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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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 30th 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 30th 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 1st, 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.

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

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.

<table>
<thead>
<tr>
<th></th>
<th>Wed Dec 27</th>
<th>Thu Dec 28</th>
<th>Fri Dec 29</th>
<th>Sat Dec 30</th>
<th>Sun Dec 31</th>
<th>Mon Jan 1</th>
<th>Tue Jan 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg High</td>
<td>36°</td>
<td>37°</td>
<td>48°</td>
<td>54°</td>
<td>36°</td>
<td>39°</td>
<td>45°</td>
</tr>
<tr>
<td>Max</td>
<td>58°</td>
<td>30°</td>
<td>57°</td>
<td>65°</td>
<td>47°</td>
<td>55°</td>
<td>52°</td>
</tr>
<tr>
<td>Min</td>
<td>30°</td>
<td>29°</td>
<td>37°</td>
<td>42°</td>
<td>30°</td>
<td>29°</td>
<td>39°</td>
</tr>
<tr>
<td>Normals</td>
<td>42°</td>
<td>20°</td>
<td>42°</td>
<td>19°</td>
<td>42°</td>
<td>19°</td>
<td>42°</td>
</tr>
<tr>
<td>Avg Low</td>
<td>27°</td>
<td>24°</td>
<td>25°</td>
<td>25°</td>
<td>23°</td>
<td>20°</td>
<td>21°</td>
</tr>
<tr>
<td>Max</td>
<td>32°</td>
<td>15°</td>
<td>31°</td>
<td>17°</td>
<td>31°</td>
<td>15°</td>
<td>30°</td>
</tr>
<tr>
<td>Min</td>
<td>15°</td>
<td>13°</td>
<td>13°</td>
<td>10°</td>
<td>15°</td>
<td>11°</td>
<td>15°</td>
</tr>
</tbody>
</table>

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.
<table>
<thead>
<tr>
<th>Region</th>
<th>Past Week 12/27 to 1/2</th>
<th>Water Year 10/1/23 to 1/2/24</th>
<th>Past Calendar Year 1/1 to 12/31/23</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Precip.</td>
<td>% Normal</td>
<td>Precip.</td>
</tr>
<tr>
<td>Northwest</td>
<td>0.08&quot;</td>
<td>67</td>
<td>1.87&quot;</td>
</tr>
<tr>
<td>North Central</td>
<td>0.03&quot;</td>
<td>17</td>
<td>4.05&quot;</td>
</tr>
<tr>
<td>Northeast</td>
<td>0.14&quot;</td>
<td>61</td>
<td>5.52&quot;</td>
</tr>
<tr>
<td>West Central</td>
<td>0.06&quot;</td>
<td>43</td>
<td>2.35&quot;</td>
</tr>
<tr>
<td>Central</td>
<td>0.02&quot;</td>
<td>11</td>
<td>5.03&quot;</td>
</tr>
<tr>
<td>East Central</td>
<td>0.21&quot;</td>
<td>81</td>
<td>9.29&quot;</td>
</tr>
<tr>
<td>Southwest</td>
<td>0.03&quot;</td>
<td>18</td>
<td>3.57&quot;</td>
</tr>
<tr>
<td>South Central</td>
<td>0.01&quot;</td>
<td>5</td>
<td>6.62&quot;</td>
</tr>
<tr>
<td>Southeast</td>
<td>0.02&quot;</td>
<td>6</td>
<td>8.06&quot;</td>
</tr>
<tr>
<td>STATE</td>
<td>0.06&quot;</td>
<td>27</td>
<td>5.22&quot;</td>
</tr>
</tbody>
</table>

**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°F from last week. This average is 2.4°F 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).](image-url)
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.

Matthew Sittel, Assistant State Climatologist
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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 10th, 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.
Figure 1. Conference agenda for 2024 Cover Your Acres.

Lucas Haag, Area Agronomist, Northwest Research-Extension Center, Colby

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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
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://kscorn.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
Ignacio Ciampitti, Farming Systems

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