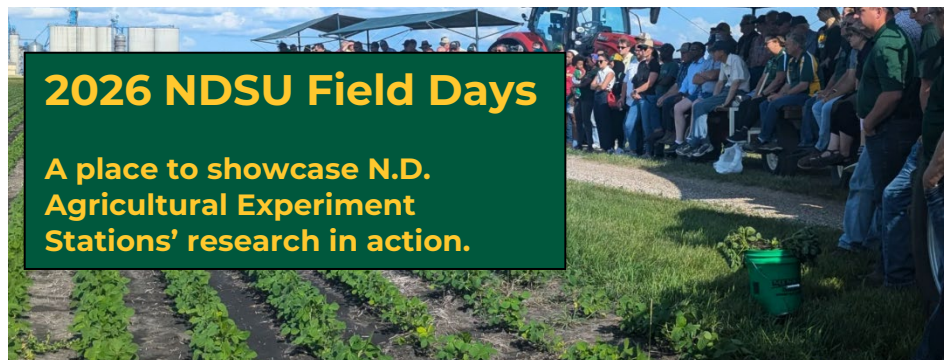


2026 NDSU FIELD DAYS

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The North Dakota State University Research Extension Centers' annual field days show N.D. Agricultural Experiment Station research in action. The events take place at the Research Extension Center sites across the state and feature speakers, presentations and tours covering a diverse array of topics. The field days are open to the public.

2026 Field Days Locations & Dates

Location	Date	Time
<u>Central Grasslands</u>	July 7	10 a.m. - 3 p.m. CDT
<u>Hettinger</u>	July 8	5-8 p.m. MDT
<u>Dickinson</u>	July 9	4:30-9 p.m. MDT
<u>Williston</u>	July 10	9 a.m. - Noon CDT
<u>Agronomy Seed Farm</u>	July 13	5-7:30 p.m. CDT
<u>Carrington</u>	July 14	9 a.m. - 3 p.m. CDT
<u>North Central</u>	July 15	9 a.m. - Noon CDT
<u>Langdon</u>	July 16	8:15 a.m. - 12:30 p.m. CDT
<u>Nesson (WREC)</u>	Aug. 5	9 a.m. - 1 p.m. CDT
<u>Oakes (CREC)</u>	Aug. 6	9 a.m. - 1 p.m. CDT



IPM INSECT REPORT

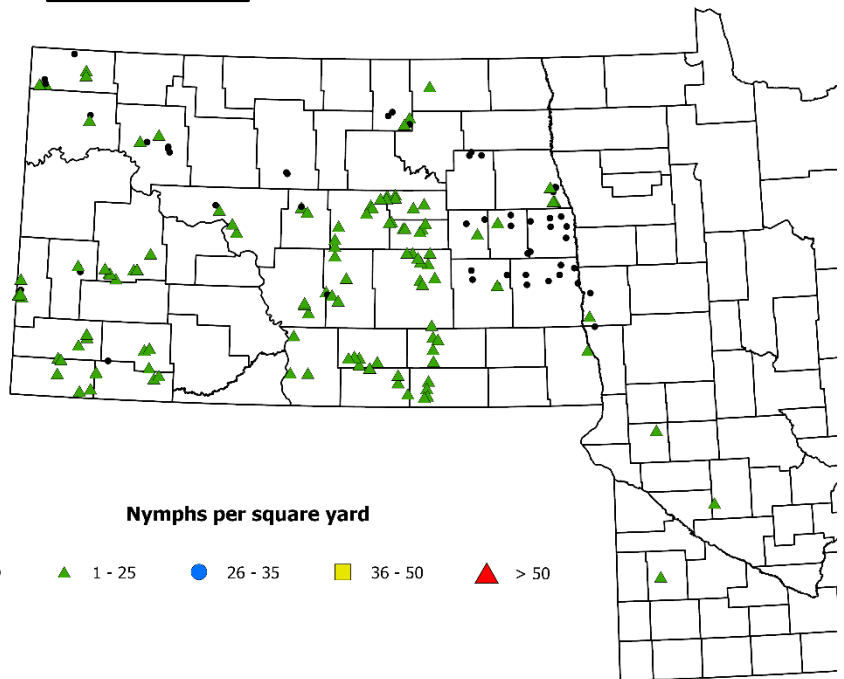
With warm-cool temperatures, insects are slowly developing and easier to find on crops in fields. Here are some reports from last week's IPM scouting, along with comments from growers, crop consultants and agronomists. Please send in any interesting insect observations to my email (janet.knodel@ndsu.edu). Thank you.

✓ **Grasshopper nymphs (young grasshoppers)** are being found at low densities in most of North Dakota on wheat, soybean and sunflower fields. At this point, their numbers are too low for any crop damage; however, scouting should continue at least weekly for the rest of the growing season. The cool, wet conditions are not favorable for grasshopper development, increasing the risk of disease epizootics and reducing overall population levels. **For grasshopper nymphs, the action threshold is 50-75 nymphs per square yard in field margins and 30-45 nymphs per square yard in the field interior.** Since it is difficult to estimate the number of grasshoppers per square yard when population densities are high, pest managers use four 180-degree sweeps with a 15-inch sweep net, which is equivalent to the number of nymph (or adult) grasshoppers per square yard.



Grasshoppers

June 4 - 12, 2026



✓ **Soybean bean leaf beetle** has also been detected at low levels, less than 1 percent defoliation, mainly in the central region of the state. Adult bean leaf beetles emerge from overwintering sites and move into emerging soybean or dry bean fields. The adults are yellow to reddish-brown, with four black spots (or none) and a black border on the wing covers. They chew circular holes in the leaves, causing



Bean leaf beetle (J. Kalisch, Nebraska State University)

defoliation. The **defoliation economic threshold is 30 percent during the vegetative stage for both soybeans and dry beans.**

- ✓ **Thistle caterpillars** were observed feeding on soybeans in one field in Stutsman County out of 50 fields scouted last week in North Dakota. This butterfly does not overwinter in the region. The painted lady butterflies migrated into North Dakota, probably a month ago. These larvae are brown to black, with yellow stripes along each side of the body. They are covered in spiny hairs, giving the larvae a prickly appearance. Mature larvae are about 1 ½ inches long. The larvae feed on the leaves, webbing them together at the feeding site. Watch for the second generation of butterflies and eventually caterpillars.
- ✓ **Soil insects (cutworms and wireworms)** are being reported, which feed on roots, decreasing plant stands.



Thistle caterpillar in webbed nest on a thistle (Nancy Deis, Emmons County)

Most damage by **cutworms** occurs when crops are in the early stage of development. Damage consists of young plants being chewed off slightly below or at ground level. Some climbing cutworms feed on foliage, causing defoliation. Cutworms primarily feed at night. See the [past issue #9 \(June 4\) of the Crop & Pest Report](#) for more information about cutworm thresholds and management.



Dingy cutworm larva on sunflower (Kristie Michels, crop consultant)

Wireworms prefer to infest grassy crops such as cereal grains and corn for development and reproduction. But it does feed on other crops, such as canola, dry beans, soybeans and peas, especially if they are not protected with an insecticide seed treatment and wireworm populations are high in the field. Neonicotinoid seed treatments kill some wireworms in the field; however, many wireworms only get sick and then recover to continue feeding later (gradually populations build over time). A more recent insecticide seed treatment called Teraxxa F4 (broflanilide, IRAC Group 30) is labeled in cereal crops (wheat (spring, winter, and durum), barley, oats, rye, and triticale). Equento 400 FS (isocycloseram, IRAC Group 30) is another new insecticide seed treatment for wireworms and is approved for the following crops: barley, dry beans, canola, chickpea, corn, fava bean, field pea, lentils, oats, rye and wheat. Extension Entomology has tested both new insecticide seed treatments in wheat. Results showed good to excellent efficacy against wireworms, with complete mortality. Some field crops (corn, field pea and soybean) also have at-plant soil insecticides available (see the NDSU Extension [2026 North Dakota Insect Management Guide E1143](#)) for more wireworm management options.

- ✓ **Corn rootworm larvae** were observed feeding on corn roots in Cass County this week. So, egg hatching is underway. See the NDSU Extension [Integrated Pest Management of Corn Rootworms in North Dakota E1852](#), for more information.

[Janet J. Knodel](#)
Extension Entomologist

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



FEATURED MATCHUP: NDSU PLANT PATHOLOGISTS VS. BACTERIAL BLIGHTS OF DRY BEANS

Players to Watch:

- Common Bacterial Blight (***Xanthomonas phaseoli pv. phaseoli***)
- Bacterial Brown Spot (***Pseudomonas syringe pv. syringe***)
- Halo Blight (***Pseudomonas syringe pv. phaseolicola***)

Scouting Report:

- Diseases commonly appear after plants are wounded by hail or high winds (especially thunderstorms).
- Diseases occur on leaves, pods **and** seeds
- Common Blight is most aggressive when temps hot (80-90F)
- Brown Spot is most aggressive when temps are warm (80-85F)
- Halo Blight is most aggressive when temps are cool (68-72F)

Opponent's Game Plan:

- Lesions begin as small water-soaked spots (like a drop of oil on green tissue) (Figure 1 – Courtesy of J. Pasche, NDSU)
- Common Blight lesions become large and necrotic with small yellow halos (Figure 2)
- Brown Spot lesions become small necrotic lesions with small yellow halos (Figure 3 – Courtesy of R. Harveson, Univ. Nebraska)
- Halo Blight lesions become small necrotic lesions, with large faint green to yellow halos (Figure 4)
- Bacterial ooze may appear in lesions (Figure 5)

Opponent's Strengths:

- Frequent thunderstorms facilitate epidemics
- Survives in residue AND seed
- Fungicides generally do not protect against bacterial diseases

Opponent's Weaknesses:

- Plant Disease-Free Seed!
- Crop rotation
- Genetic resistance (some varieties are less susceptible than others)
- Chemical application (some efficacy has been observed with multiple applications of some chemicals)

Trick Play to Watch:

- Planting infected seed can lead to early onset of widespread epidemics.
- Disease-Free seed also helps prevent Anthracnose and Bacterial Wilt!

Practice Your Skills?:

More images and diagnostic information is available at: [Dry Edible Bean Diagnostic Series](#)



Figure 1. Water soaked pod lesions of Common Bacterial Blight.



Figure 2. Common Bacterial Blight



Figure 3. Bacterial Brown Spot

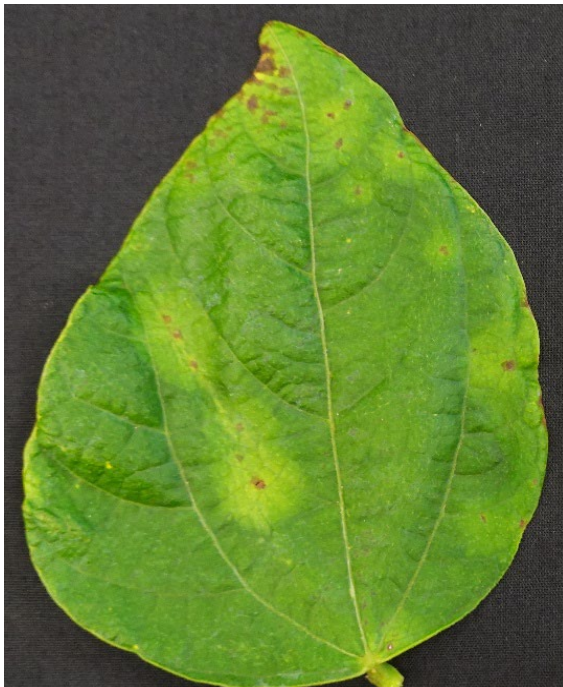
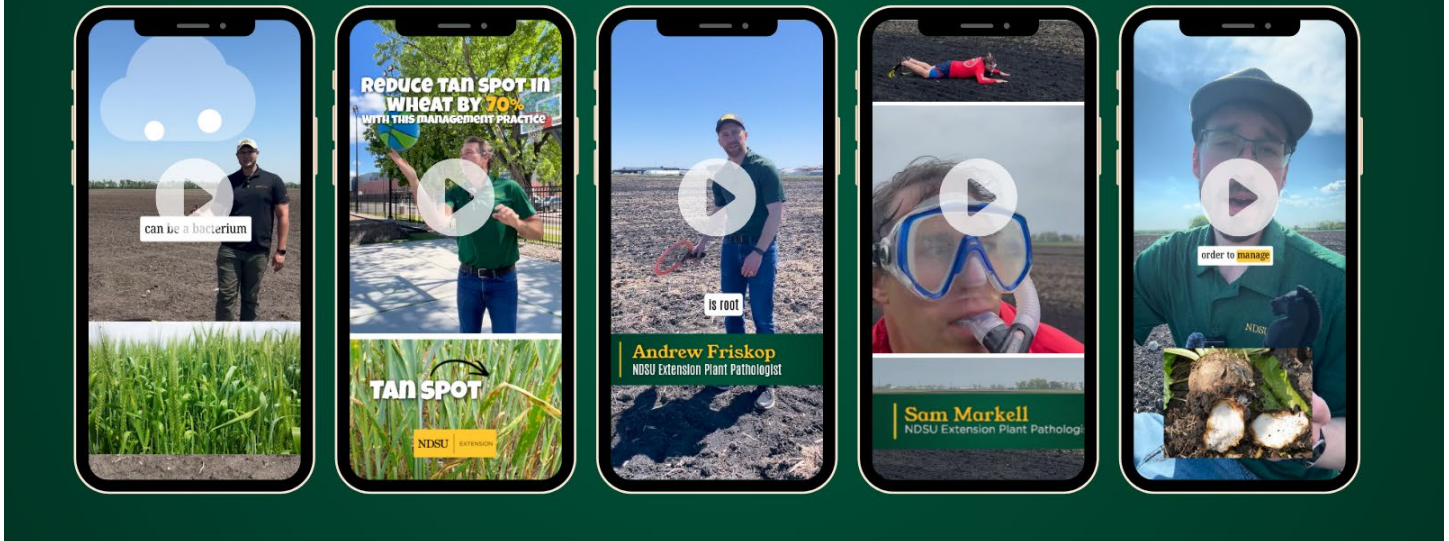


Figure 4. Halo Blight



Figure 5. Water-soaked and oozing bacterial lesions on pods.

Featured **MATCHUPS**



<https://www.youtube.com/@NDSUExtension/shorts>

<https://www.facebook.com/ndsuetcpr>

<https://x.com/NDSUExtension>

[Sam Markell](#)

Extension Plant Pathologist, Broad-leaf Crops

[Wade Webster](#)

Extension Plant Pathology, Soybeans

[Andrew Friskop](#)

Extension Plant Pathology, Cereal Crops

[Eric Branch](#)

Extension Plant Pathology, Sugarbeets

WHEAT DISEASE UPDATE

Reports from the IPM scouts, Extension specialists, agronomists, and crop consultants have all provided a similar general report; wheat disease occurrence is very low. This is great news for wheat producers in ND! The most common photos I have received have been of abiotic leaf spots (ie: wind damage, heat damage, potential herbicide damage, etc) with a few isolated reports of wheat streak mosaic. The most interesting (and somewhat puzzling) disease report is that stripe rust was confirmed on June 8 in one field at very low incidence in southwest ND.



Figure 1. Stripe rust in the lower canopy from a field in southwest ND (Photo Credit – Emma Aberle – Dickinson REC IPM Scout).

[Andrew Friskop](#)

Extension Plant Pathology, Cereal Crops

[Victor Gomes](#)

Extension Cropping Systems Specialist
NDSU Dickinson Research and Extension
Center

STRIPE RUST WAS FOUND...NOW WHAT?

Where Does Stripe Rust Come From?

The stripe rust pathogen does not overwinter in North Dakota (ND) and relies on southerly winds to carry spores northward into the state each growing season. Stripe rust risk in ND increases when there are epidemics in Kansas, Nebraska and/or South Dakota in combination with strong southerly winds. This year, there have been many days with strong southerly winds, however, the wheat crop in the southern Great Plains has been stressed by drought with minimal reports of stripe rust. It is possible spores could have traveled in from the west and we do have some evidence from race surveys in 2015 and 2016 that this infrequently occurs. Regardless of the spore source, I am still viewing this as a low stripe rust year largely because of the lack of spores that are freely available in the southern Great Plains States.

Management Perspectives?

Check the susceptibility of your spring wheat, winter wheat, and durum varieties. Most varieties do have stripe rust resistance and that will counteract any potential concerns with disease risk. If you have a susceptible variety, do not panic! There are several fungicides available that are very good to excellent against stripe rust. As for timing, our field research has shown an application at

flag leaf **or** at early-anthesis (FHB timing) can reduce rust and protect yield. In other words, if you have already penciled in a fungicide for FHB, this fungicide timing will also help reduce rust concerns on the flag leaf.

Final Thoughts

Disease onset, availability of spores, and conducive conditions contribute to stripe rust risk in ND. Most of the wheat crop is jointing with some of the crop at the flag leaf growth stage. This has given us a good head start in our ability to “out-race” the disease. The availability of spores is still very low due to lack of inoculum in ND and in the states directly south of us. We will have conducive conditions for stripe rust development (needs only 6 hours of leaf wetness to initiate infection), but remember we need all corners of the disease triangle for a significant epidemic to occur.

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PHYTOPHTHORA ON THE MIND

Soybeans are progressing quickly across North Dakota, with many fields currently around the V2 growth stage. As soybean plants continue to develop, now is a good time to begin scouting for early-season diseases, including *Phytophthora* root and stem rot (PRR), primarily caused by ***Phytophthora sojae*** and ***Phytophthora sansomeana***. This disease is favored by wet and saturated soil conditions and is most commonly observed in low-lying areas of fields, compacted areas, or regions with poor drainage.

Phytophthora can infect soybean plants throughout the entire growing season. However, symptoms can vary depending on the growth stage when infection occurs. Early infections shortly after planting can result in seed rot, pre-emergence damping-off, or seedling death. But starting at about this point in the season, infected plants may show reduced vigor, yellowing leaves, wilting, and the characteristic dark brown lesion that extends from below the soil line upward on the stem. We also often will see affected plants have petioles droop to a 90-degree angle when they start to die prematurely from PRR.



Figure 1. Low-lying area of a field with *Phytophthora* root and stem rot.

Understanding Soybean Resistance to *Phytophthora*

Management of PRR relies heavily on soybean genetics, and there are two primary forms of resistance used against ***Phytophthora***: Rps genes and field tolerance (more precisely called “partial resistance”).

Rps genes provide race-specific resistance and function throughout the entire season. However, they play a critical role in the beginning of the season when the field tolerance is not yet fully functional. These Rps genes act similarly to a lock-and-key system, where the soybean plant recognizes specific races of ***P. sojae*** and prevents disease development. However, if the pathogen population in the field can overcome that specific Rps gene, the plant may become susceptible.

One important consideration here is that the second species of *Phytophthora*, ***P. sansomeana***, is known to not be controlled by the Rps genes we have currently deployed in our commercial varieties. So if you happen to observe a case of PRR even though you have a good Rps package, this could be the explanation. Breeders and pathologists across the US are currently working on improving this issue to increase the availability of resistance to this pathogen.

Field tolerance works differently from Rps as it is more of a spectrum of resistance. Instead of completely stopping infection, field tolerance slows disease development and reduces the amount of damage caused after infection occurs. Unlike Rps genes, field tolerance is effective against a broader range of ***P. sojae*** populations and is an important component of long-term disease management.

One important consideration is that field tolerance is not fully expressed immediately after emergence. Research has shown that this type of resistance becomes more active as soybean plants develop, typically beginning around the V1 to V2 growth stages. With many soybean fields currently reaching V2 across North Dakota, plants with good levels of field tolerance are beginning to activate this important defense mechanism. Before this stage, seedlings rely more heavily on seed treatments and Rps genes for protection.

Unfortunately, at this point in the season, once PRR symptoms appear, rescue treatments are not available. Management decisions should focus on future seasons and include:



Figure 2. Chocolatey brown lesion on the main stem creeping upward from the soil.

- Selecting soybean varieties with strong field tolerance ratings
- Choosing appropriate Rps genes based on field history
- Using effective seed treatments in fields with a history of PRR
- Improving drainage and reducing soil compaction where possible

The combination of Rps genes, field tolerance, and seed treatments provides the strongest protection against Phytophthora root and stem rot. As soybean plants move beyond the early vegetative stages, field tolerance becomes an increasingly important line of defense against this challenging soilborne pathogen.

[Wade Webster](#)

Extension Plant Pathology, Soybeans



CROP MANAGEMENT FIELD SCHOOL IS NEXT WEEK!

The Carrington Research Extension Center's annual Crop Management Field School is next week June 24, 2026 with registrations due by June 22nd. Registration and refreshments the day of the program begin 8:30 AM at the Carrington Research Extension Center with the program beginning promptly at 9:00 AM. The two morning sessions include weed identification lead by Alicia Harstad, the NDSU Extension ANR Agent from Barnes County and Herbicide Site of Action led by Jeff Stachler, NDSU Extension Cropping Systems Specialist at the Carrington Research Extension Center. The afternoon program features crop growth stages lead by Ana Carcedo, NDSU Extension Agronomist for Broadleaf Crops and nutrient deficiencies and soil fertility lead by Brady Goettl, NDSU Extension Specialist in Soil Science. The program ends near 3:00 PM.

Participants will have the opportunity to obtain five Certified Crop Advisers Continuing Education Credits as follows: One crop management credit, three pest management credits, and one nutrient management credits.

The cost to attend this program is \$100 per person. The workshop is limited to 50 participants, so get your registrations in right away. To register for the event, visit the following website: [2026 Crop Management Field School](#).

If you have any questions regarding this program, please contact Jeff Stachler at jeff.stachler@ndsu.edu. This is an excellent training for consultants, retail agronomists, NDSU employees, any other agronomist, including farmers. I hope to see you there.

[Jeff Stachler](#)

Extension Cropping Systems Specialist

GROWTH DURING COOL WEATHER

Corn in southeast ND is anywhere from just emerging in the latest planted fields to about V6 in those seeded early. Soybeans are anywhere from just planted to V4. The cooler weather that moved into the region over the weekend is expected to last through next week (Figure 1), prompting discussion about what these recent temperatures mean for corn growth and development.

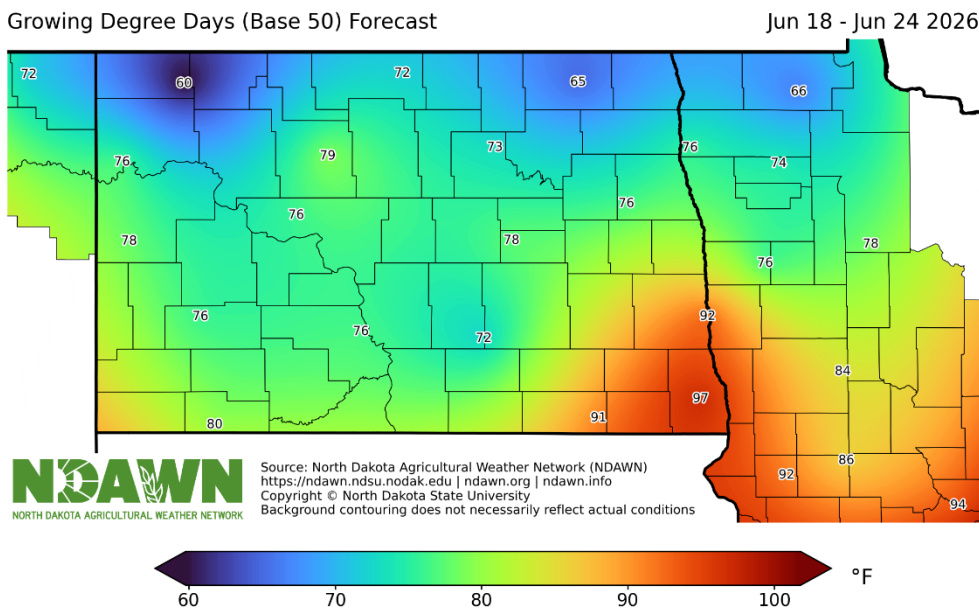


Figure 1. 7-day Growing degree days forecast. Source: NDAWN

Temperature is one of the primary drivers of plant development. Warm conditions accelerate emergence, leaf appearance, and overall crop growth. In short, corn and soybeans grow fastest when daytime temperatures are 80-90°F and overnight lows are 60-70°. Corn and soybean plants can survive at higher and lower temperatures, but cellular growth processes happen fastest within these ranges. When daytime highs are only in the 40s or 50s, corn and soybean growth is very slow.

To better understand what cool temperatures mean for corn, let’s talk about growing degree days (GDD). The standard calculation for corn and soybean GDD is:

$$((\text{High temperature} + \text{Low temperature})/2) - 50$$

With a daily maximum of 86°F used when temperatures are at or above 86° and a low temperature of 50°F used when the daily low is 50° or less. This means that 0-36 GDD accumulation per calendar day are possible. For example, if the daily high temperature is 90 degrees and the low is 60, GDD = $((86+60)/2) - 50 = 23$. If the high temperature is 62 and the low is 48, GDD = $((62+50)/2) - 50 = 6$. If you have V3-V6 corn or small, emerged soybean plants this week and cool temperatures in the forecast, know that your crop is safe as long as temperatures do not dip below freezing. Without hot temperatures, crops won’t grow quickly, but photosynthesis and cell growth will keep going, just at a slower pace than we typically expect, or want, in mid-June.

[Clair Keene](#)
Extension Agronomist Small Grains and Corn

[Ana Carcedo](#)
Broadleaf Agronomist

IRON DEFICIENCY CHLOROSIS (IDC) SHOWING UP.

With the latest rains, more and more reports of IDC have been showing up. Soybean seeds contain sufficient stored iron to support early growth through the unifoliate stage and sometimes into the first trifoliate stage. So, if your soybeans are at V2, it's time to scout.

How will IDC impact my yields? In the early stages (around V2), it's best to monitor the crop and see whether the plants recover. However, if by the time you reach V5-V6, symptoms persist, yield losses are more likely. Research from NDSU has shown that IDC-related yield penalties can range from 9 to 19 bu/ac if symptoms persist until V5-V6 (Figure 1.B).

If **IDC is a recurring issue** in your fields, your first line of defense should always be variety selection. Be sure to consult the NDSU Soybean Variety Trial results to select varieties with strong IDC tolerance for next season. While in-furrow iron chelate products (such as Fe EDDHA) can help, they are not a silver bullet. They won't turn a susceptible variety into a tolerant one; at least not at rates that are economically practical. Additional strategies, such as increasing seeding rates or using companion crops, can also help manage IDC pressure.

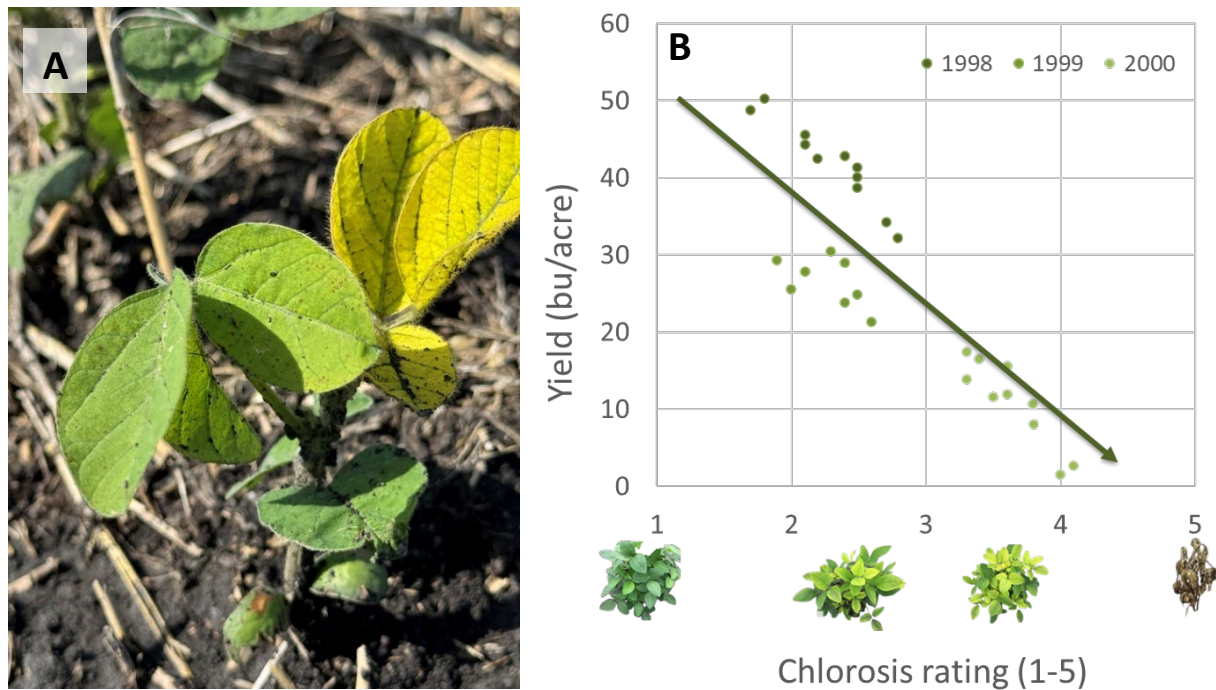


Figure 1. A. Soybean plant from an IDC susceptible variety, showing IDC symptoms. Picture taken near Fargo. B. Yield decrease across IDC scores, plants were scored at V5-V6 stages; data from R.J. Goos.

This year, with support from the ND Soybean Council, we are testing barley mixed with the soybean seed as a companion crop to reduce IDC (Figure 2). Stay tuned to know more about the results!

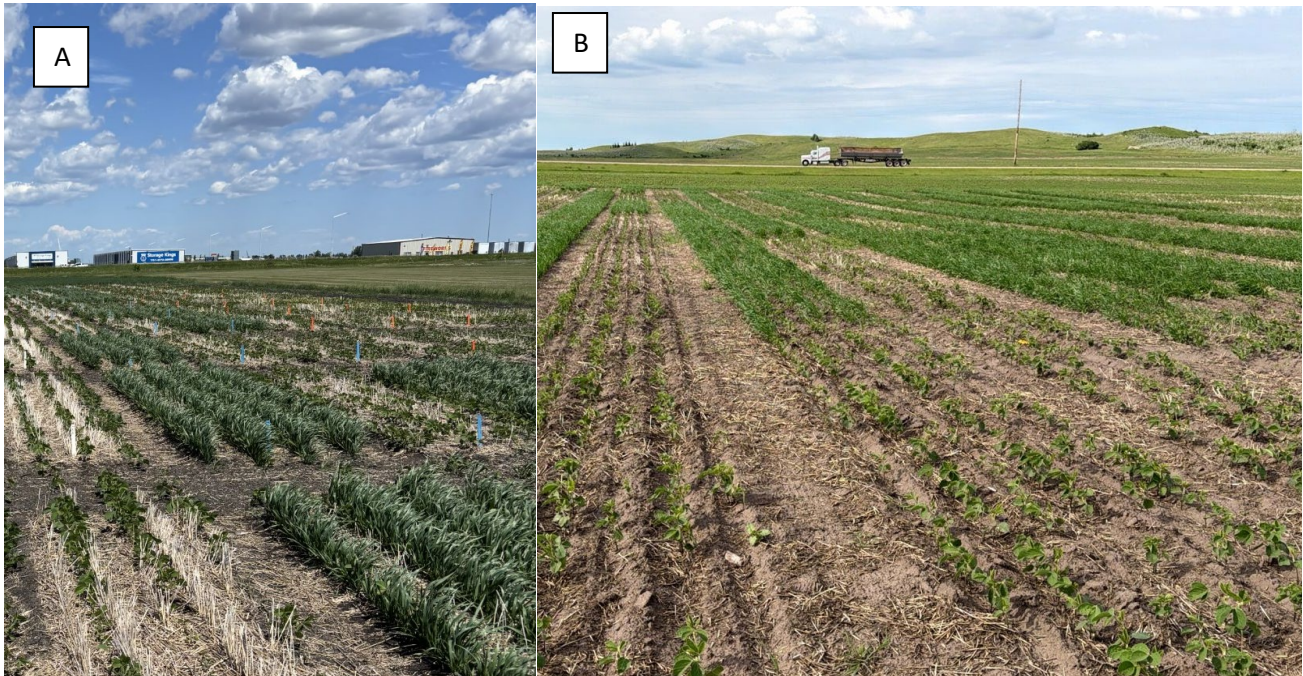


Figure 2. IDC trial near Fargo (A) and near Anamoose (B).

Now is the time to walk your fields, take notes, and start thinking ahead to next year. Effective IDC management starts with informed decisions, and scouting is the first step.

Did you see IDC in your field? Send me pictures!

Do you want to know more?

Check this guide [Soybean Soil Fertility | NDSU Agriculture](#)

[Ana Carcedo](#)
Broadleaf Agronomist



STRESS MANAGEMENT TECHNIQUES FOR FARMERS AND RANCHERS

To relax and manage stresses well while farming or ranching takes discipline and regular practice. It helps to focus on controlling events and attitudes as much as possible. Consider the following techniques that you can use to increase a sense of control and improve stress management efforts while working in agriculture.

Controlling Manageable Events

Stress can feel overwhelming when we experience too many busy or challenging events at one time, known as “stress pile-up.” To reduce the pile-up of too many stressful events at one time, think about how you might control some situations in your farm or ranch work efforts. Some ideas follow:

- Plan ahead. Don't procrastinate. Replace worn machinery parts during the off season.
- Before the harvest season, discuss who can be available to run for parts, care for livestock, or handled other needed tasks.
- Set priorities about what has to be done today and what can wait until tomorrow. Plan your time each day or week.
- Say no to extra commitments that you do not have time to do.
- Schedule stressful events within your control, such as elective survey.

Controlling Personal Attitudes

How farm/ranch family members or others in agriculture view (or think about) situations is a key factor in creating or minimizing unwanted stress. A person has to perceive a situation as stressful or threatening in order to experience stress. Some ideas follow:

- Focus on seeing the big picture. Example: “I'm glad that tire blew out here, rather than on that next big hill.”
- List all the stresses you now have. Identify those you can change; accept the ones you cannot change.
- Shift your mental and emotional focus. Slow down and limit worrying about stresses. Instead, focus your attention on problem solving.
- Think about how to turn your challenges into opportunities. Learn from the examples of others. Notice what you have accomplished rather than what you have failed to do.
- Set realistic goals and expectations. Give up trying to be perfect.

Access Helpful Resources

To learn more about available resources to assist in managing stress in agriculture, read the NDSU Extension publication FS284, “Stress Management for Farmers and Ranchers” – link: [FS284 Stress Management for Farmers and Ranchers](#)

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

Adriana Drusini (adriana.drusini@ndsu.edu)

Extension Farm and Ranch Stress Program
Coordinator





AROUND THE STATE

NORTHEAST ND

Planting continued into last week despite wet field conditions, with some wheat and canola acres requiring replanting due to wind and rain damage that resulted in soil crusting. Overall, soil moisture conditions are favorable; however, excessive rainfall in some areas has led to standing water and saturated soils. Soybean fields affected by excess moisture are showing widespread symptoms of iron deficiency chlorosis (IDC).

Crop development varies considerably across the region. Stand establishment is generally good, with the exception of drowned-out and saline areas. Sunflowers are predominantly at the V2–V4 growth stage, soybeans range from V2–V3, small grains are between tillering and jointing, and field peas are at the 2–4 node stage. Corn is at the V2–V4 stage and is currently the most vigorous-looking crop across the region. Canola development is highly variable depending on planting date, with early-seeded fields approaching bolting while later-planted fields are just emerging. Heavy flea beetle feeding has been reported in parts of Cavalier and Walsh counties, prompting some producers to apply foliar insecticides despite the use of insecticide-treated seed. Post-emergence herbicide applications are ongoing, although producers continue to express frustration with limited spraying opportunities due to unfavorable weather conditions.



Corn at 2- 3leaf stage. Photo: Venkat Chapara, LREC



Waterlogged fields and ditches full of water in Pembina County. Photos: Anitha Chirumamilla, LREC



Soybeans showing IDC symptoms. Photos: Anitha Chirumamilla, LREC



Canola nearing bolting in Pembina County. Photo: Anitha Chirumamilla, LREC



Flea beetle damage in canola. Photo: Submitted by a farmer in Walsh County

[Anitha Chirumamilla](#)

Extension Cropping Systems Specialist
Langdon Research Extension Center

SOUTH-CENTRAL/SOUTHEAST ND

The hot weather ended abruptly this past week! The average daily high temperature for June 9 through June 15, 2026 at 47 NDAWN stations across the region ranged from 70 degrees Fahrenheit (F) at Hurdsfield to 79 degrees F at Casselton, Gardener, Leonard, Mooreton, Sonora, and Wahpeton with an average of 74.8 degrees, a whopping 7.9 degrees F below last week and a little below normal. The average daily low temperature for the past week at 47 NDAWN stations across the region ranged from 46 degrees F at Pickardville to 56 degrees F at Mooreton and slightly below normal.

Due to the rapid growth earlier last week when we had the 90 degrees F followed by these below average temperature you likely will be observing “Yellow Top”, “Yellow Corn Flash Syndrome”, or also known as “Twisted Whorl Syndrome” right now. As shown in Figure 1, many corn plants



Figure 1: “Twisted Corn Whorl Syndrome” currently in Griggs County, but likely in other areas of the state.

in some fields, at least in Griggs County, (likely across the region) are currently in the “Twisted Whorl” stage. With the below normal temperatures the corn is not unrolling as fast as normal with this syndrome and the “Yellow Corn Flash” stage as seen in Figure 2 is just beginning to show up in some fields as the tight whorls begin to open. This Twisted Whorl syndrome usually does not cause any yield loss. If you start to observe individual corn plants having yellow new leaves over the next 10 to 14 days you will now know what it is. This phenomenon usually occurs at V5 (5 visible collars) to V6, but I’m seeing it in some V4 plants as well.



Figure 2: “The Yellow Flash Syndrome” after corn whorls unroll from the “Twisted Corn Whorl Syndrome leading to yellow corn leaves.

Corn growing degree days (GDD’s) slowed down a bit this past week as seen in Table 1. Notice the last row showing the change in departure from the 5-year average compared to last week’s GDD’s. At least based upon these 7 NDAWN Stations, Denhoff saw the greatest loss in GDD’s last week. Thankfully, we are still way ahead of last year at the moment.

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 6-15, 2026	426	457	464	458	492	524	557
Departure from last week	+ 72	+ 87	+ 83	+ 84	+ 99	+ 103	+ 121
Departure from normal	+ 38	+ 64	+ 103	+ 99	+ 111	+ 144	+ 140
Departure from 2025	+ 159	+ 140	+ 150	+ 147	+ 179	+ 175	+ 216
Departure from the 5-year average	+ 26	+ 25	+ 51	+ 34	+ 37	+ 66	+ 76
Departure this past week in the 5-year average	- 32	- 15	- 26	- 26	- 26	- 19	- 7

The wind continued to blow this past week and it rained at least 4 days near 27 of the 47 NDAWN stations I’m observing weekly. The average wind speed last week for the region was 10.6 miles per hour, only 0.6 miles per hour greater than last week, but at least based upon the Griggs County NDAWN station this past week was the second windiest on record and 2.8 miles per hour greater than the average for this period. Rainfall in the region this past week ranged from 0.14 inch near Sonora to 1.35 inches near Courteney with an average of 0.54 inch, 0.26 inch less than last week,

but most of the driest parts of the region received greater than 0.5 inch, greatly improving the crops in these areas. Due to the windy and rainy conditions, weeds are getting out of hand as observed in a soybean field in Figure 3.

Significant hail damage was observed in relatively small areas in Eddy, Foster, and Logan counties this past week causing varying degrees of damage with Foster county reporting potentially the most damage to the point of maybe replanting soybean.

There are still scattered fields in the eastern two-thirds of the region having not been planted yet due to wet soil conditions and continued rains, so there will be some prevent planted acres within the region, but a very small percentage.



Figure 3: Current height of weeds in a Griggs County soybean field. Pigweed species too tall for glufosinate to control all plants.

Iron Deficiency Chlorosis (IDC) is starting to show up in many soybean fields in the region as seen in Figure 4 from a Cass County soybean field last Thursday. At this point in time, I believe IDC will be a major problem at least in spots in many soybean fields in the region.



Figure 4: Soybean plant showing severe Iron Deficiency Chlorosis (IDC) symptoms in Cass County.

Corn in the southern tier of counties and the western tier of counties in the region has some pretty nice corn stands and is fairly green, however as you go north of the southern counties and east of the western counties in the region, there are few corn fields having a deep dark green color across an entire field and in whole fields. Much of this “off-green/yellowish” color in corn is due to sulfur deficiencies as seen in Figure 5 in a sandier soil in Sheridan County. The dry and/or wet conditions are likely the cause of the frequency of Sulfur deficiencies this season. Corn in the region is from V1 (1 visible collar) to V6 or maybe V7 in Richland and Sargent Counties with most corn in the region from V3 to V5.

Hard red spring wheat (HRSW) and barley look pretty good across most of the region, however there are pockets within the region where stands and growth stages are variable within a field and among fields due to the soil conditions at planting, lack of rainfall after planting and soil salinity/sodicity. HRSW within the region is from tillering to heading with most wheat at the second node to early flag leaf emergence. At least in the eastern part of the region HRSW is also showing some sulfur deficiencies, especially in sandier soils.



Figure 5: Sulfur deficiency in corn in Sheridan County. Photo provided by NDSU Extension ANR Agent of Sheridan County, Lea Mittleider.

Soybean is the toughest looking crop at this time in the region for the second year in a row. Small soybeans barely grew this past week. Soybean stands and stages within and among fields can be highly variable, but there are some good-looking soybeans as well in the region, but mostly in areas in which soybean was planted into a properly prepared seedbed having enough moisture for good emergence followed by timely rainfall. These conditions were not present across most of the region. Soybean in the southern tier of counties east of McIntosh County are probably the best looking. Soybeans are still being planted to soybean plants at the V3 (third trifoliolate) stage in the region with most at the V1 to V2 growth stage.

Canola in the western part of the region looks the best for the most part having the most even stands, however as you move east, the stands become more variable and having variable stages within the same field as seen in figure 6 in a Steele County field. Uniform canola stands are only present if seeds were planted into moisture and enough rainfall was received shortly after planting. Much of the canola in this region in the flowering stage is rather short with plants

having few branches. The canola growth stage is from rosettes to flowering with most in the bolting stage.

Dry bean and sunflower are looking pretty good across the region so far with dry bean being planted to having at least 1 trifoliolate. Some dry beans were replanted in the region due to the winds over time. Sunflowers are just being planted to being up to V7 (seven nearly fully expanded leaves) growth stage with most at the V2 to V4 stage.

When applying glufosinate remember these factors in order.

1. Choose a Liberty branded product as many other formulations are not as effective.
2. At time of application humidity and humidity are very critical for the most effective control! Use Delta T determining when to apply glufosinate. Depending upon sprayer travel speed and wind speed, glufosinate applications probably should cease at a Delta T of 23 degrees F. Check out NDAWN.info for a daily and hourly Delta T forecast model: <https://raproulx.github.io/nddeltat/>.
3. Sunshine is the next most critical factor to maximizing glufosinate efficacy (control).
4. Temperature is important as well, but is behind humidity and sunshine. Temperatures probably need to be greater than 65 degrees F at the time of application. Higher is better, but the current forecast doesn't have any 80 degree F temperatures which are probably best.

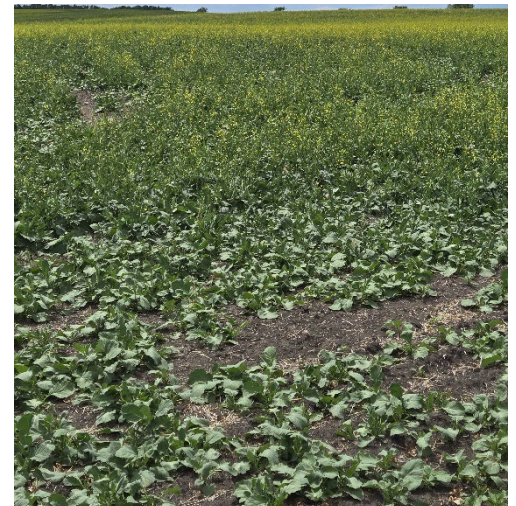


Figure 6: Non-uniform canola stand and stages within the same field in Steele County. Photo provided by NDSU Extension ANR Agent of Steele County, Megan Vig.

5. Spray volume is probably next and with glufosinate being applied at 20 gallons per acre.
6. Adjuvants are extremely important to improving glufosinate efficacy. Please at least 3.0 pounds/A of a spray grade ammonium sulfate (AMS) to the spray tank prior to adding the glufosinate. "Water-conditioning agents" containing less than 3.0 pounds/A of AMS usually do not maximize glufosinate efficacy.
7. Spray droplet size is very important as well with spray droplet size being between medium to coarse with applying glufosinate alone or a low end coarse droplet when tank-mixing with Enlist One.
8. Weed size is important as well especially for waterhemp and Powell amaranth. These two species should be no taller than three inches. Other species could be taller, but smaller is usually better.
9. Based upon a 2025 research trial at the Carrington Research Extension Center with the use of North Dakota Soybean Council funding, sprayer travel speeds of less than 8 miles per hour provided the best Powell amaranth control when using traditional straight down flat fan nozzles. The use of angled nozzles may allow faster sprayer travel speeds, but no research has been conducted in ND to prove that.
10. Apply the maximum glufosinate rate for each crop. For LibertyLink Canola apply Liberty Ultra at the maximum single use rate of 23 fluid ounces/A and follow up with Liberty Ultra at 16 fluid ounces/A acre as needed before canola begins to bolt. For LibertyLink traited soybean apply Liberty Ultra at the new rate of 34 fluid ounces/A to three-inch tall pigweed species and consider tank-mixing Enlist One with the Liberty Ultra. Apply Liberty Ultra at 24 fluid ounces/A in a second application if needed. In LibertyLink corn apply Liberty Ultra at 29 fluid ounces/A and apply Liberty Ultra a second time if necessary at 29 fluid ounces/A.
11. There are other factors to consider, but I believe these practices are the most important to maximizing glufosinate efficacy.

[Jeff Stachler](#)

Extension Cropping Systems Specialist

SOUTHWEST ND

Spotty rainfall has been observed across Western ND with precipitation totals ranging from trace amounts in southern Dunn County to 0.88 inches in northern Mountrail County. Overall, across much of western North Dakota, precipitation totals this growing season are well below normal for this time of year, with the exception of Mercer County and western McLean County that have received above normal precipitation, as well as Burke, Divide and Williams Counties that are just slightly above the historical average (Figure 1).

Percent of Normal Precipitation Since May 1 (%)

Jun 15 2026

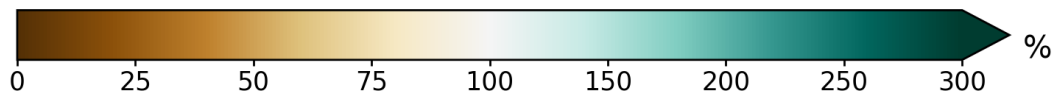
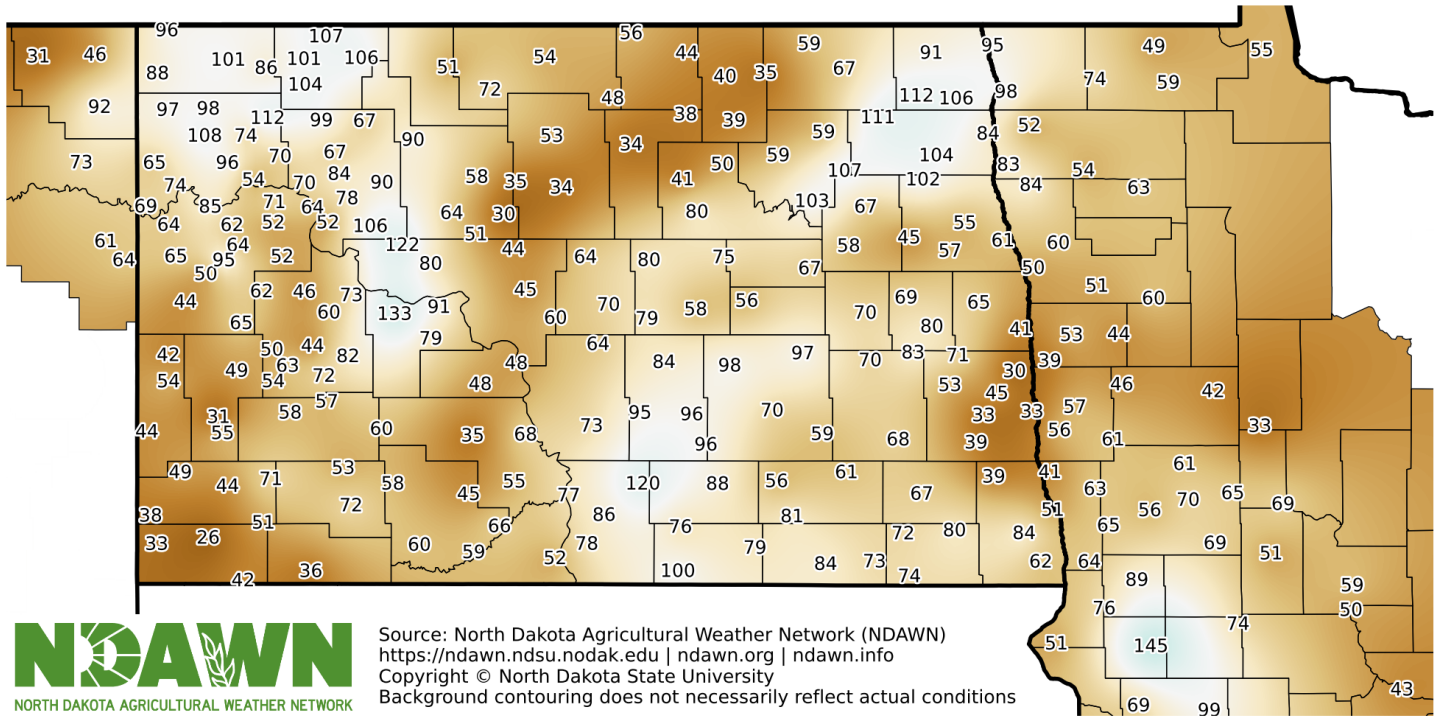


Figure 1. Percent of Normal Precipitation since May 1 (%). Source: NDAWN

As a result, crops continue to show signs of drought stress, with a few reports of crops entering their reproductive stage prematurely, with limited vegetative growth (e.g., short wheat plants beginning to head and short canola plants beginning to flower). With the delayed plant development, windy days, and persistent dry conditions weeds have been troublesome to keep under control (Figure 2), which has caused frustration among farmers. Useful tools for monitoring spraying conditions include the NDAWN [Delta-T webpage](#) as well as the [NDAWN Inversion App](#).

The dry conditions have also resulted in uneven canola stands (Figure 3). Similar stands were observed last year, although for a different reason (i.e., last year we had cold, damp soils early in the spring, which led to poor canola establishment). It is important to emphasize that, besides it being too late to consider replanting, canola has a remarkable ability to compensate for stand gaps and will often fill in open areas as plants begin to branch. Last year,



Figure 2. Hard Red Spring Wheat plants surrounded by a mat of kochia and other weedy species in Adams County. Photo: Aspen Lenning, ANR Extension Agent.



Figure 3. Uneven canola emergence and development in Adams County. Photo: Aspen Lenning, ANR Extension Agent.

canola stands in the area averaged approximately 30% stand loss, yet yields were among the best canola crops I have observed in the region.

Regarding crop development, most small grains in the area are nearing the end of tillering and entering stem elongation, with some fields already at jointing. Corn is between V4-V8. Soybeans are anywhere between just emerged to V2 stage. Some of the early planted canola is starting to flower, with most of it bolting and budding. Sunflowers are between V2-V4.

[Victor Gomes](#)

Extension Cropping Systems Specialist
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WEATHER FORECAST

The June 18 to June 24, 2026 Weather Summary and Outlook

"It's like déjà vu all over again" is a famous, redundant catchphrase immortalized by New York Yankees legend Yogi Berra and will fit our weather for this forecast period. Expect mostly below average temperatures with several days of potential hit and miss showers or thunderstorms. In most of these rain events that spots that do get wet, rain amounts will be mostly light, with some localized higher rain amounts. Yet, like this past week (Figure 1), most, if not all locations should record at least some rainfall.

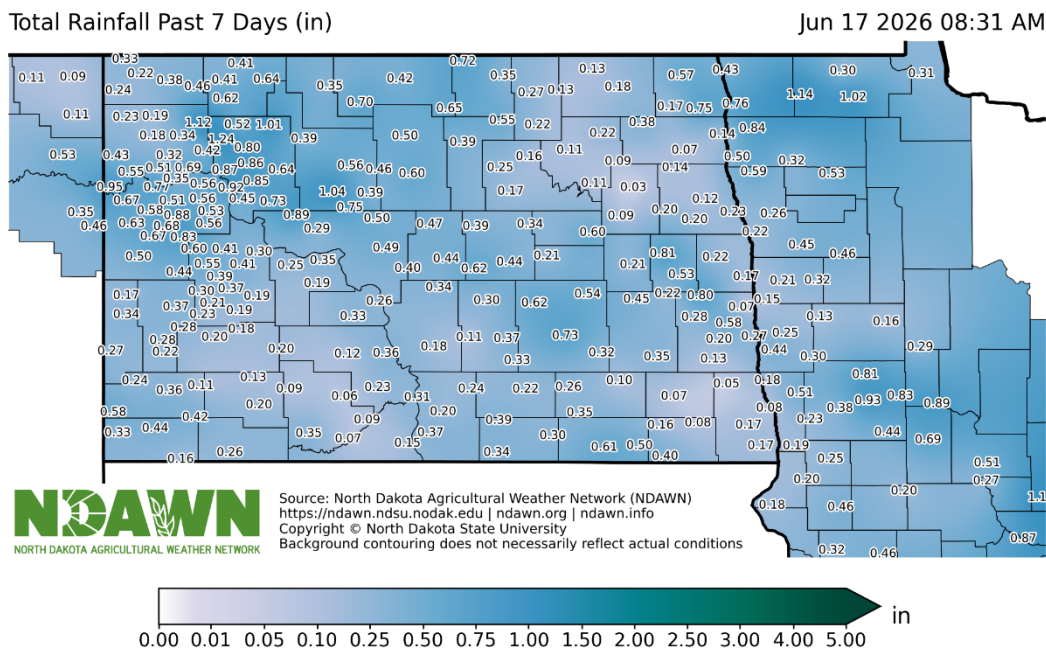


Figure 1. Total Rain at NDAWN stations from June 11 through 8:30 AM on June 17, 2026

Even with the recent rain events, a high percentage of North Dakota has recorded below average rainfall since May 1 (Figure 2). In fact, approximately one-half of the state has recorded near or less than 50% of average rainfall during that period.

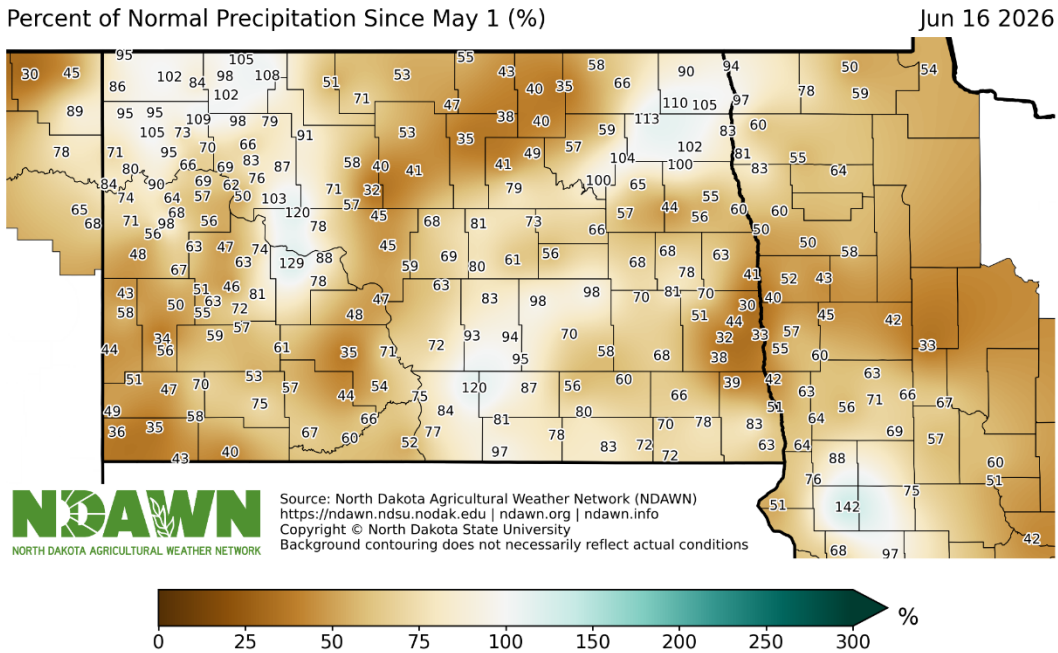


Figure 2. Departure from Average Rainfall from May 1 through June 16, 2026

Unlike the past several weeks, temperatures were well below average instead of well above. Most NDAWN stations were 2 to 5 degrees below the current 30-year average (Figure 3). As previously stated, this next week is expected to be very similar and it may take until late in the month or early July to record an extended period with above average temperatures.

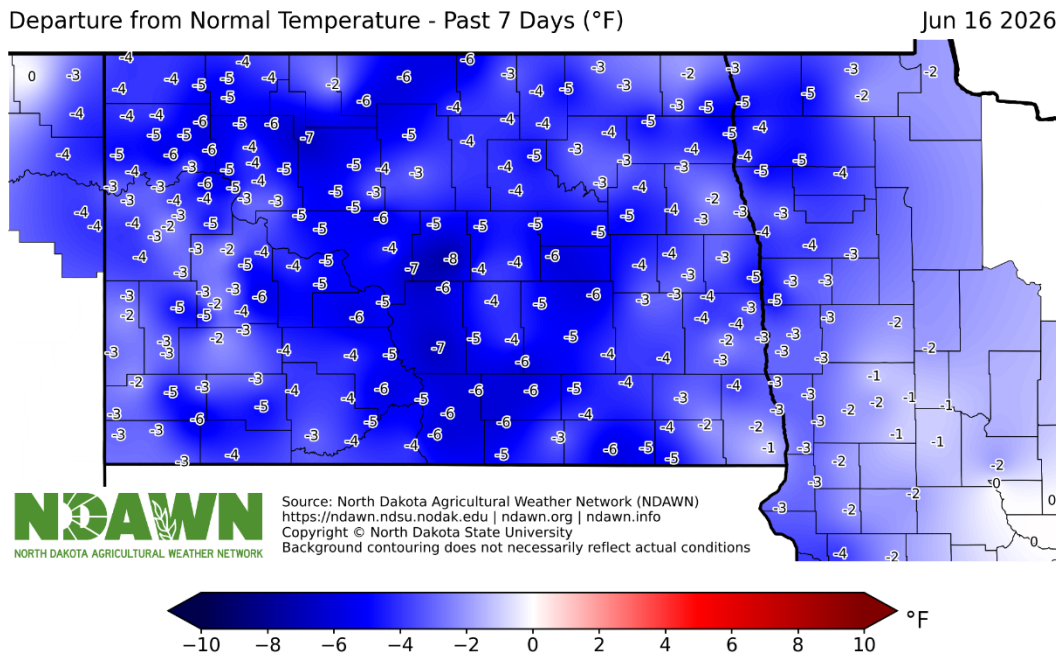


Figure 3. Departure from Average Temperatures for the 7-Day Period Ending June 16, 2026

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

Growing Degree Days (Base 32) Forecast Jun 18 - Jun 24 2026

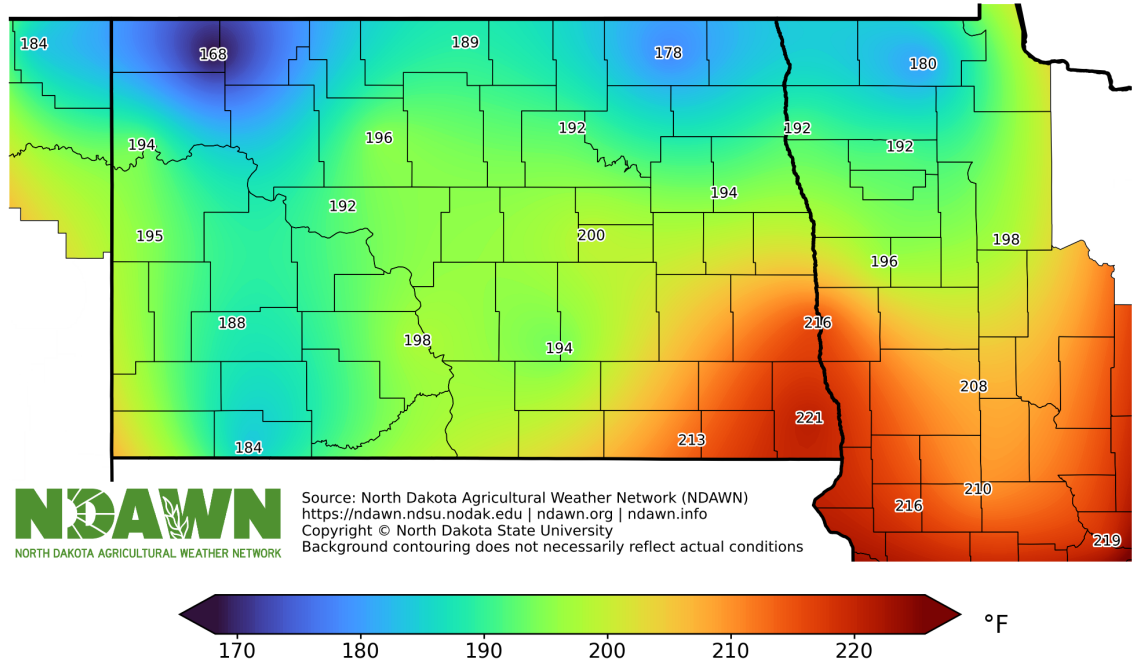


Figure 4. Estimated Growing Degree Days Base 32° for the Period of June 18 to June 24, 2026

Growing Degree Days (Base 50) Forecast Jun 18 - Jun 24 2026

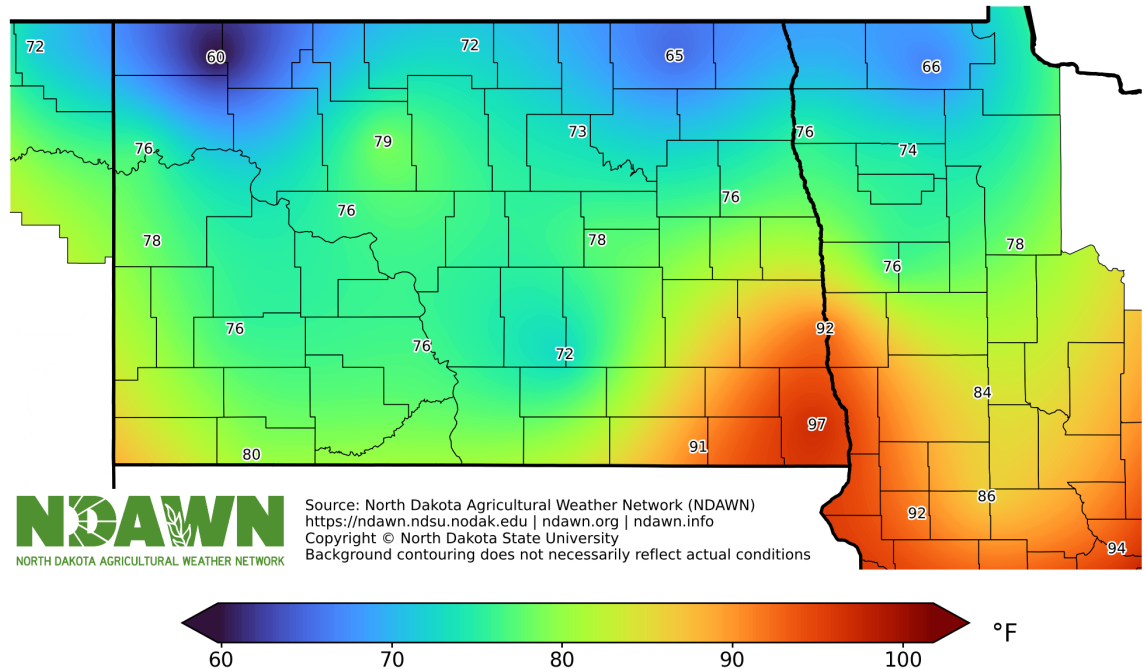


Figure 5. Estimated Growing Degree Days Base 50° for the Period of June 18 to June 24, 2026

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 Jun 16 2026

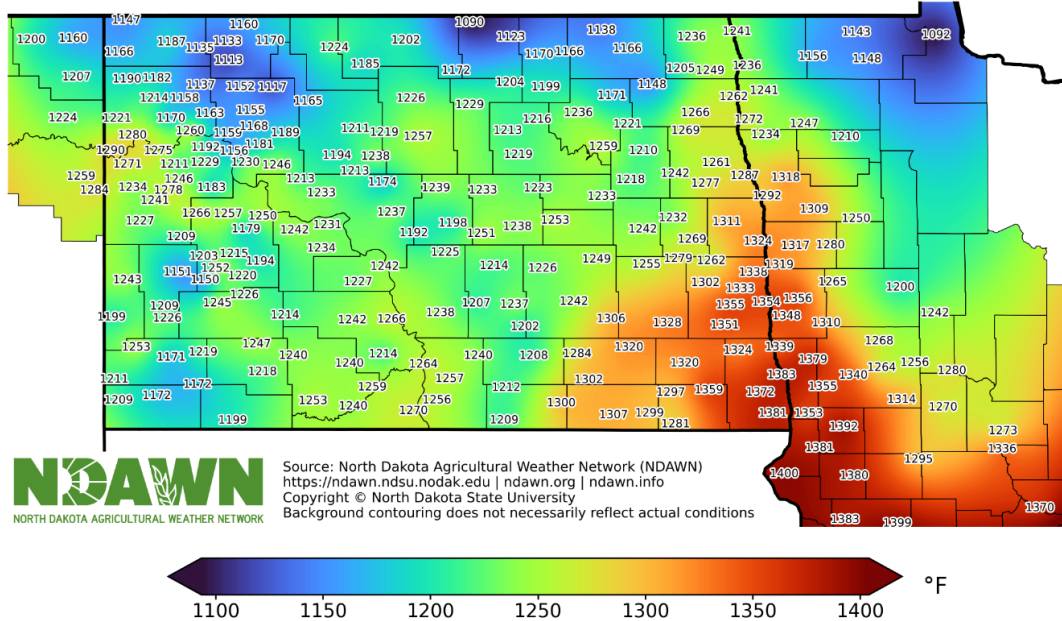


Figure 6. Wheat Growing Degree Days (Base 32°) for the Period of May 1 through June 16, 2026

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 Jun 16 2026

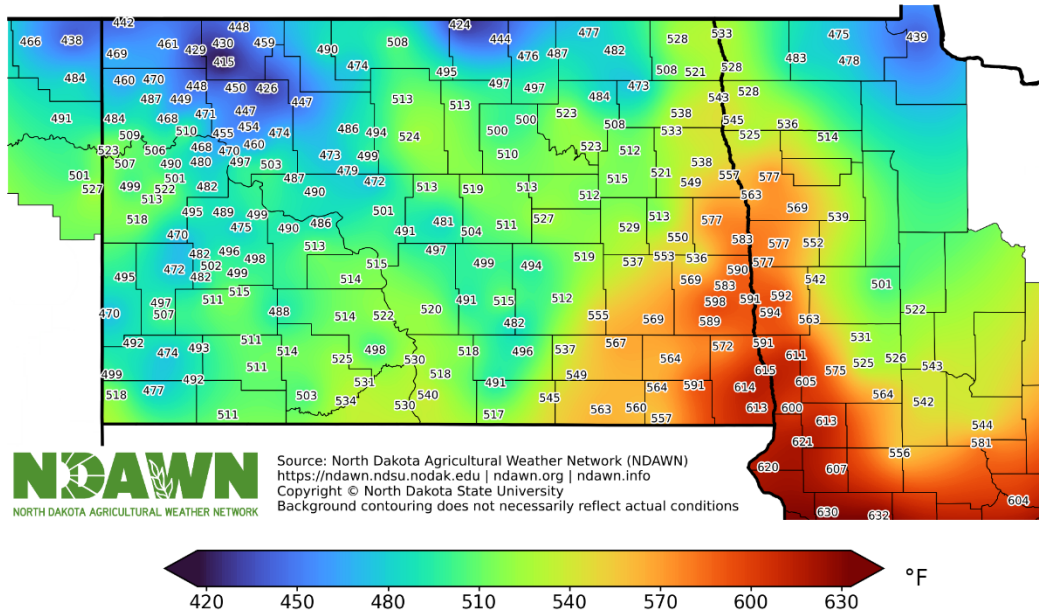
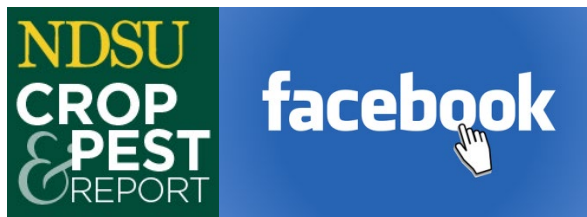


Figure 7. Corn Growing Degree Days (Base 50°) for the Period of May 10 through June 16, 2026

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NDSU Crop and Pest Report

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