# Sioux Valley Ag

A SPECIAL SUPPLEMENT TO
**Sioux Valley News**
March 6, 2025

## Check out these Sioux Valley Businesses in this section

Advanced Ag Products
Canton Home and Farm
First Bank & Trust
CHS
First American Insurance
AJ's Automotive
Tri State Ready Mix
Zomer Plumbing, Heating & AC
Farmers State Bank
Caswell Plumbing and Heating
Canton Lockers
Poet
Premier Bank
Southeastern Electric

# Important Dates & Deadlines

**March 15, 2025 -** Deadline to apply for 2025 Non-insured Disaster Assistance (NAP) Coverage

**March 31, 2025 -** Deadline to enroll in Dairy Margin Coverage (DMC) for the 2025 coverage year

**April 15, 2025 -** Deadline to enroll in 2025 Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC)

**Farm Storage Facility Loan Program**

**February Interest Rates:**
3 year loan - 4.375%
5 year loan - 4.500%
7 year loan - 4.500%
10 year loan - 4.625%
12 year loan - 4.750%

**Crop Year 2024 Market Assistance Loan Interest Rate:** 5.250%

**Corn Loan Rate:** $2.13

**Soybean Loan Rate:** $6.13

Questions? Contact Lincoln County FSA at (605)987-4332 ext. 2.

If you would need to request an accommodation, please contact the Lincoln FSA at 605-987-4332 or sdcanton-fsa@usda.gov 10 days prior to the meeting to request accommodations (e.g., an interpreter, translator, seating arrangements, etc.) or materials in an alternative format (e.g., Braille, large print, audiotape – captioning, etc.).

Text Alerts: Text SDLincoln to FSANOW (372-669) for text message alerts.

# Producers Can Now Enroll in ARC and PLC

USDA's Farm Service Agency (FSA) is accepting enrollments and elections for the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) for 2025 from Jan. 21 to April 15. ARC and PLC provide financial protections to farmers from substantial drops in crop prices or revenues and are vital economic safety nets for most American farms. The American Relief Act, 2025 extended many Farm Bill-authorized programs for another year, including ARC and PLC.

Producers can elect coverage and enroll in ARC-County (ARC-CO) or PLC, which provide crop-by-crop protection, or ARC-Individual (ARC-IC), which protects the entire farm. Although election changes for 2025 are optional, producers must enroll through a signed contract each year. Also, if a producer has a multi-year contract on the farm it will continue for 2025 unless an election change is made.

If producers do not submit their election revision by the April 15 deadline, their election remains the same as their 2024 election for commodities on the farm from the prior year. Farm owners cannot enroll in either program unless they have a share interest in the cropland.

Covered commodities include barley, canola, large and small chickpeas, corn, crambe, flaxseed, grain sorghum, lentils, mustard seed, oats, peanuts, dry peas, rapeseed, long grain rice, medium grain rice, safflower seed, seed cotton, sesame, soybeans, sunflower seed and wheat.

USDA also reminds producers that ARC and PLC elections and enrollments can impact eligibility for some crop insurance products including Supplemental Coverage Option, Enhanced Coverage Option and, for cotton producers, the Stacked Income Protection Plan (commonly referred to as STAX).

For more information on ARC and PLC, producers can visit the ARC and PLC webpage or contact your Lincoln County USDA Service Center at 605-987-4332.

# Applying for FSA Direct Loans

FSA offers direct farm ownership and direct farm operating loans to producers who want to establish, maintain, or strengthen their farm or ranch. Direct loans are processed, approved and serviced by FSA loan officers.

Direct farm operating loans can be used to purchase livestock and feed, farm equipment, fuel, farm chemicals, insurance, and other costs including family living expenses. Operating loans can also be used to finance minor improvements or repairs to buildings and to refinance some farm-related debts, excluding real estate.

Direct farm ownership loans can be used to purchase farmland, enlarge an existing farm, construct and repair buildings, and to make farm improvements.

The maximum loan amount for direct farm ownership loans is $600,000 and the maximum loan amount for direct operating loans is $400,000 and a down payment is not required. Repayment terms vary depending on the type of loan, collateral and the producer's ability to repay the loan. Operating loans are normally repaid within seven years and farm ownership loans are not to exceed 40 years.

Please contact your local FSA office for more information or to apply for a direct farm ownership or operating loan.

## Applying for FSA Guaranteed Loans

FSA guaranteed loans allow lenders to provide agricultural credit to farmers who do not meet the lender's normal underwriting criteria. Farmers and ranchers apply for a guaranteed loan through a lender, and the lender arranges for the guarantee. FSA can guarantee up to 95 percent of the loss of principal and interest on a loan. Guaranteed loans can be used for both farm ownership and operating purposes.

Guaranteed farm ownership loans can be used to purchase farmland, construct or repair buildings, develop farmland to promote soil and water conservation or to refinance debt.

Guaranteed operating loans can be used to purchase livestock, farm equipment, feed, seed, fuel, farm chemicals, insurance and other operating expenses.

FSA can guarantee farm ownership and operating loans up to $2,251,000. Repayment terms vary depending on the type of loan, collateral and the producer's ability to repay the loan. Operating loans are normally repaid within seven years and farm ownership loans are not to exceed 40 years.

For more information on guaranteed loans, contact your Minnehaha County USDA Service Center at (605)330-4515 or visit fsa.usda.gov.

# Ask the Expert: A Q&A with Robert White about Avoiding Common Mistakes in Farm Loan Applications

*By Amanda Heitkamp, Strategic Communications Coordinator*

*Jan 21, 2025*

The USDA Farm Service Agency (FSA) offers loans to help farmers and ranchers get the financing they need to start, expand, or maintain a family farm. In this Ask the Expert, Robert White answers questions about the FSA farm loan application process. Robert is the Deputy Director for FSA's Loan Making Division. He and his colleagues address regulatory and policy initiatives and develop creative IT modernization processes to assist loan applicants and farm loan staff nationwide. He grew up on a family farm in Kansas and continues to maintain close ties to production agriculture.

Robert White has been with FSA for 40 years, spending most of that time as a Farm Loan Manager in Kansas, with the last three years at the National Office.

**What do you recommend as the first steps for someone interested in an FSA farm loan?**

FSA recently rolled out two new products, which should be of interest to loan applicants. The Loan Assistance Tool offers a series of online questions, which help the applicant explore FSA direct and guaranteed loan programs, decide what loans may best suit their needs, determine eligibility and documentation requirements, and quickly access loan forms. Any interested applicant is encouraged to begin their search with the Loan Assistance Tool.

After visiting the Loan Assistance Tool site, applicants can apply by completing FSA's new Online Loan Application. To apply online, they must first sign up for a farmers.gov account. Once an account is established and linked to their profile, direct loan applicants will answer a series of questions and are provided the option to upload required documentation, saving the applicant time and a trip to their local service center.

The information listed above may be accessed via in one easy and convenient place farmers.gov, USDA's designated producer hub. If producers prefer to apply conventionally, a paper application can be obtained by contacting their local FSA county office or by downloading here.

**What are the most common errors applicants make when completing farm loan applications?**

Generally, applicants can improve their chances of receiving a timely loan approval by ensuring their loan application responses are accurate and thorough.

For example, prior to completing a loan application, all applicants should prioritize the development of their business plan. In most states, the Cooperative Extension Service can help with developing a business plan. Many states have additional resources, including FSA Cooperators who applicants can contact for assistance. Applicants needing help with their business plan should contact the local FSA Farm Loan team (see "Find Your Local Service Center" on Farmers.gov) for details on available resources.

Loan applicants can answer application questions about their business plan online or by using form FSA-2001, where they will be asked to provide a balance sheet and a cash flow projection. They can complete these as part of the application, or they have the option to attach/upload current documents containing the information.

It is very important for applicants to consider their business plan details, as the financial feasibility of the operating plan is the most common reason for a loan denial. Occasionally, an applicant's business plan includes complexities or unique circumstances that are not clear from the balance sheet and cash flow projection provided. They can provide additional supporting information. Applicants can contact their local FSA Farm Loan team to schedule a phone call, virtual meeting, or in-person meeting to clarify the loan request, business plan, or other application matters.

**Are there particular sections of the form FSA-2001 where errors are frequent?**

Direct loan applicants should note that form FSA-2001 requires applicants to provide additional information for FSA to determine if the applicant has the training, education, or experience required for the requested loan types(s) and that the applicant meets other loan eligibility or approval requirements. There is an area on form FSA-2001 to provide additional details.

Although the loan applicant is familiar with details associated with their responses, the answers may not be clear to FSA without additional details. To assist FSA in accurately determining eligibility or approval, applicants are encouraged to provide details to responses that may not be clear from the basic answers relating to loan eligibility or approval requirements. For example, to validate an applicant's experience an attachment might be submitted detailing the specific roles and responsibilities they have previously held, or a copy of a degree awarded in a related field.

Applicants can provide a continued explanation using an attachment, providing supporting documentation, or by contacting the FSA Farm Loan team processing the loan application to clarify their answers.

**What common misunderstandings do applicants have about loan eligibility criteria?**

Along with other eligibility and approval requirements, FSA must determine that an applicant has an acceptable credit history demonstrated by debt repayment. FSA does not determine eligibility based on an applicant's credit report score; but rather, FSA examines if any history of failures to repay past debts was within the applicant's control and if those debt repayment issues show a pattern of unsatisfactory or slow payment.

If FSA's credit report or other forms of debt verification show a recent history of foreclosures, judgments, or delinquent payments, FSA will contact the applicant to learn more about these potential credit issues. An applicant can explain any circumstances applicable to these matters. They should provide details if the adverse action or delinquency was caused by circumstances that were temporary in nature and beyond their control; or the result of a refusal to make full payment because of defective goods or services or other justifiable dispute concerning purchasing or contracting for goods or services.

**What occurs if the loan application submitted is not complete?**

Within seven calendar days of receiving an application, FSA will advise the applicant if additional information is required. If the stated additional information is not received following the initial written request, the agency provides notice that the application will be withdrawn if the information is not received within an additional 15 calendar days of the date of the second notice. Complete applications are placed in the queue for processing by the loan official in the order of receipt.

If an application is withdrawn as incomplete, the applicant is encouraged to contact their local FSA office once the remainder of the incomplete items are available. Often, an applicant may simply update the previously withdrawn application and re-sign form FSA-2001 to establish a replacement application.

# Winter Pasture Report: What's your plan for spring?

*January 13, 2025*
*Kaylee Wheeler*
*SDSU Extension Range Field Specialist*

## What are the current drought conditions?

Widespread drought conditions persist across the upper Great Plains into the beginning of 2025 (Figure 1). Nearly three-fourths of the region is experiencing abnormally dry conditions, while a third of the region is experiencing severe drought. Some areas in the western Dakotas and Nebraska have shown extreme drought conditions for several months now, while Wyoming has experienced widespread severe and extreme conditions. In general, conditions throughout the Great Plains region have steadily worsened with the lack of precipitation in the last three months. In South Dakota, much of the state has received 50% or less than normal precipitation since October 1, 2024 (Figure 2).

It is important for producers to assess fall precipitation, because it is very impactful for next year's growing conditions. Especially in northern and mountainous states, snow can make up a significant amount of annual precipitation. In general, 10 inches of snow only equals 1 inch of rainfall.

Two pastures side-by-side. The left has minimal snow capture due to reduced plant residue. The right has ample snow capture throughout due to increased plant residue.

Snow can play a significant role in increasing soil moisture levels and providing an insulating layer over the soil surface. It is important to leave pastures with adequate plant residue going into the dormant season to promote plant recovery and provide armor for the soil. Figure 3 shows an example of grass that was grazed short (no snow cover) compared to leaving adequate standing plant material (good snowpack).

Plant residue acts like a sponge to absorb moisture and maintain those stores far longer than bare soil in which moisture quickly evaporates. Additionally, for producers relying on overwintered crops, such as winter wheat, a good snow cover of at least 3 inches can prevent a substantial amount of winterkill on those plants (NDSU & USDA).

## What are current climate outlooks predicting?

Current seasonal precipitation outlook shows equal chances to above normal probability of receiving precipitation in the upper Great Plains region (Figure 4). However, seasonal drought outlooks predict a persisting drought in the region, with no expected improvements in the coming few months (Figure 5).

Regardless of how dry your area is, regular monitoring of precipitation and pasture conditions should still occur. With a lack of fall and winter precipitation thus far, it will be extremely important to receive adequate spring precipitation before the growing season begins.

The South Dakota Mesonet website is a comprehensive resource that includes drought monitors, climate predictions, and current and historic local weather data. However, any producer can easily access up-to-date climate outlooks and weather data for their region through the U.S. Drought Monitor, the High Plains Regional Climate Center, and local Mesonet stations.

## What are your plans for spring?

Although green grass is still far away, there are things to consider and plan for now. Given the current conditions and weather outlooks, delayed spring turnout and reduced stocking rates could be a very real possibility later in the year. If dormant-season precipitation is scarce, soil moisture can be quickly depleted, and the spring green-up can be severely compromised. If so, are you prepared to feed livestock until adequate forage growth occurs? If spring precipitation is scarce, forage growth could be limited. If so, are you prepared to reduce stocking rates?

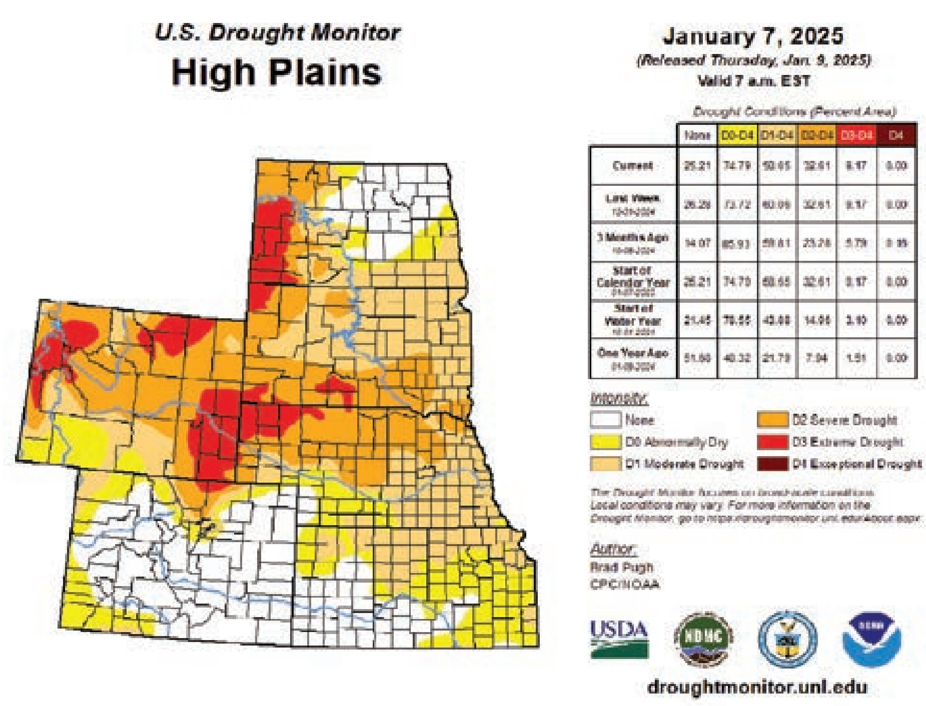



Figure 1. U.S. Drought Monitor of the High Plains as of January 7, 2025.

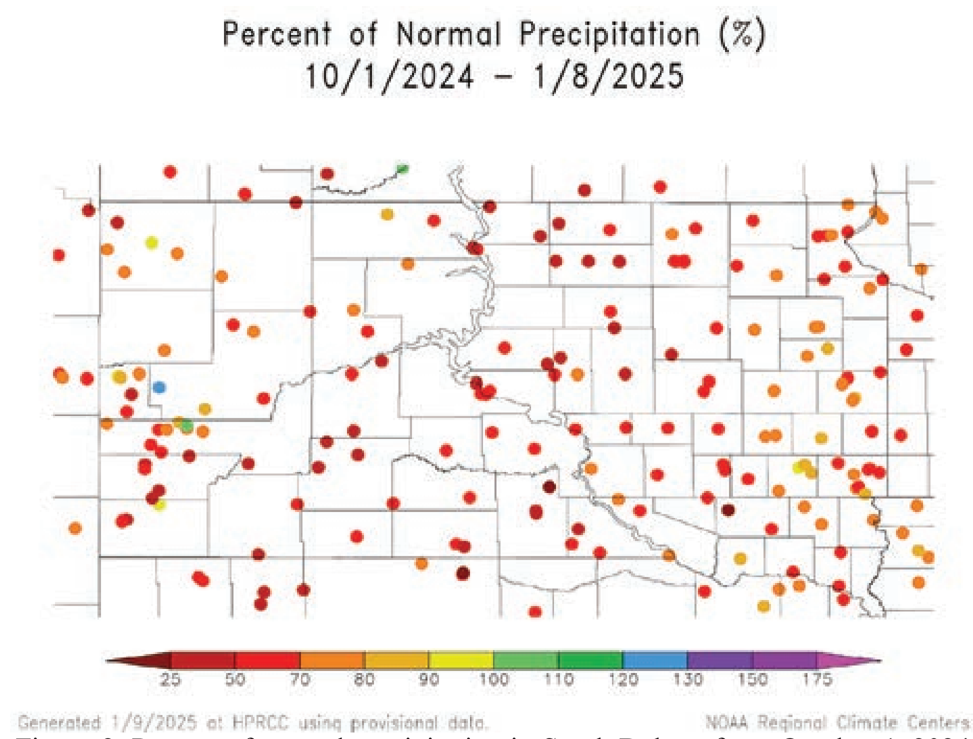



Figure 2. Percent of normal precipitation in South Dakota from October 1, 2024, through January 8, 2025.

The beginning of a new year is a good trigger date to investigate the following questions and plan ahead for spring conditions.

## Moisture/Climate

- How much precipitation was received during last year's growing season?
- How much precipitation was received during the fall?
- Are there chances of precipitation in the upcoming weeks?
- What drought conditions are being indicated now and predicted in the coming months?

## Forage

- How much forage production occurred during last year's growing season?
- When was the last grazing event in your pastures?
- What is the current condition of your pastures (how much residual forage, soil cover, etc.)?
- What are your current feed resources?

## Livestock

- Are you maintaining herd flexibility (do you know which animals will be the first to go)?
- How long are you prepared to be able to feed livestock if new forage growth is limited?

## What is your plan if drought persists?

A rancher and RMA agent reviewing insurance paperwork beside a off-road vehicle.

Unfortunately, drought conditions will periodically occur and cannot be avoided. However, your management decisions can determine the impact of the drought on your business. Proactive decision making and regular monitoring are the key to drought management. Often it is the decisions made during the "good times" that determine success during the "bad times." It is better to make decisions early, while you still have options, than to be forced into a decision. Thus, it is extremely important for producers to regularly assess precipitation and forage resources so they can manage livestock inventory accordingly. Hope for rain, but plan for drought!

Additionally, a written drought plan can be helpful to reduce emotion and make more-logical decisions. See Managing Drought Risk on the Ranch for a decision-making guide and example drought plans. For more information on climate and weather outlooks, contact SDSU State Climatologist, Laura Edwards. For more information on pasture monitoring and drought planning, contact SDSU Extension Range and Natural Resources staff.

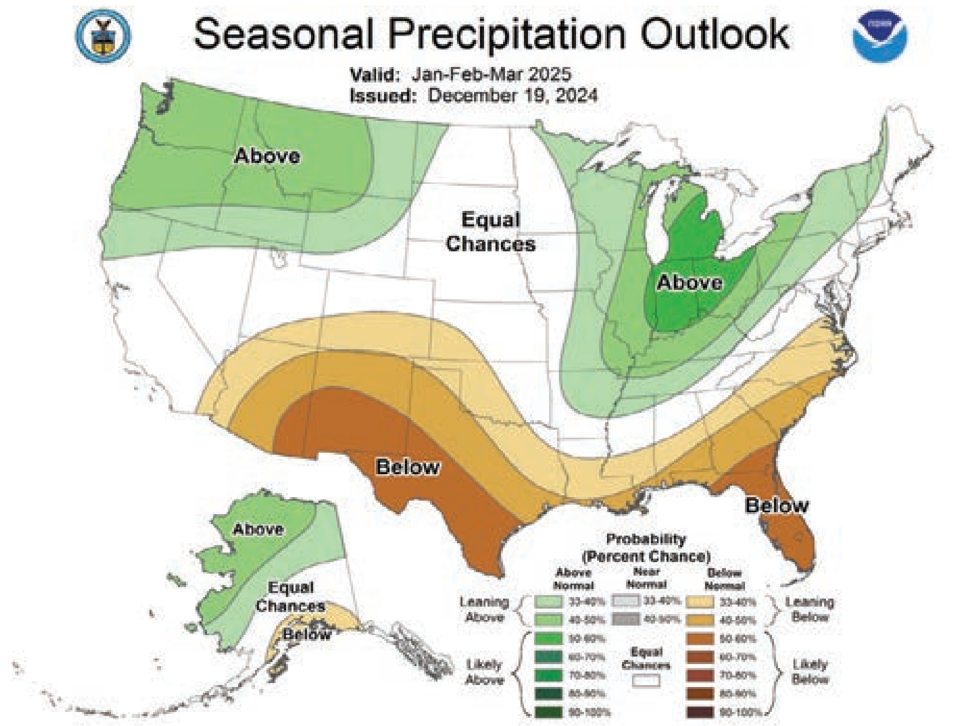



Figure 4. NOAA Seasonal Precipitation Outlook for January through March 2025.

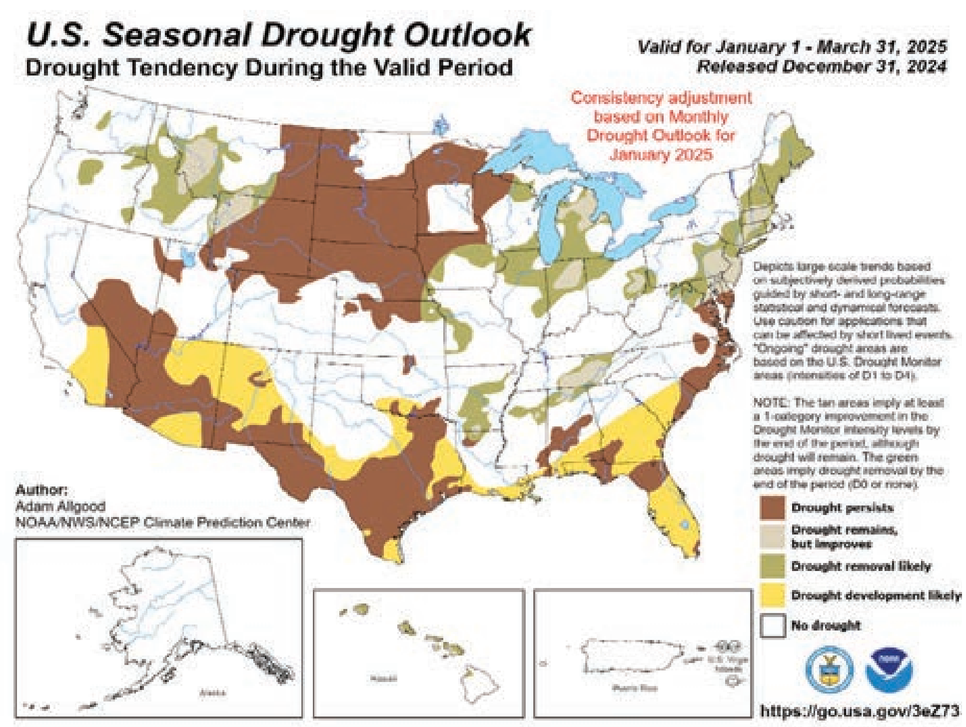



Figure 5. NOAA Seasonal Drought Outlook for January through March 2025.

# 2024 Annual Climate Review

*January 27, 2025*
*Laura Edwards*
*SDSU Extension State Climatologist*

The final climate numbers are in for the year of 2024, and South Dakota ended up having the fifth warmest year on record out of 130 years of climate history. The nation overall had its warmest year on record. Data from NOAA's National Centers for Environmental Information also showed that statewide, the year ranked as the 62nd wettest, but the details tell a more interesting story.

## Regional Climate Review

### Northwest

In the northwest region, annual precipitation was 40th driest on record, just over two inches below average and in the driest one-third of the past 130 years. Annual temperature was second warmest on record, with a 4.2 degrees Fahrenheit difference from normal. These conditions contributed to drought development in 2024.

### North Central

The north central region measured 1.84 inches below normal for the year, or 37th driest on record. Annual average temperature was seventh warmest on record, coming in at 3.6 degrees Fahrenheit above normal for the year.

### Northeast

Northeastern South Dakota fell close the long-term average with 0.61 inches above average precipitation for 2024. This region had a 4.2 degrees Fahrenheit difference in temperature from the annual normal, to end up the fifth warmest in 130 years.

### Black Hills

The Black Hills region measured 4.14 inches below average. This was enough to rank 18th driest in 130 years of records. The Black Hills ended the year as second warmest on record, 3.7 degrees Fahrenheit warmer than normal, which contributed to drought conditions across this region.

### Southwest

The southwest region was also very dry, with the regional average precipitation ranking 25th driest, or 3.13 inches below average. However, within this region, Fall River and Oglala Lakota counties were the driest in the state. Both counties ranked seventh driest on record, driven in part by record dryness in the month of June. This area experienced drought throughout most of the year. Warm temperatures also played a role, as this region ended the year as the second warmest on record.

### Central

Central South Dakota was near average for moisture, with final numbers showing 0.97 inches above normal for the year. This region was eighth warmest on record, or the relative coolest ranking of all regions of the state. Yet, the central region still finished the year 3.3 degrees Fahrenheit above normal.

### South Central

The south central region of the state was slightly drier than average by 1.03 inches. The south central region also ranked as the fifth warmest year, as drought conditions varied throughout 2024.

### East Central

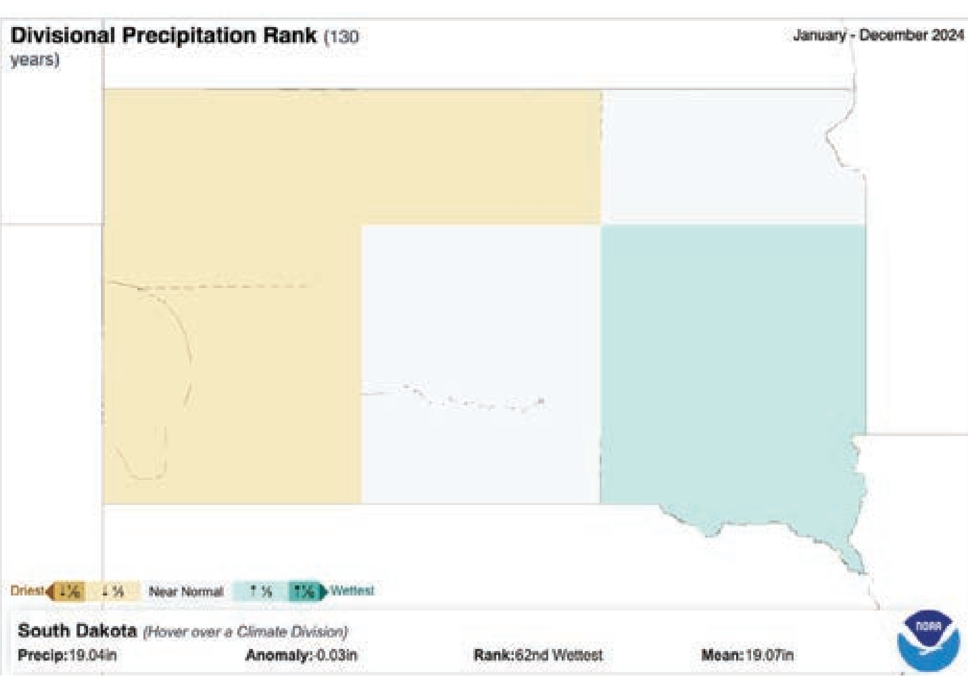
The east central region had 3.20 inches above normal, ranking 93rd wettest, or in the top one-third of wettest years on record. It was also fifth warmest on record, ending 2024 with an annual average temperature of 48.3 degrees Fahrenheit, or 3.7 degrees Fahrenheit above average.

### Southeast

On the southeast end of South Dakota, Lincoln County ranked as the eighth wettest on record, primarily due to the extreme rainfall in the month of June. This region overall ranked 23rd wettest in 130 years, with 4.38 inches above average across the multi-county area. Southeastern South Dakota ended the year as fourth warmest on record.

### 2025 Outlook

As the 2025 calendar year begins, there is drought across the state following the dryness in much of the fall and early winter. Crops, pastures, range, and gardens will all rely on spring and summer moisture more than usual in 2025. There are no clear signals on the long-term temperature outlook through the summer season, but there are some hints towards a drier summer. Many areas of the state have faced drought over the last few years, and it looks as though we should be prepared for the potential of another dry summer.






# Cattle Behavior

*February 24, 2025*
*Addie Womack*
*SDSU Extension Livestock Production and Stewardship Field Specialist*

Working cattle is an essential part of management, however, it can be stressful for the livestock and humans involved. We also know that improper handling can result in bruising and dark cutters. The more we learn and understand about cattle behavior, the less stress these handling events will cause. We can begin to work with our livestock and their natural behaviors instead of forcing them to work the way we want them to. Cattle behavior is essentially an ongoing research topic, whether that be regulated research trials or practical on farm experiences. What we know now is based on decades of studied behaviors. While we can all acknowledge cattle across the United States are raised in varying environmental conditions, therefore requiring varying management and handling practices, the principles remain consistent. Cattle are a prey species, and in certain situations can detect humans as predators. Their herd instincts encourage them to remain with a group and respond well to routine.

### Basic Principles

Cattle want to see you. Their response to pressure is best when they are aware of where you are.

Cattle want to go around you. They want to remove the pressure you're putting, but they also want to be able to see you. The implementation and success of curved working facilities is based off this principle.

Cattle want to be with and go with other cattle. You can take advantage of their herd instincts and get cattle moving together. This is also important to remember when you need to isolate an animal, it is going to respond much better when paired with a calm partner.

Cattle want to remove pressure. Also commonly stated, "cattle want to return to where they have been". When pressured into a more confined setting they may want to return to the open setting they were in.

Cattle can only process one main thought at a time. When moving an animal into a high-pressure environment, keep just enough pressure that the animal decides to keep moving forward.

Once cattle are agitated, it takes 30 minutes for that animal to return to a calm state.

We as humans perceive the world through our senses and past experiences. Cattle are the same, however, their senses vary slightly from humans. As prey animals, they also perceive the world in a manner necessary for their survival. Cattle have a 300-degree field of vision, with their blind spot located directly behind them. However their depth perception is limited, this makes it difficult for cattle to distinguish shadows. What we may see as a shadow from the fence post cattle may not be able to discern, therefore be hesitant to walk past. Keeping in mind that they can only process one thought at a time, anything in their field of vision causing a distraction could make them reluctant to move through working facilities. Keep the working area clean and clear of hanging chains, misplaced posts and brightly colored objects. Cattle typically want to move from a dark area to a well-lit area, however, as with humans, blinding lights affect their ability to see. Based on the setting of your facilities it may be more effective to work cattle at different times during the day. While working cattle you have the chute running and cattle are moving, you may have to raise your voice so that your coworkers can hear you. However, cattle have a much wider range of hearing than us and are sensitive to high pitch and frequency. Yelling and shouting should not take place when working cattle, that way when sound is needed to assist in the movement of cattle it is effective. Touching cattle is a means to move cattle usually only used in confined spaces. If a flag or paddle is being used it should be of assistance to other movement techniques and should never be used to strike animals.

Cattle respond to smell in a capacity I just recently realized. Their refined sense of smell is essential, they can smell up to 6 miles away. I always thought they just heard the feed mixer coming, but they are smelling it too! Cattle can decipher predator smells. Studies have should wolf urine to alter their behavior and stress levels. Cattle's first response to something new in their environment is to smell it, so when introducing new feeders or dogs cattle should be given the space to investigate. Animal blood may cause cattle to react, bulls especially may have an aggressive response. Pheromones are vital to cow and calf bonding. Pheromones have also become a hot topic in terms of how we can utilize them to reduce stress in cattle.

These are the basics in terms of cattle behavior and how cattle perceive the world around them. When our behaviors as humans elicit a negative response from cattle, all future interactions can be affected. From the very start of a calf's life, they are introduced to humans and our management strategies. So, start with that first interaction and make it a goal to work with their natural instincts for the best handling results.

# Over-The-Top Dicamba Applications Are Not Legal in Soybean for 2025

*February 11, 2025*
*Eric Jones*
*Assistant Professor and SDSU Extension Weed Management Specialist*
*Additional Authors: Philip Rozeboom*
*Written collaboratively by Eric Jones, Philip Rozeboom, Jill Alms, and David Vos.*

The registration for dicamba labels (Xtendimax, Engenia, and Tavium) for over-the-top applications in tolerant soybean varieties have been pulled for the 2025 growing season. Many farmers, crop consultants, and retailers are aware of this situation, but planning weed management strategy should start today. Many chemical and seed inputs have already been purchased for the 2025 growing season. Even if you have purchased a seed variety with tolerance to a different herbicide, such as 2,4-D (e.g. Enlist), the principles for an effective weed management plan remain the same. While the loss of the dicamba labels will result in the loss of a useful, effective tool for weed management, this should be a reminder that one herbicide or tactic should not be the focus of a management plan.

**Pre-and-Post Emergence Strategy**

Foremost, even if you have purchased a dicamba-tolerant soybean variety (i.e. Xtendflex) do not apply any dicamba formulation over-the-top! This would be an illegal application, and using products off label will only increase the chance for off target issues and shine a negative light on weed management in row crops. A strong preemergence herbicide program utilizing multiple herbicide groups should be a staple in a weed management plan. Utilizing multiple herbicide groups will increase the spectrum of weed control and reduce the selection pressure on herbicide-resistant weeds. If the growing season starts off with effective weed control, less reliance will be placed on the postemergence herbicides.

There are still effective herbicides that can be applied postemergence in soybean. Even though dicamba cannot be applied, planting Xtendflex soybean varieties allows for the application of glyphosate (Roundup) and glufosinate (Liberty). Enlist E3 soybeans will allow for the application of 2,4-D (Enlist One), glyphosate and glufosinate. However, if kochia is the main problem of concern, 2,4-D is not effective. While glyphosate will not control many populations of kochia or waterhemp in South Dakota due to resistance, this herbicide still has utility in controlling other broadleaf and grass weeds. Glufosinate will effectively control many weeds, but timely application on small weeds is crucial. Be sure to check your seed label before applying glyphosate or glufosinate to ensure the seed is tolerant to the herbicide(s). The PPO-inhibiting herbicides (i.e. acifluorfen [Ultra Blazer], fomesafen [Flexstar], lactofen [Cobra]) will effectively control many broadleaf weeds, but the application should be made when weeds are small.

**Tank-Mix Herbicides**

While there are options for effective postemergence herbicides, these herbicides should not go out alone. Tank-mix herbicides from different groups to increase the spectrum of weed control and reduce selection pressure on resistant weeds. Figure 1 depicts data from a field trial conducted in 2023 and 2024 in soybean. 2,4-D (Enlist One, 32 fl. oz. per acre) and glufosinate (32 fl. oz. per acre) were applied alone and mixed on waterhemp approximately 4 inches in height. Control was rated 28 days after application on a scale ranging from 0 to 100%: where 0 was no control and 100 was complete control. 2,4-D provided 89%, while glufosinate provided 69% control, while the tank mixture provided 87% (Figure 1). There may seem like there is not a benefit to tank mix these herbicides compared to the effectiveness of 2,4-D alone. However, there is 2,4-D-resistant waterhemp in neighboring states that was caused by over application. Since 2,4-D does not have grass weed activity, applying 2,4-D alone may result in high density of grass weeds. An important note would be that the waterhemp weeds were treated at 4 inches in height; as weed height increases, control decreases (Figure 2).

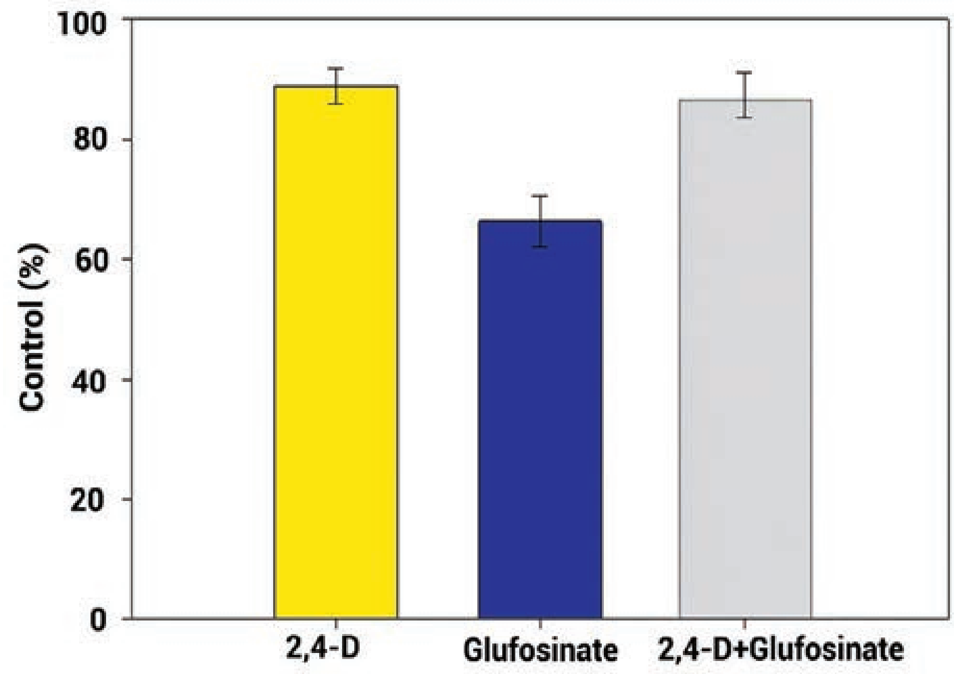



Figure 1. Waterhemp (~4 inches in height) control with 2,4-D (Enlist One, 32 fl. oz. per acre), Glufosinate (Liberty, 32 fl oz per acre), and 2,4-D+glufosinate (Enlist One + Liberty) 28 days after treatment.

**Other Considerations**

Also consider including an herbicide with soil residual activity to the tank (i.e. S-metolachlor [Dual Magnum] or encapsulated acetochlor [Warrant]). Weeds that emerge after the postemergence herbicide application can reduce crop yield. While very late emerging weeds may not reduce crop yield, these weeds can produce seeds to be managed in later growing seasons and reduce harvest efficiency. A more intensive list of herbicide options for use in soybean can be found in the latest South Dakota Pest Management Guide - Soybean. Weed control data with various herbicides and herbicide programs can be found in the latest Weed Control Field Test Data, and previous data is available as well.

Lastly, while herbicides are a large component of a weed management plan, using other non-chemical tactics will play a role in ensuring effective management. Tactics, such as crop rotation and row spacing, will aid in controlling weeds but can also provide agronomic benefits as well. While laborious, tactics such as hand weeding isolated weed patches can pay dividends as well. The best non-chemical tactics are the ones that are easily adaptable to current production practices.

Figure 2. Large waterhemp plants (>6 inches in height) treated with 2,4-D+glufosinate (Enlist One + Liberty) 28 days after treatment. These weeds survived the herbicide application and produced seeds.

# FARM AND AG WORD SEARCH

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| M | K | G | G | R | O | C | E | S | R | L | I | M | T | F | N | K | I | B | M |
| L | O | A | I | G | I | Y | O | D | O | D | Y | C | O | I | N | V | P | M | G |
| S | P | O | R | C | R | G | N | L | T | R | U | R | M | N | E | S | B | T | B |
| F | I | M | C | A | H | A | A | B | O | L | E | R | A | S | O | T | H | N | C |
| R | T | N | I | S | B | O | S | T | T | G | A | O | T | O | Y | R | M | F | K |
| G | M | P | B | S | G | A | G | I | I | F | Y | O | D | R | V | B | G | I | M |
| N | A | Y | U | F | N | N | V | T | H | O | C | P | Y | B | S | B | A | A | K |
| I | C | H | G | N | I | A | M | K | R | K | N | V | P | B | C | N | V | F | L |
| D | O | D | U | L | T | V | Y | Y | A | S | T | S | E | V | R | A | H | V | I |
| A | Y | A | L | I | Y | T | I | S | R | E | V | I | D | O | I | B | R | L | O |
| E | L | I | O | R | A | G | R | I | C | U | L | T | U | R | E | U | B | T | S |
| H | R | N | G | R | T | V | Y | A | V | Y | O | B | A | C | M | S | N | H | R |
| D | P | B | S | T | K | R | O | T | A | T | I | O | N | E | R | Y | P | V | M |
| A | A | N | I | M | A | L | S | Y | T | S | A | M | N | B | E | A | P | V | P |
| E | C | R | Y | T | I | C | A | P | A | C | N | H | S | A | V | L | K | D | U |
| D | B | P | P | P | E | G | H | A | R | I | M | E | R | A | O | T | A | S | H |
| L | V | B | V | E | G | A | N | I | A | R | D | H | Y | O | C | V | R | V | L |

Find the words hidden vertically, horizontally, diagonally, and backwards.

## WORDS

AGRICULTURE
AGRONOMY
ANIMALS
ANNUAL
APIARY
BIODIVERSITY
BIODYNAMIC
CAPACITY
COVER
CROPS
CULTIVATION
DEADHEADING
DRAINAGE
DRILLING
ECOLOGY
EROSION
FARMING
HARVEST
HUSBANDRY
IRRIGATION
LIVESTOCK
ROTATION
SOIL
TILLAGE