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CROP & PEST REPORT
NDSU EXTENSION

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entomology

CORN ROOTWORM TRAPPING NETWORK

Here's our update for the corn rootworm monitoring network in southeastern North Dakota. Trap results are posted in the NDSU Extension *Crop & Pest Report* and on the IPM website.

Trap Economic Threshold (E.T.): A capture rate of **14 or more adults per trap per week** indicates a high rootworm population and high risk for corn damage for the 2026 season. *A management strategy will be needed for corn rootworm control in that field.*

We captured a total of 128 beetles during August 7-13 and 285 beetles during August 14-20 (Table 1). All beetles were northern corn rootworms, and no western corn rootworms were captured. The corn field in Sargent County, field #2, was above the E.T. level for both weeks. The corn field in Cass County was also above E.T. for August 14-20. See the next page's Corn Rootworm IPM maps for both weeks.

The North Dakota Corn Council funds this project.

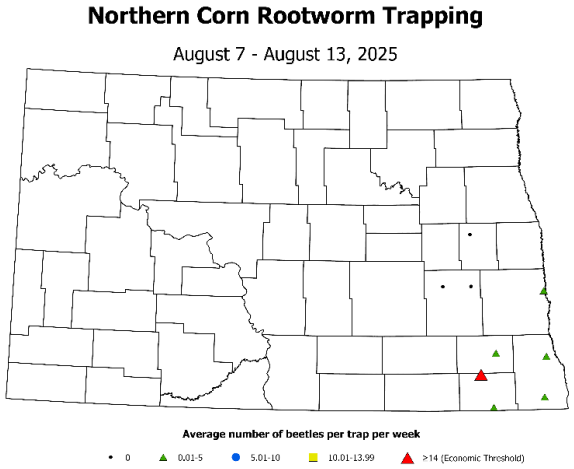
If you have rootworm problems in corn following soybean, you may have the extended diapause variant of northern corn rootworm. If you have experienced this, please email janet.knodel@ndsu.edu.

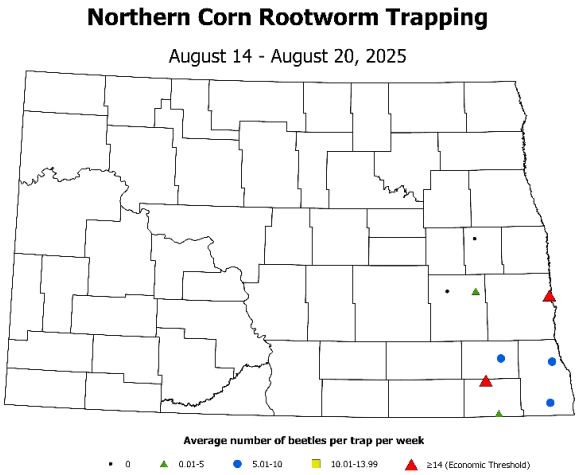
Table 1. Average number of adult corn rootworms (both northern and western) per trap per week in ND field corn, 2025.

Area	County	Nearest town	July 30 - Aug 6	August 7 - 13	August 14 - 20	August 21 - 27	Cumulative Total NCW & WCR
SE	Barnes 1	Pillsbury	0.0	0.0	1.3		5
SE	Barnes 2	Rogers	0.0	0.0	0.0		0
SE	Cass 1	Argusville	3.0	4.5	20.3		111
SE	Ransom 1	Lisbon	0.3	0.5	5.3		24
SE	Richland 1	Colfax	3.0	3.3	9.8		64
SE	Richland 2	Hankinson	0.8	4.5	7.5		51
SE	Sargent 1	Havana	0.8	2.5	4.3		30
SE	Sargent 2	Gwinner	4.3	16.8	23.0		176
SE	Steele 1	Finley	0.0	0.0	0.0		0
		Total # corn rootworm	**48**	**128**	**285**	**0**	**461**
		Percentage of NCR =	**100%**	**100%**	**100%**		
		Percentage of WCR =	**0%**	**0%**	**0%**		

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

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





SAP BEETLES FEEDING ON CORN EARS

Sap beetles are small, dark brown to black beetles with yellow-orange markings. Adults are ⅛ to ¼ inch long, oval, and somewhat flattened. They are often found clustered inside damaged corn ears this time of year.

Sap beetles are considered secondary insect pests of field corn. Beetles are attracted to fermenting plant juices and overripe grain. Sap beetles do not typically initiate injury but move into corn ears after they have been damaged by other insects, such as European corn borer, or by physical damage from hail, birds, or other factors. Feeding by sap beetles creates slimy, sour-smelling areas on kernels and can lead to the growth of molds, reducing grain quality.

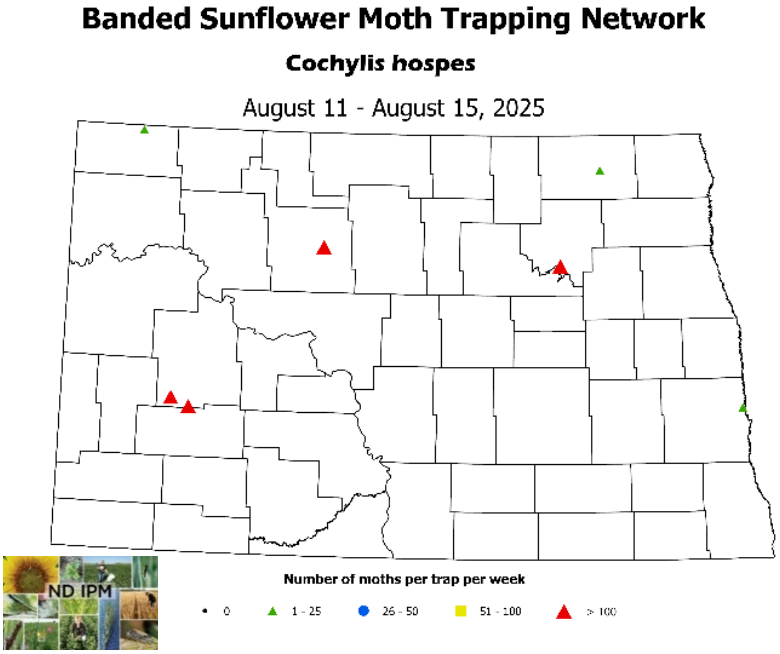
Management of sap beetles in field corn focuses on preventing the conditions that favor them. Because they rely on existing damage to gain access to ears, controlling primary pests, especially European corn borer, helps reduce the risk of sap beetle infestations. ***Once inside husks, insecticide treatments are ineffective, so chemical control is rarely practical or economical.***

Sap beetle feeding on corn ear that was damaged initially by birds in Mayville-Portland area. Mold is present on the ear from sap beetle feeding.
(Photo courtesy of Greg Reidman)

SUNFLOWER INSECT TRAP UPDATE

Sunflower growth stages have advanced to R5 (flowering) to R6 (flowering complete). This is the last report for sunflower insect trapping since the traps were pulled from the field two weeks ago. All sunflower insect trapping maps are posted on the NDSU Extension IPM website.

Banded sunflower moths were captured at all trap sites in North Dakota. The average trap catches were 137 (July 21-25), 135 (July 28-August 1), 196 (August 4-9) and 116 (August 11-15) moths per trap per week. The top three trapping sites were Dunn County (two sites reporting 246 and 236 moths per trap per week) and Ramsey County (176 moths per trap per week).



Arthuri sunflower moths (similar to the banded sunflower moth) were also captured at only three trap sites in Cass, Cavalier and Divide counties. The average trap catches were 14 (July 21-25), 32 (July 28-August 1), 25 (August 4-9) and 2 (August 11-15) moths per trap per week.

Sunflower moths were captured in Dunn (3 moths at two sites), Ward (1 moth) and Ramsey (4 moths) counties. All other trap sites had zero sunflower moths. For the 2025 season, all trap sites were below the trap threshold of **28 moths per trap per week**. See the Crop & Pest Report #15, August 7, 2025, for information on identification, scouting and thresholds for sunflower moth.

SPRAYING DECISIONS FOR SOYBEAN APHIDS IN MATURING SOYBEANS

Several questions have come to the Extension Entomology office about spraying early R6 soybeans (full seed set) for soybean aphids. However, entomologists generally do not recommend spraying for soybean aphids at R6 soybeans, because the economic benefit of insecticide applications is limited at this late stage of development. Some yield loss can occur in early R6 if aphid populations are very high and plants are stressed (drought). No research threshold has been developed for soybean aphids during the early R6 stage, but the threshold is probably higher than the standard threshold of 250 aphids per plant.

Timely management of soybean aphids relies on regular scouting and establishing thresholds. *Applying insecticides only when populations exceed 250 aphids per plant through the R5 stage ensures that yield is protected while minimizing unnecessary costs and preserving beneficial insects.* By following thresholds, growers can avoid the temptation to spray at R6, when economic returns from treatment are unlikely. This threshold-based approach remains the most effective and economical long-term soybean aphid management strategy.

Key Factors to Consider

White dwarf soybean aphids (Patrick Beauzay, NDSU Extension Entomology)

- Economic return: Yield protection diminishes after R5; insecticide applications at R6 often do not pay.
- Population trends: Treat only if aphids are increasing. Static or declining numbers do not justify spraying. Winged females and white dwarf aphids suggest natural decline is underway. White dwarf aphids have lower fecundity and longevity, so that overall population growth will be slower than for healthy green soybean aphids. Look for white dwarf aphids on the leaves' undersides in the lower canopy.
- Natural enemies: Predators (lady beetle adults and larvae, syrphid fly larvae, lacewing larvae, parasitic wasps, etc.) can keep aphids below threshold. It is important to conserve natural enemies.
- Soybean growth stage: Aphid feeding before and during R5 is more damaging to yield than during R6.
- Pre-harvest intervals (PHIs): Check labels carefully—late crop insecticide sprays have harvest restrictions.
- Weather: Rainfall and cool temperatures can reduce aphid numbers—wait if rain and cool temperatures are in the weather forecast, since these factors will slow aphid reproduction.

Take Home Points:

- Scout frequently to track soybean aphid population trends in R6.
- Assess yield potential—late treatments provide little benefit to the crop since yield is set earlier (R4-R5).
- Wait if possible—aphid movement back to buckthorn often begins at early R6 in September.

PROTECT GRAINS IN BINS FROM INSECT PESTS

Insects in stored grain cause both direct and indirect damage. Direct damage occurs when insects feed on kernels, reducing grain weight, nutritional value, and germination potential. Indirect damage results when insect activity creates “hot spots” in the grain mass, leading to mold growth, heating, and contamination with odors, dust, and insect parts. Together, these issues reduce grain quality and market value, often leading to dockage at the time of sale.

Common Grain Insects

- **Primary pests** – Weevils (granary, rice, maize) and grain borers attack whole, unbroken kernels.
- **Secondary pests** – Red flour beetle, confused flour beetle, and sawtooth grain beetle, which thrive on cracked kernels, grain dust, and debris.
- **Indian meal moth** – Easily recognized by webbing across the grain surface, signaling an infestation.

Confused flour beetle (Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org)

Prevention and Control

- **Sanitation** – Thoroughly clean bins, harvesting equipment, augers, and trucks to remove old grain and dust that harbor insects.
- **Bin Maintenance** – Repair cracks, holes, and crevices to prevent insect entry.

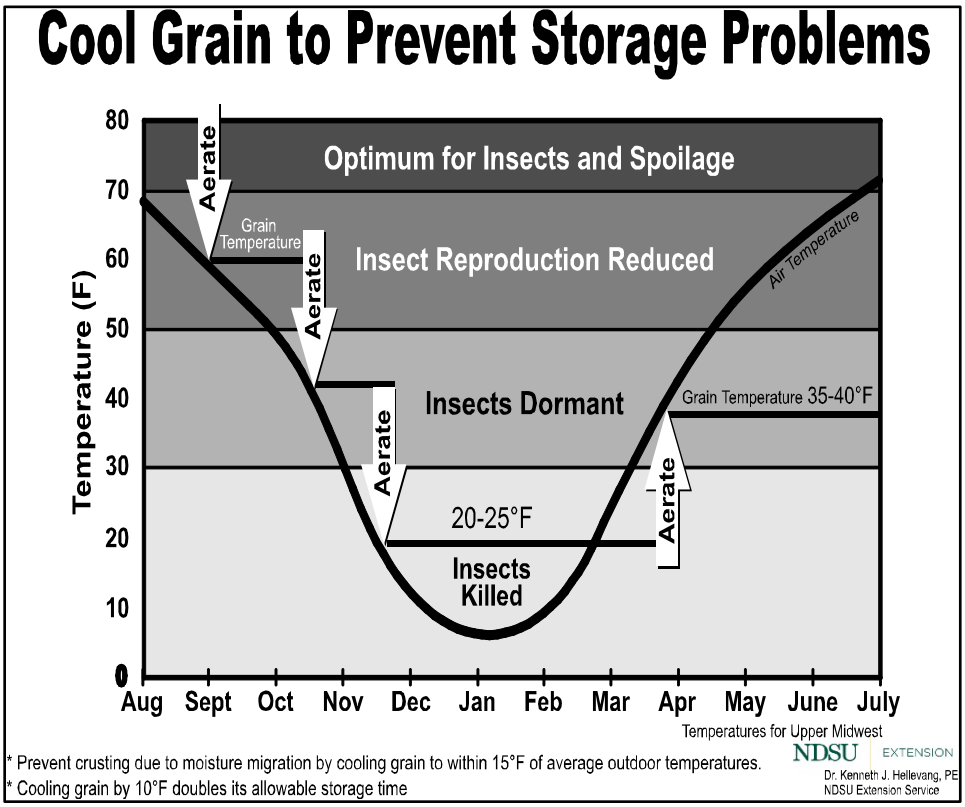
- **Insecticides**
  Once the cleaning and repairs are done, it's time to spray a residual bin or surface treatment inside and outside the grain bin. The area outside of the grain bins needs to be cleaned and treated. Remove weeds and vegetation, up to 10 ft border around empty grain bins. Treat the outside surfaces, especially cracks and ledges near doors and fans, to prevent insect pests from entering grain bins.

  Apply labeled insecticide protectants to newly harvested grain if it will be stored for more than 10 months to maintain the commodity's quality and protect your investment.

  Some insecticide examples are malathion, Tempo, Centynal EC, Diacon IGR Plus (insect growth regulator + adulticide), or a combination of chemicals should be applied to the bin surface areas 2 to 3 weeks before new grain is placed in the bin. The treatment will kill insects emerging from hiding places (cracks, crevices, under floors and in aeration systems). Also, insects crawling or flying in from the outside will be killed. Apply the spray to as many surfaces as possible, especially joints, seams, cracks, ledges and corners. Spray the ceiling, walls and floors to the point of runoff. Use a coarse spray at more than 30 lb per square inch pressure and aim for the cracks and crevices.

- **Moisture & Aeration**
  Keep grain dry and use aeration to cool grain, which slows insect development and prevents spoilage. Cooling the grain to <50°F will keep insects dormant, and temperatures < 20-25°F will kill insects (see chart). For additional information, please visit the NDSU Extension website on Grain Drying and Handling, which addresses all aspects of stored grain management, such as cooling grain to prevent insect and spoilage problems.

  Please see the stored grains section of the *2025 North Dakota Field Crop Insect Management Guide* for insecticides registered in stored grains.



Janet J. Knodel
Extension Entomologist

plant pathology

SCN IS THE SILENT THREAT UNDER THE SOIL

Soybean cyst nematode (SCN) is the most damaging soybean pathogen in the United States, often causing greater yield losses annually than all other soybean diseases combined. Unlike foliar and stem diseases that can be scouted easily from aboveground plant parts, SCN quietly sucks away yield belowground without always producing obvious symptoms. Aboveground symptoms such as stunting, yellowing, or poor canopy development may occur but are often subtle or confused with nutrient deficiencies and other stresses. This makes SCN a particularly troublesome pest that can persist in a field unnoticed for years while steadily degrading productivity.

Biologically, SCN is a microscopic roundworm that infects soybean roots. The life cycle begins when tiny juveniles hatch from eggs contained within durable cysts, which are hardened bodies of dead females that can protect eggs in the soil for a decade or longer. Once juveniles invade soybean roots, they establish a specialized feeding site where they siphon nutrients from the plant. Female nematodes eventually swell and rupture through the root surface, appearing as small white to yellow cysts visible to the naked eye late in the season. Each female produces hundreds of eggs, many of which remain protected inside the cyst after she dies, ensuring survival for future years. This entire process takes roughly 3-4 weeks, depending on environmental conditions. This reproductive strategy allows SCN populations to build rapidly when soybeans are grown frequently in rotation.

Figure 1. Soybean roots with SCN cysts present. The cysts are the small yellow lemon-shaped structures. Compared the cyst size to the much larger soybean nodules above them.

Figure 2. Closer image of the yellow SCN cysts on a lateral soybean root.

FROGEYE LEAF SPOT AS AN EMERGING DISEASE IN SOYBEANS

Frogeye leaf spot (FLS), caused by *Cercospora sojina*, was first confirmed in North Dakota in 2020 and has since been detected at low levels across the state. While the disease is a major issue in the mid-south region of the U.S., where warm and humid conditions drive epidemics, North Dakota environments have generally been less favorable for widespread outbreaks. This season, we have been seeing FLS increase, particularly in the eastern part of the state. Irrigated soybean fields with a history of consistent soybean production appear to be showing the highest disease pressure, although it remains isolated overall.

Biologically, FLS develops when airborne spores of *C. sojina* land on soybean leaves, typically during periods of extended leaf wetness and warm temperatures (greater than 75°F). Initial infections appear as small, dark lesions that expand into circular spots with tan to gray centers and reddish-brown margins, giving the disease its “frogeye” appearance. One of the key diagnostics is to flip the leaf over, and FLS will often have small bunches of gray fungal spores present in the center of lesions. The fungus can complete multiple infection cycles in a single season, producing new spores on existing lesions and spreading throughout the canopy in as little as two weeks. Under favorable persistent conditions, epidemics can intensify, leading to significant premature defoliation and yield loss. However, we have not seen these types of conditions in North Dakota up to this point.

Figure 1. Frogeye leaf spot samples from Dickey Co., North Dakota.

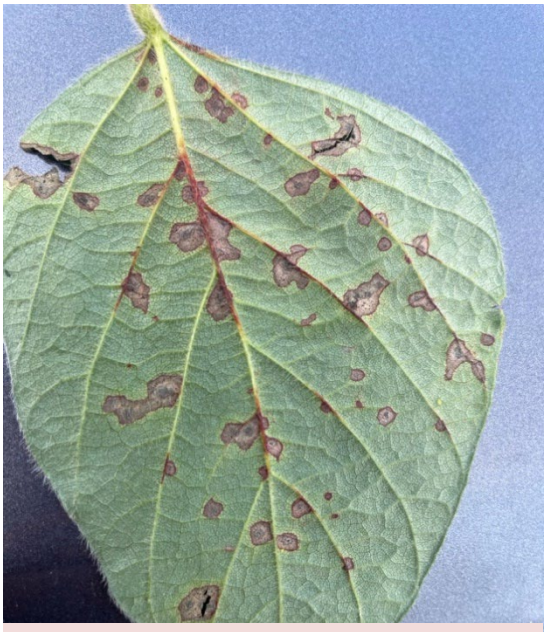


Figure 2. Underside of soybean leaves with FLS having gray fungal growth found in the center of each lesion.

At this point in North Dakota, fungicide applications for frogeye leaf spot are not recommended. The disease remains relatively new and localized, and current levels do not justify widespread chemical management. In regions where the disease is more established, fungicide applications made at the R3 growth stage (beginning pod) have consistently shown the greatest benefit in protecting soybean yield. Continued scouting will be important this season as we monitor its progression.

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Extension Plant Pathology, Soybeans

weeds

WATERHEMP AND KOCHIA CONTROL IN WHEAT STUBBLE

Broadleaf weeds, especially waterhemp, have exploded in wheat fields in eastern North Dakota and northwest Minnesota, in some cases before the wheat has been harvested. Managing summer annual weeds in small grains stubble will be especially important in 2025. For growers in central North Dakota, winter annuals or perennial weeds may be your number one priority. We recommend you decide your priorities and create a weed management strategy.

Our suggestions for controlling summer annual broadleaf weeds in small grains stubble follow. Be especially cautious when stubble is adjacent to potato seed production or when sugarbeet in 2026 follows your fall weed management program.

1. **Tillage.** Cold hard steel might be the most obvious choice for managing waterhemp or kochia. However, the literature states there is no predation from birds or rodents that feed on weed seeds following tillage since birds and rodents don't dig for weed seed covered by soil. Thus, predation as a weed management strategy is absent. Further, fields may require multiple tillage operations to maintain weed free fields. A second pass might be required in late September or October if you choose tillage as your weed management strategy. Finally, extra tillage creates an opportunity for soil to blow in the winter.
2. **Glyphosate alone or with postemergence herbicides.** Glyphosate (PowerMax, PowerMax3) will control grasses and certain broadleaves but will not control glyphosate resistant (GR) waterhemp and kochia (see table). 2,4-D, Sharpen, and Sharpen+Valor was mixed with PowerMax in this fall 2020 experiment with wheat stubble. Note waterhemp control from 2,4-D vs. Sharpen or Sharpen+Valor mixed with PowerMax. 2,4-D performance might be related to time of the season. Dr. Ikley believes 2,4-D controls waterhemp better in-crop compared to fall stubble because waterhemp is actively growing in-crop and the soybean canopy in-crop contributes to overall waterhemp control.

Wheat suppresses pigweed… until harvest[a]

Treatment	Rate	6 DAT	22 DAT
	fl oz/A	%	%
PowerMax	32	26 c	28 d
PowerMax/PowerMax	32/32	33 c	50 c
2,4-D amine+PowerMax	64+32	64 b	88 ab
Sharpen+PowerMax[b]	1+32	90 a	98 a
Sharpen+Valor+PowerMax[c]	1+1+32	99 a	98 a
P-value		0.0001	0.0001

[a]Hickson, ND, 2020
[b]4-month rotation restriction to sugarbeet (unfrozen ground)
[c]4-month rotation restriction and tillage to sugarbeet

3. **Gramoxone.** Apply Gramoxone SL 3.0 at 1.3 to 2.7 pint per acre with nonionic surfactant at a minimum of 0.25% v/v (2 pt/100 gal). Paraquat is the preferred herbicide for controlling kochia in wheat stubble with increasing reports of dicamba failing to control kochia, plus increased confirmations of Group 14 resistance. Paraquat is one of the few remaining effective foliar options (that also has favorable rotation intervals if applied in the fall).
4. **Dicamba.** Distinct (dicamba & diflufenzopyr) may provide more control than straight dicamba. Rotational crop options including sugarbeet are prohibited after applying Distinct (120 days with no mention of whether or not to count time the ground is frozen), but would be a preferred choice over straight dicamba for growers considering dicamba.

5. **Other glyphosate mixtures.** Glyphosate+Reviton at 1 to 3 fl oz mixed with MSO at 1% v/v provide burndown of small actively growing broadleaves and selected grass species. Reviton has foliar activity similar to Sharpen on waterhemp (no residual control of weeds) and has a preharvest interval favorable for the sugarbeet rotation.

Sharpen, Valor or dicamba are prohibited if sugarbeet are planted in the field in 2026. The label requires 4 months without frozen soil conditions (Sharpen) for microbial activity to degrade herbicides and to ensure residues do not harm sugarbeet seeded in 2026. Four months seems like a lot of time in early September, but we have no control on the amount of fall rainfall, when a killing frost will occur, or conditions in spring 2026. Mix Sharpen, Valor or Sharpen+Valor with methylated seed oil (MSO) at 1% v/v.

DON'T WRECK GLUFOSINATE (LIBERTY)

Broadleaf weeds standing tall above the canopies of low growing crops including sugarbeet, dry bean and soybean can be seen during travel through the countryside. Many of these escaped weeds are waterhemp and kochia. Waterhemp has been prolific in North Dakota and western Minnesota in 2025 for several reasons including an abundance of rainfall during the second half of summer. Farmers and other agricultural stakeholders have also noticed and have called extension offices looking for quick fix solutions. Most are interested in a herbicide treatment that will make waterhemp and kochia go away or at minimum, reduce seed set. The logical candidates are glufosinate, the active ingredient in Liberty, glufosinate plus Enlist One, or maybe a premix of 2,4-D and glyphosate, marketed as Enlist Duo.

The short answer is don't do it. Don't make these applications on 4- to 5-foot tall waterhemp or kochia. The most obvious reason is it's an off-label application. Why? Because our crops are flowering, using soybean as an example. The Liberty label states it can be applied to LibertyLink soybeans up to the R1 (bloom) growth stage. R1 is the reproductive growth stage indicating the beginning of flowering. At this stage, at least one open flower is visible on the main stem of the soybean plant. Enlist can be applied up to the R2 stage or full bloom stage. This stage is characterized by the presence of at least one open flower on one of the two uppermost nodes of the main stem. Finally, glyphosate can be applied up to the R3 stage or the beginning of pod development (any pod that is 3/16 inch long on one of the four uppermost nodes).

Why the label restrictions? Are they about soybean tolerance? Maybe not, but one important reason for label restrictions are to avoid regulatory concerns and potential issues with glufosinate residues in the soybean seed.

There is another reason. Glufosinate-resistant waterhemp and kochia would be devastating to North Dakota growers. NDSU Extension has long advocated for a systems approach to weed management. That is, different sites of action (SOA) in the crops planted in a rotation in a field. Simply stated, mix it up, use herbicides from multiple sites of action in a mixture at all, soil applied and postemergence. And don't' say glufosinate resistance will not happen. Waterhemp and kochia have a long history of compromising herbicides. Waterhemp has developed resistance to herbicides across multiple sites of action (SOA), including:

- ALS inhibitors (Group 2)
- Auxin mimics (Group 4)
- Photosystem II inhibitors (Group 5)
- EPSPS inhibitors (Group 9)
- PPO inhibitors (Group 14)
- very long-chain fatty acid synthesis inhibitors (Group 15)
- HPPD inhibitors (Group 27)

We could create a similar list for herbicide resistance for kochia control.

We don't want to see the onset of glutamine synthetase inhibitors (Group 10) (glufosinate resistance) in North Dakota. Populations are already being investigated in southern states for glufosinate resistance (and it has been confirmed in multiple Palmer amaranth populations).

Image 1. Kochia escapes in Pembina County ND,

Several of us, a year ago, contributed to an article in Crop Pest News called 'Best practices for using glufosinate (Liberty) herbicide.' Read the article again, at the following the link. Best practices for using glufosinate (Liberty) herbicide The article provides excellent information on the best way to use Liberty herbicide. We emphatically state, "spray small weeds." Yet we hear reports from coffee shops and our own observations of herbicide applications well past flowering weeds. The images that follow are from a field in 2022. The soybean field has waterhemp towering over the soybean canopy in August. Ironically, the field displayed symptoms on waterhemp one could categorize as from a SOA 10 herbicide days later. The coffee shop talk was herbicide application to reduce seed formation. The quickest way to wreck glufosinate is incomplete kill on large weeds. Don't do it.

We close with a comment from social media some time ago. The tenure of the conversation was about escaped weeds in soybean. The post stated, "Liberty will not hurt your beans. Sprayed some rescue in August. Not an ideal time but things happen." We get it. However, we also feel it is our responsibility to be a guardian of one of the few remaining waterhemp and kochia control herbicides.

Image 2. Waterhemp escapes in northwest MN, 2022

Image 3. Waterhemp in the same field after possible Liberty application, 2022

Tom Peters
Extension Sugarbeet Agronomist
NDSU & U of MN

around the state

AROUND THE STATE

NORTHEAST ND

The harvest season has officially begun across the Northeast region. Small grains and field peas are being harvested, and favorable weather with no rainfall is aiding progress by minimizing delays. Early planted dry beans and flax are beginning to show color changes, indicating they are nearing maturity. Sugarbeets are also ready for harvest.
Soybeans are currently in the R3 to R5 growth stages. In Nelson County, soybean aphids have been reported at threshold levels. Before deciding to spray, growers should consider the current growth stage of the crop—applications at the R6 stage have not been shown to provide a return on investment. Also, consider the presence of natural enemies and upcoming weather conditions, such as rain and cooler temperatures, which can naturally suppress aphid populations. See Dr. Janet Knodel's article above for more information.
Canola is maturing and progressing toward ripening. Due to the wet conditions this season, diseases such as white mold and clubroot are being observed in several fields.
Sunflowers are in the late R5 to early R6 stages. Again, the continued wet conditions have contributed to widespread issues with Sclerotinia head rot, as well as basal and mid-stalk rots.
Corn is at milk stage (R3) and needs more growing degree days to reach the black layer stage.

Spring wheat field harvested in Pembina County. Photo: Anitha Chirumamilla, LREC.

Sugarbeets in Pembina County. Photo: Alissa Sharp, ANR Extension Agent, Pembina County.

Soybean field in Pembina County. Photo: Alissa Sharp, ANR Extension Agent, Pembina County

Corn at R3 stage. Photos: Anitha Chirumamilla, LREC

Sclerotinia head rot in sunflowers. Photos: Anitha Chirumamilla, LREC

Sclerotinia basal and mid-stalk rot in sunflowers. Photos: Anitha Chirumamilla, LREC.

Anitha Chirumamilla
Extension Cropping Systems Specialist
Langdon Research Extension Center

SOUTH-CENTRAL/SOUTHEAST ND

Finally, a good week of hard red spring wheat harvest. The southeast and the western part of the region is nearly completed with hard red spring wheat harvest. Foster and Griggs County may be the farthest behind with hard red spring wheat harvest. Nearly all barley has been harvested in the region and durum harvest is not too far behind the hard red spring wheat harvest. Hard red spring wheat yields for the region range from 30 to 80+ bushels per acre, with Kidder County probably having some of the lower yields. Protein content is across the board from 10.5 to 15.5 percent. The farther east in the region the more consistently high the protein, although some varieties in the eastern region are poor.

Corn in the region varies from R3 (milk) to early R5 (dent stage) with the southern part of the region the farthest along. Corn pollination across the region looks to be good (photo 1). Based upon one quick corn yield check in Griggs County with corn planted in late May, yield is estimated to be 208 bushels per acre. Corn pest issues found in the region at low levels include northern corn leaf blight (photo 2), smut, rust, bacterial leaf streak, ghosting (photo 3), crazy top (photo 4), and corn aphids (photo 5).

There is concern of late planted corn reaching physiological maturity before the first hard freeze. As of August 25th, based upon the four corners of the region, Skogmo to Mooreton and Mayville to Linton and Carrington in the center, if corn was planted May 24th, Skogmo GDD's are -167 from normal and +27 from 2024 (new station so no history before 2024), Mooreton GDD's are -96 from normal, -49 from 2024 and -163 from the 5-year average, Mayville GDD's are -30 from normal, -42 from 2024, and -175 for the 5-year average, Linton GDD's are -72 from normal, +41 from 2024, and -105 for the 5-year average, and Carrington GDD's are -59 from normal, +43 from 2024, and -127 for the 5-year average. Based upon the U2U Corn GDD Tool from University of Nebraska (https://hprcc.unl.edu/agroclimate/gdd.php), May 24th planted corn will likely reach black layer on September 29th, 3 days before the average hard freeze (28° F) at Skogmo for 85-day hybrids, October 1st, 7 days ahead of the average freeze at Mooreton for 95-day hybrids, October 22nd, 14 days after the average freeze at Mayville for 85-day hybrids, September 26th, 11 days ahead of the average freeze at Linton for 85-day hybrids and October 2nd, 4 days ahead of the average freeze at Carrington for 85-day hybrids. At this point in time, all black layer dates are before the average first freeze for these locations, except Mayville. September is forecasted to be slightly above normal, but we need warmer temperature than that to finish much of this corn crop and get it dry.

Photo 1: Good pollination resulting in full ear fill, Griggs County.

Photo 2: Multiple norther corn leaf blight lesions in a Barnes County corn field.

Photo 3: A ghosting corn plant in Richland County.

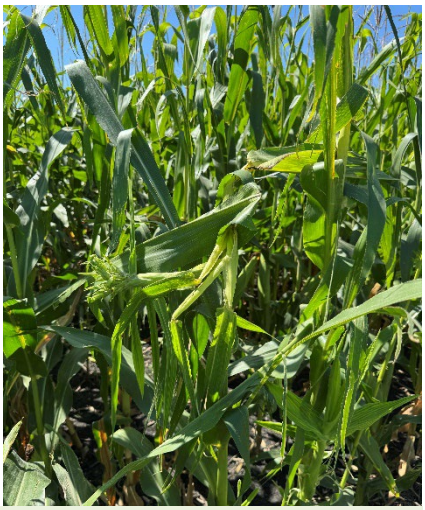

Photo 4: Crazy top disease in a Cass County field.

Photo 5: Corn aphids seen in multiple fields in multiple counties.

Soybean growth stages in the region range from R4 (greater than ¾ inch pods) to R6 (full seed) with an average stage for the region of about R4 (larger pods). Soybean conditions improved slightly this week for most of the region having well drained soils, however plants have died this week from excessive moisture. The most common soybean pest issues in the region are bacterial leaf blight, Septoria brown spot, excessive white mold in some fields and some fields in Barnes and Stutsman Counties having economic threshold soybean aphid populations. See Dr. Janet Knodel's article above for more information on late season soybean aphids.

Canola harvest has begun in the southern part of the region with Kidder County the farthest along at nearly 70% harvested. The canola crop condition still looks really good across most of the region.

Dry bean stage is from large seeds to leaves starting to drop. Dry bean has anthracnose showing up in some fields, also bacterial leaf blight, and the constant nemesis, white mold (photo 6).

Sunflowers are moving along and looking good over all, but there are some poorer fields in the region and one big issue. Sunflowers are in late R5 (flowering) to early R7 (bracts turning yellow) stage in the western part with most in the region in the R6 stage. The biggest problem in the region is plant uprooting from wind storms.

Photo 6: White mold showing up more often in many dry bean fields across the region.

Weeds are still an issue throughout the region due to the weather conditions this year and continued selection of resistant weed biotypes. Photo 7 shows a dense patch of waterhemp in sugarbeet in Richland County.

Photo 7: Severe waterhemp infestation in a Richland County sugarbeet field late last week.

Of the 27 NDAWN stations I've chosen this season across the region, the average maximum daily air temperature from August 19 to 25, 2025 ranged from 73° F near Finley to 83° F near Livona, with an average of 76° F. The average daily minimum air ranged from 51° F near Pickardsville to 56° F near Fingal, Hurdsfield, Lisbon, McHenry, Wirch, and Ypsilanti with an average of 53.7° F. We had a cold temperature scare across mostly the western half of the region, however there were a few areas in the east having morning low temperatures below 40° F. The coldest of the 27 NDAWN stations on the morning of August 25th was 35° F near Pickardsville and 12 other stations recorded morning low temperatures on that day below 40° F. Even some low areas in Emmons County received frost as shown in photo 8.

Photo 8: Light frost damaged soybean plants in Emmons County in morning of August 25th (photo by Nancy Deis).

Very little rain fell across the region with rainfall ranging from 0 inch at 15 locations to 0.15 inch near McHenry and Wing with an average for the week of 0.03 inch. This was the driest week across the region since May 6th to the 12th. The 4-inch soil moisture for these 27 stations in the past week ranged from 4% at Skogmo to 38% at Gardner and Oakes with an average of 20%. The 39-inch soil moisture for these stations in the past week ranged from 7% near Pickardsville to 51% near Casselton, Cooperstown, and Wirch with an average of 29%.

The wind this past week was fairly calm ranging from 3.7 miles per hour near Milnor to 10 miles per hour near McHenry with an average of 6.0 miles per hour.

Please be safe harvesting various crops this week!

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

SOUTHWEST ND

With the regular rainfall taking a break in southwest North Dakota and the warmer temperatures last week, harvest is well underway across the region, with reports varying by crop and county as weather continues to influence both pace and quality.

In **Adams County**, fieldwork is moving along steadily. Early reports include peas averaging in the 50s bushels per acre and wheat yielding 50–60 bushels. Several reports indicate protein levels above 14%, although low protein levels have also been reported in the minority of cases.

Mercer County harvest has been slowed by high humidity and damp field conditions. Early reports suggest at least average yields.

From **Golden Valley County**, most peas and winter wheat are wrapped up, with harvest progressing into spring wheat. Yields are within average, though not quite matching earlier crop potential. A bigger concern has been grain quality, with rains in recent weeks contributing to noticeable damage.

In **Bowman County**, harvest pace has been slow, though hot weather last week helped fields dry down and improved progress. Peas are finishing up with good yields, though contracted deliveries make it harder to get a full picture. Durum results are mixed, with some low test weight but generally good color; overall yields appear average. Winter wheat acreage was limited this year, with little information available. Hard red spring wheat yields are described as average to slightly below, but protein levels vary widely—from as low as 11% to as high as 16%. Quality issues such as washed-out kernels, low test weight, and dockage due to weed and wild oats contamination are being reported. Canola harvest is expected to pick up this week, with most fields currently being desiccated.

Oliver County producers are reporting strong wheat yields, with moisture levels now around 13–14% allowing harvest to move quickly. However, protein is trending below normal, largely attributed to high yields not matched with sufficient fertilizer. Grain appearance has also raised concerns, with many kernels bleached or spotty rather than the desirable dark red. Vomitoxin has not been reported as an issue so far.

Finally, in **Slope County**, harvest progress is a bit behind the usual schedule. Recent rains have delayed field operations, though row crop producers are thankful for the much-needed moisture.

Figure 1. Hard Red Spring Wheat Field with sever weed pressure in Dunn County, mainly herbicide resistant kochia. Photo: Victor Gomes

During my scouting trips this week, I also observed—and can echo—the heavy weed pressure at harvest reported by several agents in the area (Figure 1). It's important to remember that, although our options for managing herbicide-resistant kochia are limited, paraquat is *not* an approved pre-harvest weed control method. For labeled small-grain pre-harvest weed control options, refer to page 19 of the **2025 Weed Control Guide** (Table 1).

Table 1. Small Grain Pre-Harvest Weed Control Options. Source: NDSU 2025 Weed Control Guide

Herbicide	Product/A (ai/A)	Weeds	When to Apply	Remarks and Paragraphs
Glyphosate[9] **For HRS, Durum and Winter Wheat and Feed Barley Only.**	Up to 0.75 lb ae **See Remarks.**	Annual and perennial grass and broadleaf weeds including Canada thistle.	Wheat and barley: Hard-dough stage, 30% or less grain moisture. Allow a 7 day PHI.	lb ae/gal / lb ai/gal / 0.38 ae / 0.57 ae / 0.75 ae 3 / 4 / = 16 fl oz / 24 fl oz / 32 fl oz 4/4.17 / 5.4/5.1 / = 12 fl oz / 18 fl oz / 24 fl oz 4.5 / 5.5 / = 11 fl oz / 16 fl oz / 22 fl oz 4.8 / 5.88 / = 10 fl oz / 15 fl oz / 20 fl oz Do not apply more than 0.75 lb ae/season. **Do not apply on wheat or barley grown for seed because reduced germination/vigor may occur.** Apply 0.75 lb ae/A for Canada thistle control. May be applied with 2,4-D or dicamba for improved broadleaf weed control. Add AMS fertilizer at 8.5 lb/100 gal. Refer to label for adjuvant use and application information.
2,4-D[4] ester **For HRS, Durum, and Winter Wheat, Barley, and Rye**	**1.5 to 3 pt 4EC/SL** (0.75 to 1.5 lb)	Broadleaf weeds.	Wheat and oat: Hard dough stage to harvest. Allow a 14 day PHI.	Do not feed straw to livestock. Use only 2,4-D brands labeled for preharvest application. Drift to broadleaf crops is especially hazardous at this time.
Dicamba[4] + 2,4-D[4] **For HRS, Durum, and Winter Wheat Only**	**0.5 to 1 pt 4SL + 1 to 2 pt 4EC/SL** (0.25 to 0.5 lb + 0.5 to 1 lb)		Wheat: Hard-dough stage and green color is gone from the nodes (joints) of the stem. Allow a 7 day PHI.	Do not feed treated straw to livestock. Drift to broadleaf crops is especially hazardous at this time.
Sharpen (saflufenacil[14]) **For HRS, Durum, and Winter Wheat Barley and Triticale Only**	**1 to 2 fl oz** (0.36 to 0.72 oz)	Annual broadleaf weeds.	Wheat: Hard-dough stage and grain with less than 30% moisture. Allow a 3 day PHI.	**Do not apply Sharpen to cereals grown for seed because reduced germination/vigor may occur.** Apply with MSO adjuvant at 1.5 pt/A + AMS at 8.5 to 17 lbs/100 gal or 28% N at 1.25 to 2.5 gal/100 gal. Apply with glyphosate for additional weed control weed and desiccation. Sharpen has no grass activity. Refer to label for crop rotation intervals. **Caution: MRL's may change and growers/exporters are responsible for checking a reliable database to ensure an MRL is in effect prior to export.**
Valor SX or **Valor EZ** + MSO adjuvant (flumioxazin[14]) **For HRS, Durum, and Winter Wheat Only**	**2 oz WDG** or **2 fl oz EZ** + 2 pt (1.02 oz)	Annual broadleaf weeds.	Wheat: Hard dough stage and grain with less than 30% moisture. Allow 10 day PHI	Apply with MSO adjuvant at 2 pt/A. Spray grade nitrogen source (AMS at 2.5 lb/A or 28% or 32% nitrogen solution at 2-4 pt/A) may be added to spray mixture with MSO. Tank mix with glyphosate to increase control of emerged weeds and aid in harvest.

Regarding crop pests, the good news is that red sunflower seed weevil control has been much more successful this year. Overall control levels have been strong, though a second insecticide application was still necessary in some confection sunflower fields due to variable maturity rates caused by early-season hail damage. In one field we scouted south of Beulah, seed weevil counts dropped from over 100 per head to an average of fewer than 5 per head following a single insecticide application. After the difficulties faced last season, no significant problems are being observed so far in 2025.

So far, row crop progress varies across the region. Corn ranges from the milk to early dough stage, soybeans from R3 to R6, and sunflowers are just finishing flowering, with some beginning to shed their ray petals.

I'd like to thank the County ANR Agents Penny Nester, Rick Schmidt, Craig Askim, Ashley Ueckert, Lilly McFadden, and Aspen Lenning for submitting their preliminary harvest progress reports!

Victor Gomes
Extension Cropping Systems Specialist

weather

WEATHER FORECAST

The August 28 to September 3, 2025 Weather Summary and Outlook

If my memory is correct, this past week was the driest period of the summer. The past 7 days there was very little rain recorded at the NDAWN stations in North Dakota. The dry stretch looks to end this weekend. It is unlikely that the entire state will be impacted, but especially southern and eastern North Dakota look to have the highest odds of recording rain during this forecast period.

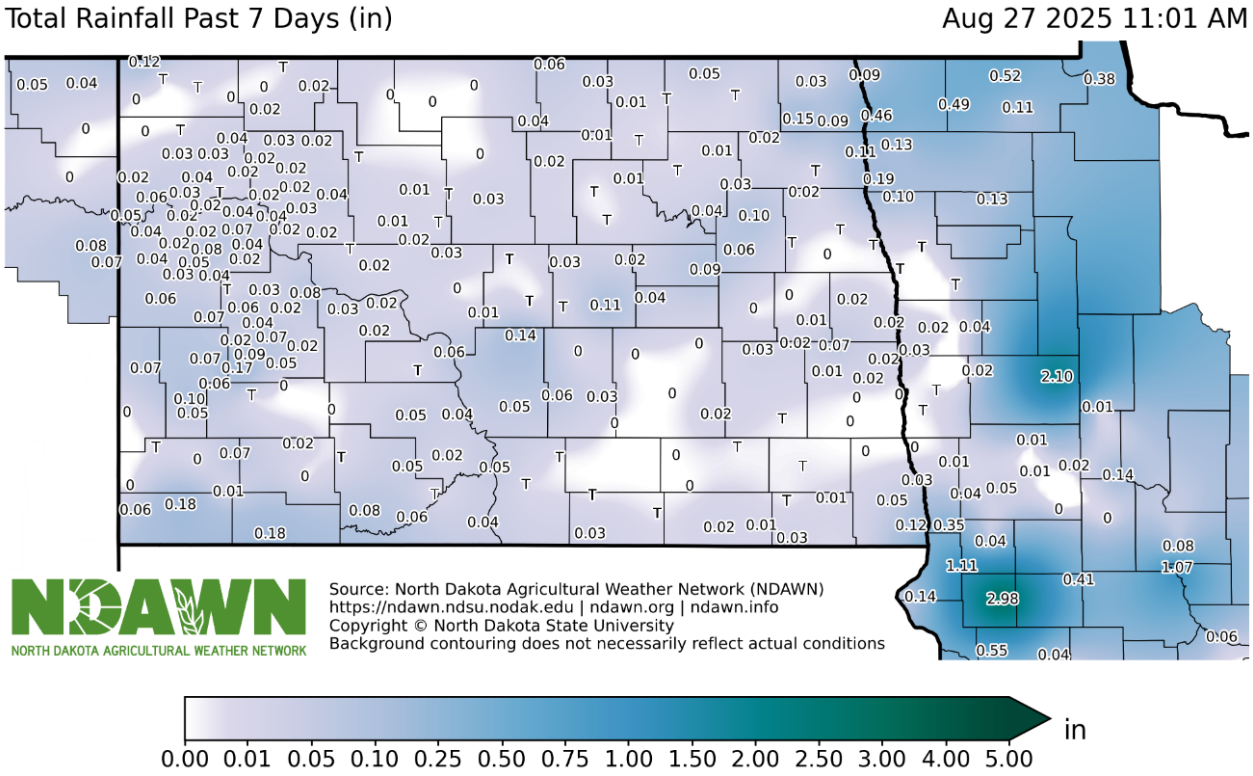

Figure 1. Total Rainfall for the Period of August 21 through August 27 at 11 AM.

Northeastern North Dakota continues to be the main area that has recorded below average precipiation since June 1 (Figure 2). But there were clearly pockets elsewhere, especially in the central part of the state.

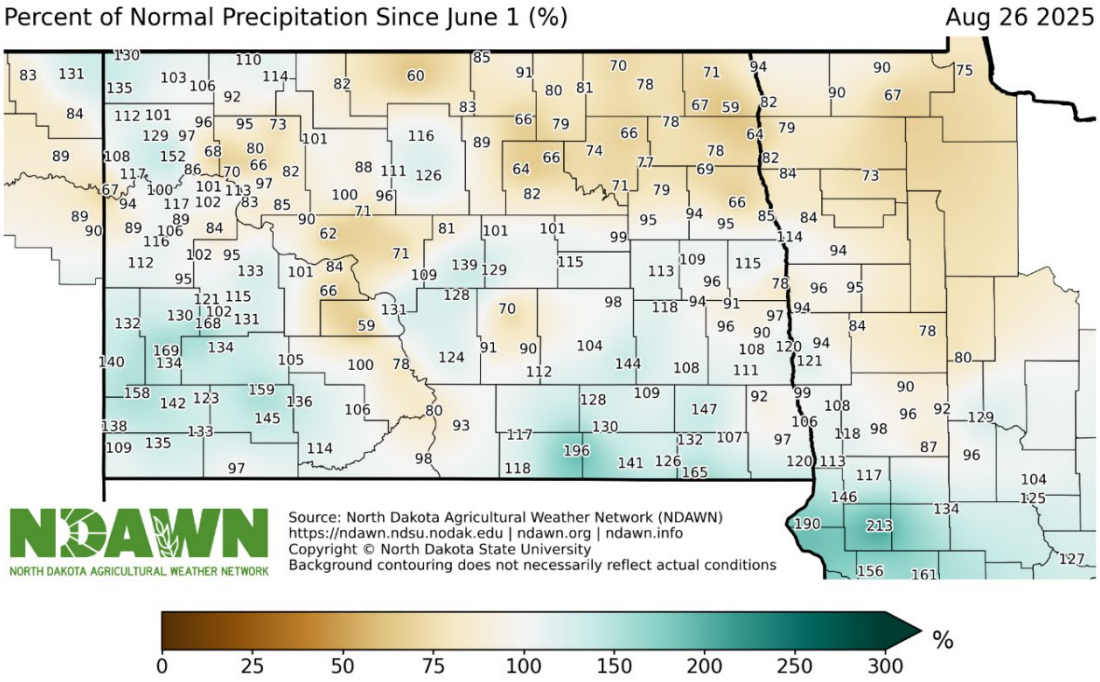

Figure 2. Percent of Normal Precipitation from June 1 through August 26, 2025

The past week was a mix of below and above average temperatures but the below average days tended to be well below average (Figure 3). The Tioga NDAWN station recorded the first freezing temperature of the season with a low of 30° on August 24, with many other stations recording a frost, which by definition is 36° or colder. Warmer air has moved back into the Northern Plains and should continue through Labor Day, but there are indications that some cooler air will back into the region by the middle of next week.

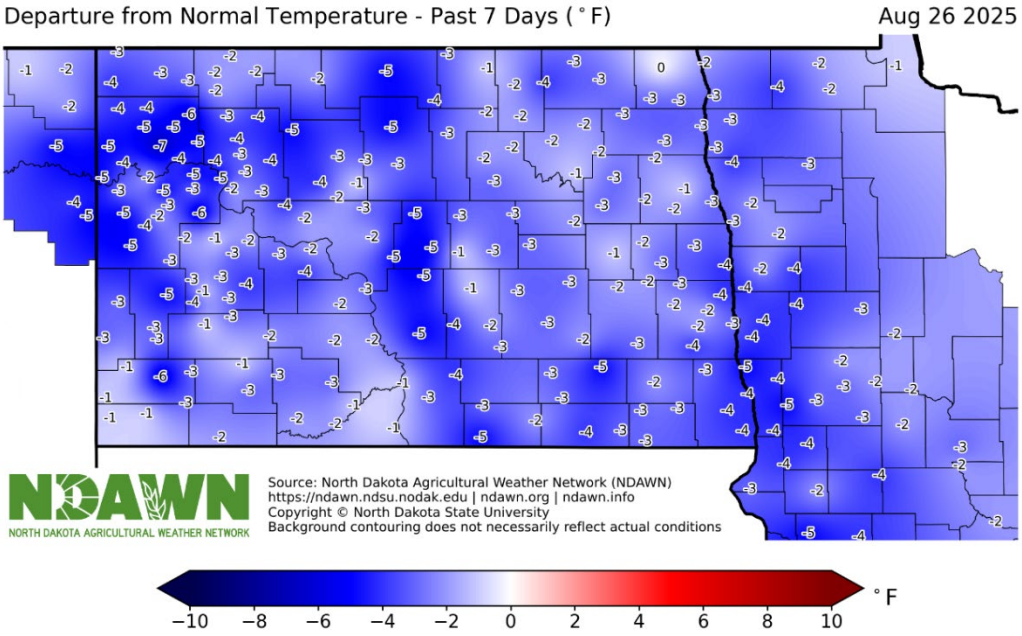

Figure 3. Departure from Average Air Temperature for Period of August 20 through August 26, 2025

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.

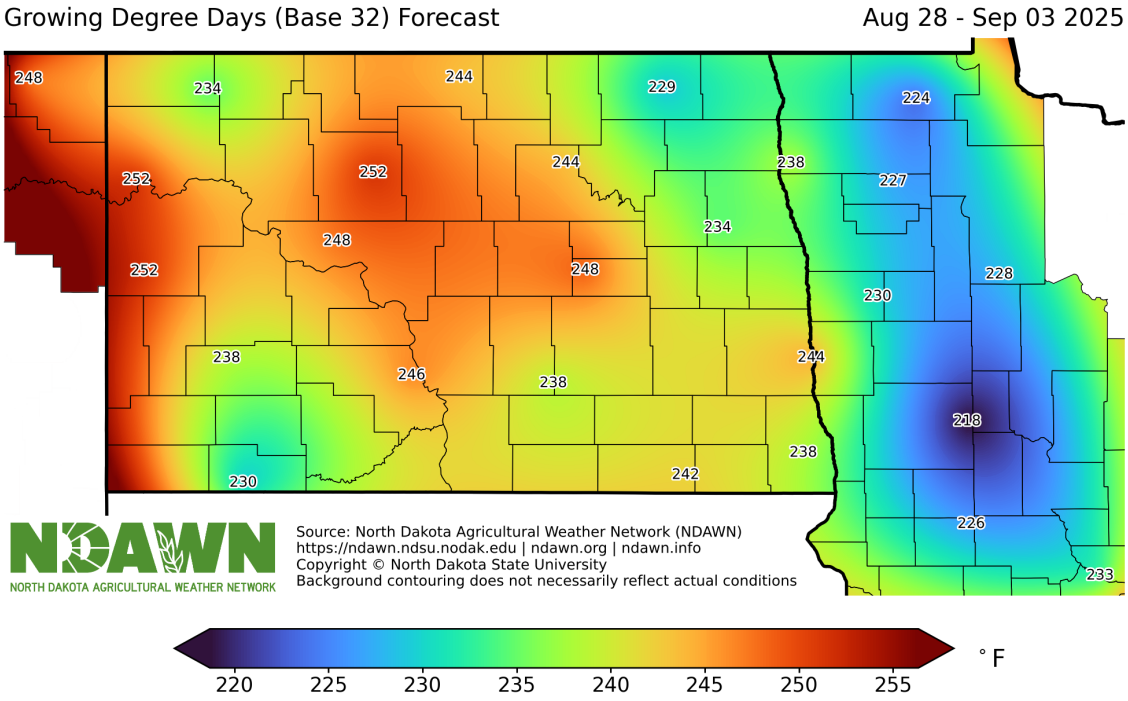

Figure 4. Estimated growing degree days base 32° for the Period of August 28 through September 3, 2025.

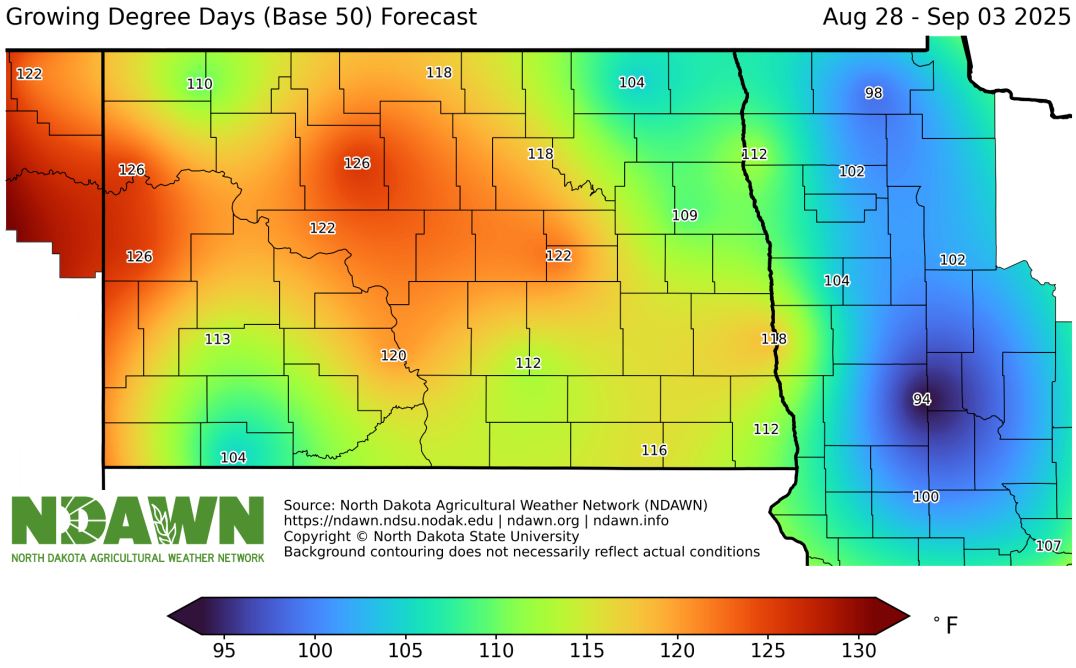

Figure 5. Estimated growing degree days base 50° for the Period of August 28 to September 3, 2025.

Using May 10 as a planting date, the accumulated growing degree days for corn (base temperature 50°) is 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.

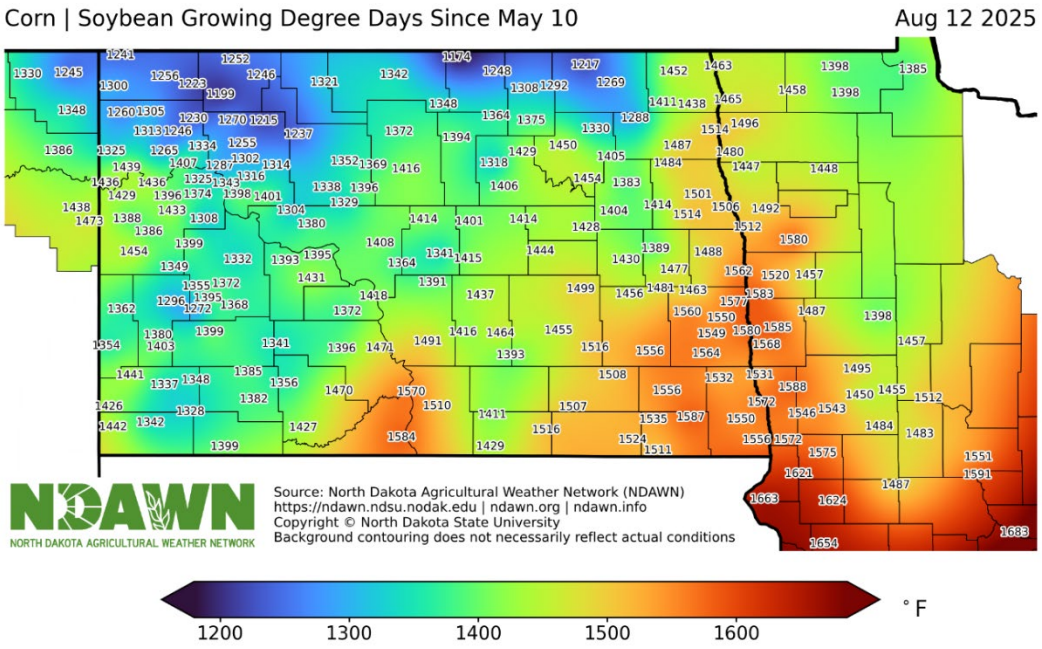

Figure 6. Corn Growing Degree Days (Base 50°) for the Period of May 10 through August 12, 2025

Soybeans also use base 50° like corn, but 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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