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CORN INSECT TRAPPING UPDATE

Weekly trapping results are posted in the NDSU Extension [Crop & Pest Report](#) and on the [IPM Crop Survey map](#) website.

The corn growth stages ranged from R4 (dough) to R5 (dent) during August 10-21, 2026.

Corn rootworms were detected at 18 trap sites (62%) for both week 3 (August 10-14) and week 4 (August 17-21). For week 3, trap catches ranged from 0 to 23.5 beetles per trap per week (Table 1). For week 4, trap catches ranged from 0 to 17.3 beetles per trap per week (Table 1). A total of 267 and 192 corn rootworm beetles were captured on yellow sticky traps across all trap sites during weeks 3 and 4, respectively. Peak emergence occurred during week 3. Northern corn rootworms (NCR) comprised 99.3 and 97.4% of the total corn rootworms captured for weeks 3 and 4, respectively.

Three corn fields were above the trap economic threshold for corn rootworm and were located in Cass County near Argusville, Ransom County near Lisbon, and Sargent County near Gwinner. Look for lodged corn stalks as an indicator of larval feeding.

Trap Economic Threshold: A capture rate of **14 or more adults per trap per week** (either NCR or WCR, or any combination of the two species) indicates a **high rootworm population and high risk for corn damage in that field for the 2027 season.**



Lodged corn stalks showing goose-necking due to corn rootworm larval feeding (J. Knodel, NDSU)

Table 1. Average number of adult corn rootworms (both northern and western) per trap per week in 2026.

Area	County	Nearest Town	Week 1	Week 2	Week 3	Week 4	Cumulative Total # NCW & WCR
			July 27 - 31	Aug 3 - 7	Aug 10 - 14	Aug 17 - 21	
Central	Foster	8 E Carrington		0.3	0.0	0.0	1
Central	Foster	6 S Grace City		0.0	0.0	0.0	0
EC	Griggs	3 NE Sutton		0.0	0.0	1.1	4
EC	Griggs	2 W Cooperstown		0.0	0.6	0.9	6
EC	Griggs	8 N Cooperstown		0.0	0.0	0.5	2
EC	Griggs	7 SW Cooperstown		2.0	1.7	4.9	33
NC	Sheridan	10 NE McClusky		0.0	0.0	0.0	0
NC	Ward	3 SW Minot		0.0	0.0	0.0	0
NE	Cavalier	5 E Langdon		0.0	0.0	0.0	0
NE	Pembina	1 NE Cavalier		0.0	0.0	0.0	0
NW	McKenzie	3 NW Alexander		0.3			1
NW	Williams	Williston		0.0			0
SE	Barnes	9 SE Sibley	0.0	0.0	0.0	0.0	0
SE	Barnes	1 SE Rogers	0.0	0.0	0.5	1.0	6
SE	Cass	4 E Argusville	0.8	0.8	14.5	17.3	133
SE	Cass	4 NE Page	0.5	1.0	1.5	1.3	17
SE	Griggs	5 S Hannaford	0.0	0.3	0.5	1.0	7
SE	Griggs	2 N Hannaford	0.0	0.0	0.5	0.5	4
SE	Ransom	8 NE Lisbon	5.0	5.7	23.5	5.5	147
SE	Richland	6 SW Hankinson	1.8	3.0	2.8	1.5	36
SE	Richland	2 SW Barney	0.0	0.0	0.0	0.0	0
SE	Richland	5 W Colfax	0.0	0.3	0.3	0.0	2
SE	Richland	6 SW Colfax	0.0	0.0	0.0	0.0	0
SE	Richland	7 SW Wahpeton	0.0	0.0	0.5	0.3	3
SE	Richland	5 SW Lidgerwood	0.0	1.5	1.5	0.8	15
SE	Richland	1 E Hankinson	0.3	1.3	2.8	1.5	23
SE	Richland	3 NW Galchutt	0.3	0.0	0.3	0.3	3
SE	Richland	6 E Hankinson	0.0	0.0	0.3	0.3	2
SE	Sargent	5 NW Gwinner	4.0	2.7	22.2	9.3	137
SE	Sargent	4 SE Rutland	2.0	0.0	2.9	1.3	22
SE	Steele	3 N Finely	0.0	0.0	0.5	0.0	2
		Total # CRW	58	89	267	192	606
		Percent NCR	93.1	93.3	99.3	97.4	
		Percent WCR	6.9	6.7	0.7	2.6	

Economic Threshold 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 the ET.



Corn rootworm larvae feeding on corn roots (Patrick Beauzay, NDSU)

SUNFLOWER IPM INSECT TRAPPING UPDATE

Insect-trapping maps are posted on the [IPM Crop Survey map](#) website. This is the final sunflower IPM insect-trapping update.

Sunflower crop stages ranged from R5 (early flower) to R6 (flower complete) during August 10-14, 2026.

The total number of **Banded sunflower moth** and **Arthur's sunflower moth** continued to decrease to a total of 701 moths across all trap sites, in contrast to the previous week's trap total of 1,660 moths. Banded sunflower moths were detected at 100% of the trap sites, and weekly trap catches ranged from 93 to 216 moths per trap. The Arthur's sunflower moth, a moth similar to the banded sunflower moth, was detected at 80% of the trap sites, and weekly trap catches ranged from 0 to 3 moths per trap compared to 2 to 81 moths per trap the previous week, a significant decline.

See Crop & Pest Report #16 for "[Banded Sunflower Moth Scouting](#)". For field scouting, the current **EIL threshold is an average of 1-2 moths per 100 plants**, based on a market price of 28 cents per lb., depending on plant population and insecticide cost (insecticide + application).



Banded sunflower moth and tiny white eggs on a bud
(NDSU Extension Entomology)



Sunflower moth (J. Knodel, NDSU)

The number of trap sites with **sunflower moths** decreased to 40% from 55% the previous week. Weekly trap catches ranged from 0 to 6 moths per trap for August 10-14, below the trap threshold for sunflower moth—continued good news for sunflower growers.

Method	Threshold - Sunflower moths
Pheromone trap	28 sunflower moths per trap per week
Field scouting	1-2 moths per 5 plants

[Janet J. Knodel](#)
Extension Entomologist

[Patrick Beauzay](#)
Research Specialist & IPM Coordinator



plant pathology

FEATURED MATCHUP: SUNFLOWER RUST VS. NDSU PLANT PATHOLOGISTS

Players to Watch:

- Sunflower Rust (*Puccinia helianthi*)

Scouting Report:

- Attack anytime in the growing season
- Repeat attacks to cause explosive epidemic
- Cause yield and quality loss
- Attack confectionary sunflower with a vengeance (confections are very susceptible)

Opponent's Game Plan:

- Use one of the most complex life cycles in plant pathology to (Figure 1):
 - Survive the winter as hard black structures (telia with teliospores)
 - Genetically recombine in the spring within specialized structures (basidiospores, pycnia and aecia).
 - Generate uredinia pustules full of hardy, wind-dispersible cinnamon-brown urediniospores. Repeat every 7-14 days!
- Infect leaves that stay wet in just a few hours, with optimal infection success when leaf wetness persists for 6-8 hours
- Attack any green part of sunflower (leaves, stems, petioles and bracts) (Figures 2-5)
- Reduce yield and quality when occurring on upper leaves at or before growth stage R5

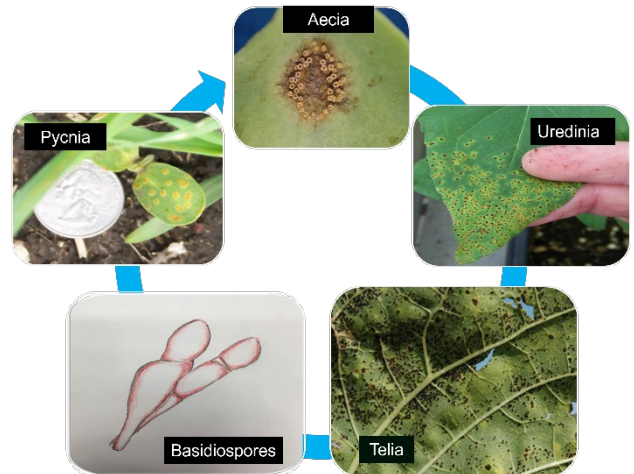


Figure 1. Sunflower rust (*Puccinia helianthi*) life cycle (Berghuis)



Figure 2. Dusty cinnamon-brown urediniospores easily rub off leaf



Figure 3. Severe leaf damage results in drying and curling



Figure 4. Rust on stem and petiole

Opponent's Strengths:

- Does not need rain! Free moisture from dew and fog are enough to cause infection
- Likes it warm! Can attack in wide range of temperatures
- It's tough! Survives North Dakota winters, high summer temperatures, long-distance dispersal events, and also attacks wild and volunteer sunflowers.



Figure 5. Rust on bracts

Opponent's Weaknesses:

- Complexity of life cycle contributes to erratic occurrence of epidemics
- Genetic resistance can be very effective
- Multiple fungicides are very effective
- When rust occurs on the upper leaves, a single well-timed application at R5 can prevent yield loss

Trick Plays to Watch:

- Complexity of life cycle allows frequent development of new races that overcome genetic resistance

[Sam Markell](#)

Extension Plant Pathologist, Broad-leaf Crops

[Eric Branch](#)

Extension Plant Pathology, Sugarbeets

[Andrew Friskop](#)

Extension Plant Pathology, Cereal Crops

[Wade Webster](#)

Extension Plant Pathology, Soybeans

SUDDEN DEATH SYNDROME SHOWING UP EARLY

Despite dry conditions, soybean diseases are still showing up across much of the state. One disease that is showing up is sudden death syndrome (SDS). While not widely present across North Dakota, SDS is starting to show up in high levels across the southeastern portion of the state, especially around Richland, Cass, and Dickey counties. While not new to these counties, as the disease has been found there in previous years, new counties are at risk of having disease develop. However, we have started to see certain fields experiencing quite severe cases in which yield losses will be observed. In Richland County at research plots, we started to see disease appear in the early R5 growth stages, and have already observed leaf drop prior to full grain fill, which will ultimately lead to reduced yields.

The timing this year is worth noting. We began finding symptomatic plants in mid-August, which is earlier than we have typically found SDS in North Dakota. Earlier onset of disease means a longer window for the disease to disrupt pod fill, and it is generally the fields that show foliar symptoms before R6 that end up with measurable yield loss. That makes the next two to three weeks the best scouting window of the season.

Scouting for SDS

SDS is easiest to spot from the road, but it is also very easy to misdiagnose. Foliar symptoms usually appear in patches rather than uniformly across a field, and those patches often line up with compacted areas, headlands, field entrances, and low spots that held moisture earlier in the season. Fields with a history of soybean cyst nematode (SCN) are also at higher risk, and the two problems frequently occur together. When you find a suspected patch of SDS, walk into it and dig plants, but do not pull them by hand. Collect plants across a range of symptom severity, including a plant or two from the edge of the patch that looks healthy. Here are the keys to diagnosing SDS:

Leaves: Look for scattered yellow spots between the leaf veins that develop into large chlorotic and then necrotic blotches. The midvein and major lateral veins stay green, which gives the leaf a distinctly "green-veined" look. In severe cases the leaflets drop off but the petioles stay attached to the stem — a classic SDS signature.

Timing: Foliar symptoms rarely appear before flowering and typically develop during the reproductive stages.

Split the taproot and lower stem: This is the single most useful step. In SDS, the outer woody tissue (the cortex) of the taproot will be discolored with a brown tint. Very importantly, the pith (the spongy tissue in the center of the stem) remains white in color. A brown, discolored pith points to the disease 'brown stem rot', not SDS.

Roots: Taproots and lateral roots are rotted and reduced. Under high soil moisture, a bluish fungal growth may be visible on the root surface. There is no red discoloration associated with SDS.

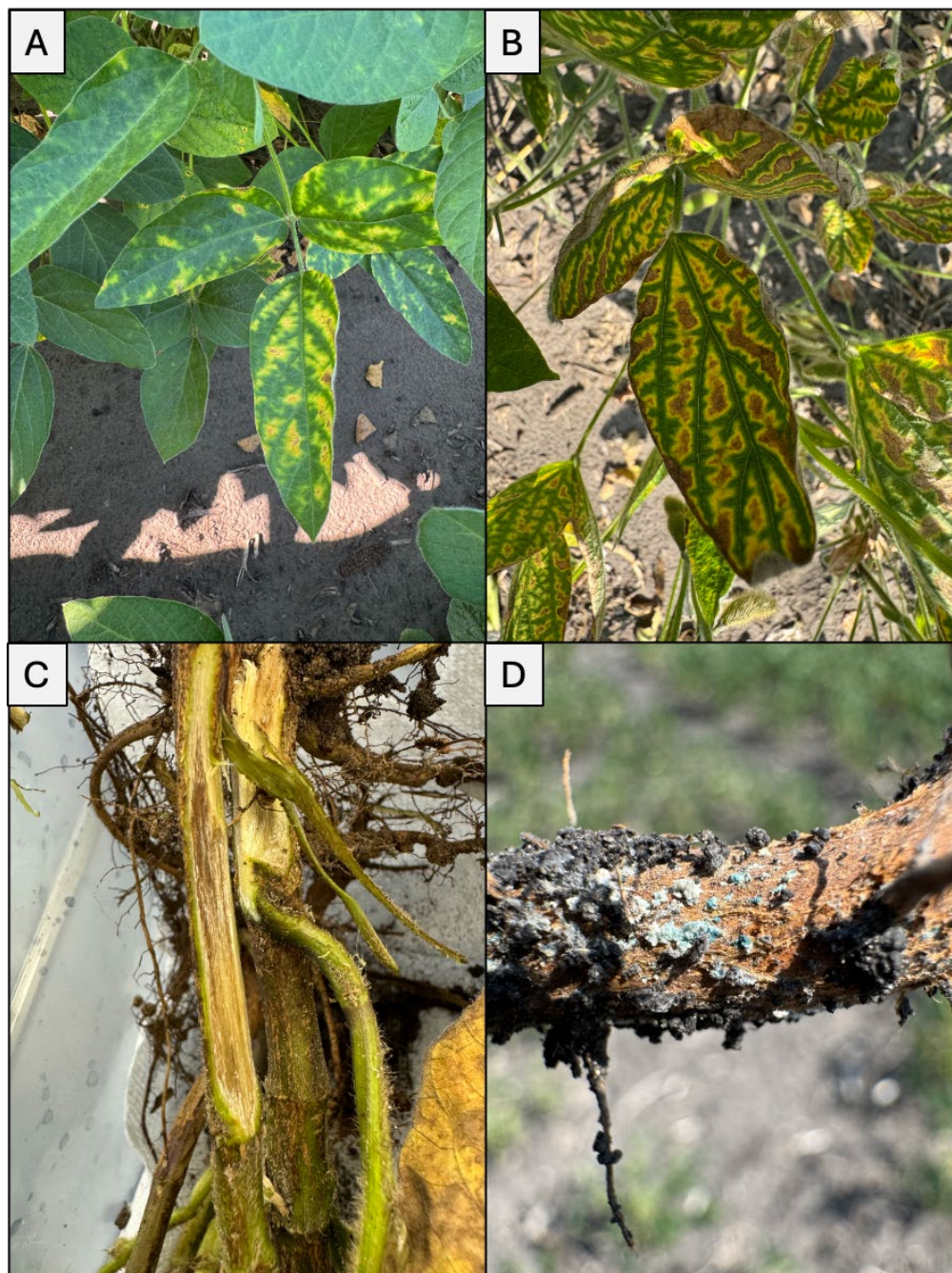


Figure 1. Sudden death syndrome of soybean. A) Initial blotchy yellow chlorosis appearing on soybean leaves, B) yellow blotches begin to form around the bright green veins and become brittle brown tissue called interveinal necrosis, C) brown discoloration of lower stem cortex tissue, D) presence of blue fungal growth on root tissue.

Red crown rot: not yet in North Dakota, but scout for it

Red crown rot (RCR), caused by *Calonectria ilicicola*, **has not been identified in North Dakota**. It has, however, been confirmed in Rock County, Minnesota, in 2025, the first detection in that state, and it continues to move north and west throughout the Midwest. Because its foliar symptoms

are nearly identical to SDS, it can be present in a field for some time before anyone thinks to look for it. I strongly encourage everyone walking soybean fields this month to stop, dig a few symptomatic plants, and look carefully at the crown and lower stem for red discoloration. Finding it early in North Dakota is a key tool for managing it going forward.

Keys to diagnosing red crown rot

Leaves: Interveinal chlorosis and necrosis with green veins, generally appearing after R3. You cannot separate RCR from SDS on foliar symptoms alone. The diagnosis has to happen below the soil line.

Crown and lower stem: Look for a distinct brick-red to reddish discoloration on the outside of the crown and lower stem, often extending from just below the soil line to a few inches above it. Under moist conditions, small red to rusty-brown, spore-producing structures (perithecia) may develop on the surface of that discolored tissue, sometimes along with white fungal growth.

Roots: Roots are rotted and plants pull out of the ground easily.

Reddish discoloration of the lower stem can also be caused by *Rhizoctonia*. Red on the crown is a reason to submit the plant, not a diagnosis on its own.

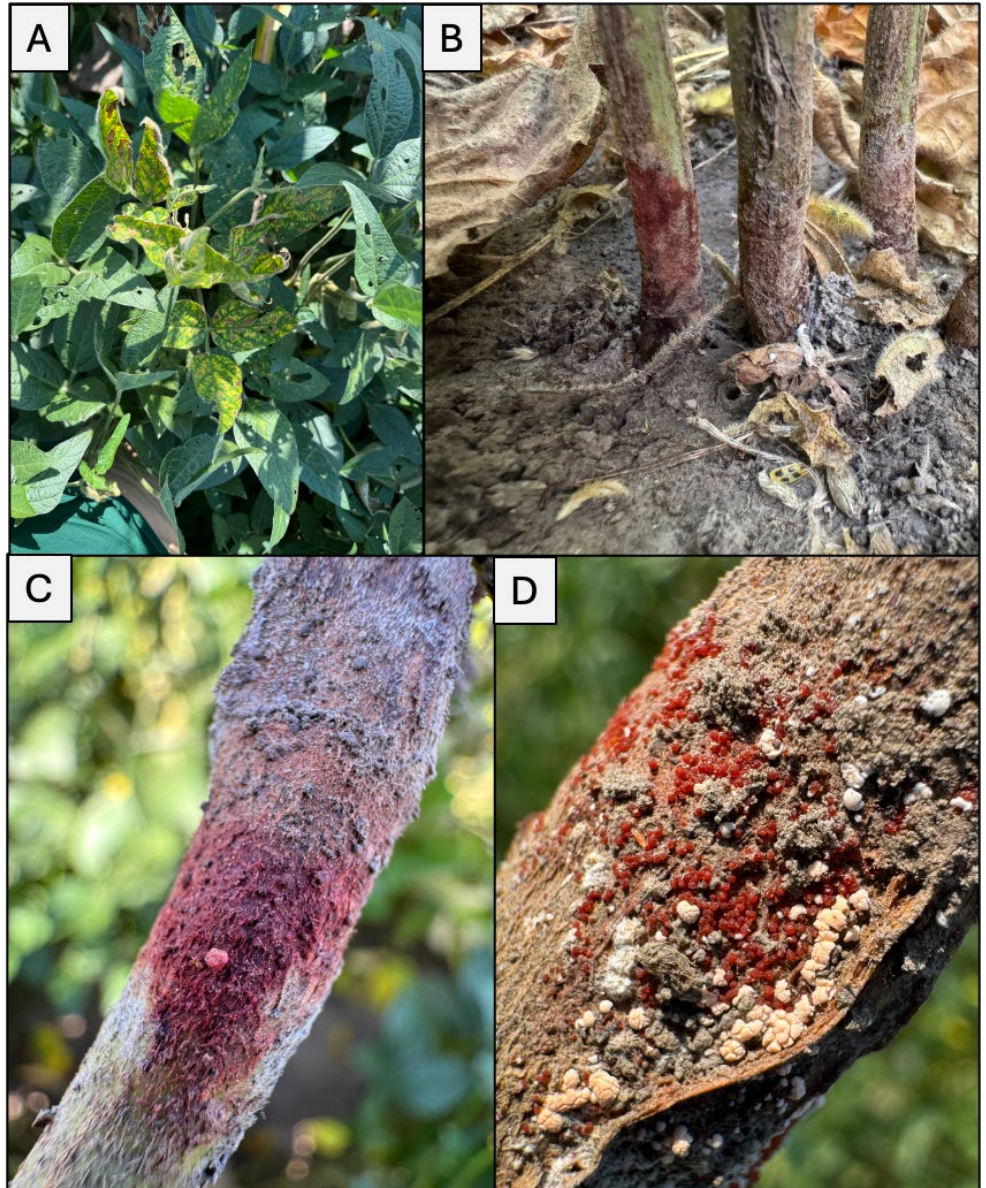


Figure 2. Red crown rot of soybean. A) Interveinal chlorosis of soybean leaves, B and C) reddish discoloration of soybean crown tissue, D) presence of red perithecia structures of the fungus. All images were taken in Illinois and not from North Dakota.

Submitting samples for confirmation

If you find suspected SDS ***outside of Cass, Richland, Dickey, and Cavalier counties***, or you find any soybean plant with ***red discoloration on the crown anywhere in the state***, please submit a sample to the NDSU Plant Diagnostic Lab so we can confirm it and track where these diseases are moving.

To collect a good sample, dig 5 to 10 whole symptomatic plants with the root systems intact and the soil left on the roots. Include one or two asymptomatic plants from the same area for comparison. Wrap the plants in moist paper towel or newspaper and place them in a plastic bag. Do not let the sample sit in a hot vehicle or in the box over a weekend. Include the field location, planting date, variety, growth stage, an estimate of the affected area, and any relevant field history such as SCN sampling results.

Submission forms and instructions are available on the NDSU Plant Diagnostic Lab website, and lab staff can be reached at ndsu.pdl@ndsu.edu or 701-231-7854 with questions on collecting or shipping a sample.

[Wade Webster](#)

Extension Plant Pathology, Soybeans



WHAT CAN WE DO TO BE BETTER PREPARED FOR THE NEXT DROUGHT?

[Current drought conditions](#) have raised an important question among growers: **What can we do to be better prepared for the next drought?**

There is no single practice that can eliminate drought risk. Crop response depends on drought timing and severity, crop growth stage, management, and, importantly, the soil. However, several management practices can help crops make better use of limited water.

Know Your Soil

Not all soils respond to drought in the same way. **Plant-available water (PAW)** is the amount of water a soil can hold between field capacity and the permanent wilting point, and it varies considerably among soils. Soil texture, structure, organic matter, and rooting depth all influence how much water is available to a crop.

As a result, two fields receiving the same rainfall may experience very different levels of water stress. Drought-mitigation strategies become particularly important in soils with low water-storage capacity.

Diversify Crops to Spread Risk

Crop diversity can reduce drought risk because crops reach their periods of greatest water demand at different times.

Small grains such as wheat have high water requirements earlier in the summer, while corn reaches peak demand during July and early August and is particularly sensitive to drought around silking. Soybean flowering begins earlier, but water demand and sensitivity to drought become especially important during pod development and seed filling.

Including crops with different critical periods does not prevent drought damage, but it **reduces the likelihood that all crops experience their most sensitive stages during the same dry period.**

Plant on Time

Timely planting gives crops more opportunity to establish a strong root system before summer drought develops. Delayed planting may result in crops entering hot, dry conditions with less-developed root systems and less ability to access water deeper in the soil profile.

There is limited flexibility to move planting much earlier in North Dakota because of cold temperatures, wet soils, and frost risk. However, avoiding unnecessary planting delays when field conditions are suitable can help crops make better use of the available growing season.

Build Soil Health and Keep the Soil Covered

Improving soil health can increase the ability of a field to capture and store water. Compaction restricts root growth and can reduce water infiltration, while good soil structure allows rainfall to move into the soil profile where roots can access it.

Maintaining crop residue and reducing unnecessary tillage can also help conserve water. Residue protects the soil surface, reduces soil temperature and evaporation, and helps limit runoff and erosion. Reducing the number and intensity of tillage operations can further minimize soil moisture losses.

Increasing soil organic matter can also improve water retention. USDA-NRCS estimates that a 1-percentage-point increase in soil organic matter can increase soil water-storage capacity by approximately **20,000 gallons per acre**, although the actual benefit varies with soil characteristics and conditions.

Cover crops can contribute to soil aggregation, biological activity, and water infiltration while providing additional soil cover. However, cover crops also use water, so species, establishment, and termination should be carefully managed under dry conditions.



Figure 1: Soybean field under drought conditions in Logan County, ND. Picture credit: Josh Becker.

Prepare Before the Drought

The best opportunities to reduce drought risk generally occur **before the drought begins**. Understanding the water-holding capacity of each field, diversifying crop rotations, planting on time, preventing compaction, retaining crop residue, reducing unnecessary tillage, and building soil health can all improve crop resilience.

None of these practices can replace rainfall, but together they can help the soil **capture more water when it rains, retain it longer, and make it available to crops when rainfall becomes limited**.

Interested in cover crops?

Check this opportunity: [Farmers for Soil Health](#)

Sources:

[Drought Resistant Practices | USDA Climate Hubs](#)

[15 Ways to Help Mitigate Drought on Your Farm This Season and Beyond | Small Farms Program](#)

[How to Decrease Drought Risk in Crop Production](#)

[Ana Carcedo](#)

Broadleaf Crop Agronomist



LATE SEASON SOYBEAN DEFICIENCIES

Over the past few weeks, I have heard multiple reports of late season K deficiencies in soybeans. While K deficiency symptoms typically present on the older leaves (K is a plant mobile nutrient), under certain conditions, soybeans develop K deficiency symptoms on the upper leaves during late reproductive stages (Figure 1). Regardless of where the symptoms are located in the crop canopy, the leaf symptomology appears as a “halo effect” or chlorosis along the leaf margin (Figure 1).

While late season K is most likely to occur in field with very low to low soil test K levels, which we know are becoming more prevalent in ND, in dry years such as this one K deficiency can also occur in fields with closer to adequate K levels. The increased prevalence of K deficiency in drought conditions occur as a function of both K fixation in smectite clays (see [North Dakota Clay Mineralogy Impacts Crop](#)



Figure 1. Late season soybean K deficiency symptoms (Photo by J. Stachler, NDSU).

[Potassium Nutrition and Tillage Systems](#)) and decreased movement of K to the roots by diffusion in the soil solution. While there is no practical management for this late season deficiency, it should be seen as a call to action for soil testing and possible K applications before the next growing season.

In addition to K deficiencies, IDC has been a lingering problem this year, with some areas seeing two to three flushes this year. Unfortunately for producers, Dr. Goos and I were correct in forecasting a bad IDC year in our May 14th Crop and Pest Report Article [Are We Queuing Up For A Bad IDC Year?](#) which outlines some of the causing factors for this year's rampant IDC.

SOIL SAMPLING SEASON IS BEGINNING

As small grain and canola harvest nears the end across parts of the state, folks are beginning to turn their attention to starting soil sampling. With this, dry conditions across the state have caused two major questions to come across my desk: how will the conditions affect the soil test results and should we delay sampling?

Simply, drought conditions and poor crop yield will have an impact on soil test levels, both good and bad. Assuming this year's fertilizer has made it into the soil (more on this later) we can expect to see little crop nutrient removal in the stricken areas with little to no yield. For next year, this means we will likely see very high residual N levels—making soil N sampling even more necessary for planning next year's crop! Additionally, there is a significant amount of field variability this year, which will further complicate the residual N situation

In various drought-stricken areas across the state, I have heard reports of some fertilizer still laying on the surface from spring applications, if this is the case with fields you are considering sampling for P, K, or Zn, I would strongly suggest not sampling (this may be the only time I speak against soil sampling!). If no crops are harvested, and the fertilizer is still on the surface, the soil test levels will be similar to last year's tests—and this year, saving money is more important. Going forward, if conditions change in the dry areas, this recommendation will change. If you must go ahead with routine sampling in dry areas, check out my next Crop and Pest Report article for more information on the cautions we must take when interpreting the soil test results.

Yearly Soil Testing Reminders

Sampling Frequency/Timing

- Residual N levels should be determined every year an N-demanding crop is grown. Since N is a soil-mobile nutrient, samples from previous crop years should be wholly disregarded for current-year planning.
- Sampling for P, K, OM, and micronutrients every few years is usually sufficient since levels do not fluctuate substantially on a yearly basis. Soil sampling once in every rotation, but not more than three years apart, is generally recommended as a *minimum*, with greater sampling frequency allowing for more intensive fertility tracking and management.
- K levels will fluctuate with soil water content and time of year (pre- or post-freeze), while conditions will never be fully ideal, consistency with sample timing will help reduce some of the variability—whether you sample K in the spring or fall, it doesn't matter as long as you pick one timing and stay consistent.

Sample Approach

- In North Dakota, zone sampling is generally considered the most economical and efficient soil sampling approach. By [developing zone soil sampling maps](#) based on common field characteristics, you can get the most informative data from your soil samples and reduce variability caused by combining high and low testing areas of fields into one single sample.
- Grid sampling is also a popular approach; however, previous research shows a grid of one acre or less is necessary to reveal useful patterns, which is financially burdensome.

Sample Analysis

- Different states use differing soil analyses for the same nutrient (the Olsen, Bray, and Mehlich tests for P is a prime example) based on the analysis best suited for the state's soil and cropping system characteristics. For NDSU fertility recommendations to work correctly, the nutrient analysis they are calibrated to must be used (see Table 1 in [ND Fertilizer Recommendation Tables](#)). With some soils samples being sent to out of state labs for processing and "total nutrient" tests being touted by some, it is essential to use the procedure calibrated and correlated to the nutrient recommendations.
- Unless a micronutrient deficiency is suspected, regular sampling for most micronutrients is not a wise economic decision. Focusing on N, P, and K should be top priorities, with Zn for corn and dry bean rotations and Cl in small grain rotations as good options. Analyzing soil samples for Fe or S in North Dakota will rarely (if ever) be a good economic decision for routine sampling ([Limitations of the Sulfate-sulfur Soil Test as a Predictor of Sulfur Response](#)).

[Brady Goettl](#)

Extension Soil Specialist

DOES TILLAGE HELP REDUCE SOIL SALINITY?

For North Dakota, the above average precipitation pattern that started in 1993 resulted in non-productive land along headlands, road-sides, in-field ditches, and sloughs. Excess rain/soil water led to shallow groundwater depths (also called water table) bringing excess water-soluble salts and sodium, causing sodicity, into the topsoil. When groundwater is deep in the soil and soil water infiltration is good, slow and steady rain events produce gravitational soil water through the soil profile. Gravitational soil water mostly moves downwards into the soil profile with the force of gravity. It can be collected by subsurface tiles and help leach/force excess water-soluble salts deeper into the soil profile. Under dry weather conditions, there is hardly any downward gravitational soil water movement and the capillary soil water movement is most prominent. Capillary soil water moves from wet to dry areas through the forces of adhesion (attraction of water molecules for soil particles) and cohesion (attraction of water



Figure 1. April 29, 2021. A non-productive headland with excess salts and potential sodicity issues along state Highway-5 East in Cavalier County, ND.

molecules to each other). The capillary soil water rises to the topsoil soil from deeper in the profile, from a lower headland to higher elevation productive areas (Figure 1), or from a pothole to higher productive areas. With this water mostly moving upwards and a little sideways (laterally), water-soluble salts are unable to leach into lower soil profile depths, leaving more salts and sodium, causing sodicity, in the topsoil and ultimately causing crop stand loss and/or plant death. Capillary water is not intercepted by subsurface drain tiles and is usually only intercepted by plant roots.

Properly managing movement of capillary water minimizes movement of excess water-soluble salts and sodium into the topsoil or soil depths where plant roots grow. If conditions are dry and we do not get enough rain to help leach excess salts deeper into the soil profile, we should at least try to minimize movement of capillary soil water into topsoil from deeper soil depths. The practices below will help reduce capillary salt and sodium movement:



Figure 2. A tilled saline area in Wells County causing increased capillary action leading to greater salinity.

Do not till saline areas (as seen in Figure 2.)

Tillage increases evaporation and dries the topsoil. Because capillary water moves from wetter to drier areas, this drying can increase the upward movement of water from deeper soil layers. As water moves toward the surface, it carries water-soluble salts and sodium, which accumulates in the topsoil and contributes to salinity and sodicity. Leaving saline areas undisturbed helps preserve topsoil moisture, reducing capillary water movement and minimizing the accumulation of salts and sodium near the soil surface.

Mow these non-productive areas instead of conducting tillage if weeds such as foxtail barley and kochia are present

If there are some weeds growing in these non-productive areas, mowing will reduce seed production of the weeds therefore reducing emergence in subsequent growing seasons without greatly increasing evaporative moisture loss. In areas with excessive plant biomass, such as dense cattails, managing residue before fall or winter seeding is important to ensure good seed-to-soil contact. A mower-conditioner may be preferable to a rotary mower because it concentrates biomass into windrows rather than leaving a thick layer of residue across the soil surface. Windrows can then be removed or, where permitted, burned under appropriate conditions. If a rotary mower is used, heavy residue may interfere with no-till drill operation and seed placement. Whenever possible, excessive biomass should be removed or concentrated before direct seeding, avoiding tillage



Figure 3. A saline area that was not tilled in 2017 east of Langdon along highway-5.

where a suitable seedbed can be achieved without soil disturbance. Farmers should also verify wetland status and applicable burning regulations before managing these areas.

Long-term Solution

The long-term solution is to build soil health and improve soil structure, which can increase water infiltration and help leach excess salts over time. Soil health principles such as minimizing soil disturbance, maintaining soil cover to reduce evaporation, and maximizing continuous living roots is the best practice. One approach is to establish salt-tolerant, deep-rooted plants while avoiding tillage. For example, a mixture of perennial salt-tolerant grasses with strawberry clover or alfalfa may be suitable, depending on whether the area will be grazed or hayed. If foxtail barley is present prior to seeding salt-tolerant plant species apply glyphosate at least at 1.5 pounds acid equivalent per acre after a good frost to prepare for planting. Glyphosate most likely will not control kochia due to resistance. For more detailed information on selecting salt-tolerant plant species based on intended land use, refer to the new NDSU Extension publication, Perennial Salt-tolerant Plant Species for Non-productive Cropland (R2299). If the salt-tolerant species are mowed and/or grazed at least two times during the growing season after establishment, plant roots will grow deeper, removing more soluble salts from the soil surface, therefore reducing salinity and allowing row crops to be planted about 6 to 8 years after being in the salt-tolerant plant species. Then row crops could be planted for two to four years depending upon the soil salinity. This is the best way to reduce loss of money instead of planting row crops into these non-productive areas and harvesting nothing. No fertilizer should ever be applied in these non-productive sites since nutrient levels are usually very high.



Figure 4. April 29, 2021. Established salt-tolerant perennial grass strip along a headland that is mowed and intercepting excess water from a road-side ditch before it reaches productive land due to capillary action along state Highway-5 East in Cavalier County, ND.

[Naeem Kalwar](#)

Extension Soil Health Specialist

[Carlos Pires](#)

Extension Soil Health Specialist

[Jeff Stachler](#)

Extension Cropping System Specialist
Carrington Research Extension Center

[Alexis Correia](#)

Conservation Agronomist
Dickinson Research Extension Center



POST HARVEST WATERHEMP CONTROL

While recent rainfall has been as scattered as most other events this year, fields that have recently been harvested and are catching rain should be monitored for new waterhemp emergence. Every year we observe waterhemp emerging in late August and early September that will produce seed before we receive a killing frost. Dry years are no exception, and in many regards may be set up for a higher likelihood of late, abundant flushes of waterhemp, as the seed that is there is primed to germinate as long as there is sufficient heat, moisture, and sunlight. In 2021 we tracked emergence of waterhemp during the last week of August that had produced mature seed by mid-September (Figure 1). These plants will often only grow a few inches tall, but can produce upwards of a couple hundred seed. The problem is that these late flushes remain very dense, so as always with waterhemp, it is a numbers game that we can quickly lose.



Figure 1. Waterhemp collected in mid-September that emerged in small grain stubble in late August. This plant was threshed and 88 mature seed were collected from it.

Fields that have received the recent rainfall should be monitored for new waterhemp emergence. In most years, many folks may choose to cultivate for late season weed control. However, many are choosing to forego tillage this year due to continued dry conditions. That leaves herbicides as the best tool to control these late flushes. Previous research has found that contact herbicides often perform better than systemic herbicides on these late flushes, particularly when it remains dry. Paraquat (Gramoxone) and saflufenacil (Sharpen) usually rise to the top in these late season trials. Dicamba (with or without diflufenzopyr) and 2,4-D will still provide fair to good control and limit seed production, but have not performed consistently as well as paraquat in these scenarios. Limiting seed production will be beneficial for the crop planted in that field next year. A top question has been if these plants emerged in August, are their progeny going to also be more likely to emerge late summer. Unfortunately, with waterhemp the answer is no. Those seed will emerge whenever conditions are right, regardless of time of year. So, while not all fields are catching rain and seed will remain dormant, it will be important to scout those fields that have caught rain to determine if waterhemp has emerged and needs to be controlled.

FREE HERBICIDE RESISTANCE TESTING ON HOLD FOR ND

Increased participation this year in the free genotyping herbicide-resistance testing through National Agricultural Genotyping Center has led to us quickly reaching the funding cap for these samples. More funding will open up around October 1, so please continue to send samples, but understand any samples postmarked after August 27 will have delayed results. DNA from samples received between now and October 1 will still be able to be tested once more funding is available. Free testing is still available for residents of MN and MT, and testing is available for a fee for ND residents in the meantime.

[Joe Ikley](#)

Extension Weed Specialist

2025-2026 COVER CROP VARIETY TRIAL – NORTH CENTRAL REGION

This trial evaluated aboveground biomass production of several cover crop species and varieties planted on September 3, 2025. Fall biomass was sampled on October 8, 2025. Winter-hardy species (winter rye) were sampled again following spring termination on May 11, 2026. Brassicas, hairy vetch, and clover species were winter-killed and were evaluated only at the fall sampling.

Winter Rye Varieties

Six winter rye varieties were compared for fall, spring, and total (fall + spring) biomass production. Elbon produced the greatest fall biomass (741 lb/acre), followed by ND Gardner (610 lb/acre) and Wrens Abruzzi (576 lb/acre), while Wheeler produced the lowest fall biomass (497 lb/acre). Spring biomass production showed a somewhat different pattern, with Cover+ (1,094 lb/acre) and ND Gardner (1,054 lb/acre) producing the greatest spring biomass. In contrast, Elbon, despite its strong fall growth, produced only 762 lb/acre in the spring. When fall and spring biomass were combined, ND Gardner (1,664 lb/acre) and Cover+ (1,605 lb/acre) were the top-performing varieties, followed closely by Wrens Abruzzi (1,544 lb/acre) and Elbon (1,503 lb/acre) (Figure 1).

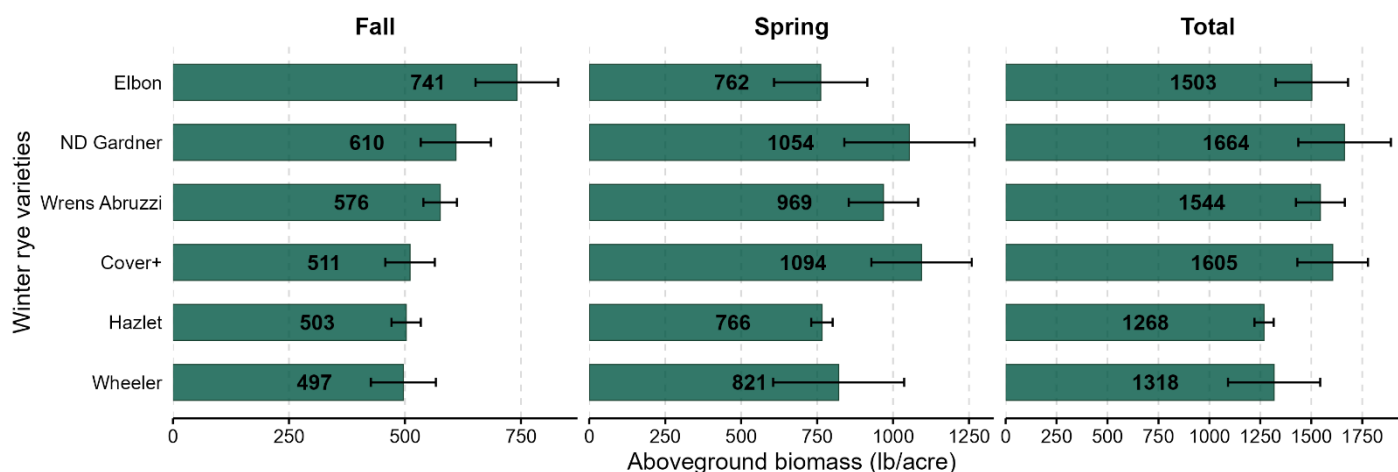


Figure 1. Aboveground biomass of different winter rye varieties.

Brassica Varieties

Among the five brassica entries, Trophy rapeseed produced the greatest fall biomass (319 lb/acre), followed closely by Driller radish (303 lb/acre) and CP1066 winter canola (302 lb/acre). Dwarf Essex

rapeseed and Aerifi radish produced slightly less biomass, at 297 and 276 lb/acre, respectively (Figure 2).

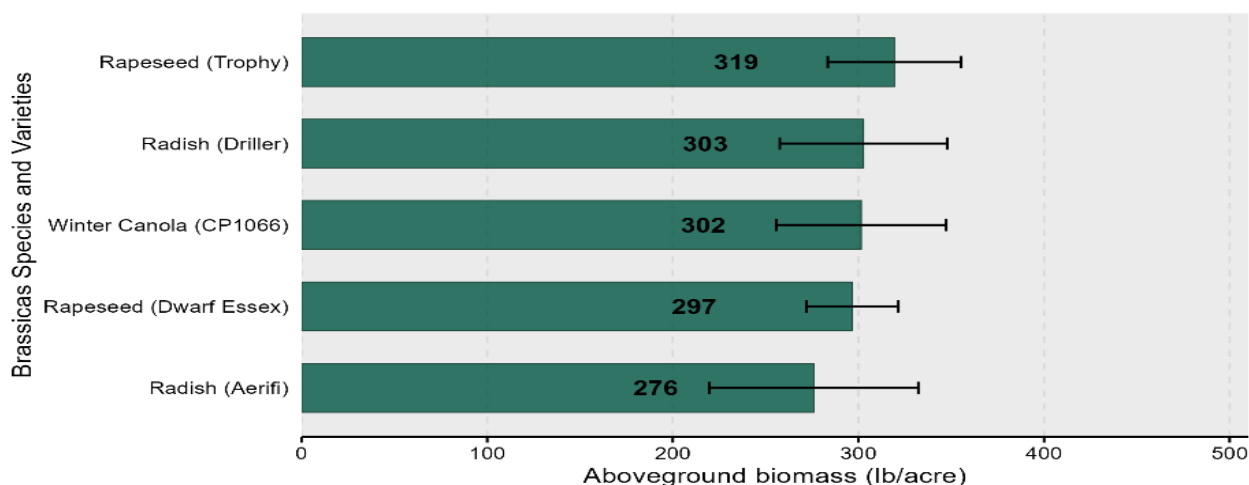


Figure 2. Aboveground biomass of different Brassica species and varieties.

Hairy Vetch Varieties

Fall biomass production was relatively similar among the four hairy vetch varieties, ranging from 332 to 371 lb/acre. Purple Bounty produced the greatest biomass (371 lb/acre), followed by Winter Warrior (347 lb/acre), MT Hairy Vetch (341 lb/acre), and AU Merit (332 lb/acre) (Figure 3).

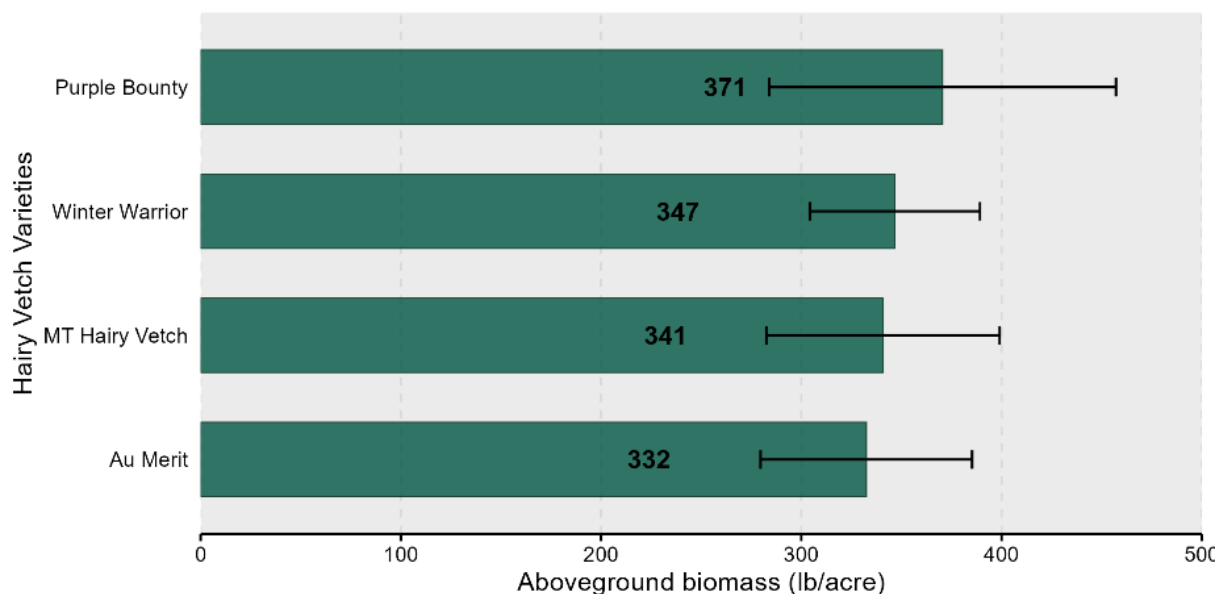


Figure 3. Aboveground biomass of different hairy vetch varieties.

Clover Varieties

Clover varieties produced relatively low fall biomass overall. Dixie crimson clover produced the greatest biomass (78 lb/acre), followed by Viper balansa clover (70 lb/acre) and Frosty berseem clover (61 lb/acre). Fixation balansa clover produced the lowest biomass among the clover entries (32 lb/acre) (Figure 4).

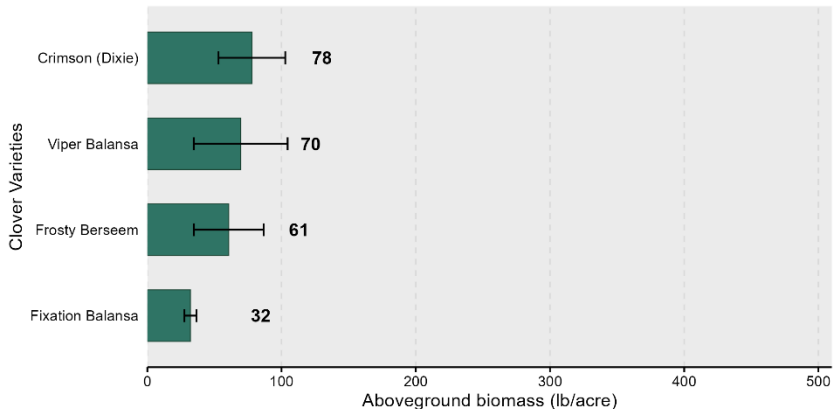


Figure 4. Aboveground biomass of different clover varieties.

[Carlos B. Pires](#)

Extension Soil Health Specialist

[Leo Bortolon](#)

Research Agronomist



FARMING AND RANCHING IN TOUGH TIMES

Farmers, ranchers and their family members experience pressure from all directions. While all of us must contend with economic ups and downs or family concerns, farmers have added uncertainties such as the weather and changing commodity prices that directly influence their lives and farming operations.

Farm and ranch stress stirs up many images: racing to town to buy spare parts (and finding they have to be ordered), listening to the radio and hearing the market drop (and your bins still are filled with last year's crop), rushing to get the hay baled before a storm, or listening to a spouse's frustration with long hours and limited family time. You may find yourself getting more and more frustrated, irritated, or just worn out and discouraged. Yet you are unlikely to reveal the stresses you face or the frustrations you feel as you meet again with the loan officer.

Seasonal Pressures in Farming and Ranching

Farm and ranch families often experience pressure, conflict and uncertainty, especially during harvesting and planting. If feelings of frustration and helplessness build up, they can lead to intense family problems involving spouses or partners, children, parents and other relatives. If left unresolved, these feelings can lead to costly accidents, poor decisions, strained relationships,

health concerns and deaths. However, you have things you can do to feel better and find help if you need it.

Recognize Warning Signs – A Stress Symptom Checklist

Recognizing early warning signals of stress in your body, your actions, your emotional life and your relationships with others is important. Review this checklist to see if signs of stress are showing up regularly in your life.

Physical Symptoms

- ☐ Head aching
- ☐ Back or neck muscles tense, aching
- ☐ Stomach upset or distressed
- ☐ Breathing short or labored
- ☐ Low energy
- ☐ Body fatigue, tiredness

Behavioral Symptoms

- ☐ Difficulties with sleep
- ☐ Inability to relax, concentrate
- ☐ Getting angry easily
- ☐ Trouble making decisions
- ☐ Increased use of alcohol or other drugs
- ☐ Difficulty being flexible

Emotional Symptoms

- ☐ Irritable about little things
- ☐ Sense of frustration, anger
- ☐ Impatient, restless
- ☐ Feeling discouraged, hopeless
- ☐ Withdrawal, isolation
- ☐ Anxiety, panic feelings

Relationship Symptoms

- ☐ Communication difficulties
- ☐ Conflict with family members
- ☐ Lack of satisfaction
- ☐ Verbal or physical outbreaks
- ☐ Strained interactions
- ☐ Avoiding others

Access Helpful Resources

To learn more about available resources to assist in managing stress in agriculture, read the NDSU Extension publication FS1804, “Farming and Ranching in Tough Times” – link: [Farming and Ranching in Tough Times | NDSU Agriculture](#)

If you or someone you know is in need of mental health support, call or text the **9-8-8 Suicide and Crisis Lifeline**, or chat at <https://988lifeline.org>.

Contact your NDSU Extension county office or search the Web for *NDSU Extension farm stress* for more resources on wellness in agriculture.



NDSU Extension reminds each of us to “check the signal” and think about how we are functioning mentally and physically. And—let’s talk about it!

[Sean Brotherson](#)

Extension Family Science Specialist

Adriana Drusini (adriana.drusini@ndsu.edu)

Extension Farm and Ranch Stress Program
Coordinator



DAKOTA GARDENER: NDSU'S RESEARCH ARBORETUM IS A HIDDEN GEM

Do you remember the Joni Mitchell song, "Big Yellow Taxi"?

Mitchell sings, "They took all the trees, and put 'em in a tree museum," referring to Honolulu's Foster Botanical Garden, which features magnificent tropical trees.

What if I told you that North Dakota State University has a "tree museum" that showcases more than 5,000 tree and shrub species, cultivars and selections?

NDSU's Dale E. Herman Research Arboretum is a 35-acre oasis tucked into the countryside near Absaraka, North Dakota, 45 minutes west of Fargo. Home to the NDSU Woody Plant Improvement Program, this living collection of trees plays a vital role in research and education.

Beginning in 1954, the WPIP breeds, selects and introduces hardy trees and shrubs that can endure North Dakota's frigid winters, strong winds and alkaline soils. Plants at the arboretum are exposed to extreme winter low temperatures of minus 20 to minus 30 degrees Fahrenheit. Surviving plants are well-suited for large areas of the northern Great Plains.

Since 1986, the program has introduced 63 trees and shrubs for production and sale. Notable releases include Dakota Pinnacle Asian white birch, Prairie Expedition American elm and Northern Acclaim thornless honeylocust.

According to Todd West, the program's director, Fireflare Orange azalea is one of the newest releases and is attracting a lot of attention for its ability to put on a dazzling spring show even in high alkaline soils. This azalea will be available at select nurseries in 2027.

The WPIP is also working to encourage diversity in tree plantings. Planting large numbers of the same or related tree species can set communities up for failure. For example, many communities planted large numbers of elm trees in the 1900s because of their reputation as tough, adaptable trees. Dutch elm disease was detected in North Dakota in 1969 and rapidly spread across the state by the mid-1970s. With elm trees being the predominant boulevard tree, many communities lost a significant portion of their trees to this devastating disease. Instead of replacing dying elms with a variety of tree species, communities planted ash trees.



Fireflare Orange azalea, a popular new release from NDSU's Woody Plant Improvement Program, is well-suited for alkaline soils. (NDSU photo)

Now, the region is faced with a similar situation involving emerald ash borer.

“We need to avoid planting the same trees up and down the boulevard,” advises West. “Look around and plant something different from your neighbors.”

Beyond its research purpose, the arboretum is also an educational destination. While the facility is normally closed to the general public, the WPIP team organizes annual events such as “Branch Out: The NDSU Arboretum Experience,” which features several educational tree walks. This year’s event will be held on Saturday, Sept. 12.

For more information, visit the event website (ndsuhorticulture.org/branch-out/) and also the NDSU tree introduction website (ndsuhorticulture.org/tree-introduction/).

[Esther McGinnis](#)
Extension Horticulturist



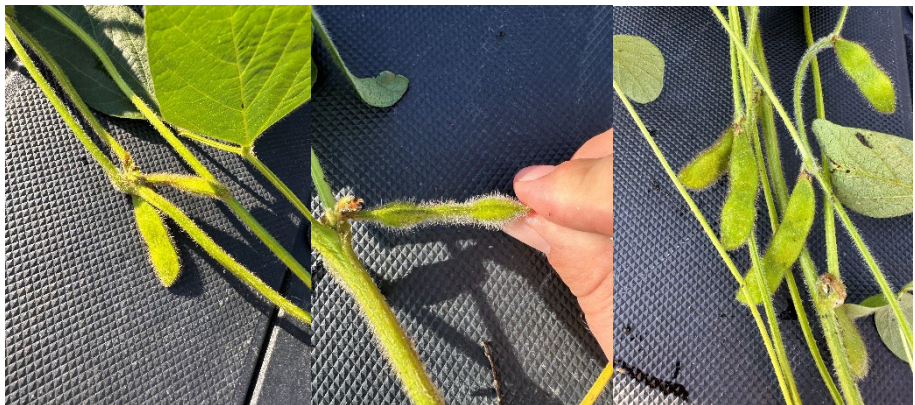
AROUND THE STATE

NORTH CENTRAL ND

Harvest is in full swing in the North Central counties of North Dakota. Barley harvest in Pierce, Rolette, Bottineau, Renville, Ward, and McHenry Counties is wrapping up. Yields being reported are around the average in the 70-80 bushels per acre range, with some better fields and some worse fields. Quality has been good in most fields and has been making malt.

Oats in Bottineau County have been dealing with lighter test weights, with some being down around the 32-pound test weight range. This comes in below the minimum of 35 that elevators will take. This makes it challenging for farmers with their contracts and for knowing what to do with their fields of mature oats.

Hard Red Spring Wheat harvest was in full swing before the rain on August 23rd and 24th. Yields have been variable and very dependent on soil type. Heavier soils have produced better wheat yields in the 60-bushel range, while counties with more sandy soils have seen average to below-



Soybean Pictures 1-3 are of abundant 1-2 bean pods and uneven seed set in 3-bean pods from Brenden Klebe, ANR Agent in Bottineau County

average yields. Test weights have ranged from 55 pounds to 59 pounds, with some seeing 60 and 61 pounds. Protein content has been between 14 and 16 percent.

Soybeans are in their pod-filling stages in all of the counties. There are some counties seeing yellowing of leaves and leaves dropping due to lack of rain and hot temperatures. Pod fill has been below average on most soybean fields, with a lot of two-bean pods and a below-average number of pods. Some three-bean pods only have two beans growing in them as well due to the heat and moisture stress.

Corn is filling in most fields now. Pollination was below average in most areas and is leading to below-average seed set. In McHenry County, some grain corn is going to be cut for silage. Corn condition varies a lot with the soil types. There are areas in every county where corn is turning yellow, and other areas where it is looking good, and yield should be around average.

Canola is maturing fast with the recent dry weather. In areas where there is swathing, most of the canola that needed to be swathed is now swathed.

Otherwise, canola desiccation is starting in the other fields that are straight cut. There are very good, thick fields and other fields that are thin, with weeds like Lambsquarters and Kochia emerging through the canopy. Canola harvest has started in the southern counties of the region.

Sunflowers are dropping ray flowers and continue to look good. The sunflower's ability to root down further and utilize the subsoil moisture has made a big difference.

Areas of the region received rain on August 23rd and 24th, ranging from .21 inches in Renville County to 8+ inches of rain in Pierce County. This should help some of the region that has been dealing with D2 Severe Drought and Abnormally Dry conditions, according to the most recent Drought Monitor on August 20th.



Corn Pictures show grasshopper feeding on cobs from Elizabeth Auka, ANR Agent in Rolette County



Straw field and hay bales in water show results of recent 5-inch rain in northern Bottineau County, from Brenden Klebe, ANR Agent in Bottineau County

Current pest issues in the county are scattered areas of grasshoppers that have been migrating from the drying-down small grains to the greener crops like soybeans and corn. There have been patches of late-season flea beetles on canola. Kochia and other hard-to-control weeds are poking through thinner crop canopies.

[Brenden Klebe](#)

Bottineau County Agriculture and Natural Resources Agent

NORTHEAST ND

The Northeast region received rain during the early hours of Monday, although amounts were highly variable. Rainfall ranged from a low of 0.17 inches in Langdon to a high of 8.75 inches in the town of Rugby. The heavy rainfall caused considerable flooding in yards and basements in Rugby (Fig. 1). The silver lining is that relatively little cropland was affected. The additional moisture may provide some benefit to late-planted soybeans and sunflowers; however, the majority of soybean and corn acres are too far along to receive much benefit from this rainfall.

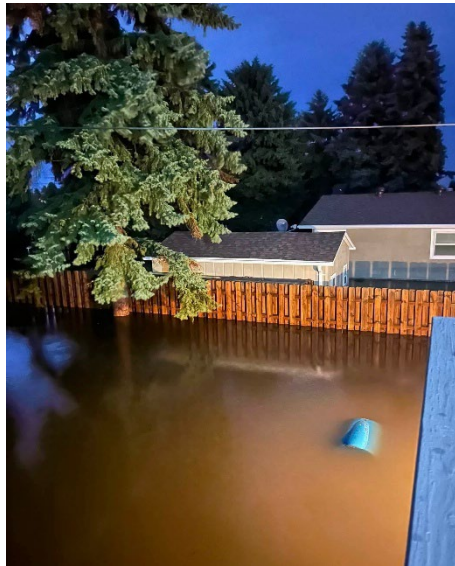


Figure 1: Heavy rain caused flooding in backyards and streets of Rugby
Photos: Natalie Wibe, ANR Extension Agent, Pierce County

Small grains, including wheat and barley, are being harvested at a good pace throughout the region. Farmers have been pleasantly surprised by decent yields and above-average protein percentages in spring wheat.

Corn is currently in the late-milk to early-dent stages (Fig. 2). The majority of the corn crop has fared relatively well despite the drought conditions, although some fields are being harvested for silage.

Field pea harvest is complete, while canola is reaching maturity. Some canola fields have been swathed (Fig. 3), while others have been desiccated. Dry beans are beginning to turn color and drop leaves (Fig. 4).



Figure 2: Corn at dent stage in Pembina County
Photo: Anitha Chirumamilla, LREC

Sunflowers are looking good overall and are currently at the R6 growth stage, with ray petals beginning to drop.

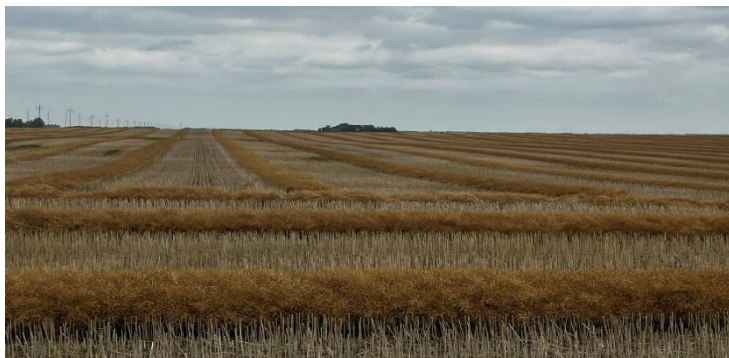


Figure 3: Canola swathed in Pembina County
Photo Anitha Chirumamilla, LREC



Figure 5. Soybean pods with 2 and 4 seeds
Photo: Anitha Chirumamilla, LREC

Soybeans have been the crop most affected by the lack of moisture this year. Many plants are producing predominantly two-seeded pods, with very few four-seeded pods (Fig. 5). Pod abortion is also occurring in the upper canopy in many fields (Fig.6). Downy mildew and white mold are beginning to show up in some areas (Figs. 7 & 8).



Figure 4: Dry beans at maturity in Cavalier County
Photo: Anitha Chirumamilla, LREC

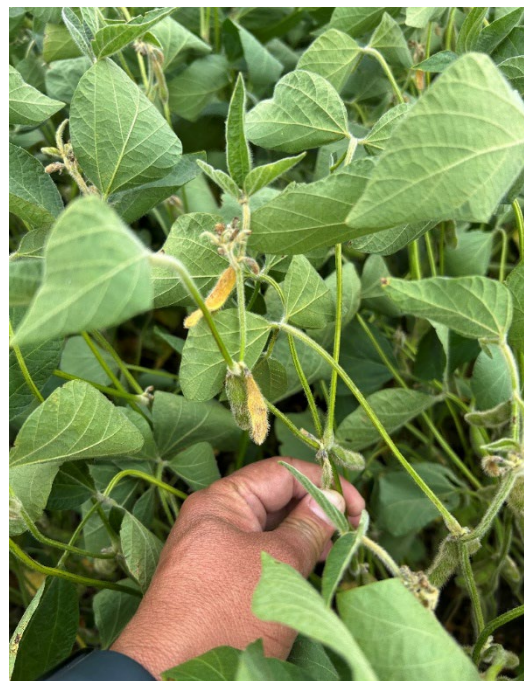


Figure 6. Aborted soybean pods in the upper nodes.
Photo: Venkat Chapara, LREC



Figure 7. Downy mildew on soybean leaves at the Langdon Research Center
Photo: Venkat Chapara, LREC



Figure 8: Dead patches of white mold in soybeans
Photo: Venkat Chapara, LREC

[Anitha Chirumamilla](#)

Extension Cropping Systems Specialist
Langdon Research Extension Center

NORTHWEST ND

In the past 30 days most of Divide and Burke Counties and the northern part of Williams County have received greater than 1.55 inches of rainfall with a small part of the rainfall still coming over this past weekend. Small grain crops are being harvested with some barley in these counties yielding close to 90 bushels/acre.

Most of McKenzie County and the southeast part of Williams and the southwest part of Mountrail Counties have received the least rainfall in the region with a swath of McKenzie County in D3, so crop condition of later-season crops is not good in this part of the region. Hard red spring wheat yields in McKenzie County are averaging near 40 bushels/acre with a few fields in the low 60's which is very similar in these dry parts of the region. Dryland corn and soybean look very tough with some corn already harvested for silage in McKenzie County. Irrigated corn and soybean are looking quite well with few diseases present.

Most peas and lentils are harvested at least in the southern part of the region with yields being fairly well.

Canola harvest is nearly 50% completed in the southern part of the region while the northern part of the region has just started swathing canola.

[Jeff Stachler](#)

NDSU Extension Cropping Systems Specialist
Carrington Research Extension Center

SOUTH-CENTRAL/SOUTHEAST ND

The major issue across the region continues to be the drought as it strengthened even more in much of the region. Most of Traill County and parts of Cass and Steele Counties are at a D3 drought status. Much of Barnes, Cass, Griggs, Richland, Ransom, Sheridan, and Steele Counties are at a D2 status. Most of Burleigh, Eddy, Emmons, Foster, Sargent, and Wells and parts of Dickey, LaMoure, Logan, McIntosh, Sargent and Stutsman are at D1. In the areas in D2 and D3 status corn and soybean yields in most, but not all fields will be very poor. Corn silage harvest has already begun in Emmons, Foster, Kidder, Steele, Traill, and Wells Counties because corn yields will be so low and plant moisture is at the proper level for good ensiling. Figure 1 shows how poor the corn crop is in parts of fields in Emmons County August 25th. Figure 2 shows only 2 pods on a soybean plant in Griggs County August 12th which now have likely aborted due to lack of rain since that date.

Rainfall at all NDAWN stations across the region in the last two weeks range from 0.06 inch at Galesburg to 3.68 inches at Skogmo. Some NDAWN stations in Burleigh, Cass, and Emmons that are in D2 status received greater than 1 inch of rainfall in the past two weeks. However, most areas in D2 and D3 status received less than 0.6 inch of rain in the past two weeks causing crops to suffer even more.

Other issues in the region include, spider mite populations drastically increased in the driest parts of the region just in the past week in corn, dry bean and soybean fields. Spider mites can be seen on corn leaves above the ear leaf at least in Griggs County as shown in Figure 3. In my entire agronomic career, I have never seen spider mites this high into the corn canopy and this level of infestation can be found in many corn fields across the dry parts of the region. Late-season potassium deficiency in soybean is showing up in some fields, particularly on side hills in Griggs and Nelson Counties as seen in Figure 4. Late-season IDC is showing up across the entire region now, especially in the fields where it was bad earlier in the season.

Soybean cyst nematode populations are on the rise in the region as well. Figure 5 shows one soybean cyst on a PI88788 soybean root in Nelson County on August 14th. Northern corn



Figure 1: Severely drought-stricken corn having no ears in Emmons County. Photo from NDSU Extension Emmons County Agent, Nancy Deis



Figure 2: Severely drought-stricken soybean plant in Griggs County having only 2 pods on plant on August 12th that probably have aborted now due to continued lack of rainfall.

rootworm beetles have now been found in all four Griggs County corn rootworm trap fields. Only one of the two Foster County corn rootworm traps have had in northern corn rootworm beetles with no more than 3 beetles in a three-week period in that one field. Soybean aphids are still at very low levels in most of the region and now soybeans are advanced enough there will be no need to spray for soybean aphids this year. Grasshopper populations continue to increase across the region, thankfully I have observed no populations at economic thresholds yet. Soybean stem and/or root diseases are starting to show up now in soybean fields in the region as observed in figure 6 in LaMoure County, but is present in most counties in the eastern part of the region, however we are still trying to figure out which stem diseases are most prevalent in the region.



Figure 3: Severely invested corn plants with spider mites on leaves above the ear leaf in Griggs County.



Figure 4: Symptomology of late-season potassium deficiency on soybean in Nelson County.

Weeds continue to be an issue in the region along field perimeters/edges. I have seen a slight increase in the number of field perimeters mowed in the last week and I saw one field that even mowed off some of the crop where weeds were located to make sure the field margin was devoid of weeds. Waterhemp and kochia are most prevalent in the region in dry bean and sunflower fields, but can also be seen in many soybean fields and some corn fields across the region. The poor early season weather conditions and the continued increase in herbicide resistant populations are the two factors allowing weeds to be in fields. It looks to me that most waterhemp and kochia populations in the region are PPO-resistant since these species

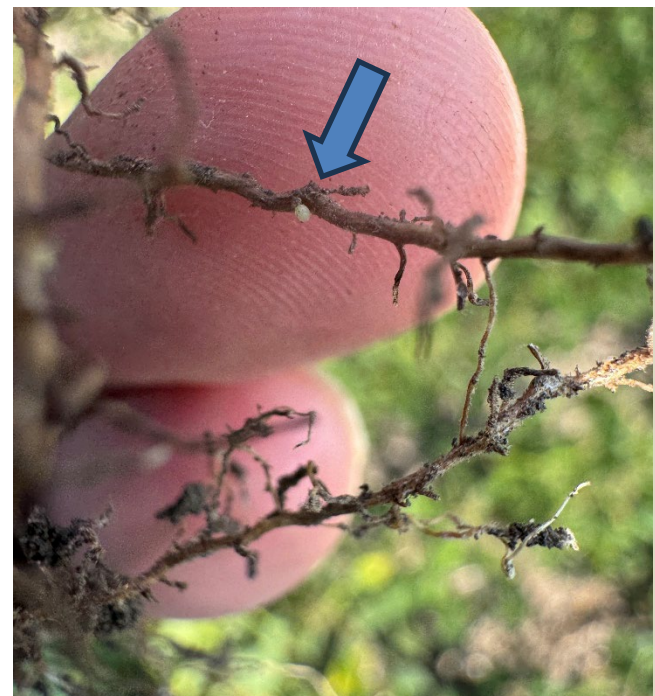


Figure 5: One soybean cyst nematode feeding on a PI88788 soybean variety in Nelson County.

are showing up in the greatest densities in dry bean and sunflower where PPO-herbicides are relied upon for control of these weed species. The most common broadleaf weed species in road ditches and non-crop areas this year, at least in all counties east of the Missouri River, continues to be perennial sowthistle! Weed management starts along the field perimeter.

The average corn growing degree days (GDD's) since the last newsletter increased at least 238 GDD's across the seven locations in Table 1. Mooreton has accumulated the greatest number of GDD's since May 13th of 1953 GDD's while Denhoff has only accumulated 1690 GDD's. The Denhoff NDAWN location continues to have the greatest departure from normal GDD's for this time of year across these 7 locations at - 70 GDD's while Mayville continues moving along at 232 GDD's. Based upon the accumulated GDD's at Denhoff since May 13th, an 80-day corn hybrid could reach black layer August 29th now, 3 days earlier than last newsletter and ahead of any freezing temperatures. Based upon the accumulated GDD's at Mooreton since May 13th, a 95-day corn hybrid could reach black layer by September 15th, 1 day earlier than last newsletter and ahead of any freezing temperatures.

Table 1. Accumulated and departure from normal GDD's for seven NDAWN stations across the region.

	Denhoff	Linton	McHenry	Jamestown	Edgeley	Mayville	Mooreton
Accumulation from 5-13 to 8-10, 2026	1690	1824	1774	1742	1824	1897	1953
Departure from last newsletter	+ 247	+ 277	+ 248	+ 238	+ 253	+ 266	+ 267
Departure from normal	- 70	+ 33	+ 132	+ 54	+ 95	+ 232	+ 122
Departure from 2025	+ 228	+ 161	+ 225	+ 153	+ 168	+ 291	+ 258
Departure from the 5-year average	+ 47	+ 36	+ 85	+ 37	+ 28	+ 127	+ 86
Departure between last newsletter and Aug. 24 for the 5-year average	- 4	+ 3	- 7	- 16	- 11	+ 5	- 6

Hard red spring wheat (HRSW) and barley harvest is at least 75% completed north of Interstate 94 and completely or nearly completely harvested south of Interstate 94. HRSW yields are ranging between 15 and 85 bushels/A across the region with a region average likely to be around 60 bushels/A. Test weight has been mostly in the high 50's. Protein has been very high this season ranging from 14 to 19%, with much of the HRSW about 15 to 16%. I still have heard of little dockage in most HRSW grain samples across the region.

Corn condition declined again this past week in most of the region especially those areas receiving less than 0.6 inch of rain. Corn yields will yield nothing in parts of many fields and some fields have been chopped already for silage. Corn growth stage in the region ranges from about late-R3 (milk) to R5 (dent stage) with most corn starting R5 stage.

Soybean condition continued to decline as well this past week in most of the region due to the drought. Soybean growth stage ranges from R5 (pods beginning to seed in one of the upper 4 nodes) to R7 (at least one brown pod on the plant and leaves dropping) with most in the late R5 to mid-R6 (full-sized seed in at least one pod in the upper 4 nodes of a plant). The most advanced plants are in the driest areas of fields or where spider mites severely damaged plants while other areas of the field are still dark green and in the R6 stage. The dry conditions are certainly pushing soybean maturity.

Canola is over 50% harvested in Burleigh and Emmons Counties and areas south of Highway 200. Not much canola has been harvested north of Highway 200. So far canola yields are ranging from 1,200 pounds/A in the driest areas up to 2,800 pounds/A in the better soils up to this point in time. Seed size has been small and test weights on the lower side in some fields. With dry weather harvest will continue into the northern part of the region.

Dry bean condition also declined in most of the region over the past two weeks. Plants are shutting down and crop maturity is speeding up in the driest parts of fields while some areas of these same fields have green plants yet. Dry bean yields will be down substantially in most parts of the region with some plants having no pods. Dry bean harvest has started already in Richland County! Dry bean growth stage is at least at the R7 (full seed) stage with many dry bean in many fields in the region starting R8 (leaves yellowing or pods beginning to ripen) stage.



Figure 6: Individual soybean plants dying from some stem or root disease in LaMoure County.

Dry bean yields will be down substantially in most parts of the region with some plants having no pods. Dry bean harvest has started already in Richland County! Dry bean growth stage is at least at the R7 (full seed) stage with many dry bean in many fields in the region starting R8 (leaves yellowing or pods beginning to ripen) stage.

Sunflowers look really good from the road across the entire region, however when you walk fields plant height is usually shorter than normal, especially in the driest parts of the field and head diameter appears to be less in many fields as well. Sunflower growth stage ranges from R5 (flowering) to at least R8 (back of head yellow but bracts still green) stage with most at least at the R6 (ray flowers wilting or dropped) stage. I'm sure some early planted sunflower fields in Cass County are nearing maturity. Several agents mentioned observing wilted sunflower plants in some of the driest areas of fields due to drought.

Please continue to think about safety during harvest and seek any necessary mental health assistance.

[Jeff Stachler](#)
Extension Cropping Systems Specialist

SOUTHWEST ND

Heavy rains in the last weeks resulted in a huge sigh of relief for some farmers in the southwest. Total rainfall was around 0.5 to over 6 inches in some areas. Crops were looking very miserable in the past months, with all of us feeling desperate for some moisture. The rain did not save all our crops, but perhaps it will give a chance to improve yields in some fields for our later harvests.

Small grains harvest is almost complete, but with about 50-60% of wheat being baled. With the recent loss of Woody's grain in Dickinson, there is also concerns about the loss of the oat market in the southwest. Canola harvest is almost complete, as well, and yields are reported to be mediocre. Corn and soybeans are looking mediocre as well, with some corn being harvested for silage. Sunflowers, on the other hand, are looking quite good in comparison. They are shorter with smaller heads, but the standing plants are healthy.

Kochia continues to be a problem for the southwest, and we likely have herbicide resistance. Chemical methods did not control all the plants, and large patches and plants can be found in fields across the region. There are small patches of foxtail barley in our saline areas, as well as a few perennial sowthistle spotted. There has been one positive identification of waterhemp in Morton county.



Corn plant from Adams County. Courtesy of Aspen Lenning, ANR Extension Agent.

Overall, things are looking better in the southwest but not particularly great. Hopefully some later season rains will help with grain fill as we approach the end of the growing season.

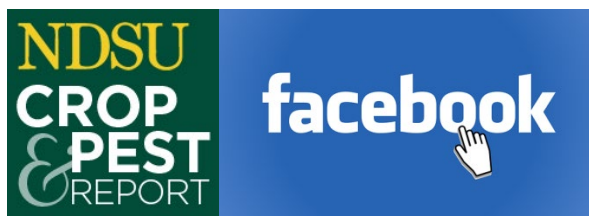
[Alexis Correia](#)

Conservation Agronomist
NDSU Dickinson Research and Extension Center

North Dakota State University
CROP & PEST REPORT
NDSU Dept. 7660; PO Box 6050
Fargo, ND 58108-6050

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