



K-STATE
Research and Extension

Extension Agronomy

eUpdate

02/08/2024

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, or Dalas Peterson, Extension Agronomy State Leader and Weed Management Specialist 785-532-0405 dpeterso@ksu.edu.

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1. Extension question: Can I garden on top of my septic system?

While it's still technically winter, the days are gradually getting longer and home gardeners are likely counting the days until spring. In this article, Dr. DeAnn Presley, Soil Management Extension Specialist, answers the question about if you can place a garden on top of a septic system. Since there are an increasing number of suburban homes being built in Kansas, most of which are not on municipal sewer systems, this article was written to help educate the public about residential septic systems and how to manage them properly.

How does a septic system work?

Septic systems, also referred to as onsite wastewater systems, treat and cycle wastewater back into the environment. There are many different kinds of systems, but except for lagoons, all depend on dispersing partially treated wastewater called effluent into the home's lawn through a network of pipes called the drainfield or absorption field. Soil organisms, such as bacteria and fungi, play a critical role in decomposing the chemicals, compounds, and other organisms present in the wastewater. For this process to proceed efficiently the soil profile needs to be aerobic, meaning that the soil isn't permanently saturated. That's why systems have the large footprint that they do so that water can be spread out across the dispersal field so that there is not any one spot overloaded with water.

Because of all this water, plants are very beneficial for removing some of this water from the lateral field through transpiration (water moves from the roots and exits through the leaves). However, the very best plants for covering wastewater system components, such as the septic tank and the absorption field, are lawn grasses and other ornamental plants with a shallow root system. There are a few reasons for this.

1. It's best to keep the area around the septic tank free of major landscaping or objects because the tank needs to be accessible for occasional pumping.
2. Plants with large roots, such as trees or shrubs, might cause damage and/or plug either the septic tank or lateral lines with roots.
3. From a human health perspective, vegetable gardening isn't recommended. According to the EPA, "It is not recommended to plant trees, shrubs, or vegetable gardens on the drainfield. Tree and shrub roots can ensnarl and damage drainfield pipes. Vegetables can potentially be exposed to sewage effluent and be unsafe to consume. Native grasses and ground covers are the most appropriate planting over your drainfield."

Because there's always a risk that a septic system might malfunction, it's best to avoid consuming vegetables that could have been in contact with effluent.

For more information:

<https://www.epa.gov/septic/frequent-questions-septic-systems>

<https://www.epa.gov/sites/default/files/2015-06/documents/septicmart-week-landscaping-final.pdf>

DeAnn Presley, Soil Management Specialist

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2. Kansas Weekly Drought Update and Climate Report ? Jan. 31 to Feb. 6, 2024

This past week, much above-normal temperatures were again the rule across all of Kansas (Figure 1). As of February 6, the average temperature across the Kansas Mesonet has now been above normal for sixteen consecutive days. Within this stretch, the four warmest days were the first four of the reporting period when highs were mostly in the 60s, and a few locations topped out in the 70s. The highest Mesonet reading during the period was recorded at the Meade County site on February 1, when it reached 75°F (Table 1). The normal high at Meade for February 1 is 46°; 75° is the normal high for May 6. That afternoon's warmth was enough to set new record highs in southeast Kansas at El Dorado (73°) and Columbus (72°). Morning lows averaged at or above freezing for the first five days of February. The average morning low across the Kansas Mesonet on the 3rd was a mild 43°, just one degree shy of the statewide average high for the date (Table 2). Over five dozen record warmest daily minimums were set on the 4th, including at Wallace, where the low of 40° shattered the previous record of 33° set over a century ago in 1915. Goodland set new record warm minimums for the 3rd (39°) and the 4th (38°). The 7-day average temperature across Kansas was 45.5°, or 13.8° above normal. All nine divisions in the state averaged above normal; departures ranged from +11.5° in southwest Kansas to +15.7° in northeast Kansas (Figure 2).

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

	Value	Location (Observer Category)	County	Date
Extreme				
Highest	75°	Lake City (Mesonet)	Barber	February 1
Temperature		Medicine Lodge 1E (WBAN)	Barber	February 1
		Wilson Lake (COOP)	Russell	February 2
		Coldwater (COOP)	Comanche	February 2
		Lowest	19°	Meade (Mesonet)
Temperature				
Highest 2-Meter	36 mph	Konza Prairie (Mesonet)	Riley	February 3
Wind Speed				
Lowest	20°	Konza Prairie (Mesonet)	Riley	February 6
Wind Chill				
Highest 7-Day	2.58"	Damar 1.4 NNW (CoCoRaHS)	Rooks	
Total Precipitation				
Highest 7-Day	0.0"	---	---	
Total Snowfall				

Table 2. Average daily high and low temperatures (F) 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								
	Jan 31	Feb 1	Feb 2	Feb 3	Feb 4	Feb 5	Feb 6								
Avg High	67°		66°		61°		54°		46°		50°		57°		
Max	73°	75°	74°	60°	49°	57°	66°	Min	61°	51°	43°	48°	42°	38°	51°
Normals	43°	44°	44°	44°	44°	44°	44°	20°	19°	19°	20°	20°	20°	20°	20°
Avg Low	30°		38°		34°		43°		37°		32°		30°		
Max	38°	50°	50°	48°	41°	38°	38°	Min	19°	26°	21°	33°	32°	26°	22°

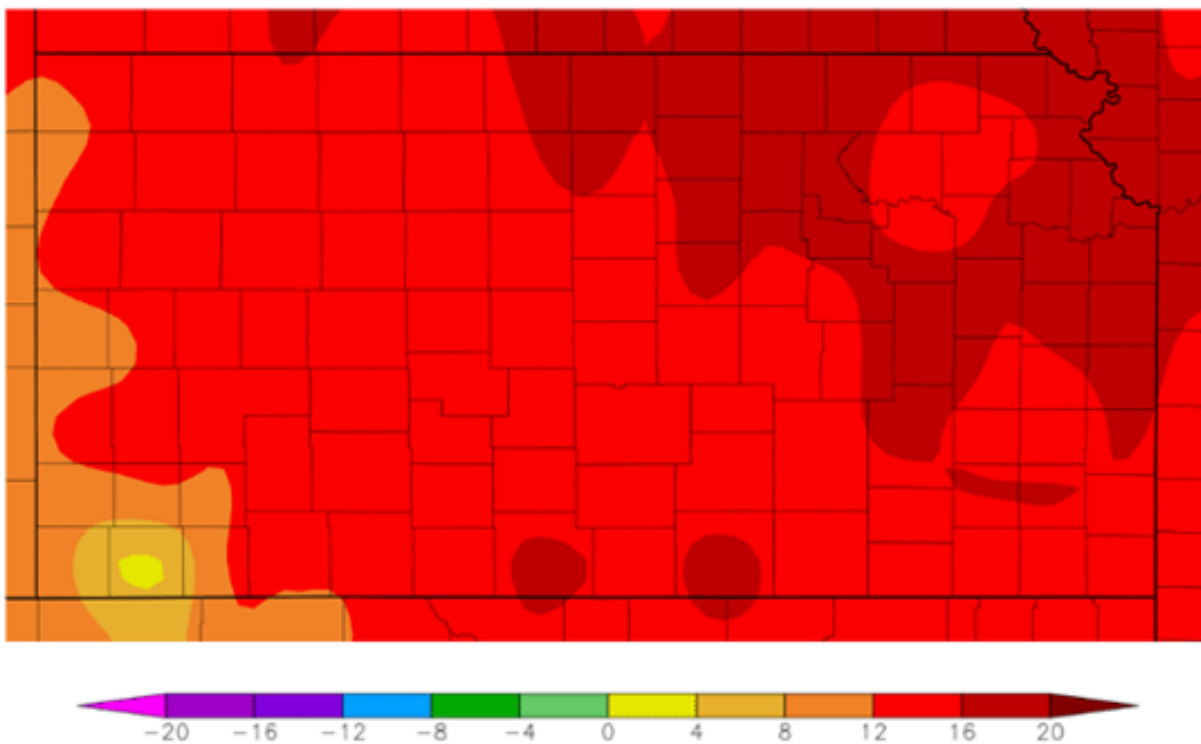


Figure 1. Departure from normal temperature (°F) for the 7-day period (Source: HPRCC).

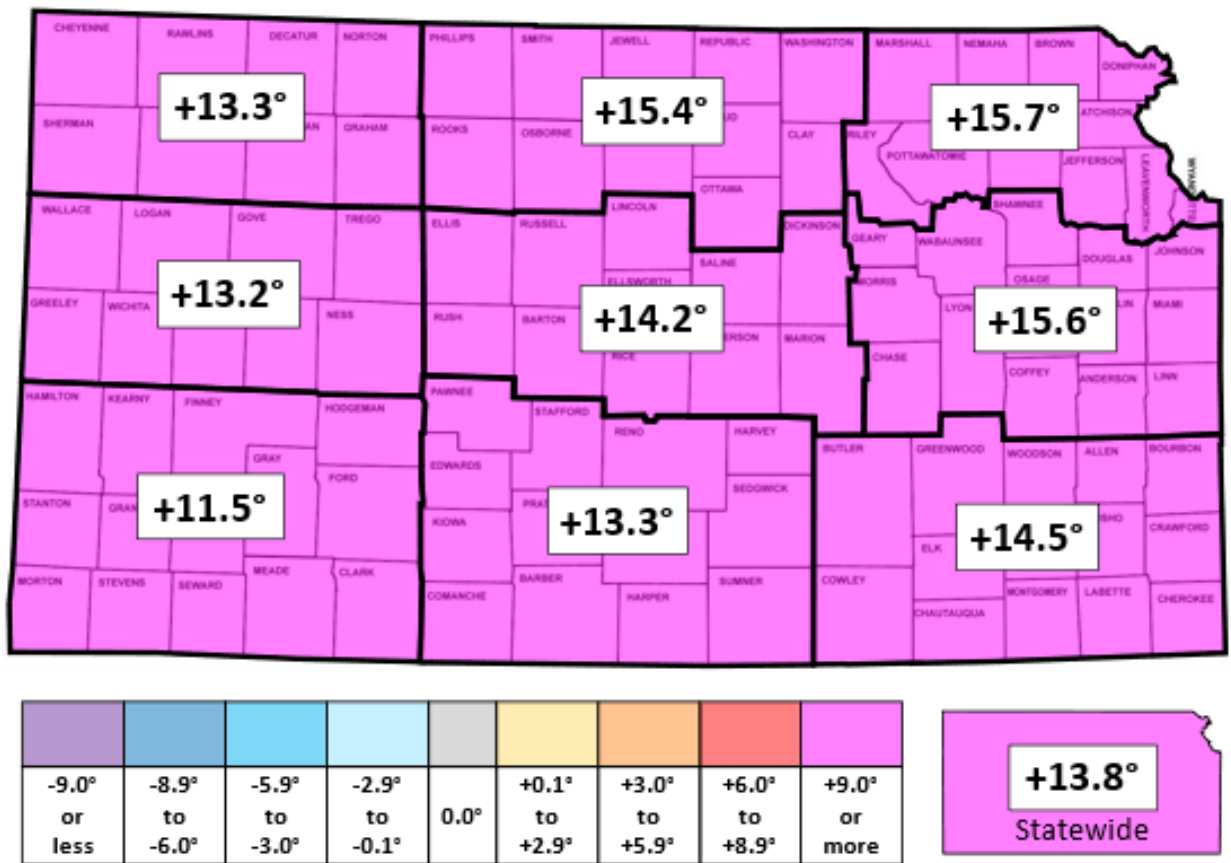


Figure 2. This week's departures from normal temperature (°F) by climate division.

A multi-day event brought generous amounts of moisture to the state during the period, and with mild temperatures in place, precipitation was solely in the form of rain (Figure 3). The rainfall began in southwest Kansas on the afternoon of the 2nd and spread across the state on the 3rd. Eastern Kansas continued to receive light rain on the 4th, eventually ending late in the day. Storm totals were highest in northern and eastern Kansas, where many locations picked up over an inch of rainfall, with amounts over two inches measured by CoCoRaHS observers in Graham, Rooks, Trego, Ellis, and Russell Counties in northern Kansas, as well as in Butler and Cowley Counties in southeast Kansas. The highest rainfall total was 2.58" near Damar in western Rooks County. The statewide average precipitation for the 7-day period was 0.96", or 436% of the normal amount of 0.22" (Figure 4). All divisions were much above normal; totals ranged from 0.44" in southwest to 1.45" in southeast Kansas. All divisions are running over 200% of normal for 2024, with annual departures ranging from +0.79" in the southwest to +2.36" in east central Kansas (Table 3). For the 2023-24 water year to date, which began on October 1, 2023, the statewide average precipitation is 7.42". This amount is 123% of the normal amount of 6.05. All nine climate divisions are now above normal for the water year. Northwest Kansas jumped from 73 to 101 percent of normal over the last week, and west central went from 97 to 119 percent. Divisional totals range from 3.57" in northwest Kansas to 12.62" in east central Kansas.

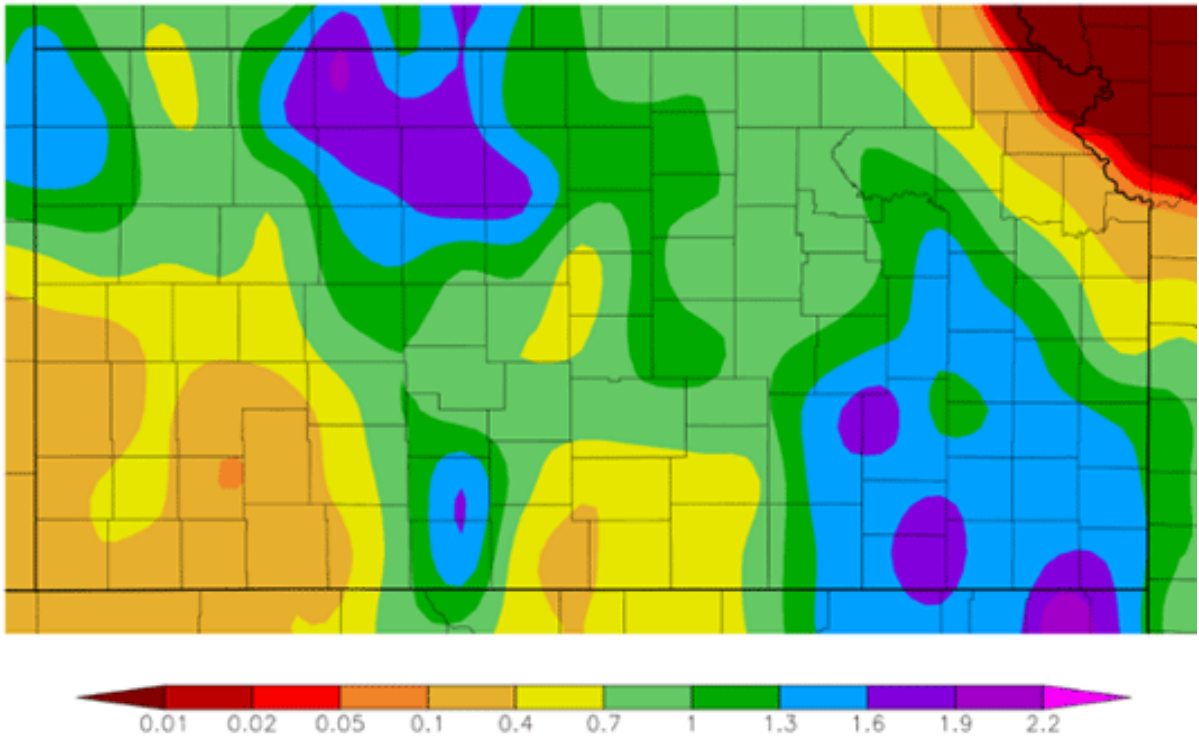


Figure 3. Total precipitation for the 7-day period (inches) (Source: HPRCC).

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		Calendar Year			Water Year		
	Jan. 31 - Feb. 6		Since January 1, 2024			Since October 1, 2023		
	Precip.	% Normal	Precip.	% Normal	% Change	Precip.	% Normal	% Change
Northwest	1.09"	908	1.75"	330	+169	3.57"	101	+28
North Central	1.18"	562	2.30"	267	+95	6.34"	124	+17
Northeast	0.73"	292	2.55"	241	+15	7.94"	112	+6
West Central	0.86"	717	1.84"	354	+111	4.02"	119	+22
Central	1.01"	459	2.36"	257	+64	7.26"	136	+13
East Central	1.13"	404	3.56"	297	+33	12.62"	163	+7
Southwest	0.44"	400	1.38"	234	+32	4.76"	128	+8
South Central	0.87"	395	2.26"	228	+46	8.72"	145	+9
Southeast	1.45"	468	3.32"	214	+62	11.23"	120	+12
STATE	0.96"	436	2.34"	241	+58	7.42"	123	+12

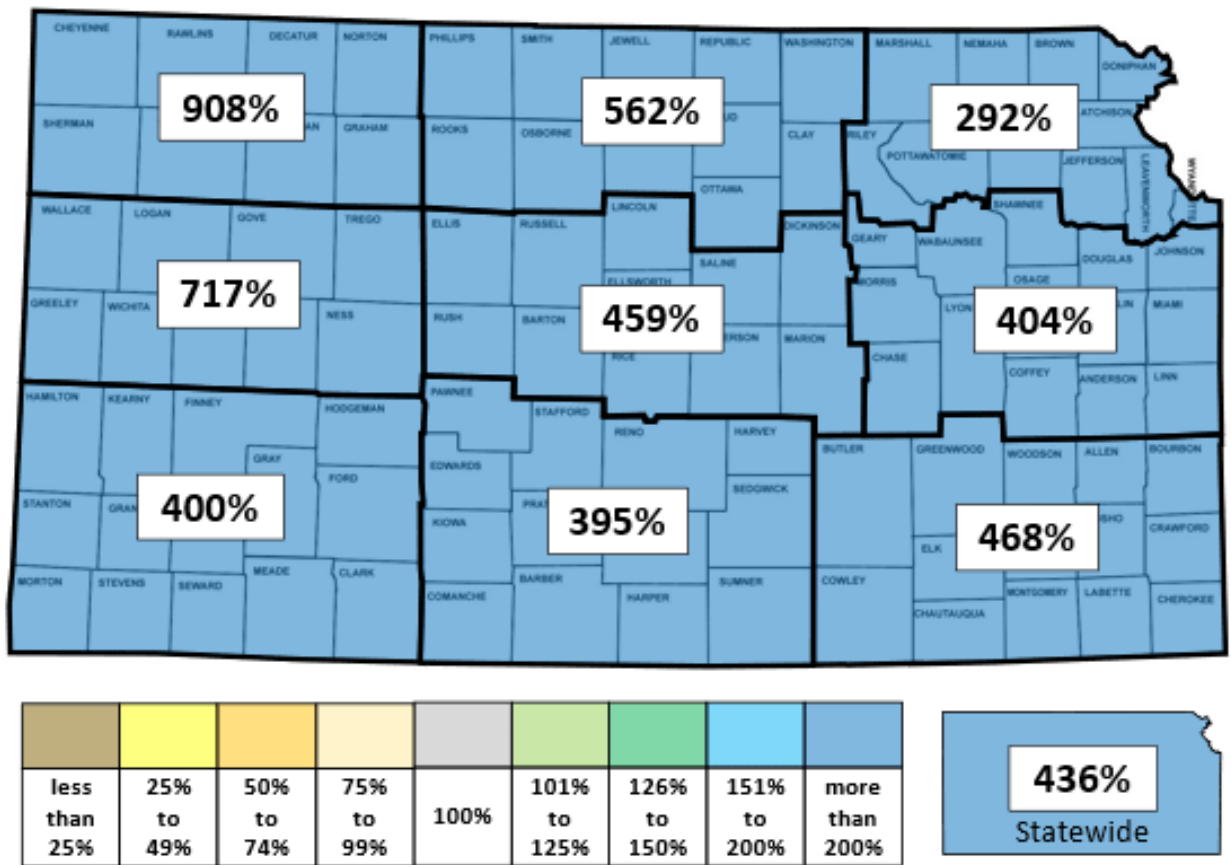
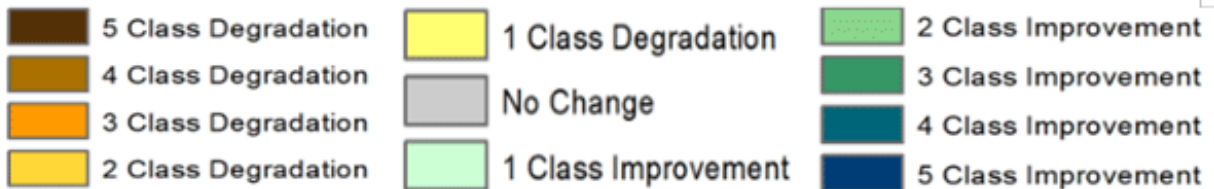
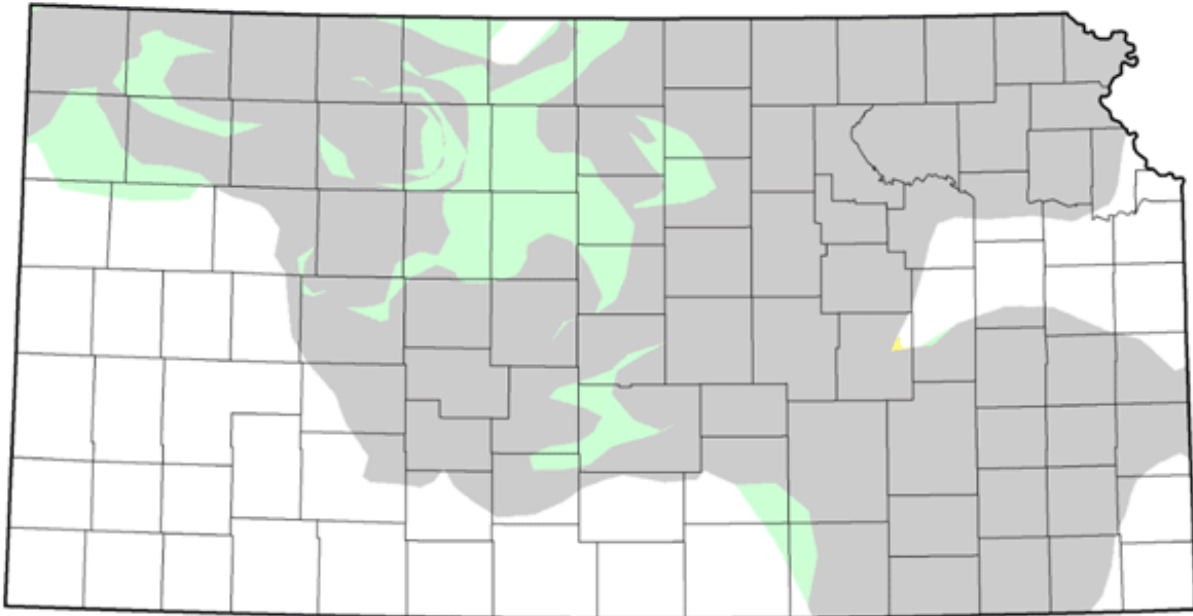
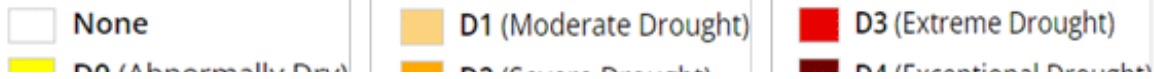
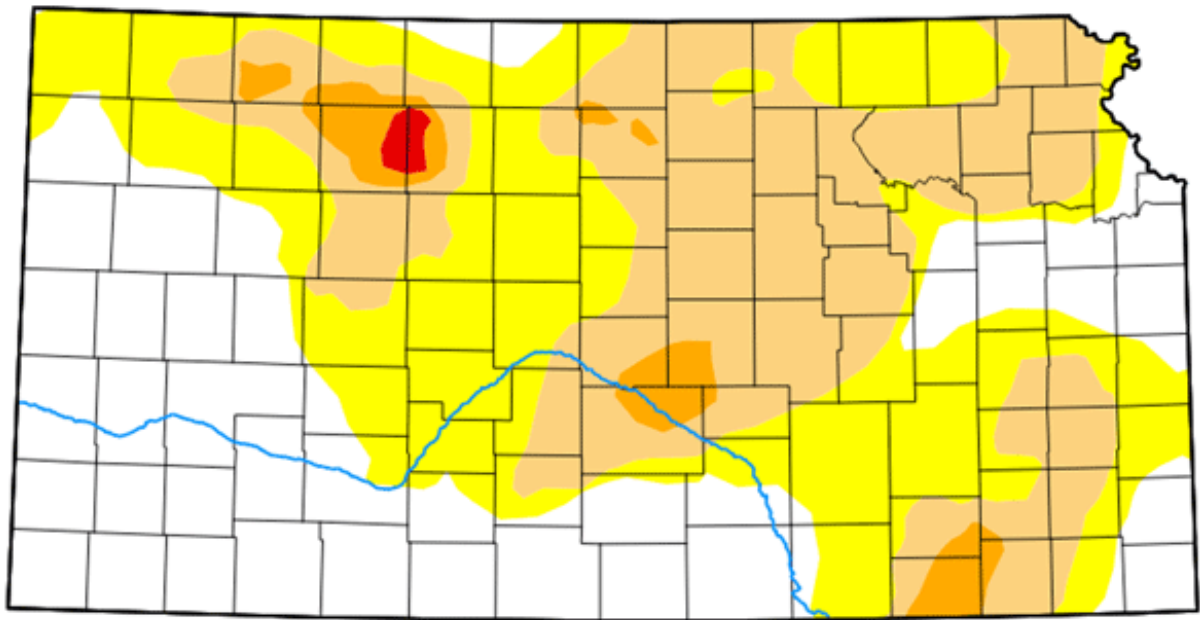


Figure 4. This week’s percentages of normal precipitation by Kansas climate division.

In this week’s US Drought Monitor update, 1-category improvements were made in parts of northwest and central Kansas (Figures 5a-b). The most extensive improvements were in north central Kansas. These changes resulted in 2% of the state being moved to drought-free status. A total of 36% of the state is now drought-free; this is the highest amount since July 2022 (Table 4). The Drought Severity and Coverage Index (DSCI) is now at 101, down 9 points from last week. Only 4% of Kansas remains in D2 or worse drought, the lowest amount since November 2021.



Figures 5a-b. Current weekly drought status and change in category over the past week maps for Kansas (Source: U.S. Drought Monitor, National Drought Mitigation Center).

Table 4. US Drought Monitor categorical data for the state of Kansas. Numbers indicate the

percent of the state in each category. D4 is the most severe category, while D0 is the least severe. None refers to drought-free conditions. DSCI is the Drought Severity Coverage Index, a composite index of overall drought conditions. Higher DSCI values indicate worse drought. The DSCI can range from a minimum of 0 (entire state drought-free) to 500 (entire state in D4).

Date	None	D0	D1	D2	D3	D4	DSCI
2/6/2024	35.80	31.62	28.79	3.43	0.35	0.00	101
1/30/2024	33.39	28.92	32.16	5.00	0.53	0.00	110
1/1/2024	20.25	26.32	34.00	16.56	2.88	0.00	156
10/1/2023	18.61	17.09	18.74	24.96	18.95	1.65	214

The average evapotranspiration (ET) for grass across the state for the week was 0.34". This is above the 10-year normal for the 7-day period ending February 6th of 0.30". Divisional averages ranged from 0.24" in north central Kansas to 0.40" in south central and southeast Kansas. Soil temperatures have rapidly warmed in the past week. The average 2" soil temperature across Kansas for the period was 41.6°, up 8.0° from last week. This average is 6.7° above the average value (based on Kansas Mesonet data from 2013 to 2023) of 34.9° for the 7-day period. Divisional averages ranged from 38° in northwest Kansas to 44° in south central Kansas. Soil temperatures should remain much above normal in the coming days.

The Weather Prediction Center's 7-day total precipitation forecast, valid for the period February 7th through the 13th, calls for drier conditions than last week (Figure 6). Less than one-tenth inch of precipitation is expected across most of the state, and parts of northeast Kansas are forecast to remain dry. Temperatures are expected to average 10 to 15 degrees above normal for the period, with a cooling trend expected to begin during the weekend. The average daily high and low across Kansas for this period are 45° and 21°. Average 7-day precipitation is 0.13" in western Kansas, 0.26" in central Kansas, and 0.37" in eastern Kansas. The 8 to 14-day outlook, valid for the period February 14th through the 20th, calls for near to slightly below-normal temperatures across the state (Figure 7a). Most of eastern Kansas has equal chances of above, below, and near-normal precipitation (Figure 7b). The probability of below-normal precipitation is slightly higher in eastern Kansas, at around 35%, but this is only a couple percent above the 33% equal chances mark. Hence, a dry week is far from a certainty. Above-normal precipitation chances are favored in western Kansas, but the highest probability of this outcome is only 40% in far southwestern Kansas.

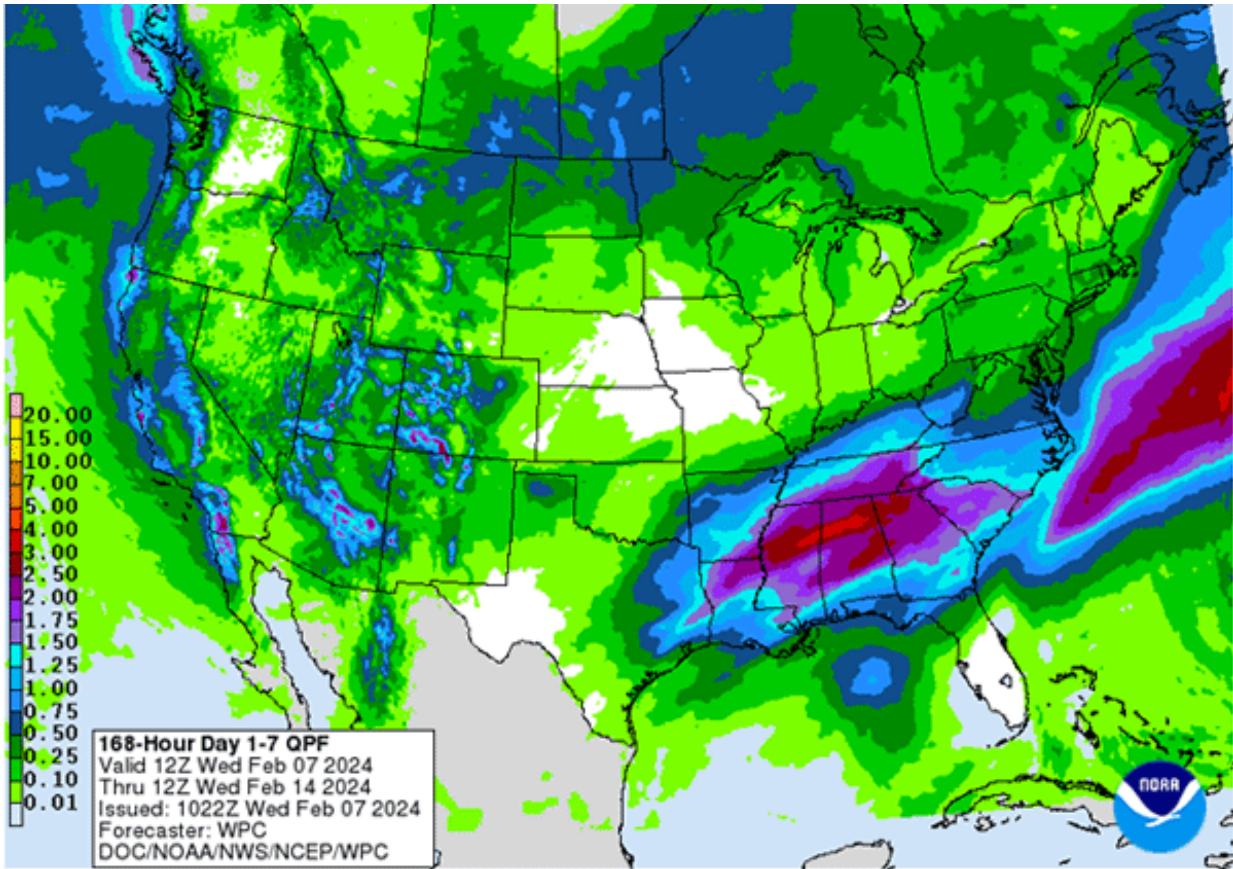


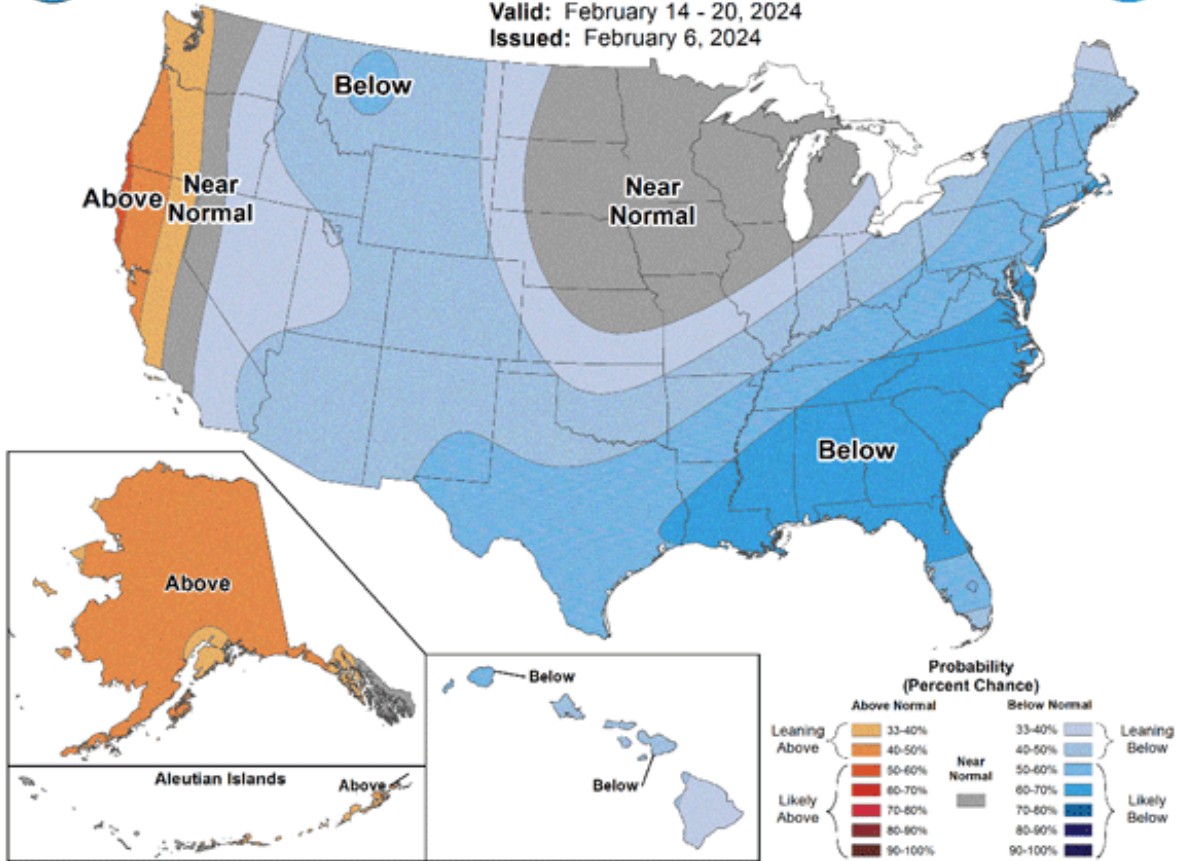
Figure 6. NOAA's Weather Prediction Center 7-day precipitation forecast.



8-14 Day Temperature Outlook



Valid: February 14 - 20, 2024
Issued: February 6, 2024



Kansas State University Department of Agronomy

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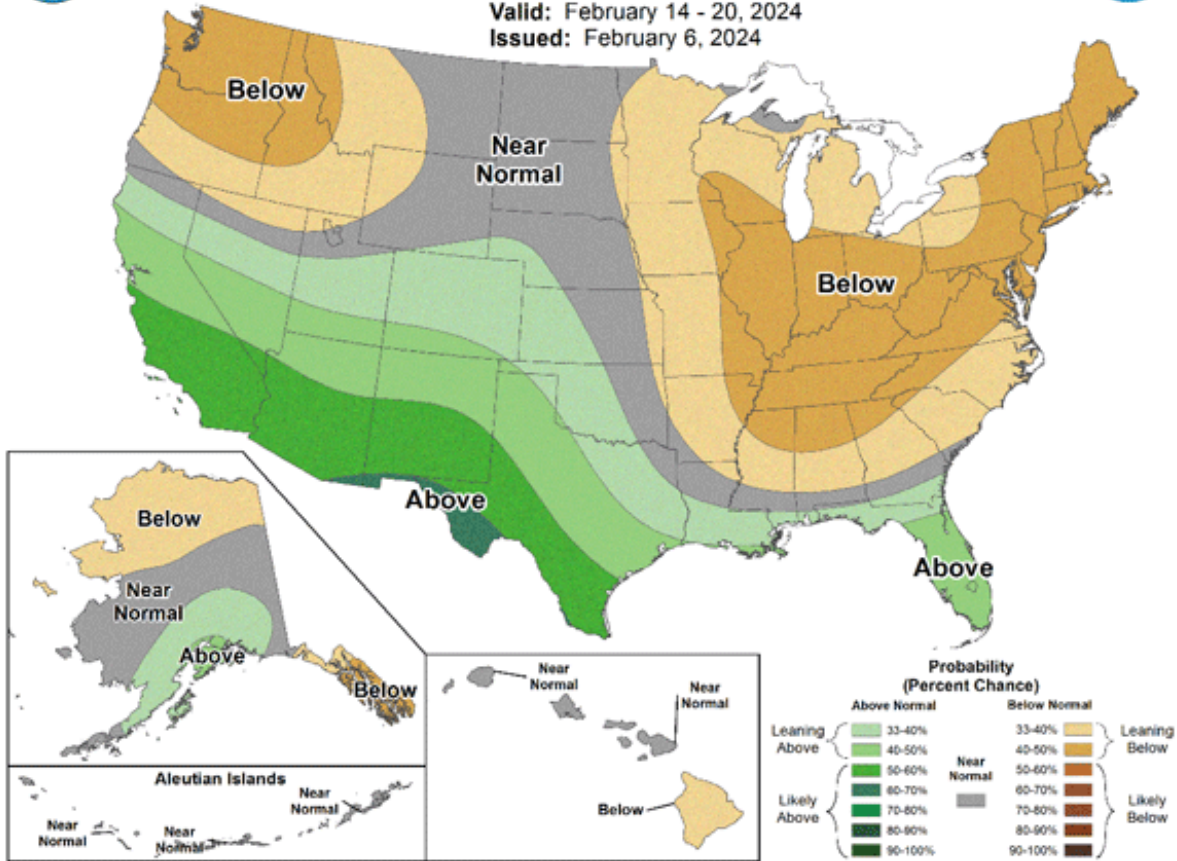
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8-14 Day Precipitation Outlook



Valid: February 14 - 20, 2024
Issued: February 6, 2024



Figures 7a-b. Climate Prediction Center's 8 to 14-day temperature and precipitation outlooks.

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3. Great Plains Cotton Conference set for February 20 in Pratt, KS

In 2020, southern Kansas farmers planted 195,000 acres of cotton that produced 300,000 480-lb bales of cotton lint and 99,000 tons of cottonseed with a combined economic value of \$97,164,000!

The 5th Annual Great Plains Cotton Conference is scheduled for February 20 at the Pratt County 4-H Building, 81 Lake Rd, Pratt, KS 67124. This conference is co-sponsored by the Kansas Cotton Association, Cotton Incorporated, and Kansas State University.

Presentations will be focused on all things cotton, including irrigation scheduling, nutrient management, policy updates, cotton classing, pest management, economics and market outlooks, and cotton industry updates related to Kansas and the Great Plains. Nationally recognized speakers from KS, TX, TN, and NC will be presenting with an additional Panel Discussion on See-n-Spray technologies in the late afternoon.

Registration opens at 7:30 AM, with morning sessions beginning at 8:15 AM and lunch at 12:00 PM, sponsored by Corteva. Afternoon sessions begin at 1:00 PM and will wrap you at 5:30 PM.

CCA CEUs for Kansas have been requested.

Agenda and Topics

- 7:30** Registration and visit sponsors' booths
- 8:15** Welcome to the Great Plains Cotton Conference – Shelley Heinrich, Cotton Board and Gary Feist, Kansas Cotton Association
- 8:30** Irrigation, utilizing soil moisture monitoring sensors, and GDD - Craig Bednarz, WTAMU
- 9:15** A New Perspective on Agronomic Research and Outreach for Cotton - Logan Simon, KSU
- 9:35** Nutrient Recommendations in Cotton – Dorivar Ruiz Diaz, KSU
- 10:05** Break
- 10:15** Policy Updates in Cotton and Cotton Trust Protocol – Tas Smith, NCC
- 11:00** What Happens at the Cotton Classing Office - Jim Waldrop and Jeannie Fowler, USDA
- 11:45** Visit sponsors' booths
- Noon** Lunch sponsored by Corteva; comments by sponsors, and visit sponsor booths
- 1:00** Insect Scouting and Management Options - Rex Friesen
- 1:30** Weed Management and Herbicide Resistance Update - Sarah Lancaster – KSU
- 2:15** Turning data into dollars – Ed Barnes, Cotton Incorporated

- 2:45** Lou Barbera – Cotton Global Market Outlook
- 3:15** Break
- 3:30** Cotton Board Update – Shelley Heinrich – Cotton Board
- 3:45** Panel Discussion on See-n-Spray technologies – Sarah Lancaster, JD rep, and farmer
- 5:00** Audience feedback and conclude
- 5:15** Visit sponsor booths

Logan Simon, Southwest Area Agronomist – Garden City
lsimon@ksu.edu

4. K-State Crop Talk webinar series kicks off on February 20

[The popular K-State Crop Talk webinar series is back and set to start on February 20, 2024. This year, Crop Talk will be focused on agronomic topics for producers across the western half of Kansas. Topics include management for wheat production, biological products concerning soil fertility, high pH soils, and fallow replacement options in dryland systems. Continuing education credits will be offered, with one credit for each session.](#)

Each webinar will begin at 12:00 pm (CST) and last until 1:00 pm, beginning with the first one on Tuesday, February 20.

Upon registration, participants will receive an email with instructions to attend via Zoom or YouTube. These webinars are open to all, and there is no cost. Visit the K-State Northwest Research and Extension Center's website to register: <https://www.northwest.k-state.edu/events/>.

Please contact your local KSRE extension office or the Northwest Research and Extension Center at 785-462-6281.

A complete list of webinars, with dates, topics, and speakers, is detailed below.

February 20 – Management Tactics for Wheat Production

Romulo Lollato, K-State Wheat and Forages Specialist

February 27 - Biological Products and their Role in Soil Fertility

Dave Franzen, North Dakota State Soil Specialist

March 5 – Managing Areas of Fields with High pH

Dorivar Ruiz Diaz, K-State Soil Fertility Specialist

March 12 – Fallow Replacement Options in Dryland Rotations

Lucas Haag, K-State Northwest Area Agronomist



Crop Talk

Webinar Series

**Broadcast Live from 12:00 – 1:00 pm CT
via Zoom and YouTube**

February 20

Management Tactics for Wheat Production
Romulo Lollato, K-State Wheat Specialist

February 27

Biological Products and Their Role in Soil Fertility
Dave Franzen, North Dakota State Soil Specialist

March 5

Managing Areas of Fields with High pH
Dorivar Ruiz Diaz, K-State Soil Fertility Specialist

March 12

Fallow Replacement Options in Dryland Rotations
Lucas Haag, K-State Northwest Area Agronomist

Register to attend at
www.northwest.ksu.edu/events

Links for joining will be sent after registration.



Certified Crop Advisor (CCA) Credits have been applied for.

If you have questions, please contact your local Extension agent or the K-State Northwest Research and Extension Center at 785-462-6281.

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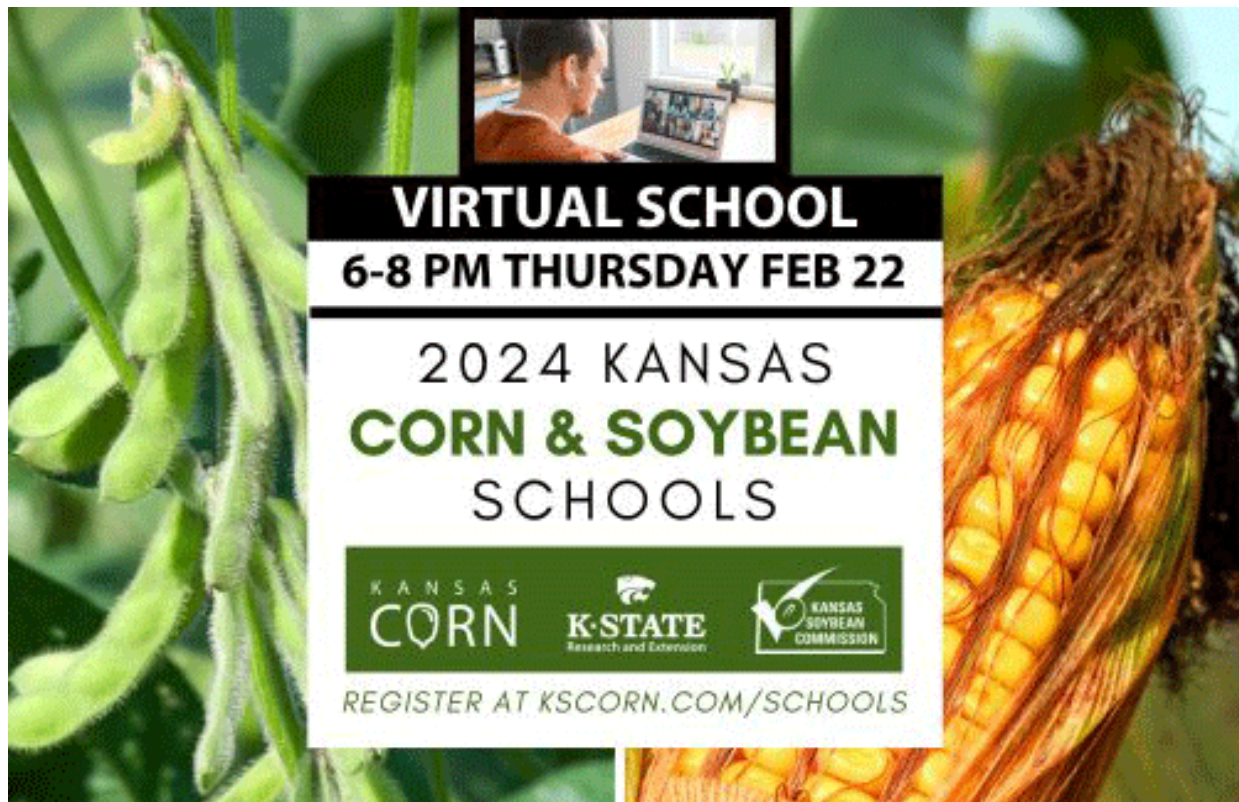
5. Registration is open for the 2023 Kansas Corn Virtual School

Did you miss one of the in-person Corn and Soybean Schools? The last of the Kansas Corn Schools is being offered as a virtual event on February 22, 2024. There is still time to register for this school, which is being hosted by the Department of Agronomy, K-State Research and Extension, and Kansas Corn.

The online session on Feb. 22 will run from 6:00 to 8:00 pm using the Zoom online platform. To receive the Zoom link, you must register at <https://kscorn.com/schools/>.

Presentations start at 6 p.m.

- Corn and Soybean Markets, Dr. Dan O'Brien
- Agronomics for Corn and Soybean Production, Dr. Ignacio Ciampitti
- Update on Corn Diseases, Dr. Rodrigo Onofre
- Updates from Kansas Soybean and Kansas Corn



Ignacio Ciampitti, Farming Systems
ciampitti@ksu.edu

6. Frontier District to host meeting on increasing row crop yields with weed and fungus control

The Frontier Extension District will host a meeting, "Increasing Row Crop Yields with Weed and Fungus Control," at 6:00 p.m. on February 22, 2024, at Grace Community Church, 310 East 8th Street in Overbrook, Kansas. Presenters for the evening will be Sarah Lancaster, weed science extension specialist, and Dr. Rodrigo Onofre, row crop extension specialist.

Lancaster will begin the evening by discussing timely tips for corn and soybean weed management and a short list of new herbicide products. She will also examine new cases of herbicide resistance and what that means for waterhemp control in corn and soybeans. She will also discuss designing a residual herbicide program to combat this troublesome weed.

Onofre will follow with a discussion of two diseases, Corn Tar Spot and how devastating it can be and Sudden Death syndrome in soybeans and what can be done to prevent it.

Corn Tar Spot is a relatively new fungus that is affecting corn acres in the northeast corner of Kansas, as well as in Illinois and Missouri. The fungi can overwinter in corn residue and then be spread by rain and wind. Tar spot develops as small, black, raised spots (circular or oval) on infected plants, and may appear on one or both sides of the leaves, leaf sheaths and husks. "Scouting fields is critical, as this fungus can spread rather quickly and can reduce yields significantly," said Ryan Schaub, Frontier District agent specializing in crop production and farm management.

"Weed control and fungal issues are becoming bigger concerns every year," said Schaub. "Plan on joining us on February 22 at 6:00 p.m. for supper and some helpful information."

Copies of the 2024 Chemical Weed Control guide will be available for attendees who have not already received a copy.

RSVP for the meeting by contacting Ryan Schaub at 785.448.6826 or reschaub@ksu.edu.

Increasing Row Crop Yields with Weed & Fungus Control

February 22, 2024

6:00 pm

Grace Community Church
310 East 8th Street
Overbrook, KS

Presenters:

Dr. Sarah Lancaster

K-State Extension Weed Management Specialist

Dr. Rodrigo Onofre

K-State Extension Row Crops Pathology Specialist



New Products for 2024

New Cases of Herbicide Resistance

Corn Tar Spot

Soybean Sudden Death Syndrome

Q&A / Discussion

RSVP for meal & meeting to Ryan Schaub

785-448-6826 or reschaub@ksu.edu

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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7. 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.

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 13th

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 7th** by calling
620-793-1910 or email 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.