

#### In This Issue:

- From South to North: Indiana's Corn Progress Update
- Purdue Corn Team Research Update
- Do We Harvest Short-Stature Corn Earlier?
- From Field Observations to Digital Solutions:
   Understanding Corn Smut
- Stalk And Ear Rots: Identify Them Now to Help With Harvest Decisions
- A False Sense of Autumn

### From South to North: Indiana's Corn Progress Update

(Jeferson Pimentel, Bruno Scheffer, Dan Quinn & Betsy Bower)

#### **Corn Condition**

Indiana's corn condition ratings this week show 49% good, 11% excellent, and 29% fair, with 11% poorto-very-poor. Iowa continues to post strong ratings (57% good, 23% excellent), while the 18-state average stands at 49% good and 19% excellent, nearly unchanged from a week ago. See more in interactive maps 1.

#### Corn Dough

Indiana corn reached **95% in the dough stage**, right in line with the 5-year average (**96%**). Illinois (98%) and

Iowa (97%) are slightly ahead. Across the 18 states, progress is also **95%**, equal to the long-term norm. See more in **interactive maps 2** 

#### Corn Dented

Corn denting in Indiana advanced to 71%, now aligned with the 5-year average (70%). Illinois stands at 87% and Iowa at 80%, while the 18-state average is 74%, just below the 5-year pace (75%). See more in interactive maps 3

#### **Corn Maturity**

Indiana maturity has reached 19%, up from single digits last week and slightly ahead of the 5-year average (17%). Iowa is at 26%, Illinois at 27%, while Kentucky leads with 66%. The 18-state average is 25%, exactly on trend. See more in interactive maps 4.

#### Corn Harvest

Indiana has begun harvest at 1%, similar to last year's start. Texas (69%) and North Carolina (44%) are well ahead, while the 18-state average is 4% harvested, in line with the 5-year norm (3%). See more in interactive maps 5.

Let us know if we can help.

#### Interactive Maps 1. U.S. Corn Condition (USDA-NASS) <u>Click on the categories</u> below to see the corn condition at each U.S. state on Sep 7<sup>th</sup>. Very Excellent Poor Fair Good Poor Interactive Maps 2. U.S. Corn Dough Progress (USDA-NASS) <u>Click on the dates</u> below to see the corn emerged progress over time and the average: Sep 7, Aug 31, Sep 7, Average 2025 2025 2024 (2020-2024)Interactive Maps 3. U.S. Corn Dented Progress (USDA-NASS) <u>Click on the dates</u> below to see the corn dented progress over time and the average: Sep 7, Sep 7, Aug 31, Average 2024 2025 2025 (2020-2024)

Sep 7,	Aug 31,	Sep 7,	Average
2024	2025	2025	(2020-2024)

Interactive Maps 5. U.S. Corn Harvest Progress (USDA-NASS)

<u>Click on the dates</u> below to see the corn harvest progress over time and the average:

Sep 7,	( Aug 31,	Sep 7,	Average
2024	2025	2025	(2020-2024)

#### Furdue Corn Team Research Update

(Betsy Bower, Jeferson Pimentel & Daniel Quinn)

The Nitrogen and Sulfur Combo: The backbone of plant and grain protein production in corn

Corn requires large amounts of **nitrogen (N)** and **potassium (K)** for optimal growth and yield. However, **sulfur (S)** has become increasingly important in modern crop production. While needed in smaller amounts than N and K, sulfur is a secondary **macronutrient** essential for plant growth.

#### **Key Functions of Sulfur**

- 1. **Protein synthesis**: Works hand in hand with nitrogen to build amino acids and proteins.
- 2. Chlorophyll formation & photosynthesis: Critical for efficient energy capture and plant growth.
- 3. **Nitrogen fixation & use efficiency**: Enhances how plants use applied nitrogen.
- 4. **Overall plant development**: Prevents delayed maturity and poor growth when adequately supplied.

#### Interaction with Nitrogen

- Nitrogen is mobile in the plant. When deficient, older leaves at the bottom turn yellow first (Figure 1).
- 2. Sulfur is **immobile** in the plant. When deficient, younger leaves at the top show yellow striping or chlorosis (**Figure 2**).
- 3. Both nutrients must be in balance: applying nitrogen alone will not overcome a sulfur shortage.

#### Rising Importance of Sulfur

In past decades, atmospheric deposition provided much of the sulfur crops needed. Today, with cleaner air and reduced emissions, **crop demand often exceeds the current air and soil supply**. This makes sulfur fertilization and tissue sampling critical steps in crop management.

#### **Practical Management Takeaways**

- Monitor fields with regular tissue sampling to detect sulfur needs.
- 2. Balance **N** and **S** applications to maximize yield and protein content. The within plant N to S ratio should be at least 15:1 (15 parts N to 1 part sulfur)
- 3. Watch deficiency symptoms.

This year, the Kernel Lab is doing an NxS trial from a protocol spearheaded by Brian Arnall at Oklahoma State University. The trial is being replicated in several states and locations in the US. The question we are trying to answer is how the addition of Sulfur (S) impacts the Nitrogen (yield) response curve. If it does impact the yield response curve, does it shift the whole curve, thus changing the Economic Optimum Nitrogen Rate, the economic optimum yield levels, or reduce the occurrence of the quadratic response to nitrogen?



**Figure 1.** Nitrogen deficiency observed in the lower leaves of corn during the 2025 research trial at ACRE, West Lafayette, IN.



**Figure 2**. Sulfur deficiency observed yellowing/striping of the upper leaves of corn during the 2025 research trial at ACRE, West Lafayette, IN.

In this trial we have two sulfur rates, 0 and 100 lbs/ac (20 lbs S/ac) of Ammonium Sulfate (AMS) and 5 nitrogen rates 0, 60, 120, 180, and 240 lb of actual N applied as urea broadcast across 15 x 40' plots. The urea and AMS were combined and applied together, corrected for the N contained in the AMS and broadcast across the plots. Each NxS treatment was replicated 6 times. Like the NxK trial, the NxS trials are at ACRE, Purdue Agronomy Farm, and Pinney Purdue Ag Center (PPAC) near Wanatah IN. We took composite samples for each replication at 0-6 and 6-12" testing soil of N, and S soil concentrations before planting. We took whole plant biomass samples at V6, ear leaf samples at VT/R1 and will be taking whole plant biomass and ear samples at R6 to check whole plant N and S content as well as grain N and S content.

This trial is particularly interesting. We did see earlyseason sulfur deficiency symptoms on V4-V6 plants at both ACRE and PPAC, and we can visually see height, greenness, and overall plant biomass differences in the treatments with N and S versus the N-only plots. The picture below shows those differences. One of our visiting scholars, Johnny Fabricio (on the right side of **Picture 3),** took these three plants to the Experience ACRE Field Day to show the differences we are finding. On the left-hand side is a form of the 0 N and 0 S treatment. In the middle is 100 lb/A of N only, and on the right is the 100 lb/A AMS and 100 lb/A N treatment.



**Figure 3.** Plant samples pulled from specific treatments of the NxS research trial for Experience ACRE 2025.

#### Take-home message

Nitrogen and sulfur must work together for strong, efficient corn production. While nitrogen drives growth, sulfur ensures that nitrogen is effectively used, making it a silent but essential partner in achieving healthy crops and high yields.

## Should We Harvest Short-Stature Corn Earlier?

(Bruno Scheffer & Daniel Quinn)

From the a drone image taken last week (Figure 1) at the Agronomy Center for Research and Education (ACRE), we can see that the short-stature corn (on the right side) shows more



**Figure 1.** Drone image taken from the NRCS trial at ACRE in West Lafayette, IN. On the left is the full-stature corn and on the right is the short-stature corn.

yellowish colors and the full-stature corn (on the left side) shows more greenish colors. So that led me to the question: Does the short-stature corn dry down faster, resulting in an **earlier harvest?** 

It's tempting to assume that short-stature corn hybrids dry down faster and should be combined first. Plant height is easily visible from the road, but harvest timing still needs to follow grain moisture and standability, not appearance.

In 2024, we ran side-by-side plots at ACRE and the Southeast Purdue Agricultural Center (SEPAC)

comparing short and full-stature genetics across seeding and nitrogen rates. Both locations used randomized, replicated designs and small-plot combines adjusted to 15.5% for yield analysis. ACRE details: split-plot with 48 treatments, five reps, harvested Oct. 5, 2024. SEPAC details: split-plot with 48 treatments, four reps, harvested Oct. 28, 2024.

#### What the numbers say

#### 1. Does short-stature corn dry down faster?

No inherent advantage showed up in the 2024 Indiana trials. Actually, at ACRE, short-stature corn (PR111-20SSC, PR112-20SSC) ran about 0.4 to 1.7 points wetter than full-stature corn (DKC61-41RIB, DKC62-70RIB) on the same dates and N rates in some cases, and it was drier in other cases, showing no hybrid consistency. In addition, both the tall-stature and short-stature hybrids planted maintained similar maturity

SEPAC 2024: Grain moisture by hybrid (colors = N rates; letters compare N within hybrid)

25

20

20

PR111-20SSC

PR116-20SSC

PR16-20SSC

DKC61-41RIB

DKC62-70RIB

**Figure 2.** Short-stature and tall-stature corn final grain moisture in response to nitrogen rate. Butlerville, IN 2024. Adapted from Quinn et al, 2024.

dates (111 and 112 day relative maturities). At SEPAC, the gap was clearer (Figure 2): short hybrids typically tested 2–3 points wetter than tall corn on the same day and N rate (e.g., short corn was around 20-22% and full-stature was around  $\sim 17-19\%$ ). However, it is important to note

that the short-stature hybrid PR116 has a longer relative maturity (116 day) in comparison to the other hybrids used in this trial which likely contributed to the higher grain moisture at harvest.

Bottom line: maturity and ear/husk traits still drive moisture at harvest, not plant stature (Quinn et al., 2024).

#### 2. Drydown reality for Indiana

Many farms aim to start at 20–25% and shoot for a ~21% sweet spot to balance field loss, kernel damage, and dryer cost (Alkazaali, 2016; Nielsen, 2021). Typical Indiana field drydown averages ~0.5–1.0 point/day in late September, slows to ~0.25–0.5 point/day by early–mid October, and can approach zero by early–mid November as temperatures fall (Nielsen, 2018b). Remember, physiological maturity (R6) sits near 30% grain moisture on average (Ciampitti et al, 2025); you still need field drydown to get to an efficient harvest moisture.

#### Answer:

**Don't harvest earlier just because it's short.** Use grain moisture. In 2024 Indiana trials, short hybrids were often **wetter** than full-stature corn on the same day.

#### References

Baktash & Alkazaali. 2016. <u>Effect of grain moisture of corn at harvesting on some agronomic traits</u>. *Iraqi Journal of Agricultural Sciences* 47(5).

Ciampitti, I. A., Elmore R. E., Lauer, J. 2016. <u>Corn growth</u> <u>and development</u>. Extension publication MF3305.

Nielsen, R.L. 2018b. <u>Field drydown of mature corn grain</u>. Corny News Network. Purdue Univ.

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Quinn, D.J., Oliva E. The Kernel. Feb. 16, 2024. <u>Short-stature corn hybrids: Next evolution in U.S. corn production</u>. Purdue University.

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### From Field Observations to Digital Solutions: Understanding Corn Smut

(Caetano Rocha, Diogo Verzegnazzi, Pedro Cisdeli, Juan Fiore, German Mandrini, Christian Cruz, Ignacio Ciampitti)

While collecting image data on corn fields this year, our team encountered many ear anomalies in fields containing non-commercial hybrids that lack specific protective traits. The most common anomaly we observed was overgrown ears that grew beyond the husk length, leaving the ear tips exposed. This exposure makes the ears vulnerable to various threats, including corn smut, caused by the fungus *Ustilago maydis*.

The corn smut is a biotrophic fungus that infects the entire aerial part of the plant, leading to the formation of galls. Interestingly, these galls are considered a delicacy in Mexican cuisine, where they are known as "huitlacoche" and are harvested and prepared in various traditional recipes when properly collected and cooked.

In terms of agricultural impact, the economic losses caused by this disease in the American Corn Belt have been considered minor since the early 1940s, when hybrids were widely adopted and levels of disease resistance improved considerably. While corn smut rarely causes widespread yield loss in commercial field corn, it can still lead to significant damage in sweet corn, organic systems, and processing operations—particularly when susceptible cultivars are grown under stressful or injury-prone conditions (Mohan et al., 2013). For this reason, control practices such as planting resistant hybrids, minimizing plant injury, and monitoring environmental stress remain important tools for managing risk.

#### Biology and Disease Cycle

Corn smut is a fungus that needs living corn plants to grow and reproduce, but it can also survive in crop residue and soil when conditions are unfavorable. The fungal spores are small, dark brown to black, and have a spiny surface.

The fungus can infect any actively growing part of the corn plant, but you'll most commonly see the characteristic galls (swollen growths) on ears, tassels, stalks, and leaves. Sometimes galls can even form underground on young seedlings. The good news is

that corn smut does not spread throughout the entire plant, it stays localized to where the initial infection occurs (Pataky and Snetselaar, 2006).

### Favorable Environmental Conditions for Disease Development

Several factors can increase the likelihood of corn smut outbreaks. The disease is most problematic when hot, dry weather during pollination is followed by rainy conditions. Strong winds and heavy rainfall also help spread the disease by carrying fungal spores from plant to plant and field to field.

#### **Symptoms**

The most obvious sign of corn smut is the formation of large, swollen growths called galls on the ears (Figure 1) and stems (Figure 2). These galls can range from smaller than a marble to larger than a softball - sometimes over a foot across. The galls contain a mix of swollen plant tissue and fungal threads, along with masses of dark blue or black spores that give them their distinctive color.

Other symptoms like yellowing leaves, purple discoloration, and stunted plant growth may also occur. But the most common sign is always the tumor-like growths filled with dark spores.



Figure 1. Formation of large galls on the ears.



Figure 2. Formation of large galls on the corn stem

#### Control

Effective corn smut management combines several key strategies. Resistant corn varieties are the most effective control method, as these hybrids are developed to withstand disease pressure. For example, recent studies have shown that the fungus releases proteins that interfere with the plant's defenses and support infection, key insights that help guide the development of resistant hybrids (Schuster et al., 2024).

Crop rotation also provides significant benefits. Since corn smut survives in crop residue and soil, rotating to non-host crops like soybeans or wheat for one to two years reduces pathogen populations.

Minimizing mechanical injuries during field operations is also important, as the pathogen enters through wounds from cultivation equipment, hail damage, or insect feeding.

#### The Next Step in Crop Monitoring

The image data we collected from corn fields this season is being utilized in advanced computer vision applications. Using Artificial Intelligence models, we can create detailed three-dimensional models (Figure 3) of corn ears from standard photographs (**Figure 4**), a process called 3D reconstruction.



Figure 3. Detailed 3D reconstruction of a corn ear that slightly outgrew its husk.



**Figure 4**. Conventional image from the same corn ear used to generate the 3D reconstruction shown in **Figure 3**.

These digital models allow us to measure important crop traits that would be difficult or time-consuming to assess manually, such as ear length, kernel row count, and husk coverage. Additionally, we can use this technology to automatically detect diseases like corn smut, helping identify genetic materials more susceptible to the disease and problem areas in fields with greater speed and accuracy.

When applied to plant breeding pipelines, digital tools such as optical sensors, remote sensing, and AI-based image analysis allow us to screen through thousands of plots, reducing time and effort while improving the accuracy of the data. This process, called highthroughput phenotyping, represents a new branch of traditional phenotyping that aims to extract meaningful data about each variety sown and tested in the field. The result is a better identification of top-performing varieties, including those with high yield and resistance to diseases like corn smut. Although these tools are not yet fully integrated into disease prediction models, their ability to detect corn smut early and across large areas shows promise. When combined with breedingfocused phenotyping, they could enhance both early detection and the selection of resistant hybrids (Mikaberidze et al., 2024).

#### References

Pataky, J. and Snetselaar, K. 2006. <u>Common smut of corn</u> (<u>Syn. boil smut, blister smut</u>). *The Plant Health Instructor*. Mohan, S. K., Hamm, P. B., Clough, G. H., & du Toit, L. J. (2013). <u>Corn smuts (PNW 647)</u>. Oregon State University Extension Service.

Mikaberidze, A.; Cruz, C.D.; Zerihun, A.; et al. 2025. Opportunities and Challenges in Combining Optical Sensing and Epidemiological Modelling. Phytopathology. *First Look* https://apsjournals.apsnet.org/doi/10.1094/PHYTO-11-24-0359-FI

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### § Stalk And Ear Rots: Identify Them Now to Help With Harvest Decisions

(Darcy Telenko & Daniel Quinn)

It is now time to evaluate fields for any stalk or ear rot symptoms. This will aid in making assessments about field harvest order and if there is a risk of mycotoxin contamination. There are many factors that can contribute to stalk decline. There are both plant pathogenic causes and abiotic stress factors that can play a role in reduced stalk integrity, such as drought and flooding. Either way, as stalk tissue becomes compromised below the main ear, the stalk may become brittle or weak and be prone to lodging.

As the corn plant loses photosynthetic leaf area due to different stresses such as foliar disease and hot and dry conditions, the amount of carbohydrates available for dry matter deposition into the kernels is also decreased. Therefore, plants respond by remobilizing nonstructural carbohydrates from the lower portion of the stalk to supply the demand required by the developing kernels on the ear. This response causes stalk strength and integrity to decrease, and increases a corn plant's risk of lodging and infection from pathogens that cause stalk rot. Fields with large ear sizes and strong kernel set, which have a high kernel fill demand, may also be at the greatest risk.

#### Stalk rots

There are a number of plant pathogens that can cause stalk rot including, Anthracnose, Bacteria, Charcoal, Diplodia, Fusarium, Gibberella, and Pythium. Some of these stalk rots have very characteristic symptoms that can help identify the specific problem, while others may require laboratory diagnosis (Table 1). The Purdue Extension Publication Corn Diseases: Stalk Rot has good images to help identify the major stalk rot diseases we see in Indiana

(https://www.extension.purdue.edu/extmedia/BP/BP-89-W.pdf).

It is time to check stalk integrity – check field by using the **Push** or **Pinch Test** by evaluating 20 plants in at least five random areas in a field.

- Pinch Test grab the stalk somewhere between the lowest two internodes and pinch between your fingers to see if the stalk is strong enough to handle the force if the stalk collapses, it fails.
- Push Test push the stalk to a 30-degree angle
   if it pops back up when released, it passes the test, if not it fails.

Threshold: 10% or more of the stalks fail then consider field for early harvesting to avoid risk for lodging.



Figure 1. Ear and stalk rot. (Photo Credit: Darcy Telenko)

What can you do in the future – management options will depend on the specific disease (see table 1). Production practices that promote good plant health including balanced fertilization, appropriate plant populations, and good water management can reduce stresses that might predispose corn to stalk rot. In addition, these key management tools can help mitigate future stalk rot issues.

- Properly diagnosis the stalk rot pathogen. (Samples can be submitted to the Purdue Plant and Pest Diagnostic Lab)
- 2. **Select hybrids with resistance** if available.

- 3. Crop Rotation rotating to non-host crop will help reduce stalk rot potential in a field.

  Note that Charcoal rot and Gibberella stalk rot can infect other rotational crops in Indiana
- 4. **Tillage** burying infected crop residue will encourage more rapid desiccation and help reduces risk of overwintering in crop residue.
- 5. Good soil drainage and reduced compaction.
- 6. **Foliar Fungicides** applying foliar fungicides can help protect crop from foliar diseases that could predispose plant to stalk rot when present, but devoid of foliar disease pressure fungicides applications have not consistently been found to help reduce stalk rot.

#### Ear rots and mycotoxin risk

Scouting for ear rots is also very important. The Crop Protection Network has a number of great resources to help scout and identify ear rots

- An Overview of Ear Rots (PDF)
- Grain and Silage Sampling and Mycotoxin Testing

In Indiana, five ear rots can lead to mycotoxin production in corn. They include Aspergillus ear rot, Gibberella ear rot, Fusarium ear rot, and Penicillium ear rot. They can cause the production of five different

Table 1. Stalk rot pathogens, identifying characteristics, and management options.

Stalk rot			Management options <sup>z</sup>			
	Image	Characteristics	Resistance	Rotation	Tillage	Other
Anthracnose	Fâ	Distinctive blackening of the stalk rind, loss of pith leads to shredded interior	x	х	х	Strong stalks, reduced susceptibility to foliar diseases, and production practices that promote good plant health may reduce potential for lodging
Bacteria		Slimy, water-soaked outer rind and pith			Fall	Good drainage and plant health practices
Charcoal		Silver grey rind, peppered with microsclerotia – grainy, gray in color	х			Many hosts. Rotation not as effective since microsclerotia can survive for many years
Diplodia		Many small, black pycnidia embedded in rind of lower internode- that cannot be scrapped off with thumbnail, white mold might appear in wet conditions, shredded pith	x	x	x	Strong stalks, reduced susceptibility to foliar diseases, and production practices that promote good plant health may reduce potential for lodging
Fusarium		Dark lesions, external brown streaks on lower internode, internal shredding, sometimes a pale-pink to salmon color on rotted tissue	x	х	x	Strong stalks, reduced susceptibility to foliar diseases, and production practices that promote good plant health may reduce potential for lodging
Gibberella		Small, black spots (perithecia) on internodes and nodes – these can be scrapped off with thumbnail, pink discoloration and shredding in pith	х	x	X	Strong stalks, reduced susceptibility to foliar diseases, and production practices that promote good plant health may reduce potential for lodging
Physoderma.		Infected nodes will snap when pushed, node is black and rotten.		Maybe	Maybe	Strong stalks, reduced susceptibility to foliar diseases, and production practices that promote good plant health may reduce potential for lodging
Pythium		Decay of first internode about soil – soft, brown, water-soaked pith. Stalk may twist. Typically no odor.				Strong stalks, reduced susceptibility to foliar diseases, and production practices that promote good plant health may reduce potential for lodging

Reference: Freije and Wise. Stalk rots. Purdue Extension BP-89-W. <a href="https://www.extension.purdue.edu/extmedia/BP/BP-89-W.pdf">https://www.extension.purdue.edu/extmedia/BP/BP-89-W.pdf</a> Image sources: D. Telenko, Purdue PPDL, and K. Wise. <sup>2</sup> Management options that could be considered for future crops. Resistance may be available in some hybrids for the specific disease. Rotation and tillage can reduce inoculum potential in the field.

mycotoxins in association with the different ear rot: **Aflatoxin** (Aspergillus), **Deoxynivalenol** or as also called DON/vomitoxin and **Zearalenone** (Gibberella); **Fumonisins** (Fusarium), and **Ochratoxin** (Penicillium and sometimes Aspergillus).

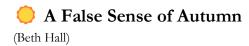
If a field has ear rot problems, it will be important to test the harvested grain lots for mycotoxins. The Grain and Silage Sampling and Mycotoxin Testing Resources publication provides a good reference on how to take a sample or sub-samples and a list of professional laboratories available to grain testing. In addition, harvest management for ear rots includes identifying and harvesting fields early, drying grain quickly to below 15% moisture, and storing in dry and cool conditions to limit fungal growth and mycotoxin accumulation.

#### Grain samples needed!

Due to increased reports of mycotoxin contamination in corn in the last few years we will again be conducting a survey of Indiana grain for mycotoxin testing and collecting data for forecasting model validation in 2025. If you have fields of concern and want to participate, please reach out to Darcy Telenko at <a href="mailto:dtelenko@purdue.edu">dtelenko@purdue.edu</a> to get more information and a sample protocol.

This project is supported by the Indiana Corn Marketing Council (ICMC).





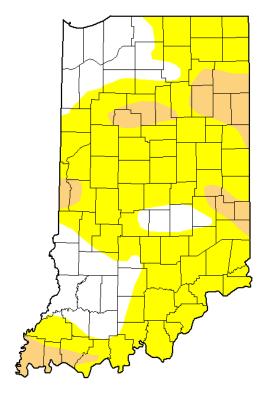
The last week has caused many to struggle with whether to turn the heat on inside. Mornings have been quite chilly, and I am guessing several readers may have also struggled with the decision to wear a jacket as they started their workday. These are tough decisions, no doubt. Several data sources have suggested we have had at least 2 weeks of consecutive below-average daily mean temperatures. While not a record, this is certainly noticeable! Perhaps we are hoping those tomato plants will produce just a few more tomatoes. Is it mum season, already? The good news – for those not quite ready to say goodbye to warm days, not needing coats, and garden delights – is warm temperatures are expected to return. Daily high temperatures are already

in the 80s and Indiana is likely to see temperatures in the mid-90s by next week. There is significant confidence that this warmer-than-normal temperature trend is likely to continue through most of September. Average high temperatures typically range from 75°F – 85°F in mid-September and 70°F – 75°F in late September, so keep in mind climate outlooks are all relative. Indiana is not likely to experience triple-digit heat waves over the next few weeks, but nighttime low temperatures are likely to fight for temperatures warranting a sweater or jacket.

There's been a noticeable lack of precipitation with Indiana receiving well below-normal precipitation throughout the state over the past 30 days except for the northwestern counties. This has led to expansion of both *Abnormally Dry (D0)* and *Moderate Drought (D1)* areas across the state (Figure 1). Unfortunately, both forecasts and climate outlooks suggest this below-normal precipitation pattern is likely to continue for a while. Over the next 7 days, very little precipitation is expected across much of Indiana (Figure 2). This below-normal precipitation pattern is likely to continue through most of next week. After that, climate outlooks are favoring near-normal precipitation through September 24th.

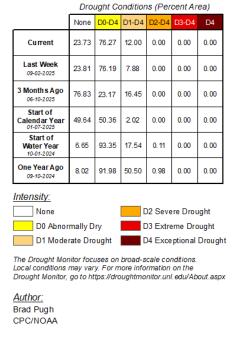
Regarding first frost or even hard frost, we are still too early in the calendar year to worry about this being an extensive risk. Very localized, low-lying areas may be susceptible, but the climatological average date of the first hard freeze (28°F) is often not until mid-to-late October (Figure 3). With temperatures expected to warm again, widespread hard frost is not anticipated prior to October.

### U.S. Drought Monitor Indiana



#### September 9, 2025

(Released Thursday, Sep. 11, 2025) Valid 8 a.m. EDT



USDA







droughtmonitor.unl.edu

Figure 1. U.S. Drought Monitor status for conditions as of Tuesday, September 9, 2025.

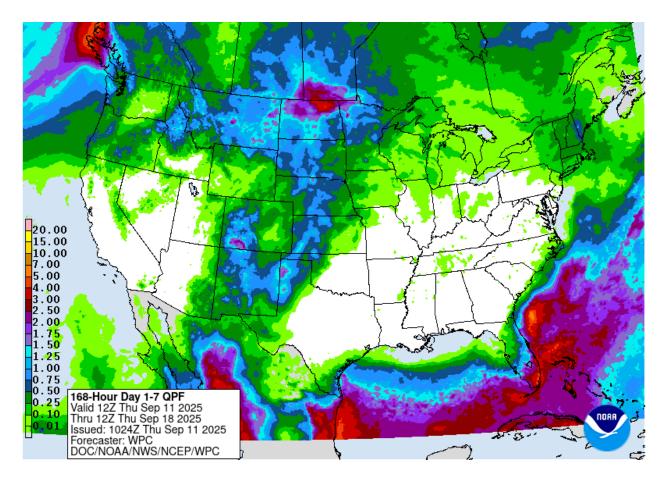


Figure 2. Total precipitation amounts forecasted for September 11-18, 2025.

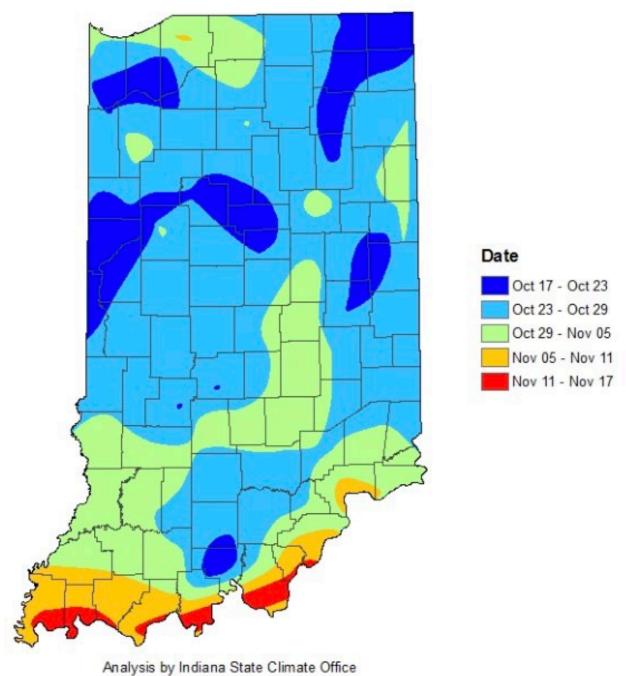


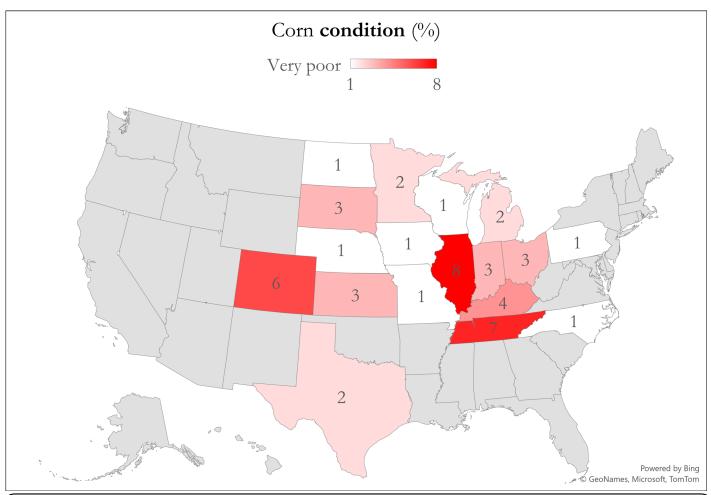
Figure 3. Average date of the first fall frost where temperature first reach or drop below 28°F.

#### Acknowledgments

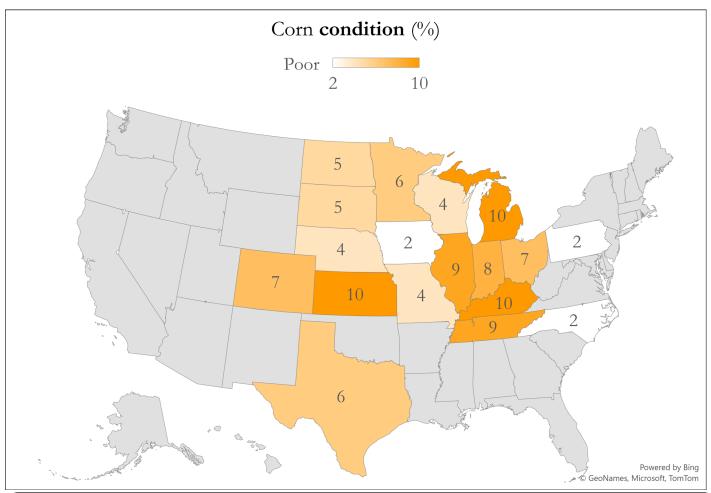
The authors greatly appreciate the feedback and contributions of all growers, county agents, consultants, and corn industry stakeholders.

#### Proudly supported by:

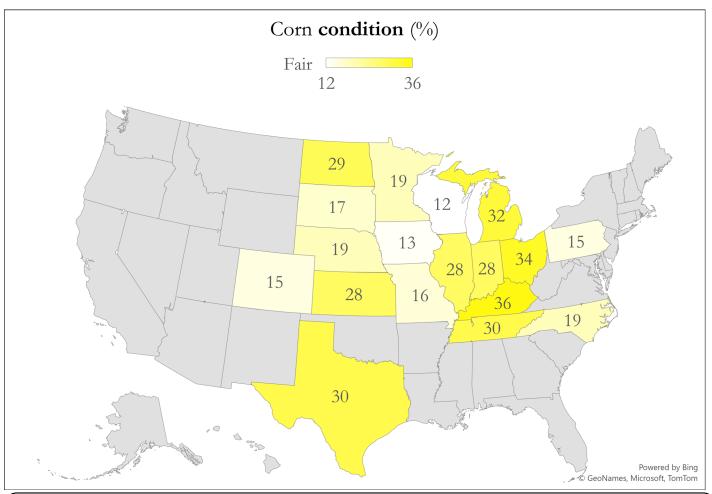




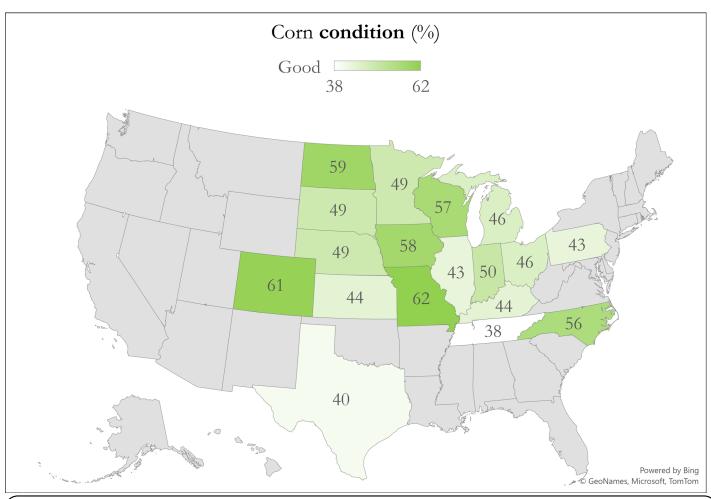
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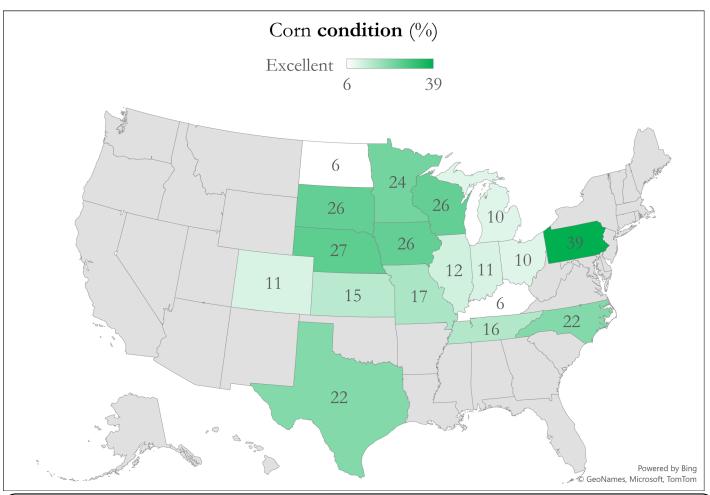
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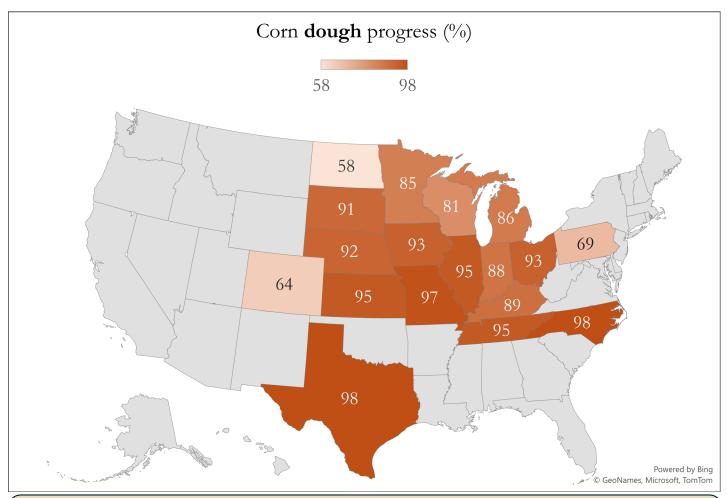
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## Interactive Maps 1. U.S. Corn Condition (USDA-NASS) Click on the categories below to see the corn condition at each U.S. state on Sep 7<sup>th</sup>. Very Poor Fair Good Excellent page 2

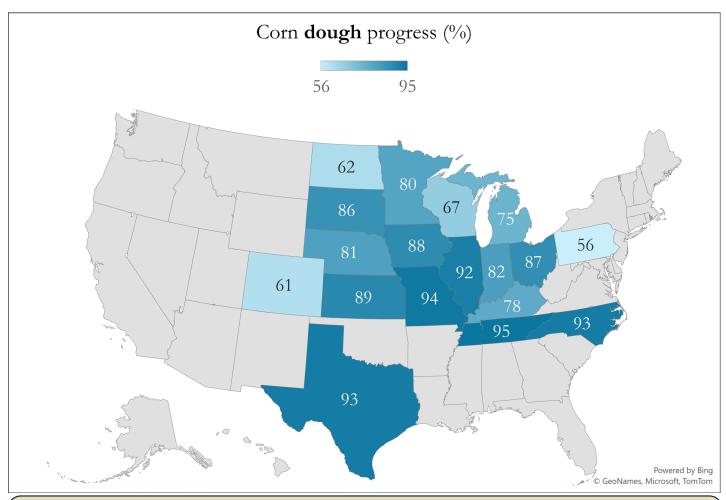


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

Average (2020-2024)

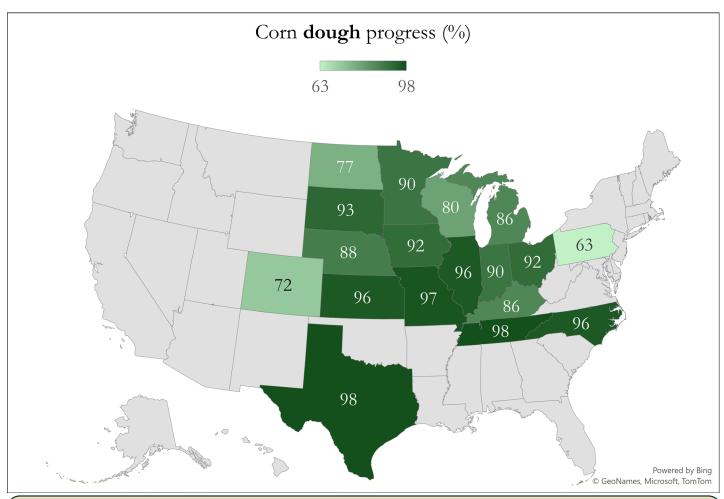


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

Average (2020-2024)

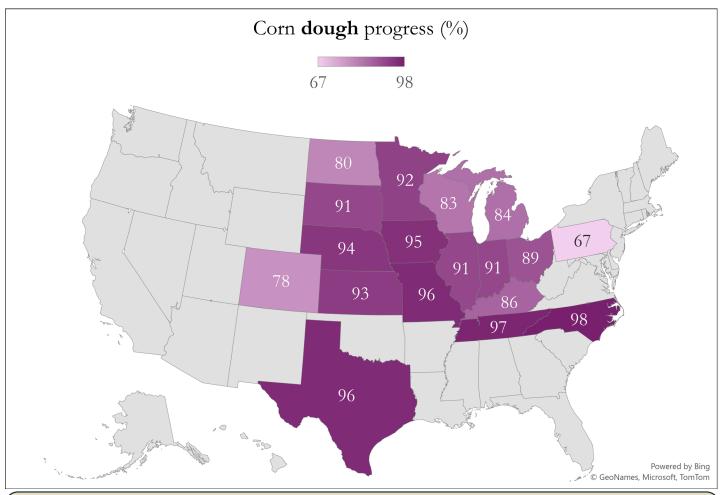


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

Average (2020-2024)

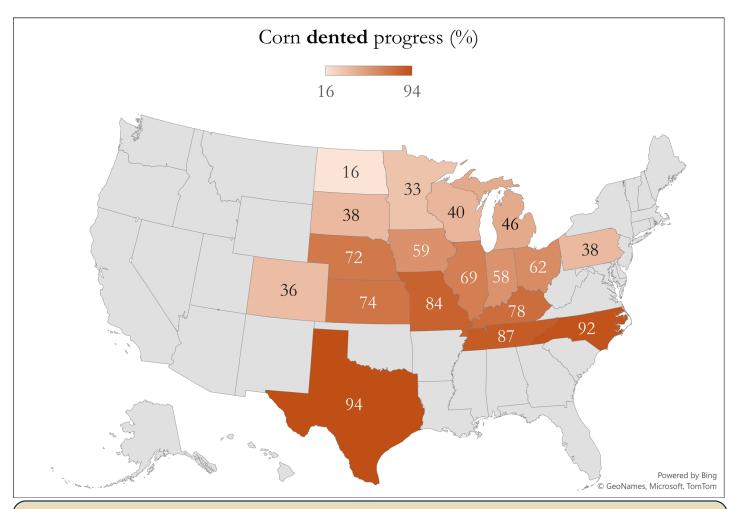


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

Average (2020-2024)

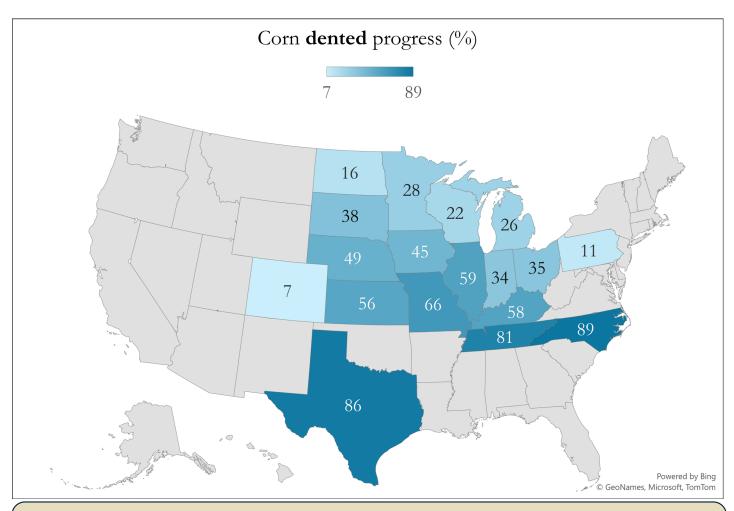


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

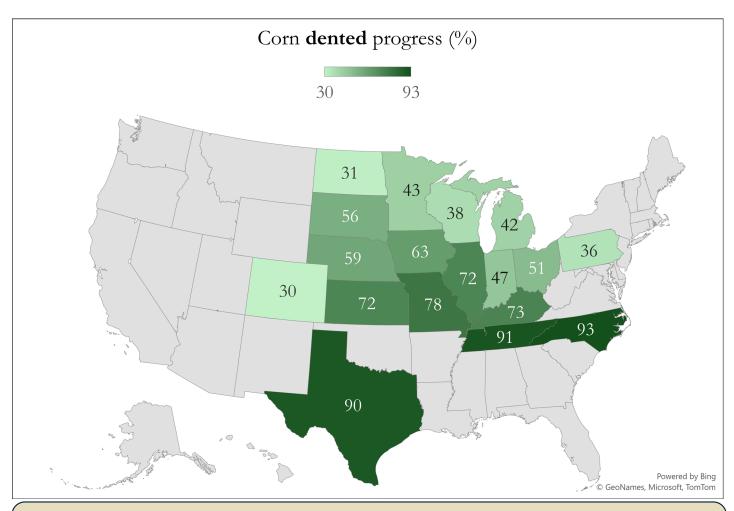
Average (2020-2024)



Sep 7, 2024

Aug 31, 2025 Sep 7, 2025

Average (2020-2024)

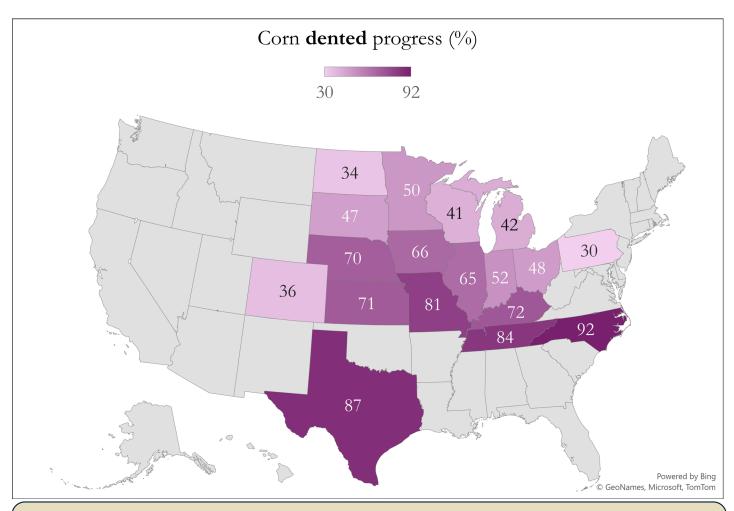


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

Average (2020-2024)

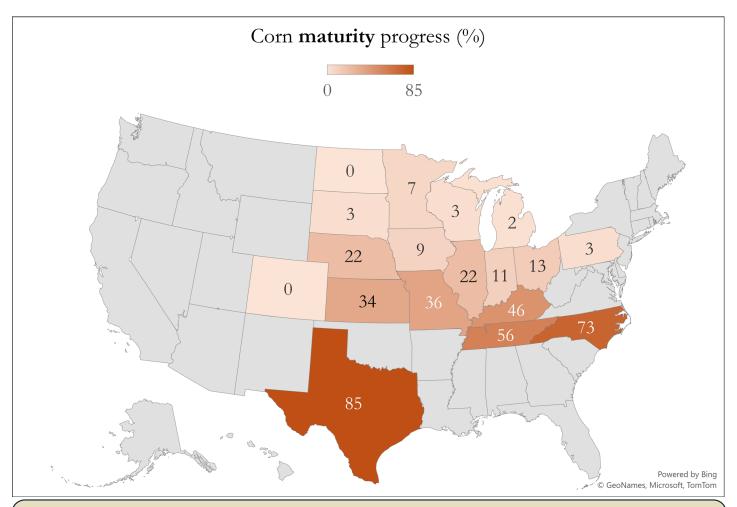


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

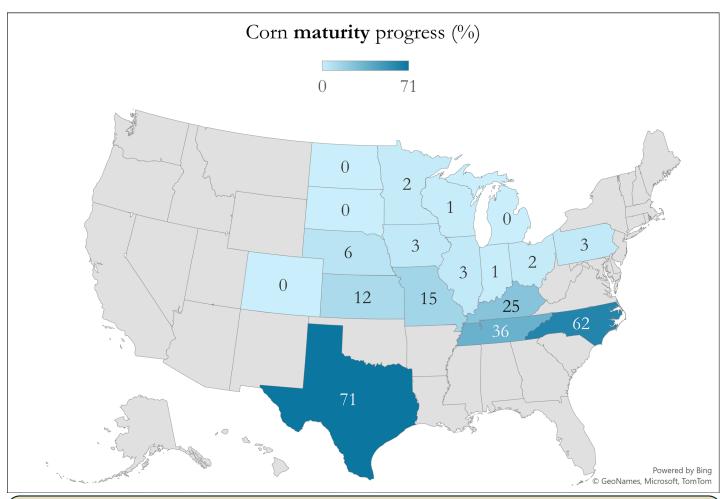
Average (2020-2024)



Sep 7, 2024 Aug 31, 2025

Sep 7, 2025

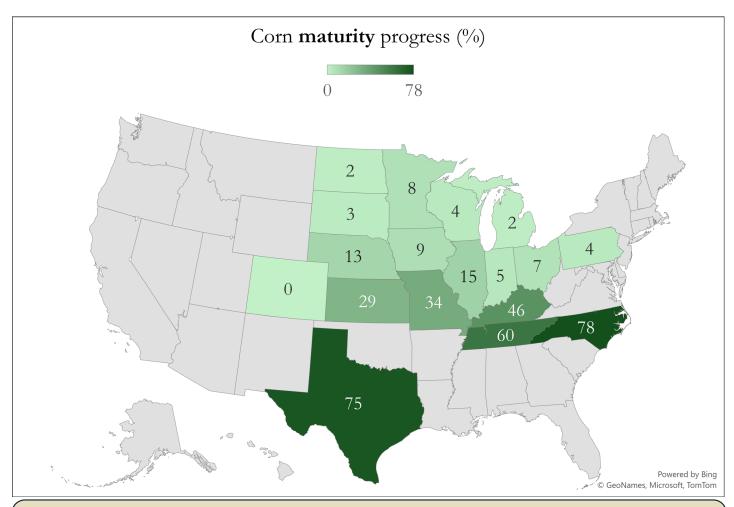
Average (2020-2024)



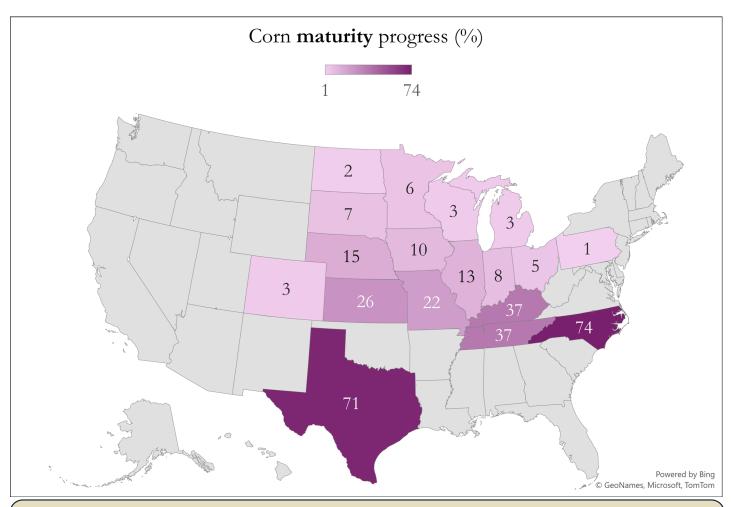
Sep 7, 2024

Aug 31, 2025 Sep 7, 2025

Average (2020-2024)



Sep 7, Aug 31, Sep 7, Average Back to page 2

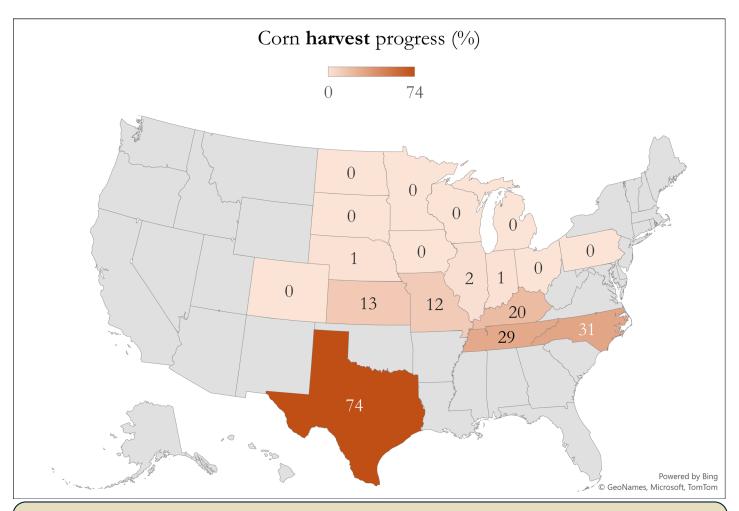


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

Average (2020-2024)

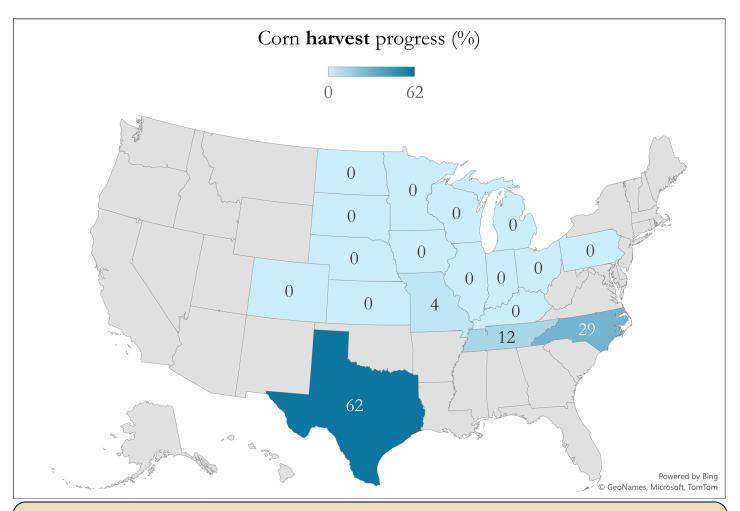


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

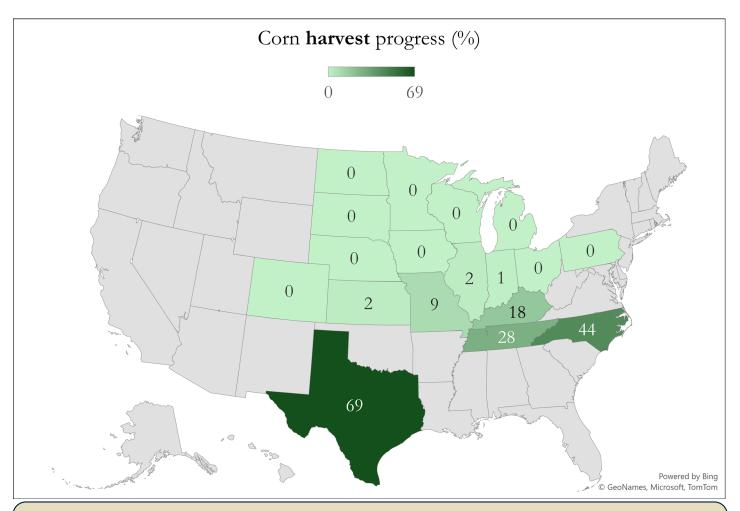
Average (2020-2024)



Sep 7, 2024

Aug 31, 2025 Sep 7, 2025

Average (2020-2024)

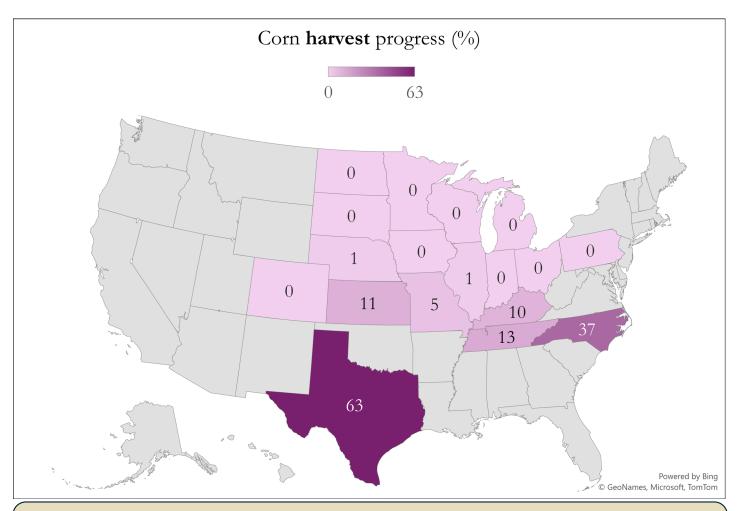


Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

Average (2020-2024)



Sep 7, 2024

Aug 31, 2025

Sep 7, 2025

Average (2020-2024)