North Dakota State University
CROP & PEST REPORT
NDSU EXTENSION

No. 11 July 3, 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

The following insect pests were observed by the IPM Scouts this past week, June 23-27, in North Dakota. 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: Cereal aphids continue to be observed in 30% of the wheat fields scouted in North Dakota and were present at an average of 0.02- 2.72 aphids per plant (well below the Economic Threshold of an average of 4-7 aphids per stem from complete heading through the end of anthesis). Wheat stages ranged from Zadoks 24 (main shoot, 4 tillers) to 67 (70% anthesis completed). See Crop & Pest Report #8, June 12, 2025, for information on identification, scouting and thresholds.

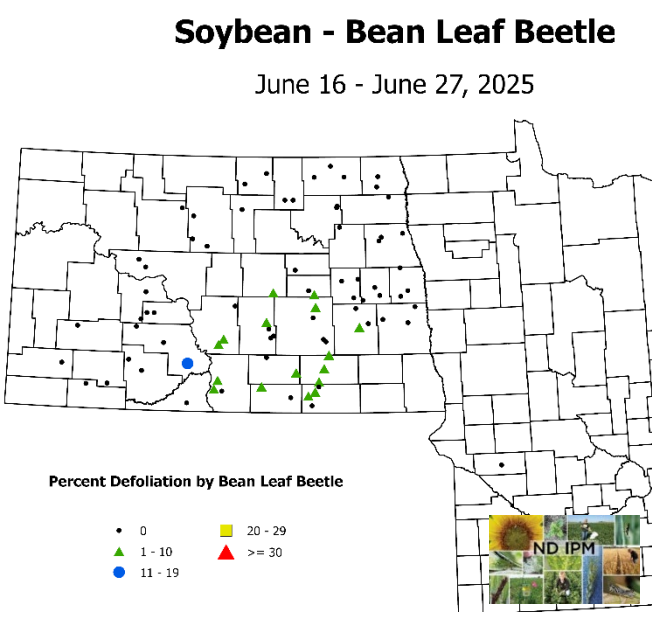
White heads of wheat stem maggot are starting to appear in 9% of wheat fields scouted, and the percentage incidence is low, 2-10%. It was observed in Oliver, Morton, Grant, McHenry, and Steele counties. This insect pest is usually not economically significant in wheat.

Wheat stem sawfly emerged and was observed in Williams and McKenzie counties, where about 4.7% of fields were scouted at low densities of 0.2-0.8 sawflies per square meter.

Soybean: Low numbers of soybean aphids were observed in two soybean fields (Nelson and Griggs counties) out of 56 fields scouted in North Dakota, with a 5% incidence and an average of 0.05 aphids per plant.

Soybean:
Bean leaf beetle continues to be below the economic threshold level and is most common in the south-central area. Beetles were found in 21% of the fields scouted, and 0.1-14% defoliation. Most soybean fields are in the vegetative crop development stage (V1-V5).

Bean leaf beetle (Taylor Sengor, former IPM scout)



Defoliation thresholds for bean leaf beetle:

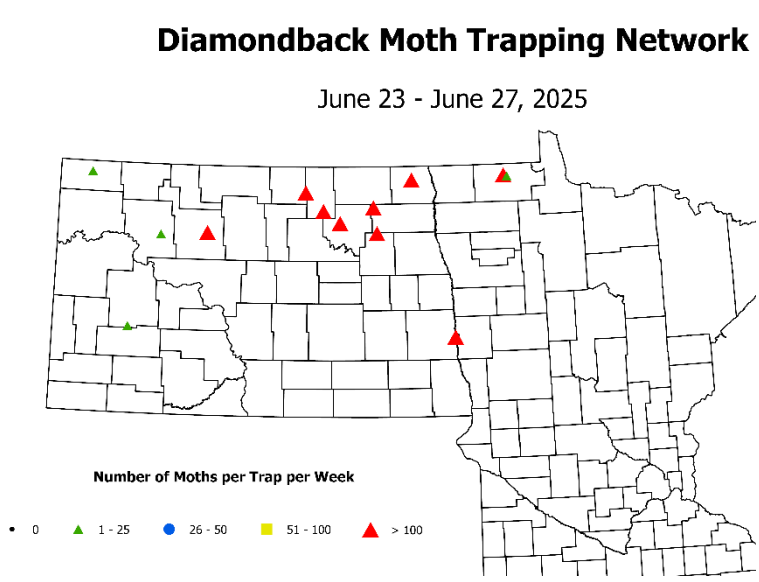
- 30 percent defoliation during vegetative (V) stages
- 20 percent defoliation from beginning bloom (R1) to beginning seed (R5)
- 10 percent defoliation during full seed (R6)

Grasshoppers were observed in wheat, barley and soybean fields in 37 counties throughout North Dakota. Grasshoppers were present in 66% of the fields scouted last week, as they were the previous week. The number of nymphs per square yard continued to be low, 1-5 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

Bertha armyworm was captured at 77% of the trap sites in northern and southwest North Dakota and northwest Minnesota, and trap catches ranged from 1 to 58 cumulative number of moths per trap. This is well below the economic threshold of 300 cumulative number of moths per trap, where pest managers need to scout for caterpillars (larvae) of bertha armyworm.

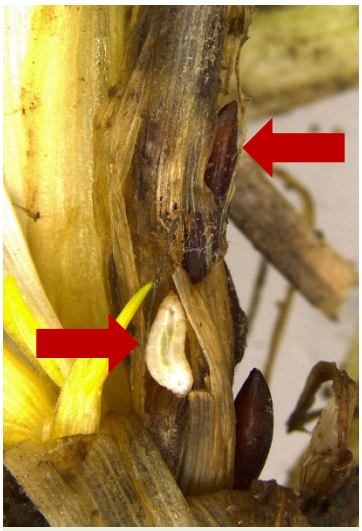
Diamondback moth trap catches have increased, with high trap catches **over 500 moths per trap per week**. In the northeast, north central and southeast areas of North Dakota and northwest Minnesota. Canola ranges from the rosette to the flowering stage depending on the planting date. **Canola is most susceptible to larval feeding injury from the second generation (late June through July) during the flowering and pod stages.** 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 detected in 62% of trap sites across 16 counties. Trap counts dropped this past week, ranging from 1 to 76 flies per trap. Higher numbers—over 25 flies per trap—were found in **Cass, Pembina, and Walsh counties**. If you're in these areas, check your wheat fields for Hessian fly larvae. Look between the leaf sheaths and the stem, especially near the crown or at the nodes. The larvae damage plants by feeding on sap, which can stunt growth and weaken the crop and cause lodging.

Wheat midge activity is increasing in North Dakota. Traps picked up wheat midge in 13 counties this week, up from just six last week, mainly in the northern part of the state. Trap counts ranged from 5 to 69 flies per trap this week, with a total of 200 flies caught at positive trap sites. Be sure to check your fields if you're in an area with midge activity. See the article below for tips on how to scout for wheat midge.



Hessian fly flaxseed stage top arrow and larva bottom arrow (Patrick Beauzay)

SCOUT FOR WHEAT MIDGE

Wheat midge (Phil Glogoza)

Even though wheat midge risk is low again this year, scouting is still important in certain fields. Focus on continuous wheat fields and areas that got over 1 inch of rain in May or June (increased risk for wheat midge). Rain in some parts of North Dakota could lead to wheat midge showing up in early to mid-July. But most of northern North Dakota—where wheat midge is usually a bigger problem—remains dry again this year.

For scouting, examine wheat heads at dusk (9 p.m. and later when temperatures are above 60°F and wind speed is less than 6 mph. The orange-colored adult midge can be seen flying around wheat heads.

Economic thresholds for wheat midge:
Susceptible crop stage: heading (Zadoks 50-59) to 30%-flowering (Zadoks 53),

- Hard Red Spring Wheat - one or more midges observed for every four or five heads
- Durum wheat - one or more midges observed for every seven or eight heads

Use the wheat midge degree-day model to predict the emergence of wheat midge, to time your field scouting, and to determine if the wheat crop is at risk. Producers can access the wheat midge degree-day model on the North Dakota Agricultural Weather Network (NDAWN). Select your nearest NDAWN station and enter your wheat planting date. The output indicates the wheat's expected growth stage, whether the crop is susceptible to midge infestation, and the timing and percentage of wheat midge emergence.

BLISTER BEETLES IN CANOLA

Using the NDAWN growing degree model (base temperature of 41°F), canola crop development ranges from rosette to early flower, using a May 15 planting date.

Ash-gray blister beetle feeding on flower buds in canola, Bottineau
(Karissa Berg, 701 Agronomy LLC)

Several species of blister beetles can be found feeding on canola in North Dakota, including:

- *Lytta nuttalli* – a large, purplish-green beetle
- *Epicauta fabricii* – an ash-gray blister beetle
- *Epicauta ferruginea* – a smaller, rusty-colored, hairy beetle

Life cycle: One generation per year.

- Eggs: Laid in the soil in early to mid-summer; hatch in ~2 weeks.
- Larvae: Triungulins; feed on grasshopper egg pods (*Epicauta* spp.) or solitary bee nests (*Lytta* spp.).
- Overwintering: Occurs in the larval stage.

Crop Impact

Adult blister beetles are highly mobile and gregarious, often aggregating in specific spots of blooming canola fields due to a chemical attractant (aggregation pheromone). They feed on leaves, stems, flowers, and pods, but usually for a short time before migrating elsewhere. Alfalfa is an alternative host, and beetles may move into canola fields after alfalfa is cut. The

treatment threshold is when 10 adult blister beetles per plant feed on the flowers or pods. However, no economic threshold has been set in North Dakota. Spot treatment with foliar insecticides registered in canola is recommended.

Other Field Crops

Blister beetles are usually not economic insect pests in field crops, so they have no established threshold. Blister beetles damage crops by eating the foliage, so the established defoliation threshold for other insects in beans (dry edible beans, faba beans and soybeans) is suggested for blister beetle control. Control in bean crops is warranted when **30% of the foliage is destroyed before bloom or when 20% is destroyed after bloom, pod set or fill.**

For more information, consult the NDSU Extension publication on Blister Beetle Management in Forages and Field Crops E1002.

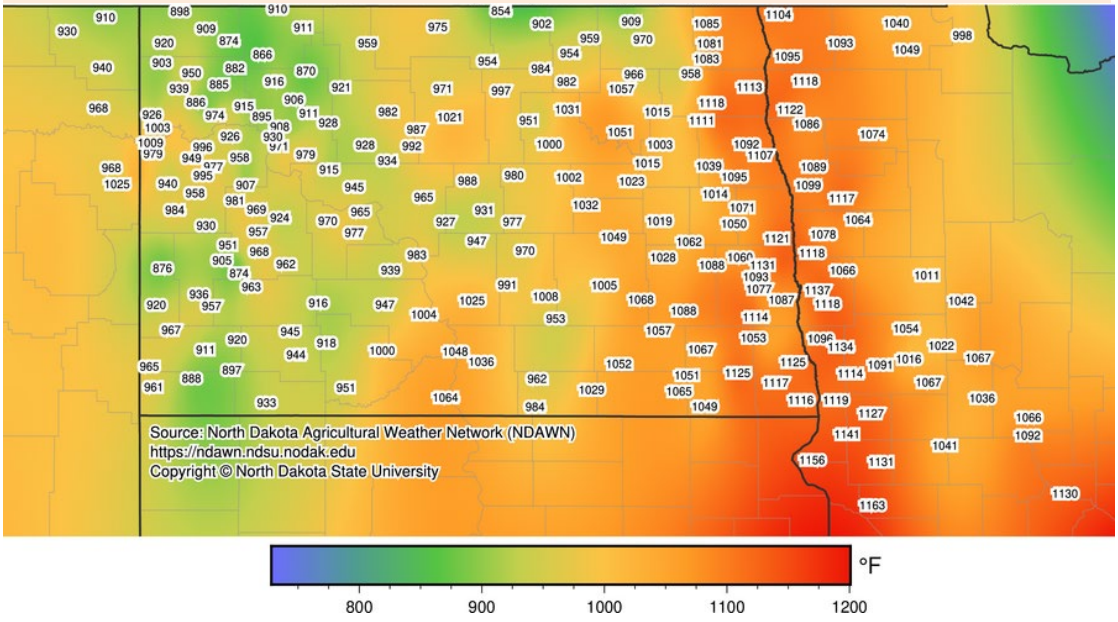
LEAFY SPURGE FLEA BETTLE DD UPDATE

See Crop & Pest Report #10, June 26, 2025, for information on scouting, collecting and the degree day model for leaf 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.

Current AGDD Status: Scouting for collection sites can begin in the south central, southeast, central and east central areas of North Dakota. However, the northern and far southwest areas of North Dakota do not have enough AGDD to start scouting. No leafy spurge flea beetle collection is recommended in North Dakota to date. We need some summer heat!

Accumulated Growing Degree Days	*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)*

Leafy spurge flea beetle AGDD, as of June 29, 2025.



Janet J. Knodel
Extension Entomologist

plant pathology

FUSARIUM HEAD BLIGHT (SCAB) RISK STAYS ELEVATED FOR SUSCEPTIBLE VARIETIES

Recent precipitation and higher levels of relative humidity (and dew periods) have maintained or elevated scab risk in several production regions of North Dakota. For susceptible varieties, there are several areas of the state that continue to be moderate to high scab risk (Figure 1). However, scab risk continues to remain low for moderately resistant varieties (Figure 2). Both the National FHB Model and NDSU models generally agree with production regions under the highest scab risk. Given the sporadic occurrence of precipitation in the state and potential influence on relative humidity, continue to monitor small grain fields entering the heading into flowering stages of development. For information on fungicide efficacy and timing, please refer to last week's article.

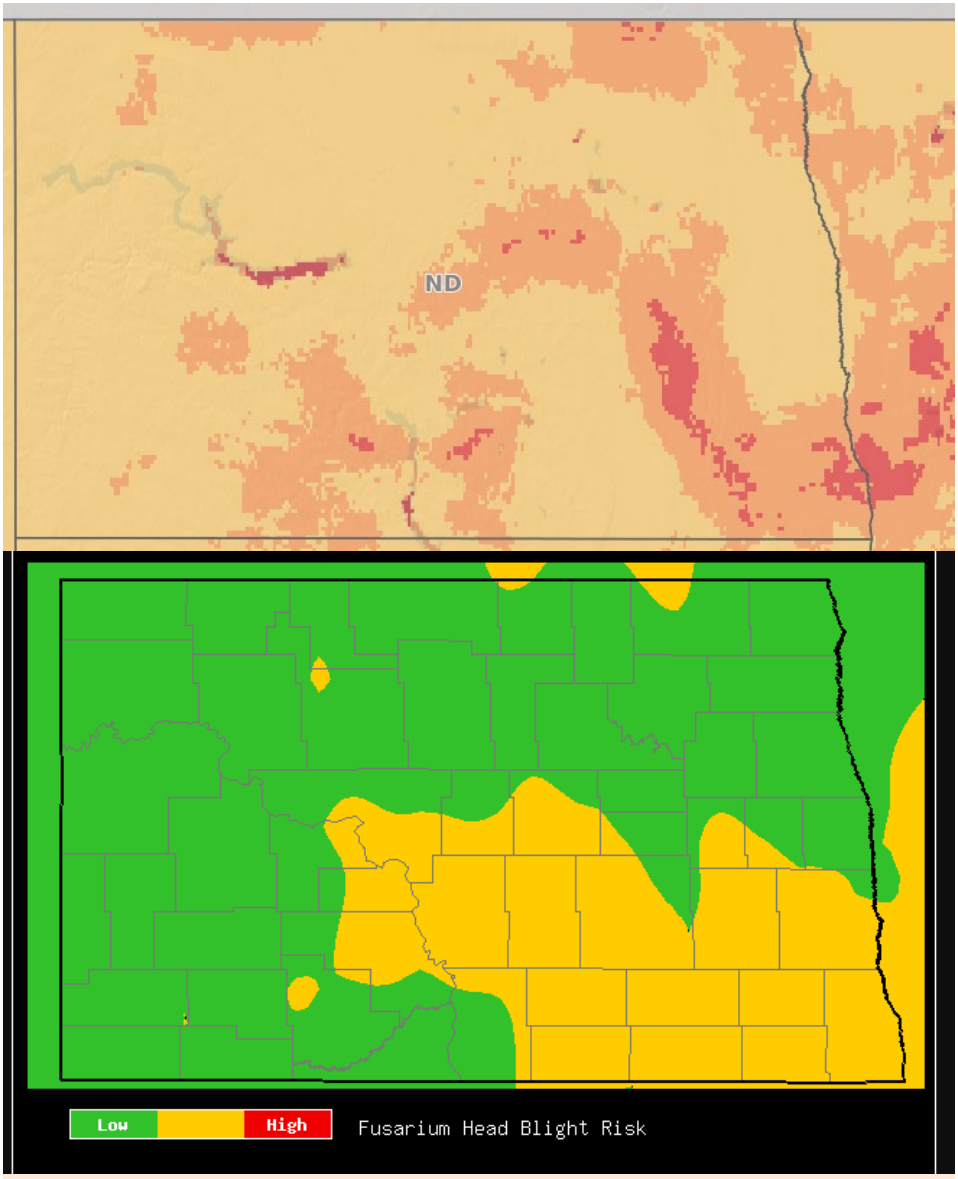


Figure 1. Scab risk for susceptible varieties on July 1 according to the USWBSI Fusarium Risk Tool (top) and the NDSU Small Grain Disease Forecasting Model (bottom).

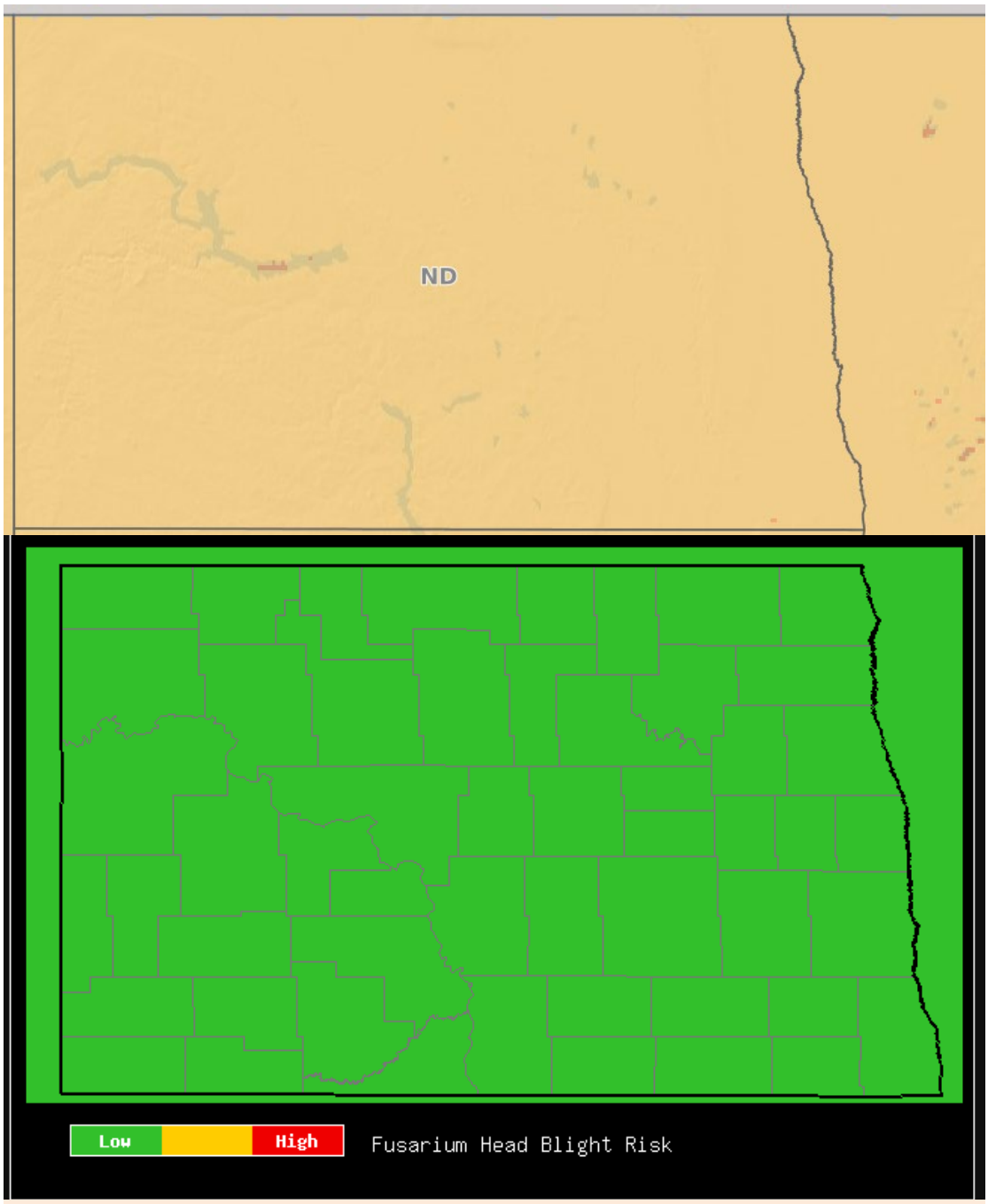


Figure 2. Scab risk for moderately resistant varieties on July 1 according to the USWBSI Fusarium Risk Tool (top) and the NDSU Small Grain Disease Forecasting Model (bottom).

Andrew Friskop
Extension Plant Pathology, Cereal Crops

WHITE MOLD ON THE MIND

More soybeans are getting into flowering across the region, and white mold keeps popping into my mind. As I had discussed last week, and most likely weeks into the future, white mold is a disease caused by the fungus, *Sclerotinia sclerotiorum*. Thankfully, previous research has been done on creating mathematical models to help predict the development of white mold 'mushrooms' or apothecia that serve as the inoculum source for the disease. These models are broken into three conditions, which include either 1) non-irrigated dryland, 2) irrigated soybeans with wide rows (generally wider than 15 inches), and 3) irrigated soybeans with narrow rows (narrower than 15 inches). Each of these conditions uses distinctly different mathematical models that account for varying weather variables that help predict when these apothecia will be present.

Over the past two years, research out of my program with support from the North Dakota Soybean Council, has led to a better understanding of the non-irrigated prediction models and how they can be best fit into the North Dakota production region. From this work, we have been able to validate that using three unique models accounting for 30-day moving averages of the daily maximum air temperature, relative humidity, and wind speed. Now this may sound slightly confusing, but I'll try to better explain what these mean. For temperature, we first take the maximum temperature that we observed for each day, then we take the previous 30 days of those maximum temperature values and find the average. These averages are then fed into our equations to help give risk prediction percentages that help to guide when we should be making fungicide applications. From this validation work, we have been able to demonstrate that we can accurately predict when white mold will develop roughly 76% of the time, which we are hoping to continue improving each year as we receive more data for training our models.

Using these models that have now been partially validated in North Dakota, we have been able to create the Soybean White Mold Risk Maps on NDAWN. These can now be found for the first time at NDAWN.info, then click on the Agriculture tab on the top, then Ag Tools, then White Mold. We are quite excited to be making these models available using NDAWN weather stations for the first time. These maps will be updated daily for the duration of the soybean flowering period to help farmers make the most up-to-date recommendations for fungicide timing.

It is very important to note that these models are predicting when environmental conditions are conducive for apothecial development, but the models are only accurate when soybean canopy coverage has occurred and flowers are present. If both of these two conditions are not met, then the models should not be evaluated for your fields until they do occur. Also, if your field has never had a history of white mold in the past, the chances of disease developing are very low, as this fungus cannot move long distances like other plant pathogens can. As a reminder, predictive models will never predict diseases with 100% accuracy, so using best judgment for your individual fields is needed.

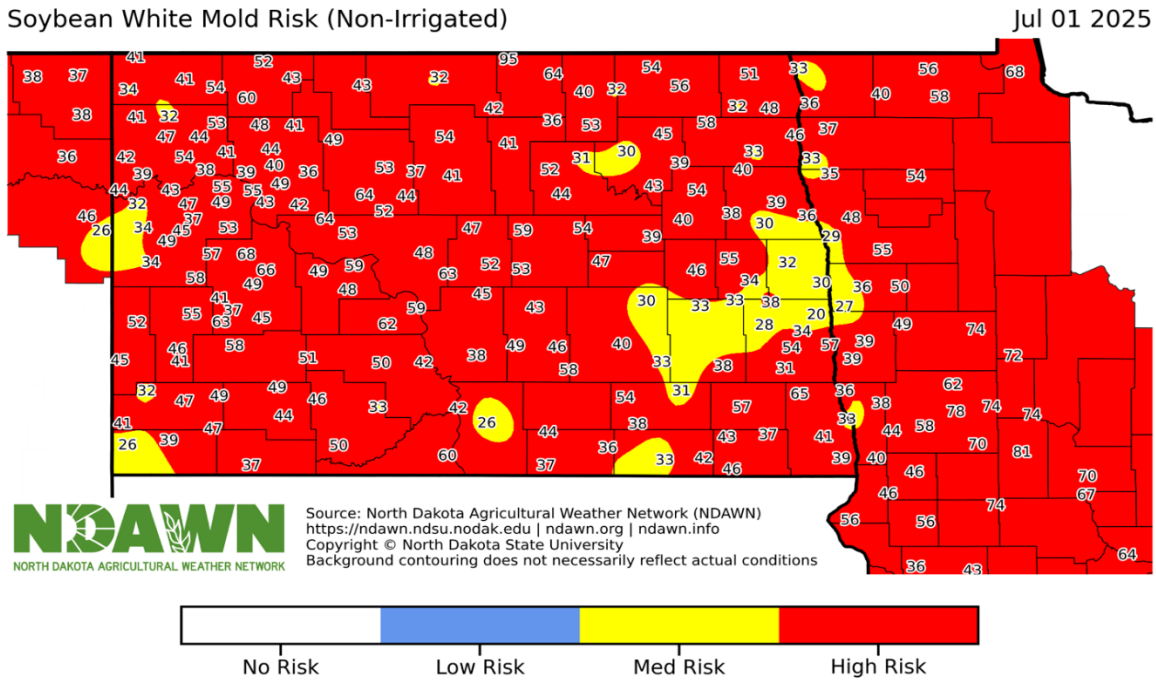


Figure 1. White mold risk map for non-irrigated dryland conditions.

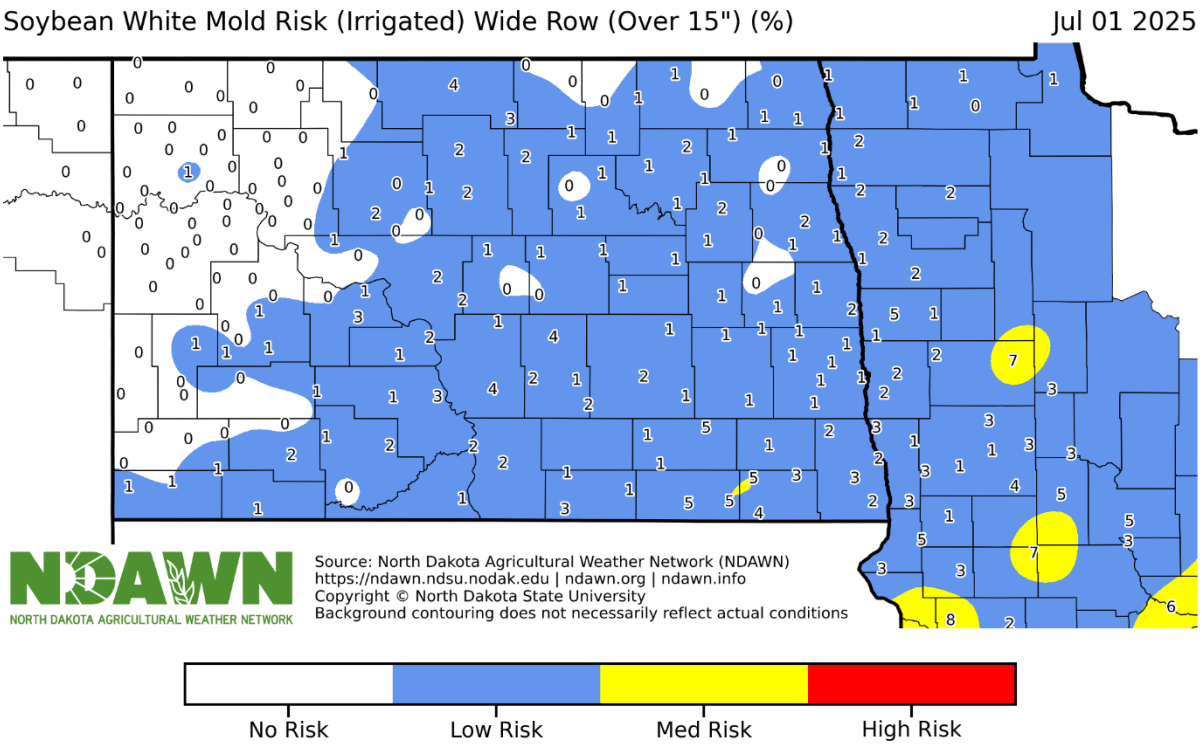


Figure 2. White mold risk map for irrigated field conditions when soybeans are planted in rows wider than 15 inches.

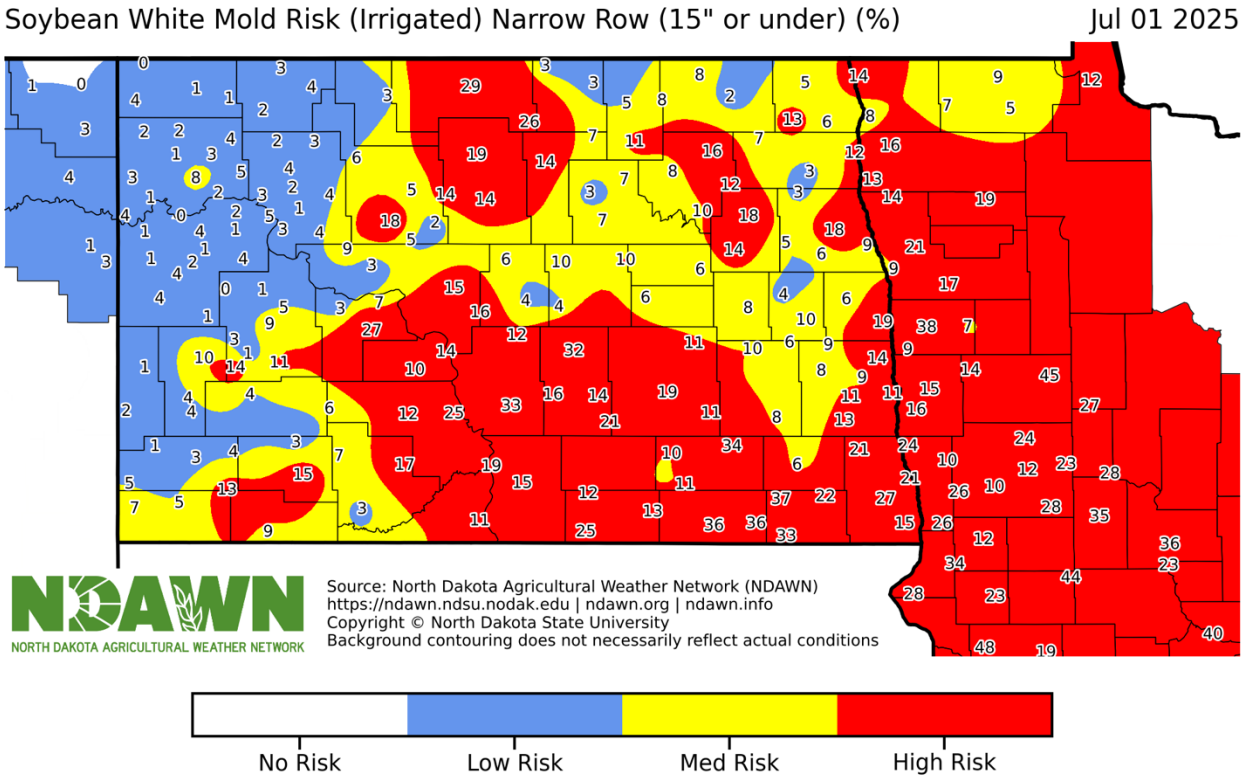


Figure 3. White mold risk map for irrigated field conditions when soybeans are planted in rows either 15 inches or less.

Wade Webster
Extension Plant Pathology, Soybeans

Daryl Ritchison
Director of the North Dakota Agricultural Weather Network (NDAWN)
State Climatologist of North Dakota

BIOTIC AND ABIOTIC IMPACTS TO SUGARBEET FOLIAR HEALTH

As thunderstorms and severe weather continue to batter sugarbeet in North Dakota and Minnesota on what seems like a weekly basis, several questions arise based on the physical damage to sugarbeet foliage and the impact on foliar diseases and crop recovery and productivity. Much of the answer depends on crop stage.

In early July, many sugarbeet fields are approaching row closure, or have already reached that stage. During the rest of the season, plants gradually shift to accumulating carbohydrates and building root tissue to store sucrose. Defoliation from heavy wind, rain, or hail can disrupt that process since the plant must divert energy stores to support regrowth of foliage. The earlier storm damage occurs, the more time for the sugarbeet field to recover. Mild foliar damage where only a few leaves are affected (Figure 1) will not have long-term effects.

Will damage to sugarbeet leaves increase susceptibility to foliar diseases? The answer is complicated. Anytime there is an easier entrance into the leaf tissue all sorts of organisms may begin an infection, or the increased stress allows previously asymptomic infections to increase in severity.

Bacterial leaf spot, which is favored in cooler, moist weather where wind and rain damage foliage, may become more prevalent following storm events. Bacterial leaf spot occurred frequently in late June and early July of 2024 (Figure 2). The cause of this disease, the bacterial pathogen *Pseudomonas syringae* pv. *aptata*, is common in the environment and merely needs an entrance into leaf tissue. **Bacterial leaf spot infection does not result in economic loss** in Minnesota and North Dakota. Symptoms are usually mild at the field scale. Bacterial leaf spot lesions are irregular in shape and darker in color than Cercospora leaf spot. Fungicides are not effective against this bacterial pathogen, and cost of application likely outweighs benefits, if any.

Figure 1. Storm-damaged sugarbeet plant, north of Moorhead, MN on June 29th, 2025. Shredded leaves (left side of picture) may be more susceptible to foliar disease, including bacterial leaf spot and Cercospora leaf spot. Standard disease management programs should be continued, but extra products or applications are probably not necessary. (Photo: Eric Branch)

Figure 2. Sugarbeet leaf in 2024 with symptoms of bacterial leaf spot. Leaf margins may also be affected. Heavy wind and rain in this field also contributed to leaf damage. (Photo: Eric Branch)

Since Cercospora leaf spot will decrease yield and recoverable sugar without a proactive fungicide strategy, it is recommended to maintain the planned program, whether or not significant damage to sugarbeet foliage occurs. High temperatures and humidity in July and August mean that the risk for Cercospora infection is high, and should be managed appropriately. If heavy, blowing rain and hail occurs in this portion of the growing season, the motivation to apply fungicides in sugarbeet is primarily Cercospora management, not crop health or recovery from hail. Other fungal diseases (Alternaria or Stemphylium leaf spot) that may be present at sub-economic levels will also be controlled. Reducing intervals between sprays is also a good practice since rain likely washed off contact fungicides such as mancozeb or tin.

Eric Branch
Extension Plant Pathology, Sugarbeets

plant science

SOYBEAN CROP UPDATE AFTER THE STORM

The 2025 cropping season has been a challenge for most of North Dakota; and the southwest region was no exception. With heavy rains in short bursts, cool temperatures and stormy weather, soybean fields have taken a hit and are showing it. While scouting fields last week, I came across soybean fields that looked like the pictures below: broken plants, plants with shredded and torn leaves, and noticeable stand losses (Figure 1). Considering these conditions, we took a moment to reflect on how this will affect our crop.

Figure 1. Storm damaged soybeans in Grant County.

First of all, soybeans in North Dakota have been trailing behind due to persistent cool, wet conditions, that have significantly slowed down crop growth. Some areas are lagging by as much as 200 growing degree days (GDD) compared to the average of the last five years! This delay means that we are not going to see canopy closure as early as usual, potentially reducing some diseases, but creating more challenges for weed control and reducing yield potential. Add to that, a couple of storm systems bringing high winds and hail, and it is not a surprise many soybean fields are looking rough. But how worrisome is it really? A few weeks ago, we published an article in CPR discussing canola's natural ability to compensate stress or gaps in the stand. Good news: soybeans have the same ability!

Timing matters

Soybeans across the state are in different stages. While in the South East, we see fields that are starting to flower, if we travel to the west part of the State the situation is different with fields mostly in V3-V4. While soybean plants may look rather bad, the fact that this storm has hit us while the crop is fairly young might have been a less negative thing. Young soybean plants (V1-R2) can tolerate up to **30% defoliation** without suffering significant yield penalties. As the crop progresses, this threshold tends to decrease: **10% between R3-R5,** and it rises again to **15% at R6** (Figure 2).

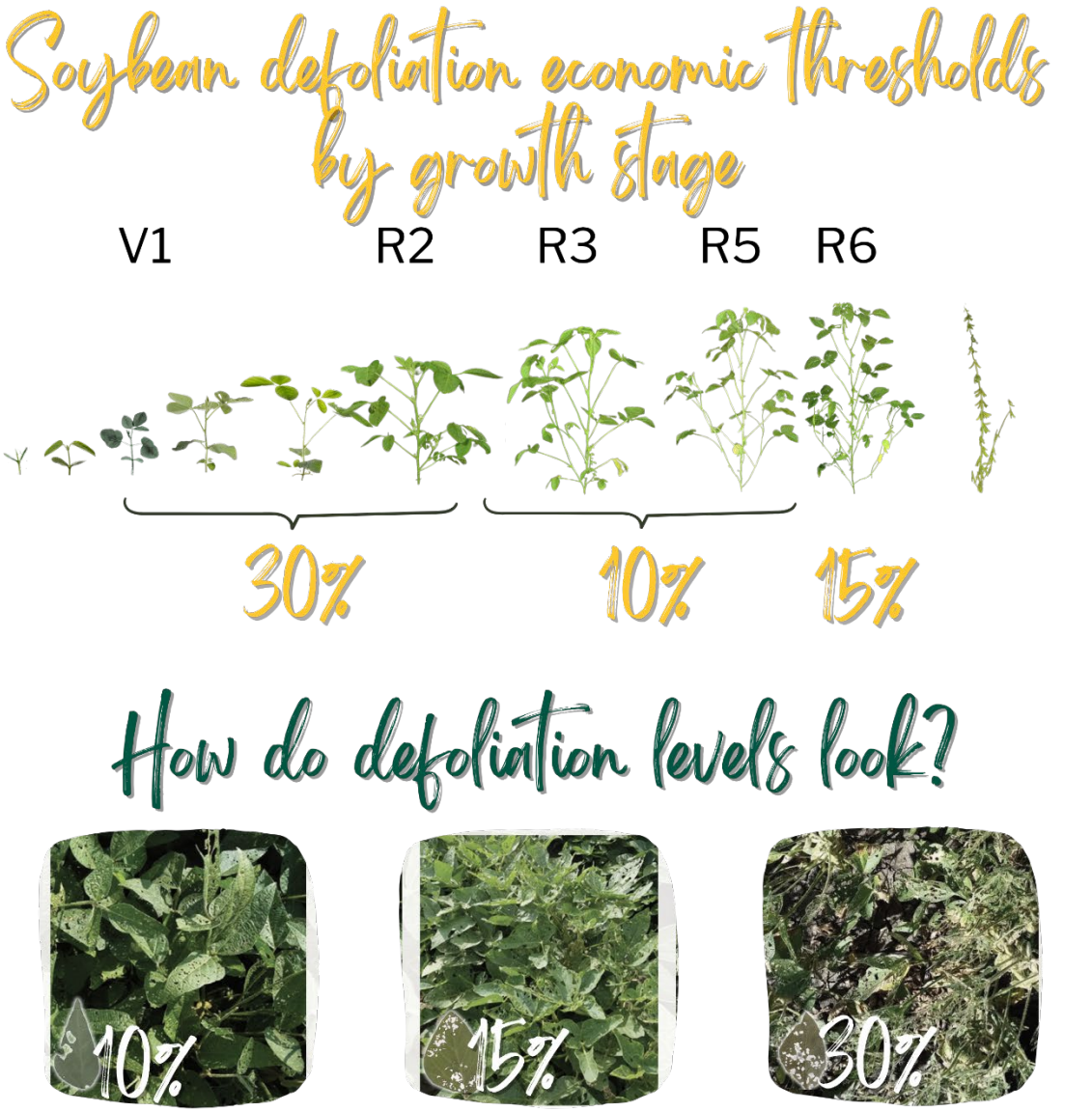


Figure 2. Soybean defoliation economic thresholds by growth stage, and levels of defoliation. Data from OSU Extension. V1: first trifoliolate; R2: full bloom, flower in top two nodes; R3: beginning pod, 3/16-inch pod in top four nodes; R5: 1/8-inch seed in top four nodes; R6: full-size seed in top four nodes.

'Where' also matters

Soybeans are tough. If young soybeans' main stem is injured or cut above the cotyledonary node, they have good chances of regrowing, surviving and making a crop, as long as there is enough cotyledon tissue to provide the plant with the energy to regrow.

If a soybean plant gets cut just above the unifoliolate node, it can still bounce back by producing branches (secondary growth). That's because it has four backup buds—two where the seed leaves (cotyledons) were, and two more where the first true leaves (unifoliolates) grew.

The key to recovery is green leaf tissue. Even if the unifoliolate leaves are torn or shredded, as long as there's some green left, the plant has a good chance of regrowing. If the weather is favorable, you'll usually see new shoots starting to grow within three to four days.
If the main stem is cut below the cotyledonary node (Figure 3), that plant should be considered dead in any stand counts.

While soybeans are resilient, we would like to see a little mercy from the weather. Unless conditions improve, this probably won't be the year for record-breaking yields. There's still plenty of time for the crop to surprise us. Let's keep scouting, stay optimistic, and hope for some sunny days ahead.

Figure 3. Soybean plant cut below the cotyledonary node.

Ana Carcedo
Broadleaf Agronomist

Victor Gomes
DREC Extension Cropping Systems Specialist

CORN RECOVERY FROM GREEN SNAP AND SMALL GRAIN UPDATE

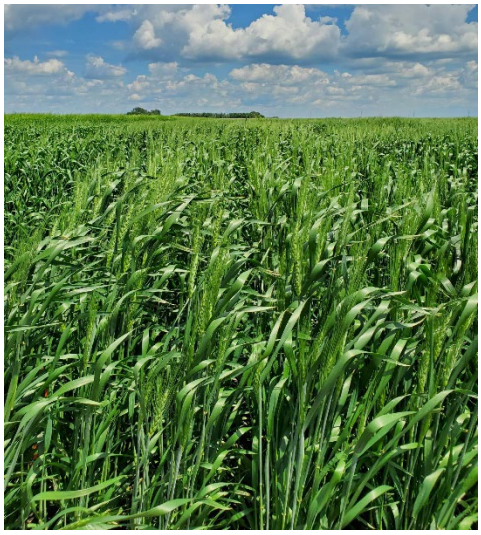
While walking corn trials at the Prosper research site in Cass Country earlier this week, we observed some green snap damage caused by the strong winds that accompanied the thunderstorms and tornadoes on June 20th. Fortunately, our trials fared reasonably well and not too many plants were lost. On the bright side, the downed corn offered some interesting photo opportunities showing the ability of corn to recover from early season stem breakage.

The first photo shows one of our Prosper plots with corn plants flattened by the wind. The corn was V5-V6 when the storm occurred on June 20th. Before V6, the growing point of the corn plant is at or below the soil surface, so damage at this stage will not necessarily kill the plant.

The second photo shows new growth (in yellow circle) emerging from the growing point that was at or just below the ground surface when the stem broke. These new stems have only 2-3 leaves compared to the V8 corn next to them. This regrowth may or may not form a viable ear with kernels; in fact, it is so far behind the main crop, it will likely only act as weed competition.

If there was a tiller already formed at the time of the main stem breaking, the tiller will likely continue growing and replace the main stem as the dominant stem for the rest of the season, as seen in the third picture. Tillers I observed that were growing after main stem breakage had 4-5 leaves. While these tillers are not likely to yield as much as unbroken main stems, they may produce cobs that yield 50-65% of an unbroken plant.

In the spring wheat variety trial at Prosper, about half of the 48 varieties included were headed as of June 30th. Overall the plots look excellent with clean flag leaves and no obvious signs of foliar disease. As wheat begins to flower, I strongly advise keeping an eye on the various head scab risk tools that are available and making a fungicide application decision based on the susceptibility of your wheat variety and local weather conditions. Remember that not only wet weather (rain and persistent dew) provide the needed moisture for the scab pathogen to infect and establish, but also extended periods of high relative humidity. The final two photos are of the new NDSU release ND Stampede heading out at Prosper and the Prosper spring wheat variety trial plots on June 30.



Clair Keene
Extension Agronomist Small Grains and Corn

soils

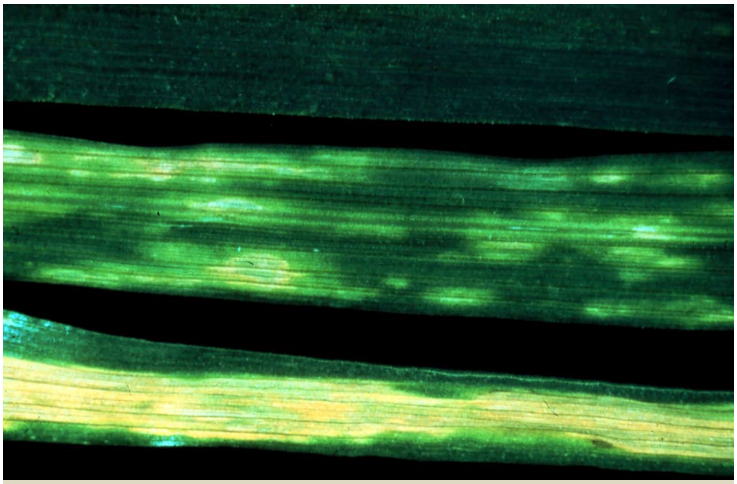
POST-ANTHESIS N IN SMALL GRAINS

Across the state, wheat is approaching or is already in the heading stages, which has prompted many emails and calls about post-anthesis nitrogen applications to come across my desk. Unlike fertilizer applied earlier in the growing season, N applied post-anthesis (flowering) serves only to increase the grain protein content, not increase yield. Post-anthesis N application studies in the North Dakota region and elsewhere indicate and average 0.5% increase grain protein content when 30 lb N/ac is applied. However, this practice does not come without risk of crop injury. To reduce the chances of leaf injury, 10 gal/ac of 32% UAN diluted with 10 gal/ac of water applied during cooler parts of the day is an effective approach. Additionally, tank mixing the UAN with other products may decrease their efficacy and increase leaf injury, check the product label for product-specific information. While the research shows the potential for post-anthesis N applications to increase grain protein content, the economic outcomes of this practice depend entirely on the markets—the price of N fertilizer and cost of application needs to be weighed against the potential protein premiums.

For more information on post-anthesis N application and general wheat fertility recommendations, see Fertilizing Hard Red Spring Wheat and Durum (SF712)

NUTRIENT DEFICIENCY CIRCUS

Although it goes without saying, crops across North Dakota this year have gotten off to a tough, slow, start. The cool wet conditions experienced in May and early June limited growth, translocated nutrients in the soil, and created conditions conducive for nutrient deficiency. In the last two weeks, I have seen plants in the field and submitted to the NDSU Plant Diagnostic Lab which expressed symptoms of nitrogen, phosphorous, potassium, sulfur, zinc, chloride, and iron deficiency. While in several cases, the deficiency resulted from lack of fertility applications (potassium, chloride, sulfur) several of the other deficiencies I noted are likely resulting from limited root exploration in small/young crops or conditions where the nutrient is not plant available due to soil conditions (phosphorous, iron, zinc).



Chloride deficiency symptoms in wheat (NDSU Photo)

Given the overall poor looking crop in some areas, it is increasingly difficult to visually diagnose nutrient deficiencies, especially if there are several occurring at once. The best way to definitively diagnose a crop nutrient deficiency is through paired plant tissue and soil sample analysis. Collecting samples from both 'good' and 'bad' areas of the field allow for productive comparisons between the areas. Additionally, comparing the concentration of nutrients in the soil to potential deficiency symptoms will inform whether the field is truly deficient or of the deficiency is a result of limits to plant uptake.

Brady Goettl
Extension Soil Specialist

around the state

AROUND THE STATE

SOUTH-CENTRAL/SOUTHEAST ND

Overall temperatures were cooler than last week, but a warmup towards the weekend made many crops look better, other than those with ponded water for over a week. More hail and strong storms occurred this past week in the region, but a smaller area and weaker storms occurred this past week compared to the week before. At least Barnes, Cass, and Wells counties received more devastating hail with Wells County receiving the most devastating hail.

Photo 1

Hard red spring wheat stage in the region ranges from first node to at least watery-ripe kernels in Griggs County (**Photo 1**) and likely milk stage farther south with most wheat in the region

heading and flowering now. All spring-seeded small grain crops condition continues to be good to excellent (at least 75% or more within counties) throughout the region. Just a few cases of bacterial leaf streak and even fewer tan spot lesions in the lower canopy have started showing up, but nearly all wheat still has no leaf diseases in hard red spring wheat in the region. There are some cereal aphids, most prevalent in the southeast part of the region. The biggest problems for hard red spring wheat in parts of the region is still sulfur and some nitrogen deficiencies and more dead plants from ponded water and high saline areas of the field. With the good to excellent wheat crop as seen in **photo 2**, please make sure you read Andrew Friskop's article from last week about applying fungicides to protect the wheat from fusarium head blight (scab) now that much wheat in the region is flowering.

Photo 2

Photo 3

Corn in the region varies from V4 (4-collars) to V10 (10-collars in Sargent and Richland Counties) with a **photo 3** showing V9 corn stage from Emmons County. Corn condition improved again this past week in the well-drained areas of fields, but declined in water-logged and water ponded areas of fields because water has stood in some areas for over a week now. About 60% of the corn crop in the region looks good as seen in **photo 4** from Emmons County, with fewer fields having excellent corn this past week. Most corn recovered well from the wind damage from the week before. More hope for the corn crop at least in the well-drained areas, but the farther west and into the southeast parts of the region corn development is behind normal and similar to last year.

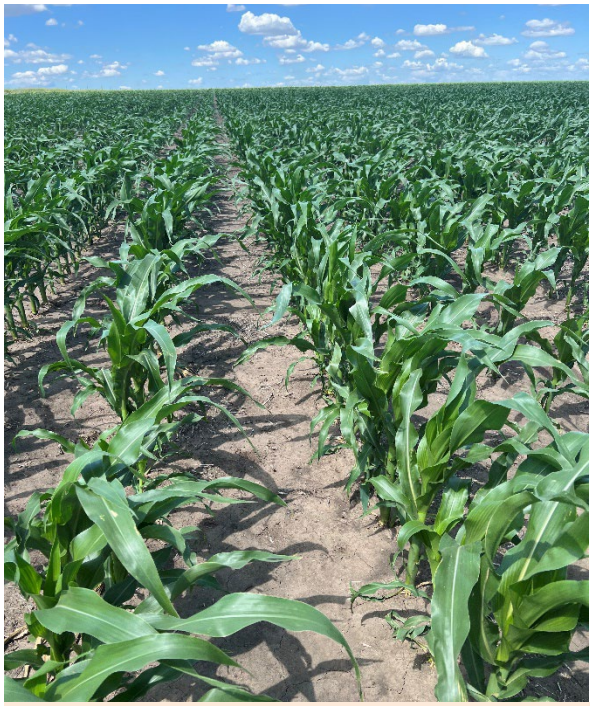


Photo 4

Soybean stage in the region varies from V1 (first trifoliate) to V4 (fourth trifoliate) and less than 10% of earliest planted soybeans flowering and already up to the R2 stage as far north as Griggs County, meaning few herbicides can be applied to those soybeans. Soybean stages vary greatly in the earliest planted fields. **Photo 5** shows a V2 soybean plant in Foster County in the same field as most plants being at V4. Soybeans are still the poorest crop in our region with more replanting this past week in different areas of the region due mostly to hail damage. Some soybean fields did turn the corn this past week with a higher percentage of excellent soybeans, but still less than 5% in the region. The majority of the soybeans in the region are still only in fair condition. The two biggest problems in soybeans in the region now is IDC and saturated and ponded-water areas of the fields reducing soybean condition. The overwintering bean leaf beetle are still prevalent, making me concerned for the presence of first and second generations being in larger numbers than normal in the coming weeks, so keep an eye on them.

Photo 5

Canola in most counties in the region is now starting to flower. The canola crop condition is highly variable across the region from poor with most in good condition. Start scouting flowering canola for diamond back larvae as numbers are very high in some parts of the state.

Most dry beans are in the first to third trifoliate stage with stands looking mostly good across the region, however crop condition did decline in areas with poor drainage and standing water.

Sunflowers are up to the 8-leaf stage now in areas. Most sunflowers are in good condition at the moment as seen in **photo 6** in Emmons County. No problems with sunflower at the moment other than standing water reducing crop condition.

Photo 6

July 1st seemed like a great day to apply glufosinate, but Delta T values in the region, especially in the southeast to Carrington and in the west reached levels greater than 20 degrees Fahrenheit, way beyond the point of spraying Liberty. July 1st was a great day for me to spray Liberty Ultra and Liberty Ultra plus Enlist one at different Delta T values, so we will see what happens. The Delta T value was 20 or a little higher in the last application of the day shortly after 4:00 PM. Please carefully apply glufosinate this season taking all steps to maximize weed control. Know that soybeans have started flowering glufosinate is should not to be applied any longer legally. With all of this rain and no soybean canopies, weeds are still emerging, especially waterhemp and other pigweed species and grass species. Scout soybean fields carefully at 10 days after the first postemergence application to determine if all weeds were controlled by that herbicide application. If weeds were not controlled completely from the first postemergence herbicide application, please apply herbicides again at 14 to 18 days after the first application, NOT waiting until the weeds come up over the soybean canopy!

Forty-five people showed up at the Crop Management Field School last Friday. **Photo 7** the typical injury of veinal necrosis from Flexstar at 8 days after application. **Photo 8** shows common lambsquarters and wild buckwheat plants not completely being controlled at 8 days after application. **Photo 9** shows common lambsquarters not completely controlled at 8 days after a Liberty Ultra application.

Photo 7

Photo 8

Photo 9

Of the 27 NDAWN stations I've chosen this season across region, the average maximum daily air temperature from June 24 to June 30, 2025 ranged from 75 degrees Fahrenheit near Cooperstown and Finley to only 79 degrees Fahrenheit near Linton, Livona, McKenzie, and Skogmo with an average this past week of 77 degrees Fahrenheit, 4 degrees Fahrenheit cooler than last week. The average daily minimum air temperature for the past week at the 27 NDAWN stations ranged from 53 degrees Fahrenheit near Pickardville to 59 degrees Fahrenheit near Mooreton, Sonora, and Wahpeton, all in Richland County, with the daily average minimum air temperature for the week being 57 degrees Fahrenheit, the same as last week.

Rainfall for these stations across the region was highly variable! Rainfall for the region at these 27 weather stations ranged from 0.02 inch near Pickardville to 3.39 inches near Lisbon with an average for the week of 0.9 inch, the same as last week.

The wind calmed down this past week! Thank goodness! The wind across the region this past week ranged from 4.5 miles per hour near Casselton to 9.7 miles per hour near McHenry, with the average daily wind speed for the week at 6.8 mph, 1 mile per hour slower than last week.

Have a great week and stay safe.

Jeff Stachler
NDSU Extension Cropping Systems Specialist
Carrington Research Extension Center

SOUTHWEST ND

Most of southwest North Dakota received welcome rainfall over the past week, with totals ranging from 0.04 inches in Dunn County to 1.63 inches in Grant County. One of the more unusual sights for late June in this region was standing water in fields (Figure 1), something we don't see often this time of year. The recent spell of cooler, overcast weather may have extended the grain fill period for small grains, but with the return of warmer temperatures, other crops are finally showing signs of catching up.

Figure 1. Standing water in a corn field in Grant County. Photo: Victor Gomes.

After several weeks of active weather, now is a good time to assess crop stress and potential yield loss. During field visits last week, I observed several stressed stands (Figure 2), with visible damage from hail, excess moisture, and previous frost events. The first step in evaluating crop recovery potential is conducting stand counts.

Young corn and soybeans can tolerate early-season defoliation, but yield potential begins to drop below certain thresholds. For dryland corn, a stand of 13,000–16,000 plants per acre is typically the minimum acceptable. Soybeans are more plastic in their response to stand loss and can often compensate well, but stands below 75,000 plants per acre may result in reduced yields.

This season, however, many fields have been hit with multiple, compounding stressors: delayed emergence from cool soils, frost injury, saturated conditions, hail, and strong winds. While each event alone may not be devastating, the cumulative stress could result in meaningful yield penalties.

Keep in mind that applying fungicide to a hail-damaged corn crop rarely provides a return on investment. Unless disease pressure is high or favorable conditions for infection persist, fungicide applications in these situations are unlikely to improve yield or recovery.

Crop progress in the area varies widely across fields with spring wheat ranging anywhere between early booting to flowering. Fusarium Head Blight (Scab) risk maps remain low except for highly susceptible varieties. Corn in southwest ND has taken advantage of the warmer temperatures last week and is starting to perk up. Crop stages vary anywhere between V2-V7. Canola is progressing well and is at full bloom with some fields entering the pod elongation phase. Sunflower is also progressing well, with some fields almost knee high, but still on the vegetative stage.

Soybean is the crop that is lagging behind the most with some fields still in VC stage. The most advanced soybean fields are in V5.

Figure 2. Hailed corn and soybeans in Hettinger and Grant Counties. Photo: Victor Gomes.

Insect and diseases numbers remain relatively low and below the economic threshold in our scouting trips and in the traps we set up across the region.

Victor Gomes
Extension Cropping Systems Specialist
NDSU Dickinson Research and Extension Center

weather

WEATHER FORECAST

The July 2 to July 9, 2025 Weather Summary and Outlook

Typical of our summer weather, rainfall varied greatly in the past week. Most of what rain did fall was associated with thunderstorms that occurred last Friday (June 27) into Saturday (June 28) that impacted central and southeastern North Dakota the most (Figure 1). There should be hit and miss thunderstorms on several days during this upcoming forecast period, but amounts will once again likely vary greatly, plus, like most of the past several weeks, southern North Dakota will be more favored than the northern portion of the state.

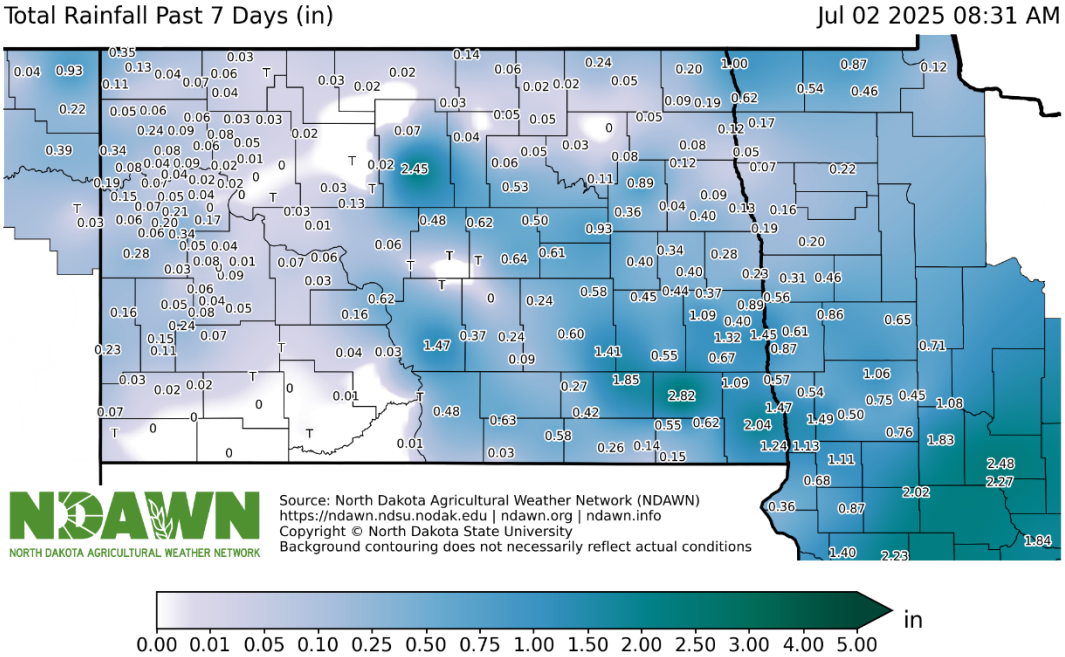


Figure 1. Total Rainfall for the Period of June 26 through July 2 at 8:30 AM.

Because southern areas have tended to be favored for rain in recent weeks, much of northern North Dakota recorded a drier than average June (Figure 2). In many locations, a very dry June. Southern North Dakota recorded near or above average rain, yet, there were many areas even in the south that finished the month on the dry side.

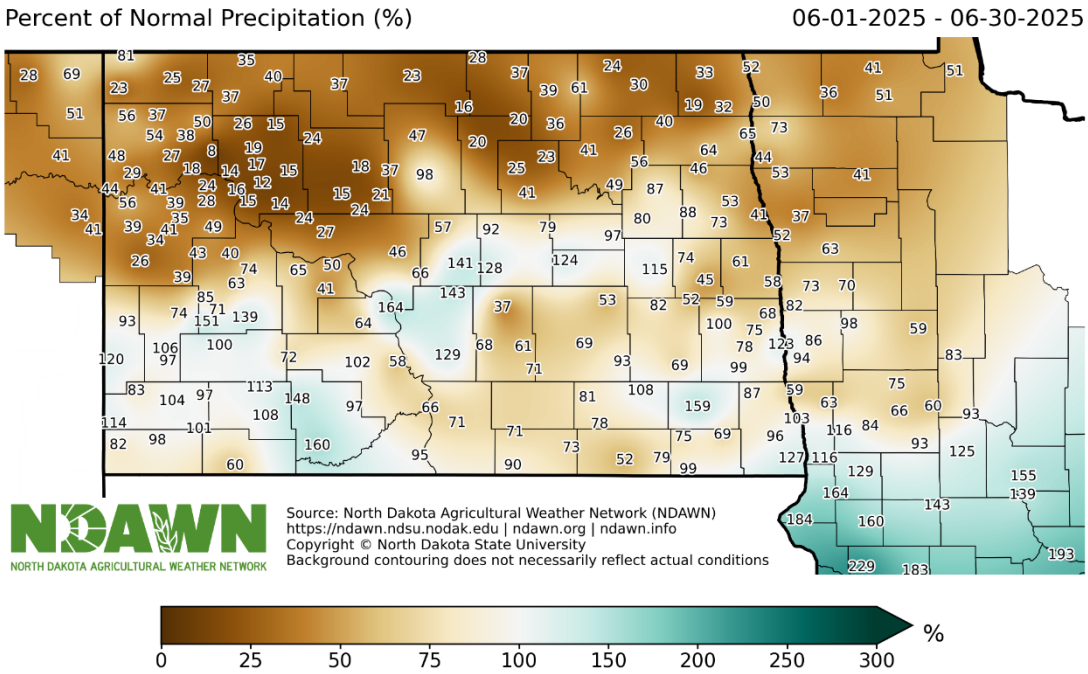


Figure 2. Percent of Normal Precipitation for June 2025

Temperatures were near to slightly below average in June for much of the area (Figure 3). Looking forward, the current pattern would suggest July will finish near or above average for temperatures. If true, that would allow for more growing degree days, yet, also increase evaporation potential and aggravate the areas that are already dry.

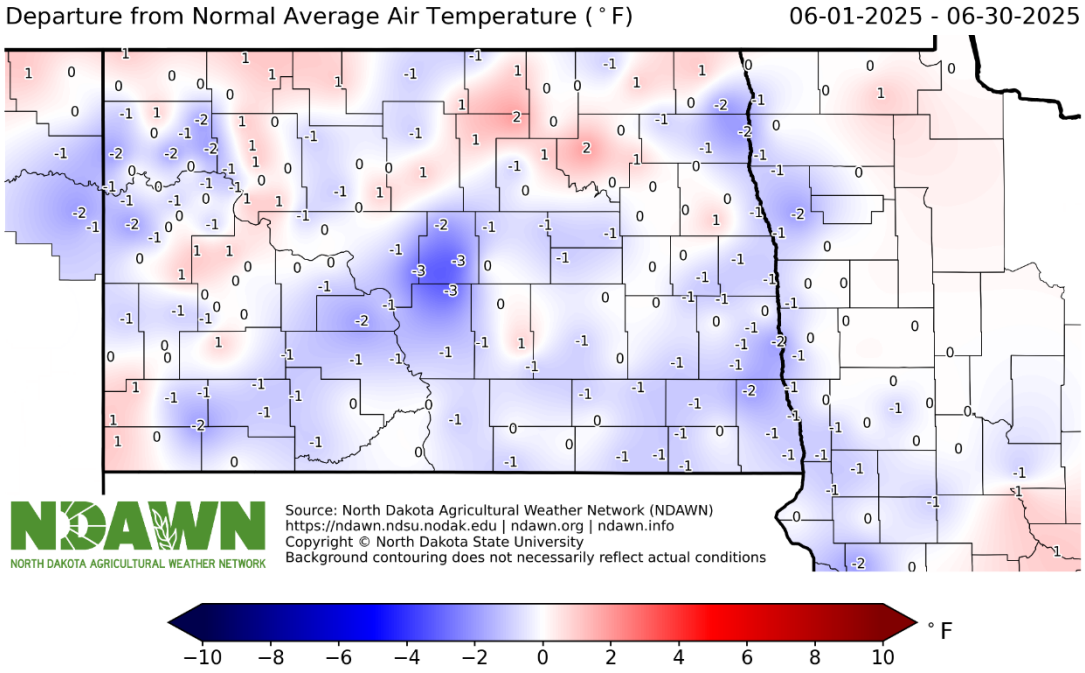


Figure 3. Departure from Average Air Temperature for June 2025

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. Above average temperatures are expected in the next 7 days.

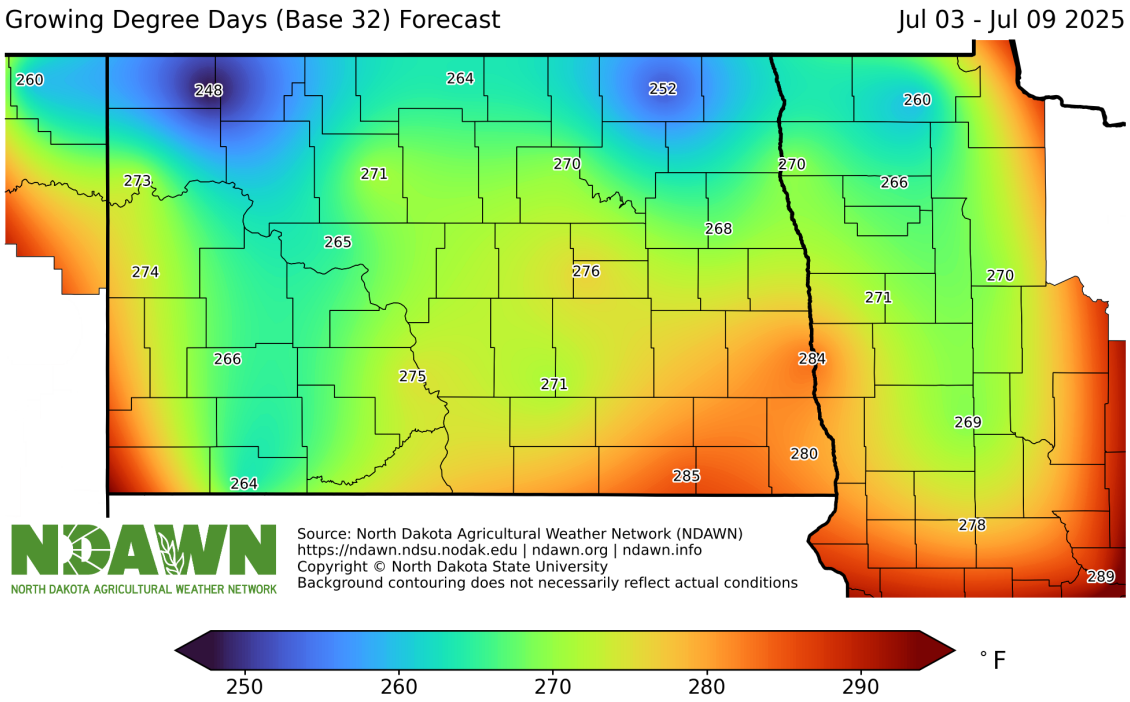


Figure 4. Estimated growing degree days base 32° for the Period of July 3 to July 9, 2025.

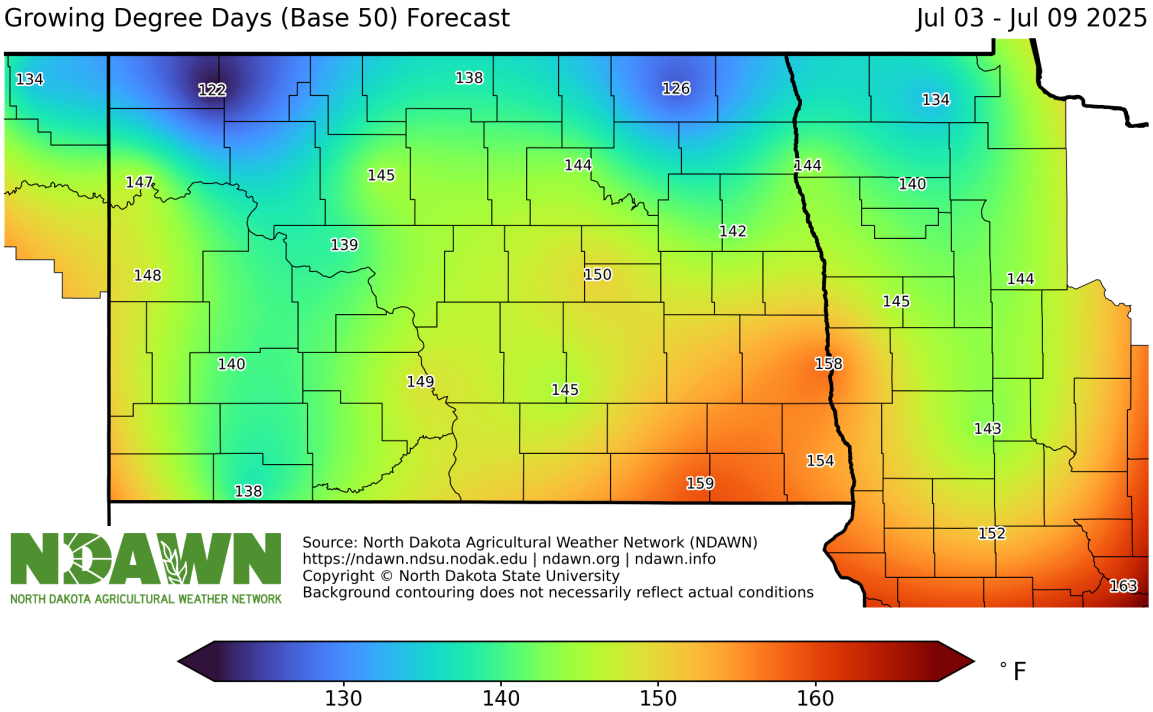


Figure 5. Estimated growing degree days base 50° for the Period of July 3 to July 9, 2025.

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

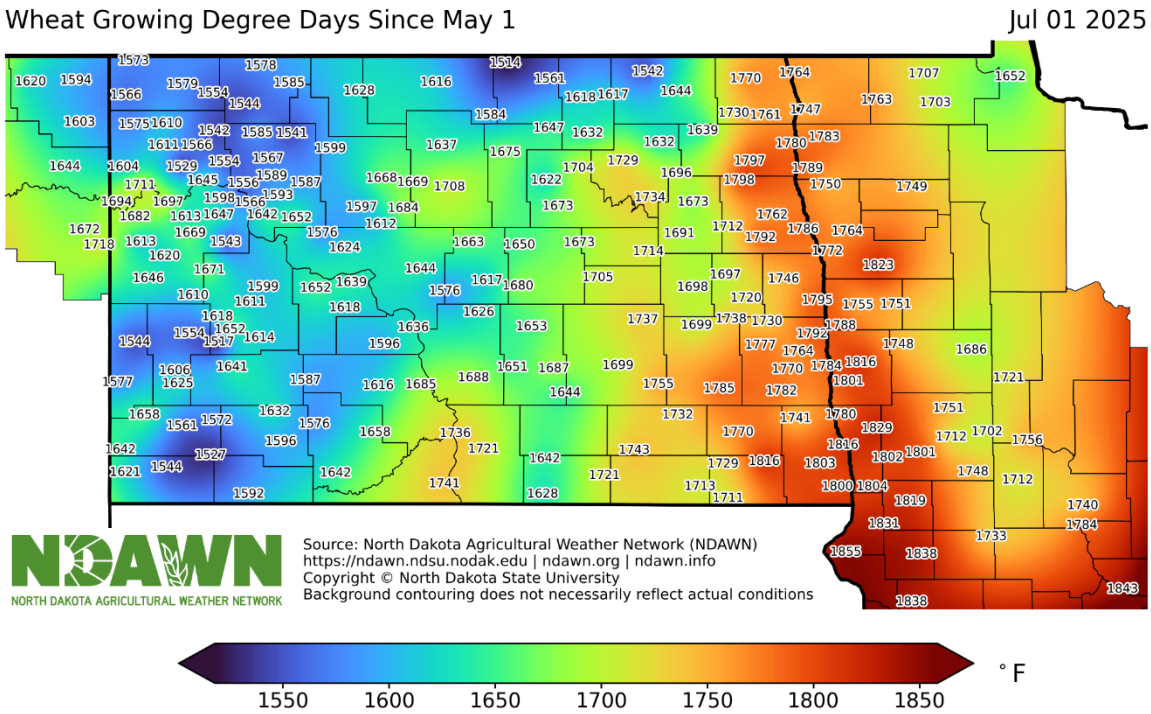


Figure 6. Wheat Growing Degree Days (Base 32°) for the Period of May 1 through July 1, 2025

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.

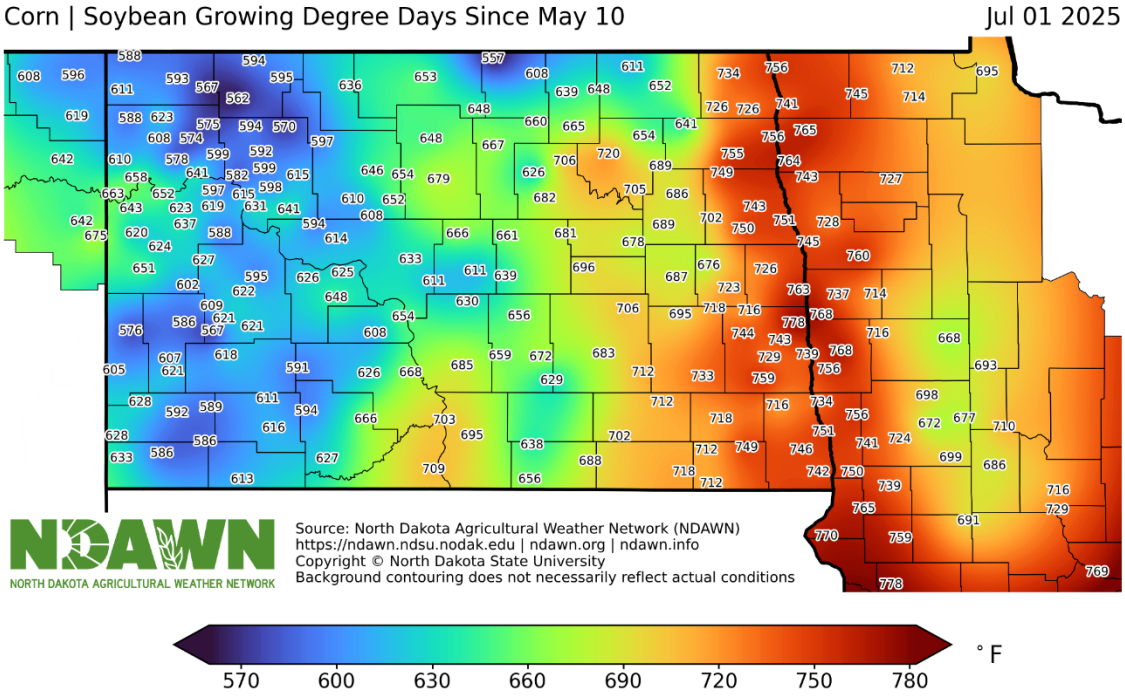


Figure 7. Corn Growing Degree Days (Base 50°) for the Period of May 10 through July 1, 2025

Soybeans also use base 50° like corn and NDAWN has a special tool for soybeans that, based on your planting date and cultivar, can estimate maturity dates based on average temperatures, as well as give you GDDs based on the planting date(s) you set. That tool can be found here: https://ndawn.ndsu.nodak.edu/soybean-growing-degree-days.html.

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