Field Crops Newsletter

Granville and Person County
Mikayla Berryhill

JULY 2025

A note from your agent – I'm back!

I have returned to work after my wonderful maternity leave! Brooklyn is happy and healthy and growing like a weed!

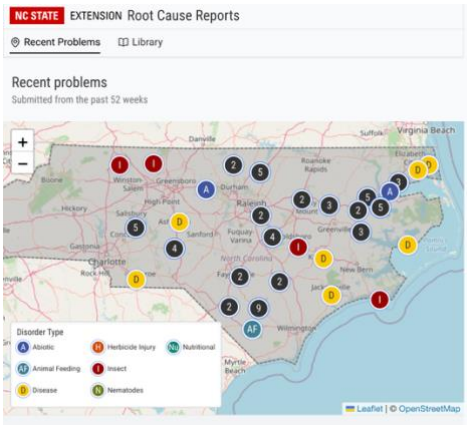
Please do not hesitate to reach out if you are in need of any assistance. Due to the high amount of rainfall the past few weeks, diseases are running rampant in all the crops in the field right now. A few reminders of what I can do for you with the very rainy weather:

- Help determine fertilizer rates due to loss of nitrogen
- Growth stage crops to determine if fertilizer will be useful for the crop
- Disease samples and letters for confirmation and documentation
- FREE wheat samples to NC State to determine quality (including test weight, falling number, DON – or mycotoxin measurement – and milling quality determination by Dr. Angela Post)
- General diagnosis of problems in the field

Baby Brooklyn at the beach!

INSIDE

Sign up for "Root Cause Reports" from NCSU



Evolving from the soybean-only "Beans Gone Wild" tool, NC State has developed a "Root Cause Reports" system which provides reports of current issues in North Carolina on both soybeans and corn – and will incorporate more crops in the future. This tool will support NC growers with timely, field-based solutions across multiple production systems. By going to https://rootcausereports.ces.ncsu.edu, you can see an interactive map of the state and the issues in the fields farmers are facing.

TO SIGN UP FOR WEEKLY REPORTS, EMAIL extension-rcr@ncsu.edu

What did Root Cause Reports receive June 7th-13th?

- In Corn:
  - Holcus leaf spot
  - Stink Bugs
- In Soybeans:
  - Brown spot

For more information on recent Root Cause Reports in NC and how to manage these issues, go to https://corn.ces.ncsu.edu/2025/06/root-cause-reports-one-month-in-and-growing/

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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Considerations for Fungicide Applications in North Carolina Corn

By. Dr. Daisy Ahumada

Current Situation in North Carolina

Corn is currently at the tasseling and silking stages across the state, which is typically the time when fungicides are applied to manage foliar diseases. Gray leaf spot, southern corn leaf blight, and holcus spot are the most commonly observed diseases. In most cases, these occur at low severity and/or have minimal impact on yield. Nevertheless, there have been numerous questions about whether a fungicide application provides a positive return in North Carolina.

Scouting Recommendations

Early to mid-July is a critical period to scout corn fields for foliar disease. Inspect plants for signs of gray leaf spot, southern corn leaf blight, or other major foliar diseases on leaves at or above the third leaf below the ear on at least 50% of sampled plants. A standard scouting approach includes 10 plants per location across 10 random field spots, equating to 100 plants total.

Early gray leaf spot symptoms. *Photo by D. Ahumada.*

Knowledge of the hybrid's disease resistance is essential, as susceptibility influences both disease progression and potential yield loss. Fields with a history of continuous corn, no-till practices, or high levels of residue are at greater risk due to increased pathogen survival.

Economic Considerations

A comprehensive analysis published by Kiersten Wise (Purdue University) and Daren Mueller (Iowa State University), *Are Fungicides No Longer Just for Fungi?*, reviewed data from 39 high-quality corn fungicide trials across the Corn Belt between 2000 and 2010. In this study, fungicide applications resulted in a statistically significant positive yield response in only 46% of trials. When statistical significance was not required, 80% of treatments showed a positive yield response; however, a positive yield response does not necessarily equate to profitability. In 2009 and 2010, a yield increase of 6 bushels per acre was needed to cover the cost of a single fungicide application made between the V15 and R2 growth stages. This breakeven threshold was met in only 45% of the trials evaluated.

More recent data from a multi-year analysis of over 400 on-farm trials conducted across the United States and Ontario, Canada, and published by the Crop Protection Network (*Impact of Foliar Fungicide Timing and Fungicide Class on Corn Yield Response*) showed that fungicide timing and class significantly influence yield response. Applications at tasseling (VT) consistently outperformed those made at early vegetative stages (V6), with yield gains averaging 3.3 bu/A for QoI-only products and 7.2 bu/A for DMI + QoI combinations. A two-pass strategy (V6 + VT) produced the highest yield increase, about 8 bu/A, but the added cost rarely resulted in a profitable return. Most importantly, these trials confirmed that return on investment was only observed when foliar disease was present. In fields with low disease severity (less than 5% leaf area affected), yield gains were minimal and rarely justified the cost of application.

To evaluate fungicide decisions based on your field-specific economics, the Crop Protection Network provides a Corn Fungicide ROI Calculator, which allows you to compare product and application costs against anticipated yield benefit.

Timing and Fungicide Activity

Fungicides are most effective when applied between the V10 and VT growth stages, especially when environmental conditions favor disease development. Most fungicide products offer protection for 14 to 21 days. Since corn typically takes about 60 days from silking to reach physiological maturity, applications made too early may fail to protect the crop during the critical grain fill period.

The Crop Protection Network's multi-year analysis reinforces this recommendation. Applications at tasseling (VT) produced significantly greater yield responses than those made earlier, supporting the guidance to time applications based on growth stage and disease presence.

Southern rust is one disease that may warrant fungicide use if it appears early before the R5 (dent) stage. While it can be severe, it has typically developed late in the season and at low severity in recent years, with limited impact on yield. However, late-planted corn, late-maturing hybrids, and irrigated fields are at greater risk.

Though foliar diseases can develop late in the season, their impact is typically negligible if symptoms arise after R5 (dent). Some fields treated with QoI fungicides (FRAC Code 11) may stay green longer, but once corn reaches black layer, grain fill has concluded and additional greening does not contribute to yield.

If you are managing a field with moderate to high pressure from gray leaf spot, southern corn leaf blight, or rust, consult the 2025 Corn Foliar Fungicide Efficacy Guide. This nationally coordinated publication includes efficacy ratings across the U.S., including data from North Carolina.

Key Takeaways

- Only apply fungicides when disease risk is present or early symptoms have been observed.
- Scout fields during early tassel and assess hybrid susceptibility, field history, and tillage practices.
- Consider commodity prices and product costs before making fungicide decisions.
- Use the CPN ROI Calculator to guide field-specific return expectations.
- Time applications between V10 and VT to protect the upper canopy during grain fill.
- Use the 2025 Corn Foliar Fungicide Efficacy Guide to guide fungicide selection for your respective disease concern.
- Use fungicides as one component of an integrated disease management strategy.

Dichotomous Key for Identifying Corn Leaf Spot

1. **Are the spots circular with tan centers and purple to dark brown margins, possibly surrounded by yellow halos?**
   → Yes → Go to 2
   → No → Go to 4

2. **Are the lesions small, numerous, evenly distributed across the leaf, with a dry appearance and no water-soaked margin?**
   → Yes → **Eyespot** (Fungus: *Kabatiella zeae*)
   → No → Go to 3

3. **Are the lesions larger, fewer, sometimes water-soaked, and irregularly distributed across the field?**
   → Yes → **Holcus Leaf Spot** (Bacteria: *Pseudomonas syringae* pv. *syringae*)
   → No → Possible **herbicide injury** (e.g., paraquat drift). Look for uniform damage on similarly aged leaves and potential symptoms in nearby weeds or along field borders.

4. **Are the lesions long and narrow (cigar-shaped), gray-green to tan, and aligned with leaf veins?**
   → Yes → Go to 5
   → No → Go to 6

5. **Are the lesions 1–6 inches long, not limited by veins, and often gray-green to tan?**
   → Yes → **Northern Corn Leaf Blight (NCLB)** (Fungus: *Exserohilum turcicum*)
   → No → **Southern Corn Leaf Blight (SCLB)** (Fungus: *Bipolaris maydis*) – Smaller, elliptical to rectangular tan lesions with reddish-brown margins)


Eyespot. *Photo by A. Robertson.*


Southern Corn Blight. *Photo by C. Grau.*


Holcus Leaf Spot. *Photo by M. Malloy.*

Dichotomous Key for Identifying Corn Leaf Spot
CONTINUED

6. **Are the lesions rectangular, with straight, parallel sides, tan in color, and bound by veins?**
   → Yes → **Gray Leaf Spot** (Fungus: *Cercospora zeae-maydis*)
   → No → Go to 7

7. **Are there raised, shiny, black specks (stroma) resembling tar in or near the lesions?**
   → Yes → Check if the black structures **cannot be wiped off**:
   • If firmly attached and embedded → **Tar Spot** (Fungus: *Phyllachora maydis*)
   • If easily wiped off → Likely **insect frass**
   • If dark areas are within tissue and not raised → Possible **Pollen rot**
   → No → Go to 8

8. **Are there rust-colored pustules on the leaf surface?**
   → Yes → Go to 9
   → No → **Unknown cause** – consider additional diagnostics

9. **Are the pustules dark reddish-brown, scattered on both upper and lower surfaces?**
   → Yes → **Common Rust** (Fungus: *Puccinia sorghi*)
   → No → **Southern Rust** (Fungus: *Puccinia polysora*) – Lighter orange pustules, mostly on upper surface, often clustered
   → Unsure → See **resource** from Iowa State University

Southern Corn Rust. *Photo from NCSU.*

This key is a tool to help growers know what they are dealing with, but contact Mikayla Berryhill (919-603-1350, 336-599-1195, or mikayla_berryhill@ncsu.edu to send a sample to the PDIC for accurate identification!

Pollen Rot. *Photo from ISU.*

Tobacco Connection: Vol. 2, Num. 2 – Spring 2025
By. Drs. Daisy Ahumada, Matthew Vann, Maggie James, and Lorena Lopez

Weed Control

While the current crop of tobacco is off to a great start, it is also one that is somewhat staggered, thanks to the wet periods we experienced in May. One may read the title of this article and be curious about the inclusion of both layby herbicides and first contact applications at this time, but it's simply because we've got producers that are looking at either scenario.

Relative to **layby herbicide applications**, we've spent significant time discussing their value in recent years. In fact, you may recall a statement we made two or three years ago that went something like this, **"The cost of hand-weeding tobacco is about the same (likely more) than the cost of a layby herbicide."** As the Adverse Effect Wage Rate (AEWR) continues to increase, this statement will only become more important to consider. Take 2023 for example, which was the last time we went through this exercise. The AEWR that year was $14.16/hour and we reported an average of 1.6 man hours to hand-weed an acre of tobacco that had been treated with **clomazone** and **sulfentrazone** (Command 3ME and Spartan 4F) prior to transplanting. The cost to hand-weed in that scenario was nearly $23/acre, and that was in a situation where weed pressure was exceptionally high and weed control from pre-transplanting herbicides was exceptionally good (>95% of the non-treated control). If we translate this scenario using the **2025 AEWR**, the cost of **hand-weeding** increases to almost **$26/acre**. That's extremely competitive

with an application of a **pendimethalin** product (such as Prowl H2O) and gaining ground on something like **napropamide** (Devrinol 2XT). Worth considering even more is the cost of more than one hand-weeding event.

The **bottom line** here is cost and the balance we must strike between labor and chemical alternatives, where they exist. It's also important to keep in mind that we commonly reference pendimethalin and napropamide as our two main layby herbicide products because they are the only ones labeled that offer residual weed control. Other herbicides that may have a fit at layby are **carfentrazone** (Aim EC) and/or **sethoxydim** (Poast). It should be noted that these two herbicides only have activity on already emerged weeds, and they offer no residual control, Aim must be applied to small (<4") broadleaf and sedge species, and Poast is only active on grasses. So, while they are critical for production, they're not always "go to" products. Going back to pendimethalin and napropamide, those considering applications at layby should keep in mind their **crop rotation** (i.e. – what are you growing next year in the same field), as there are **plant back restrictions** that can be critical. Finally, applicators should think about their **tobacco contracts.** We know of at least one tobacco purchasing entity that **does not allow the use of pendimethalin**. Producers can double check this requirement with their individual grower reps.

Sucker Control

Switching gears completely, it's also time to think about sucker control and when to apply the first contact. This season is off to a great start across the board, and it is likely we'll see some producers making first contact applications as early in the season as has ever been done. That's a good sign; let's hope the good fortune continues. **So, when does one make the first contact application?** The Production Guide says this should be done **when 50% of a field is in the elongated button stage.** We've had great success with that approach historically, but I might encourage growers to be a little more proactive in modern times. To be more direct, it would not hurt our feelings if the first contact application was made when fields were in the **30-40% elongated button stage.** The rationale behind this suggestion is that **starting earlier** gives us a much **better chance of keeping sucker growth under control.** The major concern with applying first contact earlier than we've historically suggested is the concern with chemical topping. While this is not an unfounded concern, it's one that we need to move past in modern times where we have larger acres to cover and a substantially higher cost of production. In fact, we might argue that if you aren't **chemically topping** some of your tobacco, you're probably making the first contact application too late.

What about application rate? Most tobacco operations in North Carolina are using **C8-C10 fatty alcohol products** and will lean on a **4% v/v** (2 gallons of contact + 48 gallons of water) concentration in application one. This is stepped up to a **5% v/v** (2.5 gallons of contact + 47.5 gallons of water) for all subsequent applications. There's no need to increase spray concentration above 5% v/v. In fact, doing so will increase the chance of **chemically burning tip leaves** and **decreasing their quality.** Equally as important as rate is the **timing** of subsequent applications. Our preference is for contact to be sprayed **every five days** with the knowledge that under most conditions, spraying **every seven days** is okay as well. Admittedly, the reality of spraying every five days can be difficult when one takes into account adverse weather, heat, machinery breakdown, acres to cover, and other aspects of farm management. In summary, there is a small degree of flexibility when it comes to sequential contact applications, and growers should strive to fall within the five to seven day window as best they can – lest we have to utilize labor crews to pull suckers…

It really is hard to believe that we're already discussing sucker control in 2025, but here we are, and this is a good thing. After all, we have spent some prior Junes and Julys discussing other stuff…(clears throat)*…dicamba…*

Tracking TSWV in NC Tobacco Fields

The Small Fruit and Tobacco IPM Lab is monitoring for Tomato Spotted Wilt Virus (TSWV) in tobacco fields in Wilson, Kenly, and New Bern. We visited each field weekly since May 16 and checked 200 plants at each location. TSWV levels were low during the first visit: 1.5% in Wilson, 0.5% in Kenly, and 4.0% in New Bern. By the second visit a week later, we saw a slight increase: 4.5% in both Wilson and Kenly, and 6.5% in New Bern. While this upward trend is something to watch, **the good news is that these levels are still below the 10% action threshold.** In most cases, when the incidence stays under 10%, insecticides for TSWV control are not recommended. Additionally, our team monitors the number

TSWV symptoms in tobacco. *Photo by L. Lopez.*

of tobacco thrips weekly at a tobacco field located in Kinston. While the numbers of tobacco thrips may be concerning (10–15 or more thrips per leaf based on 5/22/25 counts at Kinston), the **number of thrips in the plants usually is not directly related to TSWV incidence**, meaning we may find large number of thrips per plant and have a low incidence of the virus. We'll keep monitoring and sharing updates as the season progresses to help you make informed decisions about managing this virus.

Table 1. TSWV incidence in three commercial tobacco fields monitored weekly in NC.

Date	Location (NC)	No. Plants/acre with TSWV symptoms	# of plants sampled	Percentage of sampled plants with TSWV
5/16/2025	Wilson	3	200	1.5%
	Kenly	1	200	0.5%
	New Bern	8	200	4.0%
5/23/2025	Wilson	9	200	4.5%
	Kenly	9	200	4.5%
	New Bern	13	200	6.5%

Upcoming Events:

Farmworker Health & Safety Training – *in Spanish!*

July 9th – Two Sessions Available

- Morning Session – 8AM-11AM
- Afternoon Session – 2PM-5PM
- NC Cooperative Extension is partnering with ECU Health and the NC Agromedicine Institute to provide Farmworker Safety Training to farmworkers in the Granville County area. This training will include the topics of the Worker Protection Standard, Heat Stress, Basic CPR and First Aid, General Farm Safety, and split sessions for Green Tobacco Illness and Food Safety in the Field. **For GAP Connections certified farms, this will cover all of the required safety topics for tobacco.**
- Please register by contacting Mikayla Berryhill or by going to this link () or scanning the QR code.

NC State Tobacco Field Day

July 22nd @ 9 AM

- Oxford Tobacco Research Station (901 Hillsboro St, Oxford, NC)
- This is a free event for North Caolina tobacco stakeholders. Field research presentations and related content will be provided by NCSU faculty and students
- Trams will leave the main station at 9AM for the field and return for lunch onsite
- Please register at this link (go.ncsu.edu/tobaccofieldday2025) or by contacting Mikayla Berryhill