens statewide. After weeks without appreciable precipitation we are experiencing a statewide severe drought in 2024. The question that is being asked is “What do I do now”?

First Steps

A situation like this is why you spend the money on crop insurance so the first step is to get out your policy and contact your insurance agent. Make sure you understand what you need to do to document your losses and what options you have in terms of declaring the crop a total or partial loss. The next step is to assess your crop so that you know what can be salvaged and what cannot. Variability in soils and moisture within a field makes it difficult to assess losses on a field basis. Using a UAV to capture an aerial image is often helpful in these situations to get a clear idea of the areas of the field that are better or worse off. With an aerial image in hand a grower can then go to the field and look at good and bad areas and make assessments as to yield potential and how much can or cannot be saved.

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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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Should I Give Up on My Corn Crop? *Continued…*

By: Dr. Ron Heiniger

Assessing Yield Potential

What I often find when assessing yield potential is that either I am too pessimistic and give up on a crop that still would have produced a respectable yield or I am too optimistic and see more yield than is warranted. The key is to avoid either of these pitfalls. So what should I look for to assess the ability of this corn crop to produce a yield that makes it worth keeping as opposed to destroying the crop in the field. Here is what to look for:

1. Regardless of the growth stage if the ear leaf is desiccated, completely brown, then that corn plant is a complete loss (Figure 1 & Figure 2). Even if a secondary ear on the plant was to develop it will never receive pollen. If most of the corn plants in the field are in this condition then the field is a complete loss. This is the easiest type of damage to assess. The key issue is to know what leaf is the ear leaf. Typically, the 9th or 10th leaf that the corn plant produces is associated with the ear leaf. On a typical corn plant the ear leaf is the leaf just above the middle of the stalk. As the plant reaches the tassel stage the ear leaf can be easily identified as it emerges from the leaf sheath and starts to show silks. At earlier stages you may need to split open the stalk and look for the most developed ear bud and assess the leaf that is associated with this bud.
2. If the ear leaf is still green and remains green then the next step is to determine if the kernels on the ear are, or will be, pollinated. This means moving into the field and looking at plants in both the good and bad areas of the field. First, you should look at whether or not the silks are emerging in synchrony with the tassel. If the tassel is open and shedding pollen but you do not see silks emerging OR in some cases the silks are coming out of the ear shuck but the tassel is not open then there is a loss of synchrony (this is often called nic) and at best only a part of the ear will produce kernels. If the tassel and silks are both open to each other then the next step is to look at the silks. If the silks are green or white then they have not received pollen. If they are dark brown or black they have received pollen (Figure 3). If they are purple they have died without receiving pollen (Figure 4). The appearance of the silks will help in determining how effective pollination is or has been. Finally, shuck back the ear. Hold the ear by the base and shake it vigorously. If the silks detach and fall off then those kernels are pollinated. If the silks stay attached then those kernels are not pollinated. Of course you could wait for several days and then see if the kernels are forming a blister and see which kernels pollinated and which did not. If you are eaget to replant, you may not want to wait that long.

Figure 1. Location of ear leaf in late vegetation stage corn. *NC State University.*

Figure 2. Location of ear leaf in relation to corn ear. *NC State University.*

Figure 3. Dark brown or black silks that have received pollen. *NC State University.*

Should I Give Up on My Corn Crop? *Continued…*

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3. Once you have assessed the efficacy of pollination then you can evaluate your yield potential. This can be done by looking at the ear and determining how many rows of kernels are pollinated and how many kernels in the row will be pollinated. IT is not uncommon given the stress we have seen to see a number of kernels at the tip of the ear that do not pollinate and abort. Then use the formula:

$$\frac{(rows\ per\ ear \times kernels\ per\ row \times plant\ population\ in\ 1000th\ of\ an\ acre)}{90} = bu\ per\ acre$$

While this number is typically about 5% greater than the final yield it still should give you an idea of yield potential. If the potential yield is less than your insured yield then you know what course you need to pursue. If it is greater than your insured yield you can keep the crop and hope that future weather conditions improve to allow the crop to achieve that yield.

Figure 4. Purple silks that have not been pollinated. *NC State University.*

1. It is important to understand that plant height is NOT a good measure of yield potential. Yes, a shorter plant indicates that stress has occurred but short corn plants still can produce a large ear and respectable yield. The key is knowing if these short plants will have kernels on the ears.

My Corn is a Complete Loss – Can I Replant?

If it is clear that the corn you planted has been destroyed by this sustained drought or if your potential yield is so low as to not be worth saving the crop then the next question is whether or not to attempt to replant. Given the time of year it is important to realize that any attempt to replant will be associated with some risk to losing your investment. Clearly, the crop with the least risk and best yield opportunity is soybean. The problem is the fact that most growers have applied herbicides, particularly atrazine, that can cause the soybean to experience poor emergence and early growth resulting in low yield potential. Furthermore, most of the nitrogen applied to corn will not be needed for soybean. It is important to talk with your county agent or a specialist with knowledge of the herbicides you used before deciding to plant soybean.

If herbicide carryover is a problem for establishing soybean, then the next two options are to plant corn or sorghum. Both of these choices carry a higher risk since they will be dependent on good rainfall in late July and early August to produce a respectable yield. While many might recommend grain sorghum due to its better drought tolerance the problem with this crop is the lack of grain buyers for sorghum and the fact that any dry weather in late July or early August will delay maturity. This means that any stress could result in a freeze event before the sorghum could mature. Furthermore, sorghum yield potential when planting in early July ranges from 70 to 90 bu per acre. In comparison even a medium maturing corn hybrid ranging from 110 to 115 days to maturity will reach maturity before the end of October and avoid potential fall freeze damage. The issue with planting corn in early July is that it is absolutely critical that the crop receive adequate rainfall during the period from V6 to V12 (late July to Late August). In studies done in conjunction with Virginia Tech we found that under irrigation corn planted before July 10 yielded 120 to 140 bu per acre, but corn that was not irrigated and experienced dry weather from V6 to V12 only produced 40 bu per acre. Clearly, there is a fair amount of risk involved with planting either sorghum or corn in early July.

How Should Replant Be Done

If the decision is made to plant corn or sorghum in early July, then the best approach would be to invest as little as possible into the crop until there is a clear indication that late July to August rainfall is a good possibility. Since it is warm there is no need to use a starter fertilizer and herbicide and any further N applications should be delayed until the V6 to V7 stage of growth in either corn or sorghum. This would allow the assessment of weather and potential rainfall and help determine if the cost of these inputs would be warranted.

Mid-Season Tobacco Management

It is no secret that we are having some severe drought situations. Though we had some scattered rainfall the last weekend of June, we still have a long way to go before we are out of the woods for irrigation. The two big topics with early season water stress like this are disease control and sucker management.

Disease Control

There have been cases of very early season Black Shank in the Person County area. While Black Shank is typically a later season concern, you should keep it in mind if you have tobacco that is around layby. It seems that the combination of drowned and drought conditions could be impacting early season diseases, especially diseases like Black Shank and Granville Wilt, so variety resistance may not have the expected impact. Also, diseases like black shank can survive in ponds, and the high amount of irrigation from ponds could increase the amount of inoculum (or disease material) in fields. So, if you have fields that have had a past of black shank, have received a high amount of irrigation, or that are beginning to show signs of black shank, consider including presidio in your layby application (up to a week or two after layby) to provide another layer of protection to your crop.

Figure 5. Early season black shank confirmed in Person County Area. *Anonymous Grower Photo.*

While I have not received any calls for foliar leaf spots this year, there has been at least one call with a severe early season leaf spot outbreak since I started in Granville and Person Counties. This has typically been a mix of diseases like target spot, frogeye leaf spot, and brown spot. With the amount of rain we received in May and the amount of irrigation occurring now, it would not surprise me if we started to see some of these leaf spots coming up soon. Quadris is of course one of our major tools in combating most foliar leaf spots, but there has been documented resistance in Target Spot to Quadris, making it not as effective as it once was. So, if you know you have a history of issues with this disease, I recommend rotating your foliar fungicide applications with Manzate Pro-Stick, a group M3 fungicide, and Quadris to hopefully keep these infections at bay for as long as possible. We have a Special Local Need 24(c) Label in North Carolina for tobacco for Manzate Pro-Stick fungicide. Please note there is a 21-day harvest interval for flue-cured tobacco.

Sucker Management

It is always more difficult to manage suckers in a drought year. Timing and type of sucker control application is going to be very important this year to ensure that we are not having sucker control issues later in the season.

First and foremost, lean on your contact fatty alcohols. We currently have some incredibly short tobacco plants that are coming into button and flower. **If your tobacco is in button or flower, these contact products can be used.** You do not have to wait until the plant is a certain height to use these. One thing that may impact the effectiveness of these contact applications is now close together the topmost leaves of the plant are growing, so keep that in mind. Due to the small size of tobacco plants and sucker pressure, you are likely looking at 3-4 contact applications this year.

Leaf size comes into play when using systemic (MH) and locally systemic (butralin or flumetralin AKA Prime+) applications. Make sure that tip leaves are at least 8 inches long before making a systemic or locally systemic application to plants. Keep in mind, this may pose a problem this year! Many of our plants are needing to be topped, but the tip leaves are NOT 8 inches long, which can result in the distortion of the most valuable leaves! If you are experiencing this type of situation on your tobacco, please let me know and we can discuss an option to tank mix Prime+ and a contact fatty alcohol to reduce leaf distortion on tip leaves but extend sucker control to reduce labor costs later in the season.

Triangle Prescribed Burn Association (TPBA)

Figure 5. *Triangle Prescribed Burn Association (TPBA).*

Who we are: A group of like-minded individuals in the Triangle area across 5 counties (Orange, Alamance, Person, Durham, and Chatham) that come together to use fire as a tool for 'Best Land Management Practices' to restore the land and to advocate for people willing to support our effort. Our ultimate goal is to reduce the number of wildfires in our state.

Landowners can use prescribed burns to promote one or more of the following goals:

- Improve forest health
- Improve wildlife habitat
- Control undergrowth/reduce invasive species of plants
- Reduces fuel loads in the forest thus reducing wildfire potential
- Aid tree propagation (e.g. longleaf pine)

How we work: We work with local landowners and land managers to

- Help landowners/managers define their burn objectives
- Arrange for a NC State certified Burn Boss to help develop an approved burn plan following NC state requirements
  - Assess site conditions (vegetation, fuel loads, slope, aspect, etc.)
  - Assess and mitigate risks (infrastructure, neighbors, smoke management, etc.)
  - Determine necessary weather conditions required for a safe burn
  - Determine ignition and holding plan, identify002023 23 escape routes
  - Plan for emergencies (identify local authorities to inform)
- Help landowners prepare their land for a burn
  - Create fire breaks to contain fire to target area, protect infrastructure
  - Contact neighbors for awareness
  - Identify a team to assist on burn day
- Help landowners conduct the burn in a safe and effective manner
  - Monitor weather and fuel conditions to identify appropriate burn day
  - Lend specialized equipment such as drip torches and backpack water tanks
  - Brief and deploy burn crew, execute the burn from ignition to mop up

To learn more about prescribed fire and the Triangle PBA, and to sign up for our mailing list, open the web site at the QR code or email Andy Gillespie, TPBA Executive Secretary, at ajrgillespie@gmail.com.

Take Care of YOU!

Farming is stressful in a good year. Please take care of both your physical and mental health and know there are resources available for North Carolina farmers at no cost. If you have questions about available programs, you can go to ncagromedicine.org or reach out to Mikayla Berryhill!

FARMER TO FARMER
FARMERS HELPING FARMERS

Need to talk with someone confidentially who's non-judgemental and understands farming?

Contact the Agromedicine Institute to be matched with a trained **Peer Farmer**

252-744-1008

agromedicine@ecu.edu

NC FARM & RANCH STRESS ASSISTANCE NETWORK

www.ncfarmstress.org 252.744.1008

NC Farm Help Line

844.325.3276

Upcoming Events:

Farmworker Health & Safety Training

Tuesday, July 9th, 2024 – MULTIPLE SESSIONS!

- IN PERSON at the Granville County Expo & Convention Center (4185 U.S. 15, Oxford, NC 27565)
- Covering basic CPR/AED, heat stress, green tobacco illness, and first aid training – satisfying MOST but not ALL GAP Connection worker training requirements.
- 3 sessions:
  - 8AM-10AM in SPANISH
  - 10:30AM-12:30PM in SPANISH
  - 1PM-3PM in ENGLISH
- Contact Mikayla Berryhill by July 5th with the session and number of workers to attend at 919-603-1350 or mikayla_berryhill@ncsu.edu.

Tobacco Field Day

July 17th, 2024 @ 9AM-12PM

- IN PERSON at Cunningham Research Station (200 Cunningham Rd, Kinston, NC 28501). Registration begins at 8:30am and a program starting at 9:00am that will conclude at noon with a lunch provided on-site.
- Registration required: tobacco.ces.ncsu.edu then click on "Tobacco Field Day" at the top of the page to find the registration link.

Oxford Grains Field Day

SATURDAY, August 3rd, 2024

- Join us at the Oxford Tobacco Research Station – CURRIN FARM (2511 US-158, Oxford, NC) for a field day highlighting local research and current farm problems with multiple extension specialists and industry partners.
- Lunch and 2 hours of N, O, D, and X pesticide credits will be offered.
- Register at go.ncsu.edu/northernpiedmontfieldday24