

No. 03 March 19, 2026

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UPCOMING EVENTS

View all Extension events here: <https://www.ndsu.edu/agriculture/ag-home/events>

NDSU EXTENSION EXTENDING KNOWLEDGE >> CHANGING LIVES



Gearing up for the 2026 Growing Season

<p>8:15am Doughnuts, Coffee, and a Foundation Seed Update - Venkat Chapara</p> <p>Agronomy Update - Rutendo Nyamusamba</p> <p>Disease, Insect and Soil Health Q&A Panel - Venkat Chapara, Anitha Chirumamilla, Naeem Kalwar</p> <p>War with Weeds Q&A Panel - Brian Jenks, Jeff Stachler, and Todd Christianson (Simplot)</p> <p>Field Water Management in Spring - Laxmi Prasad</p> <p>Noon Lunch</p> <p>Boron Fertilization in Canola - Victor Gomes</p> <p>Crop Market Outlook - Frayne Olson</p>	<p style="text-align: center; font-weight: bold;">TUESDAY</p> <p style="text-align: center; font-weight: bold;">March 24, 2026</p> <p style="text-align: center;">8:15 a.m. - 2:15 p.m.</p> <p style="text-align: center; font-size: x-small;">NDSU Langdon Research Extension Center</p> <p style="text-align: center; font-size: x-small;">Contact: anitha.chirumamilla@ndsu.edu 701-256-2582</p> <div style="border: 1px solid green; padding: 2px; text-align: center; font-size: x-small; margin-top: 10px;"> Door Prize Tote of HRSW or barley seed </div>
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Requests for accommodations related to disability may be made to Anitha at 701-256-2582 or anitha.chirumamilla@ndsu.edu by March 10, 2026.

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North Dakota State University is an equal opportunity educator and employer. This work is supported by the U.S. Department of Agriculture's National Institute of Food and Agriculture.

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Cover Crop Summit

A Practical Approach to Cover Crops

Curious about using cover crops in your operation? Join this hybrid event to explore current research, economic considerations, and real-world experiences from farmers and ranchers.

THURSDAY
APRIL 2, 2026

10 AM - 4:30 PM CST

LOCATIONS

- NDSU Dickinson REC - Host Site
- NDSU Research Extension Centers - Remote Sites
- NDSU Peltier Complex - Remote Site
- Online

FREE TO ATTEND

Lunch provided at all host and remote locations. Registration required.

REGISTER
ndsu.ag/CoverCrop26









PLANTING CONSIDERATIONS

As spring arrives, everyone starts talking about the weather. Planting season is approaching, but maybe not as soon as we might hope. Although March was warmer than usual, the current **NOAA seasonal forecast suggests that temperatures in the coming months may be closer to average**, with the northeastern corner of North Dakota even leaning toward **below-average temperatures** (Figure 1).

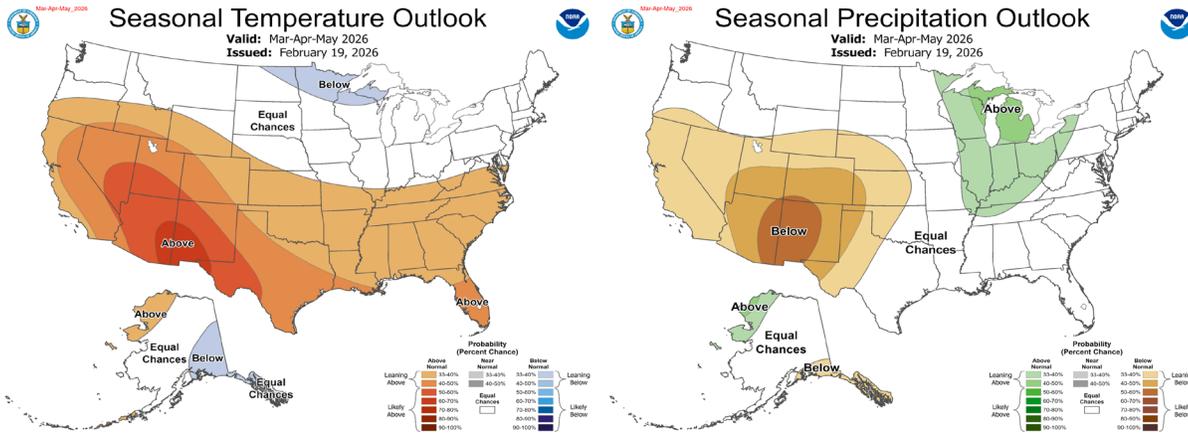


Figure 1: NOAA 90-day temperature outlook. Source: NOAA.

For most of the state, however, conditions are expected to be **near average**. But what does "average" really mean for planting? Across North Dakota, the **frost-free period typically begins sometime between April 15 and May 15**. Before this window, there is still a **50% or greater chance of experiencing freezing temperatures** (Figure 2).

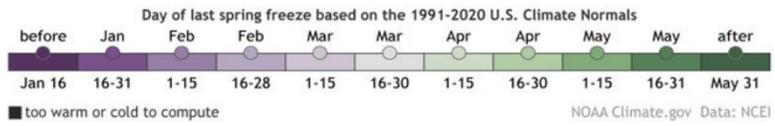
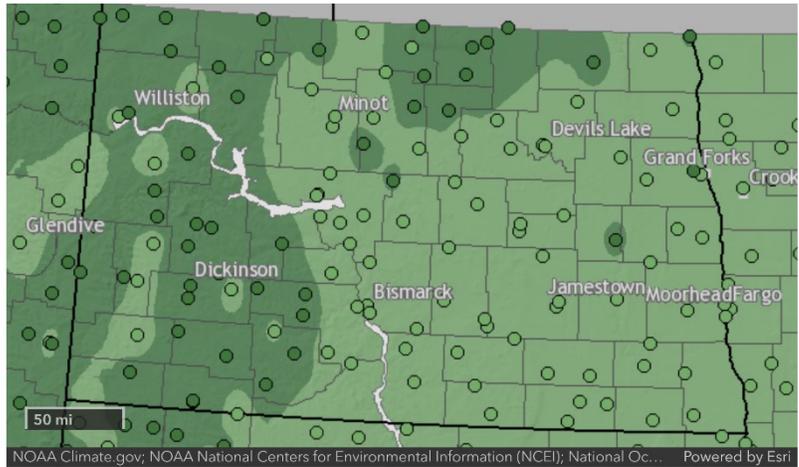


Figure 2: Average date after which the probability of temperatures remaining above freezing is higher than the probability of a return to freezing conditions. Source: NOAA.

In general, earlier planting dates are associated with higher yield potential. Soybeans are a good example. Research shows that delaying planting from May 1 to May 31 can reduce yield by approximately 0.3 bushels per acre per day. However, this assumes that soil conditions are suitable for planting: adequate moisture, soil temperatures above 50°F (I like to have at least three consecutive days with this temperature), and a favorable weather forecast. This **minimum soil temperature needed for planting varies by crop** (Table 1).

Table 1: Recommended minimum soil temperatures for planting in North Dakota

Crop	Min. Soil Temp (°F)	Optimal Soil Temp (°F)	NDSU Data Source (Link)
Field Peas	40	50 – 60	Field Pea Production Guide
Canola	38	45 – 50	Canola Production Field Guide
Flax	45	50 – 55	Flax Production in ND
Sunflowers	45	50+	NDSU Sunflower Production Guide
Soybeans	50	60 – 70	Soybean Production Field Guide

Planting when soil temperatures are below these thresholds can delay emergence, increasing the risk of soil-borne diseases, especially under wet conditions. For this reason, **monitoring soil temperature and soil moisture before planting is essential**. Soil temperature data are available from the North Dakota Agricultural Weather Network (NDAWN). You can access this information at: ndawn.ndsu.nodak.edu.

Planting sets the foundation for the entire growing season, and early decisions can have a major impact on final yield. As we get closer to the start of the season, taking time to monitor soil conditions and weather forecasts can help set crops up for success. Wishing everyone a safe and successful start to the planting season!

More information on planting can be found here:

[Early Soybean Planting Considerations | NDSU Agriculture](#)
[North Dakota Soybean Production Field Guide 2023 \(A1172\)](#)

To access the NOAA weather interactive map to see the last frost day closer to your field use this link:

[Interactive map: average date of last spring freeze across the United States | NOAA Climate.gov](#)

You want to access the NOAA weather outlook

[30 and 90-day Outlooks](#)

[Ana Carcedo](#)

NDSU Broadleaf Crop Agronomist

HOW EARLY IS TOO EARLY TO PLANT?

Over the past few of weeks, temperatures across much of southwest North Dakota approached the 60s and are expected to surpass the 70s this week, which has got many growers excited about the possibility of an early planting.

Early planting can be advantageous for row crops, allowing growers to capitalize on the longer growing season. This can allow the use of slightly longer relative maturities and extend the grain fill period, ultimately helping maximize yield potential.

However, planting early also exposes seeds and seedlings to risks associated with cold soil temperatures and cold precipitation. These conditions may lead to imbibitional chilling injury, as well as frost or freeze injury to emerging plants. With the average last spring frost date in western North Dakota typically occurring between May 21 and May 31, the risks associated with early planting can still be significant.

Different crops have different levels of tolerance to cold temperatures. Small grains such as spring wheat, barley, and oats are generally more tolerant than crops like corn and soybean. Germination of small grains can begin when soil temperatures reach approximately 40°F. Under favorable conditions, seeds will start the imbibition process (the initial

uptake of water required for germination). If a seed freezes during this process it can be damaged or killed; however, small grain seedlings are relatively tolerant of cold temperatures and can withstand temperatures as low as 28°F, and occasionally even short periods near 22°F.

With daytime highs around 60°F and nighttime temperatures near freezing, small grain seedlings should take approximately 12 days to reach the one-leaf stage, according to the Bauer and Black growing degree day model. During emergence and up to approximately the five-leaf stage, the growing point remains below the soil surface, providing protection from cold air temperatures. In these situations, even if exposed leaves experience frost injury, the plant can recover as long as the crown remains healthy.

Corn and soybean, on the other hand, are much less tolerant of cold conditions during germination. Imbibitional chilling injury may occur if seeds absorb very cold water during the first hours after planting, particularly when soil temperatures are below 50°F. The most critical period for this type of injury typically occurs within the first 24 hours after planting, especially if cold rain or a sudden drop in temperature occurs during this time.

When imbibitional chilling occurs, cell membranes can be damaged as the seed rapidly absorbs cold water. This can lead to poor germination, abnormal seedling development, reduced vigor, or even seed death, ultimately resulting in uneven emergence and reduced plant stands.

Because of these risks, growers considering early planting should monitor soil temperatures at planting depth, as well as weather forecasts for the 24 to 48 hours following planting. Ideally, soil temperatures should be near or above 50°F and trending upward, and no cold rain or major cold front should be expected immediately after planting.

Another important consideration in corn–soybean systems is crop response to early-season stand loss. Soybean plants are generally more flexible (plastic) and can better compensate for reduced stands through branching and pod production. In contrast, corn has limited ability to compensate, and uniform emergence is critical for maximizing yield potential. For this reason, waiting for favorable conditions is often more important in corn than in soybean.

Early planting can still be a valuable management strategy when conditions allow, but balancing the potential yield benefits with the risks associated with cold soil conditions is essential for achieving uniform crop establishment.

[Victor Gomes](#)

Extension Cropping Systems Specialist
NDSU Dickinson Research and Extension Center



DEPRESSION IN FARM COUNTRY – LET’S TALK ABOUT IT

Handling stresses. Fixing problems. Farmers, ranchers and others working in agriculture learn early how to take care of their own challenges. But farming and ranching is stressful, and those life stresses can feel overwhelming at times. This doesn’t mean we are weak – it means we are human. Life can get tough at times.

Being frustrated, down or exhausted doesn’t mean you are failing. Such feelings are stress signals, like the check engine light on a vehicle. They mean slow down and focus on wellness. This is particularly true if you are dealing with feelings of discouragement and depression. Let’s talk about depression in farm county.

What Should I Know About Depression in Agriculture?

Feeling down, sad or discouraged? Such feelings are normal, especially in times of loss or stress. Depression, however, is different. Depression is a medical condition, like arthritis, and does not just improve on its own.

Common signs that indicate you or someone you know might be experiencing depression include: discouraged, sad mood; irritability; constant worry or restless thoughts; inability to concentrate or make decisions; loss of interest in activities; wanting to be alone or avoid others; sleep issues; feeling tired or a lack of energy; feelings of being worthless or hopeless; repeated thoughts of death or suicide; others asking if you are okay.

Here are some key points to remember with regard to depression:

- **Depression is not a sign of weakness.** We may not like asking for help or wonder what others might think. Depression requires help. Asking for help indicates wisdom and strength.
- **You are not alone.** Millions have experienced mild to severe depression and have gotten help.
- **Untreated depression damages health and limits quality of life.** It risks a person's life. North Dakota showed a 57% increase in suicide rates over a recent 20-year period – the highest in the nation. Depression is very treatable.
- **Depression is a complex medical condition.** It requires treatment and support. It is not better to hide it, ignore it or struggle with it alone. Seek help from people you trust, including your health care professional.
- **Schedule a visit with your primary health care provider.** Get a full exam and assessment of your physical and mental health. Health care professionals have screening tools and training to assist with depression or anxiety.
- **Practice wellness habits** such as exercising, maintaining a healthy diet, practicing good sleep habits, laughing, connecting with loved ones, practicing stress reduction efforts and seeking help.

Access Helpful Resources

To learn more specifically about understanding depression and available resources to assist, read the NDSU Extension publication FS2281, "Depression in Farming— Let's Talk About It" – link:

<https://www.ndsu.edu/agriculture/extension/publications/depression-farming-lets-talk-about-it>

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

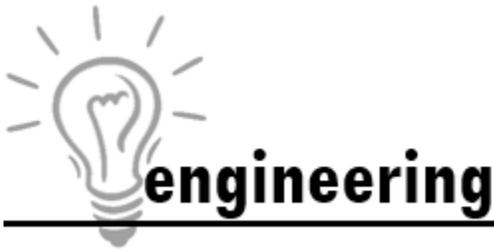
Contact your NDSU county Extension office or search the Web for *NDSU Extension farm stress* for more resources on wellness in agriculture.



This logo from 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

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Extension Farm and Ranch Stress Program Coordinator



PROPER GRAIN STORAGE CRUCIAL IN LATE WINTER AND SPRING

As outdoor temperatures begin to warm, the potential for grain storage problems increases. With the likelihood for issues going up, the need for grain monitoring and management does as well.

During a winter day, the outdoor air may fluctuate by 25 to 30 degrees Fahrenheit. This warms the bin and the grain next to the wall during the day, but they cool at night. The result is that the bin and grain near the bin wall will be near the average temperature. The same will occur during an extended warm period that is followed by a cool or cold period: the temperature will be near the average of the two periods.

Grain is an insulator, so grain temperature fluctuation is limited to the grain next to the bin wall. Dry grain that has been cooled to 20 to 30 degrees in northern regions is not expected to be affected by these temperature fluctuations.

Solar energy produces more than twice as much heat gain on the south wall of a bin in spring as it does during the summer. This, along with solar heat gain on a bin roof, can create an environment conducive to grain spoilage. A 10-degree temperature increase reduces the allowable storage time of grain by about half. For example, the storage time of corn at 17% moisture is reduced from about 130 days at 50 degrees to about 75 days at 60 degrees, and further, only 45 days at 70 degrees.

If the stored grain is dry, periodically run aeration fans in the spring to keep the grain below 40 degrees as long as possible through the beginning of summer. In northern states, night air is normally near or below 30 degrees in April and 40 degrees in May.

Frost and ice can block bin vents when the fan is operated at temperatures near or below freezing, which may lead to roof damage. Leave the fill and access door open as a pressure relief valve when operating the fan at temperatures near or below freezing.

Cover the fan when it is not operating to prevent warm air from blowing into the bin or being drawn in by a chimney effect, which could heat the stored grain to temperatures more prone to spoilage and insect infestations.

In addition to periodically running aeration fans, ventilate the top of the bin to remove the solar heat gain that warms the grain. Providing air inlets near the eaves and exhausts near the peak allows the top of the bin to ventilate due to the warm air rising — similar to what occurs in an attic — as does a roof exhaust fan.

Stored grain should be monitored closely to detect storage problems early. Grain temperature should be checked every two weeks during the spring and summer, as a temperature increase may indicate a storage problem. Grain should also be examined for insect infestations.

Checking the moisture content of stored grain determines if it needs to be dried. Verify that the moisture content measured by the meter has been adjusted for grain temperature, and remember that moisture measurements of grain at temperatures below about 40 degrees may not be accurate. Therefore, warm the grain sample to room temperature in a sealed plastic bag before measuring the moisture content.

Some in-bin cables estimate grain moisture content by measuring temperature and air relative humidity, then calculating it using grain equilibrium moisture content equations. The measured moisture may differ by 1.0%-1.5% from the true moisture content, so verify these estimates with another moisture measurement method.

Corn needs to be dried to 13%-14% moisture for summer storage to prevent spoilage. Soybeans should be dried to 11%-12%, wheat to 13%, barley to 12% and oil sunflowers to 7%-8%. The allowable storage time for 13% moisture soybeans is less than 100 days at 70 degrees.

If grain stored in grain bags isn't dry, it will spoil, and molds will grow. Grain in the bags will be at average outdoor temperatures, so grain will deteriorate rapidly as outdoor temperatures increase unless it is at the recommended summer storage moisture contents.

Grain bags that run east-west will have solar heating on the south side, creating a temperature variation that will move moisture to the north side. Continue to frequently monitor grain stored in bags.

In addition to proper storage practices, please know the safety hazards associated with handling grain. Apply recommended safety practices to decrease the risk of injury or death.

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CROP & PEST REPORT

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