



**K-STATE**  
Research and Extension

## Extension Agronomy

# eUpdate

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*01/04/2024*

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](mailto:kgehl@ksu.edu), or Dalas Peterson, Extension Agronomy State Leader and Weed Management Specialist 785-532-0405 [dpeterso@ksu.edu](mailto:dpeterso@ksu.edu).

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## 1. Kansas weekly drought update and climate report: Dec. 27, 2023 - Jan. 2, 2024

The year 2023 ended on a quiet note (Table 1). The period began with lingering light precipitation behind the slow-moving storm system that delivered blizzard conditions to northwest Kansas the day after Christmas. While some places had measurable snow, amounts were mostly under an inch.

Temperatures moderated behind the storm system, bringing milder daytime temperatures. The 30<sup>th</sup> was the warmest day of the period, with highs mostly in the 50s across the state, with a few 60s in the southwest. The average high temperature across the Kansas Mesonet on the 30<sup>th</sup> was 54°F, or 12° above normal. Lows during the period were mostly in the 20s, with colder teens in a few areas, such as north central Kansas, where there was lingering snow cover. Colder temperatures returned as 2023 came to a close, bringing daytime highs down to near-normal values. At the beginning of 2024, midnight CST on January 1<sup>st</sup>, temperatures ranged from 15°F at the Hamilton County Mesonet site to 31°F at the Cherokee County site.

**Table 1. Temperature and precipitation extremes across Kansas during the period.**

Extreme	Value	Location (Observer Category)	County	Date
Highest Temperature	65°	Lake City (Mesonet)	Barber	December 30
		Ashland (COOP)	Clark	December 31
Lowest Temperature	11°	Hamilton (Mesonet) Burr Oak 4 S (COOP)	Hamilton Jewell	January 1
		Tribune 1 W (COOP)	Greeley	January 1
				January 2
Highest 1-Day Precipitation	0.24"	Soldier 7.3 S (CoCoRaHS)	Jackson	December 27
		Prairie Village 0.8 NW (CoCoRaHS)	Johnson	
		Leavenworth 4.3 SW (CoCoRaHS)	Leavenworth	
		Louisburg 2.4 WNW (CoCoRaHS)	Miami	
Highest 7-Day Total Precipitation	0.32"	Prairie Village 0.8 NW (CoCoRaHS)	Johnson	
Highest 7-Day Total Snowfall	3.2"	Goff 3.9 SSW (CoCoRaHS)	Nemaha	

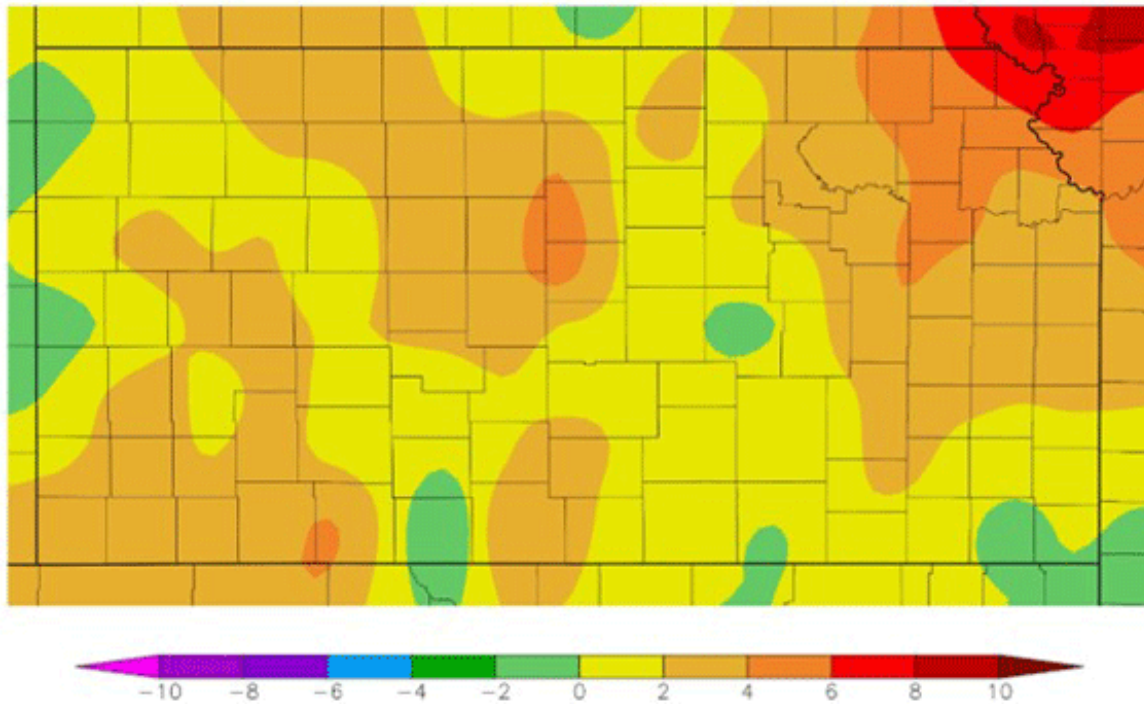
The 7-day average temperature across Kansas was 33.1°F, or 2.6° above normal. All divisions averaged above normal; divisional departures ranged from +1.5° in southwest Kansas to +4.5° in northeast Kansas (Table 2; Figure 1). The statewide average precipitation for the 7-day period was 0.06 inches or 27% of the normal amount of 0.22 inches. All divisions were below normal; amounts ranged from a low of 0.01 inches in south central Kansas to a high of 0.21 inches in east central Kansas (Table 3; Figure 2). For the 2023-24 water year, which began on October 1, the statewide average precipitation is 5.22 inches, or 102% of the normal amount of 5.14 inches, a decrease of 3% over last week. Five of Kansas' nine climate divisions are above normal for the water year. East central Kansas has the highest total (9.29 inches) as well as the highest percent of normal (141%). Northwest

Kansas is the driest division (1.87 inches) and has the lowest percent of normal at 62%.

**Table 2. Average daily high and low temperatures across the Kansas Mesonet during the 7-day report period. Maximums and minimums listed are the highest and lowest recorded in the state that day.**

		Wed		Thu		Fri		Sat		Sun		Mon		Tue	
		Dec 27		Dec 28		Dec 29		Dec 30		Dec 31		Jan 1		Jan 2	
<b>Avg High</b>		36°		37°		48°		54°		36°		39°		45°	
Max	Min	58°	30°	54°	29°	57°	37°	65°	42°	47°	30°	55°	29°	52°	39°
<b>Normals</b>		42°	20°	42°	19°	42°	19°	42°	19°	42°	19°	42°	19°	42°	19°
<b>Avg Low</b>		27°		24°		25°		25°		23°		20°		21°	
Max	Min	32°	15°	33°	13°	31°	17°	31°	15°	30°	14°	25°	11°	25°	15°

Departure from Normal Temperature (F)  
12/27/2023 – 1/2/2024



Generated 1/3/2024 at HPRCC using provisional data.

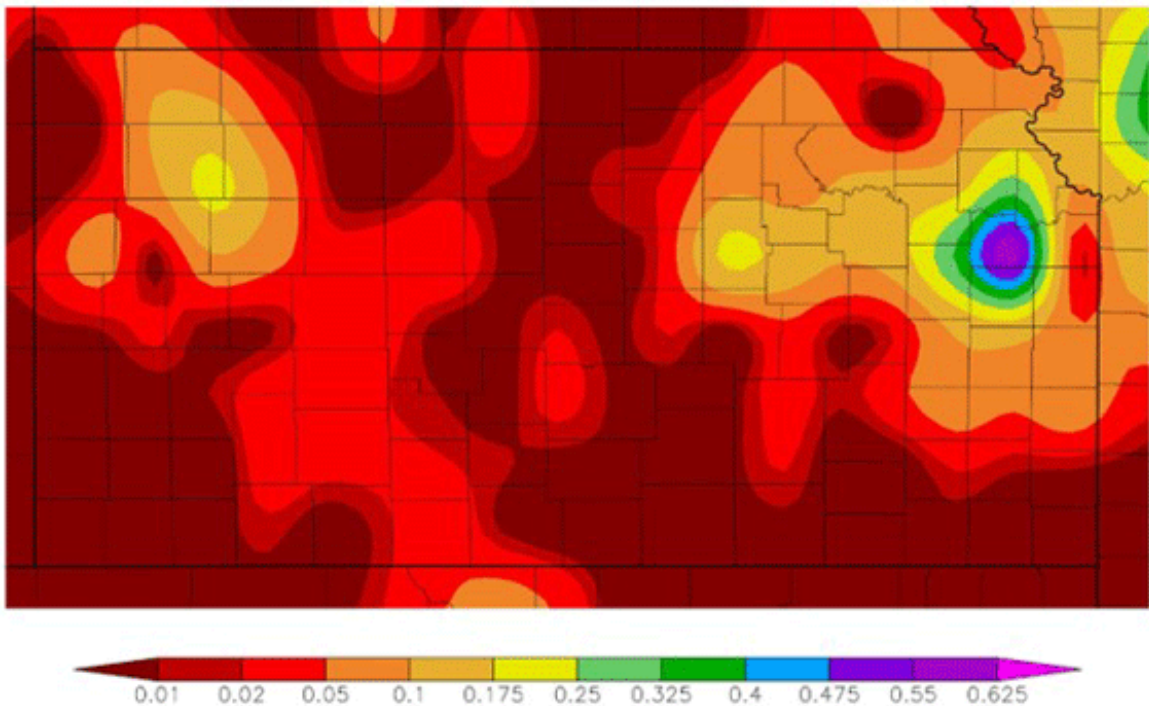
NOAA Regional Climate Centers

**Figure 1. Departure from normal weekly mean temperatures for 12/27/2023 to 1/2/2024 (HPRCC).**

**Table 3. Weekly, water year, and calendar year average precipitation totals, percent of normal, and 7-day change to percent of normal for the state and each of Kansas’ nine climate divisions.**

	Past Week		Water Year		Past Calendar Year	
	12/27 to 1/2		10/1/23 to 1/2/24		1/1 to 12/31/23	
	Precip.	% Normal	Precip.	% Normal (Change)	Precip.	% Normal
Northwest	0.08"	67	1.87"	62 (-1)	21.41"	99
North Central	0.03"	17	4.05"	94 (-3)	22.55"	79
Northeast	0.14"	61	5.52"	91 (-1)	28.32"	78
West Central	0.06"	43	2.35"	81 (-3)	20.72"	101
Central	0.02"	11	5.03"	112 (-5)	24.08"	81
East Central	0.21"	81	9.29"	141 (-3)	30.96"	82
Southwest	0.03"	18	3.57"	113 (-6)	25.19"	126
South Central	0.01"	5	6.62"	130 (-7)	29.92"	98
Southeast	0.02"	6	8.06"	102 (-3)	29.26"	70
STATE	0.06"	27	5.22"	102 (-3)	25.89"	84

Precipitation (in)  
12/27/2023 – 1/2/2024



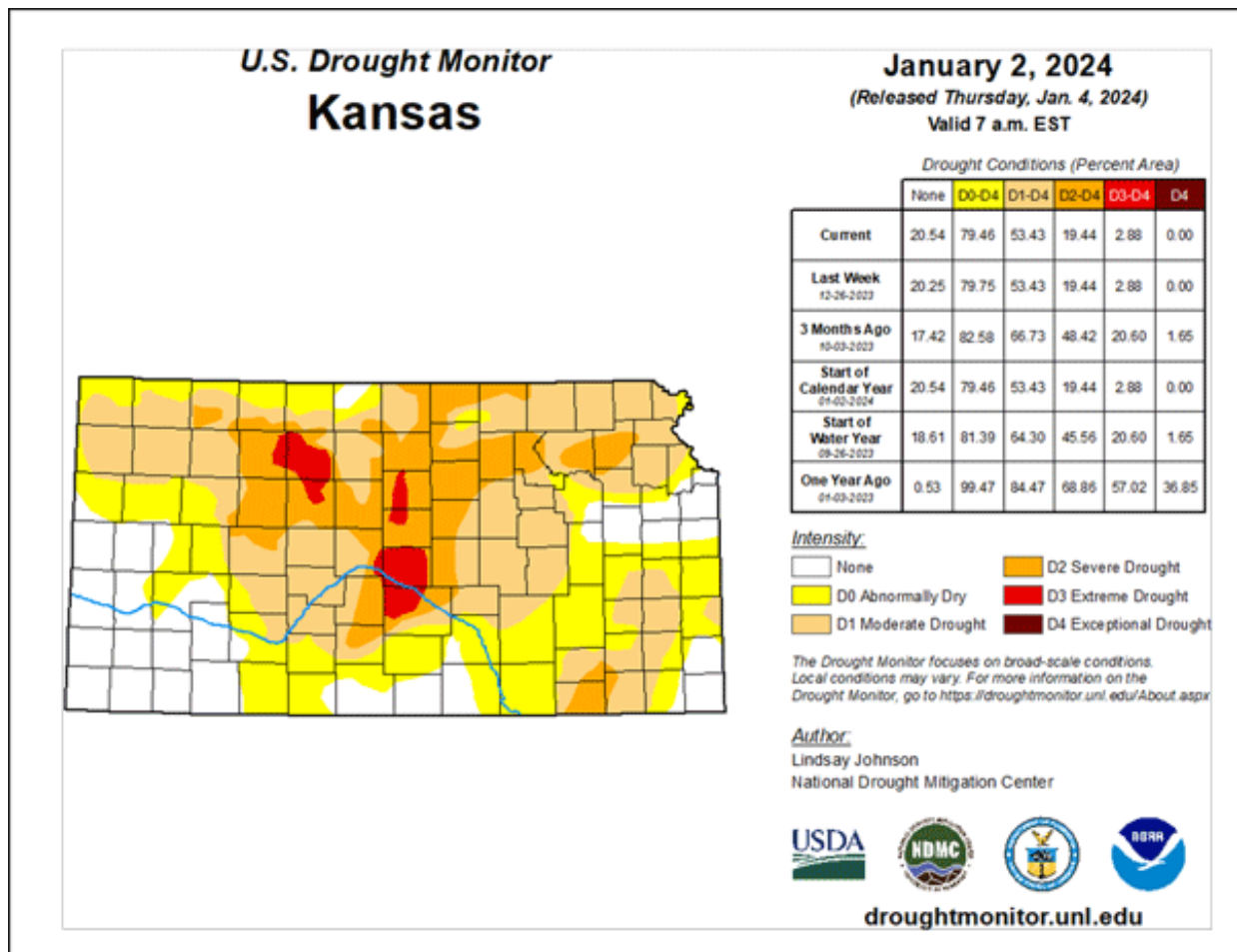
Generated 1/3/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

**Figure 2. Total precipitation for the week (HPRCC).**

The average evapotranspiration (ET) for grass across the state for the week was 0.21 inches. This is below the 10-year normal for the 7 days ending January 2 of 0.24 inches. Divisional averages ranged from 0.16 inches in north central to 0.27 inches in southwest Kansas. Cooler temperatures this past week resulted in a drop in soil temperatures. The week's average 2-inch soil temperature across Kansas was 36.8°F, down 5.8° from last week. This average is 2.4° above the 10-year normal of 34.4°F. Divisional averages ranged from 34°F in northwest Kansas to 41°F in southeast Kansas. Three Mesonet sites recorded a 2-inch soil temperature at or below freezing at least once during the period. The most time during the period that 2-inch soil temperatures were at or below freezing at a Mesonet site was 5.9 hours at Oberlin 7NE in Decatur County.

The only change in this week's US Drought Monitor was the removal of D0 in southern Morton and Stevens Counties, returning these areas to drought-free status. The rest of the state had no change in drought conditions. The D0 removal in southwest Kansas brought the percentage of drought-free areas in the state up to 21%, an increase of 1% over last week. The Drought Severity and Coverage Index (DSCI) fell 1 point to 155, the lowest DSCI since July 5, 2022. A total of 19% of Kansas is in D2 or worse drought (Figure 3). This is the lowest percentage since February 2022.



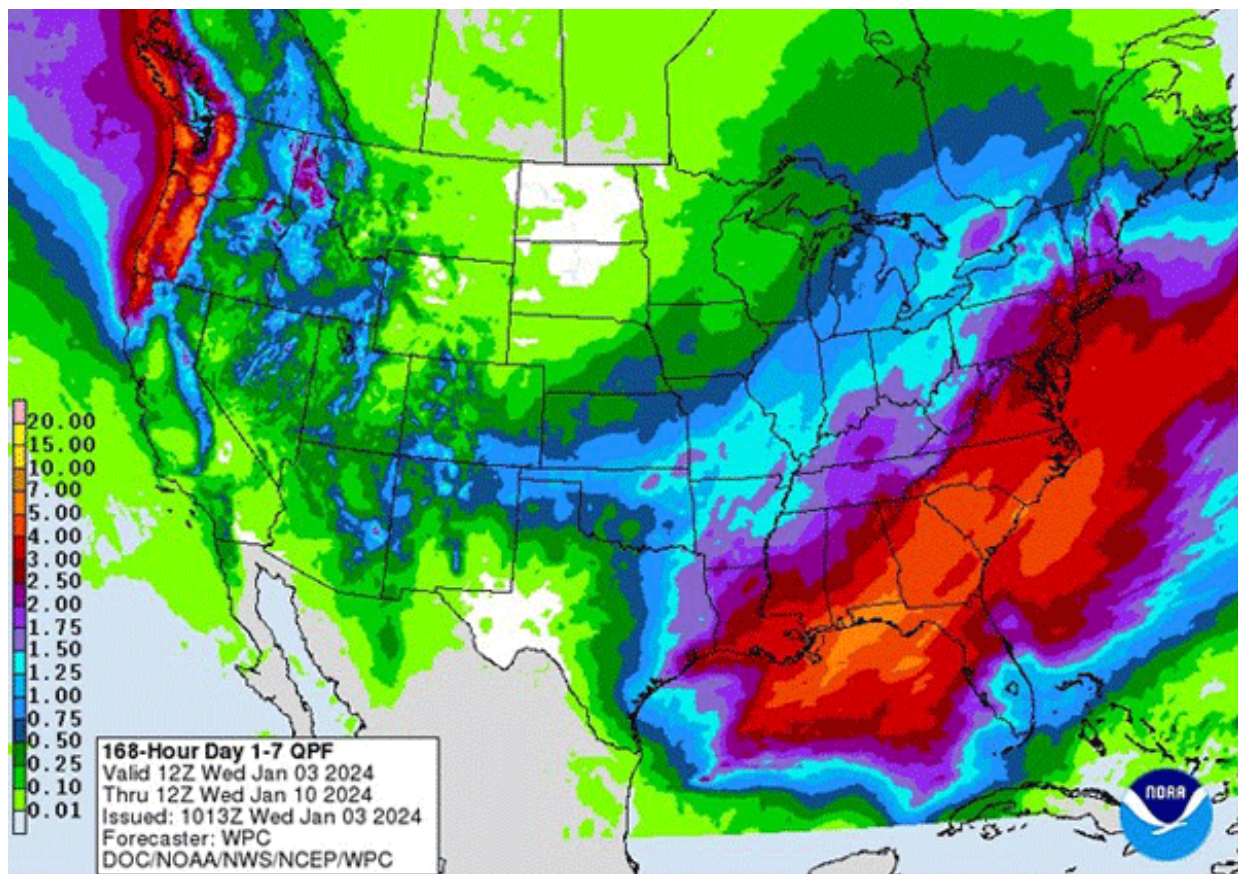
**Figure 3. Current weekly drought status (U.S. Drought Monitor).**

## Looking ahead

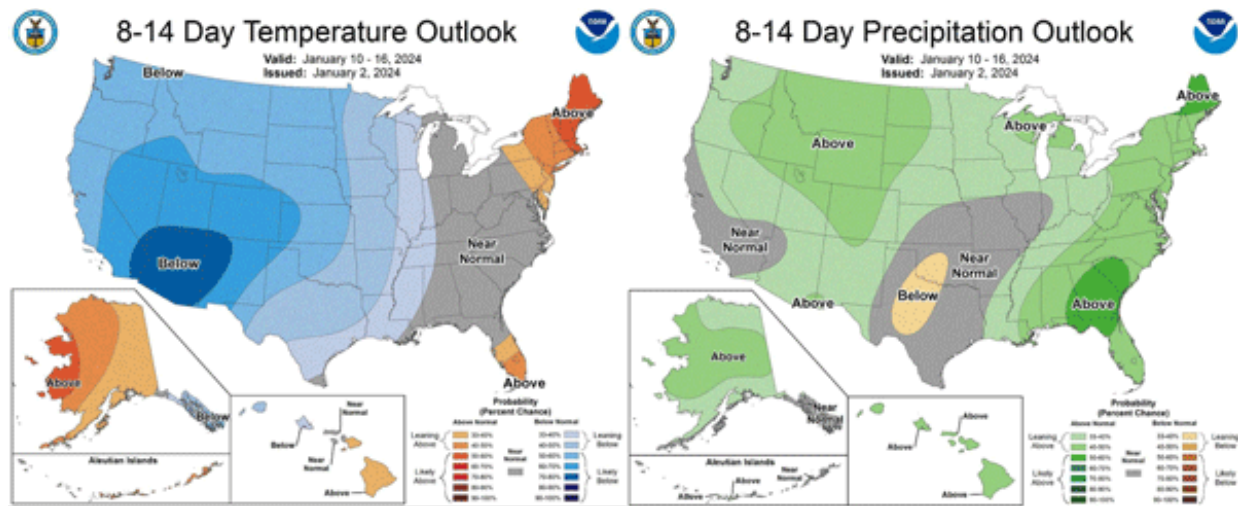
The Weather Prediction Center's 7-day total precipitation forecast, valid for January 3-9, calls for above-normal precipitation statewide. Totals over half an inch are expected across the southern third of the state, with totals as high as 1.5" possible in southeastern Kansas (Figure 4).

Temperatures are expected to average a few degrees above normal. The average daily high and low across Kansas for this period are 42°F and 19°F. Average 7-day precipitation is 0.11 inches in western Kansas, 0.16 inches in central Kansas, and 0.25 inches in eastern Kansas.

The 8 to 14-day outlook, valid for January 10-16, says below-normal temperatures are likely for most of the state, particularly in western Kansas, where the probabilities of below-normal temperatures exceed 60% (Figure 5). Neither above nor below precipitation is favored in the outlook; the probabilities of above, below, and near normal precipitation all range from 30 to 40% statewide.



**Figure 4. NOAA's Weather Prediction Center 7-day precipitation forecast.**



**Figure 5. Climate Prediction Center's 8 to 14-day temperature and precipitation outlooks.**

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## 2. Updated - Cover Your Acres Winter Conference, January 16-17

K-State Research and Extension will host the 21st annual [Cover Your Acres Winter Conference](#) for crop producers and consultants on January 16 and 17. The conference will take place in the traditional in-person format at the Gateway Civic Center in Oberlin, KS.

Cover Your Acres is a producer-driven meeting focused on new ideas and research-based updates in crop production in northwest Kansas and the Central High Plains region.

The conference, which typically draws more than 400 attendees from Kansas and other states, highlights the latest technology, methods, and conservation practices to improve crop production in the region. This year's conference will feature university specialists and industry representatives discussing what's driving profitability in northwest Kansas farms.

### Session topics and speakers

- **Current financial status of NW Kansas farms** – Mark Wood and Glenn Conover
- **Drought-driven insects and emerging pests** – Anthony Zukoff
- **Dryland rotation agronomics and economics** – Lucas Haag
- **Herbicide resistance update for the High Plains** – Sarah Lancaster
- **High Plain weather outlook for 2024** – Jesse Lundquist
- **Keeping weeds on their toes** – Jeanne Falk Jones
- **Phosphorus management – Understanding the how, why, and when in crops and soils** – Dorivar Ruiz Diaz
- **Pivot priorities – A fresh look at sprinkler setup for maximizing effective irrigation** – Joel Schneekloth
- **Sprayer and planter technology advancements** – Ajay Sharda
- **Wheat industry innovation: New markets for wheat** – Evan Backhus
- **Panel discussion: Sorghum weed control and using new herbicide-tolerant sorghums** – Agronomists and seed company representatives

The same programs will be offered on both days of the conference (Figure 1). Participants attending both days will find catching most or all programs easier. On Tuesday evening, the sessions are followed by a social where attendees can visit with industry representatives and conference speakers while enjoying refreshments.

Platinum sponsors for the 2024 conference include K-State Research and Extension, AKRS Equipment, LDI, SurePoint Ag Systems, 4G Farm and Sales, and Hoxie Implement.

**Online registration is open.** The fee is \$55 for Tuesday, January 16, \$60 for Wednesday, January 17, or \$80 for both days. After January 10<sup>th</sup>, and for walk-ins, the cost is \$80 per day. The conference fee includes lunch, morning and afternoon refreshments, and educational materials. The program will offer ten continuing education unit (CEU) credits for Certified Crop Advisors and three 1A for Commercial Applicators credit.

To view the conference details, lodging accommodations, and online registration, visit [www.northwest.ksu.edu/coveryouracres](http://www.northwest.ksu.edu/coveryouracres). For questions, call 785-462-6281.

# Cover Your Acres



## Winter Conference



January 16 and 17, 2024  
Full Program Offered Each Day  
The Gateway, Oberlin, KS

### 2024 SPEAKER TOPICS

**Current Financial Status of NW Kansas Farms:** Using data from northwest Kansas farms, we take a look at opportunities for profitability and where producers should be alert for possible concerns.

**Drought Driven Insects and Emerging Pests:** Drought conditions favor certain insect species and can have multi-year effects in insect pressure. Will also cover new and evolving pests that producers should be aware of.

**Dryland Rotation Agronomics and Economics:** A look at performance of various crop rotations from long-term trials with insight into the key drivers in productive dryland rotations.

**Herbicide Resistance Update for the High Plains:** Resistance is leading to reliance on a smaller number of herbicides. A look at emerging issues and how our management can and should adapt.

**High Plains Weather Outlook:** El Nino and La Nina, what does it mean for the Tri-State Region, outlook for 2024, and a crash course in storm spotting.

**Keeping Weeds on Their Toes:** The latest in label changes, product updates, trial data, and most importantly, using that to make a plan

**Phosphorus Management: Understanding the how, why, and when:** Availability in crop and soil systems is often misunderstood, we will revisit the basics and how they can help you make better in-field decisions.

**Pivot Priorities: Sprinkler Setup for Effective Irrigation:** How the interaction of sprinkler setup and management play a role in maximizing effective irrigation, and thus productivity and profitability.

**Sprayer and Planter Tech Advancements?** Research update showcasing how producers can make the most of the new technologies available on the market.

**Wheat Innovation—New Uses and Markets:** New demand for wheat based food ingredients as led to new processing plants in North-Central Kansas. What does this mean for wheat demand?

**Sorghum Weed Control Strategies:** A panel discussion with agronomist and seed co. reps on the keys to effective weed control in sorghum.

Register Online at [www.northwest.ksu.edu/CoverYourAcres](http://www.northwest.ksu.edu/CoverYourAcres)

Room 1		Room 2		Room 3		Room 4	
7:45	8:15	Registration					
8:15	8:20	Welcome					
8:30	9:20	Current Financial Status of NW KS Farms <sup>1</sup> (M. Wood and G. Conover)	Wheat Innovation: New Uses and Markets <sup>1</sup> (E. Backhus)	Phosphorus—How, when, and why in crops & soils <sup>1</sup> (D. Ruiz-Diaz and M. Bourns)			
9:30	10:20	Sprayer and Planter Tech Advancements <sup>2</sup> (A. Sharada)	High Plains Weather Outlook <sup>1</sup> (J. Lundquist)	Pivot Priorities for Effective Irrigation <sup>1</sup> (J. Schneekloth)			
10:20	10:50	View Exhibits					
10:50	11:40	High Plains Herbicide Resistance Update <sup>1,2</sup> (S. Lancaster)	Dryland Rotation Agronomics and Economics <sup>1</sup> (L. Haag)	Drought Driven Insects and Emerging Pests <sup>1,2</sup> (A. Zukoff)		Industry Session (ServiTech)	
11:50	12:40	Keeping Weeds on Their Toes <sup>1,2</sup> (J. Falk Jones)	Pivot Priorities for Effective Irrigation <sup>1</sup> (J. Schneekloth)	Lunch			
12:50	1:40	Phosphorus—How, when, and why in crops & soils <sup>2</sup> (D. Ruiz-Diaz and M. Bourns)	High Plains Herbicide Resistance Update <sup>1,2</sup> (S. Lancaster)				
1:50	2:40	Dryland Rotation Agronomics and Economics <sup>1</sup> (L. Haag)	Sprayer and Planter Tech Advancements <sup>2</sup> (A. Sharada)	Keeping Weeds on Their Toes <sup>1,2</sup> (J. Falk Jones)		Industry Session (PivotBio)	
2:40	3:10	View Exhibits					
3:10	4:00	Sorghum Weed Control Strategies and Technologies Discussion Panel	Drought Driven Insects and Emerging Pests <sup>1,2</sup> (A. Zukoff)	Wheat Innovation: New Uses and Markets <sup>1</sup> (E. Backhus)	The Role of Humics in Soil Health (4G Farm and Sales)		
4:10	5:00	High Plains Weather Outlook <sup>1</sup> (J. Lundquist)	Current Financial Status of NW KS Farms <sup>1</sup> (M. Wood and G. Conover)				

Tuesday: Social hour with hors d'oeuvres begins at 5:00

<sup>1</sup> CCA CEUs applied for.

<sup>2</sup> Commercial Applicator CEUs applied for.

Platinum Sponsors:



Figure 1. Conference agenda for 2024 Cover Your Acres.

Lucas Haag, Area Agronomist, Northwest Research-Extension Center, Colby  
[lhaag@ksu.edu](mailto:lhaag@ksu.edu)

### 3. 2024 Alfalfa School is set for February 13 in Great Bend

K-State Research and Extension and the Kansas Forage and Grassland Council (KSFGC) are hosting the 2024 Alfalfa School on Tuesday, February 13. The event will take place at the Burnside Room, 1214 Stone Street in Great Bend and will run from 8:30 a.m. to around 3:00 p.m.

This year's event will feature several sessions covering a myriad of topics related to alfalfa production. The program will offer five continuing education unit (CEU) credits for Certified Crop Advisors and one Commercial Applicators credit. The school is free to attend for current Kansas Forage and Grassland Council members. The cost is \$45 for non-members and is payable at the door. This fee covers the cost of participation plus membership to KSFGC.

Lunch will be provided. Please RSVP by Wednesday, February 7, by calling 620-793-1910 or email [aboor@ksu.edu](mailto:aboor@ksu.edu).

#### **Session topics**

- New technologies in alfalfa production
- Management practices for high alfalfa yield
- Alfalfa fertility management
- Important alfalfa pests and their control
- Alfalfa use in the beef industry
- Alternative annual legumes for western Kansas
- Alfalfa management under drought and irrigated conditions

# 2024 Alfalfa School

K-State Research and Extension  
Kansas Grassland and Forage Council

8:30 a.m. - 3:00 p.m.

Tuesday, February 13<sup>th</sup>

Burnside Room, 1214 Stone Street, Great Bend, KS

## Topics

- New technologies in alfalfa production
- Management practices for high alfalfa yield
- Alfalfa fertility management
- Important alfalfa pests and their control
- Alfalfa use in the beef industry
- Alternative annual legumes for western KS
- Alfalfa management under drought and irrigated conditions

## Speakers

- Industry panel
- Romulo Lollato
- Dorivar Ruiz Diaz
- Anthony Zukoff
- Justin Waggoner
- Nick Detter
- John Holman

This event will offer 5 CCA CEUs and one Commercial Applicator credit.

The event is free to Kansas Forage and Grassland Council members, \$45.00, payable at the door for non-members. This cost warrants meeting participation plus membership to KSFGC.



Lunch will be provided.

Please **RSVP** by **Wednesday February 7<sup>th</sup>** by calling 620-793-1910 or email [aboor@ksu.edu](mailto:aboor@ksu.edu)



Kansas State University is committed to making its services, activities and programs accessible to all participants. If you have special requirements due to a physical, vision, or hearing disability, contact Pawnee County Extension at 620-285-6901. **Kansas State University Agricultural Experiment Station and Cooperative Extension Service.** K-State Research and Extension is an equal opportunity provider and employer.

#### 4. K-State Corn and Soybean Schools to be held Jan. 16-19, 2024

In January 2024, look for a new format for the traditional K-State Corn and Soybean Winter Crop Schools. K-State Research and Extension, in collaboration with Kansas Corn and Kansas Soybean, has combined the schools for a whole-day program covering both crops.

Online registration is open! Please visit <https://kscom.com/schools/> and get signed up today!

##### **2024 K-State Corn and Soybean Crop Schools**

- **January 16 (Tuesday) – Parsons**  
K-State Southeast Research and Extension Center
- **January 17 (Wednesday) – Hesston**  
Agco Corporation
- **January 18 (Thursday) – Garden City**  
Corteva Agriscience Research Center
- **January 19 (Friday) – Olathe**  
John Deere Ag Marketing Center

Participant check-in will begin at 8:30 a.m. at each location with the program starting at 9:00 a.m. The school will wrap up around 3:00 p.m. Morning refreshments and a hot lunch will be provided. CCA and Commercial Pesticide Applicator credits have been applied for. Save the date for one of the locations near you!

Each school will feature a range of region-specific topics covering corn and soybean production. The final agendas for each location will be shared in an upcoming eUpdate. Some of the topics include:

- Agronomics for corn and soybean production
- Corn and soybean disease update
- Carbon credits
- Updates from the Kansas Mesonet
- Market update
- Insect pressure update
- Planter technology
- Weed control
- Soil fertility
- Irrigation for corn and soybean crops



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