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CORN INSECT TRAPPING UPDATE

Weekly trapping results are posted in the NDSU Extension [Crop & Pest Report](#) and on the [IPM Crop Survey map](#) website.

The corn growth stages ranged from R5 (dent) to R6 (maturity) during August 24 - Sept 4, 2026.

Corn rootworms were detected at 21 trap sites (68%) for week 5 (August 24-28) and 22 trap sites (71%) for week 6 (August 31-Sept 4). For week 5, trap catches ranged from 0 to 22 beetles per trap per week (Table 1). For week 6, trap catches ranged from 0 to 25.4 beetles per trap per week (Table 1). A total of 308 and 417 corn rootworm beetles were captured on yellow sticky traps across all trap sites during weeks 5 and 6, respectively. Northern corn rootworms (NCR) comprised 99.7 and 98.1% of the total corn rootworms captured for weeks 5 and 6, respectively.



Severe lodged corn from corn rootworm larval feeding. (Joel Ransom)

Table 1. Average number of adult corn rootworms (both northern and western) per trap per week in 2026.

Area	County	Nearest Town	Week 1 July 27 - 31	Week 2 Aug 3 - 7	Week 3 Aug 10 - 14	Week 4 Aug 17 - 21	Week 5 Aug 24 - 28	Week 6 Aug 31 - Sept 4	Cumulative Total # NCW & WCR
Central	Foster	8 E Carrington		0.3	0.0	0.0	0.0	0.3	2
Central	Foster	6 S Grace City		0.0	0.0	0.0	0.0	0.0	0
EC	Griggs	5 S Hannaford	0.0	0.3	0.5	1.0	1.0	0.9	15
EC	Griggs	2 N Hannaford	0.0	0.0	0.5	0.5	0.8	1.1	12
EC	Griggs	3 NE Sutton		0.0	0.0	0.9	2.0	0.5	13
EC	Griggs	2 W Cooperstown		0.0	0.9	0.7	1.8	2.0	20
EC	Griggs	8 N Cooperstown		0.0	0.0	0.5	0.5	0.6	6
EC	Griggs	7 SW Cooperstown		2.0	2.3	3.7	7.3	9.0	89
NC	Sheridan	10 NE McClusky		0.0	0.0	0.0	0.0	0.0	0
NC	Ward	3 SW Minot		0.0	0.0	0.0	0.0	0.0	0
NE	Cavalier	5 E Langdon		0.0	0.0	0.0	0.0	0.0	0
NE	Pembina	1 NE Cavalier		0.0	0.0	0.0	0.0	0.0	0
NW	McKenzie	3 NW Alexander		0.3				0.0	1
NW	Williams	Williston		0.0					0
SE	Barnes	9 SE Sibley	0.0	0.0	0.0	0.0	0.0	0.4	2
SE	Barnes	1 SE Rogers	0.0	0.0	0.5	1.0	1.3	0.2	12
SE	Cass	4 E Argusville	0.8	0.8	14.5	17.3	18.0	24.9	319
SE	Cass	4 NE Page	0.5	1.0	1.5	1.3	1.5	2.2	33
SE	Ransom	8 NE Lisbon	5.0	11.2	14.2	5.5	11.8	10.9	244
SE	Richland	6 SW Hankinson	1.8	3.0	2.8	1.5	2.3	5.3	66
SE	Richland	2 SW Barney	0.0	0.0	0.0	0.0	0.3	0.0	1
SE	Richland	5 W Colfax	0.0	0.3	0.3	0.0	0.3	0.5	5
SE	Richland	6 SW Colfax	0.0	0.0	0.0	0.0	0.5	0.3	3
SE	Richland	7 SW Wahpeton	0.0	0.0	0.5	0.3	0.3	0.3	5
SE	Richland	5 SW Lidgerwood	0.0	1.5	1.5	0.8	0.8	5.5	40
SE	Richland	1 E Hankinson	0.3	1.3	2.8	1.5	0.3	0.8	27
SE	Richland	3 NW Galchutt	0.3	0.0	0.2	0.3	1.3	1.3	14
SE	Richland	6 E Hankinson	0.0	0.0	0.2	0.3	0.3	0.7	6
SE	Sargent	5 NW Gwinner	4.0	5.3	13.4	9.3	22.0	25.4	341
SE	Sargent	4 SE Rutland	2.0	0.0	1.8	1.3	4.5	2.8	53
SE	Steele	3 N Finely	0.0	0.0	0.5	0.0	0.0	0.0	2
		Total # CRW	58	89	267	192	308	417	1331
		Percent NCR	93.1	93.3	99.3	97.4	99.7	98.1	
		Percent WCR	6.9	6.7	0.7	2.6	0.3	1.9	
Economic Threshold is an average of 14 or more adults per trap per week (regardless of species)									
Yellow highlighted and red text indicates that the corn field is at or above the ET.									

Two corn fields were above the trap economic threshold for corn rootworm and were located in Cass County near Argusville and in Sargent County near Gwinner. Look for lodged corn stalks as an indicator of severe larval feeding.

The hot spots for high corn rootworm populations have been primarily in southeastern North Dakota. Other regions have low to zero corn rootworm populations this year (see IPM map).

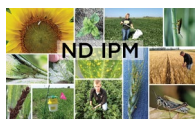
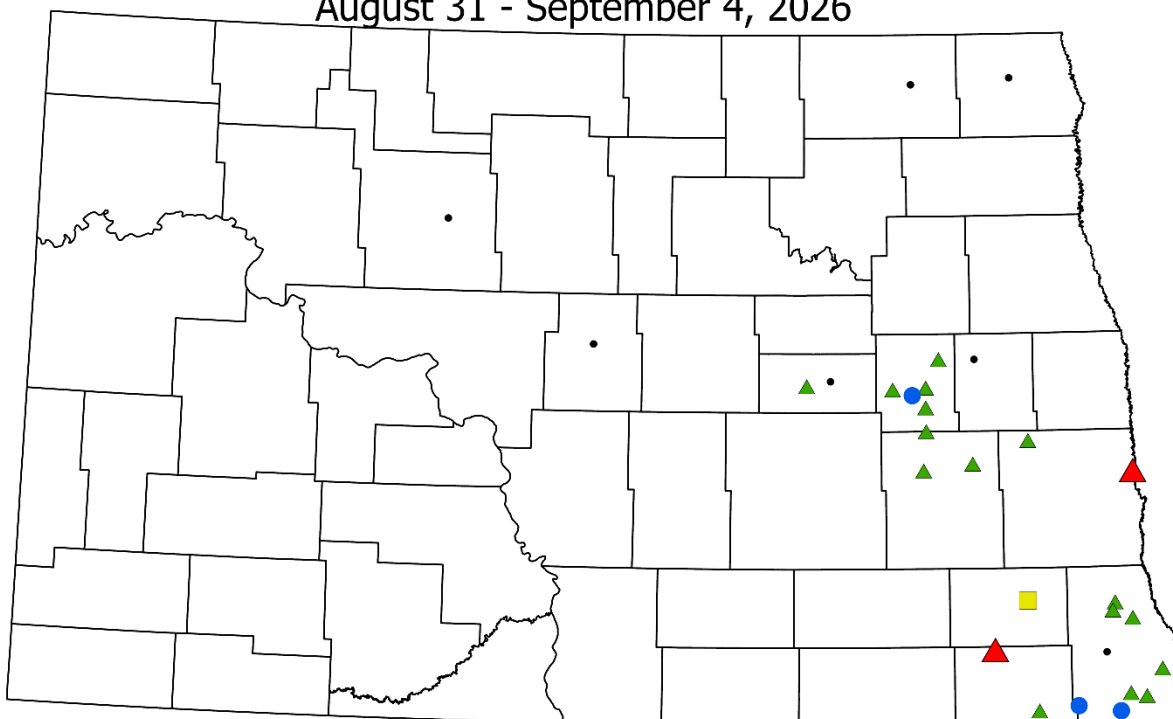
Trap Economic Threshold:

A capture rate of **14 or more adults per trap per week** (either NCR or WCR, or any combination of the two species) indicates a **high rootworm population and high risk for corn damage in that field for the 2027 season**.

Corn Rootworm (CR) Trapping

Northern and Western CR

August 31 - September 4, 2026



Average number of beetles per trap per week

- 0
- ▲ 0.01-5
- 5.01-10
- 10.01-13.99
- ▲ ≥14 (Economic Threshold)



RED FLOUR BEETLES: PHOSPHINE RESISTANCE



Red flour beetle. (Peggy Greb, USDA Agricultural Research Service, Bugwood.org)

UGA5174036

Farmers and elevator operators have recently observed that **phosphine (Phostoxin) gas is not controlling the red flour beetle in their grain bins** in western North Dakota and parts of Montana. Research has documented high-level phosphine resistance genes that have been actively spreading across the Northern Great Plains.

Recent data on phosphine show that the lethal concentration required to kill 99% of pests (red flour beetles) can be 100 to 400

times higher than in normal susceptible strains—meaning standard label rates of phostoxin will consistently fail.

Always read, understand and follow the label instructions. Phosphine is an extremely toxic gas; always handle it with proper safety precautions (wear protective gear).

If farmers or commercial grain operators suspect insect resistance to phosphine, switch from phosphine to alternative strategies—such as empty-bin and surface treatments, or contact insecticide protectants (grain is treated when the bin is being filled). Please see the stored grains section of the [2026 North Dakota Field Crop Insect Management Guide](#) for insecticides registered in stored grains.

Other possible reasons for phosphine failures (*Rule These Out First!*) include:

- **Lack of "Gas-Tight" Seal:** Phosphine requires a strict gas concentration (e.g., 200–300 ppm) held continuously for 4 to 7+ days. If an on-farm bin fails a pressure test, the gas leaks out before killing the highly tolerant egg and pupae stages.
- **Incorrect Dosage Calculations:** Applicators sometimes calculate Phostoxin doses based only on the bushel volume of the barley. Legally, they must calculate based on the total air volume of the entire structure, including the empty headspace.
- **Grain Temperature & Moisture:** If the barley was put into bins hot and moist, or if the grain mass has dropped below 60°F during late-season attempts, tablet reaction times slow down dramatically, leading to sub-lethal dosing.

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KEEP INSECTS OUT OF STORED GRAIN

As grain is put into our bins this fall, remember to clean the grain bins and trucks, and then protect the grain from potential insect pest infestations during storage.

The key to preventing grain insect problems in grain bins is cleaning empty grain bins and trucks hauling new grains. Any old grain or even dust residue left in the bin is enough for grain insects to survive, leading to new infestations and reducing the quality and salability of your new grains. Bins need to be super clean, empty and free of insect-infested grain. Leftover grain should be removed from the bin, and the walls should be swept and vacuumed. All grain handling equipment, including augers, combines, trucks and wagons, also needs to be thoroughly cleaned and grain residues removed before harvest.

After cleaning, be sure to check for any cracks, crevices or holes in grain bins and seal them up. This is how most grain insects enter bins and storage facilities.

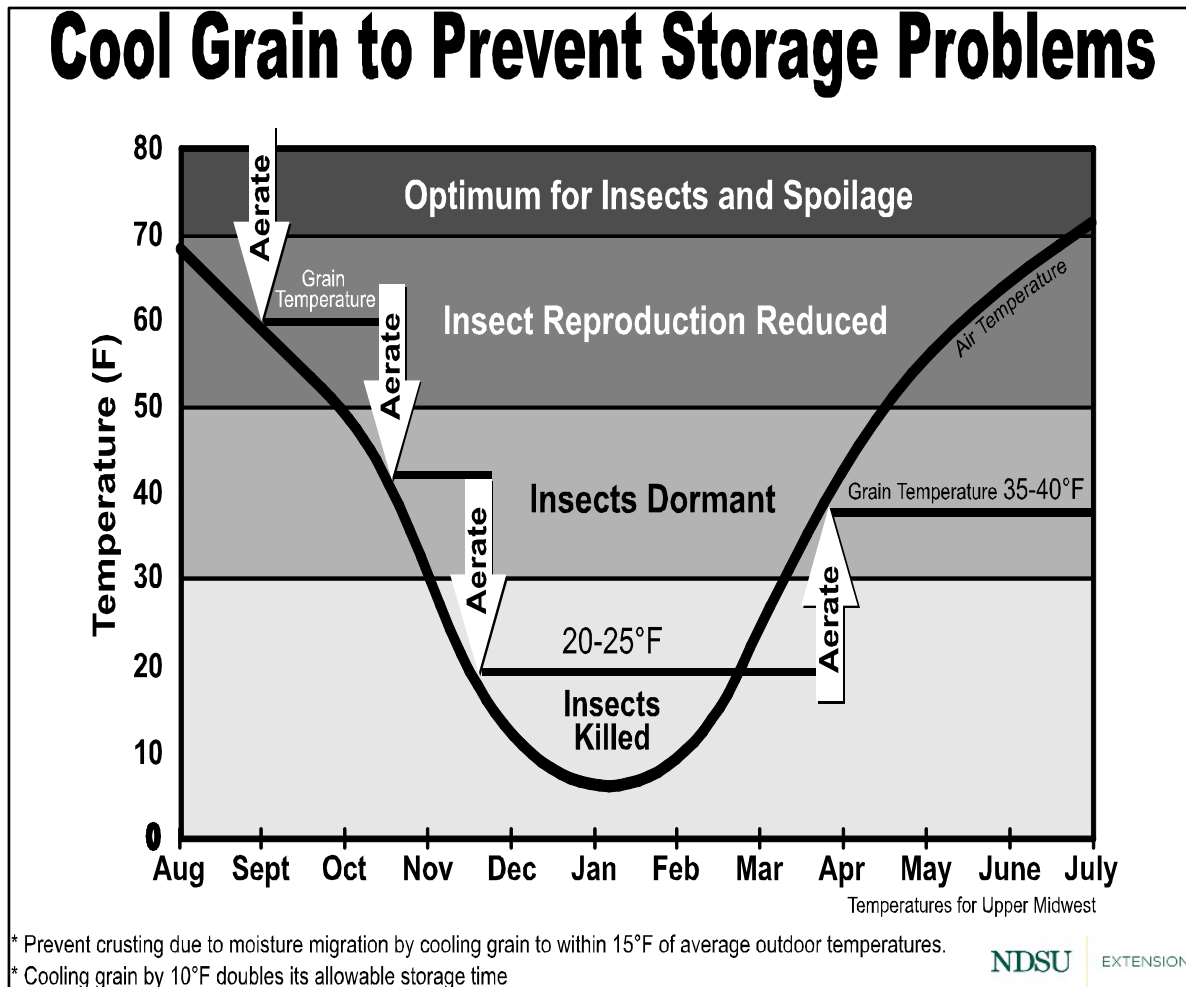
The area outside of the grain bins needs to be cleaned and treated. Mow and remove weeds and vegetation within a 10-ft border around empty grain bins. Treat the outside surfaces, especially cracks and ledges near doors and fans, to prevent insect pests from entering grain bins.

Once the cleaning and repairs are done, it's time to spray a residual bin spray or surface treatment, both inside and outside the grain bin. Examples of insecticides include malathion,

Tempo, Centynal EC and Diacon IGR Plus (insect growth regulator + adulticide). Apply these insecticides to the bin surface areas 2 to 3 weeks before new grain is placed in the bin. The treatment will kill insects emerging from their hiding places (cracks, crevices, under floors and in aeration systems). Also, insects crawling or flying in from the outside will be killed. Apply the spray to as many surfaces as possible, especially joints, seams, cracks, ledges and corners. Spray the ceiling, walls and floors to the point of runoff. Use a coarse spray at a pressure of more than 30 lb per square inch and aim for the cracks and crevices.

Any grain stored for more than 10 months should have an insecticide protectant applied to maintain the commodity's quality and protect your investment. Cooling the grain to <50°F will keep insects dormant, and temperatures < 20-25°F will kill insects (see chart). Please see the stored grains section of the [2026 North Dakota Field Crop Insect Management Guide](#) for insecticides registered in stored grains.

For additional information, please see the NDSU Extension website on [Grain Drying and Handling](#), which covers aspects of stored-grain management, including cooling grain to below 50°F to prevent insect reproduction and spoilage.



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FEATURED MATCHUP: NDSU PLANT PATHOLOGISTS VS. TAR SPOT

Players to Watch:

- Tar Spot (*Phyllachora maydis*)

Scouting Report:

- A new disease that has been found in 10 counties in southeast North Dakota
- Can be found on the lower leaves when pathogen has successfully overwintered (Figure 1)
- Generally observed in the mid to upper canopy after tasseling, and often found at low levels (one to three tar spot lesions per leaf)

Opponent's Game Plan:

- Disrupts photosynthesis in leaves that can lead to stress during kernel development
- Early symptoms are a black spot that is fully imbedded in the leaf
- Mature lesions are often diamond to irregular in shape (Figure 1)

Opponent's Strengths:

- Cool (64-73F) temperatures with sporadic periods of leaf wetness (rain and/or heavy dews)
- Pathogen survives on corn residue and spores can travel (rain splash and wind) to nearby fields

Opponent's Weaknesses:

- Crop rotation and residue management will help limit in-field inoculum sources
- Resistant hybrids (limited information available for northern corn hybrids)
- Fungicides (when needed)
- Disease forecasting models are available to predict disease development

Trick Play to Watch:

- A new corn disease in North Dakota, which means we are not certain on the level of susceptibility in hybrids
- The cool temperatures needed for tar spot are routinely experienced in North Dakota from June to September
- Long incubation period of 15 to 22 days (time between infection to first symptom development)



Figure 1. (Left) Multiple tar spot lesions on a corn leaf found in the lower canopy (Photo – Rick Hatchett); (Right) A single diamond shaped tar spot lesion.

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SOYBEAN CYST NEMATODE ON THE MIND

As we are nearing the end of the season, this is a great time to start thinking about soybean cyst nematode (SCN). Particularly for us in North Dakota, as the nematode continues to spread through the state, it attacks soybeans AND dry beans.

SCN are microscopic roundworms that you cannot see with the naked eye, but they have a tremendous capacity to reduce soybean yields. Infected plants are weaker and less productive, as the parasitic SCN females pull vital resources from the plant roots throughout the season. Across the soybean-growing regions of the U.S., SCN is considered the greatest yield-limiting disease of soybean annually. This trend is no different in North Dakota. It is estimated that SCN has caused an annual statewide yield loss of 6.9 million bushels and a total economic loss of over \$79,000,000. This can also be thought of as roughly \$12.50 lost per acre of soybean production across the state. Yield loss in dry beans is not well quantified, but it is nearly impossible to expect a parasitized plant to maximize its yield while it is also supporting a thriving population of parasites on its roots!

At the beginning of the season, SCN survives inside hardened survival structures called cysts that allow them to survive for many years. Some reports of SCN suggest survival for more than 40 years! After these cysts rupture, a few hundred new SCN eggs are released, which will then hatch into the motile juveniles called J2s. These recently hatched worms will then begin seeking out soybean roots to feed. Once they have established inside the soybean roots, the females will mate with males, and then the females begin to form a specialized feeding structure that pulls resources from the soybean. Inside each female, new eggs will begin forming, and once fully mature, the female body hardens and becomes the next cyst in the life cycle. This whole cycle takes roughly 4 weeks to complete, meaning that during a typical growing season there may be up to three generations.

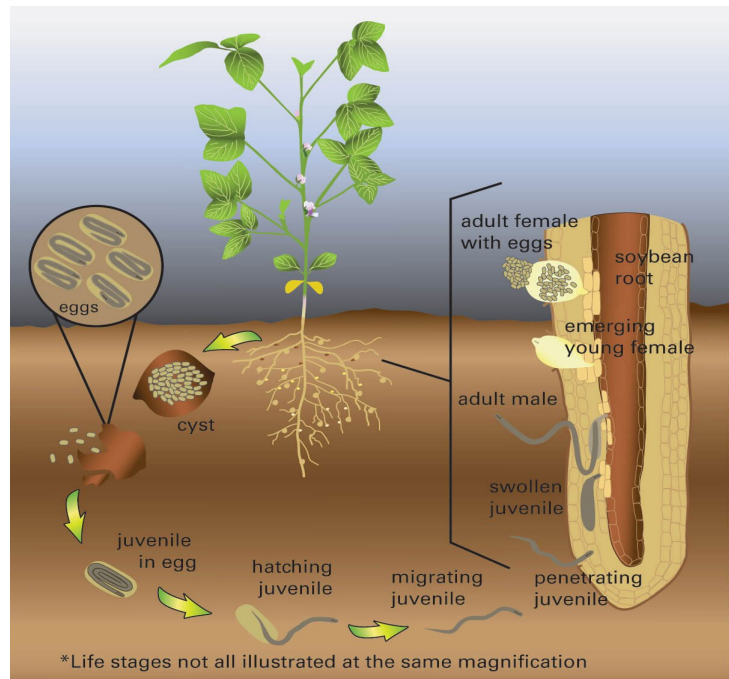


Figure 1. Life cycle of soybean cyst nematode.
Courtesy of Iowa State University

While SCN can survive in many environments, there are specific environmental conditions that favor its development. For example, SCN life cycle can be sped up when soil temperatures are higher than 75 F, in which we experienced many days this season with high soil temperatures. Further, SCN tends to prefer drier soil conditions relative to higher moisture conditions. SCN is also known to thrive better under sandier soil textures, but this pest can still be quite damaging even under heavy clay soils. Lastly, high pH soils provide a much more favorable environment for SCN than low pH soils. The relationship between pH and percent sand is so strong, they have been incorporated into a recently developed SCN yield-loss model (<https://www.thescncoalition.com/profitchecker/calculator/>). More on this in the next issue of the Crop and Pest Report.

The fall season provides an ideal opportunity for farmers to sample their fields for SCN. Soil sampling is important for three critical reasons:

1. **To understand if SCN is present.** Many fields in North Dakota have undiagnosed SCN populations. Without sampling, you won't know if your field is infested, which means you could lose yield year after year without understanding why. Early detection is key to implementing management strategies before populations become severe.
2. **To understand if management practices are working to keep numbers down.** Sampling allows you to track whether your current management approaches, whether it's resistant varieties, crop rotation, or seed treatments, are effectively reducing SCN populations over time. This data helps you make informed decisions about your long-term soybean production strategy.
3. **To understand whether soybeans or dry beans can be planted in the following season.** If SCN populations are very high in a field, you may need to rotate away from soybeans temporarily to allow populations to decline naturally. Sampling tells you the current population level and helps you decide whether it's safe to plant soybeans again next year or if a rotation to another crop would be more profitable.

Since 2013, the North Dakota Soybean Council and NDSU Extension have partnered to provide sample bags for North Dakota farmers to test their fields for SCN free of charge. In 2025 and 2026, the Northharvest Bean Growers Association is supporting sampling in dry bean fields (more on this below). The North Dakota Soybean Council-supported sample bags have been distributed to county Extension offices across the state, and each farmer can request up to 3 bags for sampling on their farm. These soil samples will need to be sent to Agvise Laboratories along with an information sheet needed for reporting numbers back to you and providing NDSU Ext. with the numbers for the creation of mapping. From previous years of sampling, SCN has been found to be present in over 25 counties in North Dakota, but the highest levels are observed in the Red River Valley.

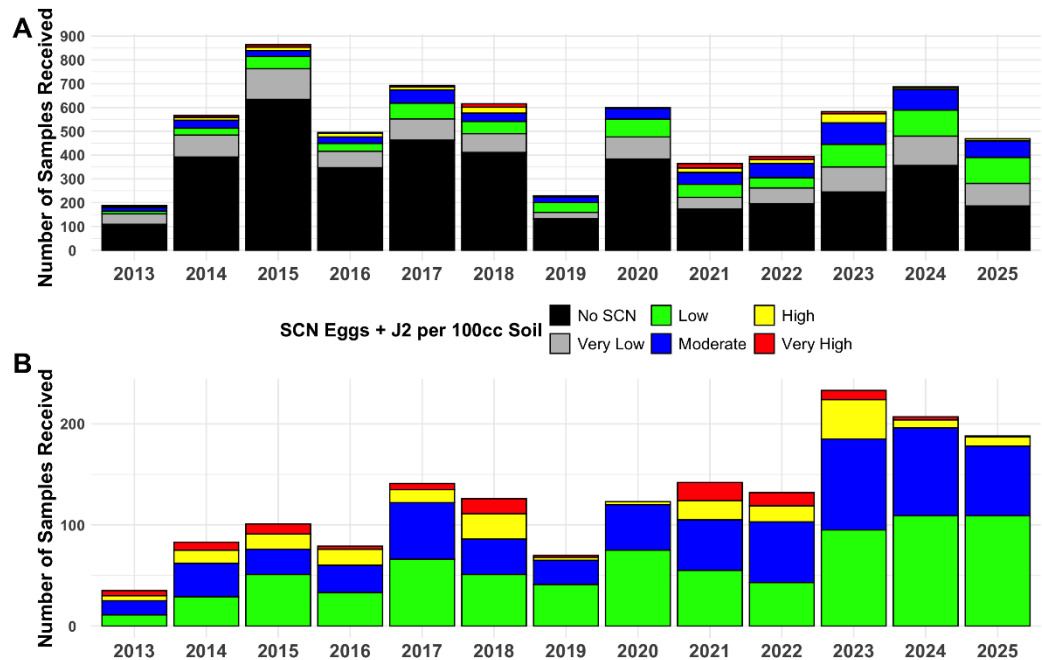


Figure 2. Evaluation of the number of submitted soil samples within each of the six classification levels. Figure 2A represents all samples, and Figure 2B represents all positive samples. Samples are classified based on their egg counts as either No SCN (0 eggs + J2/100 cc), Very Low (1-200 eggs + J2/100 cc), Low (201 – 2,000 eggs + J2/100 cc), Moderate (2,001 – 10,000 eggs + J2/100 cc), High (10,001 – 20,000 eggs + J2/100 cc) or Very High (greater than 20,000 eggs + J2/100 cc).

North Dakota SCN Egg Counts 2013-2025

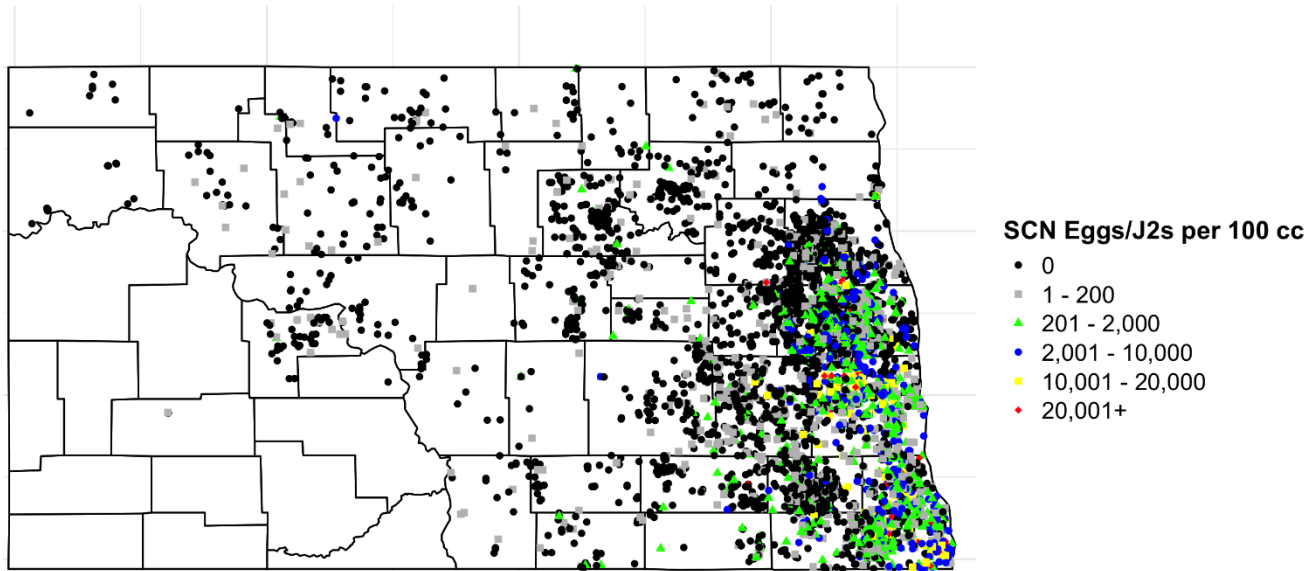


Figure 3. Map of North Dakota displaying SCN soil samples collected from 2013-2025. Samples are classified based on their egg counts as either No SCN (0 eggs + J2/100 cc of soil), Very Low (1-200 eggs + J2/100 cc), Low (201 – 2,000 eggs + J2/100 cc), Moderate (2,001 – 10,000 eggs + J2/100 cc), High (10,001 – 20,000 eggs + J2/100 cc) or Very High (greater than 20,000 eggs + J2/100 cc).

For North Dakota Soybean Council supported sampling bags, please contact your local county Extension agent for sampling supplies and instructions. For Northharvest Bean Grower Association supported sampling bags, please contact Jennifer Hansen at jennifer@northharvestbean.org.

Sampling is an investment in understanding your field's health and protecting your soybean profitability. Don't wait, get your samples in before the season ends. Look for a detailed discussion of SCN management strategies in the next Crop and Pest Report.

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SUNFLOWER STEM DISEASES

Now is a great time to scout your fields for sunflower stem diseases. What you find now will influence what you see on your farm in the future and may prove critical for future disease management.

There are seven stem diseases that I expect you might find in sunflowers at this time of the year. Three that primarily occur on the mid-stem (infection initiated through the leaves), three that occur on the base of the stem (initiated through the roots), and one wild card which may manifest in multiple ways.

The three primary MID-STEM sunflower diseases.*Phoma Black Stem*

Phoma is the most common stem disease in our region, but it is very rarely economically important.

Key Symptoms (Figure 1): Small (1-2 inch) coal-black lesion centered on a petiole, usually superficial. Many lesions may occur on the same stem. Lesions generally do not impact stem integrity.

Phomopsis Stem Canker

Can be commonly found when frequent rainfall occurs during the growing season; I have seen much less this year. Severe yield loss can occur in an epidemic. Lesions commonly degrade the pith, resulting in yield loss and lodging.

Key Symptoms (Figure 2): Large (often greater than 6 inches) brown lesion centered on a petiole. Stem becomes hollow underneath the lesion, and is easily punctured with thumb pressure. Wilting and lodging may occur. For more information, check out the new (July 2026) [NDSU Extension Publication Phomopsis Stem Canker of Sunflower](#).

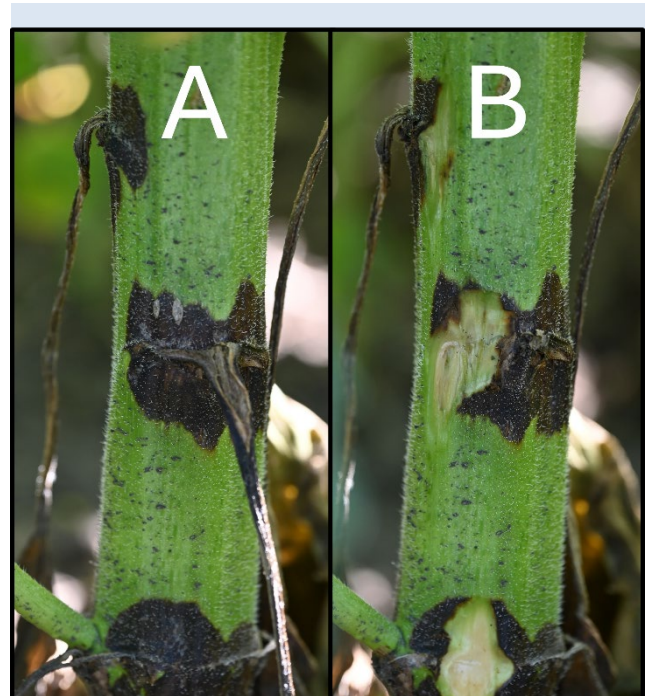


FIGURE 1 – *Phoma* black stem lesions centered on petioles, undisturbed (A) and superficially sliced (B), demonstrating superficial infection.



FIGURE 2 – Large brown *Phomopsis* stem canker lesion lodging a sunflower plant.

Sclerotinia Stem Rot (aka Sclerotinia Stalk Rot)

Least common of the three stem diseases that infect through the leaves. Caused by the same pathogen (*Sclerotinia sclerotiorum*) that ravages sunflowers as Sclerotinia wilt and Sclerotinia head rot, and causes yield loss on canola, dry edible beans, pulse crops, soybean, etc. Infection is heavily dependent on wet weather and is favored by cool temperatures. The mid-stem rot manifestation of the disease is less common than Sclerotinia wilt or Sclerotinia head rot. Yet, it is highly devastating to infected plants.

Key symptoms (Figure 3): Large (often greater than 6 inches) white/cream to tan colored stem lesion centered on a petiole. Stem frequently shreds and lodges. Fungal growth and black fungal bodies may appear on or in stem.



FIGURE 3 – Sunflower shredded and lodged from large and tan Sclerotinia stem rot lesion.

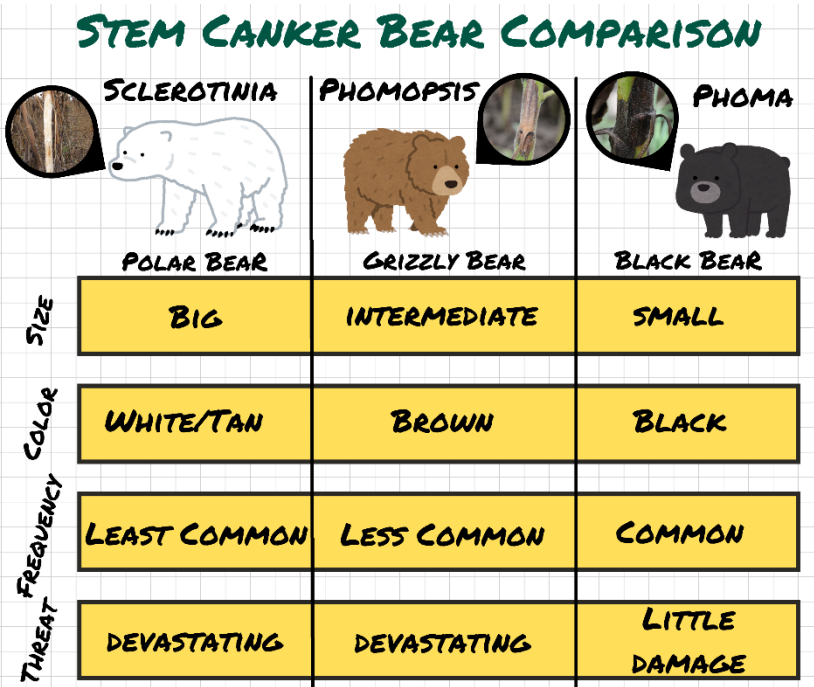


FIGURE 4 – Visual analogy of sunflower mid-stem diseases and bears.

A visual analogy

The National Sunflower Association just published an article that compares these three diseases to three North American bears in the [Sunflower Magazine](#) (August/September 2026).

Succinctly, Phoma black stem is the most common stem disease, has small and black lesions, and does little damage (Black Bear); Phomopsis is less common, has large and brown lesions, and can be devastating (Grizzly/Brown Bear); Sclerotinia mid-stalk rot is the least common among them, has enormous white/tan lesions, and can be devastating (Polar Bear) (Figure 4).

The three primary LOWER STEM / BASAL WILT sunflower diseases.

Charcoal Rot

Charcoal rot is caused by *Macrophomina phaseolina*, the same pathogen that causes charcoal rot on soybeans, corn and other crops. Charcoal rot is more common in hot and dry years, and consequently, I expect charcoal rot to appear in a variety of crops this year. Charcoal rot seems to be less common in sunflower than other crops (like soybean), and yield loss in sunflower is thought to be rare. However, given our hot dry summer, I would pay attention to charcoal rot in 2026.

Key Symptoms (Figure 5 and 6): Premature senescence, gray lesion at the soil line appearing to spreading up the stalk, small black specks (microsclerotia) in the stem.



FIGURE 5 – Gray lesion spreading up stem



FIGURE 6 – Small black microsclerotia in stem tissue.

Verticillium wilt

Verticillium wilt has occurred in our region, but has been less common than other stem diseases for many years. Its distribution in a field is spotty or patchy, but where it appears, complete wilt and premature plant death can occur.

Key Symptoms (Figures 7-9): At mid-season, symptoms may first be observed as severe interveinal chlorosis and necrosis on the leaves, with severity decreasing towards the top of the plant. A cut stem will reveal a brown 'ring' around the pith. In the later season (now) an external gray lesion on stalk may occur. If the stem is cut, the pith will be shrunken/compressed and covered with black microsclerotia. The inside of the pith will remain white.



FIGURE 7 – Foliar symptoms of Verticillium wilt appear as severe interveinal chlorosis and necrosis.



FIGURES 8 and 9. Cut stem symptoms of *Verticillium* wilt include a brown vascular ring (mid-season) and compressed and blacked pith (late-season).

Sclerotinia Wilt (aka *Sclerotinia* Basal Stem Rot)

In North Dakota, the wilt manifestation of *Sclerotinia sclerotiorum* infection is typically more common than the mid-stem rot (above) but less common than head rot. The disease occurs when germinating sclerotia directly infect the roots. This manifestation of the disease can occur in virtually all temperature conditions as long as there is sufficient soil-moisture in the early part of the season (unlike the cool and wet weather that favors mid-stalk and head rot). Consequently, in hot dry climates (such as the High Plains) *Sclerotinia* wilt is the most common manifestation of the disease. Unless late season rains facilitate late season head infections, I expect the same may be true in ND in 2026.

Key symptoms (Figure 10): Large (often greater than 6 inches) white/cream to tan colored lesion extending from the base of the stem. Whole plant wilt, typically around the time of budding. Plant may lodge and shred at base of stem. Fungal growth and black fungal bodies may appear on or in stem. Commonly occurs in rows.



FIGURE 10 – Sunflowers with basal stem rot. Note large tan-colored lesions, shredding and lodging.

A WILD CARD

Bacterial Stem Rot

Bacterial stem rot is seen occasionally, and in isolated cases in 2024 and 2025, it has caused yield loss. It can be a visually striking, smelly disease, but can also be hard to identify unless the stem is cut open. Infection may begin in a variety of ways, but the symptoms are generally the same.

Key symptoms (Figure 11): First observation may be a plant wilting, without visual stem lesions. Stem may be easily squeezed, particularly in the lower stem. The interior of the stem may be filled with an ooze; I recommend splitting a soft stem longitudinally (bottom to top). Lodging may occur. A burst or lodged stem may smell like rotten potatoes. At the end of the season, stems may turn black.

For more information visit:

[NDSU Extension Sunflower Disease Diagnostic Series](#)

[Disease Section of the National Sunflower Association website](#)

[NDSU Extension Phomopsis Stem Canker of Sunflower Publication](#)

[The Sunflower Magazine August/September 2026 Issue](#)



Figure 11. Sunflower stem with bacterial stem rot, sliced longitudinally.

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Broadleaf Crop Agronomist

2026 CORN DISEASE SURVEY – PRELIMINARY REPORT

Members in the NDSU Extension Cereal Crop Pathology program have been busy driving the gravel roads and highways looking for disease in North Dakota corn fields. As to be expected, disease levels are much lower than what was observed in 2025. Yet, we are still able to find corn diseases. We have visited over 80 fields up to this point and a summary of foliar disease

2026 Corn Disease Survey – Preliminary Report

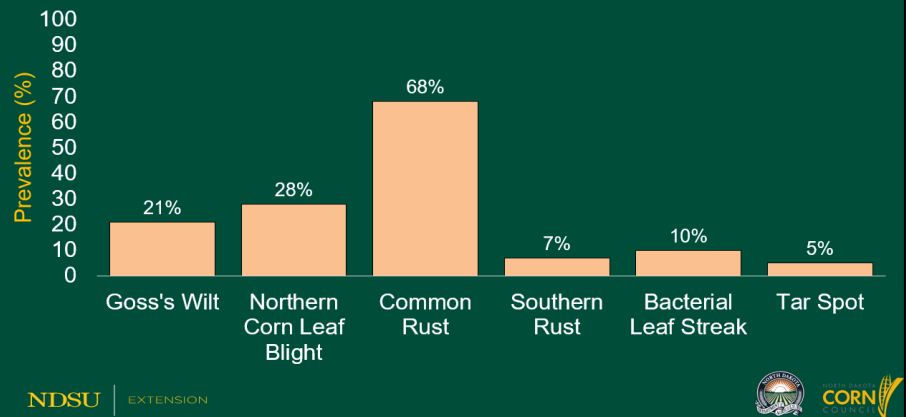


Figure 1. Preliminary results of field prevalence for six foliar diseases from scouting efforts on over 80 corn fields.

prevalence (% of fields with at least one plant with a specific disease) is reported in Figure 1.

Three take-home points from the survey at this point:

1. Foliar diseases are not going to limit yields this year. Common rust has been the most common disease followed by northern corn leaf blight and then Goss's wilt. Although we have observed foliar diseases in fields, incidence (how often) and severity (how much) within a field have been very low. These disease observations combined with the advanced crop stages have lessened concerns with yield loss caused by foliar diseases in 2026.
2. Tar spot has been found again (Figure 2). We have confirmed tar spot in fields along the southern edge of three counties: Dickey, Richland and Sargent.
3. Be on the lookout for stalk rot and crown rot. Two diseases that are likely to occur at greater frequency under water stressed environments are stalk rot and crown rot. Stalk integrity should be checked in fields (especially on hybrids with below average stalk scores) by doing the "push test". To conduct a push test and assess lodging risk, push the plant above the ear to approximately a 30-to-45-degree angle from vertical. Plants that break or fall over would fail the push test. Do this at five locations across a field and assess 20 plants at each location. Fields that have greater than 10% of the plants failing a push test should be prioritized for harvest.

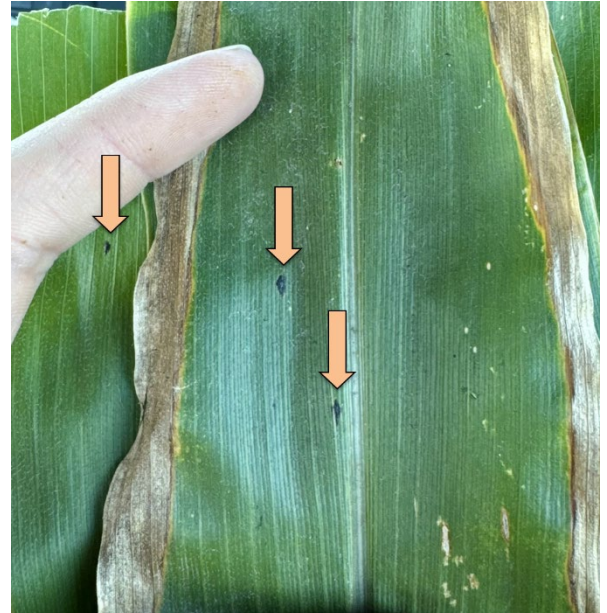


Figure 2. A few tar spot lesions (highlighted by orange arrows) on a corn



Figure 3. (A) Premature death (ghosting) of corn plants due to crown rot; (B) Comparison between a healthy crown and a crown impacted by crown rot; (C) Stalk failing the push test due to stalk rot and poor stalk integrity.

[Andrew Friskop](#)

Extension Plant Pathology, Cereal Crops

LATE-SEASON CLS CONTROL IN SUGARBEET

Cercospora leaf spot (CLS), caused by the fungus *Cercospora beticola*, continues to be a concern in sugarbeet, even in September. Daytime temperatures have continued to be fairly warm. Together with rain and dew, these environmental conditions continue to promote spore germination and CLS infection. Disease severity can increase rapidly and lead to economic loss. Reductions in healthy foliage have a two-fold negative impact on yield. First, photosynthetic tissue is reduced, directly limiting the plant's capacity to produce and store sucrose. Second, new leaves will grow and consume stored sucrose in the process.

Therefore, fungicide applications in September can be an important part of any CLS management plan. There are a few considerations since this is often the final pass for disease management.

1) **Pre-harvest interval (PHI): Can the field be harvested after the fungicides' pre-harvest interval (PHI) has expired?**

For example, triazole fungicides vary between 7-, 14-, and 21-day PHIs. Most pyraclostrobin products and tin fungicides have a 7-day PHI. Copper has a 0-day PHI and may be applied right up until harvest.

2) **Fungicide resistance management:**

As always, best practices to reduce the survival of fungicide-resistant *Cercospora beticola* is essential. **Tank-mixing multiple modes of action and mode of action rotation** are best practices that should be continued.

Please refer to the [Sugarbeet Production Guide](#) as well as cooperative agriculturalists for information on specific fungicide selection.

If late-season CLS sprays rely on fungicide groups that were already heavily used, it's possible to have another two-fold negative: lack of control in the current season, and selecting for even more resistance in the future. Late-season CLS control is also about minimizing the inoculum load that contributes to future disease outbreaks.

[Eric Branch](#)

Extension Plant Pathology, Sugarbeets

SOYBEAN CYST NEMATODE IDENTIFIED IN SOUTHWEST NORTH DAKOTA

The annual survey for soybean cyst nematode (SCN) across the state is an incredibly important effort to assess the risks and needs for mitigation strategies of SCN for North Dakota soybean production. Although we are always hoping for more moisture out here, one of the benefits to our dry climate is generally low risk of disease in our crop fields. This could explain the lack of SCN monitoring in the region. However, results from this summer suggest the presence of SCN in soybean fields in Adams, Grant, and Morton counties.

The threshold for SCN mitigation strategies is above 200 eggs per 100 cubic centimeters of soil. The highest count came from a field in Adams County, with 100 eggs per 100 cc soil. We are below the threshold in the southwest for now, at least in the fields that were sampled. Now that we have

suspected cases of SCN in our region, it is incredibly important that producers continue to monitor their soybean fields every year to track SCN numbers. Testing is free and sampling materials are available at all Research Extension Centers and county offices.

[Alexis Correia](#)

Extension Conservation Agronomist

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Extension Plant Pathology, Soybeans



CORN CROP CONDITION GENERALLY POOR TO VERY POOR IN SE ND; CORN FAIR TO GOOD IN NE ND

I spent time driving across Cass County and along I-29 between Fargo and Grand Forks the last two weeks of August. In general, corn in central and southern Cass Co. ND looks poor to very poor. Many fields are stunted and short to very short, some barely taller than I am (5'4") and some as tall as me or shorter. Two to three weeks ago, corn fields in central and eastern Cass Co were brown 3 ft above the ground and with tassels and uppermost leaves also turning brown and drying out. See photo below, which was taken on August 6, 2026. Corn north of Fargo looked poor to very poor in northern Cass, but overall



Photo 1: Corn field east of Prosper, ND in Cass Co. taken August 6, 2026. Average height of the corn estimated to be 6 feet. Clearly stunted and lower leaves dying off. Tassels and top nodes also beginning to brown and dry out.

tended to improve as one got farther north. A farmer cooperator with one of our variety trial locations east of Thompson, ND received 3 inches of rain in late July to early August and additional rain in mid-August. Our corn trial there looks good to very good. Many corn fields between Fargo and Hankinson looked almost entirely brown from the road, easily 4-6 weeks earlier than normal for such wide-spread dry foliage. There were certainly edges of corn fields visible with very small or no ears.

I sampled some ears from a corn field south of Moorhead in Clay Co. MN on Sept. 8th, 2026. The corn was dented (R5) and about 20-25% moisture based on my "tooth test", aka biting through a few kernels. A few kernels were at black layer R6. I did not get an accurate count of number of

plants with harvestable ears (aka stand count), but I think providing a range is helpful here for learning purposes. Keep in mind that Clay Co. MN fields in the Red River Valley typically average 150-180 bushels per acre and 200-220 bushel corn is achievable in years with good rainfall and attentive management. As for stand count in the field I sampled, the one small portion I walked appeared to be seeded at 32,000 plants per acre, but *not every plant had an ear*. Most plants did have an ear, but there were 1-2 barren plants per the portions of row that I walked. If you are in a drought-stricken area and go out to do corn yield estimates, count plants with viable, harvestable ears as your stand count and do NOT include barren plants in your count. These could easily skew your yield estimates high. See Photo 2 for the five ears I collected. Their kernel counts (# around by # long excluding narrow tips and abnormally large base kernels) were: 17 x 19; 18 x 21; 18 x 17; 18 x 17; 16 x 17. Average number of kernels per ear was thus calculated as 317. The formula for estimating corn yield based on kernel counts is: $((\# \text{ kernels around the ear} \times \# \text{ kernels long}) \times \# \text{ harvestable ears per acre}) / 90$. Reminder, 90 is used as a standard assuming normal kernel size and test weight. Given the difficult drought conditions where I collected cobs, a denominator of 100 is likely more appropriate. See the table below for a range of estimated yields based on # harvestable ears per row using either 90 or 100 as the denominator. Exceptionally good kernel fill conditions could justify 85 as a denominator and, conversely, extreme drought conditions could justify using 105.

Table 1. Example of yield estimate calculations for a single corn field in Clay Co MN south of Moorhead with cobs shown in Photo 2 that were collected on Sept. 8, 2026.

# harvested ears/ row	Kernels/ cob	Denom. 90	Denom. 100
28	317	98.6 bu/ac	88.8 bu/ac
30	317	105.7 bu/ac	95.1 bu/ac
32	317	112.7 bu/ac	101.4 bu/ac
34	317	119.8 bu/ac	107.8 bu/ac

As you can see, yield estimates range from about 90 to 120 bushels per acre. Given my observations of the field, I think going with 30K plants per acre and 100 as the denominator puts the field in the 95 bushel per acre yield neighborhood. Considering that this area usually grows 180-200 bushel corn, this represents a substantial yield loss due to drought, approximately 50%. In the coming weeks, I will attempt to visit more fields and provide more estimates of what I am seeing in regards to corn yields.



Photo 2: Corn ears sampled from a field south of Moorhead, MN in Clay Co. on Sept 8, 2026. Note the “zippering” and uneven fill pattern of the kernels on the ears. Also note the lack of fill to the tip, aka barren tips or tip die back, which is typical of drought conditions.

For everyone out there with corn to harvest, go out and check your fields for black layer and moisture status now if you haven't already! The high temperatures and low to moderate humidity of the past two weeks are causing corn to mature ahead of normal and extremely quickly in drought-affected fields. I encourage growers and their agronomists to keep an eye on drought stressed fields and get the combines ready, even if this seems like a month or more ahead of normal. With the drought stress severe in some fields, plants will mature and dry down much more quickly than you may be used to. The corn is well past being able to recover, so what is out there now is all that there will be; yield has been set, hopefully more favorable conditions from now until harvest will favor good test weight. If you can, consider harvesting a little on the early side to avoid excess ear drop due to potentially weak shanks that are drying out quickly. Once corn gets below about 17% moisture, it can become brittle and subject to shattering off the cob too easily and/ or excess kernel breakage during threshing.



Photo 3: Kernels cut open from cobs collected on Sept 8, 2026. Two of the five kernels shown had reached black layer (R6), aka physiological maturity. Knife tip is pointing to the black layer of cells visible when R6 is reached and kernels begin to dry down.

Stay safe out there and keep a water truck handy. Best wishes for a safe harvest.

[Clair Keene](#)

Extension Agronomist Small Grains and Corn

DROUGHT DEFINES A HIGHLY VARIABLE SOYBEAN SEASON ACROSS ND & NW MN

As the 2026 soybean season approaches harvest, one word describes crop conditions across North Dakota and northwest Minnesota: **variable**. From fields with good yield potential to areas where little or no crop may be harvested, rainfall distribution and soil water-holding capacity have largely determined soybean performance this season.

Recent reports from NDSU and University of Minnesota Extension professionals featured on *In the Pod: Soybean Updates* highlight just how different conditions can be, not only across the region but also within individual counties.

Drought dominates the season

By mid-August, dry conditions covered nearly all of North Dakota, with areas of extreme drought (D3) in western and eastern portions of the state. Rainfall has also been extremely localized, meaning one field may receive beneficial rainfall while another only a few miles away remains dry.

That variability is clearly reflected in soybean conditions. In east-central North Dakota, NDSU Extension cropping systems specialist Jeff Stachler reported excellent soybean potential in areas that received timely rainfall and had soils with good water-holding capacity. In contrast, soybeans on sandy or low water-holding-capacity soils were severely stressed and, in some cases, already dead.

Similar variability was reported in south-central North Dakota. NDSU Logan County Extension agent Josh Becker observed soybean fields ranging from approximately R2-R3 to R5-R6 in early August, with plants ranging from ankle-high to chest-high depending on local growing conditions.

In west-central North Dakota, conditions were somewhat more favorable. NDSU Mercer County Extension agent Craig Askim expected approximately average yields or just below average in his area, but drought created another challenge: uneven maturity. Some drought-stressed plants reached physiological maturity early, while rainfall later in the season stimulated regrowth and flowering in other plants. This uneven development may complicate harvest decisions.



Figure 1. Field under drought conditions in Cass County, ND.

Drought brings additional challenges

Water stress has not been the only concern. Dry conditions have favored some pests, particularly **spider mites**. Stachler reported spider mites moving into stressed soybean fields in east-central North Dakota, while University of Minnesota Extension crops educator Angie Peltier described substantial spider mite infestations across parts of northwest Minnesota. Infestations frequently began along field edges and in drier portions of fields. Northwest Minnesota has faced particularly difficult conditions, with Peltier reporting areas receiving 6 to 9 inches less rainfall than the 30-year average. Drought caused some soybean fields to mature earlier than desired. At the same time, frogeye leaf spot was observed farther north than typically expected following hot and humid conditions earlier in the season.

Scout fields individually as harvest approaches

The experiences across the region reinforce an important message for growers: **this is not a year to make management decisions based solely on what neighboring fields look like**. Rainfall, soil characteristics, planting conditions, pest pressure, and crop development have created substantial field-to-field variability.

As harvest approaches, growers should continue scouting individual fields, paying particular attention to crop maturity, late-season insect pressure, and areas that experienced severe drought stress. Uneven maturity also may require additional consideration when determining harvest timing.

The 2026 season has demonstrated how quickly soybean yield potential can diverge when rainfall becomes limited and highly localized and why knowing the conditions within each field remains critical for making late-season management decisions.

Information summarized from recent episodes of NDSU Extension's In the Pod: Soybean Updates, featuring Angie Peltier, University of Minnesota Extension; Craig Askim, NDSU Extension; Daryl Ritchison, North Dakota State Climatologist; Josh Becker, NDSU Extension; and Jeff Stachler, NDSU Extension.

To hear the full episodes, visit [In the Pod: Soybean Updates | NDSU Agriculture](#)

[Ana Carcedo](#)

Broadleaf Crop Agronomist

DROUGHT-STRESSED CORN SILAGE

Drought-stressed corn can be chopped for silage. If considering turning a corn crop into silage, first check with your crop insurance agent. Then check pesticide labels to make sure that harvest intervals and restrictions are followed.

In general, the feed value of drought-stressed corn is 70-90% of normal corn. However, drought-stressed corn can still make quality silage. Corn silage produced from drought-stressed corn may be higher in crude protein (11% vs. 8%), but lower in energy (61% TDN vs 70% TDN) compared to normal corn silage. This will depend on the amount of ear development that occurred before chopping. These nutrient values will meet or exceed the nutrient requirements of gestating beef cows from the last 1/3 of pregnancy through the first 90 days after calving. Two of the most critical points during the cow's production cycle. Drought-stressed corn silage should be tested for feeding value after the ensiling process has been completed.

Moisture content is critical for making good corn silage. Ideal moisture content for silage placed into bunkers is 65%-70%. If it's chopped too dry, it will not pack or ferment well, increasing the chance for spoilage. Chopped at moisture levels too high, and silage can weep, reducing nutrient content and increasing the possibility of clostridial bacteria forming.

Moisture content of corn can be deceptive and should be tested before chopping. Corn stalks can hold a lot of moisture, and a field that looks dry can have a higher moisture content than you might think. If moisture levels have dropped below 65%, water can be added to raise the moisture content, but it is usually not practical. As a rule of thumb, it takes seven gallons of water per ton of silage to raise the moisture content by 1%. If moisture levels are too low for proper ensiling in a bunker, consider other methods, such as silage bags or baleage.

Nitrate levels can be elevated in drought-stressed corn and should be tested. Nitrates accumulate in the lower part of the plant stalk. Raising the cutting height to 10-12 inches will help reduce the concentration of nitrates going into the silage. Raising cutting height will reduce yield, but the trade-off can be worth it. Nitrates will also decline as the corn goes through the ensiling process. It is still good management to test the silage before feeding, just to make sure nitrate concentrations are at a safe level.

If corn to be ensiled is on the dry side, reducing the chop length can improve silage packing. This will increase the anaerobic environment and improve ensiling. Adding a microbial inoculant to drier silage can also improve the ensiling process. When adding an inoculant, follow the label directions to ensure that an adequate number of bacteria are added to the silage volume for the process to be effective.

Corn should be ensiled for a minimum of three weeks. Always be cautious and aware that silo gas can form during the ensiling process, and it is lethal.

Additional information about the economics of chopping very low-yielding corn for silage is contained within the NDSU's Corn Silage Decision Tool, which can be found at:

<https://www.ndsu.edu/agriculture/ag-hub/corn-silage-decision-tool>.

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Extension Forage Crops Production Specialist

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INTERPRETING THE SOIL TEST RESULTS FOLLOWING A DROUGHT

As I mentioned in the [August 27th, 2026 Crop and Pest Report](#), we will certainly be facing challenges this year when it comes to soil sampling in drought-stricken areas of the state. Firstly, collecting a good sample will be a challenge. As always, collecting a sample of the proper depth is essential to get accurate soil test results. If you cannot collect a full 24-inch sample for nitrate-N analysis, it is important to note this when submitting the sample to the lab. A sample shallower than 24 inches can result in an inaccurate estimate of nitrate-N in the full two-foot soil profile. Secondly, prolonged dry soil conditions can both directly and indirectly impact the results of the soil analyses.

Nitrogen: This year's residual N levels in dry areas will likely fall into two main categories: high or similar to last year, depending on the conditions this spring. In areas of the state receiving anhydrous ammonia or rain following a broadcast urea application, particularly where yields were low, we will likely see some very high residual N levels. In parts of the state receiving little

meaningful rain after fertilizer application, the fate of the applied N will depend heavily on the fertilizer source and what happened after application. Urea which remained on the soil surface without sufficient moisture for incorporation may have been lost through ammonia volatilization. In contrast, ammonium-containing fertilizers such as AMS and MAP are not subject to the same volatilization risk as surface-applied urea, although their N can undergo other transformations once conditions become favorable. Depending on the timing and amount of rainfall, some of the applied N may still be present in the soil, while some may have been lost through other processes.

This is the year for nitrate-N sampling!

Phosphorus: Unlike N, we need not concern ourselves with P losses this year (unless, of course, you were faced with severe erosion this spring see [Soil Erosion: Where We Go From Here](#)). What we do need to consider, though, is how this year will affect our P trend over time.

With low crop yields, there will be less P removal in the harvested crop, which could contribute to an increase in soil test P from last year, providing the crop was fertilized based on the recommendation in the medium to high soil test categories. However, low rainfall also means less residue decomposition and less movement of P from less-available pools into the plant-available pool. Consequently, soil-test P may not increase as much as expected and could even be somewhat lower than normal following a very dry period.

The amount of P remaining in crop residue can be substantial. For example, approximately 37 lb. of P_2O_5 can be contained in the stover of an average corn crop. Much of this P will eventually be recycled to the soil as the residue decomposes, but dry conditions can slow this process. This is something to keep in mind when interpreting this year's soil-test P results and comparing them with previous years.

Potassium: Potassium levels will be the most affected by the drought conditions, and the impact on the soil tests may be substantial! In heavy shrink-swell, smectite clays, K^+ will become "fixed" between the drying clay layers, becoming both less plant available and less extractable during the soil testing procedure (see [North Dakota Clay Mineralogy Impacts Crop Potassium Nutrition and Tillage Systems](#)).

In extreme conditions, swings of 100+ ppm soil test K have been noted between field sampled in previously wet versus dry conditions. This year, the results of the K analysis will appear starkly lower. Do not be alarmed by the lower K levels but also keep this in mind when making recommendations for next year. If you applied K this year and your soil test comes back lower than the previous sampling, do not assume the fertilizer has disappeared. Some of the K may be temporarily retained in clay interlayers and become more available as soil moisture returns. However, soil-test K should still be interpreted in the context of soil clay chemistry, crop removal and the overall fertility history of the field.

pH: For parts of the state where acid soils are becoming an issue, extremely dry conditions can appear to exacerbate the issue. Following a drought, soil pH can be up to 0.4 units lower; however, buffer pH used to make liming recommendations is less impacted by drought.

[Brady Goettl](#)
Extension Soil Specialist



WHY STRESS MANAGEMENT MATTERS TO YOUR BOTTOM LINE

In the engineering field, stress means ***the capacity to withstand strain***. When applied to people, stress is more complex. However, recognizing and managing stress is important on your farm or ranch operation. It matters to your health, your relationships, your energy to work, and the decisions you make that affect your bottom line.

What Is Stress?

Everyone takes energy (strength) from the sun, air, and food. When people remain relaxed and balanced as they go about their daily tasks, this energy flows in and out of their bodies in a healthy, harmonious way. But when they feel anxiety and their muscles tie up in knots, their breathing tightens, and their stomachs, shoulders or necks become tense? This is the experience of **stress** — energy in a blocked or chaotic state.

When you put your body in “passing gear” to work as fast as possible to bale that hay before the storm comes, you experience stress. You feel the effects of powerful hormones being released into the body. Your *blood pressure rises*, your *heart rate quickens*, and your *breathing and blood flow accelerates*.

Healthy Adjustment to Stress

If you adjust to the stressful event, you move on into the relaxation response, in which blood pressure goes down to a normal, healthy rate. While occasional operation in passing gear in an emergency situation does little, if any, harm, keeping yourself under heavy strain for lengthy periods of time or experiencing too many stressful events at one time is dangerous. Just like a boiler that bursts under too much pressure, your body breaks down and your health suffers.

This is one critical reason why stress management matters so much to your bottom line. If stress destabilizes your health, your ability to work and function on your farm or ranch becomes more limited. If stress interferes with your mental and emotional well-being, then your focus on work and ability to perform well in your work is also diminished. Maintaining your health depends on good stress management, and your health is your most asset on your farm or ranch operation.

You always have two choices: the *stress response* or the *reaction response*. If, at the first warning signs of stress, you take a moment to relax and breathe deeply, you will find that you have more energy, can concentrate better and actually can get more done in less time.



NDSU Extension reminds each of us to “check the signal” and think about how we are functioning mentally and physically. And—let’s talk about it!

Access Helpful Resources

To learn more about available resources to assist in managing stress in agriculture, read the NDSU Extension publication FS1804, "Farming and Ranching in Tough Times" – link: [Farming and Ranching in Tough Times | NDSU Agriculture](#)

If you or someone you know is in need of mental health support, call or text the **9-8-8 Suicide and Crisis Lifeline**, or chat at <https://988lifeline.org>.

Contact your NDSU Extension county office or search the Web for *NDSU Extension farm stress* for more resources on wellness in agriculture.

[Sean Brotherson](#)

Extension Family Science Specialist

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Extension Farm and Ranch Stress Program
Coordinator



EMERALD ASH BORER SPREADS TO BISMARCK, ND

The emerald ash borer (EAB) was found in Bismarck, North Dakota. City crews were removing some declining ash trees and noticed the telltale signs of EAB – serpentine galleries beneath the bark and D-shaped exit holes. The arborists looked closer and found the insect itself.

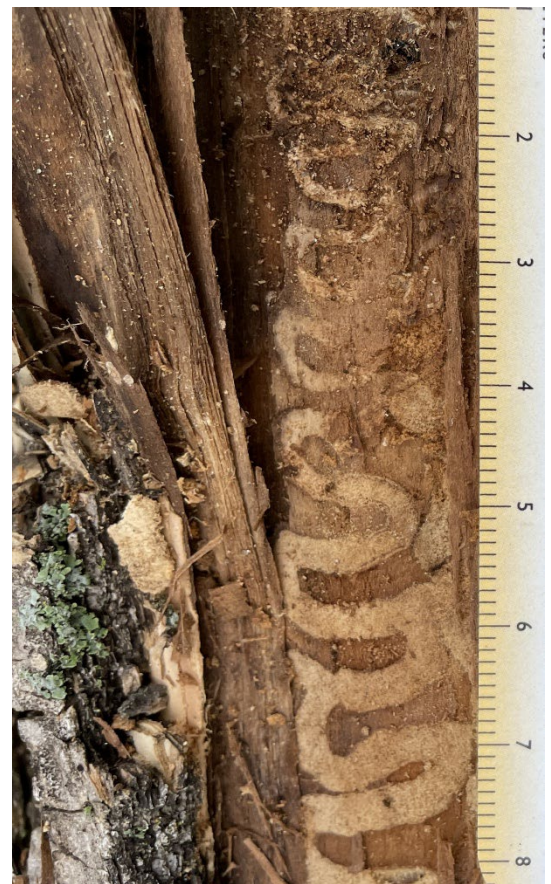
EAB is a very destructive pest, and its impact on North Dakota will be big. That's pretty vague, so let's look at EAB "by the numbers."

Three: the number of North Dakota counties with known EAB infestations. The first find was in LaMoure County in August 2024. No new infestations were found in 2025, but both Cass and Burleigh followed this year.

90 million: the estimated number of ash trees in North Dakota's native forests, shelterbelts and urban forests. There's a lot at stake.

22%: Bismarck's current population of boulevard ash trees. Since 2008, the city's forestry department has worked hard to reduce the percentage of ash trees by removing those in poor condition or those in poor locations. In 2008, 36% of Bismarck's urban forest was ash trees.

Up to 80%: the amount of boulevard ash in some communities in North Dakota. The cost of removing and



Emerald ash borer larvae chew a serpentine gallery beneath the bark. (NDSU photo)

replacing those trees will be substantial. Many communities have already begun diversifying their urban forests, but some have not. Find out more about your community's urban forest via the North Dakota Tip Tool, courtesy of the North Dakota Forest Service: <https://ndcitytrees.org/NorthDakota/>.

\$950,000: the amount of funding allocated by the North Dakota legislature for communities to prepare for the emerald ash borer. The funds were distributed via a grant program managed by the North Dakota Forest Service. It's unknown if funding for these efforts will continue.

250-plus: the number of EAB traps placed across the state by the North Dakota Department of Agriculture. Traps have been placed every year since 2008 in high-risk areas such as campgrounds, rest areas and large rail yards. While EAB will spread only about one to two miles per year on its own, long-distance spread mainly occurs through the movement of firewood and through wood packing materials.

\$5,000: the fine for moving firewood out of a quarantined county. The North Dakota Department of Agriculture sets quarantines; a map of quarantined counties is available at <https://www.ndda.nd.gov/eab>.

Two to three years: the duration of protection against EAB provided by injections of emamectin benzoate, a highly effective insecticide. The insecticide must be injected, most often by a professional. Injections are pricey but highly effective for two years, sometimes three.

Approximately 40%: the maximum amount of canopy dieback that an ash tree can suffer due to EAB and still respond to injections of emamectin benzoate. This measurement is approximate – sometimes, a tree with 40% dieback won't recover, even with a timely insecticide treatment.

15 miles: the distance from an EAB find, where injections are recommended. Another way to look at this is that injections are not recommended unless EAB has been found within 15 miles of your location. It might take 10 years or more before EAB reaches your area, and giving unnecessary treatment can be a waste of both time and money.

Emerald ash borer is in our state, and it's not going away. Prepare your own yard, farmstead or community for this pest.

NDSU Extension has more information about EAB biology and its management: ndsu.ag/EAB-26.

Managing EAB in communities has its own challenges, and NDSU Extension has information to help prepare your town: ndsu.ag/EAB-community.

Source: [NDSU Extension and Ag Research News Release](#) (Dakota Gardener) from September 2, 2026:

[Joe Zeleznik](#)
NDSU Extension Forestry Specialist

**BEWARE OF STINGING HORNETS!**

The NDSU Extension Entomology office has been getting calls about swarming hornets or hornet nests in homes or in trees near houses for the past several weeks. This will continue until the first hard frost in the fall.

Hornets (or yellowjackets) belong to the family Vespidae. All yellowjackets sting, and their stinging behavior is a defensive reaction when the colony is threatened. They can sting more than once because their stinger stays with the insect. Yellowjackets are more aggressive during August and September and more likely to sting people. Although yellowjackets are beneficial insects that feed on other insects, they often become pests when nests are located near homes, schools, picnic areas, or playgrounds. Pest control is often warranted.

Biology: These wasps are social insects and build nests of paper-like material. Nests are generally located underground in mammal burrows, in cavities or between house siding. In the northern temperate climates, only the mated queen wasp overwinters from the previous year's colony. Queens are inactive during the winter, hiding in protected places like under tree bark or in attics. In early spring, the overwintering queen builds a new nest and



Hornets or yellowjackets (*Vespula* spp.) in nest
(Susan Ellis, Bugwood.org)

lays an egg in each cell. Larvae hatch from the eggs and are dependent on the queen for food. The queen forages outside the nest and brings food (caterpillars and other insects) back to the larvae until pupation. Sterile female workers emerge from the pupae and take over nest building and brood rearing, while the queen stays in the nest. During late summer into early fall, adult males and newly produced queens leave their parent colony. The colony dies off, and only newly mated queens will find a protected place to overwinter.

Control: Vespid wasps are active outside the nest during the daylight hours. Nearly the entire colony is in the nest during the evening and nighttime hours, so control measures should be

applied to the nest then. There are many insecticides labeled for the control of hornets and yellowjackets. The difficulty is making the treatment without being stung. Usually, an aerosol spray of one of the many fast-acting wasp killers will quickly kill all workers present in the nest. Examples include permethrin, synergized pyrethrins (Spectracide Bug Stop and other brands), and pyrethroid insecticides (such as esfenvalerate - Ortho Bug-B-Gon Garden & Landscape Insect Killer; lambda-cyhalothrin - Spectracide). A slower-acting insecticidal approach is to apply carbaryl (Sevin) dust directly onto the exposed nest and entrance hole. After treatment, check the nest for any activity the following day and re-treat if necessary.

Nests should be removed to avoid attracting dermestid beetles later and to prevent wasp pupae from reestablishing the nest. If dealing with yellowjacket nests in structures like homes, the nest entrance should never be plugged from the outside. If confined, yellowjacket workers cannot escape outside and may locate or chew a new opening to move toward the inside of the home or structure, creating a potential stinging threat to people inside. Yellowjacket nests become an important source of carpet and other dermestid beetle infestations in the home, so the nest should be removed whenever possible. When outside enjoying your picnic, avoid wearing bright colors and perfumes, which attract hornets and yellowjackets, and keep garbage away from the picnic table.

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Extension Entomologist

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NORTH CENTRAL ND

Since the last Crop and Pest Report, small grain harvest was at a rapid pace until recent thunderstorms put everything at a standstill. Wheat harvest is 75 percent complete in the North Central Region. Yields are variable and very dependent on soil types. Yields have varied from 20 bushels to 70 bushels across the region. Quality was good before the recent thunderstorms.

Canola harvest is 20 percent complete across the region. Wind damage has been reported across the region. Yields were 1800 to 2800 pounds per acre; however, some growers have seen a loss of 500 pounds or more from recent weather events. Pod drop has been the most common issue, with the winds shaking the plants and causing the pods to drop off. Recent thunderstorms have brought hail across some of the acres of canola and will cause substantial yield loss as well.

Soybeans have enjoyed the late moisture and recent rain. Most soybeans are in the R6 stage or later. No soybean harvest has been reported yet. Some fields have reached maturity and are drying down, while others are still filling pods. The latest thunderstorms were too late to have a difference on most of the soybean crop now. A few fields will see better seed fill, but most will not be affected.

Corn is between R4 and R5 stages with some denting. With pollination being the major yield-contributing factor, the recent rains will not have a huge impact on yield. Some fields in the area did receive hail and could see lighter test weights. The warmer days have helped push the corn maturity along. Corn yield will be very variable and dependent on soil types.

Recent thunderstorms on September 5th, 6th, and 7th have brought harvest in the region to a complete stoppage. NDAWN station total rainfall reports for the last 14 days show 5.87 inches in Willow City, 3.91 inches in Rugby, 4.03 inches in Rolla, 4.05 inches in Bantry, 3.65 inches in Karlsruhe, 3.06 inches in Maxbass, 2.42 inches in Minot, 1.53 inches in Mohall, and 2.28 inches of rain in Sawyer. This will slow harvest considerably, especially in the heaviest rainfall areas.

[Brenden Klebe](#)

Bottineau County Agriculture and Natural Resources Agent

NORTHEAST ND

The region has received excessive rainfall over the past 10 days, with some areas in Benson County receiving more than 13 inches from multiple rain events. Coupled with rain, wind and hail damage was reported in Ramsey County. The continued wet conditions have resulted in saturated and flooded fields, poor road conditions, and water entering some basements. Field access and harvest operations have been significantly delayed.

Canola and small grains are the primary concerns. Lodging, shattering, sprouting, and potential quality losses are being reported, with some canola fields and small grains flattened and already showing volunteer germination and sprouting (Figs. 1& 2) Small-grain harvest remains behind schedule, and final grain quality is uncertain due to the prolonged wet conditions. Canola harvest has started in some areas, but additional rain is likely to increase losses and further delay harvest. Soybeans are generally progressing, ranging from full seed to approaching maturity, with some fields beginning to color. Dry edible beans are reaching maturity, while potato vines are drying down and harvest is expected to begin soon (Fig. 3). Corn continues to look good in most areas, but heavy wind gusts caused lodging in some areas (Fig. 4). Sunflowers are approaching R7 stage and are standing well (Fig. 5).



Figure 1: Shattered canola germinating in field. Photos: Lindsay Overmyer, ANR Extension Agent. Ramsey County



**Figure 2: Barley sprouting in research plots at Langdon REC.
Photo: Venkat Chapara, LREC**



**Figure 3: Dry beans and soybeans approaching maturity in Cavalier County. Photos:
Lahni Stachler, ANR Extension Agent, Cavalier County**



**Figure 4: Lodged corn due to wind in Ramsey County. Photos: Lindsay Overmyer, ANR
Extension Agent, Ramsey County**

The recent moisture has resulted in exceptional weed growth. Waterhemp continues to produce new growth, with many mature plants present, while foxtail barley has produced a heavy seed crop. Concerns remain about waterhemp management, particularly where mature 3–4-foot plants are being treated with Liberty. Repeatedly allowing mature waterhemp to produce seed and relying on post-emergence control under these conditions could increase selection pressure for herbicide resistance.



Figure 5: Sunflowers at R7 stage. Photo: Lindsay Overmyer, ANR Extension Agent, Ramsey County

Despite the current challenges, many fields had been yielding very well prior to the recent weather, with reports of strong bushels and high protein levels. Overall, excessive moisture is now the primary concern, with delayed harvest, crop lodging, shattering, sprouting, quality deterioration, saturated soils, and increased weed pressure becoming more significant as the wet pattern continues.

[Anitha Chirumamilla](#)

Extension Cropping Systems Specialist
Langdon Research Extension Center

NORTHWEST ND

In the past 14 days rainfall across Burke, Divide, McKenzie, Mountrail, and Williams County have ranged from 0.29 to 3.47 inches of rain. The greatest rainfall has been along the Missouri River, Burke County and the southeastern part of Mountrail County.

As of September 3rd, about 50% of McKenzie County was in D3 (extreme drought) status. The remainder of McKenzie and the lower parts of Williams and Mountrail Counties were in D2 (severe drought). The majority of Williams and Mountrail Counties and a small southern part of Burke County were in D1 (moderate drought) status.

In McKenzie County at least 90% of hard red spring wheat has been harvested with yields ranging from 25 to 70 bushels/A depending upon rainfall and some other factors. Greater than 90% of hard red spring wheat has been harvested so far in the remaining counties, however the substantial rains in most of the northern region may compromise grain quality. In Mountrail County the early planted hard red spring had lower test weights while the later planted hard red spring wheat had higher test weights. Mountrail County hard red spring wheat yielded between 35 to 65 bushels/A.

Canola harvest is greater than 50% completed in the southern part of the region while the northern part of the region is mostly under 25% harvested. In Mountrail County canola yields ranged from 1,300 pounds/A with the later planted canola to a little over 2,100 pounds/A in the early planted canola. The heat in Mountrail County really harmed the later planted canola.

Most dryland corn in McKenzie County will not be harvested for grain. The majority of dryland corn in the county has already been chopped for silage or will be grazed by cattle later this fall. McKenzie County irrigated corn is looking good at the moment. As you move farther north in the region, corn has variable conditions and looks good in the areas with the greatest rainfall.

Soybean conditions in the region are variable, depending upon rainfall. Soybean plants are starting to turn yellow and drop leaves at least in the southern part of the region.

Sunflowers in the region look pretty good for the most part with the bracts yellow to turning brown in the southern parts and just after petal drop in some of the later planted sunflowers farther north. There are few disease and insect issues in most of the sunflowers in the western part of the region.

At least 80% of flax has been harvested in McKenzie County with yields in the 25 to 30 bushels/A range.

[Jeff Stachler](#)

NDSU Extension Cropping Systems Specialist
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SOUTH-CENTRAL/SOUTHEAST ND

Rainfall for all NDAWN stations in the SC and SE ND Counties over the past two weeks range from 0 inch at Leonard and Mooreton, ND to 2.94 inches near Finley, ND. Almost all NDAWN stations in the region north of Highway 200 received greater than 1 inch of rainfall in the past two weeks. Farmers in these areas were very excited. However, most NDAWN stations south of I-94 and east of Highway 3 received less than 0.39 inch, leaving these areas drier than two weeks ago, especially Barnes, Cass, Ransom, Richland, and Sargent Counties.



Figure 1: A dried-up water hole usually filled with water near the Baldhill creek in Griggs County on 8-31-26.

The major issue across much of the region continues to be an intensifying drought at least south of I-94. As of September 3rd, all of Cass and Traill Counties, nearly all of Steele County, much of Barnes and Griggs Counties and small parts of Ransom and Richland Counties were in D3 (extreme) drought intensity. Also, on the 3rd the remaining parts of Barnes and Griggs, most of Ransom and Richland Counties and parts of Eddy, Foster, LaMoure, and Sargent Counties were in D2 (severe) drought intensity. All remaining Counties or parts of counties in the region were at D1 (moderate) to D0 (abnormally dry) drought intensity. Figure 1 shows a dry water spot I've never seen dry near the Baldhill Creek in Griggs County. Figure 2 shows dead and dying soybean plants from extreme drought and sandy soils in Griggs County on 8-31-26.

The departure from the normal minimum daily temperatures over the past two weeks range from plus 3 degrees F near Pickardville and Steele to plus 9 degrees F near Livona with an approximate average across the region of plus 6.5 degrees F. These higher-than-normal minimum daily air temperatures is a big driver for the drastic increase in corn GDD's as seen in Table 1.

Other issues in the region include spider mite populations reaching the top of corn plants at least in Griggs County as seen in Figure 3, but also in other areas of the region as well.

I've never seen spider mites present on the top leaf of a corn plant before. Late-season potassium deficiency and IDC is still present in soybean, particularly in the driest areas of the region. In a southern Nelson County 2024 soybean field, the highest soybean cyst nematode (SCN) egg count per 100 cc of soil was 42,700. This field was planted to wheat in 2025 which should have reduced the SCN egg count by 50% to 21,350 (estimated, not sampled). This season the field was planted to a PI88788 soybean variety and SCN egg counts in this similar area of the field was still above the 50% reduction at 11,650 SCN eggs per 100 cc of soil and visible cysts on soybean plant roots of these "resistant" plants meaning race shift selection is occurring in the field. Northern corn rootworm beetles have continued to increase in at least two of the four Griggs County corn rootworm trapping fields. One field last week averaged



Figure 2: Dead and severely drought stressed soybean plants in a Griggs



Figure 3: Spider mites all of the way to the top of corn plants in a Griggs County field on 8-27-26.

8 northern corn rootworm beetles per trap for the week. Soybean stem and/or root diseases are starting to show up in soybean fields across the region. Figure 4 shows a soybean plant in Sheridan County on 8-27-26 having stem canker as seen by the dead branch in the photo. Another issue is severe water soil erosion in the northern parts of the region in the past two weeks from heavy rainfall as seen in Figure 5 from Griggs County. As I check corn fields for diseases, I'm now starting to see "ghosted", prematurely dead individual corn plants. This is usually caused by crown rot and/or stalk rots. Thank you to those farmers having taken the time to mow weeds along crop field perimeters including the crop along the field perimeter infested with weeds. There are several sunflower fields across the region having lots of waterhemp

and/or kochia in them as seen in Figure 6 in Griggs County. For this field it may be best to mow off most of the field to reduce kochia seed production and plants spreading to other fields when winds gust like they did this past Tuesday. Remember weed management starts along the field perimeter. If a few plants exist in short statured crops, please take the time to pull these plants by hand to stop seed production.

The average corn growing degree days (GDD's) since the last newsletter increased at least 250 GDD's across the seven locations as shown in Table 1, 12 additional GDD's from the prior two weeks. Mooreton has accumulated the greatest GDD's since May 13th at 2253 while Denhoff has only accumulated 1940 GDD's. If corn was planted May 25th at Denhoff and Mooreton, the current accumulated GDD's are 1844 and 2131, respectively, only about 100 GDD's fewer than planting May 13th. If you look at the departure from the 5-year average since the last newsletter, the range in the increase of GDD's range from 38 to 74 with an average of 55 GDD's. Corn is way more advanced than 2025. Based upon



Figure 4: The dead stem on the soybean plant is due to stem canker in Sheridan County on 8-27-26.



Figure 5: Severe water soil erosion from heavy rains in Griggs County on 9-4-26.

the accumulated GDD's at Denhoff since May 13th, an 80-day corn hybrid should have reached black layer back on August 28th, which certainly has at least in the low moisture parts of fields. Even an 80-day corn hybrid planted May 25th should be at black layer already near the Denhoff area. Based upon the accumulated GDD's at Mooreton since May 13th, a 95-day corn hybrid is predicted to reach black layer by September 11th, 4 days earlier than reported in the last newsletter and prior to any historical freezing temperatures. If a 95-day corn hybrid was planted May 25th, the corn is

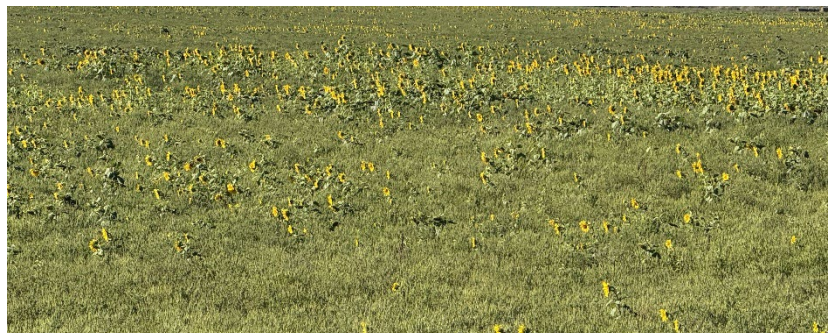


Figure 6: A dense kochia population in a Griggs County sunflower field on 9-4-26.

predicted to reach black layer by September 19th, way before any forecasted freezing temperature in October.

Table 1. Accumulated and departure from normal GDD's for seven NDAWN stations across the region.

	Denhoff	Linton	McHenry	Jamestown	Edgeley	Mayville	Mooreton
Accumulation from 5-13 to 8-10, 2026	1940	2113	2027	1994	2088	2182	2253
Departure from last newsletter	+ 250	+ 289	+ 253	+ 252	+ 264	+ 295	+ 300
Departure from normal	- 39	+ 110	+ 188	+ 105	+ 151	+ 324	+ 204
Departure from 2025	+ 311	+ 267	+ 306	+ 240	+ 268	+ 411	+ 388
Departure from the 5-year average	+ 85	+ 99	+ 125	+ 81	+ 78	+ 203	+ 160
Departure between last newsletter and Aug. 24 for the 5-year average	+ 38	+ 63	+ 40	+ 44	+ 50	+ 76	+ 74

Most hard red spring wheat (HRSW) has been harvested across the region, however there are still fields of late planted wheat in the northern parts of the region requiring to be harvested. The quality of HRS yet to be harvest is concerning in areas receiving excessive rainfall in the past two weeks. HRSW yields across the region are ranging between 15 to 85 bushels/A with a region average likely around 60 bushels/A.

Corn condition held steady in the areas receiving over 1.5 inches of rain, but continued declining over the past two weeks in areas receiving little rainfall. Corn maturity within a field is highly variable with corn in the dryer parts of fields at or nearly at black layer, but most corn in the region is at the dent stage, so it is reaching maturity quickly. Chopping of corn silage in dry land fields severely impacted by the drought is occurring now with yields below normal. The highest percentage of corn silage cut so far are from corn grain fields hit hard by drought with little corn silage hybrids being chopped yet. Grain corn has been shelled already in Sheridan County with moisture being in the high 20's yet.

Soybean condition declined again this past week, especially in the SE part of the region. Soybean leaves are turning yellow and dropping now in most fields in the region, especially those planted early and planted to 0.2 or shorter-season maturing varieties. In areas receiving recent rainfall, soybean maturity is across the board within fields from plants nearly ready to harvest while other plants still being green. Soybean harvest has begun already in Sheridan County, but just a few fields so far. There will be soybean fields harvested as far north as Griggs and Traill Counties in the east maybe at the end of the week as well as in the western part of the region.

Canola harvest is nearly completed in the western and very eastern parts of the region; however, canola still needs to be harvested in the north-central part of this region due to rainfall delaying harvest. Canola yields in the region range from 1,100 pounds/A to 3,000 pounds per acre with

most fields yielding around 2,300 pounds/A. For those areas not harvested yet, there is concern for shattering, especially when it is very windy like this past Tuesday.

Dry beans across the region, but particularly within the central part of the region, are the most variable in development within a field that I have ever seen. In many fields some dry bean plants are dead and just waiting for the pods to dry out to harvest while other plants next to the dead ones are blooming yet. Some dry bean fields have been desiccated already in some parts of the region, but most are a couple of weeks out yet. Dry bean condition declined in most of the region over the past two weeks. Plants are shutting down and crop maturity is speeding up in the driest parts of fields while some areas of these same fields have green plants yet. Most dry bean fields have lost their leaves already and desiccation will start in earnest in the next 10 days.

Sunflowers look really good from the road across the entire region, however when you walk fields plant height is usually shorter than normal, especially in the driest parts of the field and head diameter appears to be smaller in many fields as well. In a Sheridan County field on 8-27-26 there were at least 12 red sunflower weevils per head. Sunflower stage across the region ranges from R6 (petal drop) to at least R9 bracts turning brown already. These fields are mostly in the western part of our region.

Please think about safety during harvest and seek any necessary mental health assistance.

[Jeff Stachler](#)

Extension Cropping Systems Specialist/Carrington Research Extension Center

SOUTHWEST ND

Dry conditions in the southwest persist as we finish up small grains harvest. Last weekend was very hot and dry across the counties, and the strong winds created fire hazards in some parts. In Bowman County, there was a fire that burned about 350 acres of wheat stubble. Meanwhile, the heavy rain event in Adams County resulted in flooded basements. Despite suffering similar drought conditions, high numbers of monarchs were reported from Oliver County.

Areas that received more rain in the northern part of Adams County averaged about 50 bu/acre wheat while drier areas in the south averaged about 7 bu/acre. Yields from Mercer County were reported to be similar, averaging about 40 bu/acre with the best fields producing 60 bu/acre.

Most of the canola in the region has been harvested with reports of 20% lower yields than normal. Corn is still in the dough stage and finishing up in the southwest. Most of it will be harvested for grain, but the crops look quite stressed, and yields are anticipated to be low. Like last time, sunflowers are still looking good across the region, and yields are anticipated to be average. The lack of moisture will also create some challenges for those trying to plant cover crops unless we get a good shot of rain around planting.

Soybeans are almost ready to harvest in the region. While we do not have many soybean acres, we have confirmed cases of soybean cyst nematode in Adams, Morton, and Grant Counties. Testing efforts across the state continue to be encouraged, especially in the southwest.

[Alexis Correia](#)

Conservation Agronomist

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This publication will be made available in alternative formats for people with disabilities upon request (701) 231-7881. This publication is supported in part by the National Institute of Food and Agriculture, Crop Protection and Pest Management - Extension Implementation Program, award number 2024-70006-43752.

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