NDSU EXTENSION COVER CROP FIELD DAY

Opportunities to incorporate cover crops into various cropping systems will be the focus of a North Dakota State University Extension field day Tuesday, September 17.

Registration is required. For registration go to:

https://forms.gle/zy9QnmEXY6nND3cu9

The benefits of cover crops and how they can be used as part of an interseeding system in wheat, corn, and soybeans will be discussed and demonstrated. Educational sessions and field visits will be at the NDSU campus research plots 0.4 mile west of the corner of 18th Street and 15th Avenue North in Fargo. Registration will begin at 8 a.m. and sessions will end at 3 p.m.

The field day will highlight 20 different cover crop species and how they can be incorporated into a farming operation or used for fall grazing.

Other topics presenters will discuss include:
* Cover crops and soil health
* Benefits and challenges of cover crops
* Forage sorghum and grazing mixtures
* The results of seeding timing
* Rate of rye and camelina seeded into standing corn or soybeans

In addition, participants will visit the NDSU field research and demonstration plots near Reile’s Acres, N.D., by bus. Stops include a research area with cover crop interseeded into soybean; a research site investigating the effect of fall-seeded cover crops after wheat harvest on the following soybean crop; and, a cowpea demonstration showing various types of cowpeas.

After lunch, researchers will present results of interseeding camelina and rye into corn and sugarbeet, and the use of cover crops to manage soybean cyst nematodes. The program will conclude with a panel discussion which will include a question-and-answer session.

Lunch will be provided; register online. For more information about the field day and preliminary research results, visit the project’s website at https://www.cropsyscap.org.
This field day is part of the outreach effort associated with a National Institute of Food and Agriculture grant from the U.S. Department of Agriculture awarded to North Dakota Agricultural Experiment Station scientists (Award no. 2016-69004-24784, “CropSys - A novel management approach to increase productivity, resilience, and long-term sustainability of cropping systems in the northern Great Plains”). The grant research aims to study how cover crops can increase the resiliency and productivity of crops such as corn and soybeans and improve soil health and land use efficiency.

Hans Kandel
Extension Agronomist Broadleaf Crops

Marisol Berti
NDSU Forage & Biomass Crop Production

NO SOYBEAN GALL MIDGE DETECTED IN ND

Soybean gall midge, Resseliella maxima, continues to be an important new pest of soybeans and has increased its presence in Iowa, Minnesota, Nebraska and South Dakota from a total of 67 counties in 2018 to 93 counties in 2019 (Source: Justin McMechan, University of Nebraska). Soybean gall midge was also detected in northwest Missouri for the first time this year (Source: Kevin Rice, University of Missouri). However, our 2019 survey for soybean gall midge detected no soybean gall midge in soybeans in ND. We focused on the bordering counties where populations may be moving from Minnesota and South Dakota into ND.

Wondering how to scout for soybean gall midge? Infestations of soybean gall midge are most common near field edges, close to last year’s soybean fields, so focus on field edges. Soybean stems should be inspected for darkened areas near the base (or soil line). Peel back the epidermis near the plant base with your fingernail and look for white or orange larvae underneath the epidermis. Larvae turn orange when they are mature and ready for pupation. This insect has at least two generations in Minnesota, and the second generation can infest stems higher up on plant near branches (Source: Bruce Potter, UMN Extension).

Watch Bruce Potter’s YouTube video on scouting for soybean gall midge at: https://www.youtube.com/watch?v=9ijE9OrVdKM&feature=youtu.be

If you suspect stems infested with soybean gall midge, please let me know. Thank you.
The most common insect pest problems in soybeans and dry beans reported the last couple of weeks are foliage-feeding caterpillars including a few late thistle caterpillars, and numerous green cloverworms. Field reports have come in from the Red River Valley area of Fargo north to St. Thomas and east to Park Rapids, Minnesota.

Scouting: Since green cloverworm larvae are green and blend in with the bean foliage, it is easier to find them by using a drop cloth placed between two rows of plants, or just vigorously shaking the plants to dislodge larvae from the plants onto the soil. Then, count the number of larvae to estimate the number per row feet. However, the Economic Threshold (E.T.) used for all foliage-feeding caterpillars is based on defoliation:

- **SOYBEANS** - 20% defoliation from pod-set to maturity
- **DRY BEANS** – 25-30% defoliation

Note: Soybean gall midge has not been detected in ND.
When estimating defoliation, remember to look at lower, middle, and upper canopy of foliage and calculate an average. Foliage-feeding caterpillars often cause the most damage only to the upper foliage of beans.

**Green cloverworms** are green with two narrow, white stripes down the side. When mature, larvae are 1 ¼ inches long. These caterpillars have only three pairs of fleshy prolegs on the abdomen, plus a pair of prolegs on the back segment. When moving, the worms move by arching the middle of the body, or “looping.” Young larvae scrape leaf tissue creating a transparent skin, or "window," on the leaf surface. Older cloverworms eat holes in the leaves.

When I went out to nearby soybeans and dry bean fields with crop consultants and growers last week, we found a few thistle caterpillars (most were already mature or dead from a viral disease) and many green cloverworms in all different stages - young to mature larvae. There were up to 30 green cloverworm larvae per square yard in some fields. However, we decided that the defoliation was below the E.T. of 20% defoliation for soybeans when you considered the lower, middle and upper canopies. Defoliation by green cloverworm was common only in the upper canopy of plants. Green cloverworm is less likely to feed on pods as it prefers foliage.

The other factor that we considered was maturity of beans. We decided that if the beans were fairly far along in seed set (R5 or R6 in soybeans) that the green cloverworms were less likely to affect yield than late-planted beans. For any late-planted soybeans or dry beans near the R3-R4 pod set stages, we recommended that it would be worthwhile to treat if defoliation is above the established E.T. These fields have a longer time to maturity, and it is more likely that the feeding injury from insect pests could negatively affect yield. Remember to watch for grasshoppers feeding on pods since grasshoppers will be moving out of cereal grain fields as they are harvested.

Also, the recent cooler temperatures are going to slow down insect feeding as low temperatures drop to 50F or below. Insects will be less active including grasshoppers and caterpillars. In fact, the preferred temperature range of grasshoppers is 86-112F. Grasshoppers need to warm up their body temperatures in the morning before they are capable of flying or other movements and food consumption.

**PYRETHROID RESISTANT SOYBEAN APHIDS IN ND**

In 2019, soybean aphids were low and present at non-economic populations in soybeans in ND. A few aphids were collected from a soybean field in Grand Forks County for the pyrethroid resistance bioassay. These aphids were sent to Dr. Koch’s laboratory at the University of Minnesota for rearing and testing for pyrethroid resistance. Results indicate that this population was fairly resistant to bifenthrin (Trade name Brigade 2EC and generics) with 60-70% survivorship, and two of the four lambda-cyhalothrin (Warrior II and generics) vials had single survivors while one had 50% survivorship. So, pyrethroid resistant soybean aphid populations may be established in ND or migrating into ND from other resistant areas.

This illustrated the importance of proper pest management, especially treating fields with insecticides only when necessary and at the E.T. - average of 250 aphids per plant when populations are actively increasing in 80% of field. For more information, consult the multistate extension publication, *E1878 Management of Insecticide-resistant Soybean Aphid*. 

Guide to estimating damage caused by defoliating insects.
The intercropping of alfalfa into corn experiment was conducted at three environments in Prosper and Forman, ND, established in 2016, and Prosper, established in 2017. The results across the three environments, indicate that alfalfa yield was greater for alfalfa established alone the first year compared with the other treatments. Alfalfa intercropped into corn at establishment, with or without prohexadione application, had lower yield than alfalfa seeded alone, but 2.2 to 2.5 times greater yield than the spring-seeded alfalfa following corn. In the third year of production (alfalfa established at Forman or Prosper in 2016), alfalfa yield was similar for all four treatments. An economic calculation for the results in North Dakota indicate the intercropping system has a positive outcome. In Year 1, corn yield decreased on average 30 bu/acre due to the competition alfalfa imposed. In Year 2, alfalfa yield increased by about 2.5 tons/acre compared to the spring-seeded alfalfa. In Figure 1, you can observe the increase in alfalfa yield compared to spring-seeded alfalfa was 170 to 184% higher for alfalfa established intercropped with corn the previous year. When compared with alfalfa established a year before, the yield of alfalfa intercropped is lower (-19 to -25%) but then you would not have had corn the first year. In the third-year, alfalfa yield is similar for all treatments, meaning no effect from the first-year intercropping system is observed.
With these research findings and expectations of market prices, one can estimate the economic impact of intercropping. Assuming corn and alfalfa prices of $3 per bushel and $100 per ton, revenue from corn sales are expected to be $90 per acre (30 bushels x $3) lower in year 1, but $250 per acre (2.5 ton x $100 per ton) higher in year 2 when interseeded alfalfa is harvest and sold. Across both years, intercropped alfalfa into corn is expected to increase revenue $160 per acre compared to when corn is planted in the first year and alfalfa is established in the second.

A decision tool based on the research was developed to estimate the financial outcome of intercropping alfalfa and corn for alfalfa establishment with a range of financial and production inputs. This decision tool is intended to aid farmers considering interseeding alfalfa in corn. Producers can use available baseline assumptions or enter data specific to the farm operation. The tool estimates the economic returns to six cropping system alternatives.

The tool does not provide a pure "apples-to-apples" comparison between crop systems. Differences in unpaid operator labor and management requirements, production risk and marketing risk are not considered. The tool is available at: [https://www.cropsyscap.org/information-for-farmers-1/corn-alfalfa-interseeding-decision-tool](https://www.cropsyscap.org/information-for-farmers-1/corn-alfalfa-interseeding-decision-tool)

The development of the tool is part of the outreach effort associated with a National Institute of Food and Agriculture grant from the U.S. Department of Agriculture awarded to North Dakota Agricultural Experiment Station scientists (Award no. 2016-69004-24784, "CropSys - A novel management approach to increase productivity, resilience, and long-term sustainability of cropping systems in the northern Great Plains"). The project has a web site [https://www.cropsyscap.org](https://www.cropsyscap.org), and has additional information of research projects and outcomes.

Marisol Berti  
NDSU Forage & Biomass Crop Production

Dulan Samarappuli  
NDSU Research Associate

Dave Ripplinger  
Bioenergy/Bioproducts Economics Extension Specialist

Hans Kandel  
Extension Agronomist Broadleaf Crops
LOW FALLING NUMBERS IN WHEAT A CONCERN

Low falling numbers (FN) is a concern in some areas of North Dakota, particularly in areas where harvest has been delayed by excessive moisture. The falling numbers test is used by the grain industry to determine potential or possible sprout damage in cereal grains. This test gives an indication of the level of alpha-amylase (starch degrading) enzyme activity in a sample of grain or flour. The wheat industry typically considers grain with FN values over 300 seconds to be sound, while grain with values below 300 seconds are often discounted. As a result, domestic and international customers set a minimum FN value in their contract specifications. Low FN number values are possible even if there are no visible signs of germination, yet alpha amylase enzymes levels are elevated. Grain with low FN is discounted because of its reduced value to the baking industry. Flour made from grain with low FN has low water absorption, reduced mixing strength and forms a sticky dough. Bread made from flour with low FN can result in lower loaf volume, crust strength and crumb texture, and creates loaves that may collapse or produce holes in the middle. Durum products made with semolina from grain with low FN has reduced shelf life, are less firm when cooked, can result in greater cooking losses, and may even increase breakage in packages.

There are two primary causes of low FN. The first and most common is due to pre-harvest sprouting. Pre-harvest sprouting (PHS) of kernels in the spike does not occur until they have fully matured and undergone a period of “ripening”, after which repeated rains and prolonged periods of dew can initiate germination. Often the kernel only initiates the first step in the germination process before the kernel then dries and is returned to a dormant state so no visible sprouting can be observed. This first step includes the synthesis of alpha amylase enzymes that degrade the starch in the kernel to produce compounds essential for metabolic activities needed for germination and seedling growth. Varieties differ in their propensity to “sprout” when conditions are favorable for sprouting prior to harvest. Most of the commonly grown spring wheat varieties have relatively good sprout tolerance (see Table 2 in the report of the variety trials conducted by the University of Minnesota for a comprehensive list of preharvest sprout ratings of most varieties of spring wheat grown in the region).

The second potential cause for low FN is called late maturity alpha amylase (LMA). LMA occurs when elevated levels of alpha amylase are produced during kernel development. The literature suggests that LMA can be induced by either a heat or cold shock (most likely type of shock the crop may have experienced this year) during a key kernel developmental stage. I know of at least one report this year where a grower was surprised to learn that his grain had a lower than normal FN even though the grain had been harvested prior to any post-maturity rain events. In my opinion, this is a classic example of LMA. In the literature there are reports of genetic differences in the propensity of varieties to develop LMA, but as far as I know, this has not been documented in spring wheat varieties adapted to North Dakota (i.e. we do not know if some varieties are more susceptible to LMA than others).

I have had several questions about whether a pre-harvest application of glyphosate might affect PHS or influence the FN test, particularly since glyphosate is known to affect the germination of seeds when plants are treated prior to reaching harvest maturity. Though the literature is somewhat limited on this question, it appears that glyphosate when applied for pre-harvest weed control at the labeled time and rate has no effect on FNs, positive or negative.

Discounts for low FN numbers can be significant. Nevertheless, blending grain with low FN with sound grain can be risky because the relationship is not linear but rather exponential, and it is difficult to predict what the FN of the blended grain might be. As a hypothetical example, mixing grain with a FN of 350 sec with grain with a FN of 250 sec will not result in grain with a falling number of 300 sec. Potentially it might be 270 sec, resulting in the entire mixture being subject to discounts.

Joel Ransom
Extension Agronomist, Small Grains and Corn
FALL FERTILIZER APPLICATIONS

With the problems applying fertilizer in fall 2018 and fertilizer application delays spring 2019, I anticipate much more interest in fall fertilization this year than in most years. The following are guidelines to consider.

Fall strip-till
The best plan to make sure that the strip-till strips are made is to run the strip-till implement directly after harvest of early crops. Fertilizer P and K, if needed, can be applied in an August/September strip-till pass, but fertilizer N should be delayed as detailed in the ‘Fall N application’ guidelines later in the article.

Fall P and K application
Fertilizer P and K can be applied anytime in the fall that field conditions permit. For no-till fields, surface application is possible, but not when fields are frozen. Application with an air-seeder or similar implement can help prevent movement of recent surface-applied fertilizer should a heavy rain fall shortly after the application.

Fall N application
The guidelines for fall N application are as follows for ND:
- No fertilizer N (except the small amount in MAP or other P products) before October 1.
- After October 1, wait until soil temperature measured at 4 inch depth between 6AM and 8AM reaches 50°F or lower. At that date it would be reasonably safe to begin anhydrous ammonia application.
- Wait another week to begin banded urea application.
- Wait 2 weeks after the anhydrous safe date to begin broadcast urea application.

These guidelines are no guarantee that some ammonium-N will not transform to nitrate should we experience a long fall period before soil freeze-up, but these guidelines are practical compromises to allow semi-protected ammonia stability in most fall seasons.

The two chemistries that have nitrification inhibited are nitrapyrin (N-Serve™, Instinct II™, others) and DCD products. In research studies the formulation with greatest effectiveness tends to be the N-Serve for anhydrous ammonia. The urea products show effectiveness, but not to the same degree. For best effectiveness, use a DCD rate on urea which is similar to the concentration in SuperU™ (Koch product).

See the circular Nitrogen Extenders and Additives for more detailed information - https://www.ndsu.edu/fileadmin/soils/pdfs/Nitrogen_Extenders_and_Additive_for_Field_Crops_2017.pdf (Reference to specific products are not endorsements of these products).

A nitrification inhibitor should not be used to push application date of N fertilizers earlier. The nitrification inhibitors can best be used to provide protection against a warmer-than-normal fall, or a longer fall period than anticipated.

Fall Sulfur?
Sulfur is not a fall fertilizer. Sulfate-S can leach in the spring, so fall application is unreasonable. It can only work if there is a drought. The proposed strategy of using elemental-S in the fall is flawed, because any sulfate produced from this application in the fall is susceptible to leaching in the spring. The remaining S is elemental-S so release of any available S would be very slow and probably not enough to sustain any crop that requires S. So spring applied sulfate-thiosulfate fertilizers are the rule.

Lime application
I realize that limestone application/sugarbeet waste lime/municipal water treatment lime application has not been common in North Dakota, but that history is changing rapidly. In the west particularly, as I tried to convey in a previous C&P report, there are great expanses that have pH as low as the high 4’s. In no-till fields, recent research from the North Central and Dickinson R&E Centers indicate that great improvements can be made with surface application. Sample the 0-2 inch and 2-6 inch depths in a zone pattern within fields and lime accordingly.
One to 2 tons per acre of sugarbeet/municipal lime sources should be sufficient to correct a low pH, Al toxicity problem for several years. Fall is the ideal time to apply lime. Time is too short in the spring for practical application.

Dave Franzen
Extension Soil Specialist
701-799-2565

AUGUST AND SEPTEMBER ARE THE MONTHS TO SCOUT FOR PALMER AMARANTH

Palmer amaranth is difficult to distinguish from waterhemp early in the season since many characteristics are very similar between both dicot pigweed species. However, August and September are excellent months to scout for Palmer amaranth.

The most visible characteristic is the flowering structure that might be 1 to 2 feet long, and mostly non-branched on Palmer amaranth. Each Palmer amaranth plant is either male or female; the male flowering structure feels soft and sheds pollen, while the female flowering structure feels prickly and contains seed.

The second characteristic to scout for is petiole length, often as long or longer than the leaf blades, especially on lower leaves.

Contact your county agent, area, or state specialist if you observe pigweeds curiously different or pigweeds not observed before in fields, ditches, or non-cropped lands.
PALMER AMARANTH CONFIRMED IN LINCOLN COUNTY MINNESOTA

A field seeded to cover crop was contaminated with Palmer amaranth according to representatives from Minnesota Department of Agriculture. Palmer amaranth is listed as a Prohibited Weed Seed in Minnesota and in North Dakota, meaning no Palmer amaranth is allowed in any seed offered for sale.

Lincoln County is the fourth county in southwestern Minnesota identified with Palmer Amaranth. Palmer amaranth was identified previously in Yellow Medicine and Lyon Counties in conservation plantings in 2016 and in a row crop field in Redwood County in 2018.

LABOR DAY, COLLEGE FOOTBALL, AND REFLECTION ON WEED MANAGEMENT IN 2019

I think of the start to the college football season when I am reminded of Labor Day. It is also the time of the year when many growers are beginning preparation for fall row crop harvest. But wait, we have not finished collecting 2019 field season data. I am writing to remind you to take weed species and density notes and, if possible, maps spatially representing where you observed tough weeds in fields in 2019. These data must be collected ahead of harvest since the combine will eliminate all evidence of 2019 weeds or any other 2019 mistakes.

These data compliment pesticide application records and are critical as growers continue to develop their management strategy for each field in the farming operation. Use your field scouting notes, maps, and your 2020 cropping plans to develop a comprehensive weed management strategy after carefully considering the ‘biology’ of the ‘tough weeds’ challenging your fields. Continue to learn germination and emergence habits of weeds and timeline when each weed species may begin to germinate and its emergence in fields. And above all, study the various herbicide options in-crop, considering mode of action, application timing, and mixtures to augment control and learn of any potential herbicide rotational restrictions for future crops planted in the cropping sequence.

Unexpected weather will always provide a wrinkle to the weed management strategy so develop a backup plan if your strategy needs to be adjusted due to unforeseen circumstances. Finally, don’t be afraid to reevaluate the strategy and make changes to the weed management strategy based on mistakes or disappointing results. Remember that Einstein was the one who stated that anyone who has never made a mistake has never tried anything new. Here is to a safe and productive 2019 row crops harvest and best wishes for 2020.

Tom Peters
Extension Sugarbeet Agronomist
NDSU & U of MN
AROUND THE STATE

NORTH CENTRAL ND

Up and down temperatures have ruled the area over the past few weeks. Hit and miss storms have brought moisture to the area - the following are area NDAWN observations for the past two weeks: Minot 1.70”; Rugby 0.79”; Bottineau 2.38”; Rolla 1.14”; Plaza 0.42”; Mohall 1.58”; and Garrison 1.26”.

Sunflower moth numbers began to fall over the past week. They were nearly non-existent in the Ward County area. The highest Banded Sunflower moth catch was recorded over the last week with about 30 moths found in the trap at the Renville County site. The other two species have fallen considerably in their numbers. Grasshopper continued to be observed in the grassy areas and along field edges. Canola flea beetle was observed in growing numbers in area gardens and other mustard family related plants as canola continues to dry out. Harvest at the NCREC is underway and small grain and pulse harvest should wrap up soon. Throughout the area, harvest is not progressing as quickly as the NCREC site. Moisture has kept many growers out of the field over the last week but a drier forecast appears to be in front of us.

TJ Prochaska
Extension Crop Protection Specialist
NDSU North Central Research Extension Center

NORTHWEST ND

Good harvest progress was made last week with warm temperatures and dry conditions. Over the weekend of August 24th, it turned cloudy and cooler for most of the weekend as scattered rain showers and some strong thunderstorms moved through the area. Rainfall ranged from only trace amounts to over an inch where small cells dumped heavy rain in short periods of time. The 10-day forecast is showing warmer and drier conditions through Labor Day weekend and then more moderate high temperatures in the low 70’s and upper 60’s for the first few days of September.

It is too soon to say how the 2019 crop as a whole is shaping up, but I have heard a mix of average and high yields for spring wheat so far. For some, it seems like despite the dry spring and wetter mid-summer, rain came at the right time to boost yield, while for others, the rain wasn’t as well-timed and they’re seeing a more average crop. Scab is still a concern and there may be some high-VOM durum and wheat out there as rain during flowering certainly happened. I am curious to see what soybean yield is like as there were more first-time acres in Northwest North Dakota this year and we’ve had rain in August, which should be good for that crop.

On Wed, Sept 11th there will be a Fall Weed Control Meeting at the McKenzie County Courthouse in Watford City 9:30 am to noon with a lunch following. Topics include winter annual weed identification and control strategies for troublesome weeds including narrowleaf hawksbeard and horseweed/marestail. Speakers are Devan Leo, McKenzie Co. Ag Agent; Clair Keene, Extension Specialist WREC; Brian Jenks, Weed Scientist NCREC; and Mike Jenks, Helena Agronomist. If you have questions about this event, please call the McKenzie County Extension Office at 701-444-3451.

Clair Keene
Extension Cropping Systems Specialist
NDSU Williston Research Extension Center

Narrowleaf hawksbeard, a troublesome winter annual weed.
NORTHEAST ND

Small grain harvest continues. Some farms are finished in the valley. Yields have been variable (low to average).

Canola swathing is happening. Swathing is an excellent time to look for clubroot in the field. If plants are not cut cleanly, consider stopping the swatch and pulling up plants to look for clubs. Other canola fields are turning brown and are nearly ready for combining.

Dry bean and some soybean fields have lower canopy leaves yellowing and dropping. Other soybean fields are still green and filling pods. Sunflowers are starting to drop ray petals.

No major pests to report. Some concerns about wet weather impacting pre-harvest sprouting in barley and potential storm systems bringing wind damage to canola.

Lesley Lubenow
Extension Cropping Systems Specialist
NDSU Langdon Research Extension Center

SOUTH-CENTRAL/SOUTHEAST ND

Based on NDAWN, the region’s total rainfall May 1 through August 26 ranged from 9.6 inches (Harvey) to 17.9 inches (Robinson), with the Carrington REC receiving 11.1 inches. During the current month (August 1-26), rainfall ranged from 2.1 inches (Edgeley) to 4.9 inches (Oakes). Daily water use by corn (emerged on June 1) during August 1-26 averaged 0.18 inch.

The region’s corn growing degree day units (GDDU) accumulated from May 20 to August 26 range from 1480 (Robinson and Wishek) to 1710 (Brampton and Oakes). This range is -240 to +10 GDDU, depending on location, compared to the long-term average for the period. May planted corn ranges from milk to dent stages (R3-5). While corn has good yield potential, it is our row crop at most risk to reach physiological maturity.

Carrington REC’s dryland barley variety trial averaged 61.5 bu/acre; 42.3 lb/bu; 10.7% protein and 83% plump. In contrast, the irrigated barley variety trial averaged 109.5 bu/acre; 46.1 lb/bu; 13.4% protein and 93% plump.

Winter and spring cereal crop harvest continues including spring wheat. Rainfall is hindering harvest progress and reducing potential of marketing high quality seed.

Dry bean is nearing or at physiological maturity (R9 stage). Soybean has developing seeds (R5-6 stages). Sunflower stages primarily range from ray-petal drop to backside of head losing green color (R6-7).

The Carrington REC’s Row Crop tour is today (August 29) with tour wagons rolling at 4:30 p.m. General topics include field status of corn and soybean; white mold management of dry bean and soybean; cover crop research in dry bean and soybean; and corn intercropping.

Greg Endres
Extension Cropping Systems Specialist
NDSU Carrington Research Extension Center
Most farms are behind on harvesting this year. With cool and wet temperatures, conditions haven’t been ideal for dry down. Canola harvest just started over the past week in the region, some wheat and durum fields have been harvested but many are waiting for it to dry down further. As of August 27th there are reports of wheat fields still at 16-20% moisture. For those that didn’t receive hail the crop is looking amazing this year. There are definitely pockets of scab and other disease as well as wheat stem sawfly damage. If you noticed sawfly damage last year, and more damage this year it would probably be a great time to rotate into a broadleaf crop. At the bare minimum be sure to plant some solid stem varieties next year. Row crops are looking great so far for most in the region. We will be conducting the National Sunflower Survey this fall sponsored by the National Sunflower Association. The survey observes disease, insect, and weed issues in the field as well as other yield limiting factors such as spacing within the row and bird damage. Along with looking for issues, we also make a yield estimate. If you would like us to survey your sunflower field, please contact your local county agent. This survey helps the National Sunflower Association and researchers direct our attention to emerging issues in sunflower production and gives us a diverse set of data points.

If soil acidity appears to be an issue for you, now would be a great time to look further into liming. Getting a consistent spread can be difficult, but it can be done. Also be sure to look into tolerant varieties. We weren’t able to harvest our low pH HRSW variety site yet due to high moisture, but I will have data to share soon.

Ryan Buetow
Extension Cropping Systems Specialist
NDSU Dickinson Research Extension Center