North Dakota State University
CROP & PEST REPORT

NDSU EXTENSION

No 12 July 10, 2025

Inside this Issue...

2025 Field Days Locations & Dates

REC	Date	Time	Topic
Central Grasslands	July 14	Morning/afternoon	
Hettinger	July 15	Afternoon	
Dickinson	July 16	Morning	Ranch Tour
Williston	July 16	Afternoon/evening	Dryland and Horticulture
Williston	July 17	Morning	Irrigated
Dickinson	July 17	Evening	Agronomy and Horticulture
Agronomy Seed Farm	July 21	Evening	
Carrington	July 22	All day	
North Central	July 23	Morning	
Langdon	July 24	Morning	
Oakes	Aug. 7	Morning	

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.

entomology

IPM UPDATE FOR INSECT PESTS – JUNE 30 – JULY 1

The IPM Scouting insect report for North Dakota this past week, June 30-July 1, is listed below. Overall, insect pests are present but at a low level, below the threshold. The IPM maps for crop stages, insect pests and diseases can be found at: https://www.ndsu.edu/agriculture/ag-hub/ag-topics/crop-production/diseases-insects-and-weeds/integrated-pest-management

Wheat & Barley: Crop stages - Zadoks 27 (main shoot, 7 tillers) to 77 (late milk).

Cereal Aphids: Aphid presence increased to 49% of scouted fields (up from 30% last week). Densities remain well below economic thresholds, with 0.02–1.5 aphids per stem. See Crop & Pest Report #8, June 12, 2025, for information on identification, scouting and thresholds.

Economic Threshold for cereal grain aphids on wheat or barley:
- For vegetative through head emergence - 4 aphids per stem
- From complete heading through the end of anthesis - 4-7 aphids per stem
- From the end of anthesis through medium milk - 8-12 aphids per stem
- From medium milk through early dough -> 12 aphids per stem

Wheat Stem Maggot: White heads caused by maggot feeding were found in 48% of wheat fields, up from just 9% two weeks ago. Incidence ranged from 2% to 48%, with widespread distribution across the southwest, north-central, central, and northeast regions.

Wheat Stem Sawfly: Sawfly emergence continues, mainly in the southwest and northwest. Found in 14% of fields, but densities remain low (0.2–3.2 sawflies/m²).

Soybean: Most soybean fields are in the vegetative crop development stage (V1-V5) to R1 (early bloom).

Soybean Aphids: Aphids were detected in 5 of 28 fields scouted, with 5–100% incidence and an average of 0.01–15.5 aphids per plant. Populations remain low, but moderate temperatures (75–85°F) forecasted this week may support rapid doubling every 2–3 days. Continue scouting. See the article on soybean aphid scouting basics.

Bean Leaf Beetle: Numbers remain below threshold (20–30% defoliation), but are increasing. Present in 36% of fields (up from 14%), with 0.2–11% defoliation.

Defoliation thresholds for bean leaf beetle:
- 30 percent defoliation during vegetative (V) stages
- 20 percent defoliation from beginning bloom (R1) to beginning seed (R5)
- 10 percent defoliation during full seed (R6)

Grasshoppers were observed in wheat, barley and soybean fields in 37 counties throughout North Dakota. Grasshoppers were present in 80% of the fields scouted last week, up from 66% two weeks ago. The number of nymphs per square yard continued to be low, 1-6 nymphs per square yard, well below the economic threshold. Continue to scout for hot spots. **Economic thresholds for nymph stage grasshoppers are 50-75 nymphs per square yard in the field edge and 30-45 nymphs per square yard in the field interior.**

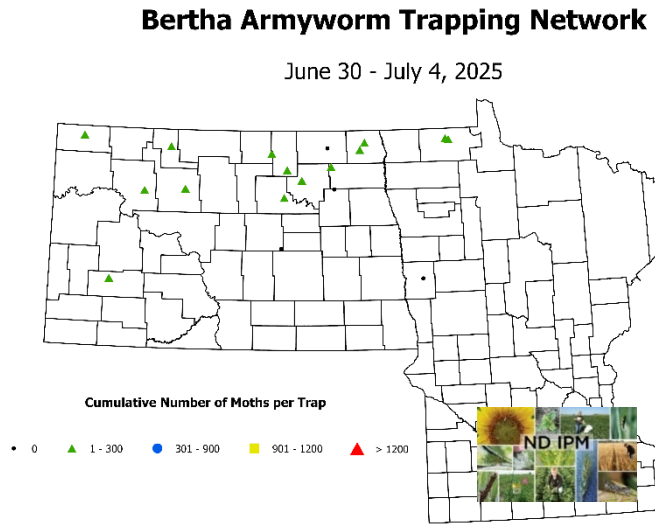
IPM CANOLA INSECT TRAPPING

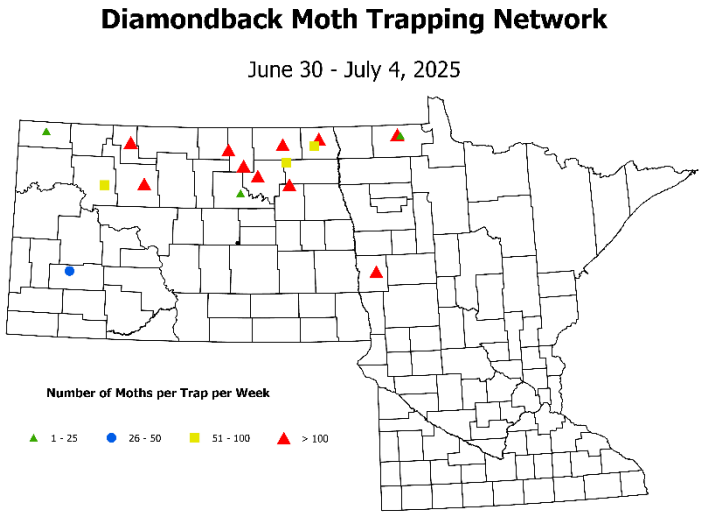
Canola crop stages vary widely, from the rosette to the flowering stage, depending on the planting date.

Bertha armyworms: Moths were captured at **80% of trap sites** in **northern and southwest North Dakota** and **northwest Minnesota**. Trap catches ranged from **1 to 134 moths per trap** (cumulative total), which is **well below the economic threshold of 300 moths per trap**. **No larvae (caterpillar) field scouting is required yet**, but we will continue monitoring cumulative trap numbers.

Diamondback moth trap catches decreased slightly, but remained elevated at several locations. Trap catches averaged **over 200 moths per trap per week this past week, compared to 500 moths per trap two weeks ago**. The top three trapping sites were Nelson County (total of 245 moths per trap per week), Ramsey County (total of 221 moths per trap per week) and Renville County (total of 215 moths per trap per week).

Canola is most susceptible to larval feeding injury during the flowering and pod stages, especially from the second generation (late June through July). Continue to scout for diamondback moth larvae in canola. See the Crop & Pest Report #9, June 19, 2025, for information on identification, scouting and thresholds for diamondback moth in canola.

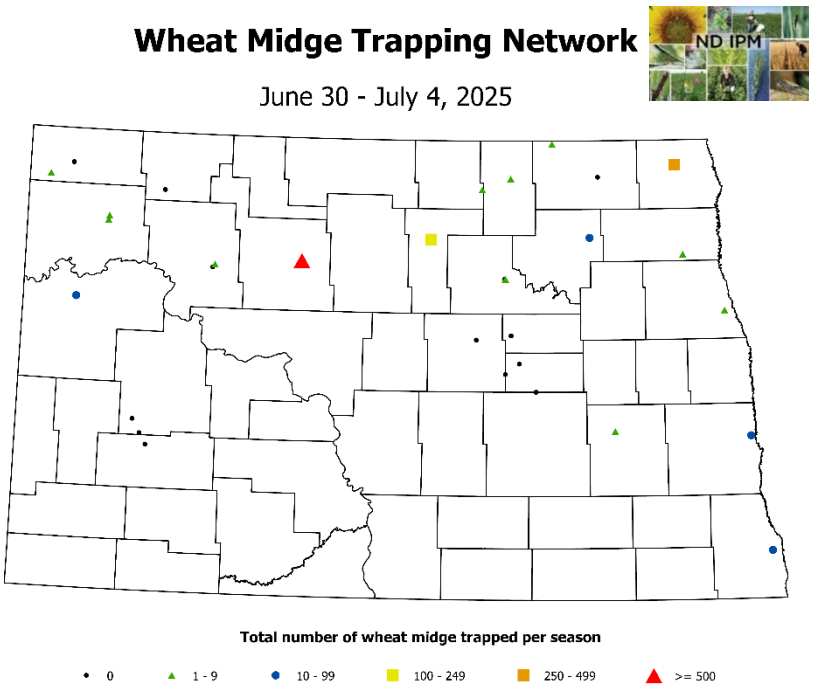




IPM WHEAT INSECT TRAPPING

Hessian fly activity was observed at 55% of trap sites across 24 counties. Most traps caught between 1 and 51 flies, but a hot spot was detected in Rolette County, with 227 flies in a single trap. Trap sites exceeding 25 flies per trap were found in Cass, Cavalier, Rolette, and Ramsey counties.

Wheat midge was detected at 61% of trap sites in the same 24 counties. Trap counts mostly ranged from 13 to 70 flies, with a hot spot of **730 flies** in **Ward County**. Wheat midge was reported in **17 counties** this week, up from 13 two weeks ago. A total of **1,615 wheat midges** were caught at positive sites, compared to just 200 two weeks ago — a sharp increase. If you're in an area with known midge activity, begin **scouting your fields, especially in the heading to early flowering crop stages**. Refer to the Crop & Pest Report #11, July 3, 2025 for detailed scouting tips and economic thresholds for wheat midge.



REFRESHER ON SCOUTING FOR SOYBEAN APHIDS

Regular scouting for soybean aphid populations is crucial to reduce potential yield losses to soybeans. Begin scouting weekly in early July, especially in fields near buckthorn (overwintering host), which may require earlier checks. In areas without buckthorn, aphids migrate from neighboring regions mid-season, particularly affecting North Dakota in late July and early August.

Soybean aphids on the underside of the leaf. Do not count the white cast skins of molting nymphs - arrow (Patrick Beauzay, NDSU)

Scout 30-40 plants per field, focusing on new growth and late-planted fields. Inspect the underside of the leaves for soybean aphids. Avoid counting the cast skins of molting nymphs (immature aphids) since they are not live aphids.

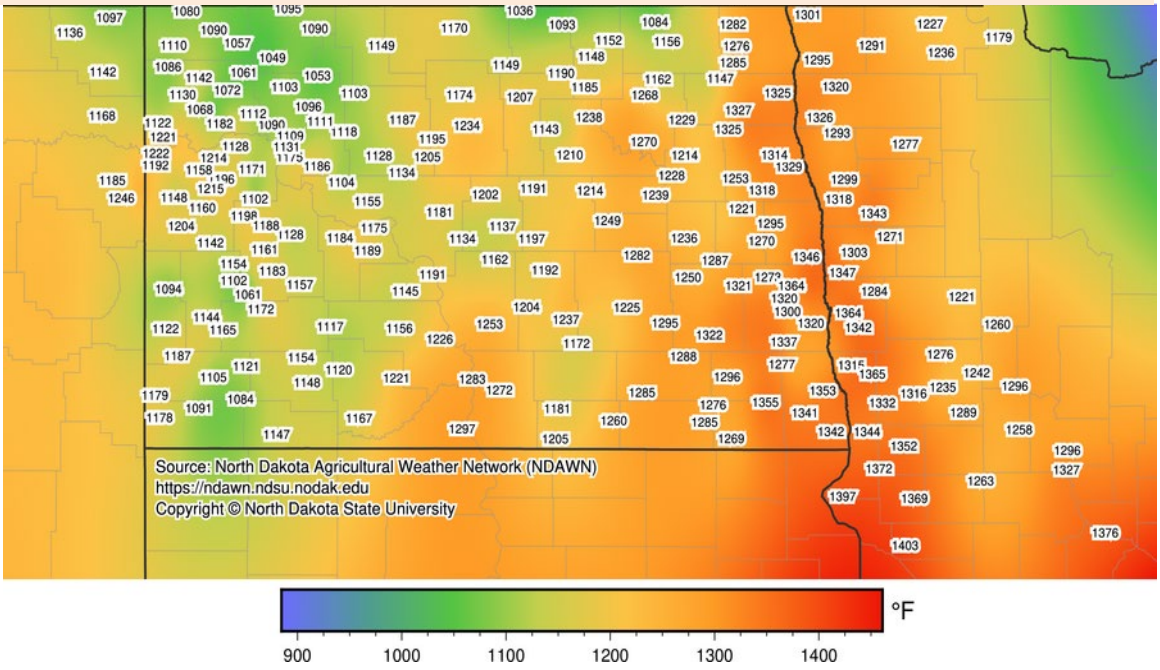
Use a threshold of 250 aphids per plant and increasing populations on 80% of the field. This threshold is most effective for late vegetative through the early reproductive stages (R1-R5). Spraying at R6 has lower effectiveness and may not be cost-effective, depending on soybean value, plant health, and stress. To track aphid population growth, visit the field multiple times. Moderate temperatures, plant stress (especially drought), and a lack of predators (lady beetles, pirate bugs, lacewing larvae, syrphid fly larvae) favor soybean aphid growth. Look for mummies (parasitized aphids) and winged adult aphids — avoid spraying if these are present, as aphids may soon leave. If aphids cover stems, pods, or leaves with honeydew and mold, insecticide treatment is likely past its peak effectiveness.

Aphid mummies or parasitized aphids from wasps (called parasitoid) (David Cappaert, Bugwood.org)

LEAFY SPURGE FLEA BETTLE SCOUTING

See Crop & Pest Report #10, June 26, 2025, for information on scouting, collecting and the degree day model for leafy spurge flea beetle. Use the NDAWN Sunflower Degree Day tool to determine the Accumulated Growing Degree Day (AGDD) for leafy spurge flea beetles. Select "degree day" for map type. The planting date for insect development is March 1, 2025.

Leafy spurge flea beetle AGDD, as of July 7, 2025.



Current AGDD: Scouting for collection sites can begin in all areas of North Dakota. Finally, enough heat units to collect leafy spurge flea beetles in the southeastern region of North Dakota.

Accumulated Growing Degree Days (AGDD)	*Leafy Spurge Flea Beetle Event*
1,000	*Begin scouting for adult flea beetles*
1,200 – 1,600	*Collect adult flea beetles*
1,600 (late July)	*Do not collect adult flea beetles (egg laying begins)*

Janet J. Knodel
Extension Entomologist

plant pathology

WHEAT AND BARLEY DISEASE UPDATE

Foliar disease levels in small grains have been low for a large majority of the state. Although we have had conditions conducive for fungal foliar diseases, crop rotation, residue management, and/or early fungicide applications have kept fungal leaf spot levels low, and no rust diseases have been reported in North Dakota (yet). Over the past week, I have been receiving pictures of bacterial leaf streak on hard red spring wheat and two-row barley from northeast, southeast, south central and southwest North Dakota. Bacterial leaf streak in spring wheat will initially appear as yellow streaks with water-soaking on the leading edges. Eventually, the lesions will progress, and result in brown to yellow streaks resulting in premature flag leaf death on susceptible varieties (Figure 1). In barley, bacterial leaf streak has been reported in the middle canopy and symptoms include water soaking coinciding with brown to yellow streaks (Figure 2). As a reminder, fungicides will not manage bacterial leaf streak and genetic resistance is our only management tool.

Figure 1. Bacterial leaf streak on a susceptible hard red spring wheat variety. Notice linear streaks ranging from yellow to brown in color.

Figure 2. Bacterial leaf streak on two-row barley. Notice brown linear streaks running parallel to the flag leaf.

Low levels of Fusarium head blight (scab) have been reported in winter wheat, the earliest planted spring wheat, and a few fields of barley. The best time to scout for scab is 14 to 21 days after early-flowering in wheat or 14-21 days after full-head in barley. Symptoms in spring wheat include premature bleaching of spike tissue that can range from a single spikelet (Figure 3) or the entire spike. In barley, symptoms often begin as browning of a single floret (Figure 3) and symptomatic florets are often scattered on a barley spike.

Figure 3. Fusarium head blight on hard red spring wheat (left) and two-row barley (right). Notice premature bleaching of a single spikelet on wheat and the browning of a single floret on barley.

Andrew Friskop
Extension Plant Pathology, Cereal Crops

WHITE MOLD RISK UPDATE

Soybeans across the region generally are still nowhere near canopy closure, which drops the risk substantially of white mold apothecia from developing. However, the environmental conditions across North Dakota indicate high risk for these apothecia to be forming. Just a quick reminder that BOTH canopy closure and flower presence are needed before you should consider looking at the NDAWN Soybean White Mold Risk Maps.

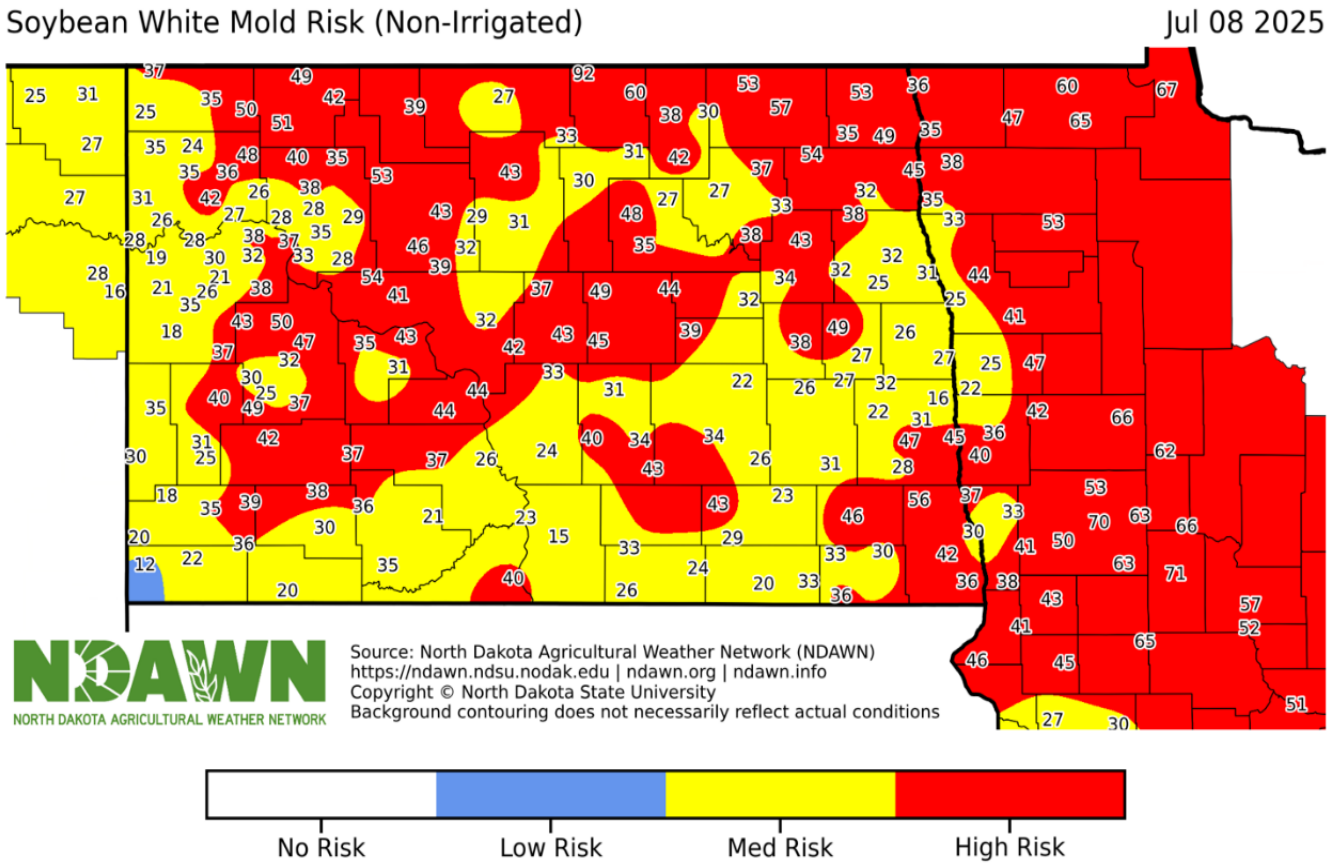


Figure 1. White mold risk map for non-irrigated dryland conditions.

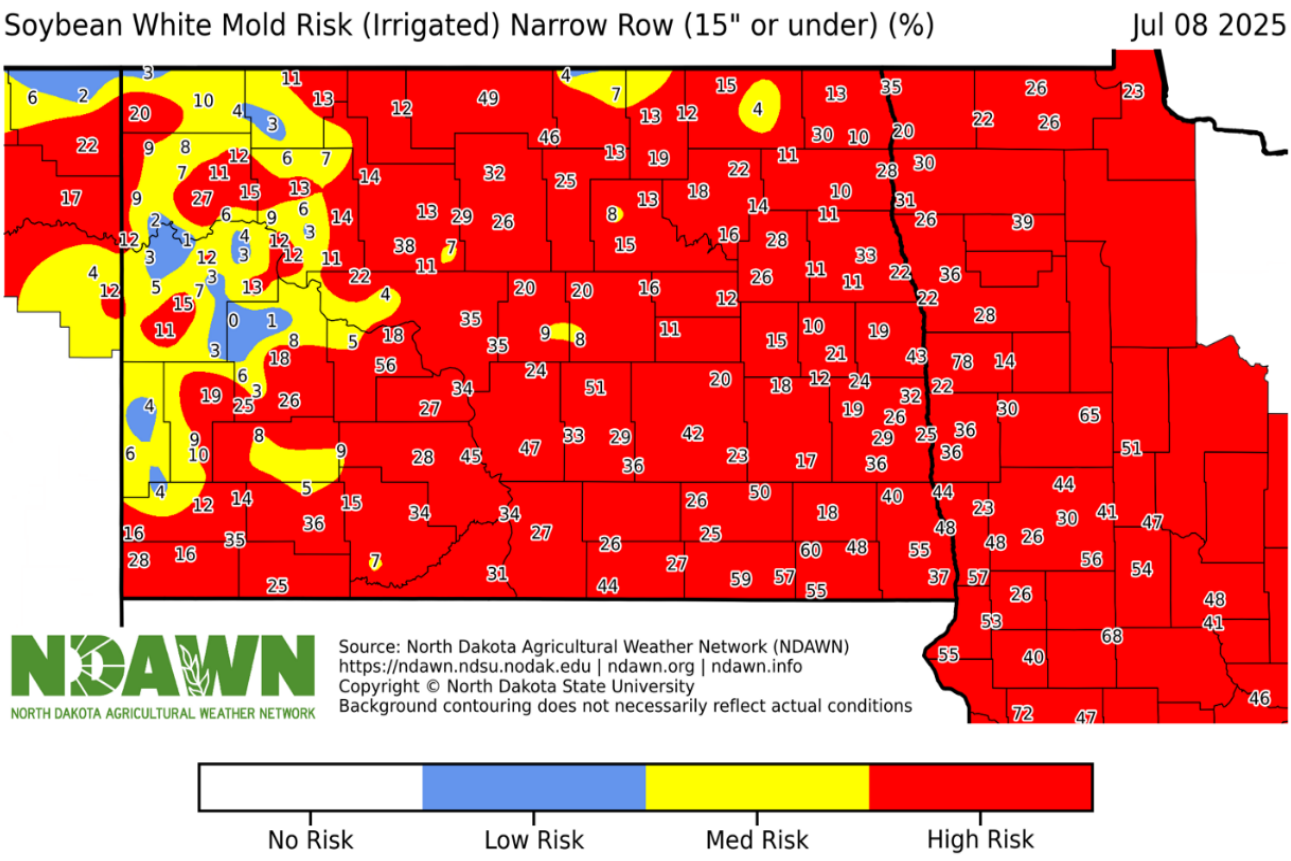


Figure 2. White mold risk map for irrigated field conditions when soybeans.

This tool can be found here.

Wade Webster
Extension Plant Pathology, Soybeans

NEW SOYBEAN WHITE MOLD FUNGICIDE ROI TOOL AVAILABLE

With white mold risk being high across the state, there are many questions on which products or fungicide programs farmers should be aiming to apply for the reduction of diseases, maintaining high yields, and ensuring the profitability of their operation. While this question is incredibly complex due to the nature of white mold infections being dependent on the environment, soybean yield potential, and the current economics of soybean sale prices, it is still a decision that many soybean farmers need to make on an annual basis.

To help with this, myself and other soybean pathologists have aggregated our white mold fungicide trial data from 2017 through 2024, which were conducted across the North Central region. This dataset included almost 1,700 individual research plots and 140 different fungicide programs. In this case, a fungicide program was a fungicide product applied at a specific rate and soybean growth stage, which could also include multiple products. For example, one program could be 1) Endura applied at 8 oz/ac at the R1 growth stage, and another program could be 2) Omega applied at 16 floz/ac at

the R1 growth stage, followed by Miravis Neo applied at 16 floz/ac at the R3 growth stage. The products evaluated in this dataset were selected based on the decisions being made by the majority of farmers across the US. We also focused on including newer products as they become available, but the analyses conducted require a large number of environments in which each product must be tested. As we evaluate more programs broadly, these will be included in future iterations of this tool.

Using this established dataset, a large network meta-analysis was conducted, which accounts for the results of each individual trial conducted during this time frame. Based on the results of this analysis, we were able to create a brand-new White Mold ROI Calculator which allows for estimating the expected benefit and breakeven probabilities of multiple fungicide programs. This calculator is based on many years of field research data, but it does not guarantee results. This new White Mold ROI Calculator will be hosted on the Crop Protection Network, and I have attached a screenshot of this tool (Fig. 1). When you first open the tool, you will be given the default conditions of an estimated soybean yield of 40 bu/ac, a soybean sale price of $12/bu, and a Disease Severity Index of 30%. All of these variables should first be adjusted to the expected values that are representative of your operation. Then the tool will ask for a Base Operation Cost, which represents the cost of either contracting fungicide applications or the cost of using your own equipment. Then default prices for each fungicide product are provided.

“Low disease” indicates simulations made using a disease index of 0-20, indicating low risk conditions. “Moderate disease” indicates simulations using a disease index of 21-40, indicating moderate risk conditions. “High disease” indicates simulations using a disease index of 41-60, indicating high risk conditions. The levels were chosen based on previous research. Disease severity index levels should be set at what is expected for a particular soybean variety in a particular field at the end of the season.

The North Central Regional Committee on Soybean Diseases (NCERA-137) collectively solicits information on white mold fungicide product pricing and application costs from university Extension specialists annually. The methods in which each state collects these costs vary by state and year. The Extension specialists may collect pricing information from surveys or direct feedback from Extension, industry, farmers, and other agricultural professionals. Then the product and application costs are averaged, and a national mean and median are determined for each product based on submitted data. The treatment costs for each product listed can be changed to tailor the expected benefit estimates to local pricing.

Finally, this calculator will provide estimates of net benefit for the fungicide program being applied. This tool will also provide the Disease Severity Index (%) that is needed for you to break even on the fungicide application cost. This new tool will be going live soon, and if you are interested in this, please try adjusting the differing inputs to see the economics for your operation.

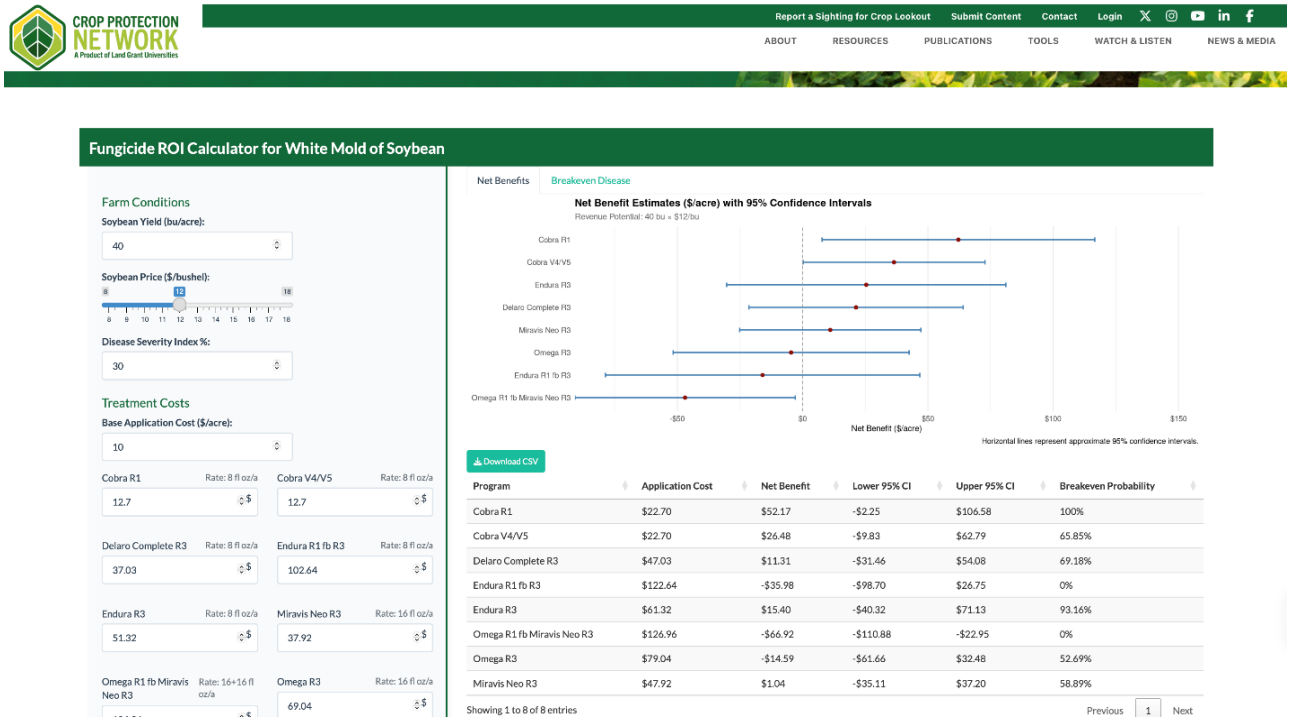


Figure 1. Snapshot of the new White Mold ROI Calculator that is hosted on the Crop Protection Network.

Disclaimer: The information and recommendations made by this calculator are to be used for making recommendations and management decisions. The products listed in this tool are based purely on the availability of data, and I do not endorse any product listed or not listed. Further, no liability is assumed by me or NDSU from the decisions made resulting from the use of these estimates.

Wade Webster
Extension Plant Pathology, Soybeans

ON-FARM STUDY PLOT TOUR: MANAGEMENT OF APHANOMYCES AND FUSARIUM ROOT ROT IN FIELD PEAS

On Tuesday, July 15 at 10:00 am, Michael Wunsch, plant pathologist at the NDSU Carrington Research Extension Center, will be hosting a plot tour at an on-farm study evaluating management strategies for Aphanomyces and Fusarium root rot in field peas. The on-farm study consists of 6 acres of field pea plots established in a field in McLean County and is located approximately halfway between Garrison and New Town.

The focus of the tour will be walking plots and evaluating the impact of planting date, field pea variety selection, and fungicide seed treatment on field pea agronomic performance under Aphanomyces and Fusarium root rot pressure. Two studies have been established. (1) A strip study with 5 ft x 150 ft plots evaluating five field pea varieties, four of which are tested with each of six fungicide seed treatments versus a control, seeded at each of two planting dates and with four replicates. (2) A small-plot variety screening with two planting dates and five replicates. The early planting date in these studies was April 25; the late planting date was May 13.
Root symptoms indicate that the field where this study is being conducted has moderate to high Aphanomyces pressure. Pictures will be shared of the performance of the same treatments under with severe Aphanomyces pressure at a parallel on-farm study being conducted in Ramsey County north of Devil's Lake. The on-farm studies are evaluating the replicability of findings from Carrington that suggest that successful management of Aphanomyces and Fusarium

root rot in field peas may be possible with the combined use of planting date, fungicide seed treatment and field pea variety selection. See Plant Pathology Research Updates for results from prior research.

Directions to the on-farm plot tour:

- From the Cenex gas station located just north of Makoti on Highway 23, turn south off of Highway 23 onto 338th St SW (State Highway 9). Go 10 miles south; pass through the town of Makoti and past Hiddenwood National Wildlife Refuge.
- Turn west onto 29th St SW. Go 3.5 miles west. The field study is on the south side of 29th St SW just after you pass a missile silo located on the north side of the road.
- GPS coordinates of the study are 47.8328, -101.8837

Lunch will be served at 11:30 am. For those attending the Hettinger Research Extension Center field day at 5 pm, note that this on-farm plot tour is located approximately 4 hours from Hettinger.

Michael Wunsch, Ph.D.
Plant Pathologist
NDSU-Carrington Research Extension Center

plant science

SOYBEANS REACHING FLOWERING: WHAT IT MEANS AND WHAT TO WATCH FOR

Soybeans across North Dakota are now beginning the shift from vegetative growth to the reproductive phase—an important milestone in the crop's development. This change is triggered by longer nights and warmer temperatures, meaning that shortly after the summer solstice (June 21st), plants begin to sense shorter days and kick-start the flowering process.

The 2025 season has been cooler (and wetter in some parts of the state) than usual, and that's slowed things down a bit. Still, in early July I observed the first flowers showing up in research plots near Fargo (planted around May 15; see Figure 1). Most of these plants were in the V4 to V6 stage at the time—right on track for the appearance of their first flower, a growth stage we call R1 (beginning bloom). The first flower usually appears on one of the lower nodes of the main stem (see Figure 1).

When staging soybeans, remember that a stage begins once 50% or more of plants in the field are at or beyond that stage. Keep in mind that growth stages can overlap (Soybean-growth-and-management-quick-guide).

Figure 1. Soybean plant starting to bloom. Picture taken near Fargo.

What Else Should You Be Watching For?

Many fields haven't closed the canopy yet due to slower early growth. This can lead to more weed pressure, so it's important to think about

weed management. Keep in mind that some herbicides are only labeled for use up to the R2 stage (full bloom), **so always read the label**!
Insect scouting remains important, even in a cooler season. Soybean aphids are typically monitored from the late vegetative through early reproductive stages. This is the window when most treatment decisions are made. According to the 2024 NDSU Insect Guide, the economic threshold during this period (R1 to R5) is 250 aphids per plant when populations are actively increasing on 80% of the field (2024 Insect Guide)
White mold risk begins once broadleaf crops start blooming—soybeans included. The fungus uses flowers as an entry point, so **early bloom is the optimal time for fungicide applications**. If conditions are **cool and wet at bloom**, especially in fields with a **history of white mold**, scouting and timely treatment are critical (Soybean Disease Diagnostic Series (PP1867); White Mold: Summary of Risk Factors | NDSU Agriculture).
Regarding **IDC** (iron deficiency chlorosis), if you still see symptoms, you are probably going to have yield penalties. Take note and consider using an IDC-tolerant variety the next time you plant soybeans in that field.

Ana Carcedo
Broadleaf Agronomist

WHEAT FLOWERING AND STARTING TO FILL GRAIN, CORN GROWING FAST

My phone has been pretty quiet the past week with no major issues to discuss. Spring wheat and durum in my trials in Cass and Grand Forks Counties are flowering and fungicide applications were made late last week to early spring wheat varieties and on July 8 on later spring wheat and durum trials. The corn is taking advantage of the heat and starting to jump up. From the road, most fields around the Fargo area seem to be V8-V10. I have not seen any tassels out yet.

If you are in Southwest North Dakota and grow corn, I strongly encourage you to attend the **Hettinger Research Extension Center Crop Tour** happening next **Tuesday, July 15th starting at 5:00 pm Mountain Time.** My graduate student and I will be discussing a corn population trial funded by the North Dakota Corn Utilization Council. We have 8 hybrids planted at 8 different seeding rates: 10,000; 14,000; 18,000; 22,000; 26,000; 30,000; 34,000; and 38,000 plants per acre to help us refine seeding rate recommendations for corn grain grown in the region. The plots are looking good this year and it should yield interesting results. We hope to see you there!

Clair Keene
Extension Agronomist Small Grains and Corn

PREVENTED PLANT ACRES: AN UNPLANNED OPPORTUNITY FOR IMPROVING SOIL HEALTH

Each growing season presents its own set of challenges, and some years bring more than their fair share. Excessive rainfall, flooding, or other extreme weather events can prevent timely planting or devastate planted acres, leaving many fields idle. Extreme events have been more common than ever in ND, with the storms that swept through the region on June 20 being one example of it. While "prevented plant acres" may initially feel like a setback, they can also open the door to a unique and often overlooked opportunity: **improving soil health.**

When fields are left unplanted, farmers have a rare chance to focus on rebuilding and regenerating the soil. Without the pressure of managing a cash crop, it is possible to introduce practices that are often sidelined in a typical production year. **This includes planting cover crops.** These practices help build organic matter, improve soil structure, enhance

microbial activity, and ultimately improve soil health. When fields are left unmanaged, soil erosion and weed pressure often occur, problems that can come back even stronger in future seasons. Rather than viewing these acres as a loss, producers and land managers can reframe them as an investment in long-term soil productivity. With careful planning and a focus on soil-building strategies, prevented plant acres can offer lasting benefits that extend well beyond a single growing season.

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. Seeding dates of cover crops on prevented planting ground must comply with Risk Management Agency guidelines. Farmers should always inform their insurance agent of intentions to plant a cover crop and obtain the latest information on cover crop restrictions and guidelines for prevented planting. Other things farmers should take into consideration when adding a cover crop to prevented planted areas are cost and availability of seeds, seeding time, crop rotation, and termination method (in ND, most cover crops will be winter killed).

Figure 1. Field with a mix of cover crops on October 4, 2024, near Leonard, ND. Photo credits: Carlos Pires

Seeding time

Most cool-season cover crops are typically seeded in early spring or fall. However, due to North Dakota's relatively mild summers, mid-summer seeding can still provide effective soil cover, even if overall growth is reduced. Keep in mind that much of a cover crop's value lies in what happens below ground, so don't be discouraged if you don't see full canopy closure. In contrast, warm-season cover crops are better suited to hot, dry conditions and can produce substantial biomass both above and below the soil surface.

Cover Crop Options for Prevented Planted Acres

The most common cover crops are listed below. A great option for selecting cover crops is to use the Midwest Cover Crop Council Cover Crop Decision Tool. Indicate where your farm is located (state and county) and select your goals.

Cool-season broadleaves and legumes	Cool-season grasses	Warm-season broadleaves and legumes	Warm-season grasses
Clovers*	Annual ryegrass	Cowpeas*	Millets
Camelina	Barley	Mung beans*	Sudangrass
Field peas*	Cereal Rye	Safflower	Sorghum sudan
Flax	Oats	Sunflower	
Lentils*	Triticale	Sunn hemp*	
Radish	Wheat	• Nitrogen fixing legumes	
Turnip			
Vetches*			

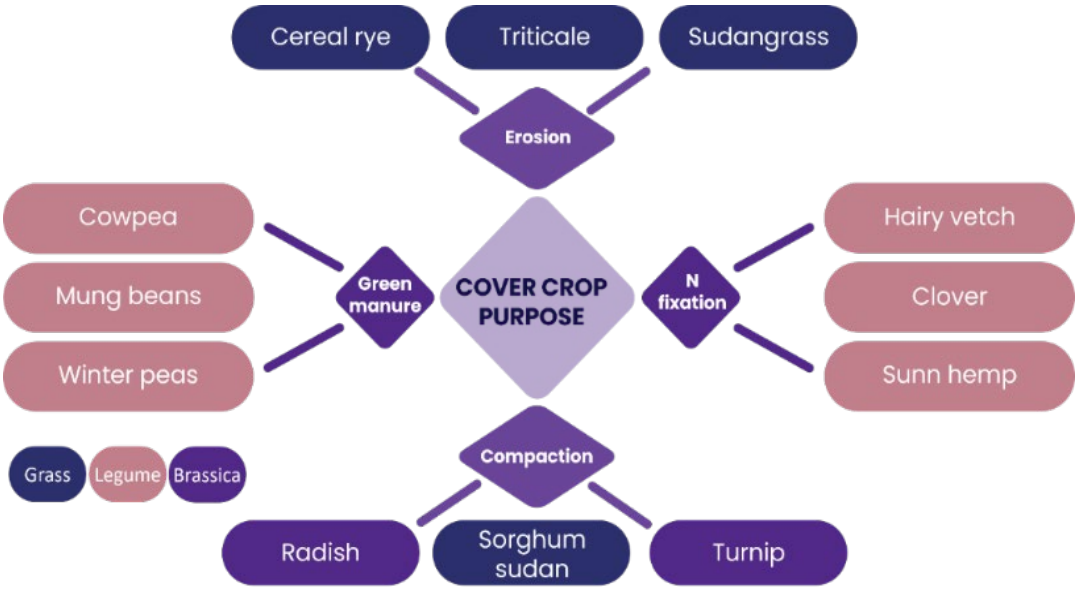
Crop Rotation

When selecting cover crops, it is important to consider their role within your overall crop rotation and how their residues will affect soil nutrient dynamics. A key factor is the carbon to nitrogen (C:N) ratio of the cover crop biomass. Species with high C:N ratios, such as cereal rye, millets, and other grasses, decompose slowly and can temporarily tie up nitrogen, potentially limiting its availability to the following cash crop. In contrast, legumes like vetches and clovers have lower C:N ratios and contribute nitrogen to the soil as they break down.

Using a diverse mix of cover crop species can help balance these effects. If your next cash crop is a grass (e.g., wheat, barley, oats, or corn), consider including cover crops with lower C:N ratios to ensure nitrogen availability. For broadleaf crops such as soybeans, lentils, peas, or canola, higher C:N ratio covers may be beneficial, as legume and brassica residues tend to decompose more quickly. Avoid planting high residue grasses in succession, as this increases the risk of nitrogen tie up. Keep in mind that this tie up is temporary and driven by soil microbes that immobilize nitrogen during residue decomposition.

Cover crops are service plants

Different cover crop species influence the soil in various ways, depending on their root systems, growth habits, and interactions with the soil. Grasses such as cereal rye, sudangrass, and triticale are particularly effective at reducing soil erosion and improving soil structure due to their extensive aboveground growth and dense, fibrous root systems. In contrast, legumes such as vetches, winter peas, clovers, and sunn hemp are well-suited for fixing nitrogen from the atmosphere. Brassicas, including radish and turnips, are excellent for alleviating soil compaction. These species tend to decompose more quickly after termination, which can make nutrients available sooner for the following crop.
Selecting the right cover crop depends on the specific goals for your field, whether that is improving soil structure, managing nutrients, protecting against erosion, reducing compaction, or addressing other objectives.



Commonly used cover crop species separated by purpose and type.

Grazing

When planning to graze cover crops, it is important to consider both livestock needs and soil health. Choosing the right cover crop species makes a big difference. Timing is also key. Letting the cover crop grow enough before grazing helps

build more aboveground and root biomass. It also helps protect the soil. Avoiding overgrazing is important to keep the soil covered, reduce erosion, and support long-term soil health. With the right approach, grazing cover crops can be a win-win for livestock and the land.

Carlos Pires
Extension Soil Health Specialist

around the state

AROUND THE STATE

NORTHEAST ND

Field Conditions and Crop Progress Update

Timely rains brought much-needed relief to crops across the northeast region, particularly benefiting small grains, which had been under significant drought stress. NDAWN stations recorded rainfall amounts ranging from 0.04 to 2.29 inches across the region. However, some counties received minimal precipitation and could still use additional moisture.
Small grains are advancing rapidly. Early-seeded fields have reached the early milk stage of kernel development, while later-seeded fields are now at the early boot stage. Cereal aphid populations appear to be declining, based on regional IPM scout reports—welcome news for growers.
However, bacterial leaf streak is starting to appear in some areas. Unfortunately, there are currently no control options available for this disease. Growers are encouraged to monitor the NDAWN small grains disease forecasting model for Scab risk at https://www.ag.ndsu.edu/cropdisease.
Grasshopper numbers are increasing in isolated locations, where nymphs are causing damage to both wheat and soybeans.

Spring wheat in Grand Forks County. Photo: Isaac Cuchna, ANR Extension Agent, Grand Forks County

Canola is currently in the bolting to flowering stages. While diamondback moth counts in pheromone traps are declining. Growers should remain vigilant and scout regularly for larval activity. Bertha armyworm moths are being detected at low levels in IPM traps.
Soybeans and dry beans are behind in development, with most fields still showing open rows and delayed canopy closure. In contrast, field peas are looking strong, with flowers and pods starting to develop. Sunflowers are progressing well, with some fields reaching the R1 growth stage. Corn is also beginning to show signs of recovery.

Dry beans in Ramsey County. Photo: Lindsay Overmyer, ANR Extension Agent, Ramsey County.

Sunflowers in Grand Forks County. Photo: Isaac Cuchna, ANR Extension Agent, Grand Forks County.

Canola trials flowering at Langdon REC. Photo: Isaac Cuchna, ANR Extension Agent, Grand Forks County.

Heavy rains caused ponding in low lying areas of a field in Grand Forks County. Photo: Isaac Cuchna, ANR Extension Agent, Grand Forks County.

Herbicide damage in Canola likely from sprayer contamination, Photo: Hayden Anderson, ANR Extension Agent, Towner County.

Anitha Chirumamilla
Extension Cropping Systems Specialist
Langdon Research Extension Center

SOUTH-CENTRAL/SOUTHEAST ND

Be sure to attend the July 22, 2025 Carrington Research Extension Center Field Day. Also mark your calendar to attend the annual Row Crop Tour at the Carrington Research Extension Center August 21, 2025.

Higher temperatures this past week pushed crops along developmentally in most of the region. The southeast part of the state is still way behind on growing degree days with most of the area about normal. Hail and strong storms occurred again this past week in parts of the region, mostly the southern counties and up into Stutsman and Barnes Counties.

Photo 1: Hard Red Spring Wheat Seedhead from Griggs County with a Three-Seeded Spikelet.

Hard red spring wheat stage in the region ranges from second node to soft dough stage kernels in southern part of region. Photo 1 shows three kernels in a hard red spring wheat spikelet and Photo 2 shows a milky stage kernel from a seed head in Griggs County, with most wheat in the region flowering now. All spring-seeded small grain crops condition continues to be mostly good to excellent (at least 75% or more within counties) throughout the region. As seen in Photo 3, most hard red spring wheat fields are free of any leaf diseases. Bacterial leaf streak shown in Photo 4 is becoming more prevalent in fields in the region having susceptible varieties. Wheat stem maggot is showing up now in fields as seen in Photos 5 and 6 from Griggs County.

Photo 2: Hard Red Spring Wheat Kernel at Milk Stage from Griggs County.

Photo 3: Hard Red Spring Wheat Having No Leaf Diseases in Griggs County.

Photo 4: Bacterial Leaf Streak on Hard Red Spring Wheat Flag Leaf in Griggs County

Photo 5: White Hard Red Spring Wheat Seedheads Caused By Wheat Stem Maggot in Griggs County

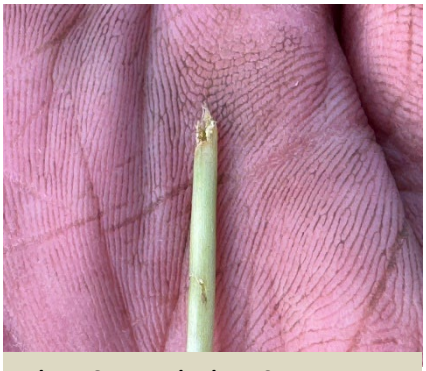


Photo 6: Actual Wheat Stem Maggot Damaged Wheat Stem in Griggs County

Corn in the region varies from V5 (5-collars) to V12 (12-collars in Sargent and Richland Counties) with Photo 7 showing V10 stage corn in Foster County. Corn grew rapidly this past week and looks better overall, but there are still too many water-logged fields and nutrient deficient corn fields in the region. About 60% of the corn crop in the region looks good. The most notable issue in corn in the past week was yellow flash as seen in Photo 8. Yellow flash occurs when plants begin growing rapidly after a cold spell with the whorl unable to unroll causing the leaves to become yellow. Yellow flash usually causse no yield loss. No pest issues in corn at this time.

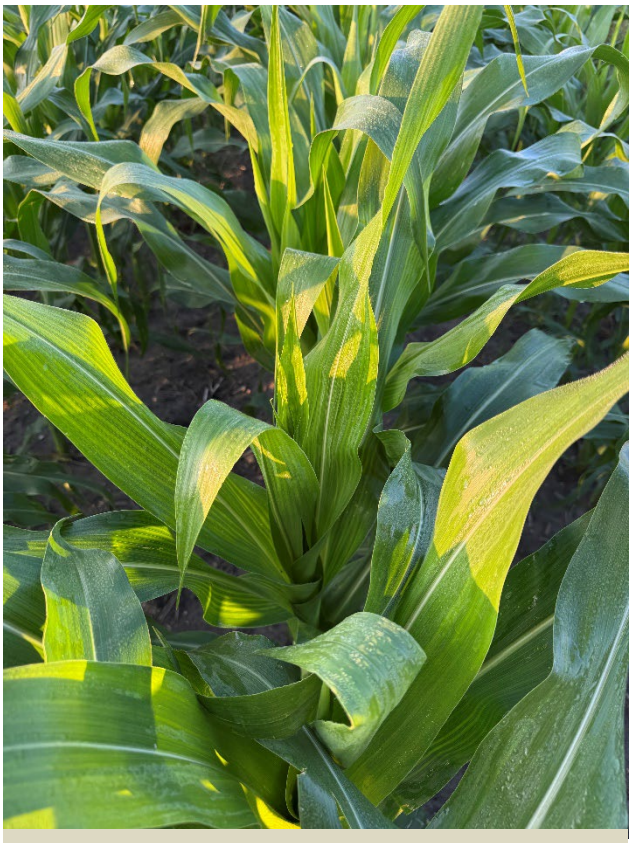


Photo 7: V10 (10 collar) Corn in Foster County

Photo 8: Yellow Flash in Corn in Foster County (photo by Jeff Gale)

Soybean stage in the region varies from V2 (second node with a trifoliate leaf) to R2 (full flowering) now with the average stage in the region at least R1 (begin flowering). Photo 9 shows V5 (fifth node trifoliate leaf) soybean. Soybean stages still vary greatly in the earliest planted fields. Soybeans remain the poorest crop in our region with fewer than 10% of soybean fields looking excellent. The majority of soybeans in the region are still only in fair condition. The two biggest problems in soybeans in many parts of the region remains to be IDC and saturated and ponded-water areas of the fields reducing soybean condition. Soybeans improved from IDC in some fields and got worse in other fields in the past week. The overwintering bean leaf beetle is still present in fields and has now been found north of Highway 200 in Wells County.

Photo 9: V5 (5th trifoliate leaf node) Soybean in Foster County

Most canola is flowering now as seen in Photo 10 in Logan County. The canola crop condition has improved and is less variable across the region but still not where it needs to be. Start scouting flowering canola for diamond back larvae as diamond back moth trap numbers are still high, but have started to decline now.

Photo 10: Full-Flowering Canola in Logan County

Most dry beans are in the second to fourth trifoliate stage with stands looking mostly good across the region. However, crop condition did decline in areas with poor drainage and standing water again this past week.

Sunflowers are up to the 12-leaf stage in areas of the region. Most sunflowers are in good condition at the moment. No problems with sunflower at the moment other than standing water reducing crop condition.

Photo 11: Flowering Flax in Foster County

Weeds continue to be a battle for some across the region. I noticed new emergence of weeds this past week with the warmer and wetter conditions. The most common species were foxtails, kochia, waterhemp, other pigweed species, and common purslane . It has been hard to get into some fields to apply herbicides timely. With the lack of soybean canopy in most fields, newly emerging and/or non-controlled weeds from the first postemergence application may be a big concern for the rest of the region. Photo 12 shows mostly green and yellow foxtail and barnyardgrass and some common purslane in a non-treated plot at the NDSU Tri-County plot near Wishek. Photo 13 shows how effective Spartan at 8 fluid ounces per acre plus metribuzin 75 DF at 10.7 ounces per acre plus Zidua at 4 fluid ounces per acre controlled most of these weeds 33 days after application when I applied glyphosate. Please scout soybean fields at 10 to 14 days after the first postemergence application to determine if a second postemergence application in needed. If weeds are surviving the first herbicide application and/or a new flush of weeds are coming, spray herbicides with a second postemergence application at 14 to 18 days after the first application. Please don't wait to spray beyond this time period as any surviving weeds will be too large and difficult to control with a second postemergence application.

Photo 12: Non-Treated plot having mostly foxtail species and common purslane in Soybean at NDSU Tri-County Research Site.

Photo 13: Soybean Plot treated with Spartan at 8 fluid ounces per acre plus metribuzin 75DF at 10.7 ounces per acre plus Zidua at 4 fluid ounces per acre at NDSU Tri-County Research Site.

Of the 27 NDAWN stations I've chosen this season across the region, the average maximum daily air temperature from July 1 to July 7, 2025 ranged from 82 degrees Fahrenheit near Finley and Hurdsfield to 88 degrees Fahrenheit near Livona, with an average this past week of 84 degrees Fahrenheit, 7 degrees Fahrenheit warmer than last week. The average daily minimum air temperature for the past week at the 27 NDAWN stations ranged from 56 degrees Fahrenheit near Pickardville to 63 degrees Fahrenheit near Wirch, with the daily average minimum air temperature for the week being 60 degrees Fahrenheit, 3 degrees Fahrenheit above last week. The average maximum daily air temperature for June at these 27 NDAWN stations ranged from 72 degrees Fahrenheit near Hurdsfield to 78 degrees Fahrenheit near Gardner and Hillsboro, with a June average of 76 degrees Fahrenheit. The average daily minimum air temperature for June at the 27 NDAWN stations ranged from 50 degrees Fahrenheit near Pickardville to 56 degrees Fahrenheit near Sonora, with the daily average minimum air temperature for June being 53 degrees Fahrenheit.

Rainfall for these stations across the region was highly variable again this past week! Rainfall for the region at these 27 weather stations ranged from 0.02 inches near Gardner to 2.53 inches near Wirch with an average for the week of only 0.57 inches, 0.21 inches below last week. Rainfall for June at these stations ranged from 1.27 inches near Robinson to 5.41 inches near Lisbon with a June average of 3.09 inches.

The wind calmed down again this past week to the lowest wind speeds since the last week of May! The wind across the region this past week ranged from 4.7 miles per hour near Mooreton to 8.1 miles per hour near McHenry, with the average daily wind speed for the week at 6.06 mph, 0.78 mile per hour slower than last week. The average daily wind speed for June across these stations averaged 7.9 miles per hour.

Have a great week and stay safe.

Jeff Stachler
NDSU Extension Cropping Systems Specialist at Carrington Research Extension Center

SOUTHWEST ND

Most of southwest North Dakota received some rainfall over the past week, with totals ranging from 0.03 inches in Grant County to 1.23 inches in Bowman County. The combination of rains and warmer weather with plenty of sunlight last week has helped crops catch up and put on some decent growth.

Barley is anywhere from early inflorescence emergence to turning color, with some fields in the early milk stage. Similarly, spring wheat stages can be found anywhere from early booting stage to late milk development stage. So far, no incidence of fusarium head blight has been detected by our field scout.

Victor Gomes
Extension Cropping Systems Specialist

weather

WEATHER FORECAST

The July 10 to July 16, 2025 Weather Summary and Outlook

All North Dakota Agricultural Weather Network (NDAWN) stations recorded at least some rain in the past week, but as is almost always the case, the variation was great (Figure 1). Totals ranged from just a trace to over two inches. These next 7 days will likely be similar with the high variation in totals, but some parts of western North Dakota perhaps recording very little rain during this period.

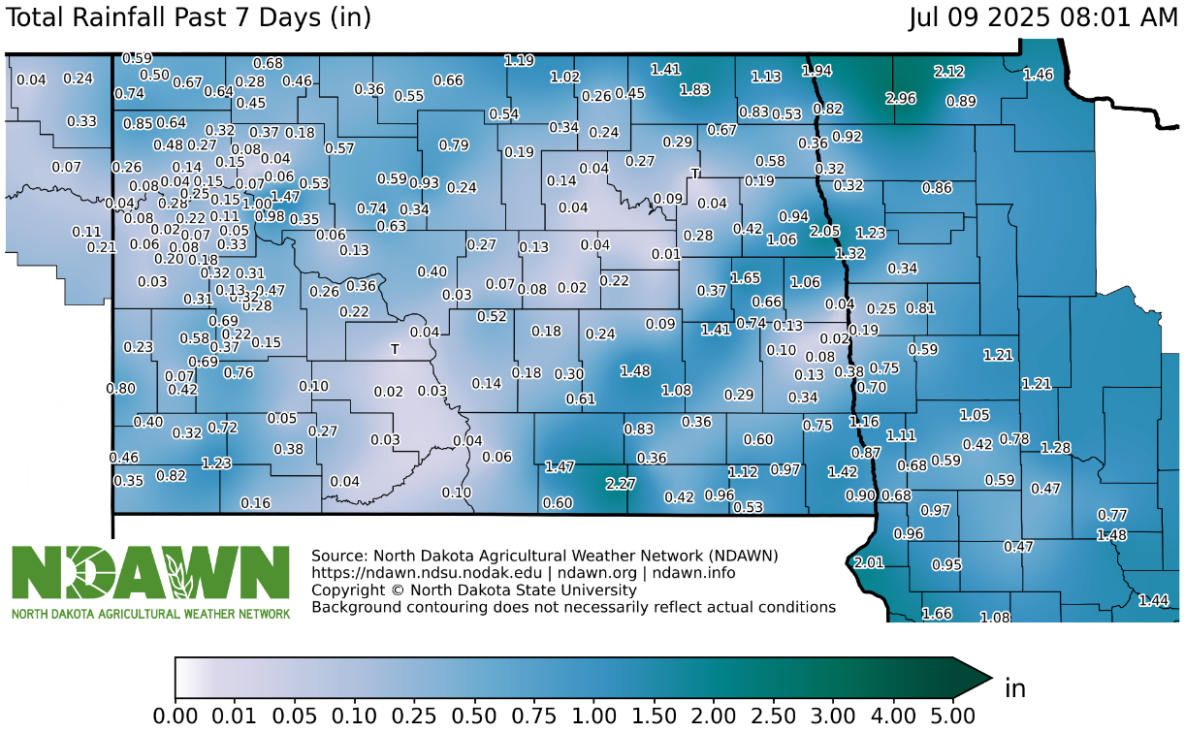


Figure 1. Total Rainfall for the Period of July 3 through July 9 at 8:00 AM.

Although northeastern North Dakota did record some of the highest rain totals in the past week, that area is still well below average for the 60 day period ending July 8, 2025 (Figure 2). Because of the recent dryness across the north, the latest drought monitor that came out today did expand the D1 (Moderate) Drought westward along the Canadian border into northcentral North Dakota.

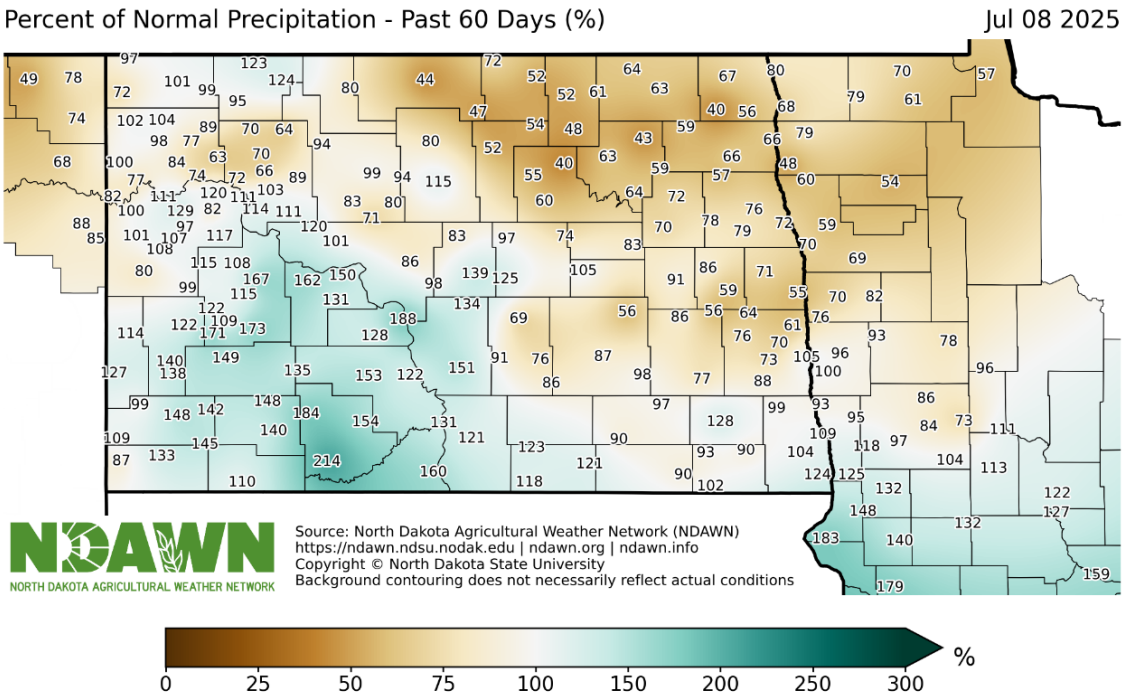


Figure 2. Percent of Normal Precipitation for the 60-day Period Ending on July 8, 2025

There were both some very warm and and cool days in the past week. Overall, most of the state recorded slightly above average temperatures during the first week of July. The hot weather from yesterday (Wednesday, July 9) in western North Dakota is not included in Figure 3. The next week will be a mix of warm and cool days that overall should average a bit above average for temperatures.

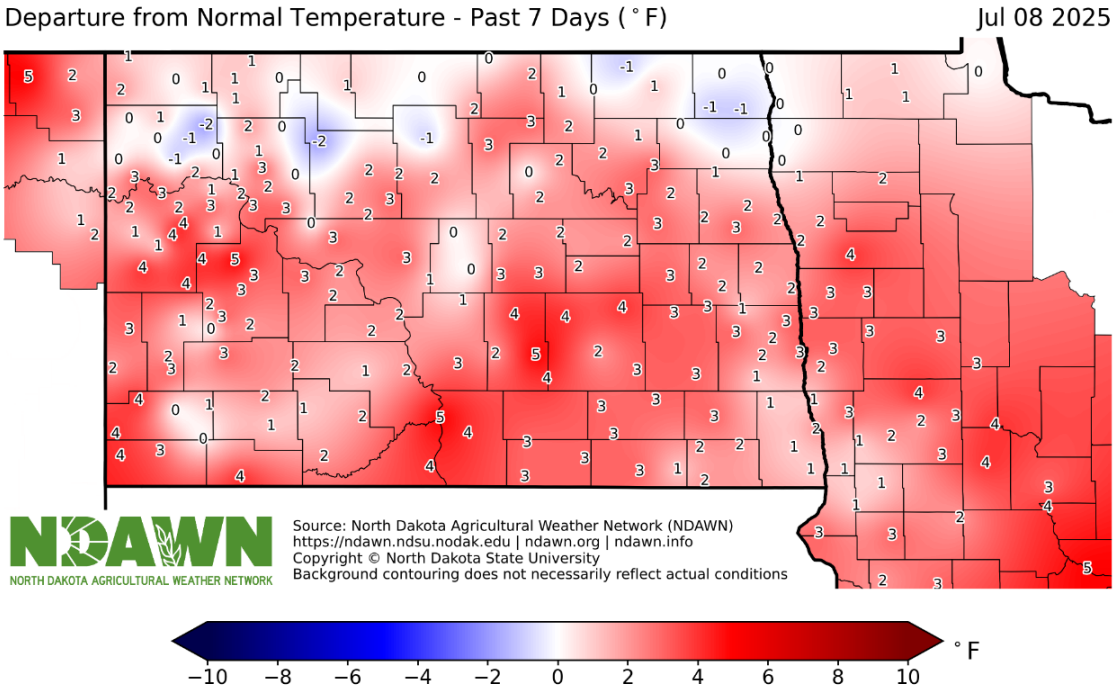


Figure 3. Departure from Average Air Temperature for Period of July 2 through July 8, 2025

Figures 4 and 5 show forecasted growing degree days (GDDs) for base 32°F (wheat and small grains) and base 50°F (corn and soybeans) during this forecast period. With temperatures a bit above average in the next several days will also mean more than average GDDs.

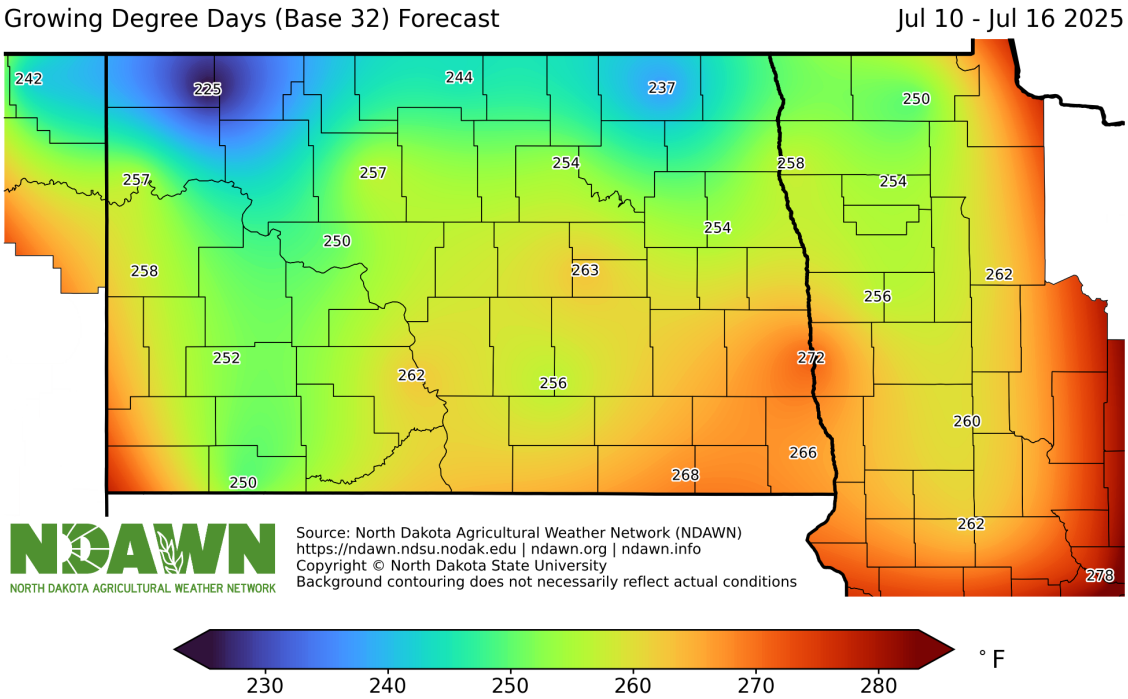


Figure 4. Estimated growing degree days base 32° for the Period of July 10 to July 16, 2025.

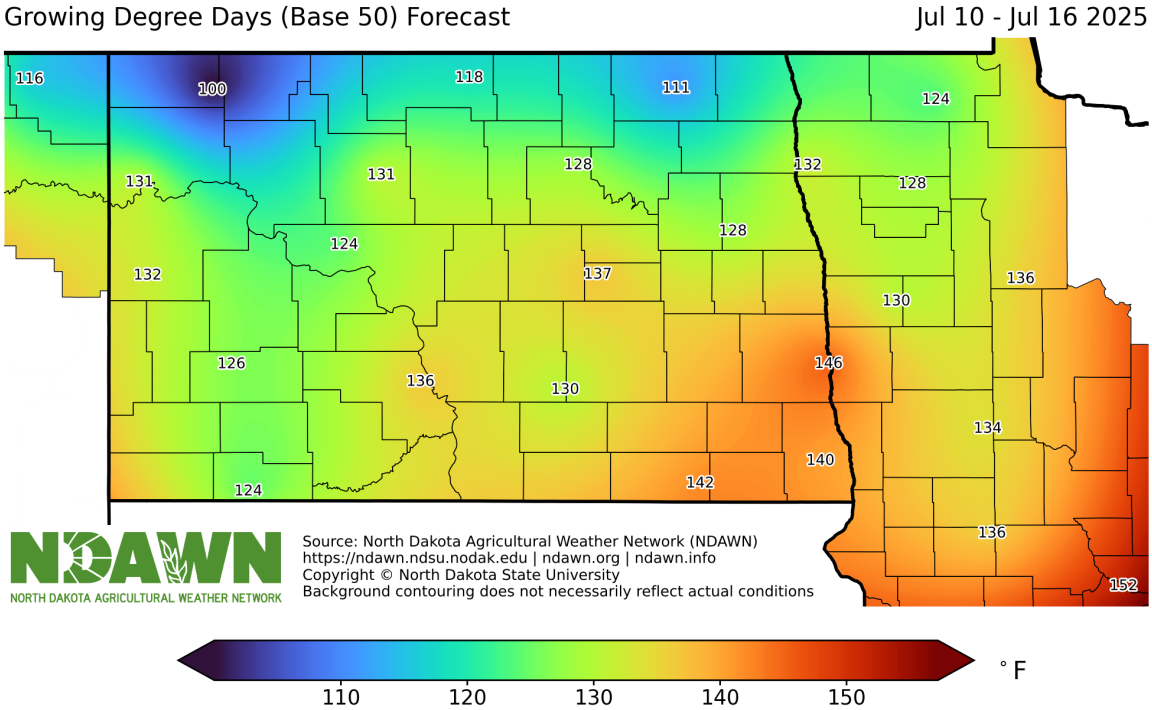


Figure 5. Estimated growing degree days base 50° for the Period of July 10 to July 16, 2025.

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

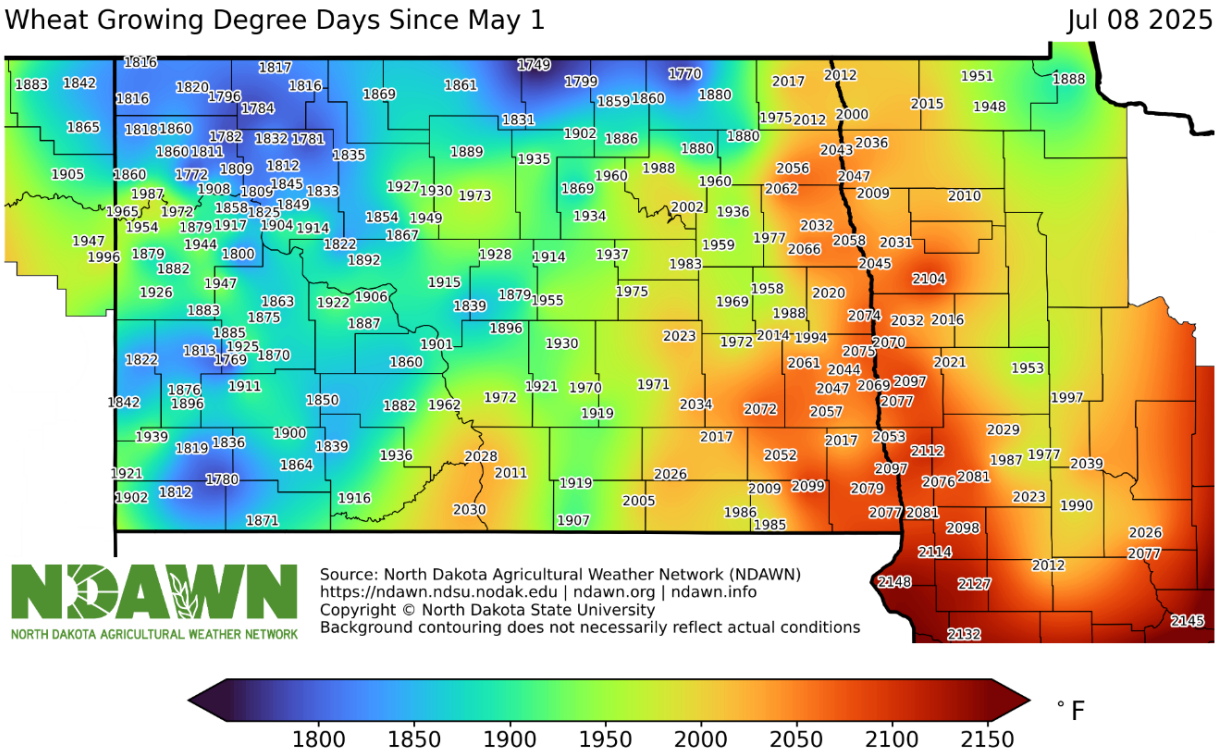


Figure 6. Wheat Growing Degree Days (Base 32°) for the Period of May 1 through July 8, 2025

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.

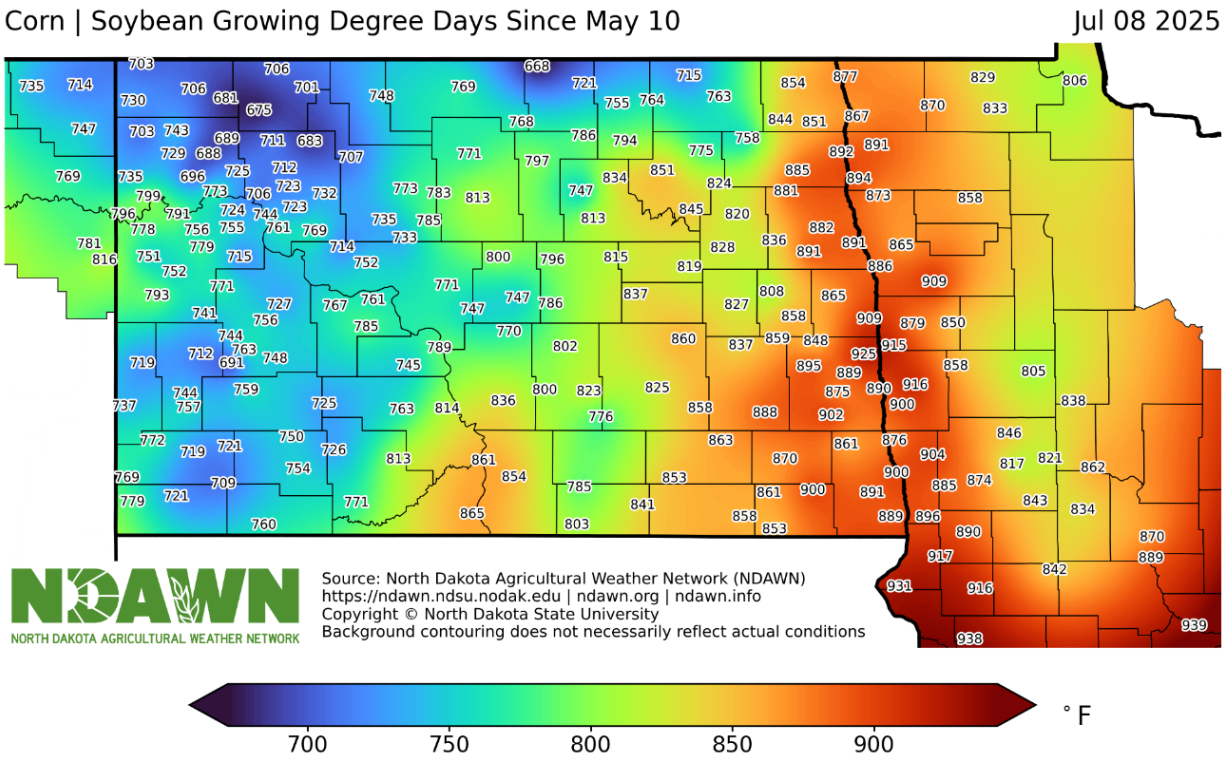


Figure 7. Corn Growing Degree Days (Base 50°) for the Period of May 10 through July 8, 2025

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