

No. 18 August 13, 2026

Inside this Issue...

Continue to Scout for Soybean Aphids & Spider Mites	1
Red Sunflower Seed Weevil Increasing	2
Sunflower IPM Insect Trapping	3
Corn Insect Trapping	4
FEATURED MATCHUP: NDSU Plant Pathologists Vs. Frogeye Leaf Spot and Paraquat on Soybean	6
Training Your Eyes: Scouting for Foliar Diseases of Corn in North Dakota	9
Soybean Water Needs Increase During Reproductive Growth	15
Small Grain Harvest Opens Opportunities for Cropping System Intensification with Cover Crops	16
Updates and Save the Dates	19
NDSU Extension Offers Fall 2026 Suicide Prevention Webinars	19
Around the State	21
Northeast ND	21
Northwest, North Central, and Southwest North Dakota	23
South-Central and Southeast North Dakota	24
Weather Forecast	29



CONTINUE TO SCOUT FOR SOYBEAN APHIDS & SPIDER MITES

Soybean growth stages ranged from R3 (beginning pod) to R6 (full seed set).

Soybean aphid populations continued to slowly increase in North Dakota and west-central Minnesota from the previous week. About 57% of the fields scouted were positive for soybean aphids, compared to 27% last week. Plants infested with soybean aphids ranged from 5 to 100% incidence, the same as last week. The average number of soybean aphids per plant remains low, ranging from 0 to 15 across most of North Dakota. The exception is in the northeast and northwest areas of North Dakota, where a few fields are at or approaching the economic threshold.

The economic threshold (ET) is an average of 250 aphids per plant, and when populations are actively increasing in 80% of the field.

Avoid unnecessary insecticide sprays for soybean aphids, as they may trigger secondary pest outbreaks, such as **spider mites** (see CPR #16 article, "[Watch for Spider Mites](#)"). Dry edible beans should also be scouted for spider mites.



Soybean aphids at ET in Burke County (Kristie Michels, Production Service Agronomy)

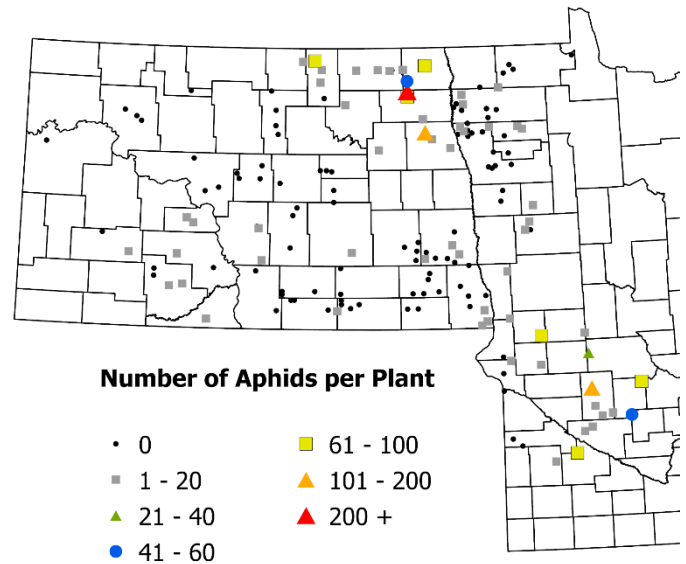
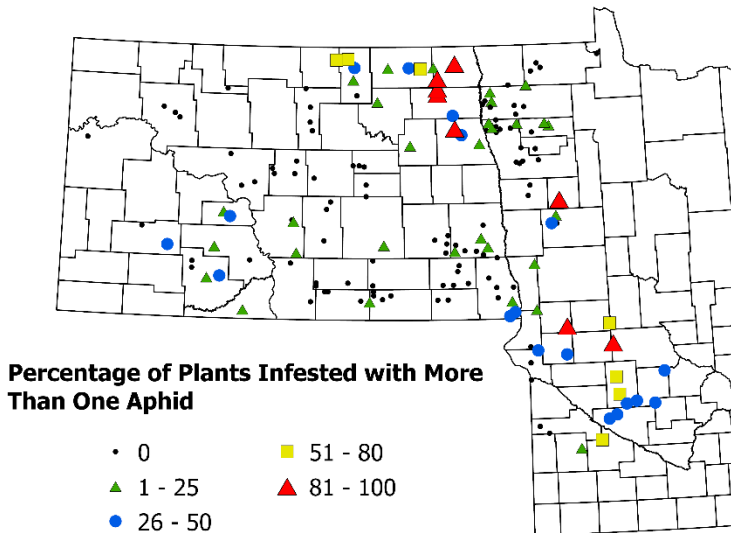
Continue to scout for soybean aphids and spider mites through R6.

Soybean Aphids Incidence

July 27 - August 7, 2026

**Soybean Aphids**

July 27 - August 7, 2026

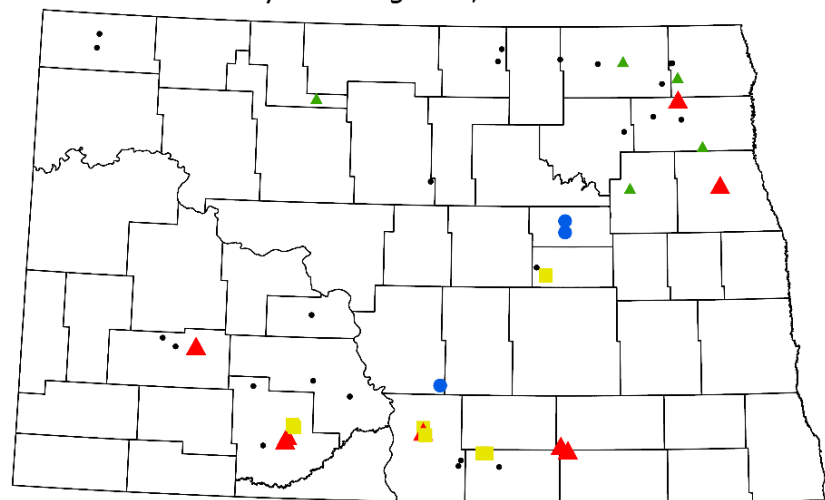
**RED SUNFLOWER SEED WEEVIL INCREASING**

Sunflower growth stages ranged from R2 (bud <1 inch from leaf) to R6 (flowering complete). The majority of sunflowers were in R5 (flowering).

Red sunflower seed weevil (RSSW) populations increased 4-fold, and weevil-infested sunflower fields went from 29% during July 27-31 to 63% during August 3-7. The average number of RSSW per head ranged from 0 to 15. About 26% of the fields scouted were above the economic threshold of 5 weevils per head.

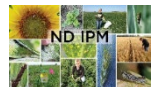
Red Sunflower Seed Weevils in Sunflower

July 27 - August 7, 2026

**Average Number of Weevils per Head**

- 0
- ▲ 1
- 2
- 3 - 4

5 or more (economic threshold for oilseed sunflowers at 28 cents per lb)



Several field reports from southwestern and south-central North Dakota observed reduced control of RSSWs to pyrethroid insecticides. Pyrethroid efficacy was generally rated at only 50-60%. Be sure to use only the high rates of pyrethroids to help mitigate the development of RSSW resistant to pyrethroids.

Please email me (janet.knodel@ndsu.edu) any information (insecticide, rate, location) on pyrethroid field failures for RSSW control, so we can use this data to support a possible Section 18 – Emergency Exemption for the new insecticide Vertento (A.I. isocycloseram, Group 30) for RSSW control in North Dakota sunflowers in 2027.

Continue scouting until the economic threshold is reached or plants reach 70% pollen shed (R5.7). After R5.7, plants are no longer at risk for egg laying or significant damage, and larvae are protected inside seeds from insecticides.

Optimum Treatment Timing: It's recommended to treat when 3 out of 10 plants in a field are just starting to shed pollen. This provides flexibility in the event of weather delays or scheduling issues with aerial applicators. Early sprays for high RSSW populations may require a second application. NDSU Extension Entomology has received field reports from producers who are spraying sunflowers for RSSW in southwest and south-central North Dakota this week.



Red sunflower seed weevil egg on developing sunflower kernel inside seed (Govinda Shrestha, SDSU)



Red sunflower seed weevil (Brandi Herauf, former IPM Scout)

2026 RSSW Economic Threshold (average # weevils per head)

Oilseed sunflower at 28 cents per lb:

25,000 – 16,000 plants per acre

- \$6 insecticide cost per acre + \$12 aerial application costs – **>5-8 weevils per head**
- \$8 insecticide cost per acre + \$12 aerial application costs – **>6-9 weevils per head**

Confection sunflowers:

- **>1-2 weevil per head**

SUNFLOWER IPM INSECT TRAPPING

Here are some reports from last week's IPM insect trapping (August 3-7, 2026). More insect-trapping maps are posted on the [IPM Crop Survey map](#) website.

Sunflower crop stages ranged from R4 (bud open, ray flowers visible) to R5 (early flower) last week.

The total number of **Banded sunflower moth** and **Arthur's sunflower moth** decreased to 1,660 moths from last week's trap total of 3,009 moths. Banded sunflower moths were detected at 89% of the trap sites, and weekly trap catches ranged from 140 to 260 moths per trap. The



Banded sunflower moth and tiny white eggs on a bud (NDSU Extension Entomology)

Arthur's sunflower moth, a moth similar to the banded sunflower moth, was detected at 6 trap sites (67%), and weekly trap catches ranged from 2 to 81 moths per trap.

See Crop & Pest Report #16 for "[Banded Sunflower Moth Scouting](#)". For field scouting, the current **EIL threshold is an average of 1-2 moths per 100 plants**, based on a market price of 28 cents per lb., depending on plant population and insecticide cost (insecticide + application).



Sunflower moth (J. Knodel, NDSU)

The number of trap sites with **sunflower moths** increased to 55%, up from 38% last week. Weekly trap catches ranged from 1 to 5 moths per trap for August 3-7, below the trap threshold for sunflower moth. Good news for sunflower growers.

Method	Threshold - Sunflower moths
Pheromone trap	28 sunflower moths per trap per week
Field scouting	1-2 moths per 5 plants

CORN INSECT TRAPPING

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 R2 (blister) to R3 (milk) during August 3-7, 2026. No **European corn borers** were detected in the pheromone traps for the second week in a row at the nine trap sites in southeastern North Dakota (Table 1). This is the last trapping report for corn borers.



European corn borer wire trap (J. Knodel, NDSU)

Table 1. Pheromone Trapping Catches for European Corn Borer - 2026

Field_ID	County	Town	Week 1 - June 29-July 3			Week 2 - July 6-10			Week 3 - July 13-17			Week 4 - July 20-24			Week 5 - July 27-31			Week 6 - August 3-7			Cumulative Total	
			Z-race	E-race	Total	Z-race	E-race	Total	Z-race	E-race	Total	Z-race	E-race	Total	Z-race	E-race	Total	Z-race	E-race	Total	Z-race	E-race
Barnes 1	Barnes	Sibley	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barnes 2	Barnes	Rogers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cass 1	Cass	Angusville	0	0	0	0	0	0	1	0	1	15	0	15	0	0	0	0	0	0	16	0
Ransom 1	Ransom	Lisbon	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	4	0
Richland 1	Richland	Galchutt	1	1	2	2	0	2	16	3	19	7	0	7	0	0	0	0	0	0	26	4
Richland 2	Richland	Hankinson	0	0	0	3	0	3	2	0	2	3	0	3	0	0	0	0	0	0	8	0
Sargent 1	Sargent	Gwinner	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0
Sargent 2	Sargent	Rutland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Steele 1	Steele	Finley	0	0	0	0	0	0	5	0	5	1	0	1	0	0	0	0	0	0	6	0
6 counties			Totals	1	1	2	5	0	5	28	3	31	27	0	27	0	0	0	0	0	61	4
CORN COUNCIL			Trapped	Race %	50.0	50.0	100.0	100.0	0.0	100.0	90.3	9.7	100.0	100.0	0.0	100.0	0	0	0	0	93.8	6.2

Corn rootworms were detected at 8 trap sites (42%) last week, and weekly trap catches ranged from 0 to 5.7 beetles per trap per week (Table 2). A total of 80 corn rootworm beetles were captured on yellow sticky traps across all trap sites, an increase from the previous week of 54 beetles. Northern corn rootworms (NCR) comprised 92.5% of the total corn rootworms captured last week; in contrast, western corn rootworms (WCR) comprised only 7.5%. *No corn fields were above the economic threshold for trapping.*

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**. A management strategy is recommended for corn rootworm control if corn is to be planted in that field the following year.

Table 2. Average number of adult corn rootworms (both northern and western) per trap per week.

per trap per week.					
Area	County	Nearest Town	Week 1 July 27 - 31	Week 2 Aug 3 - 7	Cumulative Total # NCW & WCR
NC	Sheridan	10 NE McClusky		0.0	0
NC	Ward	3 SW Minot		0.0	0
NE	Cavalier	5 E Langdon		0.0	0
NE	Pembina	1 NE Cavalier		0.0	0
NW	McKenzie	3 NW Alexander		0.3	1
NW	Williams	Williston		0.0	0
SE	Barnes	9 SE Sibley	0.0	0.0	0
SE	Barnes	1 SE Rogers	0.0	0.0	0
SE	Cass	4 E Argusville	0.8	0.8	6
SE	Cass	4 NE Page	0.5	1.0	6
SE	Griggs	5 S Hannaford	0.0	0.3	1
SE	Griggs	2 N Hannaford	0.0	0.0	0
SE	Ransom	8 NE Lisbon	5.0	5.7	52
SE	Richland	6 SW Hankinson	1.8	3.0	19
SE	Richland	2 SW Barney	0.0	0.0	0
SE	Richland	5 W Colfax	0.0	0.3	1
SE	Richland	6 SW Colfax	0.0	0.0	0
SE	Richland	7 SW Wahpeton	0.0	0.0	0
SE	Richland	5 SW Lidgerwood	0.0	1.5	6
SE	Richland	1 E Hankinson	0.3	1.3	6
SE	Richland	3 NW Galchutt	0.3	0.0	1
SE	Richland	6 E Hankinson	0.0	0.0	0
SE	Sargent	5 NW Gwinner	4.0	2.7	31
SE	Sargent	4 SE Rutland	2.0	0.0	8
EC	Steele	3 N Finely	0.0	0.0	0
		Total # CRW	54	80	138
		Percent NCR	93.1	92.5	
		Percent WCR	6.9	7.5	

Economic Threshold is an average of 14 or more adults per trap per week (regardless of species)

Red highlighted text indicates that the corn field is at or above the ET.



Northern corn rootworm feeding on tassel and pollen (V. Calles Torrez)

[Janet J. Knodel](#)
Extension Entomologist

[Patrick Beauzay](#)
Research Specialist & IPM Coordinator



plant pathology

FEATURED MATCHUP: NDSU PLANT PATHOLOGISTS VS. FROGEYE LEAF SPOT AND PARAQUAT ON SOYBEAN

Players to Watch:

- Frogeye Leaf Spot
 - o Warm weather (greater than
 - o High humidity and leaf wetness
- Paraquat herbicide drift
 - o Wind conditions, including temperature inversions, during application will show pattern of injury. Recently desiccated fields or PP fields are often the source in late summer.

Scouting Report:

- Frogeye leaf spot, caused by the fungus *Cercospora sojina*, develops as circular lesions with a dark border and grayish-tan center, often with a distinctive dark 'frog-eye' ring. The disease typically appears first on lower leaves beginning around the R3-R4 growth stages.
- Paraquat damage appears as rapid necrosis (death) of exposed plant tissue, creating brown or black-burned leaf margins, stem bleaching, and tissue collapse. Injury will often appear as tan/necrotic spots with a darker brown halo around the lesion. Lesions are not always uniform, as they are representative of droplet deposition on the leaves. Unlike frogeye leaf spot, paraquat injury develops within hours to days after exposure and affects the exposed portions of plants.
- Both can cause plant damage, but no extensive yield impacts has ever been recorded in North Dakota so far for either issue. Frogeye leaf spot and paraquat reduces photosynthetic area and can cause premature defoliation in severe cases. However, paraquat damage can kill seedlings or severely stunt plants if the damage is extensive.

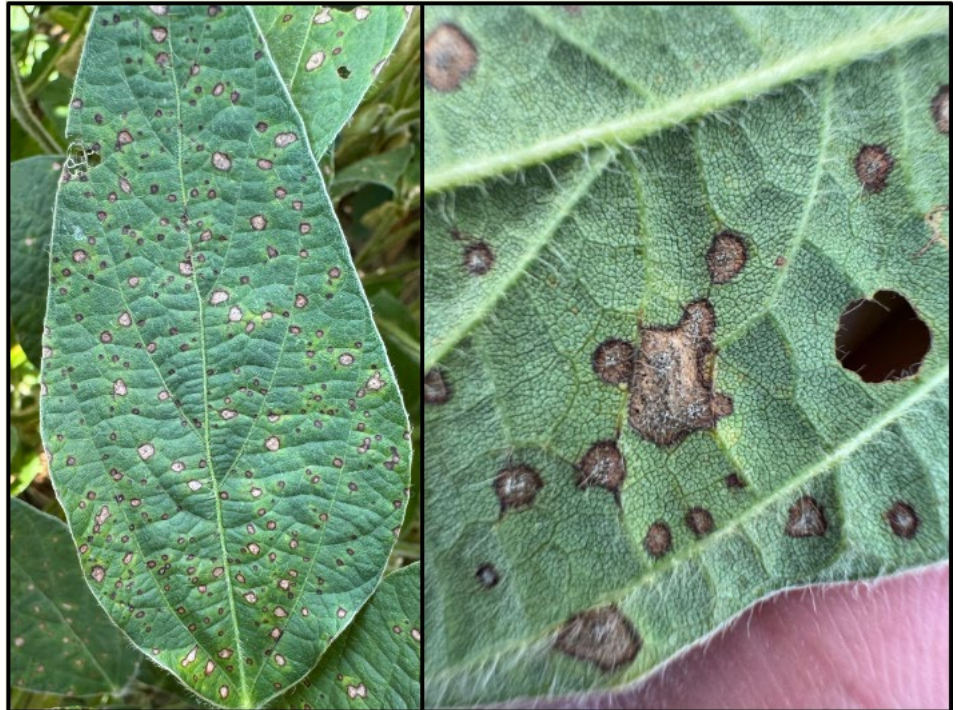


Figure 1. Frogeye leaf spot lesions on soybean leaves. Notice the development of gray fungal growth on the backside of leaf lesions.

Opponents Gameplan:

- *Frogeye Leaf Spot's Strategy:*
 - o Warm temperatures (75-85°F) and extended leaf wetness periods (6+ hours) create ideal conditions for spore germination and infection.
 - o The fungus overwinters on infected soybean residue, producing spores that spread by either rain splash or wind.
 - o Certain varieties are more susceptible than others.
- *Paraquat's Strategy:*
 - o Paraquat is a fast-acting contact herbicide that causes rapid desiccation of plant tissue upon exposure.
 - o Even small amounts of drift during windy conditions can cause significant damage to non-target soybean plants.
 - o Young soybean plants (V2-V4 stages) are more susceptible to injury than larger plants. Older plants can exhibit more injury symptoms at low exposure rates due to amount of leaf tissue that intercepts drift.

Opponents Strengths:

- Frogeye leaf spot can appear suddenly during favorable weather, making it difficult to catch early.
- *Cercospora sojina* spores can travel long distances in wind and rain, spreading the disease across entire fields.
- Paraquat damage can easily be mistaken for disease, frost injury, or other abiotic factors.
- Paraquat injury is non-selective and can affect all exposed tissue (of all plants within a field).
- Drift damage can occur even when herbicides are applied correctly if weather conditions shift suddenly.

Opponents Weaknesses:

- Selecting resistant soybean varieties can help to reduce frogeye leaf spot incidence.
- Fungicide applications at R3 growth stage may provide excellent control of frogeye leaf spot, if disease is present and environmental conditions are appropriate.
- Residue management: tilling of infected crop debris can reduce the inoculum for next season.
- Crop rotation helps disrupt the disease cycle by reducing the amount of infected residue in the field.
- Careful application planning and consideration of wind direction can prevent paraquat drift injury.
- Using labeled application rates and following all label instructions reduces the risk of off-target damage.
- Avoiding herbicide applications during sensitive soybean growth stages minimizes potential injury.

Trick Play to Watch:

- Both frogeye leaf spot and paraquat damage can cause plant injury, making it critical to distinguish between them in the field. Frogeye lesions develop slowly and show gray fungal growth inside the lesions on the bottom side of leaves, while paraquat damage is sudden and shows diffuse tissue necrosis with very defined lesion borders in many cases. Only higher rates of exposure will cause large necrotic areas. When scouting, examine the field pattern and recent weather or application history. We have documented cases of paraquat drift over a mile when the herbicide was applied during a temperature inversion. Be aware of applications to surrounding fields that have been desiccated for harvest or are Prevent Plant. Frogeye leaf spot typically starts on lower leaves and progresses upward, while paraquat damage affects upper leaves and new growth first. Frogeye damage is patchy and sporadic. Paraquat injury often correlates with wind patterns or application direction.

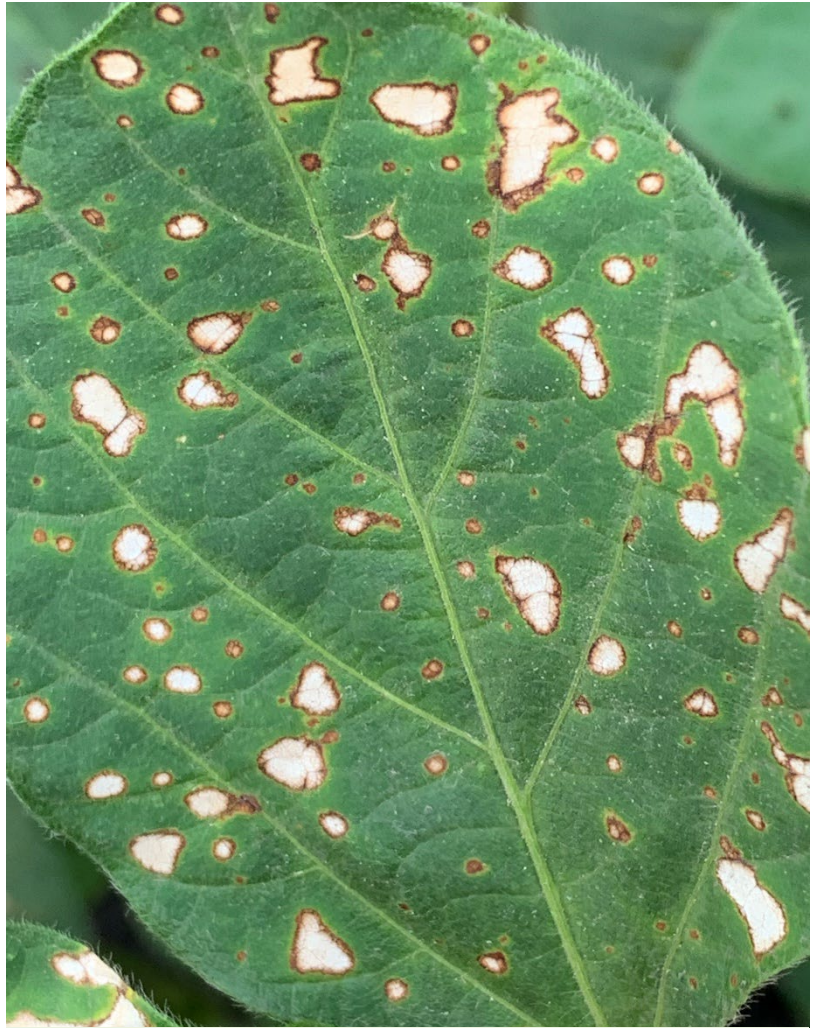


Figure 2. Paraquat damage on soybean leaf.

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TRAINING YOUR EYES: SCOUTING FOR FOLIAR DISEASES OF CORN IN NORTH DAKOTA

The most challenging production issue this season in corn has been heat and water stress, which has drastically reduced corn leaf disease development in the state. In other words, leaf diseases are unlikely to result in yield losses in 2026. However, as the temperature cools and prolonged leaf wetness increases, we will likely have the opportunity to train our eyes for late season foliar diseases of corn. This article will review how to identify and scout for six foliar diseases of corn.

Bacterial Leaf Streak

What to Look For?

-Irregular lesions occurring within leaf veins that are yellow-orange to brown with water-soaking on the edges of the lesions (Figure 1 A).

A Closer Look

-Lesions will appear translucent when held up to a backlit light source (Figure 1B).

Favorable Environment

- Warm temperatures and high humidity.
- Severe thunderstorms and irrigation.
- Corn on corn production in reduced tillage systems.

Survivability in North Dakota

-Survives on corn residue, alternative grass hosts and/or seed, with corn residue likely being the most important source of pathogen inoculum.



Figure 1. (A) Bacterial leaf streak lesions on a corn leaf in the upper canopy. (B) Lesions will appear translucent when backlit with a light source).

Common Corn Rust

What to Look For?

-Dark-red to brown pustules that are often scattered across a leaf (Figure 2A). Pustules will change to the color black at the end of the season.

A Closer Look

-Spores will be dusty and be easily removed with a finger (Figure 2B).

Favorable Environment

-Wide temperature range (66-77F) with periods of prolonged leaf wetness.
-Early occurrence of rust reports in the states south of North Dakota

Survivability in North Dakota

-Pathogen does not survive in North Dakota and is dependent on southerly winds to carry spores northward during the growing season.



Figure 2. (A) Common rust pustules on a corn leaf. (B) Pustules contain dark-red to brown dusty spores.

Goss's Wilt

What to Look For?

- Irregular leaf lesions that will be light green to yellow to tan in color (Figure 3A).
- Lesions often found extending from the leaf tip or near a wounding site.
- Water-soaking is often visible on the leading edge of the lesion.
- Systemic wilt phase (less commonly observed) will result in stunted and/or wilted plants with discolored vascular tissue.

A Closer Look

- Diagnostic 'freckles' will be visible within a lesion (Figure 3B).
- Orange bacterial ooze may also be visible after prolonged periods of leaf wetness.

Favorable Environment

- Warm to hot temperatures (70-95F) and high humidity.
- Severe thunderstorms, sand blasting, and irrigation.
- Corn on corn production in reduced tillage systems

Survivability in North Dakota

- Survives on corn residue (most important) and other alternative grass hosts.



Figure 3. (A) Leaf lesions of Goss's wilt. (B) Diagnostic freckles of Goss's wilt with orange bacterial ooze.

Northern Corn Leaf Blight

What to Look For?

- Immature lesions will be elliptical in shape and appear light green.
- Mature lesions will be "cigar shaped" with a gray to tan center (Figure 4A).

A Closer Look

-Mature lesions may have masses of fungal spores in the center (Figure 4B).

Favorable Environment

-Cool to warm (64-81 F) temperatures and prolonged periods of leaf wetness.

-Corn on corn production in reduced tillage systems.

Survivability in North Dakota

-Survives well on corn residue.

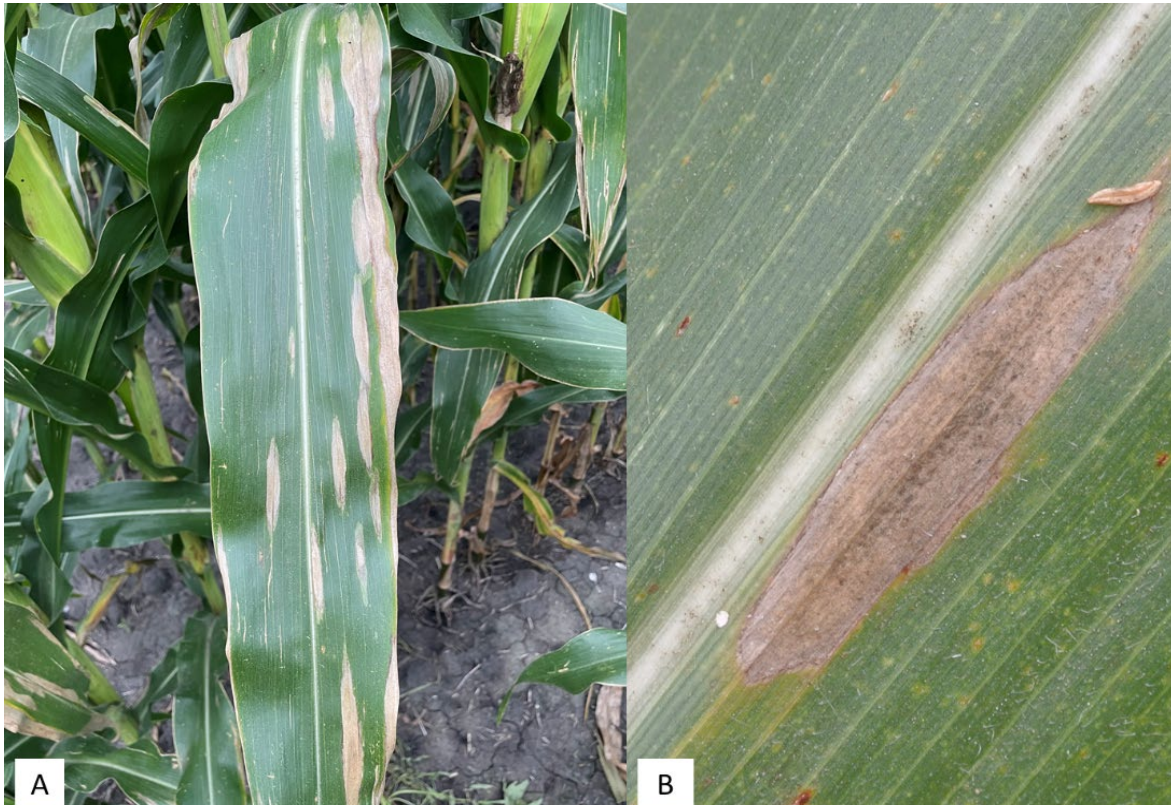


Figure 4. (A) Cigar shaped lesion of northern corn leaf blight. (B) Mature lesion or northern corn leaf blight with a mass of fungal spores in the center.

Southern Rust

What to Look For?

-Pustules will be densely cluttered with orange spores (Figure 5A).

A Closer Look

-Pustules are often accompanied by a bright yellow halo and spores can be removed with a finger (Figure 5B).

Favorable Environment

-Warm temperatures (80F and higher) with periods of prolonged leaf wetness.

-Early occurrence of rust reports in the states south of North Dakota.

Survivability in North Dakota

-Pathogen does not survive in North Dakota and is dependent on southerly winds to carry spores northward during the growing season.



Figure 5. (A) Southern rust pustules on a corn leaf. (B) Pustules containing orange spores and surrounded by bright yellow halos.

Tar Spot

What to Look For?

- Irregular to diamond shaped lesions that are embedded in the leaf tissue (Figure 6A).
- Tar spot lesions will not be able to be removed with a finger nail or thumb.

A Closer Look

- Orange spore exudates can ooze from the center of the tar spot lesion (Figure 6B).

Favorable Environment

- Cool (64-73 F) temperatures and prolonged periods of leaf wetness.
- Corn on corn production in reduced tillage systems.

Survivability in North Dakota

-Field observations in 2025 highly suggest the pathogen can survive on residue.

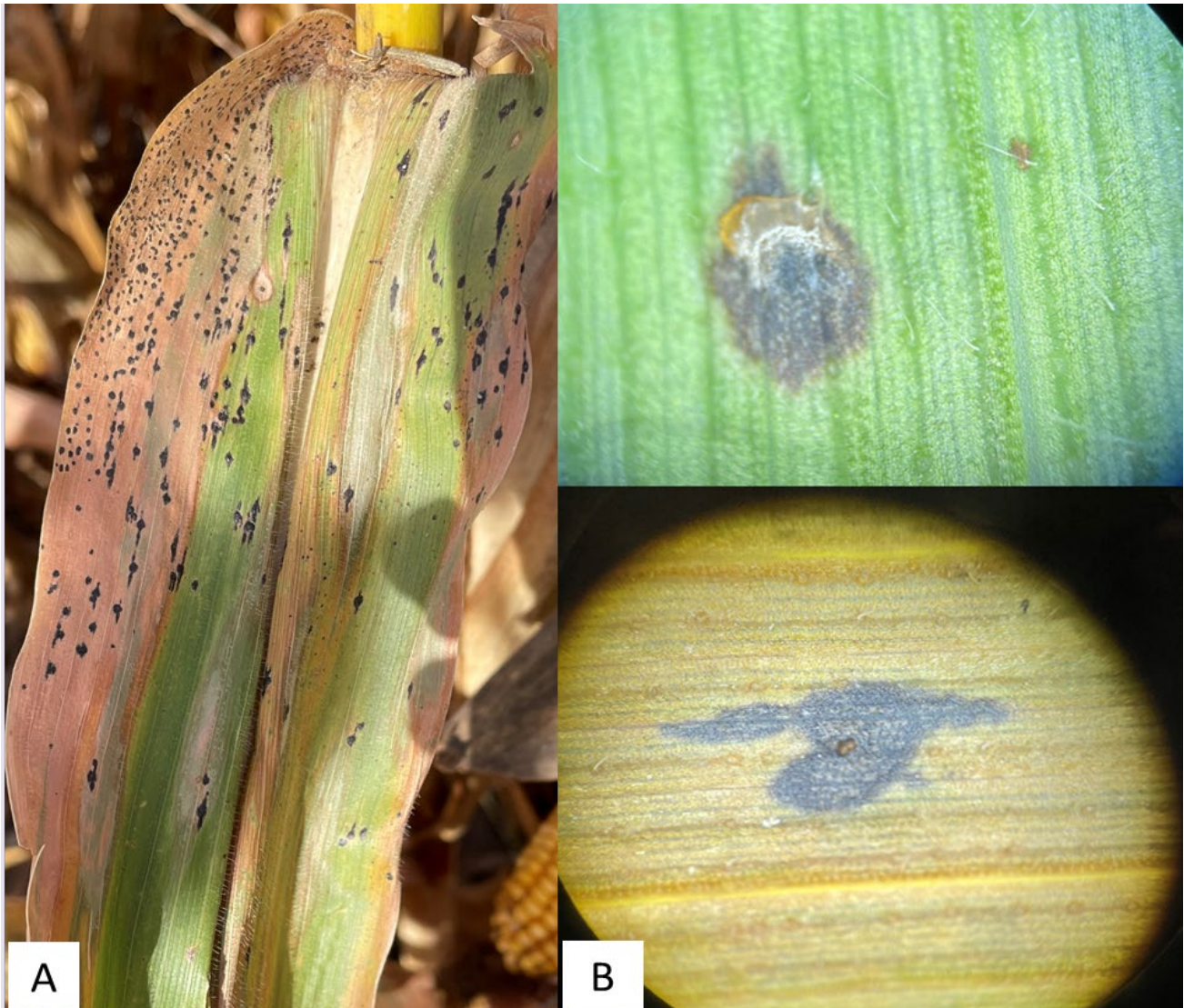


Figure 6. (A) Irregular and diamond shaped lesions of tar spot. (B) Orange fungal spore masses oozing from center of tar spot lesion.

[Andrew Friskop](#)

Extension Plant Pathology, Cereal Crops



SOYBEAN WATER NEEDS INCREASE DURING REPRODUCTIVE GROWTH

Recent rains have provided welcome moisture to soybean fields across parts of North Dakota. However, drought conditions continue (Figure 1), and adequate soil moisture will become increasingly important as soybean crops progress through reproductive development and enter the period of greatest water demand.

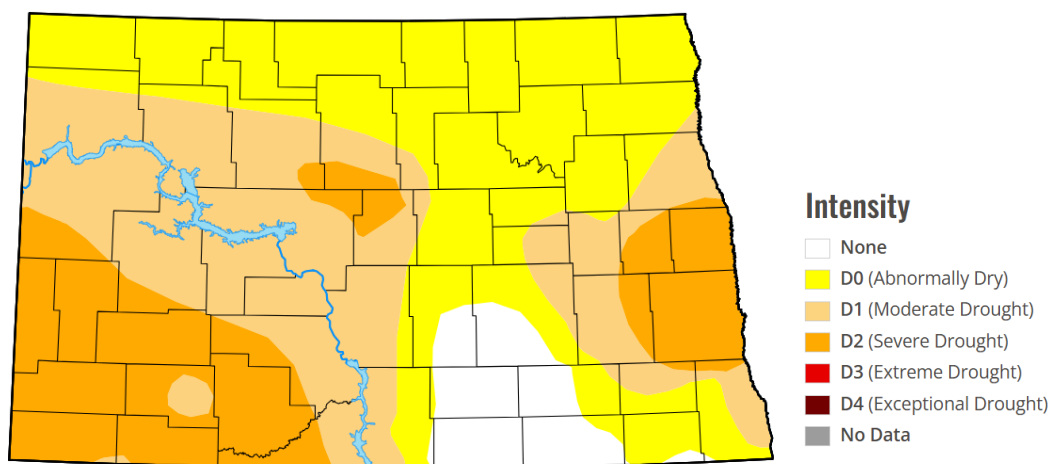


Figure 1. Drought monitor. Source: droughtmonitor.unl.edu

Soybeans have some ability to compensate for short periods of drought. Because flowering and pod development occur over several weeks, plants may produce additional flowers and pods if favorable conditions return. However, this ability becomes more limited when drought is prolonged or occurs during critical reproductive stages. As the soybean canopy develops and leaf area increases, transpiration becomes an increasingly important component of crop water use.

Soybean water demand is greatest from early pod development through the middle of seed filling, when plants are rapidly growing and developing pods and seeds. Pod development and seed filling (R3–R6) is the critical peak demand window where plants use over 60% of their total seasonal water. Need jumps from 1 inch per week to 1.4 to 2.45 inches per week (or 0.20–0.35 inches daily). Although drought can affect soybeans at any growth stage, water availability becomes particularly important during pod development and seed filling.

Pod number is particularly sensitive to drought. Under severe water stress, pod number may be reduced by as much as 20% because of increased flower and pod abortion.

Water stress also affects processes beyond plant growth. When root water uptake is limited, nutrient availability, uptake and transport within the plant can also decline. Drought-stressed plants may have reduced stem strength and can become more vulnerable to other stresses.

Nitrogen fixation can also be affected. Under dry soil conditions, soybean nodules reduce or cease nitrogen fixation because of limited soil moisture and reduced carbohydrate supply from the plant. If drought is relatively short and moisture conditions improve, nitrogen fixation may resume.

[Ana Carcedo](#)

Broadleaf Crop Agronomist



SMALL GRAIN HARVEST OPENS OPPORTUNITIES FOR CROPPING SYSTEM INTENSIFICATION WITH COVER CROPS

Cropping system intensification means getting more production from the same acre by reducing fallow periods and growing crops more often or adding greater crop diversity. The goal is to make better use of sunlight, water, nutrients, and the growing season while maintaining long-term soil productivity. Producers may consider using a cover crop to intensify rotations and protect soils over the winter.

The biggest challenges for cover cropping in North Dakota are the short growing season, early frost risk, and limited precipitation for cover crop establishment. However, cover crops help build organic matter, improve soil structure, enhance microbial activity, and ultimately improve soil health. When fields are left uncovered, soil erosion and weed pressure often take hold. These problems can come back even stronger in the seasons ahead. Even a modest stand of cover crops can help suppress weeds, reduce erosion, and capture residual nutrients that might otherwise leach away. Depending on the species selected, they can also break up compaction, add nitrogen to the system, or provide habitat for beneficial insects and wildlife.

Overall, small grains such as oats, barley, spring wheat, and durum offer a great opportunity for the addition of cover crops due to their “early harvest” and consequently offer the largest post-harvest window before the first killing frost (Figure 1).

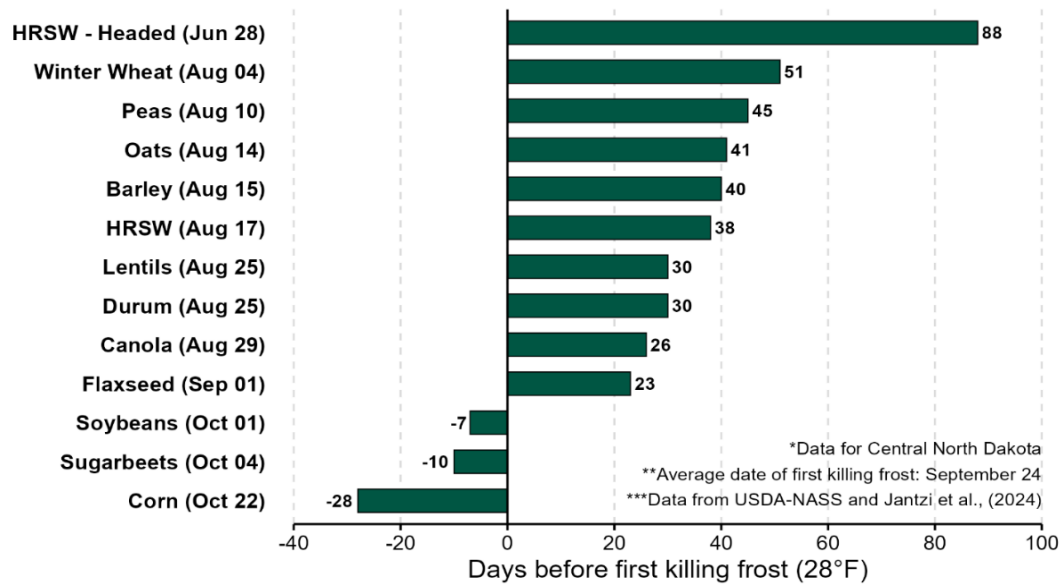


Figure 1. Post-harvest window before the first killing frost in central North Dakota. The date in parentheses after each crop is the average harvest date across North Dakota. The average date of the first killing frost varies slightly across regions of the state. Source: Pires (2026).

All small grains provide at least 30 frost-free days after harvest, creating a good opportunity to drill cover crops. Ideally, cover crops should be seeded the same day or the day after harvest to take advantage of moisture remaining under the crop canopy. If accessible, interseeding cover crops via broadcast into standing small grains, such as hard red spring wheat (HRSW), is another option and can help maximize cover crop growth. Instead of having about 30 frost-free days after harvest,

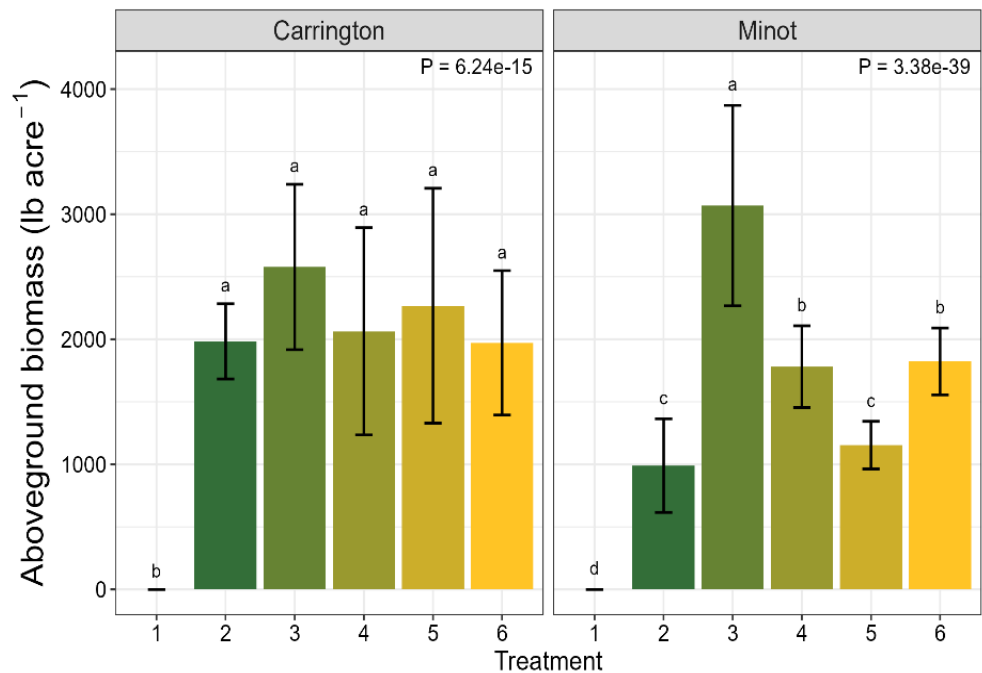


Figure 2. Cover crop biomass under different planting times and seeding methods in Carrington and Minot, ND. T1: No cover crop (chemically terminated). T2: Volunteer HRSW. T3: Volunteer HRSW + turnip (8 lbs/acre) and hairy vetch (15 lbs/acre), broadcast at HRSW flowering. T4: Volunteer HRSW + turnip (5 lbs/acre) and hairy vetch (10 lbs/acre), drilled after harvest. T5: Volunteer HRSW + cereal rye (80 lbs/acre), broadcast at HRSW flowering. T6: Volunteer HRSW + cereal rye (80 lbs/acre), drilled after harvest. Different letters represent significantly different cover crop biomass between treatments. Source: Pires, Bortolon,

interseeding can provide more than 60 days of growth before the first killing frost. In research funded by the North Dakota Wheat Commission and conducted in Minot and Carrington, a mix of 8 lbs/acre of turnip and 15 lbs/acre of hairy vetch was interseeded into standing HRSW at flowering. The cover crop produced approximately 3,000 lbs/acre of biomass in Minot and 2,600 lbs/acre in Carrington (Figure 2). Moisture is necessary for these covers to establish, so producers in the western parts of the state should consider drilling or incorporating cover crops to maximize their chance at establishing.

Another strategy for North Dakota growers is to use volunteer small grains as a free cover crop. Many farmers are already taking advantage of volunteer small grains, which can help suppress weeds and reduce wind erosion in the fall and, depending on biomass production, into the following spring. One option is to use a light harrow after harvest to improve seed-to-soil contact and encourage germination while minimizing soil disturbance. In the same research trials, volunteer HRSW produced nearly 1,000 lbs/acre of biomass in Minot and 2,000 lbs/acre in Carrington. At both locations, plots with volunteer HRSW had less weed pressure than plots left without any cover (Figure 3). Suppressed weeds

included kochia, green foxtail, dandelion, and Canada thistle.

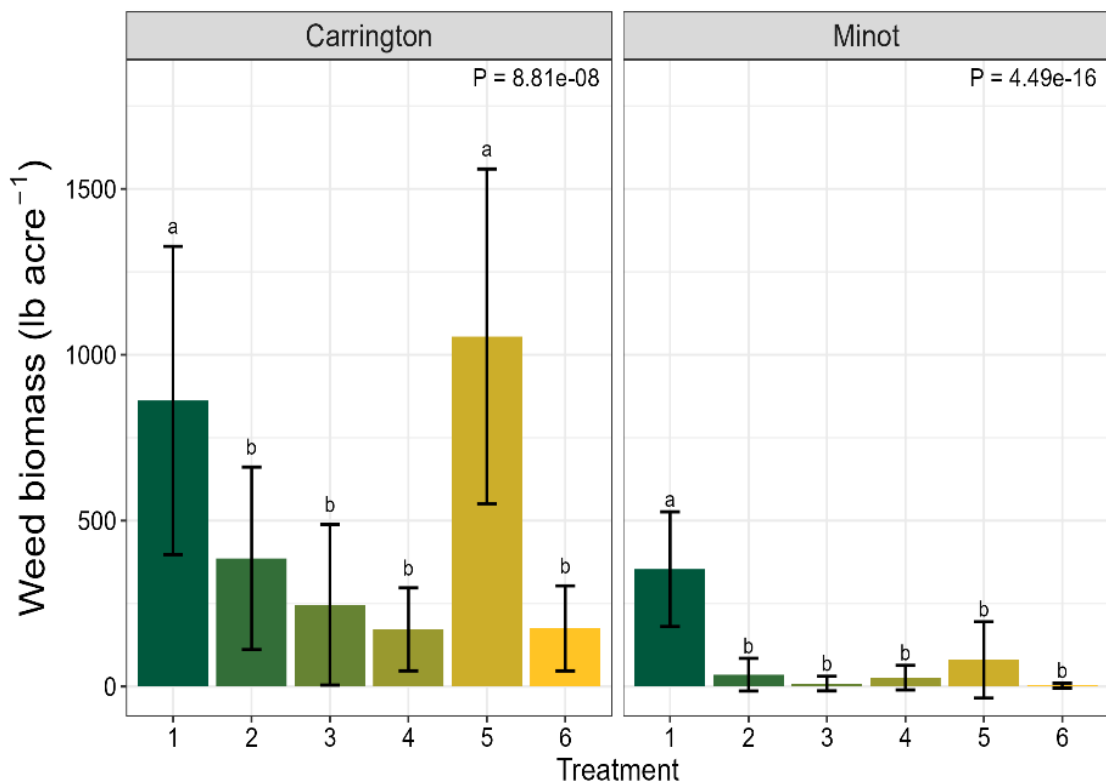


Figure 3. Weed biomass under different cover crop planting times and seeding methods in Carrington and Minot, ND. T1: No cover crop (chemically terminated). T2: Volunteer HRSW. T3: Volunteer HRSW + turnip (8 lbs/acre) and hairy vetch (15 lbs/acre), broadcast at HRSW flowering. T4: Volunteer HRSW + turnip (5 lbs/acre) and hairy vetch (10 lbs/acre), drilled after harvest. T5: Volunteer HRSW + cereal rye (80 lbs/acre), broadcast at HRSW flowering. T6: Volunteer HRSW + cereal rye (80 lbs/acre), drilled after harvest. Different letters represent significantly different weed biomass between treatments. Source: Pires, Bortolon, Aberle (2025).

[Carlos B. Pires](#)

Extension Soil Health Specialist

[Alexis Correia](#)

Conservation Agronomist

UPDATES AND SAVE THE DATES

In [last week's Crop and Pest Report](#), Dr. Dave Franzen discussed the North Dakota Soil and Fertilizer Resource he developed and gave a temporary link. The link for the Resource has been updated and simplified to www.ag.ndsu.edu/ndsoilresource. The North Dakota Soil and Fertilizer Resource, along with many other soil fertility resources can also be found on [my NDSU directory](#) page.

Upcoming Soil Science Events:

- **September 3rd: End of Summer Soils Field Day** will be hosted in Richland County. This informal event will feature topics on soil fertility, soil testing, and showcase on-farm soil management practices. CCA Credits will be offered and lunch will be provided. More information can be found [here](#) as the event approaches.
- **January 20th:** Attend the **2027 Soil Water Workshop** to get the most recent research updates on soil fertility, management, and testing. Up to 7 CCA Continuing Education Credits will be available. More information and in-person (Fargo) or virtual registration will be available beginning in November.

[Brady Goettl](#)

Extension Soil Science Specialist



NDSU EXTENSION OFFERS FALL 2026 SUICIDE PREVENTION WEBINARS

Research shows that people working in agriculture experience higher rates of stress and suicide than in many other occupations. Studies also indicate that strong social support and access to helpful resources can significantly reduce stress levels and suicide risk.

The QPR Training Program Focuses on Suicide Prevention and Provides Helpful Resources

To help address the challenges of higher mental health and suicide risks in agriculture, North Dakota State University Extension will offer two "Question. Persuade. Refer." suicide prevention webinars on Sept. 1, 2026 at 11 a.m. and Oct. 6, 2026 at 1 p.m.

The free 90-minute webinars will focus on the unique stressors facing people in agriculture and the impact those pressures can have on mental and emotional well-being.

Similar to how CPR training prepares people to respond during a medical emergency, QPR training equips participants to recognize the warning signs of mental health distress or suicidal thoughts. Participants will learn practical skills to approach someone with compassion, offer support and connect them with appropriate resources.

"A consistent message we want people in agriculture to hear is that it's OK to not be OK and that help is available," says Sean Brotherson, NDSU Extension family science specialist. "Your health is your most important resource for daily well-being, and this training helps us put health first."

The webinars will be facilitated by Katie Henry, NDSU Extension agent for Cavalier County; Jill Sokness, NDSU Extension agent for Cass County; and Madeleine Smith, NDSU Extension pesticide specialist.

QPR Suicide Prevention Training and Resources

Although the training is designed with agricultural producers, farm families and others working in agriculture in mind, anyone interested in learning suicide prevention skills is welcome to participate. The training is free and is supported through a U.S. Department of Agriculture grant.

Registration is limited to the first 30 participants. Registration is available at ndsu.ag/QPR-fall-26.

For more information, contact Adriana Drusini at adriana.drusini@ndsu.edu or Brotherson at sean.brotherson@ndsu.edu.

If you or someone you know is in need of mental health or substance abuse resources, 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.



Addressing the wellness needs of those working in agriculture or related areas will be the focus of the upcoming "Question. Persuade. Refer." suicide prevention webinars.

[Sean Brotherson](#)

Extension Family Science Specialist

Adriana Drusini (adriana.drusini@ndsu.edu)

Extension Farm and Ranch Stress Program
Coordinator



AROUND THE STATE NORTHEAST ND

The majority of small grains are ready for harvest, while a few fields have already been harvested (Fig. 1). Wheat yields are disappointing this year, although protein levels are high, generally above 16%. In one case, the yield was nearly equal to the protein level. Very few late-planted wheat fields remain green, and those fields are suffering from a lack of moisture.

Soybean conditions are variable across the region and even within individual fields. Some higher areas are drying out, and several fields are showing signs of moisture stress (Fig. 2). Fields that are still holding moisture are generally behind in development. Flower abortion is occurring, and pods are not filling.

Corn is showing a similar response to the lack of moisture. Some fields, or portions of fields, are extremely dry and appear to be beyond recovery at this point (Figs. 3 & 4). Overall, both corn and soybeans need additional rainfall to finish the crop. The majority of canola is turning color, while later-planted fields are still flowering (Figs. 5 & 6). Field peas are either harvested or nearing harvest. Sunflowers are blooming and generally looking good (Fig. 7). Their deep taproot system is allowing them to access moisture deeper in the soil profile, helping them tolerate the current dry conditions better than some other crops.

Waterhemp is beginning to show up in drowned-out areas.

Haying is progressing well under the current dry conditions. However, there are no expectations for a second cutting due to the lack of moisture.



Figure 1. Wheat ready for harvest in Pierce County. Photo: Anitha Chirumamilla, LREC



Figure 2. Soybeans showing moisture stress in Pierce County. Photo: Natalie Wibe, ANR Extension Agent, Pierce County



Figure 3. Corn drying out on edges in Pierce County. Photo: Anitha Chirumamilla, LREC

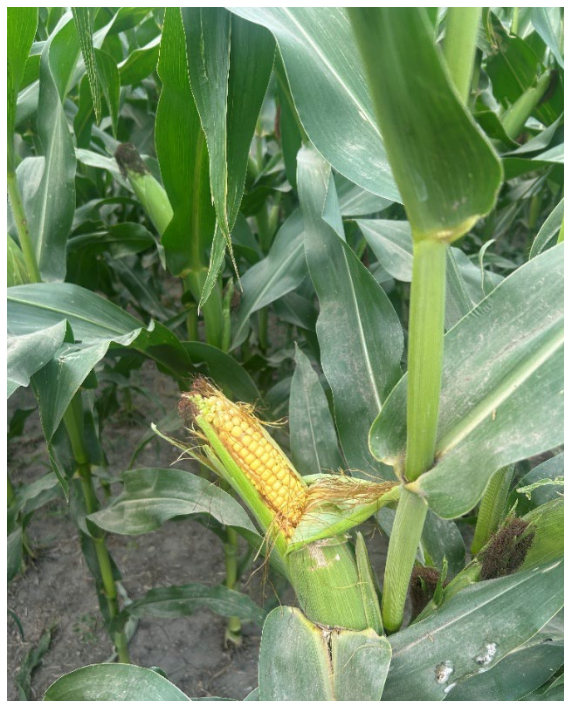


Figure 4. Corn at milk stage in Towner County. Photo: Anitha Chirumamilla, LREC



Figure 5. Canola at flowering in Cavalier County. Photo: Anitha Chirumamilla, LREC

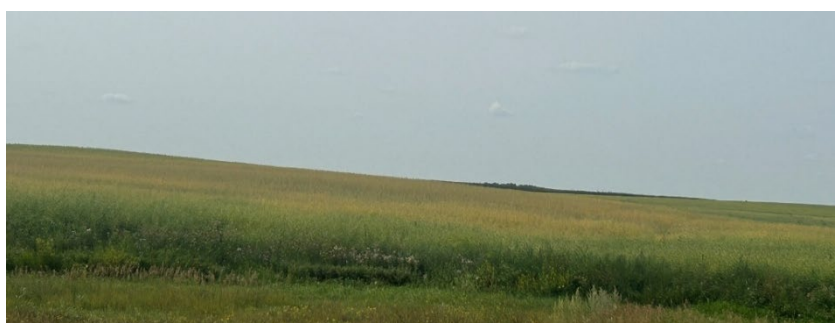


Figure 6. Canola turning color in Pierce County. Photo: Natalie Wibe, ANR Extension Agent, Pierce County



Figure 7. Sunflowers blooming in Cavalier County. Photo: Anitha Chirumamilla, LREC

[Anitha Chirumamilla](#)

Extension Cropping Systems Specialist
Langdon Research Extension Center

NORTHWEST, NORTH CENTRAL, AND SOUTHWEST NORTH DAKOTA

Dry conditions continue to worsen across these regions with nearly all of Adams, Billings, Bowman, Golden Valley, Hettinger, Grant and Stark Counties in D2 drought status in addition to parts of Dunn, McKenzie, Morton, and Sioux Counties.

Dry peas are yielding very well across the region in most cases at 35 to 40 bushels per acre with 40 to 75% of fields harvested south of Watford City.

25 to 75% of hard red spring wheat (HRSW) and barley has been harvested south of McKenzie County with HRSW harvest just beginning in Renville County. HRSW yields across these regions range from 35 to 60 bushels per acre with test weights between 56 and 60 pounds per bushel and protein mostly between 15 and 16%. At least 10% of HRSW was baled in McKenzie County due to drought conditions and likely poor grain yield. The farther south you travel in the regions, the greater the percentage of HRSW fields baled, but no good estimates of percentage of HRSW fields baled was provided.

Barley seems to be yielding in the 60 to 70 bushels per acre range across the region with most making malt quality.

Corn condition is very severe in areas in the south half of McKenzie, southern Dunn, Mercer, and Oliver Counties with much discussion of when and how to harvest corn as a forage due to the

drought condition. Some corn has already been cut for silage. North of this dividing line corn is looking fair to good overall with just poor areas in fields, but the poor areas are becoming larger as the drought continues.

Soybeans across the region are highly variable and the farther south the poorer the crop. There still seems to be some hope for the crop from Mercer County and to the north, but rainfall is needed immediately to save the crop even in these areas.

Sunflowers are looking great across these areas with most sunflowers still flowering while others have completed flowering and petals have begun to drop. It was mentioned that sunflower head diameter is less than normal, but for some sunflower stands are very good and uniform and think that will make up yield for the smaller diameter heads.

Canola looks pretty good throughout the three regions with harvest having started in Stark County already with many other counties starting yet this week south of New Town, ND.

No major pest problems were reported, including weeds, except grasshoppers are increasing in the southwest region of the state. Foxtail barley was mentioned as being more prevalent this year in most counties and environments. Horseweed/marestail was also mentioned in some areas.

Hay yields are anywhere from 30 to 50% of normal. Fires are increasing in frequency, particularly in the southwest part of the state.

[Jeff Stachler](#)

NDSU Extension Cropping Systems Specialist
Carrington Research Extension Center

SOUTH-CENTRAL AND SOUTHEAST NORTH DAKOTA

Drought continues to strengthen and increase across the region. Only the entire county of McIntosh and parts of Dickey, LaMoure, Logan, Kidder, and Stutsman Counties are not officially in minimum drought status (D0 - abnormally dry) condition as of last Thursday, however parts of all counties in the region have D0 conditions. Corn and soybean, specifically, across the region are highly variable in condition from 0 yield in parts of fields to slightly below average yield in other parts of fields, depending upon soil type (water-holding capacity), elevation, water table, rainfall, planting conditions, and planting date. The foreground of Figure 1 shows spider mites starting on the edge of a Griggs County field with severely wilted soybean plants in the background. Figure 2 shows a wide crack in the soil in LaMoure County last Thursday. Dry beans in the driest areas of fields within the region like Cass, Griggs, and Steele Counties already of leaves turning yellow and heading towards full maturity. Higher than normal temperatures

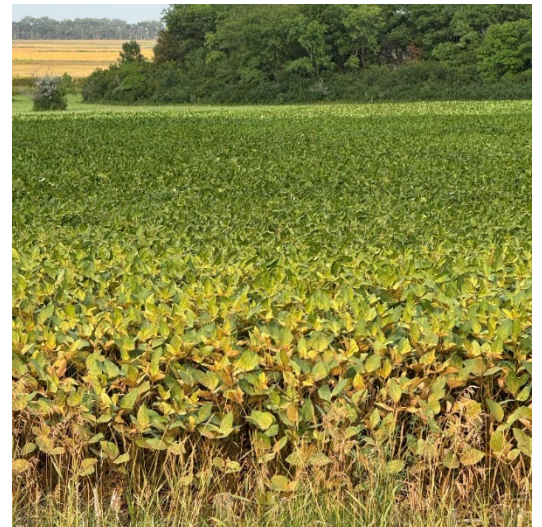


Figure 1: Spider mites starting on the edge of a Griggs County soybean field in the foreground with wilted

continued across the region again with average daily temperatures for the past week ranging from 77 near McHenry to 85 degrees Fahrenheit near Strasburg with an average for the region of 81 degrees Fahrenheit, 7 degrees lower than the week before.

Spider mites are being found in soybean, dry bean and corn fields in more counties and fields than the past week. Northern corn rootworm beetles were found in a corn field in Foster and Griggs Counties last week in corn rootworm traps. Two of the 6 trap locations had northern corn rootworm adults on traps with a Griggs County field having a total of 8 northern corn rootworm beetles on the four traps in the field. I found red-headed flea beetles in 4 of the 6 trap fields with an irrigated corn field having 23 red-headed flea beetles on just one trap in Griggs County. Aphids are still present, but I'm not aware of any economic threshold populations in the region. Grasshoppers across the region continue to increase in density, but usually not at economic thresholds yet, however, please scout as many crops are not far enough along to not be concerned about severe grasshopper damage. The most damaging and surprising crop loss from insects and animals observed last week was near complete loss of corn in a research trial at the Oakes Irrigation offsite caused by birds (Figure 3).



Figure 2: A large crack in the soil in a hard red spring wheat field in LaMoure County last Thursday.



Figure 3: Near complete loss of corn due to bird damage in a corn research trial at the Oakes Irrigation offsite. The worst bird damage I've ever seen!

Weeds in all crops continue to come above the crop canopies. The most common weeds include wild oat, waterhemp, kochia, and common ragweed, with kochia being the most common across all crops in the region. The most common broadleaf weed in road ditches and non-crop areas this

year, at least in all counties east of the Missouri River, is perennial sowthistle. Some patches are extremely thick as seen in Figure 4 in Sheridan County last week and seeds are being blown away. The other huge weed issue across the state is the lack of perimeter weed management. Wind-blown seeds of Canada thistle, perennial sowthistle, horseweed (marestail), absinth wormwood, and prickly lettuce are dispersing seeds into crop fields from dense patches along the field margins as seen in Figure 5 in Pierce County. Annual weeds such as kochia and waterhemp are also present in high numbers along field edges, just waiting for the combine to gather up these plants and spread them farther into the field. Please go back to the [July 30th Crop and Pest Report Issue](#) and read about perimeter weed management. Weed management starts along the field perimeter.



Figure 5: Dense Canada thistle patch along the outside field perimeter in Pierce County. The seeds are starting to blow into the field.



Figure 4: Dense perennial sowthistle patch in a non-crop area in Sheridan County, just waiting for the seeds to blow into the field.

The least rain fell this past week during the entire growing season, adding to the water deficit. Rainfall ranged from 0 inch at 27 NDAWN locations in the region I have been monitoring this season to 0.31 inch near Ayr this past week with an average for the region of only 0.02 inch. Water deficits caused by the difference in Jensen-Haise potential evapotranspiration and subtracting rainfall ranged from 1.16 inches near Ayr to 1.54 inches near Lisbon with an average across the region at the 47 NDAWN stations of 1.4 inches. Soil moisture across the region is nearly the same as last week at the 4-inch (a low of 2.2% at Skogmo to 32.2% at Ayr) and 39-inch depths in the soil.

The average corn growing degree days (GDD's) for this past week compared to the previous week increased only 110 GDD's, the lowest increase for a week since the week of June 22 to June 29th! Table 1 shows Mooreton has accumulated the greatest number of GDD's at 1686 while Denhoff

has only accumulated 1443 GDD's. The Denhoff NDAWN location continues to have the greatest departure from normal GDD's for this time of year while all other locations were at least 25 GDD's above the normal with Mayville at 210 GDD's above normal. Based upon the accumulated GDD's at Denhoff since May 13th, an 80-day corn hybrid could reach black layer September 1st now, 2 days later than last week. Based upon the accumulated GDD's at Mooreton since May 13th, a 95-day corn hybrid could reach black layer by September 16th, 1 day later than last week.

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	1443	1547	1526	1504	1571	1633	1686
Departure from last week	+ 1110	+ 118	+ 106	+ 110	+ 107	+ 110	+ 109
Departure from normal	- 48	+ 25	+ 130	+ 67	+ 101	+ 212	+ 122
Departure from 2025	+ 218	+ 155	+ 220	+ 172	+ 187	+ 266	+ 258
Departure from the 5-year average	+ 51	+ 33	+ 92	+ 53	+ 39	+ 122	+ 92
Departure between last week and Aug. 3 for the 5-year average	- 5	- 8	- 13	- 13	- 16	- 10	- 17

Hard red spring wheat (HRSW) and barley harvest ranges from at least 30% in most counties to likely completed in Richland and Sargent Counties. HRSW yields are ranging between 20 and 70 bushels/A across the region. Test weight is between 53 to 60 pounds per bushel with most about 58 pounds per bushel. Protein ranges from about 14 to 19% with most about 15 to 16%. Little dockage has occurred in most HRSW grain samples up to this point in time.

Corn condition declined again this past week in the entire region. Corn yields will range from 0 bushels/A in parts of fields. In Kidder County corn chopping has begun with maybe 25% of the crop being harvested as silage instead of for grain due to the drought. Corn growth stage in the region ranges from about R1 (silking) to R5 (dough stage) with most corn at R3 (milk) stage.

The soybean crop declined in condition as well this past week in most of the region due to the drought and heat. Soybean growth stages ranges from R3 (at least 3/16-inch pods in one of the upper 4 nodes) to R5 (pods starting to fill in at least one pod within one of the top four nodes having fully expanded leaflets).



Figure 6: R5 soybean plant in Griggs County having few pods on the plant, despite being pretty tall.

Figure 6 shows soybean at the R5 stage having very few pods on the plant, despite being tall and lush.

Canola harvest has begun at least in Burleigh, Cass, Emmons, and Sheridan Counties, but I have not heard any yield reports yet. Most canola in the region continues to look really good, but pod abortion is present at the top of some plants in fields. Nearly all canola in the region is nearly brown in color.

Dry bean condition declined in most of the region again this past week as plants in some areas of fields are showing yellow-colored leaves and shutting down if there has not been enough rainfall. Dry bean growth stage ranges from R5 (pods 3 inches long and seeds starting to fill) to R8 (leaves yellowing) with most at the R6 (seeds $\frac{1}{4}$ inch diameter) stage.

Sunflowers look really good across the region from the road and have good plant health, however head diameter appears to be less in most fields. Sunflower growth stage ranges from R3 (flower bud extending) to R6 (petals dropped/flowering complete) with most at the R5.8 (80% of head flowering) stage.

Please stay safe with harvest and think critically about equipment and fires.

[Jeff Stachler](#)

NDSU Extension Cropping Systems Specialist
Carrington Research Extension Center

**WEATHER FORECAST****The August 13 to August 19, 2026 Weather Summary and Outlook**

Most of the rain recorded in the past week through 9:00 AM on August 12 was on Tuesday night into Wednesday morning (Figure 1). With most locations outside of the I-94 corridor recording very little. This period will also see some opportunities for rain, yet, the odds favor like most of this summer amounts will very greatly once again.

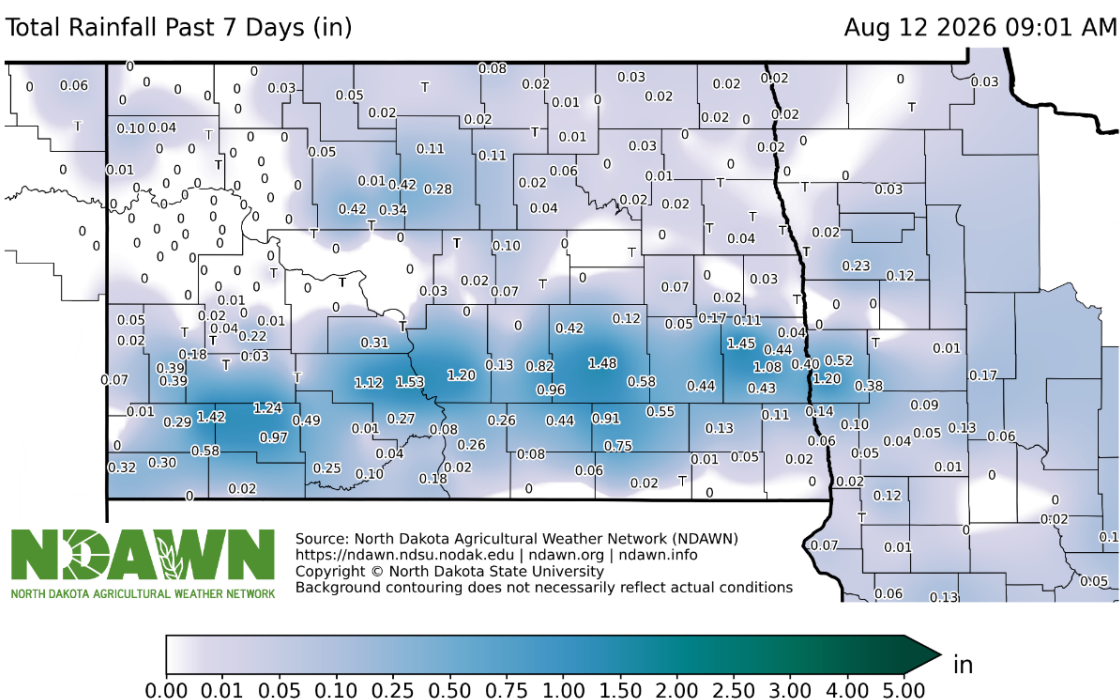


Figure 1. Total Rain at NDAWN stations from August 6 through 9:00 AM on August 12, 2026

Through August 11, the rainfall deficits have been several inches below average. The east central portion of North Dakota some negative anomalies have been over 6 inches.

Departure from Normal Precip Since May 1 (in)

Aug 11 2026

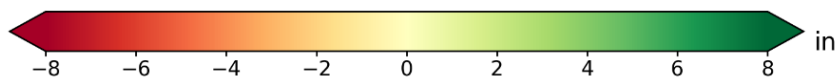
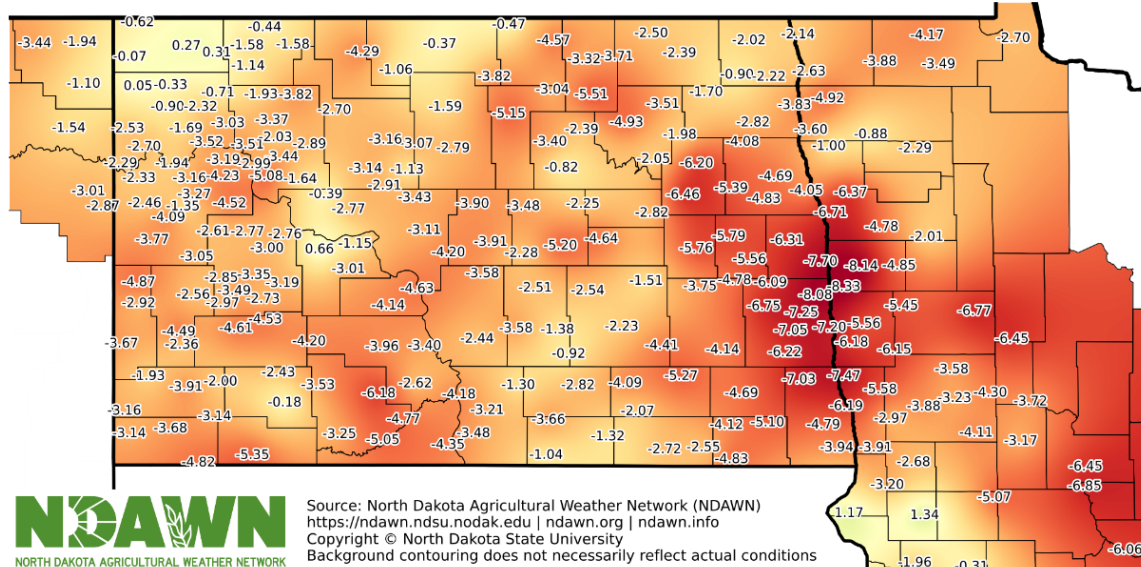


Figure 2. Departure from Average Rainfall from May 1 through August 11, 2026

After several weeks with above average temperatures, this past week was mostly near or below average across the entire state. These next seven days should experience a mix of above and below average days, meaning, overall, pretty average for the middle of August.

Departure from Normal Temperature - Past 7 Days (°F)

Aug 11 2026

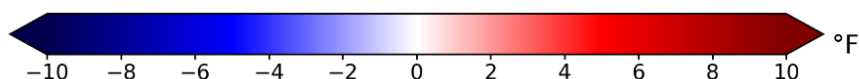
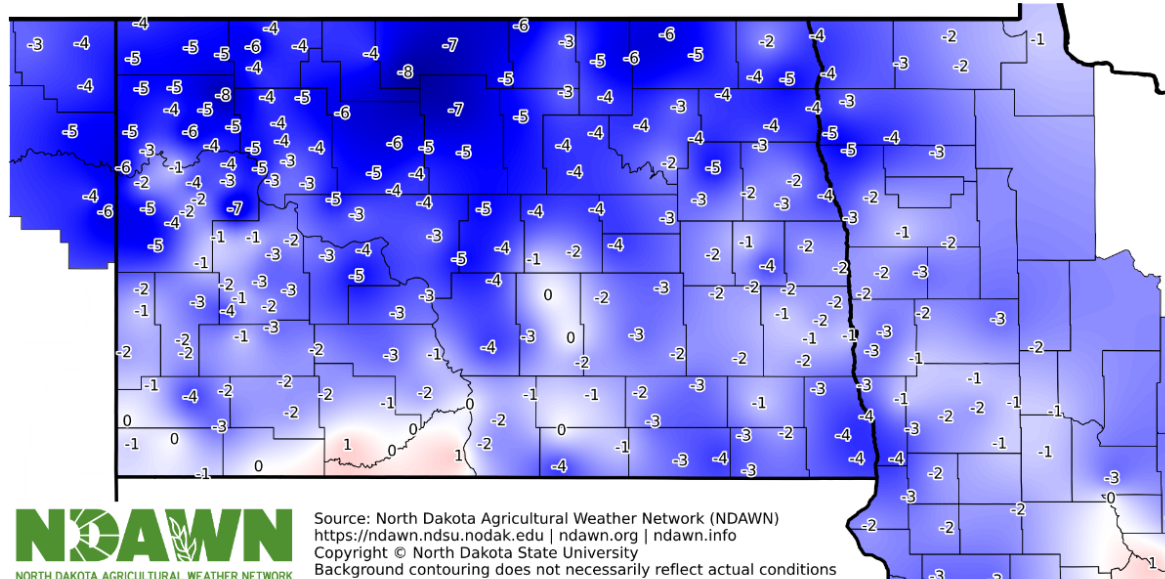


Figure 3. Departure from Average Temperatures for the period of August 5 through August 11, 2026.

Figures 4 and 5 show the forecasted growing degree days (GDDs) for base 32° (wheat and small grains) and base 50°F (corn and soybeans) during this forecast period.

Growing Degree Days (Base 32) Forecast

Aug 13 - Aug 19 2026

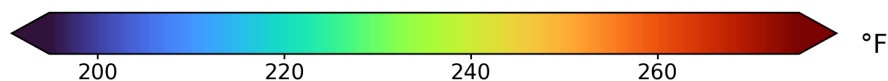
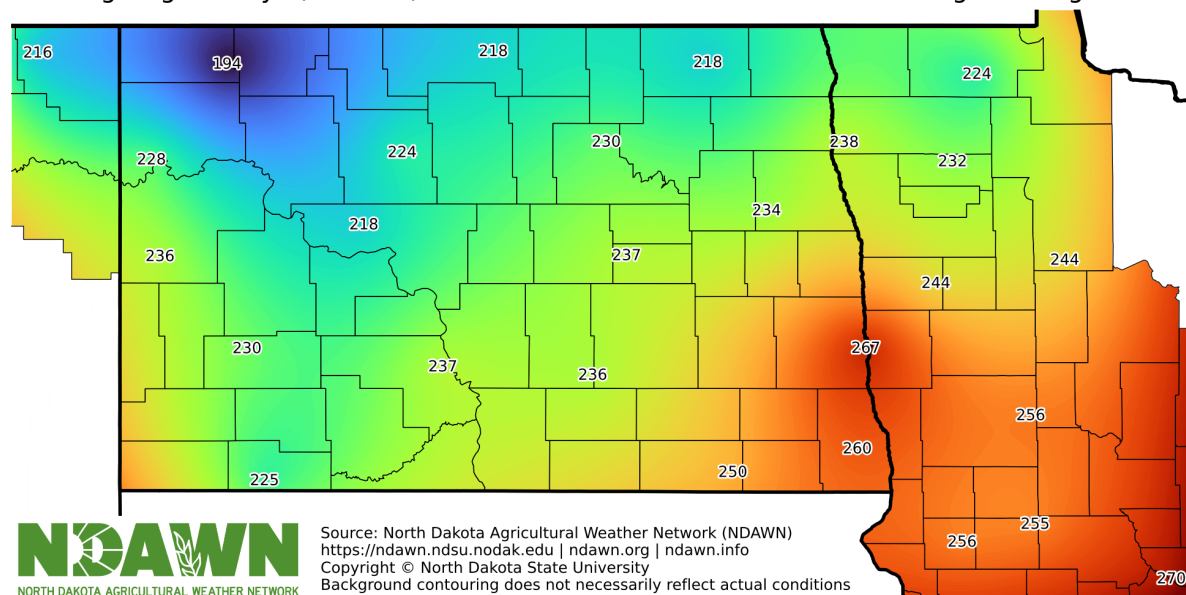


Figure 4. Estimated Growing Degree Days Base 32° for the Period of August 13 to August 19, 2026

Growing Degree Days (Base 50) Forecast

Aug 13 - Aug 19 2026

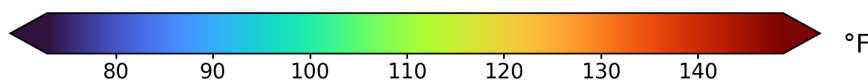
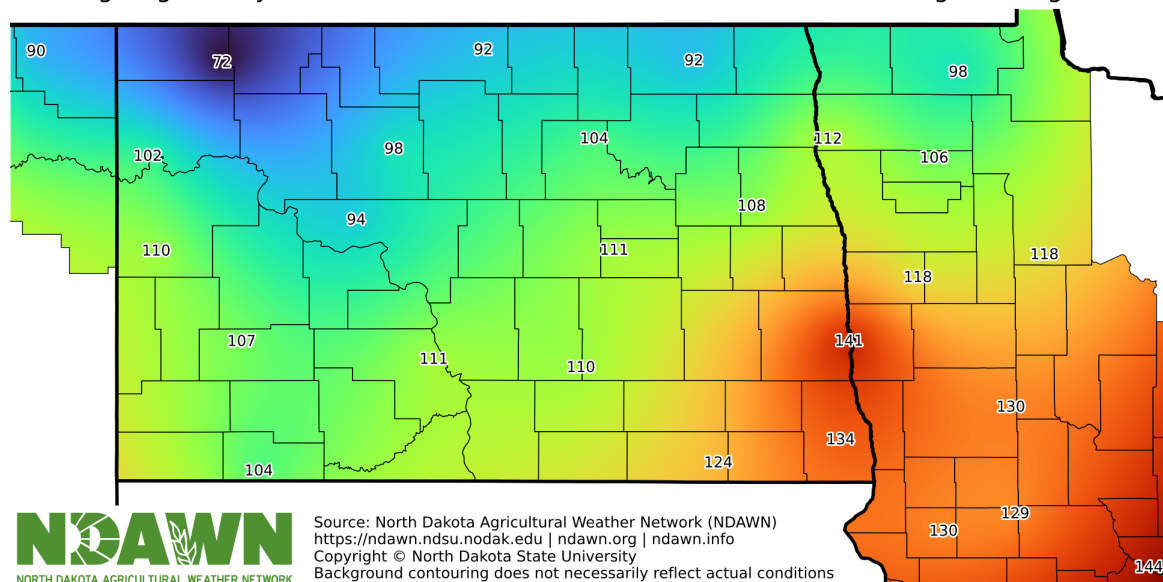


Figure 5. Estimated Growing Degree Days Base 50° for the Period of August 13 to August 19, 2026

Using May 1 as a planting date, the accumulated growing degree days for wheat (base temperature 32°) is given in Figure 6. You can calculate wheat growing degree days based on your exact planting date(s) here: <https://ndawn.ndsu.nodak.edu/wheat-growing-degree-days.html>

Wheat Growing Degree Days Since May 1

Aug 11 2026

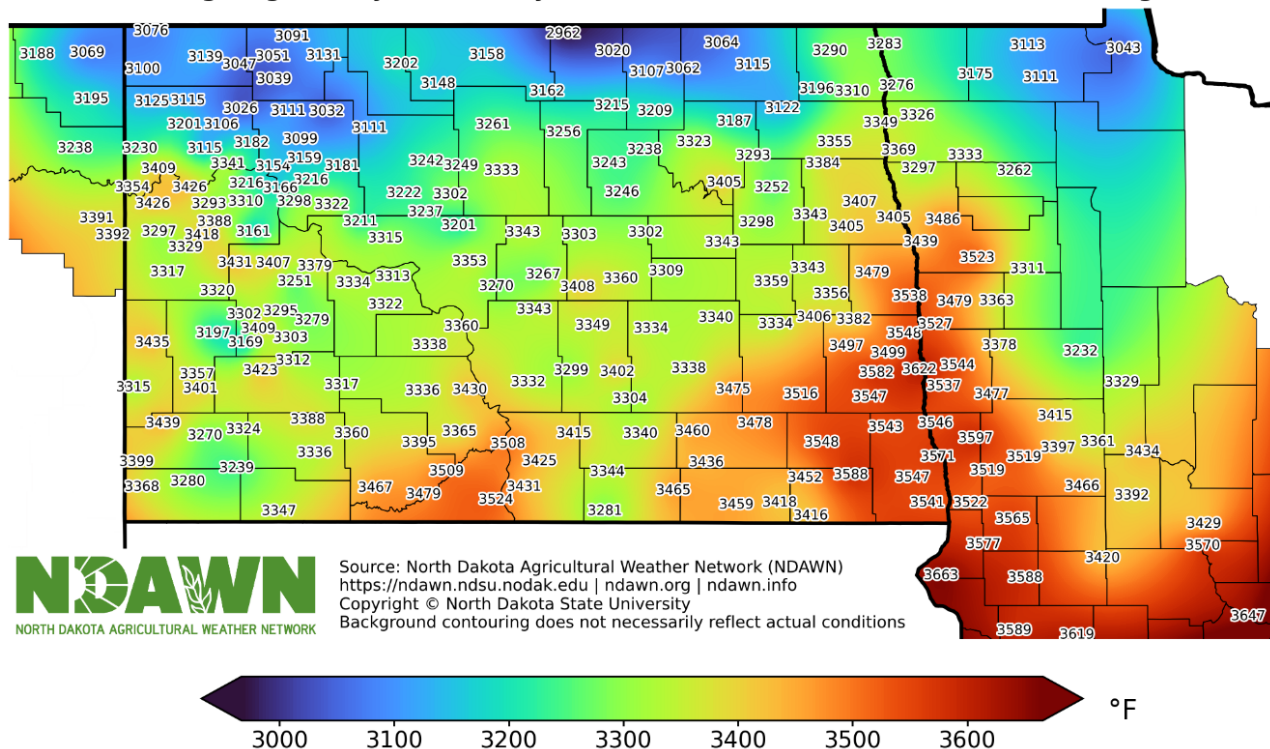
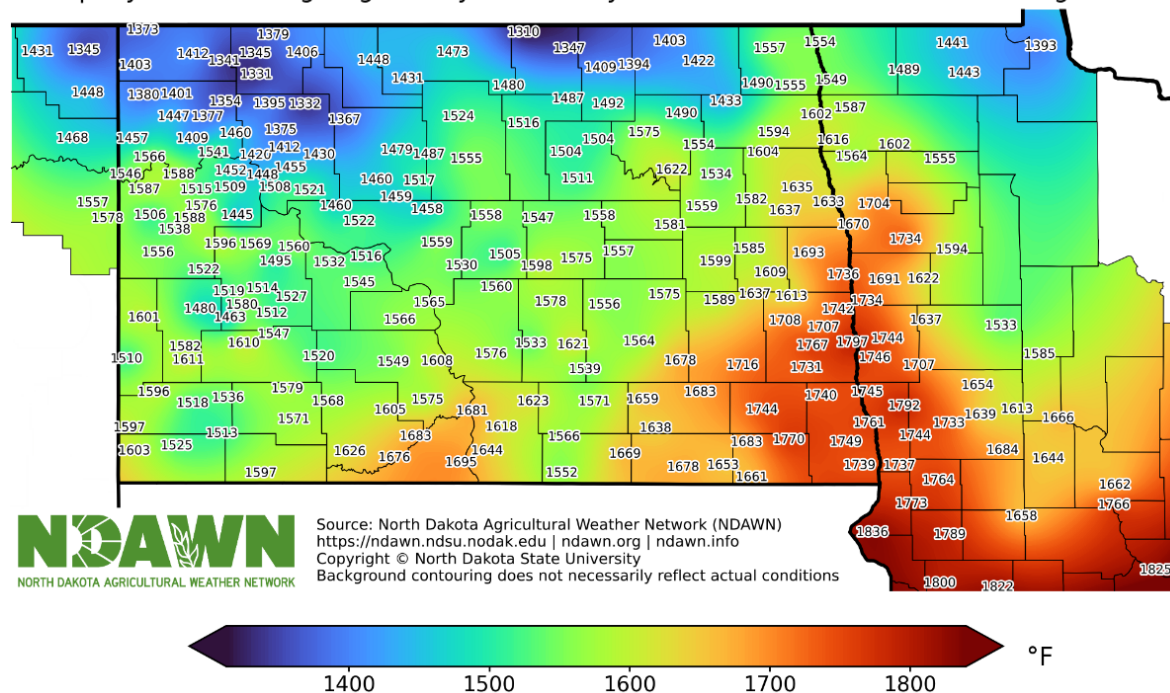


Figure 6. Wheat Growing Degree Days (Base 32°) for the Period of May 1 through August 11, 2026

Using May 10 as a planting date, the accumulated growing degree days for corn (base temperature 50°) is given in Figure 7. You can calculate corn growing degree days based on your exact planting date(s) here: <https://ndawn.ndsu.nodak.edu/corn-growing-degree-days.html>.

Corn | Soybean Growing Degree Days Since May 10

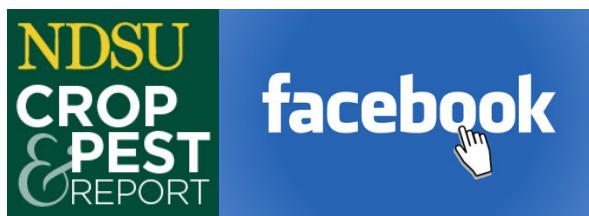
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