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PYRETHROID RESISTANCE SOYBEAN APHIDS COMMON

Soybean aphids have doubled their populations within 3-days this past week in Fargo and parts of southeastern North Dakota. That is only half of the story since pyrethroid resistant soybean aphids are being observed making insecticide selection decisions more difficult than just reaching for an inexpensive generic pyrethroid. Several grower calls from Cass and Richland Counties have come into the Extension Entomology office with complaints about pyrethroid insecticides NOT providing effective control (<50%) of soybean aphids.

In our 2024 Fargo insecticide trial for soybean aphid control, we evaluated five pyrethroids alone:

- ✓ Baythroid XL (beta-cyfluthrin) @ 2.8 fl oz/acre,
- ✓ Brigade (bifenthrin) @ 3.2 fl oz/acre,
- ✓ Warrior II (lambda-cyhalothrin) @ 1.6 fl oz/acre,
- ✓ Asana XL (esfenvalerate) @ 9.6 fl oz/acre,
- ✓ Hero (bifenthrin + zeta-cypermethrin) @ 10.3 fl oz/acre;

three aphid-specific insecticides:

- ✓ Transform WG (sulfoxamines) @ 1 fl oz/acre,
- ✓ Sivanto Prime (flupyradifurone) @ 5 fl oz/acre,
- ✓ Sefina (afidopyropen) @ 3 fl oz/acre;

and four pyrethroid + aphid-specific premixes:

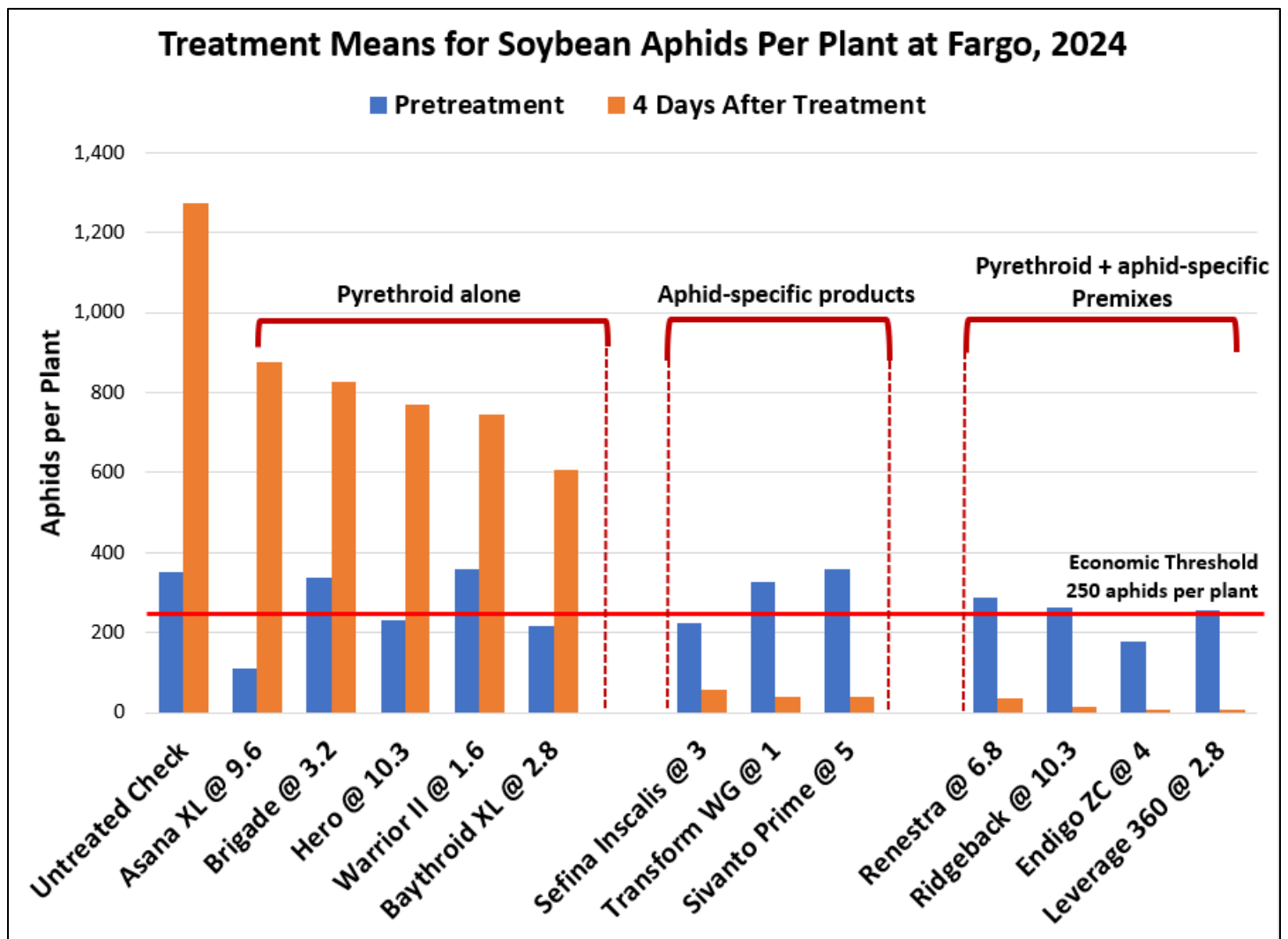
- ✓ Leverage 360 (beta-cyfluthrin + imidacloprid) @ 2.8 fl oz/acre,
- ✓ Endigo ZC (lambda-cyhalothrin + thiamethoxam) @ 4 fl oz/acre,
- ✓ Ridgeback (bifenthrin + sufoxaflor) @ 10.3 fl oz/acre,
- ✓ Renestra (alpha-cypermethrin + afidopyropen) @ 6.8 fl oz/acre.

Soybean aphid densities were above the economic threshold - an average of 250 aphids per plants, 80% of the plants infested and increasing populations. All tested products gave some control of soybean aphids (See figure on next page) except for all of the pyrethroids alone, which had significantly more aphids per plant compared to the aphid-specific insecticides and the pyrethroid + aphid-specific premixes. The pyrethroid alone treatments were comparable to the untreated check. These data indicate that the soybean aphid populations at Fargo had a high level of pyrethroid resistance, **and resistance was readily observed across all pyrethroids**. The best products for soybean aphid efficacy were any of the aphid-specific insecticides or the pyrethroid + aphid-specific premixes.

If you farm soybeans in the Red River Valley area of North Dakota, you can assume that you have pyrethroid resistant soybean aphids and should spray an aphid-specific product. Winged alate soybean aphids with pyrethroid resistance can also migrate into or out of any soybean field from North Dakota, Minnesota, Iowa or South Dakota. It's important to monitor fields treated with a pyrethroid 3-4 days after spraying to see if any resistance is present (>50% of the soybean aphids surviving).

Aphid-specific products are effective and are gentler on beneficial insects than broad spectrum pyrethroids or organophosphates (chlorpyrifos products labeled for use in 2024). See photo of lady beetle larva that was observed in the Sivanto Prime plots. Although the pyrethroid + aphid-specific premixes also provided good control of soybean aphids, optimal use includes when soybean aphids AND another pest such as grasshoppers, bean leaf beetle, or foliage feeding caterpillars are present at economic levels. This could help reduce the risk of insecticide resistant soybean aphids. See photos of treatments on the next page. Look closely at the pyrethroid treatment photos - you'll see high numbers of healthy, green aphids. In the premix and aphid-specific treatments, there are very few healthy aphids remaining, although you can see dead aphids (black) and molted skins (white).

Thanks for support from the North Dakota Soybean Council and chemical companies. Disclaimer: Mention of insecticides does not imply any discrimination against any product not tested by the authors or the university.





Untreated check



Warrior II @ 1.6 fl oz/acre



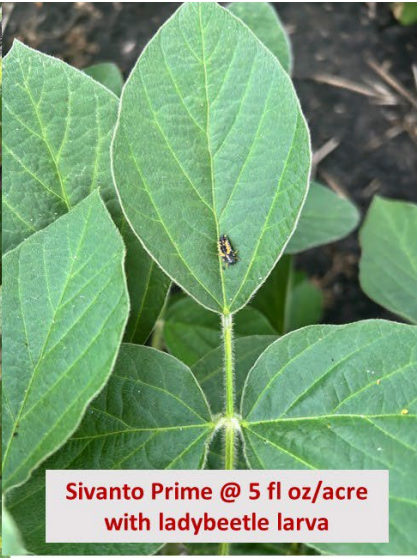
Brigade @ 3.2 fl oz/acre



Sefina Inscalis @ 3 fl oz/acre



Transform WG @ 1 fl oz/acre



Sivanto Prime @ 5 fl oz/acre
with ladybeetle larva



Renestra @ 6.5 fl oz/acre



Ridgeback @ 10.3 fl oz/acre



Endigo ZC @ 4 fl oz/acre

GRASSHOPPERS INCREASING IN FIELD

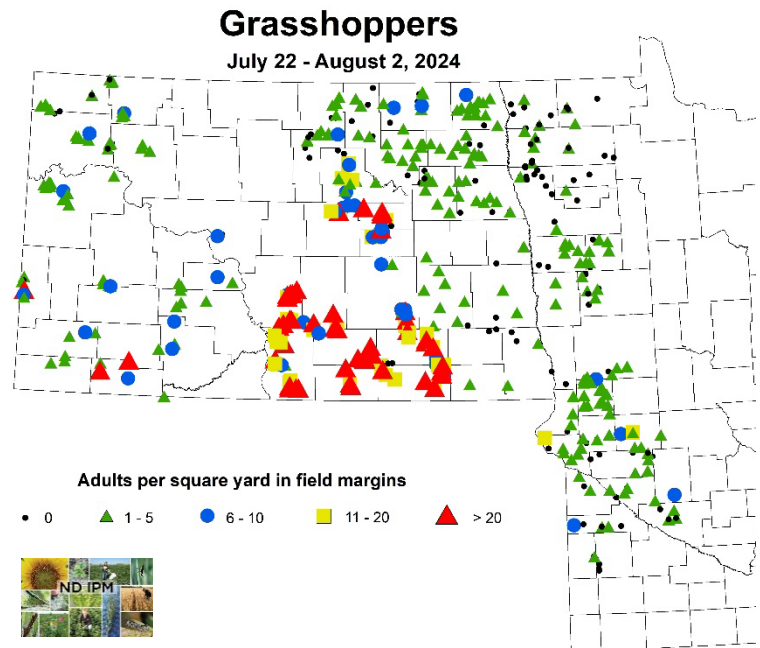
Mixed populations of adult and nymph grasshoppers were observed mostly in the field interiors now. Continue to scout fields for pod feeding or head clipping as crops mature. Later maturing row crops (corn, flax, soybeans, sunflowers) are especially susceptible to grasshopper feeding injury as cereal grains are harvested. Grasshopper thresholds are listed in Table 1 with “Threatening” used as the action threshold.

Table 1. Rating	Nymphs per square yard		Adults per square yard	
	Margin	Field	Margin	Field
Light	25-35	15-25	10-20	3-7
Threatening	50-75	30-45	21-40	8-14
Severe	100-150	60-90	41-80	15-28
Very Severe	200+	120+	80+	28+

ND and MN IPM scouts recorded grasshoppers in 84% of 247 fields scouted in wheat, barley, sunflower and soybean last week. About 16% of fields scouted had no grasshoppers present, 75% light grasshopper densities, 7% threatening and 2% severe. The central and south-central areas of North Dakota are the current hot spots.



Clipped wheat head from drought years due to grasshoppers. Photo courtesy of Tammy Duchsherer, Scheresky Ag Services.



BANDED SUNFLOWER MOTH SCOUTING

Banded sunflower moth trap captures increased to >100 moths per trap per week at all sites suggesting a peak flight period (see map next page). Pheromone traps indicate the presence or absence of moths, general population level and they help determine scouting windows. Within a week after emergence, the female moths begin to lay eggs on the outer whorl of bracts of mid-sized buds (R3) (preferred size). Very few eggs are laid on plants at pollen shed (R5.1) and later. Most eggs are laid singly or in small groups. Eggs are present through mid-August and hatch into larvae about five to eight days after being deposited.

Field scouting for adult moths should be conducted during the day (late morning or early afternoon) in the late bud stage (R3). Walk a W pattern into the field about 75 to 100 feet from the field edges and sample 5 sites within the field.

Count the number of moths on 20 plants per sampling site to obtain the total number of moths per 100 plants. Moths remain quiet, resting on upper or lower surfaces of the leaves of sunflower plants. The banded sunflower moth is easy to identify:

- ✓ small (¼ inch long)
- ✓ tan moth with a ½ inch wingspan
- ✓ forewings with a brown triangular band crossing through the middle of the wing

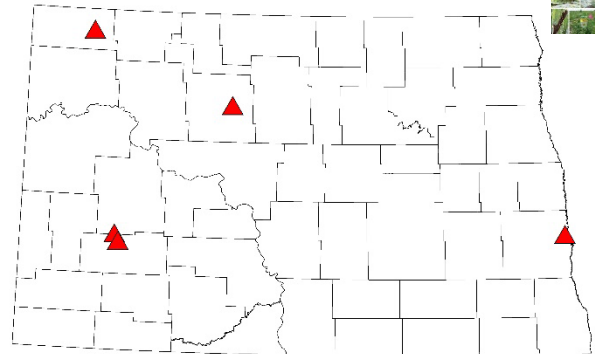


Banded sunflower moth and eggs on right. Photo courtesy of NDSU Extension Entomology.

Banded Sunflower Moth Trapping Network

Cochylis hospes

July 29 - August 2, 2024



Number of moths per trap per week

• 0 ▲ 1-25 ● 26-50 ■ 51-100 ▲ > 100

2024 Banded Sunflower Moth Economic Threshold (total # moths per 100 heads)

Oilseed sunflower at 18 cents per lb:
22,000 to 18,000 plants per acre

\$18 insecticide or \$20 insecticide cost per acre
2-3 moths per 100 heads

Table 1. Economic Threshold for Oilseed Sunflowers - Number of adult banded sunflower moth per 100 plants when the cost of control equals \$18.00 per acre.


Market Price \$ per lb	Sunflower Plants per Acre (x 1,000)											
	14	15	16	17	18	19	20	21	22	23	24	25
0.15	4.3	4.0	3.7	3.4	3.2	3.0	2.8	2.6	2.5	2.3	2.2	2.1
0.16	4.0	3.7	3.4	3.2	2.9	2.8	2.6	2.4	2.3	2.2	2.0	1.9
0.17	3.7	3.4	3.2	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.9	1.8
0.18	3.5	3.2	2.9	2.7	2.5	2.4	2.2	2.1	1.9	1.8	1.7	1.6
0.19	3.2	3.0	2.8	2.5	2.4	2.2	2.1	1.9	1.8	1.7	1.6	1.5
0.20	3.0	2.8	2.6	2.4	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4

Table 2. Economic Threshold for Oilseed Sunflowers - Number of adult banded sunflower moth per 100 plants when the cost of control equals \$20 per acre.

Market Price \$ per lb	Sunflower Plants per Acre (x 1,000)											
	14	15	16	17	18	19	20	21	22	23	24	25
0.15	4.9	4.5	4.2	3.9	3.6	3.4	3.2	3.0	2.8	2.7	2.5	2.4
0.16	4.5	4.2	3.9	3.6	3.3	3.1	2.9	2.8	2.6	2.5	2.3	2.2
0.17	4.2	3.9	3.6	3.3	3.1	2.9	2.7	2.6	2.4	2.3	2.2	2.0
0.18	3.9	3.6	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.9
0.19	3.7	3.4	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.9	1.8
0.20	3.5	3.2	2.9	2.7	2.5	2.4	2.2	2.1	1.9	1.8	1.7	1.6

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plant pathology

SPOTTING FROGEYE: UNMASKING A NEW THREAT TO NORTH DAKOTA SOYBEAN PRODUCTION

Frogeye leaf spot (FLS) is a relatively new disease of soybeans in North Dakota caused by the fungus *Cercospora sojina*. This pathogen was first reported in North Dakota in 2020 and has been found in the Eastern side of the state in most years since then. This year, FLS was just reported on August 1st near Oakes, ND, which is abnormally early. This was most likely driven by the mild winter we had allowing for inoculum survival and a very wet spring and past few weeks. The fungus thrives in warm, humid environments and can spread rapidly under favorable conditions. The disease cycle begins with the production of spores that are spread by wind and rain, and infection typically starts on the upper canopy, where conditions are more conducive to fungal growth.

Environmental Conditions

Frogeye leaf spot develops under specific environmental conditions:

- *Temperature*: Optimal temperatures for disease development are between 77°F and 86°F.
- *Humidity*: High humidity and frequent rainfall or dew are necessary for spore germination and infection.
- *Leaf Wetness*: Extended periods of leaf wetness promote the spread and severity of the disease.

Disease Identification

Frogeye leaf spot lesions are distinctive and can be identified by their unique appearance:

- *Foliar Lesion*: Lesions are usually circular to angular, with a tan center surrounded by a dark, reddish-brown ring (Figure 1).
- *Location*: Lesions are most commonly found on the upper canopy leaves.
- *Fungal Growth*: On the underside of the leaf, grayish fungal growth may be observed emerging from the center of the lesions (Figure 2).

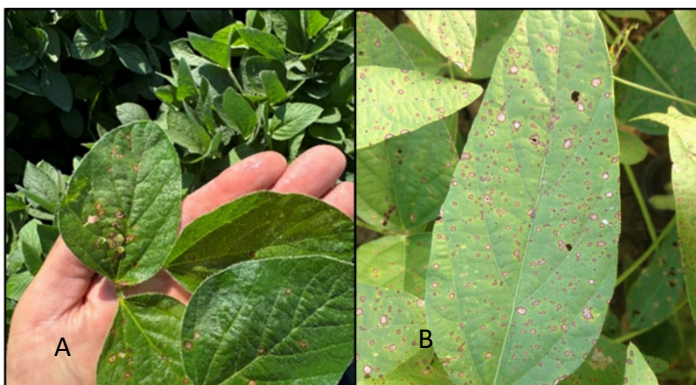


Figure 1. A) Soybean leaves with active frogeye leaf spot lesions that were identified in Oakes, ND area on August 1st, 2024. B) More advanced instance of frogeye leaf spots with many small dark lesions present. (Credit: Tom Allen, Mississippi State)



Figure 2. Underside of soybean leaf with a frogeye leaf spot lesion. Note the grayish fungal growth growing from the center of the lesion. This fungal growth will only be found on the bottom of leaves. (Credit: Sam Markell, NDSU)

Common Misidentifications

Frogeye leaf spot can be frequently misidentified as herbicide damage. Some of the common cases include paraquat and diquat which can cause similar symptoms (Figure 3). These herbicides are often used in prevent plant scenarios and can be used to desiccate pulse crops. Symptoms will often be present in a gradient across the field in case of drift. Lesions from these products can be circular and discrete but can be larger with no specific shape when many droplets deposit onto a soybean leaf.

Frogeye leaf spot (FLS) continues to develop across North Dakota soybean fields. However, it is currently not a disease with an immediate need to start managing for it. We have yet to see situations with economically important levels of disease in this region, but that may change in the coming years as the pathogen begins to establish itself. Currently, the best tactics we can take are regular field scouting for this disease and identification of the FLS when and where it appears. If FLS does appear, either report these cases with your local extension offices or to NDSU Plant Pathology to help track the spread and impact of the disease.



Figure 3. Soybean leaf with damage from paraquat. (Credit: Joe Ikley)

For more detailed guidance on this new North Dakota soybean diseases, information can be found [here](#).

[Wade Webster](#)

Extension Plant Pathology, Soybeans

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Extension Weed Specialist



UPDATE ON WHEAT HARVEST PROGRESS AND CORN DEVELOPMENT

I've had reports of winter wheat being harvested across the state from the southwest to the northeast. Hard red winter wheat yields sound generally good and benefitted from the cool, wet spring. It will be interesting to hear what the quality of the crop looks like once more of it has been sold to the elevators. If winter wheat has not yet been harvested, the rain that fell over the weekend in many areas with more rain in the forecast for mid-week, may cause some bleaching issues. Black point may also be an issue in wheat that gets wet after it has reached harvest moisture. On the spring wheat front, I've heard sporadic harvesting of early-planted spring wheat, but I anticipate that this week's rain and cooler temperatures will push the start of harvest out to mid-next week (week of August 12th) and beyond. Later planted and/ or later maturity varieties likely won't be ready for harvest until late August.

Below is a photo of head scab (Fusarium Head Blight) on spring wheat in an unsprayed check plot near Thompson in Grand Forks County (photo credit C. Deplazes, NDSU). It may be the case that the salmon-pink heads were weakened by root rot and the opportunistic FHB pathogen and/or saprophytes organisms came in and were able to grow abundantly



over the head. I encourage wheat growers to scout their fields and if they see obvious signs of head scab to keep more problematic fields and/or varieties segregated from cleaner grain, if possible, to facilitate marketing. Due to the weather favoring scab this summer, 2024 could be a year that buyers may be hesitant to purchase grain with DON levels exceeding their usual thresholds. I advise those selling wheat to check multiple elevators to compare discount schedules for loads with detectable levels of DON.

Moving on to corn, I received the question, “what is going to happen to corn growth with these cooler temperatures?” The short answer is, the corn will grow more slowly. Corn is capable of growing from about 41°F-95°F, but its optimal temperature range for growth is about 50°F-86°F (the standard min and max cut-offs used in corn Growing Degree Day calculations). Corn will grow at a faster rate when the average daytime temperature is 80°F compared to 60°F and temperatures over 96°F tend to stress corn, when moisture is inadequate. My greatest concern for corn in the state right now is in the western and central parts of the state that saw temperatures in the high 90’s and low 100’s while corn was tasseling (VT), silking (R1), or starting to fill grain (R2). Corn is most susceptible to temperature and moisture stress during this window and fields that experienced extremely high temperatures during these early reproductive stages

with limited soil moisture likely have already lost some yield potential.

[Clair Keene](#)

Extension Agronomist Small Grains and Corn

SOYBEANS ARE STILL FLOWERING

Across the state, soybeans are flowering to early grain filling stages. According to historical trends, by this date, more than 50% of the soybean fields in North Dakota should be setting pods (based on USDA crop progress report). However, this year, we are only at 35% so far. This delay has raised concerns about whether the soybeans will reach maturity by the end of the season.

If the soybeans are currently flowering, they still need to accumulate at least 900 heat units to reach maturity (this varies according to the variety). If we have days with a mean temperature of 80°F, it would take around 30 days to reach maturity, but with days at 70°F, it might take closer to 45 days. The first freeze typically occurs between September 20 and October 10 (Figure 1), so we still have a good chance to reach maturity on time, but we will need warmer days to help the soybeans along.

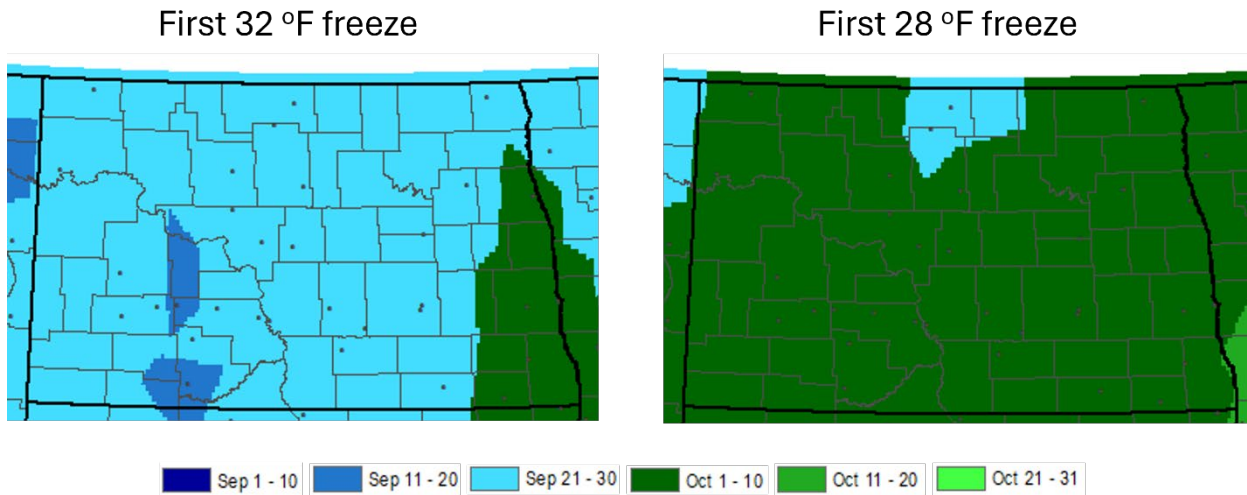


Figure 1. Date of median first 32° freeze and first 28° freeze, based on 1991-2020 average The maps are courtesy of The Midwestern Regional Climate Center.

But... What should we expect in the event of an early frost?

Estimate percentage of the total yield lost

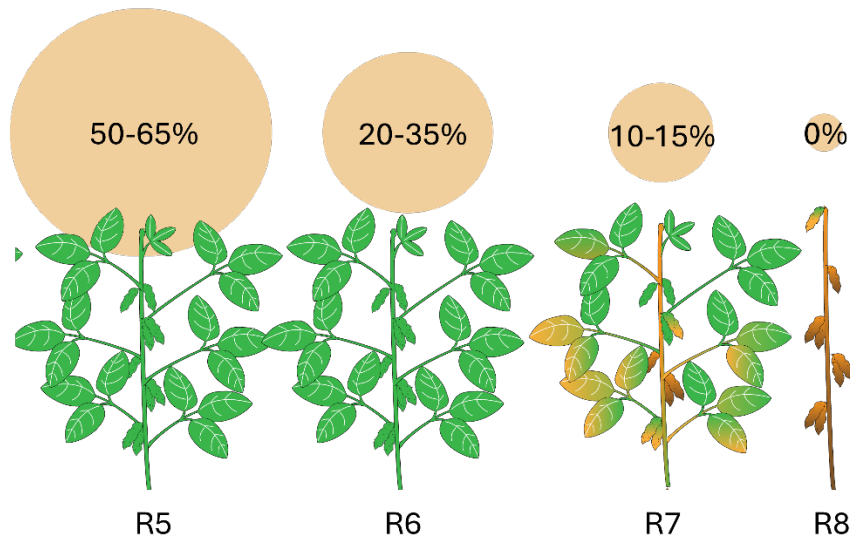


Figure 2. Estimate percentage of yield lost in different soybean stages. Stage R5 (beginning seed), Stage R6 (bean fills pod cavity), Stage R7 (green color lost from seeds and pods), Stage R8 (Full Maturity Stage). Soybean drawings are from Kansas State University.

The level of damage depends on the growth stage of the soybeans (Figure 2), the lowest temperature reached, and the duration of the freezing temperatures. A light frost (temperatures below 32°F) that lasts for a short period of time is likely to only damage the leaves in the upper part of the plant. In such cases, soybean pods and seeds can continue to grow, and the yield may be minimally affected. However, a more severe freeze (temperatures below 30°F) that damages stems, pods, and seeds, has the potential to reduce both the yield and quality of the crop.

The impact of frost damage within a soybean field can vary significantly, depending on microclimate effects, the position of the field in the landscape, soil moisture (which retains heat), and nighttime cloud cover (which can reduce damage to the plants). In general, dense plant canopies created by narrow rows (15 inches or less) and/or high plant populations tend to retain soil heat better and protect the lower part of the plants and pods to some extent, allowing soybeans to continue to fill and develop normally after a frost. Other factors that can contribute to open canopies, such as soybean cyst nematode (SCN) or iron deficiency chlorosis (IDC), are likely to be more damaged in the event of a frost, than less stressed fields.

If you are interested in estimating the heat units until the maturity, check this link [Growing Degree Day Model for North Dakota Soybean](#)

[Ana Carcedo](#)

Extension Broadleaf Agronomist



COVER CROP CONSIDERATIONS

When selecting a cover crop for a winter ground cover between cash cropping seasons, a few considerations must be made. The first thing to know is your goal for this cover crop. Are you looking to cover the ground in the fall, for growth in the spring, or looking for specific rooting structures to work towards other goals? Once you determine your goal, the next step is to look at the previous crop and determine what the next crop will be. This helps select crops that will not provide a bridge for insects or diseases. Next, how and when will you seed the cover crop? This will affect establishment and seeding rates along with the outcome of biomass. Soil texture and soil moisture can affect establishment and growth, so predictions and current weather conditions combined will help determine the feasibility of getting a good stand of cover crops and survival (different species have different ideal conditions). Also, herbicide carryover can cause issues. Once these questions have been addressed, cover crop selection is next.

Variety selection for the cover crop is key, as they have different characteristics affecting success. Some overwinter well, and others will winter kill if not a cold-tolerant variety. Cover crop mixes are available on the market, but if you are getting a custom blend, know what percent of each plant type there is and if it is by seed count or seed weight for the percentages. As cover crops vary greatly in seed size, going by seed weight to create your cover crop mixture can lead to unbalanced coverage. An example is comparing 50% by weight of a larger seed like Austrian winter pea or Sunn hemp to the other half by weight in the mix being turnips. The large seed will have much lower total seed in the mix. This potentially leads to not having the desired seeding rate and coverage of the area. Know what you want for each for coverage using seed count per foot (or acre). That way you achieve your ideal coverage of each species you want in your 3, 4, or more way mixture. In cover crop seed selection, the cost of seed is often considered when looking at a sustainable practice. Knowing the cover crop species planted in the mix also achieves program needs if working with cost-sharing programs. Working through this list of items to consider may seem like a lot upfront, but it will pay in the long run for success. Reach out with questions and assistance with working through the cover crop selection.

[Chandler Gruener](#)

Extension Soil Health Specialist



around the state

AROUND THE STATE**NORTHEAST ND**

Majority of the small grains are ripe and days away from harvest. With high temperatures and rain free days, harvest will commence soon. Scab in wheat is going to be a concern this year despite spraying for this disease. Field peas are also reaching the stage close to harvest.

Soybeans and dry beans caught up in the past week and are looking very good with a lot of canopy rows closed and with several pods. Soybean aphid numbers are rising in the region. With favorable temperatures, populations can quickly grow, reaching threshold in days and putting a lot of stress on soybeans at the pod development stage. While scouting for aphids, it is very important to check for the natural enemy (predator and parasitoid) populations as they play a crucial role in managing aphid numbers.

Most of the canola is at advanced pod and seed development stages. Diamond back moth populations are low. Corn is growing fast with most of them at silking stage. Aphids are showing up in corn. Sunflowers are at R2-R5 stage.



Aphids on corn. Photo: Anitha Chirumamilla, LREC.



Scab in Wheat. Photo: Anitha Chirumamilla, LREC

[Anitha Chirumamilla](#)

[Extension Cropping Systems Specialist](#)
[Langdon Research Extension Center](#)

NORTHWEST ND

Weather in the northwest in the past 2 weeks has been hot until last weekend. In Williston, daytime temperatures were in the upper 80s to low 100s (109°F on July 25), and night time temperatures were in the upper 50s to mid-60s. Daytime temperatures didn't get lower than 88 °F until last weekend when the northwest counties received rain anywhere from 0.05" in Fortuna in the north to 0.33" in Grassy Butte in the south (per NDAWN records).

Harvesting operations began the last week of July. Many are expecting at least decent crop size this year. At the REC, cut crops yielded 80 to 100-bushel barley, 69-bushel winter wheat and 50-bushel pea. Many in the region are expecting 40 to 60-bushel pea crops. Although field operations have slowed down due to the rain last weekend, harvesting of spring-planted grains and pulses are expected to increase in the coming weeks when crops dry up. Recent rains gave late planted crops like corn, soybean, and sunflower a break from heat and drought stress. Canola is turning color, and some fields are already showing a dark brown hue. Flax, lentils, and chickpea are turning color, as well. Some of the lentil fields

have already been desiccated. Corn ears are advancing fast, especially in irrigated areas where corn is more than 7-ft tall. Soybeans are at late flowering to pods starting to grow. Sunflowers are at R2 to the beginning of R5 stages.

Some of the disease observed but were at low levels. Ergot in Durum and Phytophthora stem rot in soybean were observed in Mountrail County (see pictures below). Fusarium head blight (FHB) or wheat scab was reported low in the region this year. Deoxynivalenol (DON) is a mycotoxin produced more likely in scabby wheat kernels. Wheat grains with DON levels at 2ppm or less usually will not have discounts. A DON of 1 ppm from sampled grains translates into 1 infected kernel per 80 pounds of wheat grain, to put into perspective.

This year we've seen aphids infest garden vegetable plants, wheat and soybean. We've also seen a great number of lady bugs that prey on them. Grasshoppers increased after the hot and dry days. Banded-sunflower moth seems to be on the rise in a sunflower field in Divide County. Insect trapping efforts still showed True army worm moths in Divide and McKenzie County and Hessian flies in Burke and Williams County and both insect species in Mountrail County.



Ergot found in durum in Mountrail County. Picture taken 08/02. Ergot occurs following cool and wet conditions at wheat flowering. Alkaloids contained in Ergot fungal bodies shown above are highly toxic to livestock and humans when ingested in enough concentrations. Thresholds for Ergot bodies per weight of wheat seeds are set low and strictly imposed. NDSU publication [PP109](#) provides information one might need to know about Ergot.



Brown to dark brown lesion on the lower stem extending from the ground upwards and wilting are diagnostic symptoms from Phytophthora stem rot. Picture taken 08/02 from a soybean field in Mountrail County. The disease is not caused by fungi but by an oomycete (*Phytophthora sojae*), which is the same organism that causes root rot in soybean. Unlike fungi which are more related to animals, an oomycete is more related to algae. So, strategies to control and manage stem and root rot in soybean would differ than those soybean diseases caused by fungi, so diagnosis is key (please see publication [PP1867](#)). If you have problems with Phytophthora in your soybean, send samples to Dr. Webster of the Soybean Pathology Lab in Fargo to participate in [Phytophthora disease survey in ND](#). Sending samples would help efforts leading to a better understanding and the management of this disease in ND.

[Charlemagne "Charlie" Lim](#)

Extension Cropping Systems Specialist
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SOUTH-CENTRAL/SOUTHEAST ND

The region, as a whole received more rainfall than the week before with the greatest amounts in the southern two tiers of counties from an area south of Bismarck through Richland County. There are scattered areas of the region, such as Griggs County suffering from too little rain and having substantial reduction in crop growth. Rainfall in the region this past week ranged from 0.15 inches near Hope in Steele County to 2.00 inches near Sonora in Richland County with an approximate average for the region of 0.67 inch. Locations in Barnes, Emmons, LaMoure, Richland, and Sargent Counties received greater than 1.0 inch of rainfall over the past week. Average high temperatures for the region last week were slightly above to slightly below normal. Some parts of the region experienced hail again this past week with an area south of Bismarck receiving 4-inch diameter hail.

Hard red spring wheat harvest has begun in the southern parts of the region with barley harvest nearly complete in the southern part and getting a good start in the northern part. All wheat is at or beyond the watery-ripe stage now. Hard red spring wheat yields will be highly variable in the region with quality in some areas being very low. Weed control in hard red spring wheat has improved from last year for the most part in the region, however in some areas more grass species are present than in previous years, however the presence of kochia and waterhemp appear to be lower this year.

Corn is highly variable in the region and within a field. Within a field, corn yields will range from zero to over 200 bushels per acre, most likely. As of August 6th, corn growing degree days are ranging from 1340 at Harvey in Wells County which is 20, 119, and 244 GDD's below the normal, the 5-year average, and 2023, respectively to 1578 GDD's at Mooreton in Richland County which is 146 GDD's greater than last week and 8 GDD's greater than the normal, but 77 and 194 GDD's below the 5-year average and 2023, respectively! Corn in some fields in the region likely will not reach maturity before a freeze, however, most should reach maturity. Corn will certainly be wetter than normal at harvest. No insects or diseases are being reported in corn in the region.

Soybean condition is highly variable as well in the region and within a field. Soybeans in the region Range from R1 (Beginning flowering) stage to R4 (3/4-inch pods in one of the upper four nodes) stage with most soybeans at the R3 (beginning podding) stage. Phytophthora root rot is present in some fields across the region with concern for white mold appearing in some areas of the region. Soybean aphids are more present in the eastern part of the region from at least Griggs County to the far eastern part of the state. There are no soybean aphids being reported in the western part of the region, with slight and building populations in Griggs County to beyond threshold with insecticides being sprayed in Richland County. Grasshoppers and the red-headed flea beetles are also present, at least in Griggs County, but they are causing minor defoliation now. Weed control in soybeans is variable across the region, but at the moment appears better than previous years.

Dry bean condition is highly variable across the region and within fields. Dry bean plants not harmed by too much water are looking amazing. Dry beans in most fields have started flowering with some fields having pods over 4 inches in length. There are few if any diseases and insects in dry beans at the moment. Weed control appears to be worse this year in many fields due to lack of timely postemergence herbicide applications from the wet weather. Kochia, waterhemp, and other pigweed species seem to be the most prevalent weed species in dry bean fields so far.

Sunflower condition is somewhat variable in the region, as well. Sunflower stage ranges from R2 to R5 in the region. The banded sunflower moth has reached threshold levels out west with insecticide applications being made. Few diseases have been reported so far, but rust is certainly present in the region because the ornamental sunflowers in my garden have lots of rust.



Fusarium head blight, Root rots, and ergot present in hard red spring wheat.



Corn looking great and having two ears per stalk.



Soybean at the R4 stage.



Late-season Phytophthora root rot present in fields.



Soybean aphid populations in Griggs County.



Water-stressed soybeans in Griggs County.

[Jeff Stachler](#)
Griggs County Extension Agent

SOUTHWEST ND

Dry and hot conditions in Southwest North Dakota have helped accelerate crop development, with most spring wheat changing color and nearing harvest. These conditions have also slowed disease progress in small grains, resulting in lower incidence and severity of scab and other head diseases across the region. Insect pest activity has decreased considerably for most species, except for grasshoppers, which had been steadily increasing their activity, extending beyond field edges and into the fields. However, with the anticipated drop in temperatures and increase in rainfall this week, grasshopper activity is expected to decrease going forward.

Preliminary results from our winter wheat variety trials show an average yield of 75 bushels per acre. More information will follow soon.

This week's rains will aid struggling corn fields, especially the earlier planted ones currently undergoing seed fill. However, most fields experienced water stress during critical stages for pollination, ear size, and seed number set, likely leading to reduced yields and abnormal ear formation.

Soybeans in the area are in various stages, from early flowering to the beginning of seed fill. Canola continues to ripen, with seeds starting to change color in the lower pods. Sunflowers are in different stages, with some fields almost at inflorescence opening and others well into flowering.

[Victor Gomes](#)

Extension Cropping Systems Specialist
Dickinson Research and Extension Center



WEATHER FORECAST

The August 8 to August 14, 2024 Weather Summary and Outlook

After a warm second half of July, August has been mostly cooler than average. The summer of 2024 to this point has been running near average for temperatures for most of North Dakota and northwestern Minnesota (Figure 1). It may have felt cooler, but that perception is likely associated with the fact that the past several summers have been warmer than average. Our current cooler than average temperatures should last through the weekend and even into early next week, especially in eastern North Dakota. Warmer temperatures are expected to return to the region toward the end of next week.

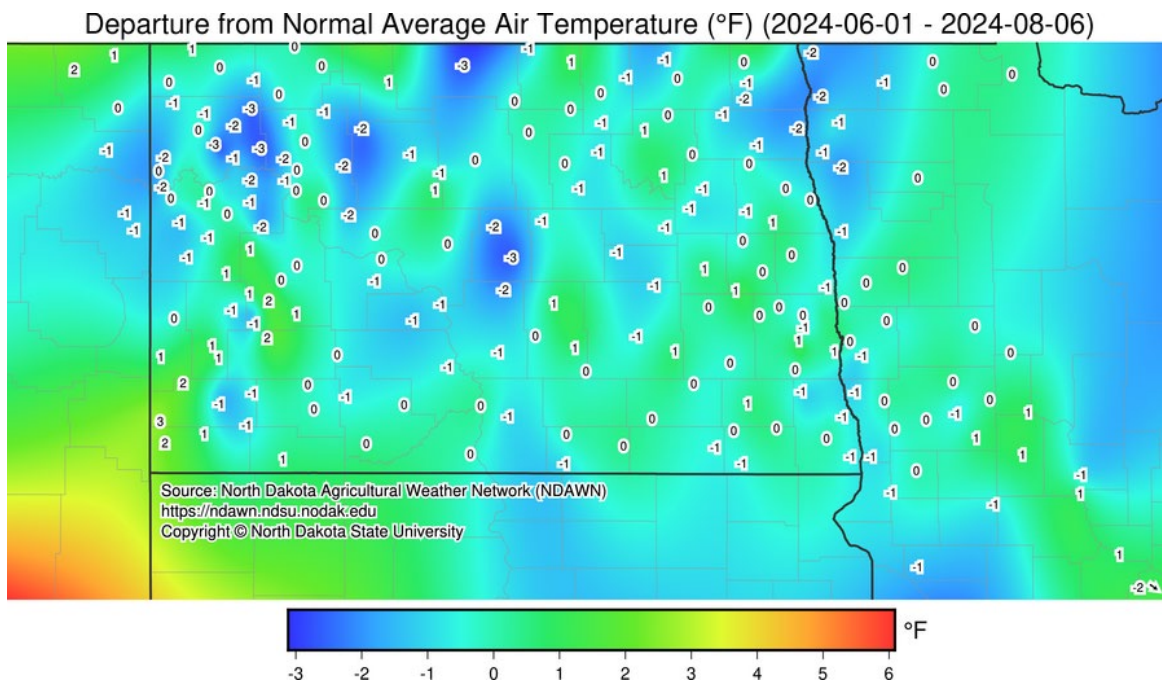


Figure 1. Departure from Average Temperature for the Period of June 1 through August 6, 2024.

Rainfall in the past 7 days varied from very little to over 2 inches (Figure 2). Some severe weather was also noted during this time period. There will be some scattered thunderstorms in the next week, but overall, widespread heavy rain is not anticipated.

Total Rainfall Past 7 Days (in)

Aug 07 2024 01:21 PM

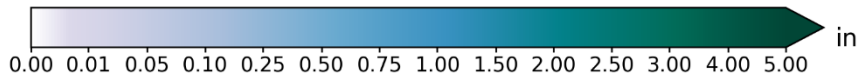
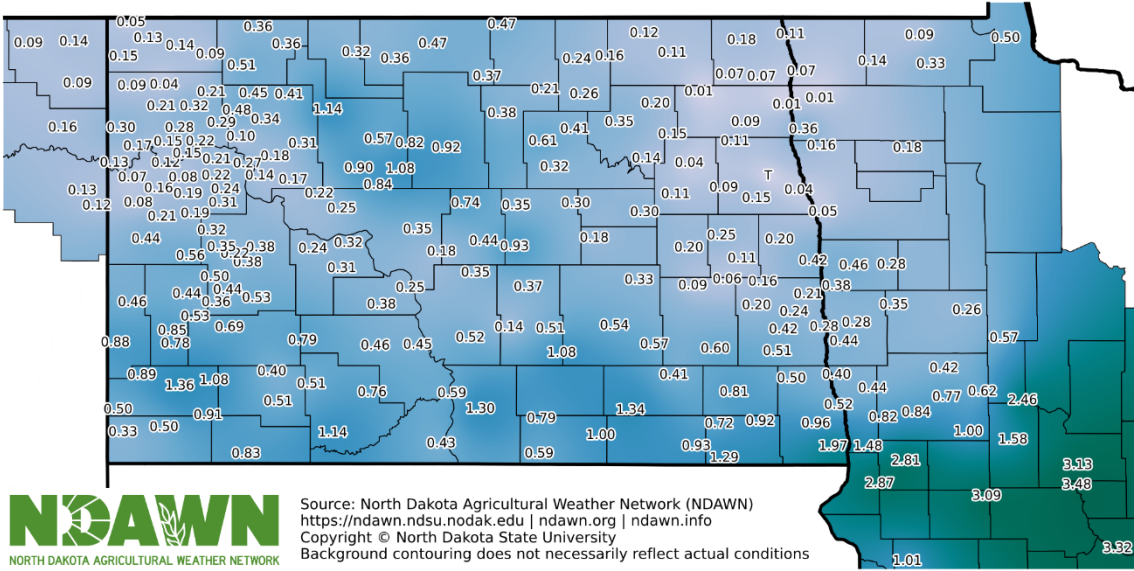


Figure 2. Rain amounts at NDAWN Weather Stations for the past 7 days Ending at 1:21 PM August 7, 2024.

Figures 3 and 4 below are forecasted growing degree Days (GDDs) base 32° (wheat and small grains) and base 50° (corn and soybeans) for this forecast period. Temperatures are expected to be mostly below average for the next several days.

Growing Degree Days (Base 32) Forecast

Aug 08 - Aug 14 2024

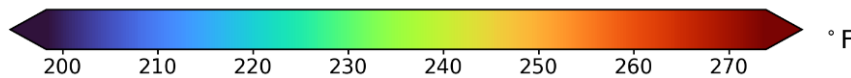
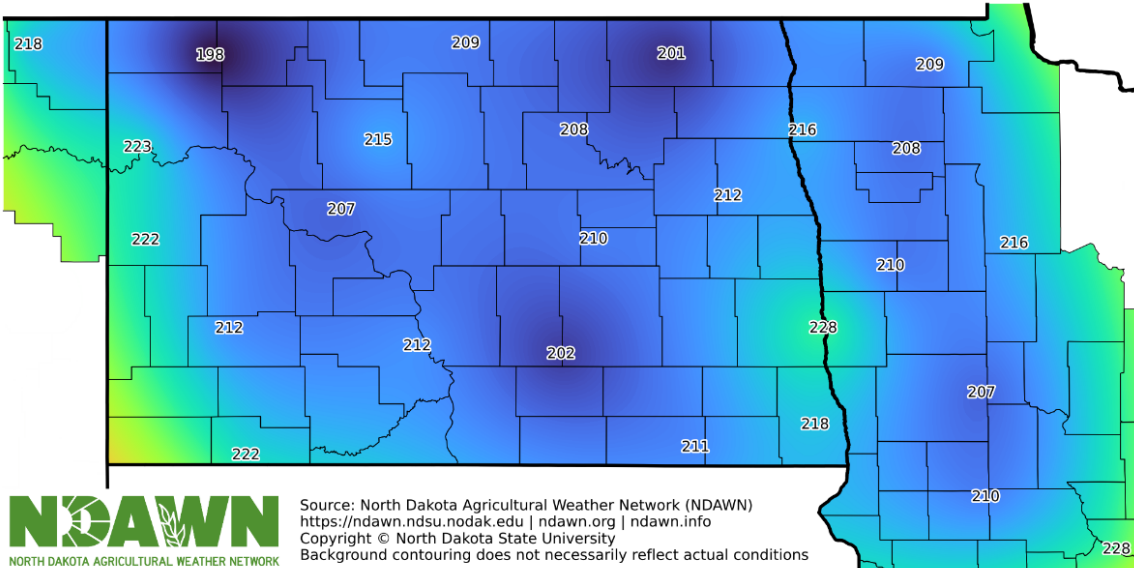
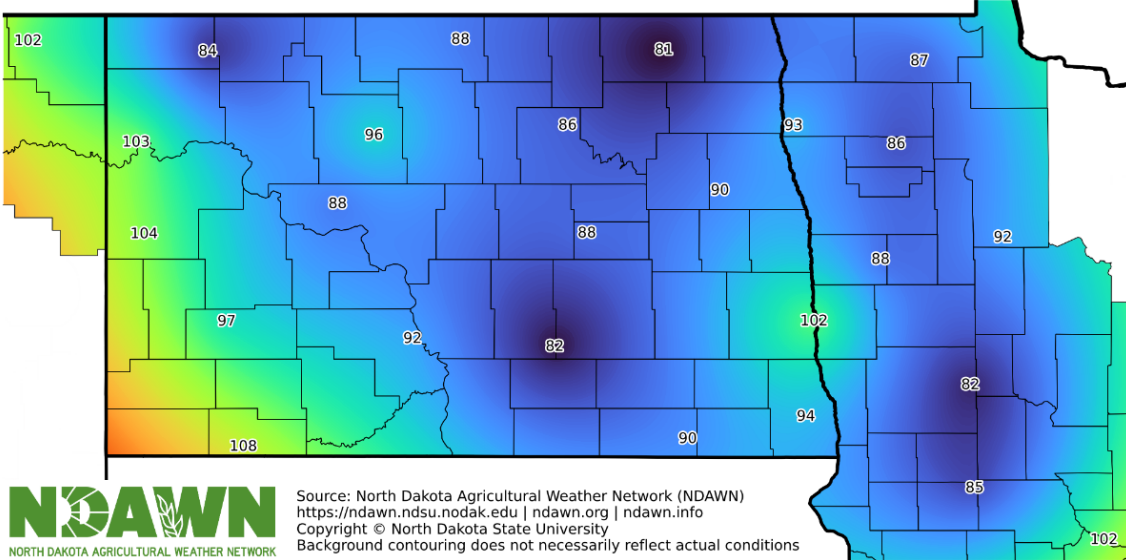


Figure 3. Estimated Growing Degree Days Base 32° for the Period of August 8 to August 14, 2024.

Growing Degree Days (Base 50) Forecast

Aug 08 - Aug 14 2024



Source: North Dakota Agricultural Weather Network (NDAWN)
<https://ndawn.ndsu.nodak.edu> | ndawn.org | ndawn.info
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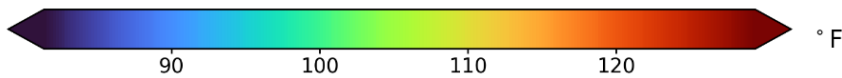
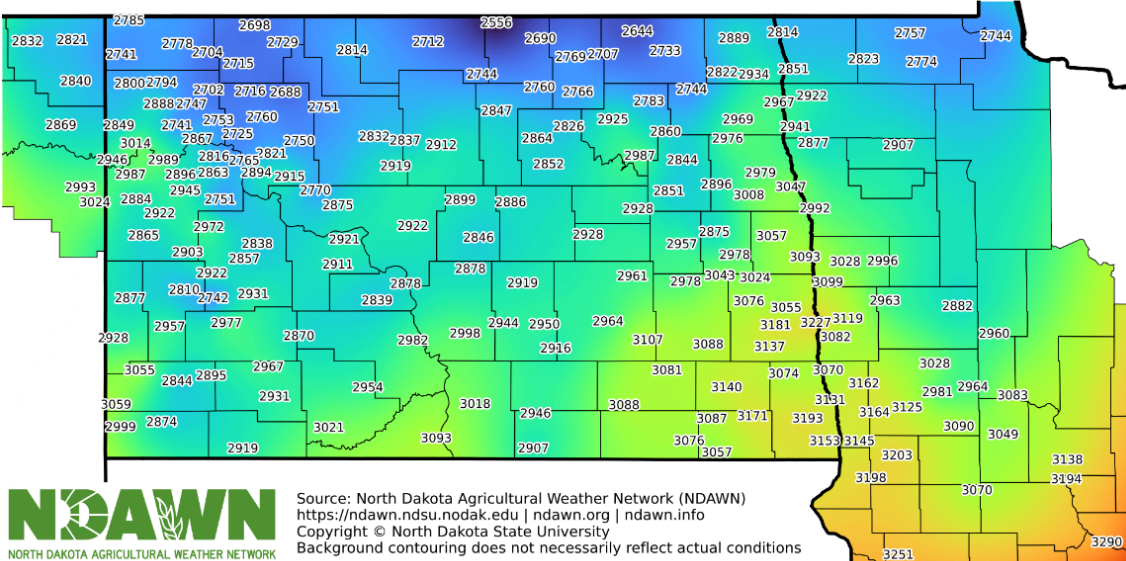


Figure 4. Estimated Growing Degree Days Base 50° for the Period of August 8 to August 14, 2024.

Using May 1 as a planting date, the accumulated growing degree days for wheat (base temperature 32°) is given in Figure 5. You can calculate wheat growing degree days based on your exact planting date(s) here: <https://ndawn.ndsu.nodak.edu/wheat-growing-degree-days.html>

Wheat Growing Degree Days Since May 1

Aug 04 2024



Source: North Dakota Agricultural Weather Network (NDAWN)
<https://ndawn.ndsu.nodak.edu> | ndawn.org | ndawn.info
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Figure 5. Wheat Growing Degree Days (Base 32°) for the period of May 1 through August 4, 2024

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>.

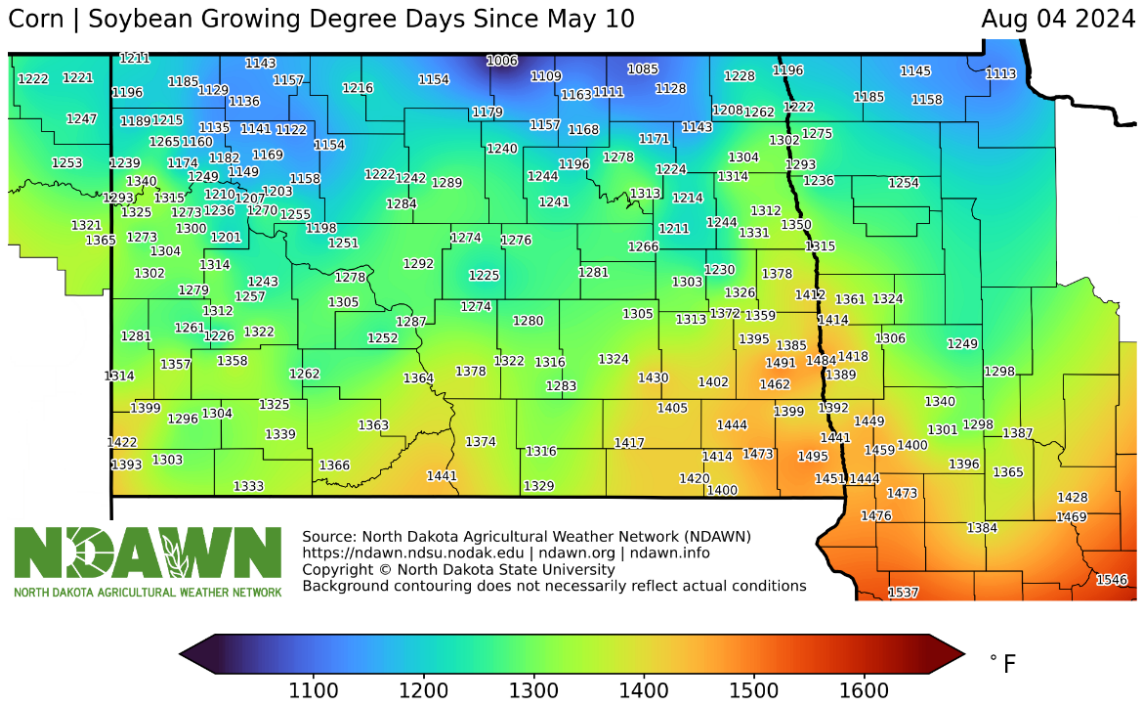


Figure 6. Corn Growing Degree Days (Base 50°) for the period of May 10 through August 4, 2024

Growing Degree Days for other crops can be found on the main website, <https://ndawn.ndsu.nodak.edu/> under the “applications” menu, or on our mobile compliant website, https://ndawn.info/agriculture_gdd.html.

Daryl Ritchison
Meteorologist

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This publication is supported in part by the National Institute of Food and Agriculture, Crop Protection and Pest Management - Extension Implementation Program, award number 2021-70006-35330.