North Dakota State University
CROP & PEST REPORT
NDSU EXTENSION

No 10 June 26, 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.

2025 Crop Management Field School

Last chance to register for the 2025 Crop Management Field School at the Carrington Research Extension center June 27, 2025! Agronomists, Extension personnel, and farmers are welcome to register and attend the annual Crop Management Field School. Registration starts at 8:30 AM with the program ending at 2:45 PM. Registration deadline is June 23, 2025 with maximum participants of 50 people, so register soon. You may register at the following link: ***www.tinyurl.com/payCREC*** .

Topics covered at the Crop Management Field School include Weed Identification by Alicia Harstad and Jeff Stachler, Herbicide Site of Action by Joe Ikley, Soybean Disease Management by Wade Webster, and Soil Health by Carlos Pires and Naeem Kalwar.

Be sure to attend! If you have any questions, please contact Jeff Stachler

entomology

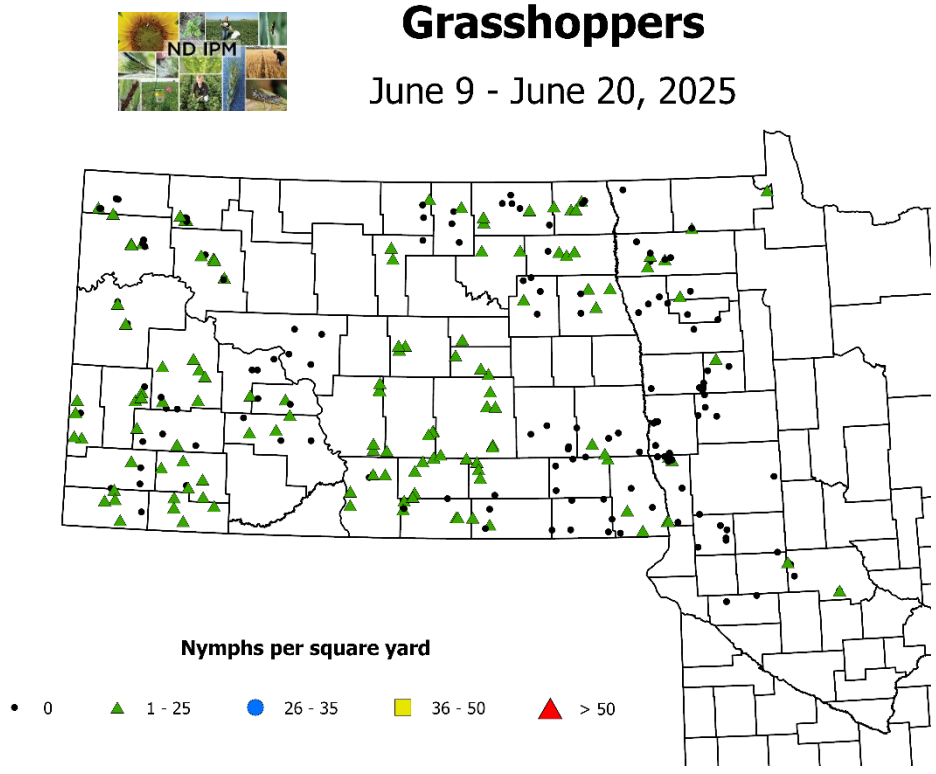
IPM UPDATE FOR INSECT PESTS

IPM Scouts observed the following insect pests this past week, June 16-20, in North Dakota. Visit the NDSU Extension IPM website for crop and pest maps (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 about 16% of the wheat fields scouted in North Dakota and were present at low densities, an average of 0.02- 0.94 aphids per plant (well below the Economic Threshold of an average of 4 aphids per stem for vegetative through head emergence and 4-7 aphids per stem from complete heading through the end of anthesis). Wheat stages ranged from Zadoks 12 (2 leaves unfolded) to 60 (beginning of anthesis). The recent severe thunderstorms in some areas of North Dakota may decrease aphid populations by washing and drowning them. Continue to scout for cereal aphids until the early dough stage. See Crop & Pest Report #8, June 12, 2025, for information on identification, scouting and thresholds.

Soybean: No new detections of **soybean aphids** were observed last week.

Grasshopper nymphs were observed in wheat, barley and soybean fields in 30 counties throughout North Dakota. Grasshoppers were present in 66% of the fields scouted last week, a slight increase from 46% last week. The number of nymphs was low, 1-5 nymphs per square yard, well below the economic threshold. Severe thunderstorms can also increase the mortality of grasshopper nymphs.

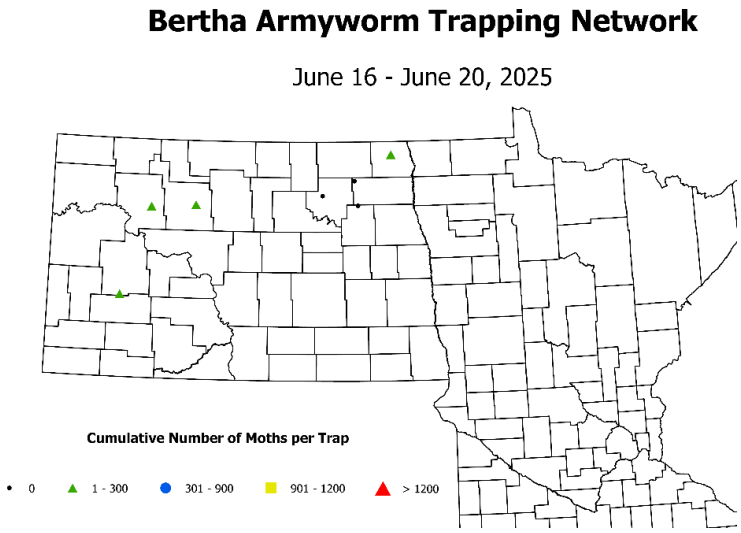


Scout for nymphs (young grasshoppers without wings) in field margins. **Economic thresholds for nymph stage grasshoppers are 50-75 nymphs per square yard in the field edge and 30-45 nymphs per square yard in the field interior.** When population densities are high and hard to count, pest managers can use four 180-degree sweeps with a 15-inch sweep net, equivalent to the number of grasshoppers per square yard (adult or nymph).

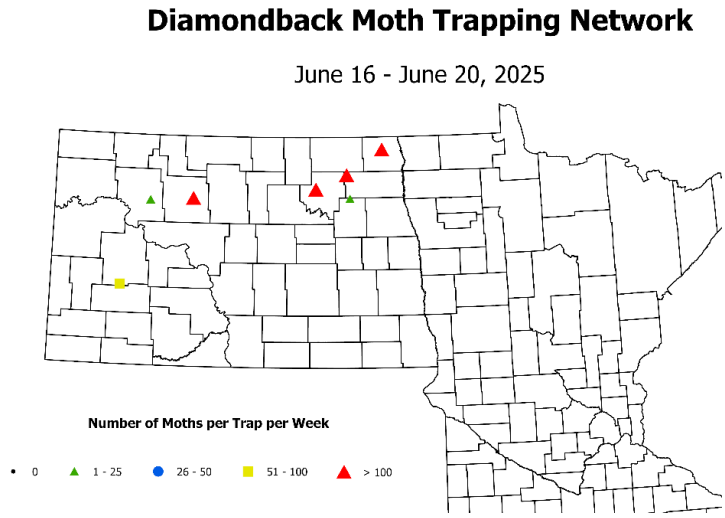
IPM CANOLA INSECT TRAPPING

The canola crop stages ranged from the rosette to the flowering stage, depending on the planting date.

Bertha armyworm has started to emerge in northeast (Pembina county), north central (Ward county), northwest (Mountrail county) and southwest (Dunn county). Trap catches were low, a total of 1 to 25 moths per trap per week.



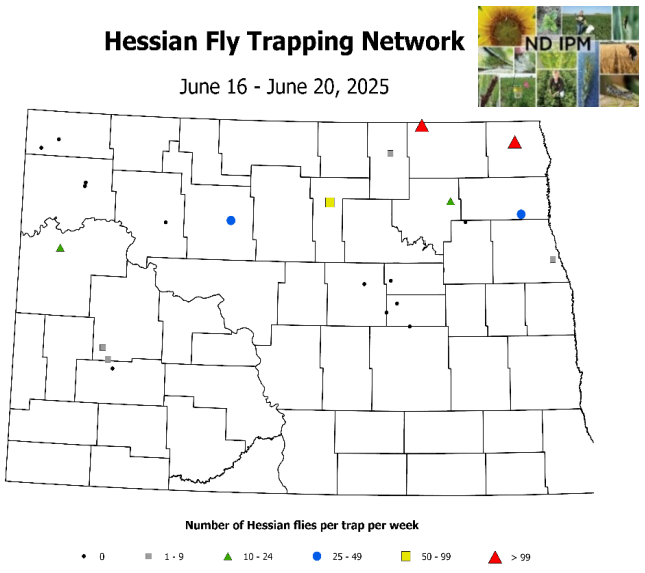
Diamondback moth has migrated into North Dakota in large numbers (> 100 moths per trap per week) in the northeast and north central areas of North Dakota. Canola is most susceptible to larval feeding injury from the second generation (late June through July) during the flowering and pod stages. See the Crop & Pest Report #9, June 19, 2025, for information on identification, scouting and thresholds for diamondback moth in canola.



IPM WHEAT INSECT TRAPPING

Hessian flies were trapped in 46% of the field traps and in 10 counties. High densities, >90 flies per trap per week, were observed in Cavalier, Pembina and Pierce counties. Check wheat fields for the presence of Hessian fly larvae feeding on the stems.

Wheat midge is beginning to emerge in six counties: northeast - Nelson, Pembina, Walsh, northwest - McKenzie, Mountrail, and north central – Ward. Trap catches were low, a total of 1-6 wheat midge per trap per week.



INTERESTED IN COLLECTING LEAFY SPURGE FLEA BEETLES

Copper leafy spurge flea beetles (Aphthona flava) (L.L. Berry, Bugwood.org)

Leafy spurge flea beetles (*Aphthona* spp.) are an effective, host-specific biological control agent for managing leafy spurge infestations in North Dakota. These beneficial insects help reduce leafy spurge density over time and are most effective when monitored and collected correctly.

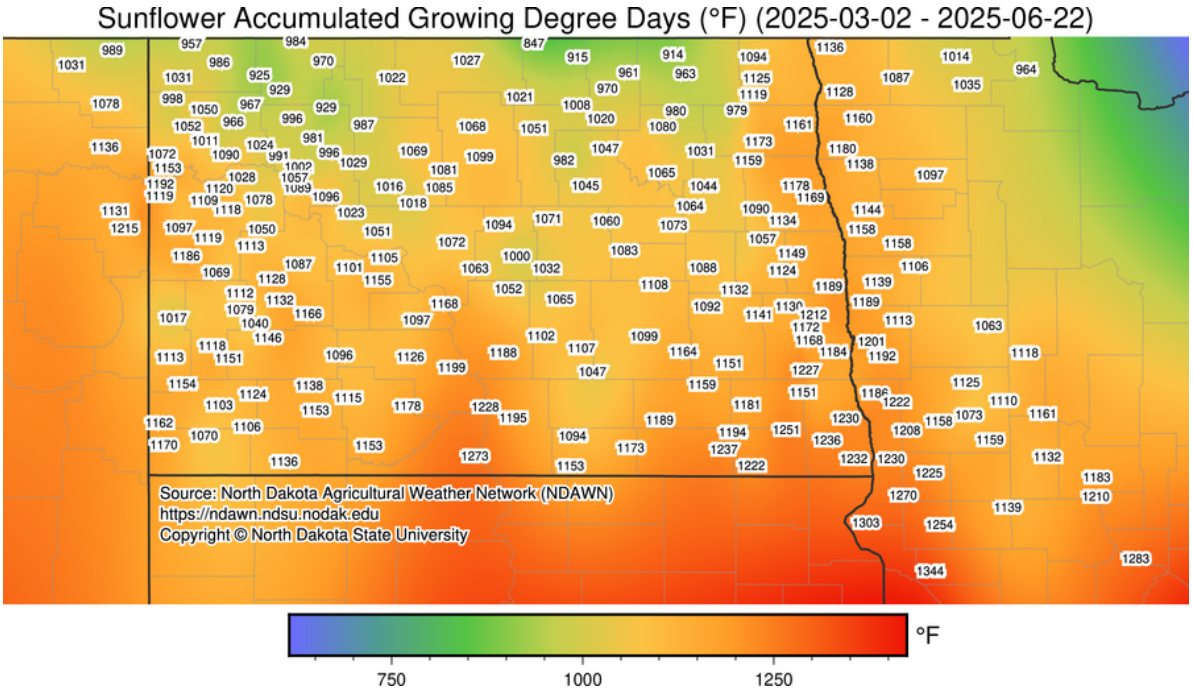
When to Start Scouting: Begin scouting when accumulated growing degree days (AGDD), using the sunflower GDD model (base 44°F), approach 1,000 AGDD. Adult flea beetles should be collected between 1,200 and 1,600 AGDD. Use the NDAWN Sunflower Degree Day tool to determine the AGDD for leafy spurge flea beetles. Select "degree day" for map type. Set planting date to March 1, 2025, for insect development.

Current AGDD Status: Scouting and collecting can begin in south central and southeast North Dakota. However, northern North Dakota does not have enough AGDD accumulated yet, so start scouting and wait to collect beetles.

Collecting Tips: Use sweep nets to collect adult flea beetles. Do not collect after 1,600 AGDD or late July, as beetles begin laying eggs. Flea beetles usually take 3–5 years to establish and significantly reduce leafy spurge patches.

Need Help Finding Collection Sites?

Contact your local county Extension agent or weed control officer. A county directory is available at the http://ndweeds.homestead.com/10_County_City_Weed_Boards_Directory.pdf



Janet J. Knodel
Extension Entomologist

plant pathology

FUSARIUM HEAD BLIGHT (SCAB) FUNGICIDES – TIMING AND SUMMARIZED DISEASE DATA SETS

Spring wheat and durum has started to flower, and barley has started to head. This marks the beginning of the scab fungicide questions. For review, we have four "good" fungicides (Miravis Ace®, Prosaro®, Prosaro Pro®, and Sphaerex®) on the market that on average provide 45-60% scab suppression. Tebuconazole (and the generic formulations) is considered a fair fungicide and will provide around 20% scab suppression. The best time to make a fungicide application in spring wheat and durum begins at early-flowering and extends up to seven days (Figures 1 and 2). For barley, the best time for a scab fungicide begins at complete full-head and extends up to 7 days (Figure 3). In other words, you have about a week to make a fungicide application for management of scab. You can still get scab suppression if you apply prior to the early-flowering stages in spring wheat and durum, but our data suggests you get more suppression beginning at early flowering and up to 7-days later. For barley, applying too early can limit the amount of fungicide coverage on the heads and drastically limit the effectiveness of a fungicide. Remember, fungicides do not move long distances within plant tissues, so coverage is very important.

Figure 1. Heading and flowering stages for hard red spring wheat. Early-flowering is depicted with the small arrow. The best time to apply a scab fungicide for hard red spring wheat begins at early-flowering and extends for up to 7-days.

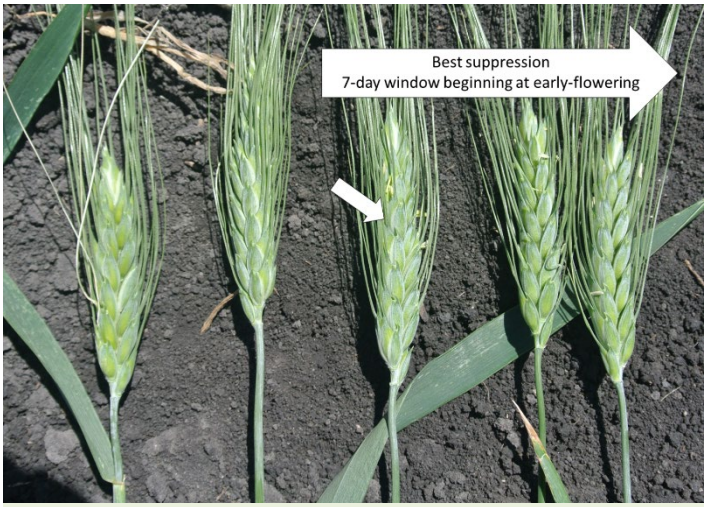


Figure 2. Heading and flowering stages for durum. Early-flowering is depicted with the small arrow. The best time to apply a scab fungicide for durum begins at early-flowering and extends for up to 7-days.

Figure 3. Heading stages for two-row barley. Full-head is depicted with the small arrow. The best time to apply a scab fungicide for barley begins at full head and extends for up to 7-days.

We receive funding from the US Wheat and Barley Scab initiative to evaluate fungicide timing and efficacy to reduce scab and deoxynivalenol (vomitoxin) on hard red spring wheat, barley and durum. Over the past three growing seasons, the research has been conducted at multiple Research Extension Centers and other field sites across the state. The focus of the recent research has been on providing additional data on "good" fungicides and the value of spraying twice for scab. I have summarized the disease data from our efforts in 2022 to 2024 in Tables 1-3. Generally, the data suggests that a single well-timed fungicide application is just as effective as two separate fungicide applications. Also, the data supports that the application window for a scab application is about seven days.

Table 1. Summary data for USWBSI trials conducted on hard red spring wheat across six locations from 2022 to 2024 with moderate to high scab levels.

Fungicide	Timing	Rate	FHB Severity	DON (VOM) ppm
Non-treated Control	NA	NA	15.2 a	2.0 a
Miravis Ace	Early-anthesis	13.7 oz/A	2.0 bc	0.8 b
Prosaro	Early-anthesis	6.5 oz/A	5.8 b	0.9 b
Prosaro Pro	Early-anthesis	10.3 oz/A	3.8 bc	0.6 bc
Sphaerex	Early-anthesis	7.3 oz/A	2.9 bc	0.6 bc
Sphaerex	3 to 7 days after early-anthesis	7.3 oz/A	3.4 bc	0.4 c
Miravis Ace followed by Prosaro Pro	Early-anthesis 3 to 7 days later	13.7 oz/A 10.3 oz/A	1.4 c	0.2 c
Miravis Ace followed by Sphaerex	Early-anthesis 3 to 7 days later	13.7 oz/A 7.3 oz/A	0.8 c	0.3 c
Miravis Ace followed by Tebuconazole	Early-anthesis 3 to 7 days later	13.7 oz/A 4 oz/A	1.8 bc	0.6 bc

**Values with same letter are not statistically different.*

Table 2. Summary data for USWBSI trials conducted on two-row barley across five locations from 2022 and 2023 with moderate to high scab levels.

Fungicide	Timing	Rate	FHB Severity	DON(VOM) ppm
Non-treated Control	NA	NA	2.6 a	2.0 a
Miravis Ace	Full-head	13.7 oz/A	1.1 cd	1.0 abc
Prosaro	Full-head	6.5 oz/A	1.7 b	1.3 ab
Prosaro Pro	Full-head	10.3 oz/A	1.3 bcd	0.8 bc
Sphaerex	Full-head	7.3 oz/A	1.5 bc	0.6 bc
Sphaerex	3 to 7 days after full head	7.3 oz/A	1.2 cd	0.6 bc
Miravis Ace followed by Prosaro Pro	Full-head 3 to 7 days later	13.7 oz/A 10.3 oz/A	1.1 cd	0.2 c
Miravis Ace followed by Sphaerex	Full-head 3 to 7 days later	13.7 oz/A 7.3 oz/A	1.0 d	0.2 c
Miravis Ace followed by Tebuconazole	Full-head 3 to 7 days later	13.7 oz/A 4 oz/A	1.0 d	0.6 bc

**Values with same letter are not statistically different.*

Table 3. Summary data for USWBSI trials conducted on durum across four locations from 2022 and 2023 with moderate to high scab levels.

Fungicide	Timing	Rate	FHB Severity	DON(VOM) ppm For only 2 locations
Non-treated Control	NA	NA	6.8 a	14.4 a
Miravis Ace	Early-anthesis	13.7 oz/A	2.7 cde	6.7 cd
Prosaro	Early-anthesis	6.5 oz/A	3.8 bc	13.3 a
Prosaro Pro	Early-anthesis	10.3 oz/A	3.4 bcd	11.7 ab
Sphaerex	Early-anthesis	7.3 oz/A	3.3 bcde	11.0 abc
Sphaerex	3 to 7 days after early-anthesis	7.3 oz/A	4.4 b	7.7 bcd
Miravis Ace followed by Prosaro Pro	Early-anthesis 3 to 7 days later	13.7 oz/A 10.3 oz/A	2.0 e	4.0 d
Miravis Ace followed by Sphaerex	Early-anthesis 3 to 7 days later	13.7 oz/A 7.3 oz/A	2.1 de	4.5 d
Miravis Ace followed by Tebuconazole	Early-anthesis 3 to 7 days later	13.7 oz/A 4 oz/A	2.7 cde	6.8 cd

**Values with same letter are not statistically different.*

Andrew Friskop
Extension Plant Pathology, Cereal Crops

CROP DAMAGE AND ASSOCIATED DISEASES

The extreme weather across the state in June has damaged crops, leading to potential questions on disease risk and fungicide use. When crop damage occurs, the group of plant pathogens that will become more problematic is bacteria. There are several bacterial pathogens that can impact the crops in North Dakota, and some of them are more economically important than others. One of the common symptoms of bacterial diseases is water-soaking on plant tissues, which looks like grease spots on a leaf (Figure 1). Additional symptoms may include haloing, browning, and yellowing around damaged tissues (Figure 2). A common sign for a bacterial pathogen is ooze (Figure 3). Please consult your local Extension agent for help in the identification of bacterial diseases.

Figure 1. Water soaking on a barley leaf caused by the bacterial leaf streak pathogen.

Figure 2. Bacterial blight on soybean. Notice haloing, yellowing and brown (necrotic) symptoms around plant tissue damage.

Unfortunately, the in-season management of bacterial diseases is very difficult. Our best management tool is the use of genetic resistance. Fungicides are not effective for managing bacterial diseases. There are other plant protection products labeled for bacterial diseases, but results from the use of these products are inconsistent and often do not provide enough yield protection to warrant the cost.

Figure 3. Bacterial ooze from the pathogen that causes bacterial leaf streak in wheat. Notice the small yellow to white ooze from the center and on the margin of lesions.

Andrew Friskop
Extension Plant Pathology, Cereal Crops

Wade Webster
Extension Plant Pathology, Soybeans

Sam Markell
Extension Plant Pathologist, Broad-leaf Crops

SOYBEAN WHITE MOLD RISK AND MANAGEMENT AT FIRST FLOWER

Earlier this past week, while taking root rot notes in research trials, my team and I noticed the first flowers starting to appear in our May 6th planted soybeans. The beginning of flowering is especially important as a soybean pathologist, because the susceptibility window for white mold is just starting. As soybeans enter the first flower stage (R1), the risk of white mold, caused by *Sclerotinia sclerotiorum*, becomes a key concern, especially in fields with a history of the disease. Cool, wet conditions during early reproductive stages, combined with dense canopies, create an ideal environment for white mold development. While we do not have widespread dense canopies, or in many places not even reaching canopy closure yet, this season's frequent rainfall and moderate temperatures in major soybean regions heighten the potential for infection. This risk is especially high in fields planted with narrow rows or high plant populations. Regular field scouting at first flower is critical to assess risk and catch early signs of disease, such as apothecia—small, tan, cup-like fungal structures—emerging from soilborne sclerotia.

Figure 1. Soybean plant with flowers found on June 24th, 2025 in Fargo, ND.

Figure 2. Apothecia of the white mold fungus, Sclerotinia sclerotiorum.

White mold relies on soybean flower tissue to initiate infection, making the R1 to R3 growth stages a critical window. The fungus releases ascospores from apothecia, which land on senescing flower petals. These petals provide the nutrients needed for the fungus to grow and invade the plant's stems, leading to characteristic white, cottony growth and blackened sclerotia on infected plants. Without flower tissue, the fungus struggles to establish itself, which is why infections are most common during flowering under moist, humid conditions. Fields with poor air circulation or heavy dew are particularly vulnerable, as prolonged leaf wetness helps the pathogens' spores germinate.

To manage white mold, farmers should consider cultural practices that help to improve airflow and reduce humidity during these growth stages such as wider row spacings like wider row spacing to improve canopy airflow and reduce humidity. An additional method for increasing airflow through the canopy is the use of the herbicide Cobra (a.i. lactofen) at a 6 fl oz/acre rate. This product is labeled for white mold suppression if applied right at the beginning of the flowering period or right before to slightly 'ding' the plants. This slight damage to the plants allows for a more open canopy, which improves air circulation and also triggers soybeans to have a higher base level of resistance that we often call systemic acquired resistance, in which the plants produce antifungal compounds called phytoalexins. However, field trial results across the North Central region show that yield benefits are seen with these applications under high disease pressure,

but potential yield losses occur if these applications are made under low white mold risk conditions. It is important to weigh all the risks in each field before deciding to make any applications, regardless of the product.

Disclaimer: I do not endorse or promote any specific chemical products or favor one company's products over another, focusing instead on providing unbiased research and recommendations for effective crop management.

Wade Webster
Extension Plant Pathology, Soybeans

SPRAY APPLICATION TECHNOLOGY FOR FUSARIUM HEAD BLIGHT SUPPRESSION

Sprayer configuration influences the efficacy of fungicide applications for Fusarium Head Blight (FHB) suppression. NDSU Extension publication AE1314, *Ground Application of Fungicides for Fusarium Head Blight Management*, has been recently updated. I encourage you to review the full publication, but here is a summary of recommendations:

- Use a dual-angled spray, with a steeper angled forward-facing spray (e.g., 30 degrees from vertical) and a shallower backward-facing spray (e.g., 70 degrees from vertical).
- Use a coarse spray quality (i.e., droplet size).
    - See NDSU Extension publicationAE1246, *Spray Application Technology: Selecting Spray Nozzles with Drift-Reducing Technology*, for details on the spray quality classification system.
- Apply 10 to 20 gallons of water per acre.
- Position spray nozzles as low as possible above the grain heads without dragging through the crop.
- Ground speeds up to 12-15 miles per hour are acceptable as long as proper boom height, boom stability and spray pattern are maintained.

TeeJet AI3070, an asymmetrical twin fan nozzle recommended for FHB suppression. Photo credit: Tom Wolf, Sprayers101

Lastly, please consider this essential point: *Fungicide application settings are important for FHB suppression, but product selection and application timing have a greater influence*. Selection of an effective fungicide product and applying it at the proper time must be the foundation of a successful FHB suppression program. Consider proper spray application settings to be the "cherry on top."

Disclaimer: NDSU Extension does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names.

Rob Proulx
Agriculture Technology Systems Specialist

plant science

IRON DEFICIENCY CHLOROSIS (IDC) SHOWING UP

Soybeans across the state are in different stages, with many fields that have already reached V2 to V3 (two to three fully expanded leaves). This is a good time to begin scouting for iron deficiency chlorosis (IDC) symptoms (Figure 1.A). *Why now?* Soybean seeds contain some stored iron; enough to support early growth through the unifoliate stage and sometimes into the first trifoliate. This means IDC symptoms may not appear until later, which can make early diagnosis tricky.

Another common question is: *How will IDC impact my yields?* If your soybeans are at early stages (around V2), it's best to monitor the crop and see if the plants recover. However, if you're already at V5-V6 and symptoms persist, yield losses are more likely. Research from NDSU has shown that IDC-related yield penalties can range from 9 to 19 bu/ac if symptoms persist until V5-V6 (Figure 1.B).

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

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

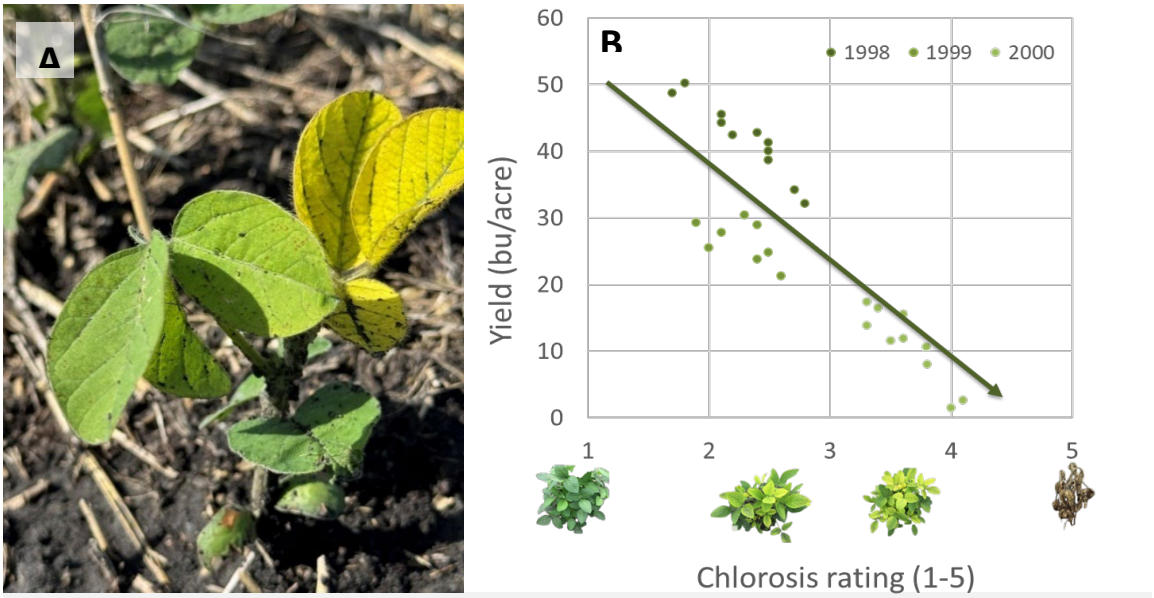


Figure 1. A. Soybean plant from an IDC susceptible variety, showing IDC symptoms. Picture taken near Fargo. B. Yield decrease across IDC scores, plants were scored at V5-V6 stages; data from R.J. Goos.

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

Do you want to know more? Check this guide Soybean Soil Fertility | NDSU Agriculture

Ana Carcedo
Broadleaf Agronomist

WIND AND HAIL DAMAGE TO CORN

The massive thunderstorms and tornadoes that moved across eastern North Dakota last week caused severe damage to many crop fields in their path. If you are dealing with an affected corn field, scout the field 7 to 10 days after the storm to assess the stand. Corn that was V6 or younger at the time of the storm has a better chance of recovering than more advanced stands because its growing point was at or below the soil surface. If corn plants survived the storm, you should see new leaves emerging from the whorl. If you are unsure whether a plant is alive or dead, pull it out of the ground and cut the stem lengthwise with a knife. If the growing point is white or yellow and firm, it is alive; if the tissue is brown, soft or looks like it is decaying, the plant is dead.

While defoliated corn fields are never pretty, the good news is that corn is quite resilient to early-season leaf loss due to hail or wind. V7 corn that loses 50% of its leaf area is only estimated to lose 2% of its yield potential; V7 corn that loses 100% of its leaf area but survives loses approximately 9% of its yield. V8 corn that loses 50% or 100% leaf area has its yield reduced by 3% or 11%, respectively.

If the corn crop does not recover and is a loss, I encourage growers to consider what may be the most economical way to protect their soil and their bottom line for the remainder of the season. We are now well beyond the last recommended planting date for corn in storm-affected areas, so selecting a cover crop that can either be used as a forage or provide a nitrogen benefit to next year's crop is a good option. If considering a forage, millet is a good option for planting in late June through the first week of July. Foxtail millets have done well when planted late as an emergency forage. If you are interested in pursuing a nitrogen credit for next year's production, consider planting a cover crop mix with legumes that fits your budget. Field pea seed is widely available and an economical option, but it does not thrive in the heat of late summer. If you are interested in trying a warm-season legume, look for mixes that contain cowpea and/or sunhemp. I recommend including at least a low rate of a cereal (preferably oat or barley, but wheat works) with the legume to enhance weed suppression and soil cover. A field that is left fallow during the summer is susceptible to soil erosion and can create not only a headache for weed management this year, but likely add expense to next year's weed control program.

Clair Keene
Extension Agronomist, Small Grains and Corn

END OF JUNE UPDATE

2025 has been a year where agronomic issues have taken precedent over weed control issues in the early part of the season. However, weeds never fail to remind us in June that they want all the spotlight. This article will cover some of the most frequent questions and observations to date this year.

Kochia

The perennial front runner for Weed of the Year continues to be problematic. There have been several inquiries and comments about dicamba resistance in kochia this year. We do know of several populations resistant to the 0.5 lb ae per acre rate, but the volume of inquiries indicates either that resistance has become more widespread, or perhaps there are environmental explanations to herbicide failures. Overall, the systemic herbicides (glyphosate, dicamba, etc) have been slow to kill weeds this year, in part due to the cooler temperatures when many fields were sprayed. In some of our trials, it took between 28 and 35 days after application to kill dicamba -and fluroxypyr-susceptible kochia (while resistant plants rebounded with new growth within 14 days).

Waterhemp

There have been numerous questions from corn and small grain fields about waterhemp surviving Group 27 herbicide applications. The common theme has been that waterhemp survived, yet other weeds were controlled. As mentioned in the kochia paragraph, systemic herbicides have been slow, and these Group 27 herbicides are systemic. In our plots, it took somewhere between 14 and 21 days for Group 27 herbicides to fully control weeds. So, the environment has not been in our favor for optimal control from that chemistry. Many of the fields I've received calls about do have a gradient of dead plants next to alive plants, which is a textbook observation of herbicide resistance. We intend to collect seed from these fields to test for resistance over the winter. I don't want to shout fire in a movie theater, but there has always been the concern of developing resistance to Group 27 herbicides, and it has been documented in waterhemp in Minnesota and the I-states. To date, Group 27 resistance has not been confirmed in North Dakota, but we intend to follow up on these populations and determine if resistance has arrived or if there is some other explanation for these escapes.

Wild oat and common ragweed

I'm grouping these two weeds together because they generally require cooler weather and moisture to germinate. Many areas have had both of those things in abundance. Typically, we hope by early to mid-June that soil temperatures are warm enough to stop germination of these weeds. However, we continue to see additional flushes. One of our ragweed sites had a new flush of ragweed cotyledons after the rain this weekend, which unfortunately prolongs the control season for these "early season" weeds.

Glufosinate

We are early enough in the soybean weed control season to not have much feedback on glufosinate performance this year. Overall, many folks have had decent heat, sunlight, and humidity over the last 7 to 10 days that should help glufosinate control weeds. The forecast seems to predict that many of us will continue having good weather for glufosinate applications. I encourage folks to check out Dr. Rob Proulx's recent articles about Delta T to determine optimum times to spray glufosinate. Optimizing glufosinate applications will be important as this herbicide will be applied across a lot of acres, which, from my seat, indicates a lot of selection pressure for potential resistance. We do not suspect glufosinate-resistant weeds at this time, and we would like to keep it that way.

Joe Ikley
Extension Weed Specialist

around the state

AROUND THE STATE

Spring wheat at heading stage. Photo: McKenna Schneider, IPM Scout, LREC

NORTHEAST ND

Field Conditions and Crop Progress Update

Crop conditions have improved significantly across the region, thanks to a combination of good moisture and warm temperatures. NDAWN stations reported rainfall amounts ranging from 0.3 to 2.5 inches over the past week, providing much-needed relief from moisture stress.

Most small grains are currently at the boot to heading stages, while later-sown fields remain at the tillering stage. The recent showers not only eased moisture stress but also helped wash down increasing aphid populations, potentially setting them back for a period.

Canola crops have mostly progressed past the flea beetle-susceptible stage, with many fields reaching the 4-6 leaf stage. Early-planted canola is now at the bolting stage.

Canola in Towner County. Photo: Hayden Anderson, ANR Extension Agent, Towner County

Corn at the Langdon Research Extension Center. Photo: Anitha Chirumamilla, LREC

Soybeans and dry beans have emerged and are growing slowly. Field peas are advancing rapidly, with some nearing the flowering stage.

Corn is approaching the 4-6 leaf stage, and sunflowers are at the 3-4 leaf stage.

Anitha Chirumamilla
Extension Cropping Systems Specialist
Langdon Research Extension Center

SOUTH-CENTRAL/SOUTHEAST ND

Much warmer temperatures this past week, along with some sunshine! The biggest news of the week was all of the Friday night catastrophic storm damage. The most significant farm buildings, homes, grain bins, grain elevators, trees, and crops damage and other damage mostly occurred from the Jamestown area to nearly the Red River and mostly between Highway 200 and Interstate 94, although there were a few areas of severe damage south of Interstate 94 and north of Highway 200. I'm deeply saddened by the death of people and all of the extensive wind and/or tornado damage in many parts of this region. Many millions of dollars were lost.

Hard red spring wheat stage in the region ranges from tillering to completely flowered in the southern part of the region, with flowering beginning now as far north as Griggs County. All spring-seeded small grain crops condition continues to be good to excellent throughout the region. I still have not seen any leaf diseases or aphids in hard red spring wheat in the region; however, the Carrington Research Extension Center IPM scout has seen a few cereal aphids in the region, so be scouting. One of the biggest problems for hard red spring wheat in parts of the region is sulfur deficiency, as seen on the leaf in photo 1 and a large area of a field in Foster County in photo 2. With the good to excellent wheat crop, make sure you read Andrew Friskop's article (in the Plant Pathology section of this issue) about applying fungicides to protect the wheat from fusarium head blight now that wheat is starting to flower.

Figure 1. Sulfur-deficient wheat in Foster County.

Figure 2. Severe sulfur-deficient wheat in Foster County.

Corn in the region varies from V2 (2 collars) to V9 (9 collars in Sargent and Richland Counties). Corn condition improved again this past week due to the warmer and sunnier weather, with about 60% of the corn crop in the region looking good. There are very few, if any, excellent fields of corn in the region, especially in the western part of the region. The biggest story with corn this past week was all of the hail and wind damage last week, with small corn plants blown over in some cases all the way to the ground, but much of it is coming back upright. Some green snap occurred across the region in larger corn as indicated in Figure 3 in Emmons County. Crop residue in addition to some soil also caused corn damage on top of an already poor stand as seen in Figure 4 in Emmons County.

Figure 3. Green snap corn in Emmons County.

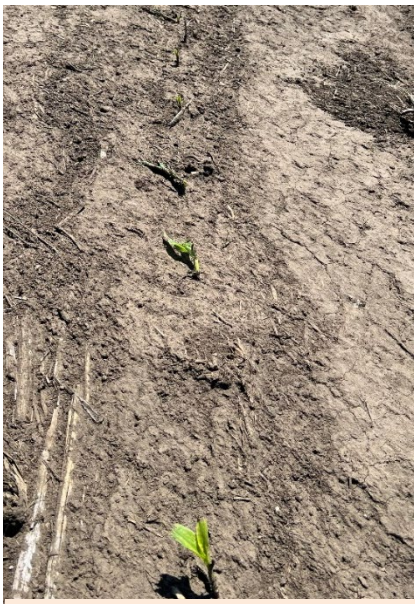


Figure 4. Corn damaged from cold and storm in Emmons County.

Soybean stage in the region varies from VC (unifoliate leaves are fully expanded) to fourth trifoliate (V4), and possibly some soybean plants in Sargent and Richland Counties are beginning to flower. In my opinion, soybeans are the poorest crop in our region, with some areas replanting due to poor stands, and in southern Sheridan County, due to severe hail the week before. In Sheridan and Wells Counties, the majority of the soybeans are only fair condition, and a few soybean fields are excellent in the SC part of the region, other than some of the later-planted soybeans. The soybeans were set back some more with the storms from wind damage, as seen in Figure 5 from Barnes County and Figure 6 from Emmons County. Besides the poor soybean stands and additional wind damage, the other story in soybeans is the frequent presence of the bean leaf beetle south of Highway 200! Farmers and others scouting soybean fields will need to scout carefully for the second generation that will be defoliating soybean plants later in the season and potentially feeding on soybean pods as well if the bean leaf beetle population comes in great numbers.

Figure 5. Poor stand and wind-damaged soybeans in Barnes County.

Figure 6. Soybeans were damaged from wind-blown old crop residue in Emmons County.

Canola in the region is from 3 leaves to mid-flower in the region. The canola crop condition is highly variable across the region, from poor to excellent, with most likely good. No problems in this crop yet, but high numbers of diamondback moths have been found in other parts of the state, so start scouting flowering canola fields for diamondback larvae.

Dry beans are progressing nicely with the warmer weather last week. Most dry beans are in the first to second trifoliate stage at this time, with stands looking mostly good across the region. There are some emerging issues in the region, and some seedling blight is causing minor stand loss.

Sunflowers are moving along with the heat, with the sunflower stage from two leaves to six leaves. Most sunflowers are in good condition at the moment. No problems with sunflower at the moment, other than stand loss or poor emergence in some fields, and maybe some storm damage.

Weed control has improved across the region, with most corn being sprayed now; however, some weeds were too tall, and where rain has been plentiful, a second flush of grasses is appearing. Please carefully apply glufosinate this season, taking all steps to maximize weed control. Remember, glufosinate is not to be applied to soybeans once flowering begins. With all of this rain, if soybean fields were sprayed prior to the rain and with nearly all fields still having open canopies, a second flush of waterhemp, common ragweed, and grasses may occur. Also, 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 make a second herbicide application 14 to 18 days after the first application, NOT waiting until the weeds come up over the

soybean canopy! If weeds have lots of dirt on the leaves, wait to make a herbicide application until the dirt is either washed off the leaves or new growth with no soil on the leaves happens.

Of the 27 NDAWN stations I've chosen this season across region, the average maximum daily air temperature from June 17 to June 23, 2025 ranged from 76 degrees Fahrenheit near Hurdsfield to 87 degrees Fahrenheit near Tappen with an average this past week of 81degrees Fahrenheit, a whopping 9 degrees Fahrenheit warmer than last week! The average maximum daily air temperature was above normal for the region in the past week, a welcome event. The average daily minimum air temperature for the past week at the 27 NDAWN stations ranged from 52 degrees Fahrenheit near Pickardville to 61 degrees Fahrenheit near Sonora with the daily average minimum air temperature for the week being 57 degrees Fahrenheit, 4 degrees Fahrenheit warmer than last week.

The daily average four-inch bare soil temperature for these stations in the region ranged from 64 degrees Fahrenheit near Robinson to 77 degrees Fahrenheit near Milnor with an average for the region of 71 degrees Fahrenheit, a whopping nine degrees Fahrenheit greater than last week! This average four-inch soil temperature is about to slightly above normal for the week across the region.

Rainfall for these stations across the region was highly variable! The most variable so far this season. Rainfall for the region at these 27 weather stations ranged from 0 inch near Oakes to 3.2 inches near Carrington with an average for the week of 0.9 inch, 0.09 inch less than last week's regional average.

As of June 23, 2025 the Skogmo NDAWN station still had the lowest four-inch depth of soil moisture at 5% compared to Gardner, Hurdsfield, and Mooreton having the greatest four-inch soil moisture at 37%. The average four-inch soil moisture at these stations over the region was 23%, the same as last week. As of June 23, 2025, the Tappen NDAWN station had the lowest 39-inch depth of soil moisture content at only 4% with the Cooperstown and Leonard stations having the greatest at 51% with an average for the region of 28%, a one percent decrease from last week. The driest areas now are showing up again south of Interstate 94.

Wind was the other big weather story of the week, with the Friday night into early Saturday storms. The wind across the region this past week ranged from 5.2 miles per hour near Casselton to 10.2 miles per hour near Linton and McHenry, with the average daily wind speed for the week at 7.8 mph, the same as last week. The maximum daily wind gust this past week ranged from 24.6 miles per hour near Lisbon to 98.8 miles per hour near Galesburg, with the average daily maximum wind gust of 62 miles per hour! I don't know this for sure, but my guess is this is a record average daily maximum wind gust for this region in a one-week period and in many cases, the strongest one-time wind gust at most NDAWN stations. For the Cooperstown NDAWN station the maximum daily wind gust record was 58.3 miles per hour on July 21, 2017, but Friday's maximum wind gust was 62.7 miles per hour!

Have a great week and stay safe.

Jeff Stachler
NDSU Extension Cropping Systems Specialist
Carrington Research Extension Center

SOUTHWEST ND

A week of very active weather across the state and in southwest North Dakota as well. In our region, precipitation over the past seven days ranged from 0.10 inches in Bowman County to 2.52 inches in Oliver County. These few consecutive weeks with rain have helped alleviate the drought conditions in southwest ND, with improvements in the drought monitor map. Some counties, however, were hit hard by last week's storms with several agents reporting severe structural damage to grain bins, silos, shops, warehouses, etc. The South Heart area got hit by golf ball sized hail last Thursday and there were reports of extensive hail damage to many fields, affecting crops such as field peas, corn, and wheat, with some fields being completely wiped out by hail. Reports of hail damage to crops also came from the Glen Ullin area, in Morton County (Figure 1).

Figure 1. Headed wheat damaged by hail, east of Glen Ullin. Photo: Ashlyn Williams, IPM Scout Dickinson REC.

Crop progress in the area varies widely across fields, with spring wheat ranging anywhere between early tillering stages to flowering. With spring wheat either heading or at flowering, a concern that comes to mind is the need for a fungicide application to fight Fusarium Head Blight (scab), even more so given the moist conditions we have been experiencing in the last few weeks. To assess the small grain disease risk, please refer to NDSU's Small Grain Disease Forecasting Model. In any situation, in case you are considering a prophylactic fungicide application, ask yourself how much disease risk is actually present. Factors such as crop rotation, variety, and fungicide product all came into play when determining if a fungicide application is, in fact, economical. Keep in mind that some generic formulations can still get the job done in many cases, even more so when grain prices are so low.

Corn is southwest ND (Figure 2) is still lagging behind and may not be knee high by the 4th of July. The crop could use some heat to help it pick up. Also, some fields are starting to appear yellow, showing symptoms of nutrient deficiency, likely Nitrogen or Sulfur. With the slow crop growth and high volume of rains (above average for both May and June) chances are the nutrients have moved deeper in the soil, and the young, short roots haven't been able to reach it yet.

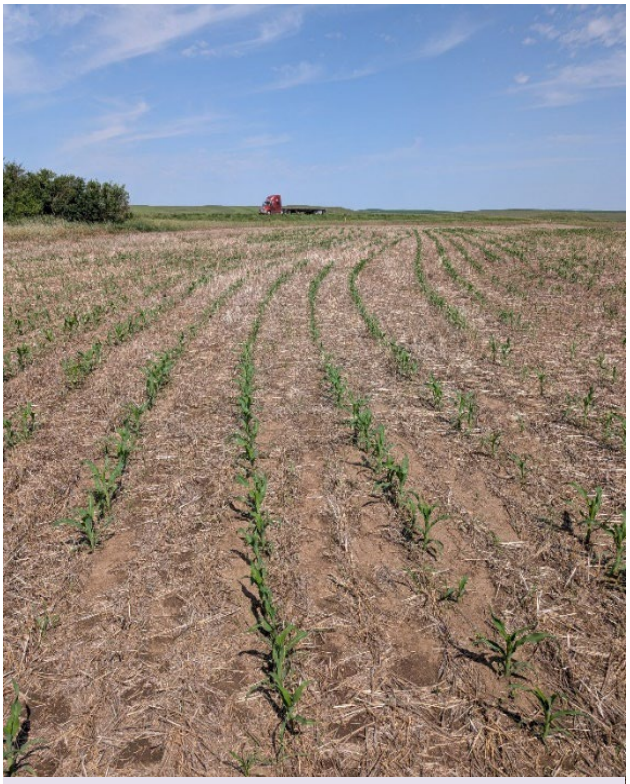


Figure 2. Corn field in Adams County. Photo: Aspen Lenning, ANR Extension Agent Hettinger County.

Canola in the region is mostly in the early bloom stage, with some later-planted canola in the bolting stage (Figure 3). With canola initiating its vertical growth and starting to branch out, we start to see less gaps in those fields that had really poor emergence this season.

As both canola and wheat move into the reproductive stages, a lot of herbicide spraying activity was seen over the last week, and farmers are almost all wrapped up with the last herbicide application for those crops

Soybean in the area is mostly in V2-V3 stage. Sunflower is mostly between V2-V6 stage.

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.

Figure 3. Canola field in early bloom in Adams County. Photo Aspen Lenning, ANR Extension Agent Hettinger County.

Victor Gomes
Extension Cropping Systems Specialist

weather

WEATHER FORECAST

The June 26 to July 2, 2025 Weather Summary and Outlook

The rain in the past week was mostly associated with the severe weather last Friday night that dropped the heaviest amounts in areas near Highway 200 (Figure 1). The heaviest rain generally fell just to the north of where the strongest wind was recorded. The fast movement of the storms generally kept rain amounts lower than you would normally expect from such strong thunderstorms.

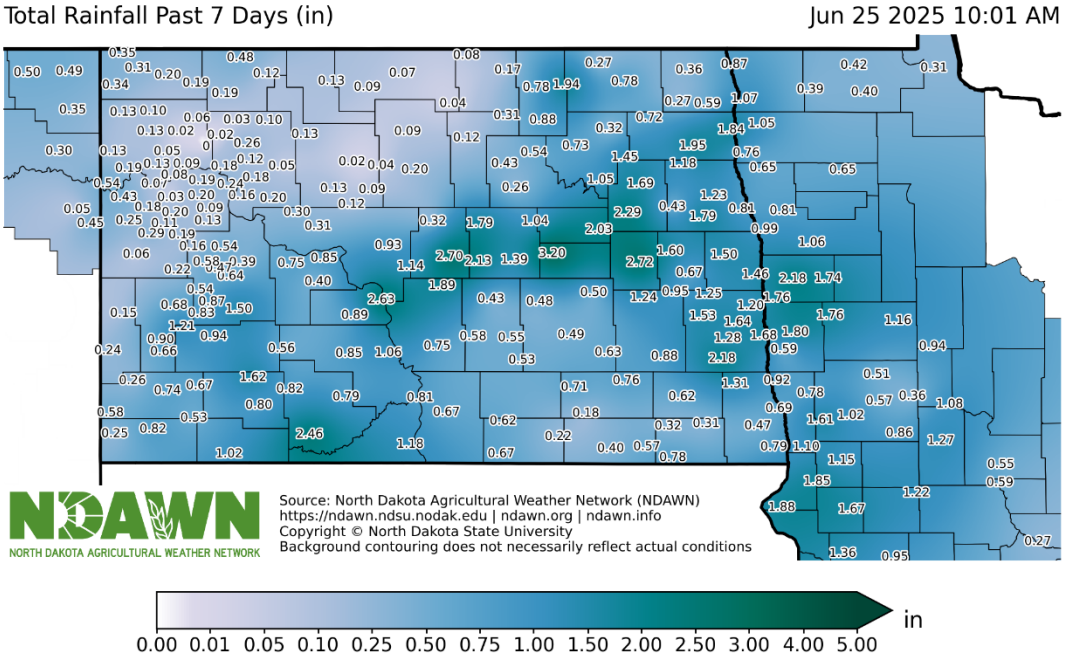


Figure 1. Total Rainfall for the Period of June 20 through June 25 at 10:00 AM.

Even with the rains in the past week, the month of June has been drier than average for a high percentage of North Dakota. The driest areas tend to be near and north of Highway 2 (Figure 2). The Drought Monitor has much of northeastern North Dakota in either the abnormally dry (D0) category or in moderate drought (D1). Although there will be many days with rain and/or thunderstorms somewhere in North Dakota during this forecast period, it appears that southern North Dakota will continue to be more favorable for higher rain amounts than the northern portion of the state.

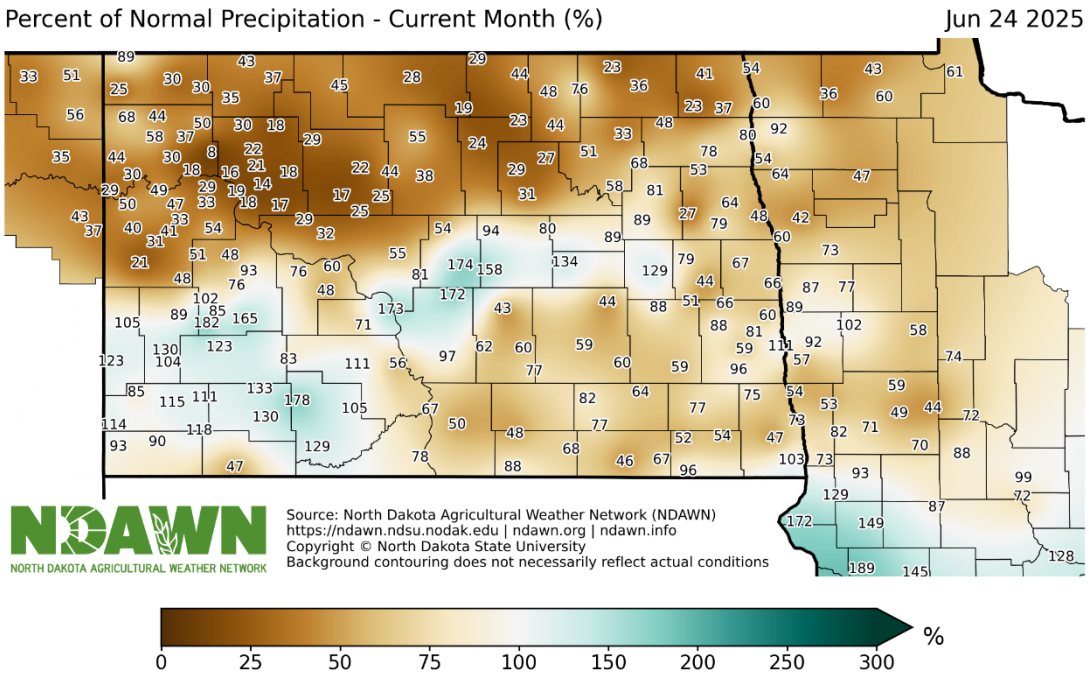


Figure 2. Percent of Normal Precipitation for the Period of June 1 through June 24, 2025.

Temperatures were above average across central and eastern North Dakota in the past week (Figure 3). Looking forward, we will record our usual fluctuations of daily temperatures, yet it appears we will record more average to above average temperatures than below average temperature days. This should allow us to continue to gradually catch up on growing degree days for this growing season.

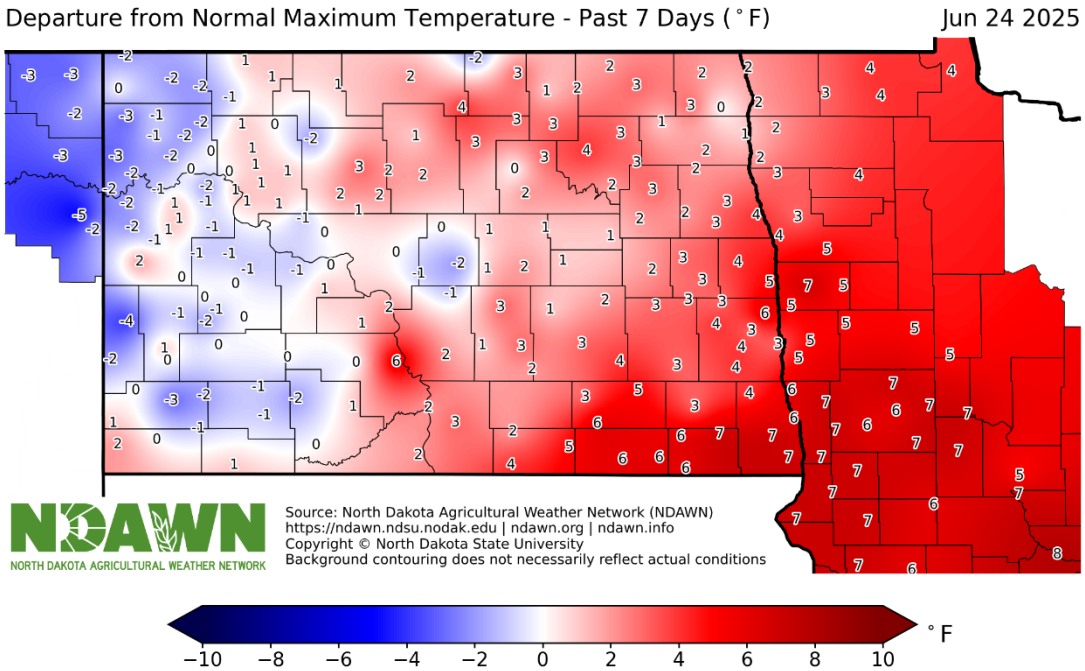


Figure 3. Departure from Average Air Temperature for the Period of June 18 through June 24, 2025

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.

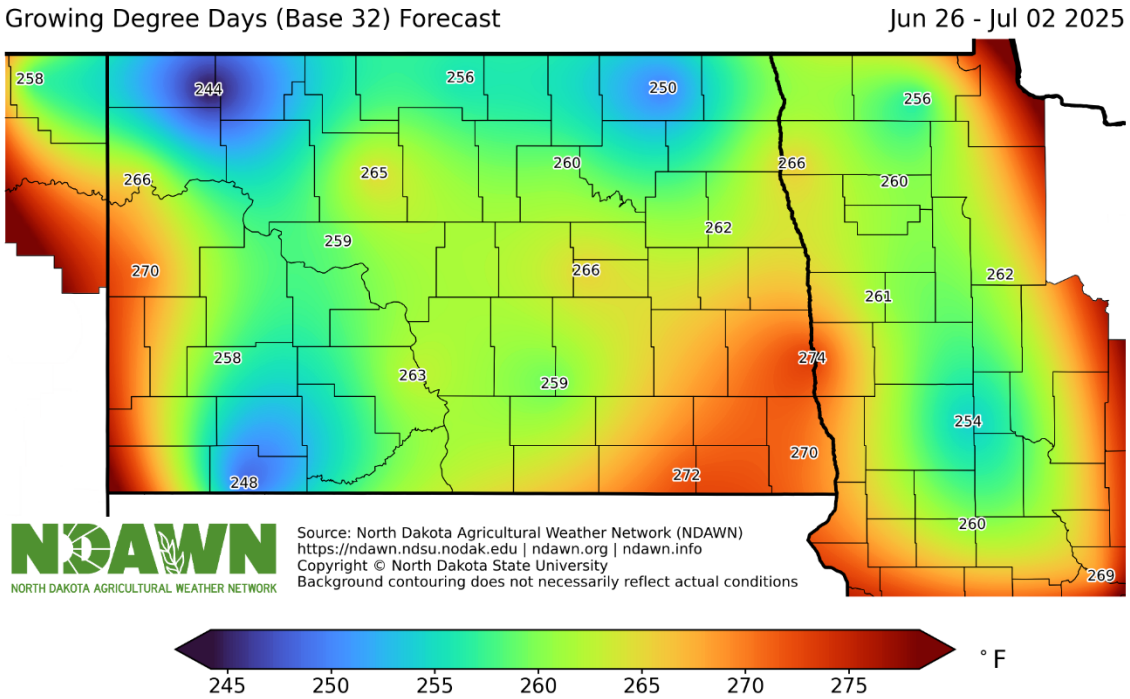


Figure 4. Estimated growing degree days base 32° for the Period of June 26 to July 2, 2025.

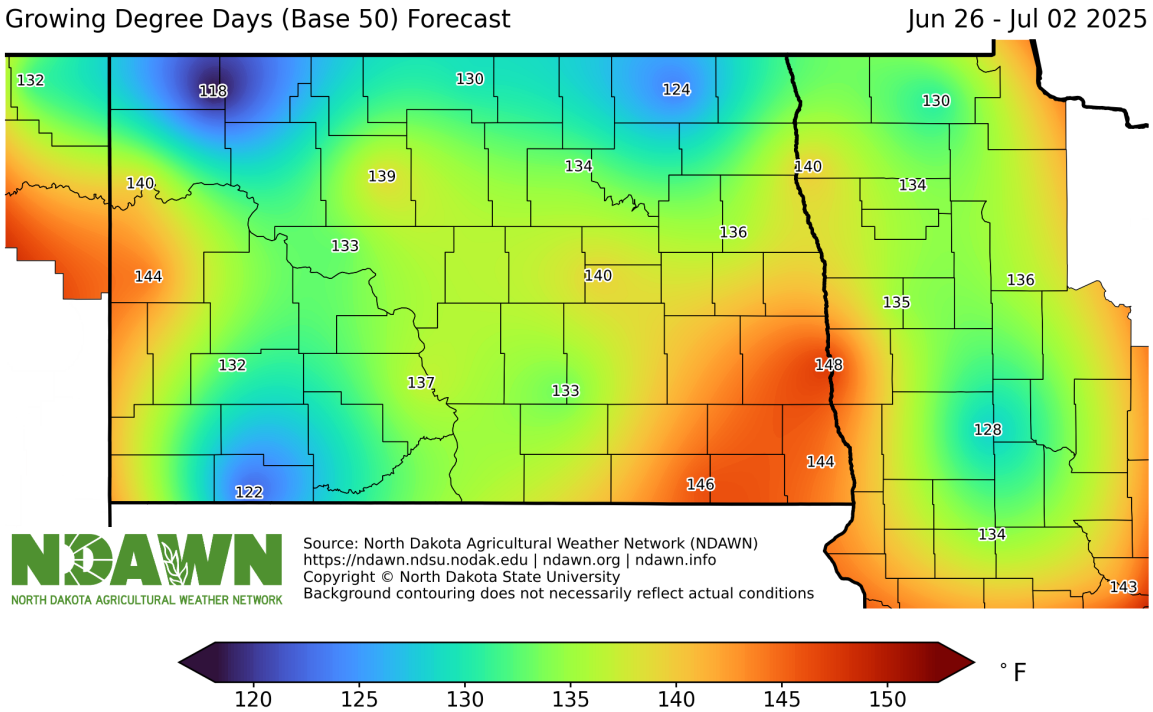


Figure 5. Estimated growing degree days base 50° for the Period of June 26 to July 2, 2025.

Using May 1 as a planting date, the accumulated growing degree days for wheat (base temperature 32°) are 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

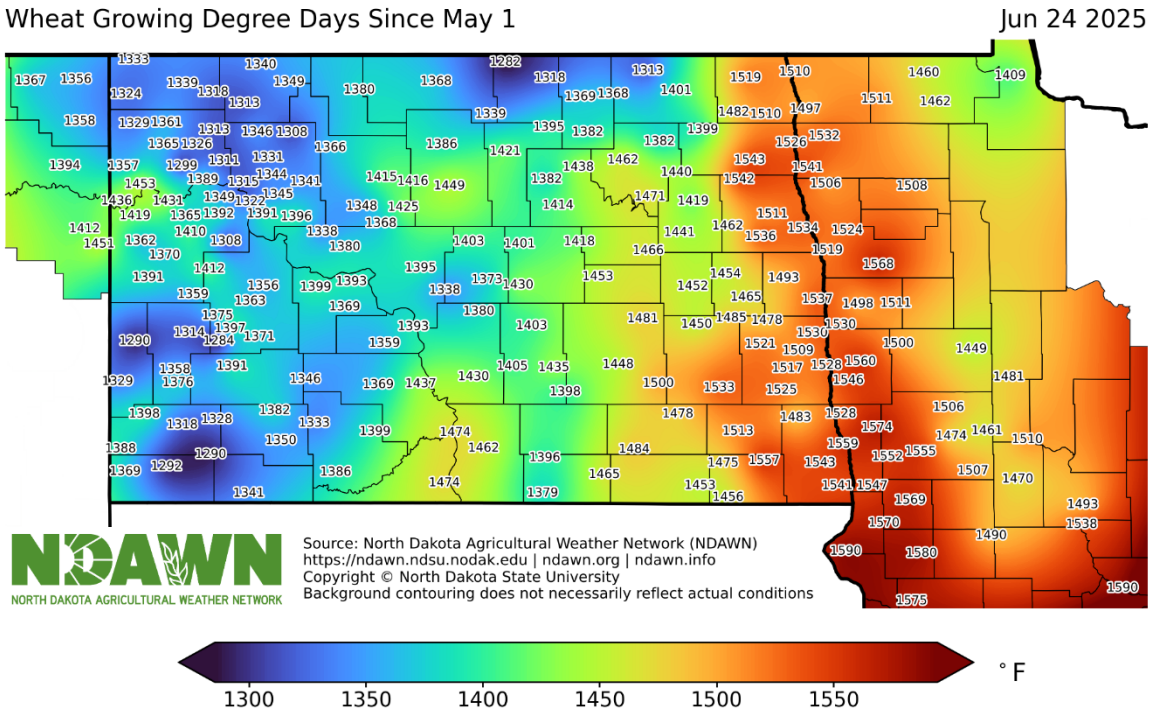


Figure 6. Wheat Growing Degree Days (Base 32°) for the Period of May 1 through June 17, 2025

Using May 10 as a planting date, the accumulated growing degree days for corn (base temperature 50°) are given in Figure 6. 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.

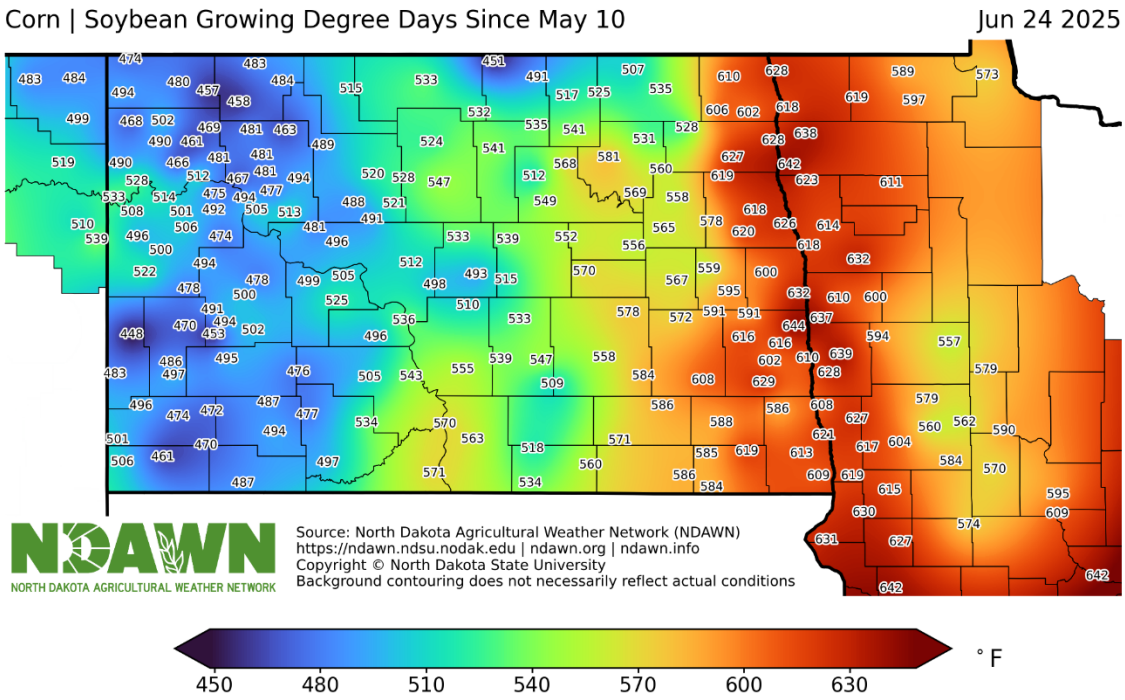


Figure 6. Corn Growing Degree Days (Base 50°) for the Period of May 10 through June 17, 2025

Soybeans also use a base of 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. Also, the new soybean white mold tool is now available on https://ndawn.info. Go to the Agriculture tab, select "ag tools" and you'll see the link to the white mold guidance.

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