



K-STATE
Research and Extension

Extension Agronomy

eUpdate

10/23/2025

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, Agronomy eUpdate Editor. All of the Research and Extension faculty in Agronomy will be involved as sources from time to time. If you have any questions or suggestions for topics you'd like to have us address in this weekly update, contact Kathy Gehl, 785-532-3354 kgehl@ksu.edu, or Dalas Peterson, Extension Agronomy State Leader and Weed Management Specialist 785-532-0405 dpeterso@ksu.edu.

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1. Green Stem Syndrome in Soybeans

Soybean harvest is well underway in Kansas. Complicating harvest, there are reports in multiple areas of “green stem” syndrome. Green stem syndrome in soybeans is a condition where the stem remains green while the seeds are mature and ready to harvest. Some fields throughout the state may have brown pods but green stems (Figures 1, 2, and 3). A hard freeze will kill the leaves and stems, but it may still take a while for the leaves to drop if they are still green.



Figure 1. Green stems and brown pods (indicating mature seeds) characterize green stem syndrome in soybeans. Infographic developed by I. Ciampitti for K-State Research and Extension.

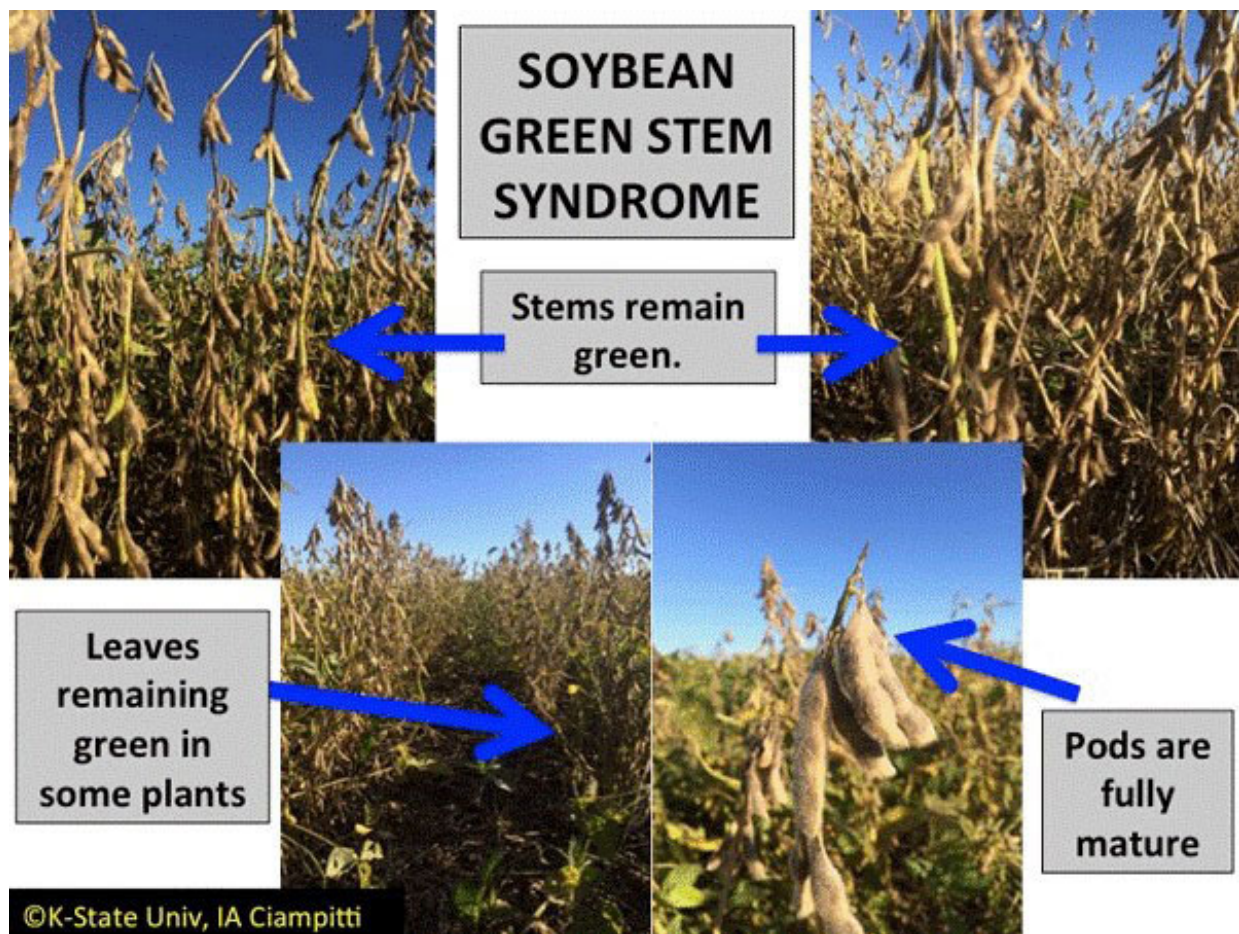


Figure 2. Green stem syndrome in soybeans. Infographic developed by I. Ciampitti for K-State Research and Extension.

What causes of green stem syndrome?

It is most likely due to a combination of early-season stress, low pod counts, and improved late-season growing conditions (i.e., timely rains).

In a “normal” growing season, soybeans will accumulate carbohydrates and proteins in the leaves and stems until seeds begin to form (R5). The leaves provide the photosynthates (food) needed by the newly formed seeds as they begin to fill. The need for photosynthates will eventually exceed what the leaves can provide through photosynthesis as seeds increase in size. As this occurs, the plants move carbohydrates and nutrients from the leaves and stems into the seeds, often called “cannibalization” of the vegetative tissue (rapid senescence and defoliation), but it is a normal process. This eventually causes leaves to turn yellow and drop, and stems to turn brown and die.

When the seed number is low due to abiotic or biotic stressors, the demand for photosynthates produced by leaves and stems lowers. If demand is low enough, the leaves and stems are never “cannibalized” for their carbohydrates and nutrients, and the leaves and stems will remain green longer than normal, even up through the beans’ physiological maturity. Late-season rainfall can exacerbate the problem by keeping the plants alive after the seeds have dried out. It will take either a

frost or a chemical desiccant to kill the leaves and stems in this situation. If the leaves are still green and intact when the pods have turned brown and reached 13-14% moisture, it is usually an indication of mid-season stress around flowering/pod set, and low yield potential – at least relative to the amount of foliage produced.

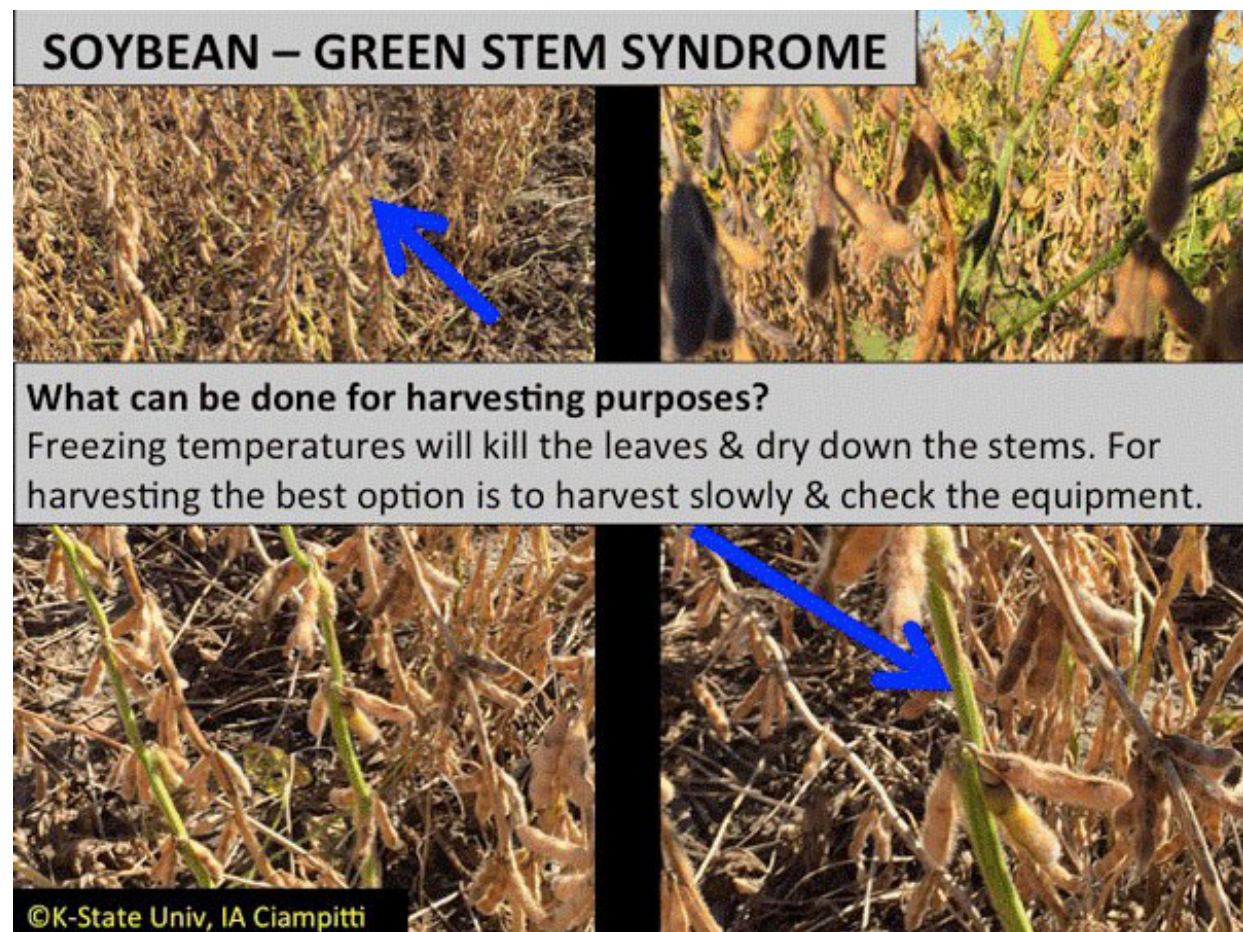


Figure 3. Green stem syndrome in soybeans and suggested harvesting operations. Infographic developed by I. Ciampitti for K-State Research and Extension.

Harvest Timing and Management

Soybeans with green stems can be harvested as soon as seed moisture is low enough, even if some leaves remain. In most cases, **harvesting sooner rather than later** helps reduce losses from pod shatter and seed weathering.

Harvesting green-stemmed plants can be a slow and messy process. To minimize plugging and header losses:

- Keep harvest equipment sharp and well-maintained.
- Reduce ground speed to handle tough stems.
- Expect more residue buildup if leaves are still attached.

If a freeze has not yet occurred, **chemical desiccants** can be used to speed leaf and stem dry down, but this option is most useful when an early harvest is planned or frost is not imminent.

As always, ensure that you time your harvest to achieve the optimum seed moisture content, thereby maximizing the final grain volume for sale.

More information on soybean dry down rate can be found in this eUpdate article from September 18, 2025: <https://eupdate.agronomy.ksu.edu/article/soybean-seed-filling-and-dry-down-rate-before-harvest-664-4>

Tina Sullivan, Northeast Area Agronomist
tsullivan@ksu.edu

2. Henbit Taking Over? Management Tips for Fall

[Henbit](#) is a common winter annual weed throughout much of Kansas that is thriving this fall. Recently, farmers have shared photos of especially large, dense henbit infestations in harvested corn and soybean fields, as well as other areas (Figure 1). This is likely the result of timely precipitation coupled with ideal soil temperatures (Figure 2).



Figure 1. Henbit infestation in soybean residue. Photo from David Hallauer, Meadowlark Extension District Crops Agent, K-State Extension.

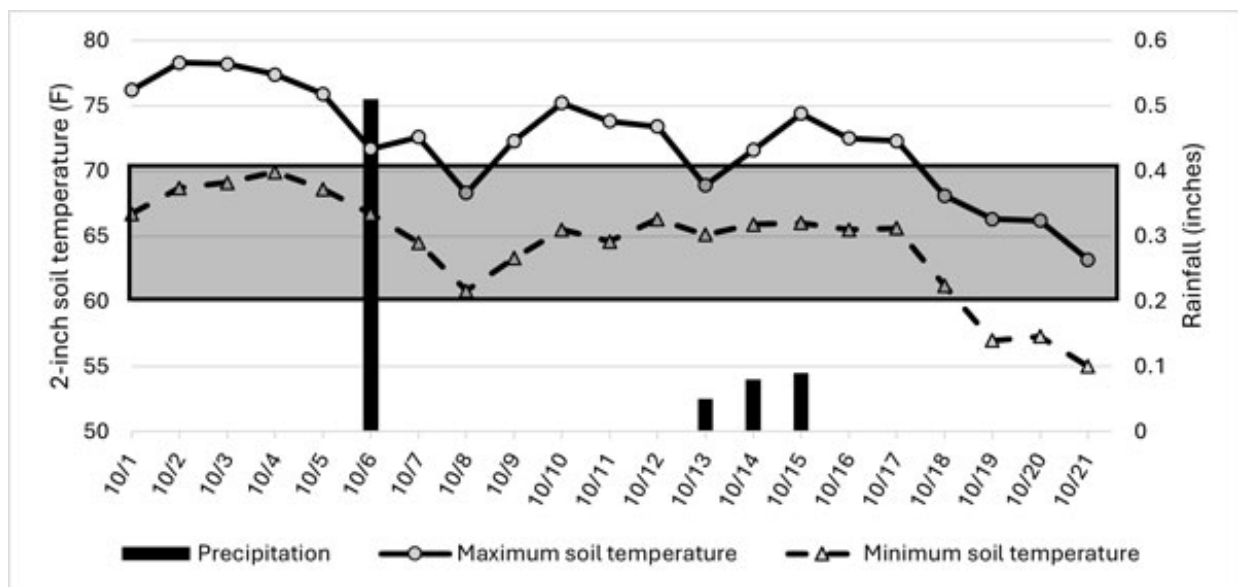


Figure 2. Temperature and rainfall observed at Ashland Bottoms Research Farm near Manhattan, KS. Henbit emergence is greatest when soil temperatures are between 60°F and 70°F (gray shaded area).

Although henbit does not directly compete with summer crops, control is still important. Henbit can utilize soil water that would otherwise be available for crops, is known to host nematodes, and dense stands may lead to challenges with seedbed preparation if long stems become tangled in planting equipment.

Fall herbicide applications are an excellent way to control henbit. Emerged plants can be controlled with combinations of 2,4-D and dicamba; however, residual herbicides will be needed to prevent emergence throughout the fall or spring. Herbicides that include flumioxazin (Valor, others), sulfentrazone (Spartan, others), metribuzin (Tricor, others), or chlorimuron (Classic, others) can be used. Detailed information is available in this recent eUpdate article: <https://eupdate.agronomy.ksu.edu/article/control-annual-weeds-with-fall-applied-herbicides-665-1>.

Fall applications can be useful for controlling other winter annual weeds, especially marestail (also known as horseweed). More information on controlling marestail is available in this recent eUpdate article: <https://eupdate.agronomy.ksu.edu/article/get-control-of-fall-emerged-marestail-before-next-spring-665-2>. In addition, fall or very early spring applications can provide control of summer annual species prior to spring applications.

When considering fall or early spring applications, remember that weed control will be most effective if herbicides are applied when low temperatures are above freezing and high temperatures are in the fifties or higher for about 5 days before and after the application.

For additional information about henbit, listen to this [War Against Weeds podcast](#) with Dr. Bill Johnson. You can also refer to the 2025 Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland, K-State publication SRP-1190 at

https://bookstore.ksre.ksu.edu/download/2025-chemical-weed-control-for-field-crops-pastures-rangeland-and-noncropland_CHEMWEEDGUIDE.

The use of trade names is for clarity to readers and does not imply endorsement of a particular product, nor does exclusion imply non-approval. Always consult the herbicide label for the most current use requirements.

Sarah Lancaster, Extension Weed Management Specialist
slancaster@ksu.edu

3. Winterizing Irrigation Systems: Steps for a Smooth Spring Start

Above-average temperatures in early October may have delayed thoughts of winter, but colder weather and freeze warnings have now arrived in parts of Kansas—especially in the west. Many irrigation system startup problems in spring are caused by preventable winter damage. Taking time now to properly winterize your system can prevent costly repairs and ensure a smoother start next season. Off-season inspections also provide a great opportunity to make improvements and repairs before spring fieldwork begins.

Park pivots and linear moves in a safe location

- Wire theft is less likely when the machine is in a visible but inaccessible area of the field.
- Wind damage is less likely when the pivot points into or away from the prevailing wind compared to perpendicular to the wind direction
- Rodent damage is lessened when machines are at least 100 feet away from tree lines.
- Protect or surround the entire machine with an electric fence if grazing will occur in the field.

Drain pivots and linear move systems

- Check for plugged automatic freeze drains, as this can lead to major repairs if not caught in a fall inspection.
 - Most of the currently designed pivots have automatic freeze drains that drain the main overhead pipe
- Clean and drain rock traps.
- Ensure all Pivot supply lines, end gun supply, and hydro control hoses are drained, even if they are installed to allow drainage. Sagging hoses can hold water and lead to damage.
- Remember to cap all large openings into the system to prevent bird nesting.
 - If the linear move has a large hose, placing buckets on the ends to ensure animals don't nest in the pipe during the off-season is key.
- Ensure all drain hoses are released and drained at the control panel if the system includes them. These are found at the bottom of the control panel. These small hoses can freeze and cause damage to the control box, but make sure the hoses are tucked if left unattached to protect from animals.
- Ensure all nozzle drops and nozzles are drained, as any trapped water can crack regulators and sprinkler bodies



Figure 1. An irrigation system nozzle body can trap moisture that freezes and damages plastic bodies. Photo by Tina Sullivan, K-State Research and Extension.

Pump down or drain underground pipelines

- Most underground pipelines are buried deep enough to prevent freeze damage but often require pumping or draining enough water from them to empty the upper portion of Z-pipe risers and pump manifolds. This is typically done by purging the system with air or modifying a fertilizer transfer pump to pump system at its lowest outlet or inlet points.
- Remember to cap all pipe inlets and outlets to prevent rodents from entering.
- Ensure all irrigation risers are marked to protect from being hit in times of high snowfall.

Drain the pumping station

- Drain pumps and manifold to the lowest point.
- Replace brass drain plugs if damaged.
 - Well-designed pump installations will be easy to drain without stripping drain plug threads or the need for air purging.
- Inspect gauges, supply, and control wire for need of repair.
- Service engine with attention to engine oil, bearing and seal lubrication.
- Check cooling system for adequate anti-freeze level and concentration.
- Drain the fuel tank to reduce water accumulation and potential theft.
- Remove any gauges that are not graded for winter conditions and replace with plugs for the winter.

Inspect and lock down electrical power supplies

- Locking down electrical power supplies helps prevent vandals from turning wells and pivots on midwinter and minimizes potential electrical system damage.
- Inspect each electrical box in the system from power supply to the last pivot or disconnect on system line for damage and holes that may be an access for rodents.
- Inspect the grounding connection and the grounding rod and test the resistance.

Inspect tires and wheel tracks

- Check drive trains/ wheel gearboxes for each tower to ensure wires are tucked or maintained
- Check for correct air pressure in each pivot tire.
- Check pivot tires for any sidewall damage and consider using the off-season to replace tires if they are struggling to hold air or could be considered a safety hazard due to UV cracking.
- Consider filling or tilling any rutted pivot wheel tracks, which will allow your center pivot irrigation system to run properly and reduce stress on tillage and harvest.
 - If your wheel tracks are too deep, consider the variety of options available for this problem (i.e., filling in with gravel).

Explore options for reducing monthly energy bills

- Consider contacting your power supply company to investigate turning off the power system to save energy costs.

Create a winter work list for each system

- List the improvements and repairs needed for each system while it's fresh in your memory.
 - As you are inspecting and winterizing your system, add any other areas needing attention to the list of repairs needed, such as the U-joint between the gearbox and gear motor, tires, sprinkler packages (nozzles, pads, regulator), etc.
- Assign the repair to someone, whether it is your people or the local irrigation dealer repair crew.

Tina Sullivan, Northeast Area Agronomist

tsullivan@ksu.edu

Jonathan Aguilar, Water Resources Engineer
jaguilar@ksu.edu

4. Preparing Spray Systems for Winter: Simple Steps to Avoid Spring Repairs

Temperatures in western Kansas fell below freezing recently. Before a bigger cold snap hits, don't forget to get your field sprayers winterized. As you put the sprayer in storage for the winter, this is also a good time to clean and inspect the exterior, tanks, hoses, and other components – including your tendering equipment. This article summarizes some of the key steps to winterizing sprayers. Be sure to check your owner's manual for detailed instructions for your particular sprayer so you don't void any manufacturer's warranty.

1. Clean the sprayer to remove herbicide residues if not already done.
2. Check and service the pump.
3. Remove filters, nozzles, check valves, and screens from your sprayer and wash them by hand. You can store metal filters and screens in vegetable oil to prevent rusting.
4. Remove pressure gauges and store them at room temperature.
5. Remove as much water as possible. Consider using an air hose to blow out moisture.
6. Add RV antifreeze with a corrosion preventer. Solutions designed to winterize sprayers are also available. Liquid fertilizer is another option, but it can cause corrosion.
7. Circulate the antifreeze through the entire system, including the boom (if applicable). For boom sprayers, turn on one section at a time until you see the antifreeze come out of the nozzle openings, then cap the opening.
8. Refer to your owner's manual for other components, such as flow meters, rate controllers, and electronics.



Sarah Lancaster, Extension Weed Science Specialist
slancaster@ksu.edu

5. Kansas Mesonet Fall Freeze Monitor and Winter Cold Tool Available

The first freezing temperatures of the season were recorded in western Kansas this past weekend, marking the end of the growing season in many areas—especially outside urban heat islands and regions with heavier vegetation (Figure 1). The Hamilton County Mesonet site near Syracuse fell to 30 degrees just before midnight on October 18. By the next morning, 30 sites were below freezing. On the mornings of October 21 and 22, additional freezes were recorded across northern Kansas. As of October 22, 40 sites across the state have recorded at least one freeze.

With more locations expected to approach the 32°F mark this week, now is an ideal time to explore the **Kansas Mesonet's Freeze Monitor** (<https://mesonet.k-state.edu/airtemp/min/hoursbelow/>). This tool allows users to track real-time conditions and compare current frost and freeze events to long-term climatology. How does this year's first freeze compare to average? Has your area dropped below freezing yet—and for how long? The Freeze Monitor provides quick answers to these questions and more.

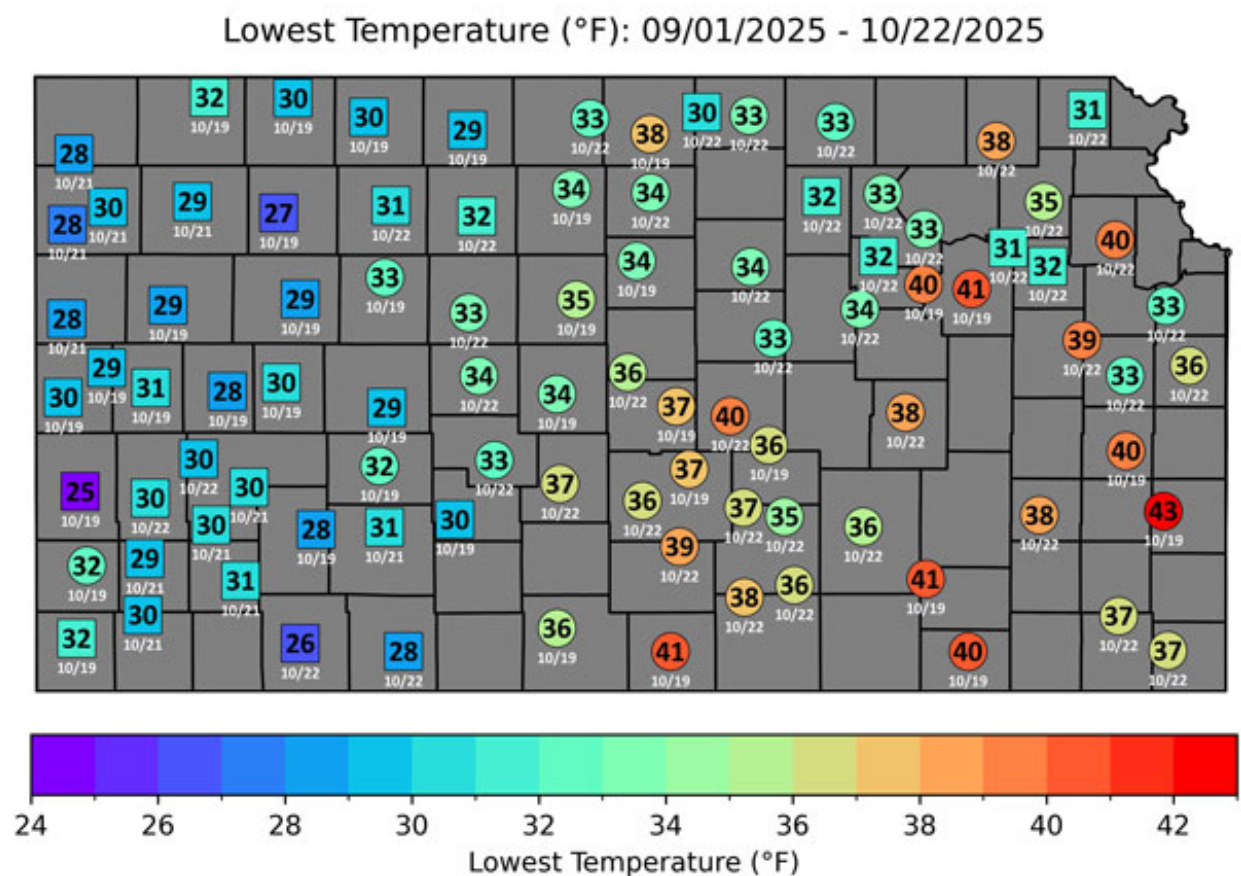


Figure 1. The lowest temperature recorded at each Kansas Mesonet site so far this fall (September 1 through October 22, 2025). Locations with temperatures inside squares have recorded a freeze this fall. Underneath each symbol is the date on which the plotted lowest temperature occurred. Map by Matthew Sittel, Weather Data Library.

The average freeze date (32°F) in northwest Kansas is as early as the last week in September (Figure 2). However, southeast Kansas does not usually see freezing temperatures until the end of October. You can find the average first freeze dates by location here: <https://mesonet.k-state.edu/airtemp/min/hoursbelow/#tab=table-tab&mtIndex=6>. The “Table” tab lists the average dates on the right side (Figure 3). Average dates for the first occurrence of 28°F temperatures are even later (Figure 4).

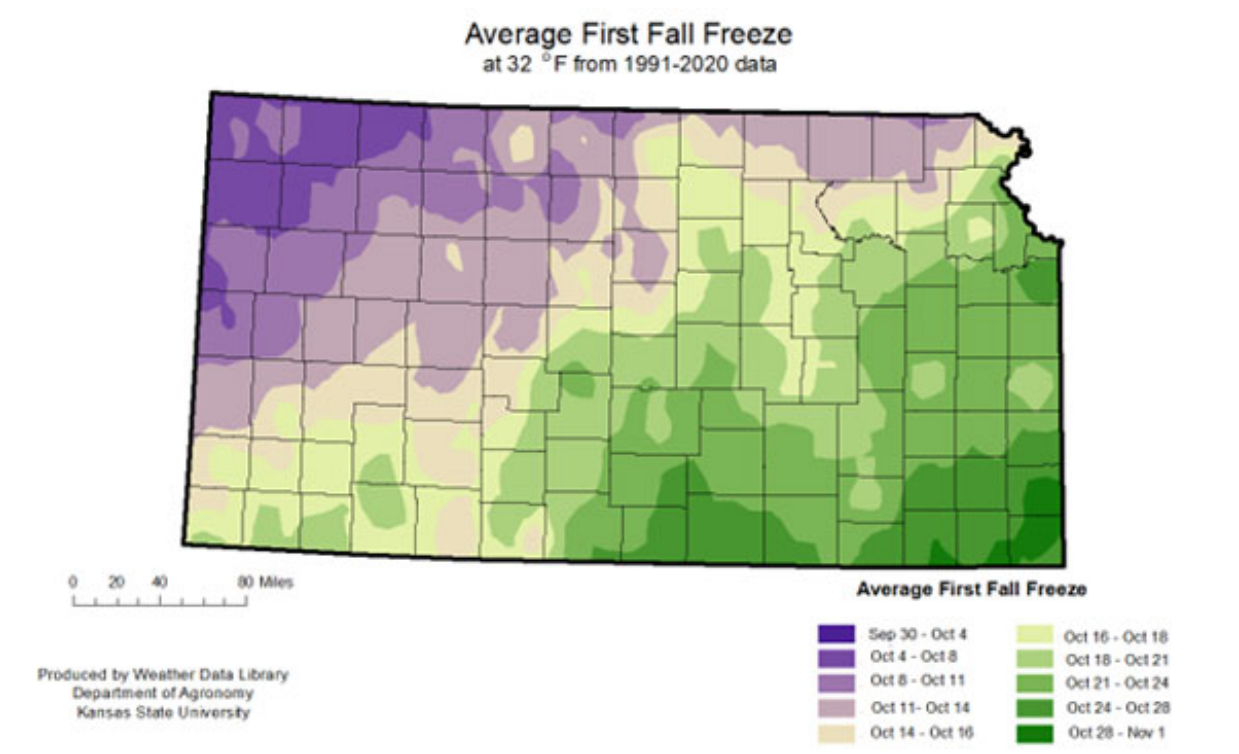


Figure 2. Average fall freeze dates for Kansas. Source: Kansas Weather Data Library.

Table	Data from Mon Oct 20 2025 12:00 -- Click column headers to sort data						
Chart	Station	Days Since 24°F	Date	This Fall First 32°F	Fall Freeze Climatology		
Calculate		Days			Average Date	Record Earliest	Record Latest
Download	Alma SSE	>365	M		10-23	1995-09-22	2024-11-21
Resources	Ashland BS	195	2025-04-08	2025-10-20	10-15	1995-09-22	1937-11-14
	Ashland Bottoms	224	2025-03-10		10-16	2003-10-01	1998-11-10
	Belleville 2W	196	2025-04-07		10-20	2004-10-02	2016-11-12
	Bennington 3N	213	2025-03-21		10-19	1995-09-22	2021-11-13
	Bentley 2S GMD	217	2025-03-17		10-24	2014-10-04	1999-12-05
	Bunker Hill 3NE	225	2025-03-09		10-17	1995-09-22	1998-11-04
	Butler	224	2025-03-10		10-20	1995-09-22	2016-11-12
	Cherokee	239	2025-02-23		10-25	1942-09-27	2004-11-25
	Cheyenne	187	2025-04-16	2025-10-20	10-08	1983-09-22	1963-10-28
	Clay	213	2025-03-21		10-16	1995-09-22	1998-11-11
	Colby	196	2025-04-07	2025-10-20	10-07	1983-09-22	1963-10-28
	Corning 2NW	213	2025-03-21		10-13	1995-09-22	1998-11-11
	Denmark 1NW	>365	M		10-14	1995-09-22	1947-11-05
	Elmdale 1SE	217	2025-03-17		10-17	1995-09-22	1902-12-03
	Flickner Tech Farm	213	2025-03-21		10-20	1995-09-22	2016-11-12
	Garden City	196	2025-04-07		10-14	1995-09-22	1973-11-01
	Goodland Tech Farm	187	2025-04-16	2025-10-19	10-09	1946-09-22	1931-10-28

Figure 3. First freeze date averages for all Mesonet stations as found on the “Table” tab.
Source: Kansas Mesonet.

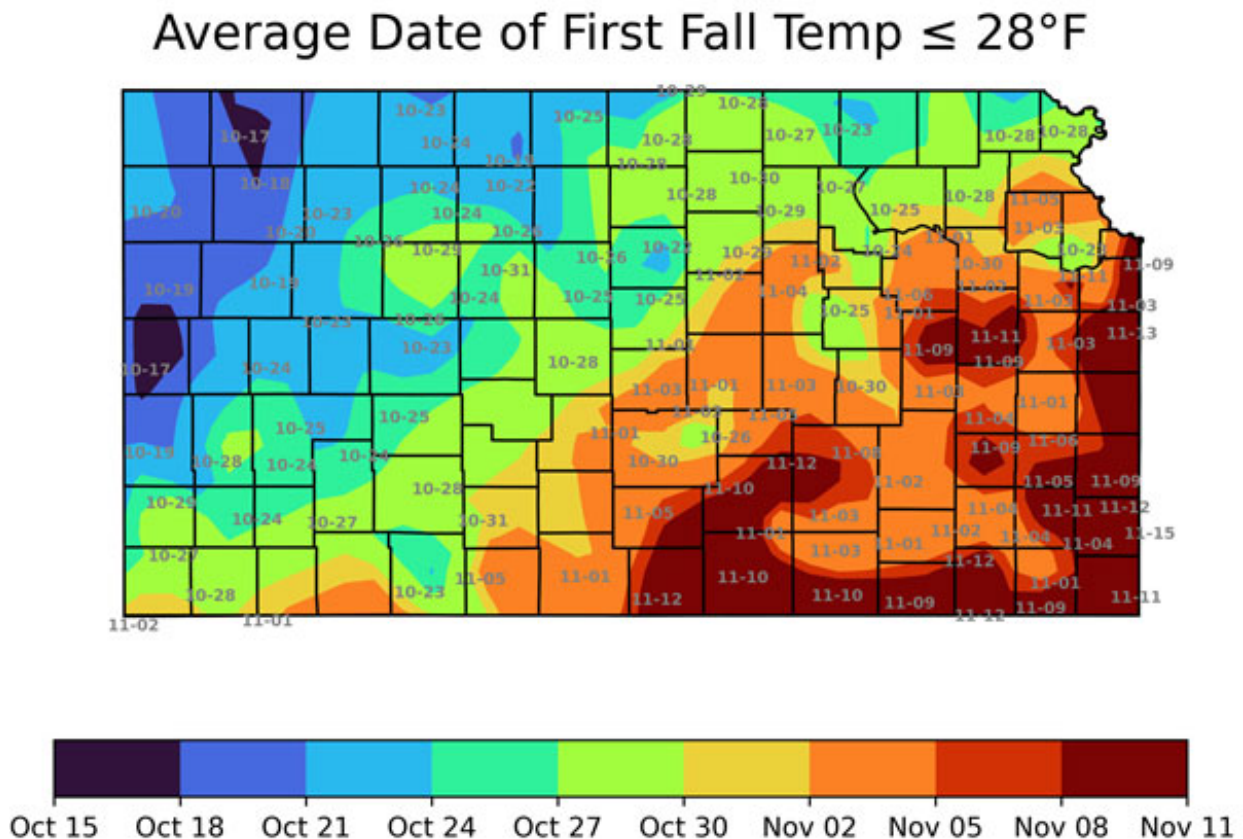


Figure 4. Average 28°F freeze dates for Kansas. Map created by Matthew Sittel, Kansas Weather Data Library.

Historically, almost all parts of the state have recorded freezing temperatures as early as September. The earliest first freeze on record in Kansas was September 3, 1974, when many stations dropped below freezing. However, this year, the first freezes have fallen as much as two weeks later than normal in the northwest and a week later than normal in north-central Kansas.

Common question: “How cold did it get?”

The Freeze Monitor tool displays the coldest temperatures observed across Kansas during the previous two weeks (the most recent freeze event during the previous two weeks is displayed; Figure 5). It also tracks the first fall freeze date for each station for comparison to local climatology in a table (<https://mesonet.k-state.edu/airtemp/min/hoursbelow/#tab=table-tab&mtlIndex=6>) as seen in Figure 3. Data updates every twenty minutes on both the map and the table.

Common question: “Was it cold long enough to damage crops?”

Another tool important for producers and gardeners is the duration below freezing, as some crops and commodities have lower thresholds for damage. This feature allows users to select options to view maps/data of the “[hours below 32°F](#),” “[hours below 24°F](#),” and the “[hours below 12°F](#)”). While all three are of interest, the lower two thresholds are of great importance to wheat growers later into the fall/winter season.

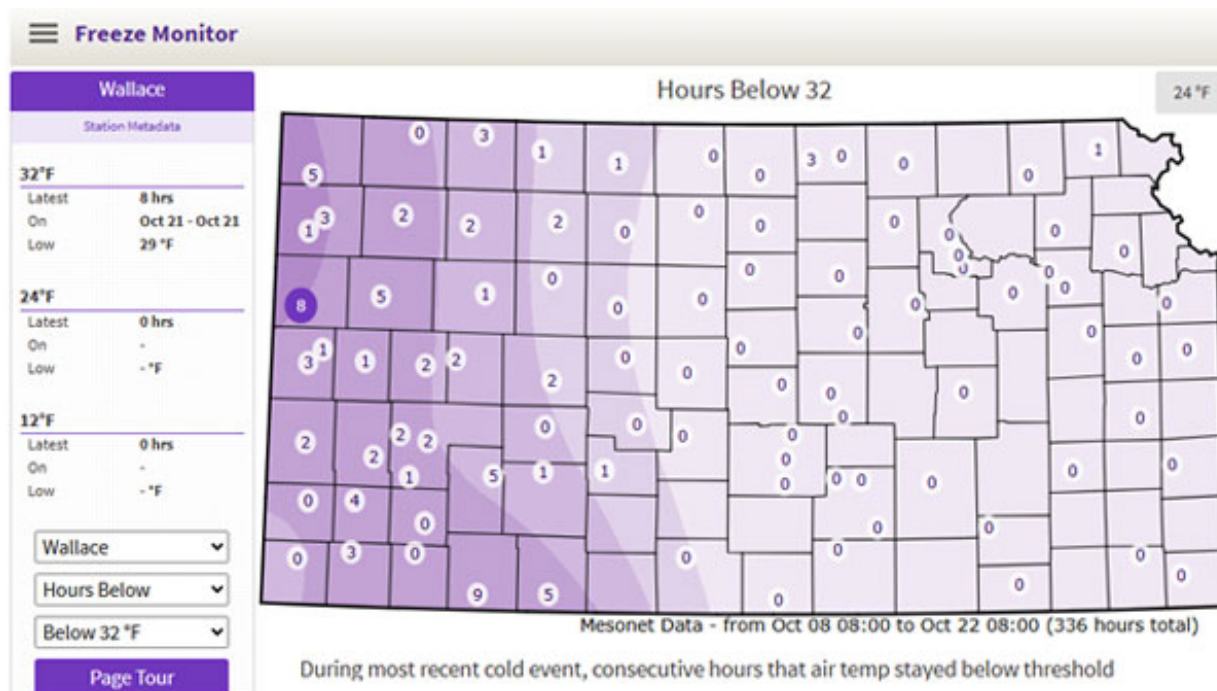
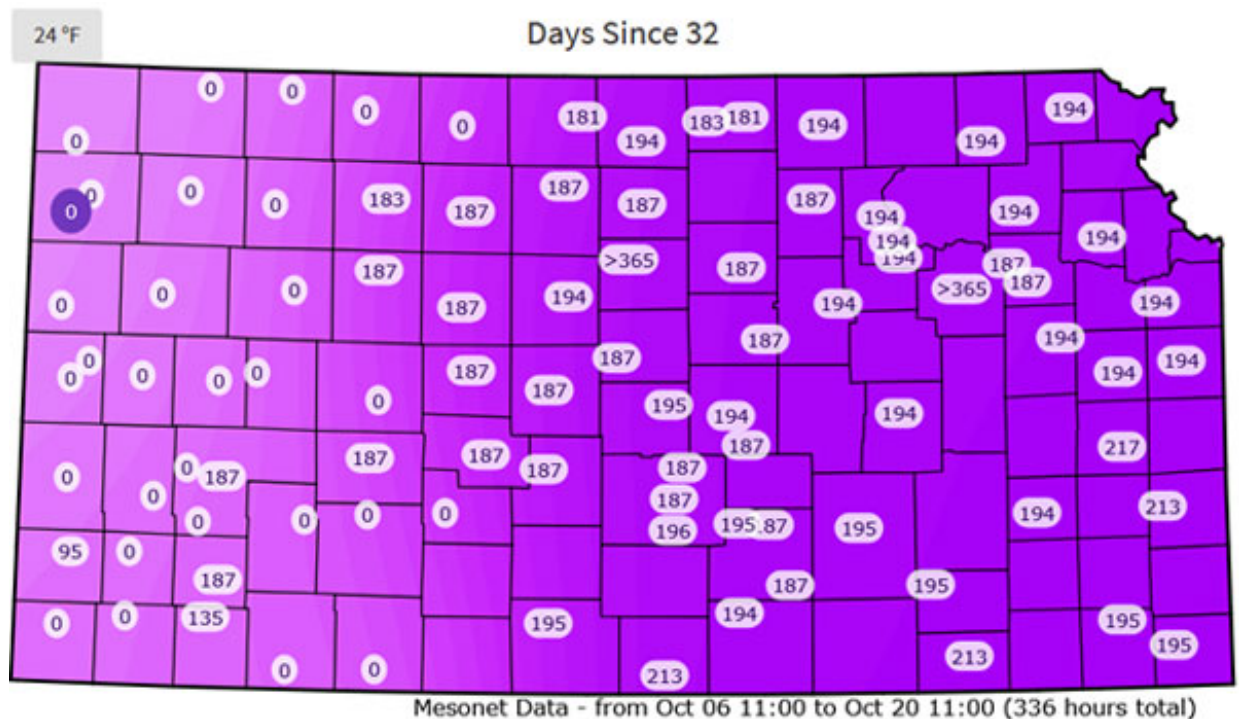


Figure 5. View of the Freeze Monitor webpage on October 22, 2025. Wallace (selected station) shows a freeze event on October 21, 2025. The map represents the latest freeze events at these locations since October 8, 2025. Source: <https://mesonet.k-state.edu/airtemp/min/hoursbelow/#tab=table-tab&mtIndex=0>

Common question: “How long has it been above freezing?”

The freeze monitor can also track the duration of days since the last freeze or below the 24°F and 12°F thresholds. This is ideal for determining the first freeze and estimating the length of the growing season. You can find “days since” using this link: <https://mesonet.k-state.edu/airtemp/min/hoursbelow/#tab=table-tab&mtIndex=6>. The last freeze in the spring occurred in mid-April, and with the later-than-normal freeze for most of Kansas thus far, this has resulted in a significantly longer growing season than normal. Many locations were at 180+ days without freezing temperatures as can be observed in the “Days Since 32” option (Figure 6).



The number of days since the temperature threshold was reached

Figure 6. Number of days since the last freeze as of October 5, 2023. Find this information here: <https://mesonet.k-state.edu/airtemp/min/hoursbelow/#tab=table-tab&mtIndex=6>.

The data displayed in the tables below the maps can be sorted. Clicking on the header of a particular column will sort the table by that column. This makes it much easier to see what area was the coldest in the state, as well as the earliest freeze and earliest climatological freeze data. There are several download options, including table and chart data and images of the maps.

The Freeze Monitor remains operational throughout the winter and is available for the 24°F and 12°F thresholds, in addition to the 32°F threshold, for those arctic air masses. As we approach spring, the Freeze Monitor will be updated to display the spring freeze climatology.

Chip Redmond, Weather Data Library/Mesonet
christopherredmond@ksu.edu

Matthew Sittel, Assistant State Climatologist
msittel@ksu.edu

Dan Regier, Weather Data Library/Mesonet
regierdp@ksu.edu

6. Kansas Forage Conference set for Nov. 5 in Garden City

Kansas State University will host the Kansas Forage Conference on Wednesday, Nov. 5, at the K-State Southwest Research-Extension Center in Garden City. This one-day event brings together researchers, producers, and industry experts to share the latest insights on managing forage in limited-water environments.

The conference runs from 8:30 a.m. to 4 p.m. and is free to attend. Sessions will feature fast-paced, practical updates on forage management, soil health, fertility, risk protection, and marketing, along with time for Q&A and peer discussion. Lunch is provided, courtesy of sponsors High Plains Farm Credit, American AgCredit, and the Kansas Forage and Grassland Council.

Forage is a vital part of Kansas agriculture. In 2022, Kansas produced more than 5 million tons of hay, ranking third among all states. Forage contributes over \$536 million annually to the state's economy. According to the Kansas Department of Agriculture, forage production supports nearly 6,700 jobs and generates \$546.9 million in economic output across the state.

Summer annual forages, such as forage sorghum, sudangrass, triticale, and wheat, are particularly valuable in the High Plains due to their drought tolerance and flexibility for grazing, hay, or silage production. Some hybrids can be ready to graze within four to six weeks of planting, providing a timely feed source during hot, dry summers.

Conference sessions include:

- Annual forage economics — John Holman, K-State cropping systems agronomist
- Soil impacts of haying, grazing, and cover crops — Augustine Obour, K-State soil scientist
- Managing prussic acid in forages — Scott Staggenborg, seed and product development consultant
- Alfalfa profitability update — Romulo Lollato, K-State extension wheat and forages specialist
- Forage fertility management — Logan Simon, K-State southwest area agronomist
- Insurance and price protection tools — Jenny Ifft, Flinchbaugh Agricultural Policy chair
- Invasive grass management — Keith Harmony, K-State range scientist
- Plus, additional sessions on summer legumes, silage quality, and a Kansas Livestock Association industry update.

Event details

Date: Nov. 5, 2025

Time: 8:30 a.m.–4 p.m. (Registration 8:30–8:55 a.m.; program starts 8:55 a.m.)

Location: K-State Southwest Research-Extension Center, 4500 E. Mary St., Garden City, KS 67846

Cost: Free; lunch provided

Registration: Online form - https://kstate.qualtrics.com/jfe/form/SV_82McOxQB89lxRFs

Registration is not required, but is requested for an accurate meal count.

For more information, please visit the event link at:

https://www.wkrec.org/events/forage_conference/western_kansas_forage_conference.html

2025 K-STATE FORAGE CONFERENCE

NOVEMBER 5, 2025 - 8:30 AM
Southwest Research Extension Center
4500 E. Mary Street Garden City, KS 67846

PRACTICAL, RESEARCH-BACKED INFORMATION FOR PRODUCERS

Join us for a one-day, producer-focused workshop covering annual forage systems, alfalfa profitability, prussic acid management, fertility, insurance, marketing, and more. Sessions are fast-paced with time for Q&A and peer discussion. Ground your decisions in high-quality, unbiased research you can trust for the seasons ahead.

RSVP REQUESTED BUT
NOT REQUIRED
SCAN HERE



FOR MORE INFORMATION

 awood22@ksu.edu
 www.wkrec.org/events

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AGENDA

- 8:30 am – Registration
- 8:50 am – Welcome and Introductions
- 9:00 am – Haying and Grazing Annual Forages and Associated Economics—John Holman
- 9:30 am – Impact of Haying and Grazing Forage Cover Crops on Soils—Augustine Obour
- 10:00 am – Managing Prussic Acid in Forages—Scott Staggenborg
- 10:30 am – Break & Discussion
- 10:45 am – Management Practices for High-Yielding and Profitable Alfalfa—Romulo Lollato
- 11:15 am – Summer Legume Forage Alternatives—Nick Detter
- 11:45 am – Forage Fertility Management—Logan Simon
- 12:15 pm – Lunch, Discussion & Sponsor Highlights
- 1:00 pm – KLA Livestock Industry Update—Clayton Huseman
- 1:30 pm – Seeding Rate Recommendations for Summer Annual Forage Hay—Nick Detter
- 2:00 pm – Managing Pesky Native Plants: Silver Bluestem and Western Ragweed—Keith Harmoney
- 2:30 pm – Forage Insurance Options—Jenny Ifft
- 3:00 pm – Livestock Price Protection Options (LRP and More)—Jenny Ifft
- 3:30 pm – Wrap-Up & Discussion

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John Holman, Cropping Systems Agronomist
jholman@ksu.edu