Issue 673

K-STATE Research and Extension

Extension Agronomy

eUpdate

02/09/2018

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, Agronomy e-Update 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 Curtis Thompson, Extension Agronomy State Leader and Weed Management Specialist 785-532-3444 cthompso@ksu.edu.

Subscribe to the eUpdate mailing list: https://listserv.ksu.edu/cgi-bin?SUBED1=EUPDATE&A=1

eUpdate Table of Contents | 02/09/2018 | Issue 673

1. Strategies for control of marestail in soybeans

Controlling marestail in soybeans continues to be a big challenge for Kansas no-till producers. Because soybeans are generally planted later in the season, and marestail generally germinates in the fall or early spring, application timing and weed size are critical factors for successful control.

Figure 1. Glyphosate-resistant marestail in soybeans. Photo by Dallas Peterson, K-State Research and Extension.

Mother Nature is pretty good at controlling some marestail throughout the winter. Research has shown that up to 80% of marestail can die over the winter as a result of cold temperatures. The marestail that do survive are often robust and can be difficult to control with herbicides. However, there are still a number of herbicides that do a good job of managing the surviving rosettes.

In the early spring, using a growth regulator herbicide such as 2,4-D and/or dicamba is an inexpensive and effective option to control rosette marestail. Dicamba has provided better marestail control than 2,4-D and will also provide some residual control, especially at higher use rates. A combination of the two will give broader spectrum weed control than either one alone. Recent observations in Kansas suggests marestail will bolt in April throughout most of the state, so timing control before the end of March is recommended. Application of dicamba and 2,4-D in March also generally allows adequate time ahead of planting soybeans to meet required preplant intervals.

Using herbicides with longer residual helps control weeds that germinate between treatment and soybean planting. Products that include Canopy EX, Autumn Super, Classic, FirstRate, Sharpen, metribuzin, or Valor can help provide residual control against several broadleaf species, including

marestail. However, it is very important to consult and follow the herbicide label guidelines for the required preplant intervals prior to planting soybeans.

As soybean planting nears, existing marestail plants can become difficult to control because plants will have bolted and be considerably larger. Herbicides to apply as a burndown prior to planting include tank mixes of glyphosate with FirstRate, Classic, Sharpen, Optill, or 2,4-D. Be very careful to follow label directions when using 2,4-D prior to soybean planting. The plant-back restriction ahead of soybean can range from 7-30 days depending on rate and formulation. Sharpen generally provides good marestail control and can be applied any time before soybean emergence. However, it is still most effective if applied before marestail starts to bolt, in a tank-mix with other herbicides, when used with methylated seed oil, and at spray volumes of 15 gallons per acre or more. Elevore is a new herbicide that has provided similar marestail control to dicamba, but needs to be applied at least 14 days prior to planting.

Preplant restrictions for dicamba products such as Clarity, Banvel, and others range from 14 to 30 days depending on product, application rate, rainfall amounts, and geography. However, with the introduction of Xtend soybeans, the new dicamba products Xtendimax, FeXapan, and Engenia have no preplant interval restrictions applied ahead of Xtend soybeans and should be some of the more effective treatments for marestail control in that scenario. Xtendimax, FeXapan, and Engenia are still most effective prior to bolting.

One additional herbicide to consider as a rescue burndown application to control bolting marestail prior to soybean planting is Liberty. Although, it would be better to control marestail at an earlier stage of growth, Liberty has been one of the most effective herbicides to control bolting marestail. Liberty also has broad spectrum non-selective activity on other broadleaf and grass species if treated at a young growth stage. Liberty is primarily a contact herbicide, so a spray volume of 15 gallons per acre or greater generally provides the most consistent weed control. Liberty tends to work best under higher humidity and warm, sunny conditions at application.

Controlling marestail in the growing soybean crop can be the biggest challenge for producers. Glyphosate alone is often not effective on larger plants or glyphosate-resistant marestail. The most successful treatments for large marestail in Roundup Ready soybeans have been tank-mixes of glyphosate + FirstRate, glyphosate + Classic, or glyphosate +Synchrony. However, some marestail may also be ALS-resistant, and thus not controlled by those herbicides either. If Xtend soybeans are planted, Xtendimax, FeXapan, and Engenia should be some of the most effective herbicides for postemergence control of marestail in soybeans. Remember that Xtendimax, FeXapan, and Engenia can only be applied to Xtend soybeans.

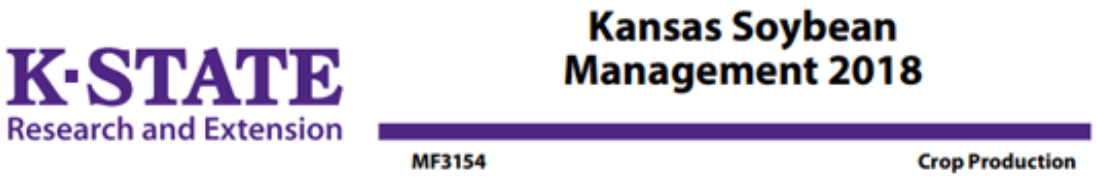
Another postemergence option to control marestail in soybeans is to plant Liberty Link soybeans and use Liberty herbicide. It is important to remember that Liberty can only be applied postemergence on Liberty Link soybeans.

Dallas Peterson, Weed Management Specialist
dpeterso@ksu.edu

Doug Shoup, Southeast Area Crops and Soils Specialist
dshoup@ksu.edu

2. Updated for 2018 - Kansas Soybean Management publication

A newly revised K-State Research and Extension publication, *Kansas Soybean Management 2018*, is now available and can be accessed online at: https://www.bookstore.ksre.ksu.edu/pubs/MF3154.pdf



This publication offers advice to producers, crop consultants, and agronomists to manage Kansas soybean crops as efficiently and profitably as possible. The recommendations provide guidelines and must be tailored to the diverse conditions found in cropping systems across the state.

This comprehensive guide is written specifically for Kansas and includes valuable, up-to-date information on:

- Tillage and rotation
- Variety selection
- Planting practices
- Weed control
- Rate of dry down before harvest
- Fertilizer requirements
- Diseases
- Insects
- Irrigation

Contributors to the 2018 version of this publication include:

Ignacio Ciampitti, Crop Production and Cropping Systems
Dorivar Ruiz Diaz, Soil Fertility and Nutrient Management
Doug Jardine, Plant Pathology
Dallas Peterson, Weed Science
Jeff Whitworth, Entomology
Danny Rogers, Agricultural Engineering
Doug Shoup, Southeast Area Crops and Soils

3. 2017 Kansas Performance Tests with Soybean Varieties report now online

The *2017 Kansas Performance Tests with Soybean Varieties* report is now online. In this report, you will find a recap of the 2016-17 soybean crop, with a detailed discussion summarizing the statewide growing conditions. More importantly, the results of the 2017 soybean performance tests are also shown.

Soybean performance tests are conducted each year to provide information on the relative performance of new and established varieties and brands at several locations in Kansas.

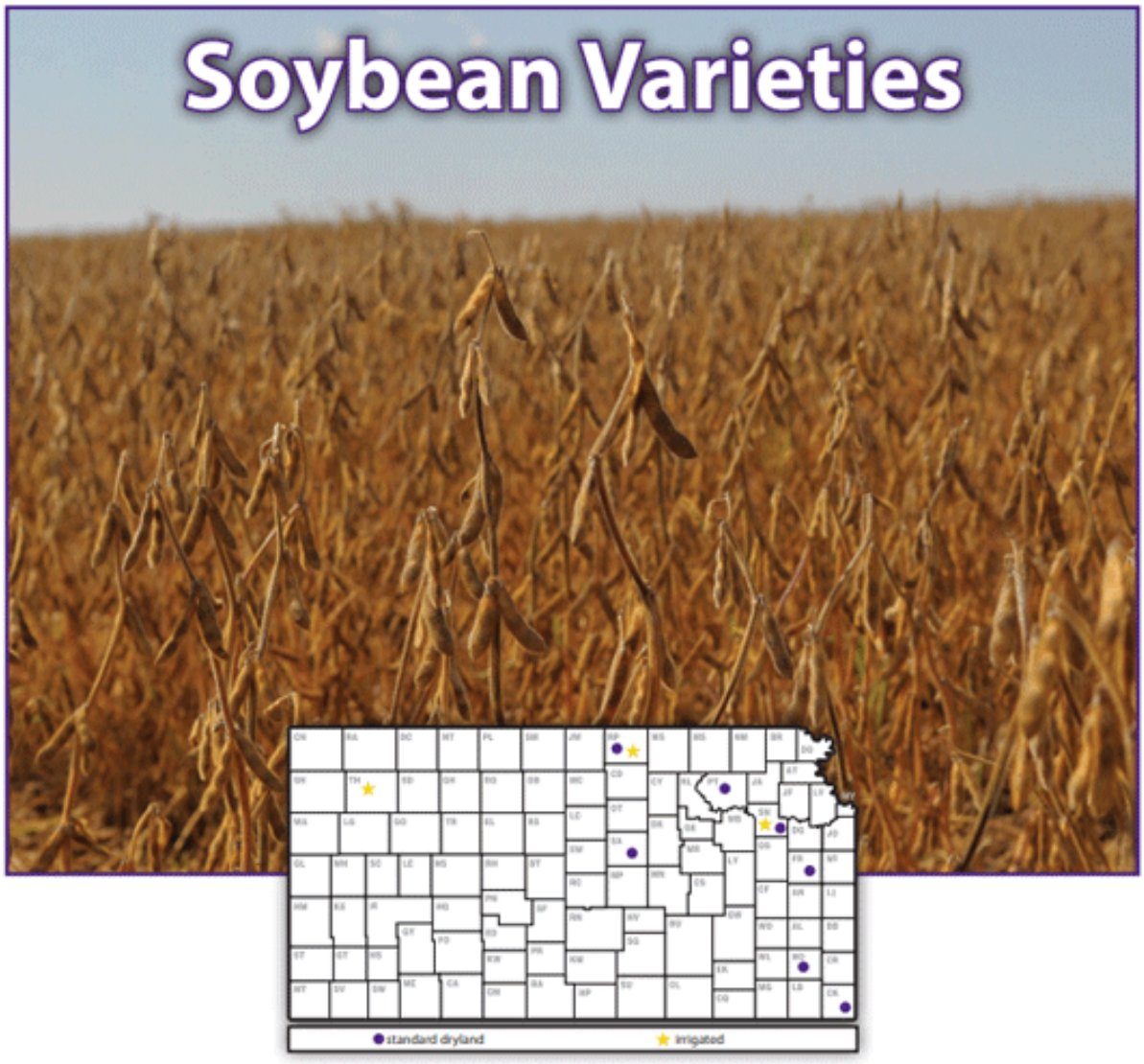
Performance of soybean varieties or brands varies from year to year and from location to location, depending on factors such as weather, management practices, and variety adaptation. When selecting varieties or brands, producers should carefully analyze variety performance for two or more years across locations. Performance averaged over several environments will provide a better estimate of genetic potential and stability than performance based on a few environments.

The online version of the 2017 Kansas soybean performance tests can be found at: https://www.bookstore.ksre.ksu.edu/pubs/SRP1137.pdf.

Test results also can be found online at: http://www.agronomy.k-state.edu/services/cropperformance-tests/soybean

2017 Kansas Performance Tests with

Soybean Varieties



Report of Progress 1137

K-STATE
Research and Extension

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Kansas State University Department of Agronomy
2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506
www.agronomy.ksu.edu | www.facebook.com/KState.Agron | www.twitter.com/KStateAgron

4. Kansas weather: When the atmosphere runs dry

Kansas, especially western Kansas, is no stranger to periods of very dry weather. The past 130 days, however, have been remarkably dry. After a heavy October rain event which caused many producers to delay wheat planting, many areas in southwest and southern Kansas have received little to no moisture. This lack of precipitation has resulted in Moderate to Extreme Drought in over 36% of the state (Figure 1) and begun to approach some impressive records detailed below.

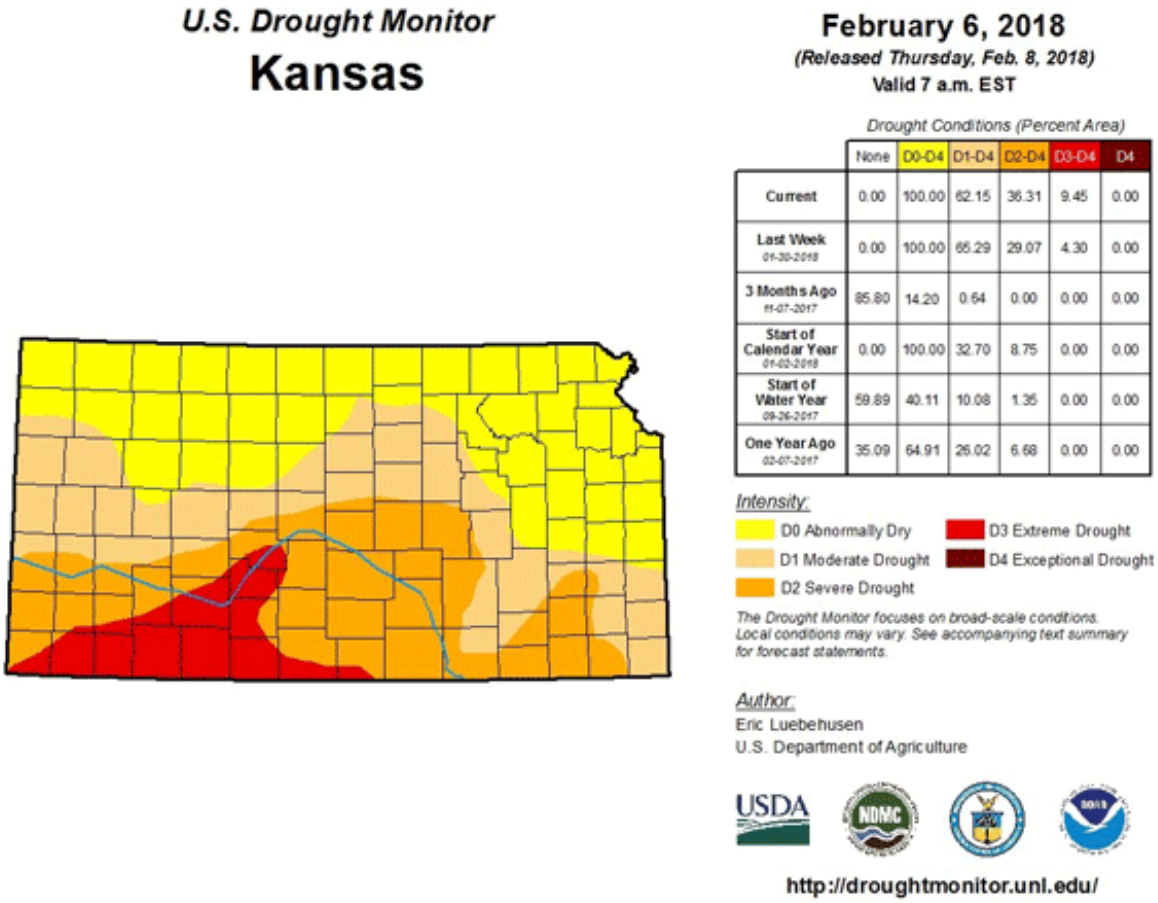


Figure 1. Drought Monitor data as of February 6, 2018 (droughtmonitor.unl.edu).

A wetting rain (at least 0.1 inches in a 24-hour period) is considered enough to minimally recover surface moisture. The Kansas Mesonet (mesonet.ksu.edu), which measures rain (and some melted snow), shows where the dry period persists the longest by counting the days since the last wetting rain occurred across the state (Figure 2). The areas with the longest dry streak coincide with where the most intense drought conditions are being observed. All of the moisture during the past three months has persistently tracked further north and east of this region.

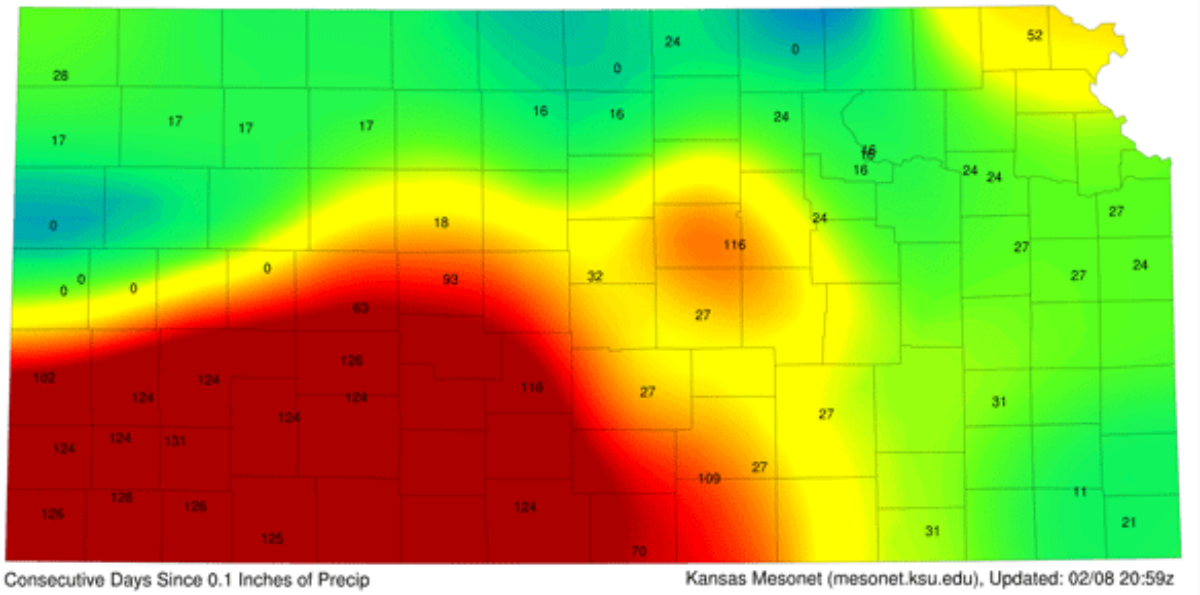


Figure 2. Days since last wetting rain (at least 0.1 inches) on the Kansas Mesonet (mesonet.ksu.edu).

Historically, the streaks of 120-130 days are near/at the top of the list - and dry weather is still in the forecast for the next week at least. Here are some key historical values associated with dry spells in the state:

- Longest period in Kansas without 0.1" was at Tribune, with 147 days ending on 4/15/1976.
- In Elkhart, the longest period without a wetting rain was 120 days ending on 5/6/1936. Thankfully we are still in winter but we have already surpassed that number with 121 as of 2/8/2018.
- Manhattan reached 87 days in a row without wetting rain ending on 1/10/2018. That was the longest streak on record at that location beating 12/26/1927.

Despite the streaks of no wetting rain, some periods of 147 days (using the state record) were even drier in the state.

- Ending on 2/15/1911, Ulysses (3NE station) only received 0.05" in 147 days.
- Lakin also only measured 0.05" in a 147-day period ending on 4/14/1950.
- Outside of southwest Kansas, the driest period in the state was Alton (2SW station) in Osborne County. They measured 0.13" in a 147-day period ending on 1922.

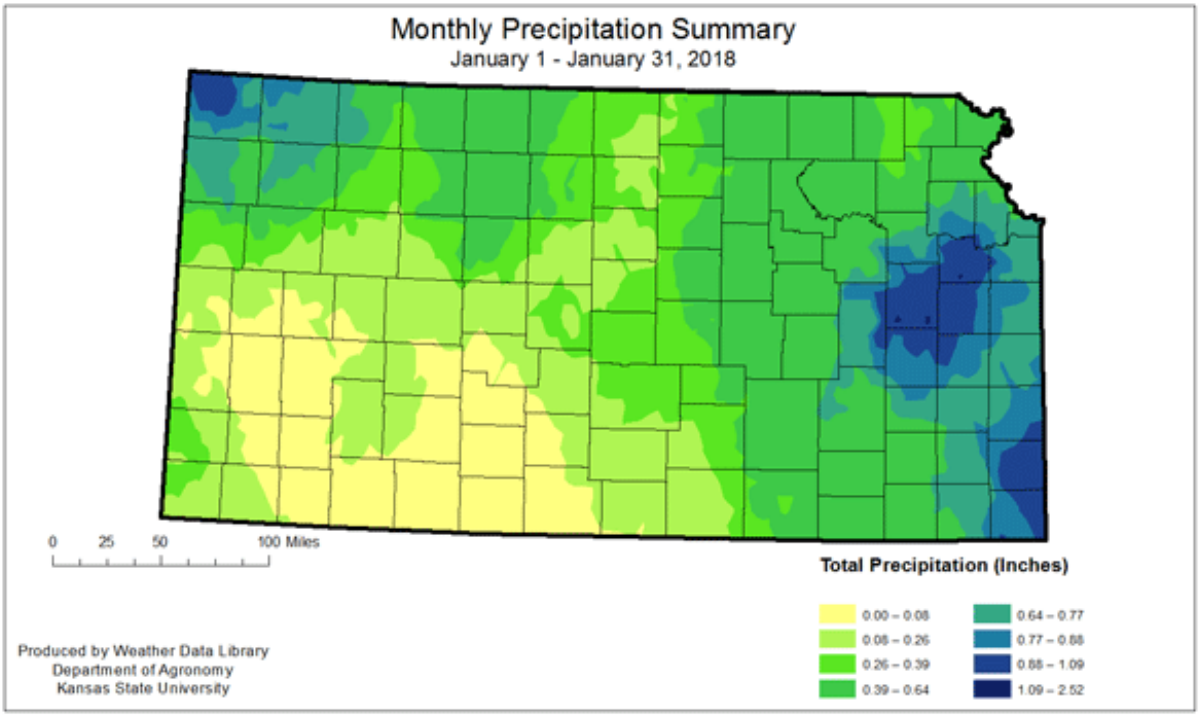
As expected, the areas which have the longest dry streaks reside in the western half of the state. The winter months are also the driest on average during the year. Combining these two elements can create some impressive dry spells like the current one. Most of the dry spells ended in either April or May with the onset of stronger storm systems impacting the region and tapping into Gulf of Mexico moisture. As we continue into early spring in 2018, we can only hope that those spring rains come soon enough!

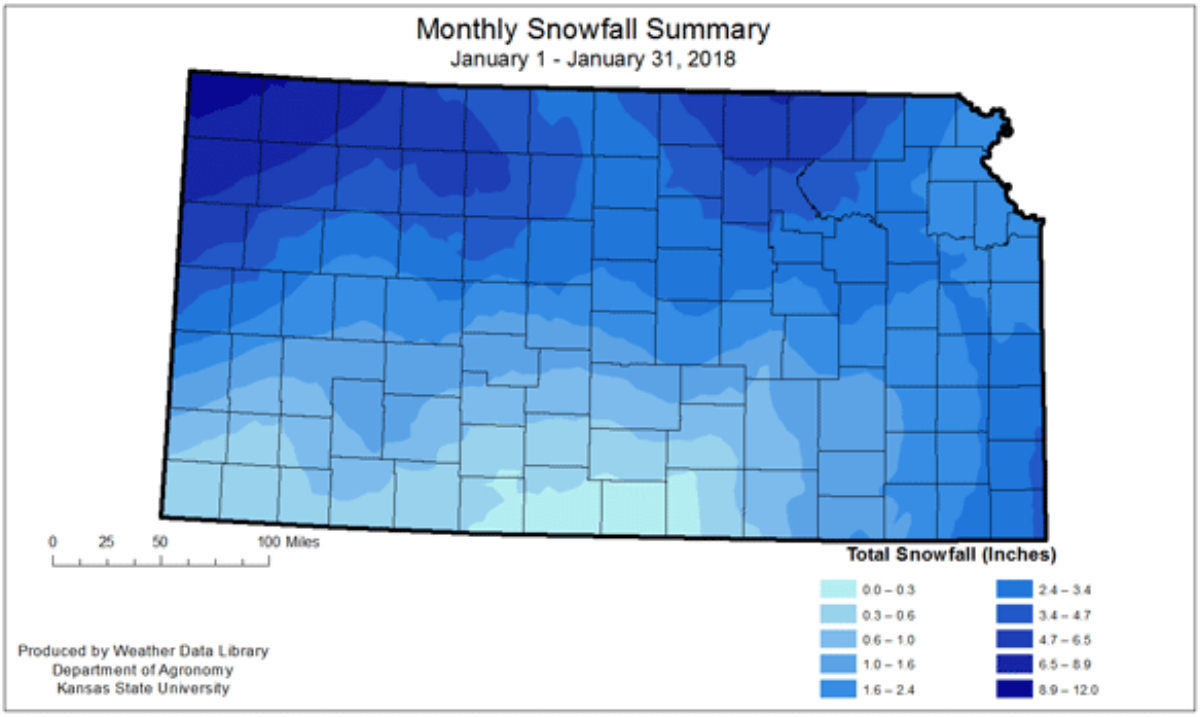
Christopher "Chip" Redmond, Kansas Mesonet
christopherredmond@ksu.edu

Mary Knapp, Weather Data Library
mknapp@ksu.edu

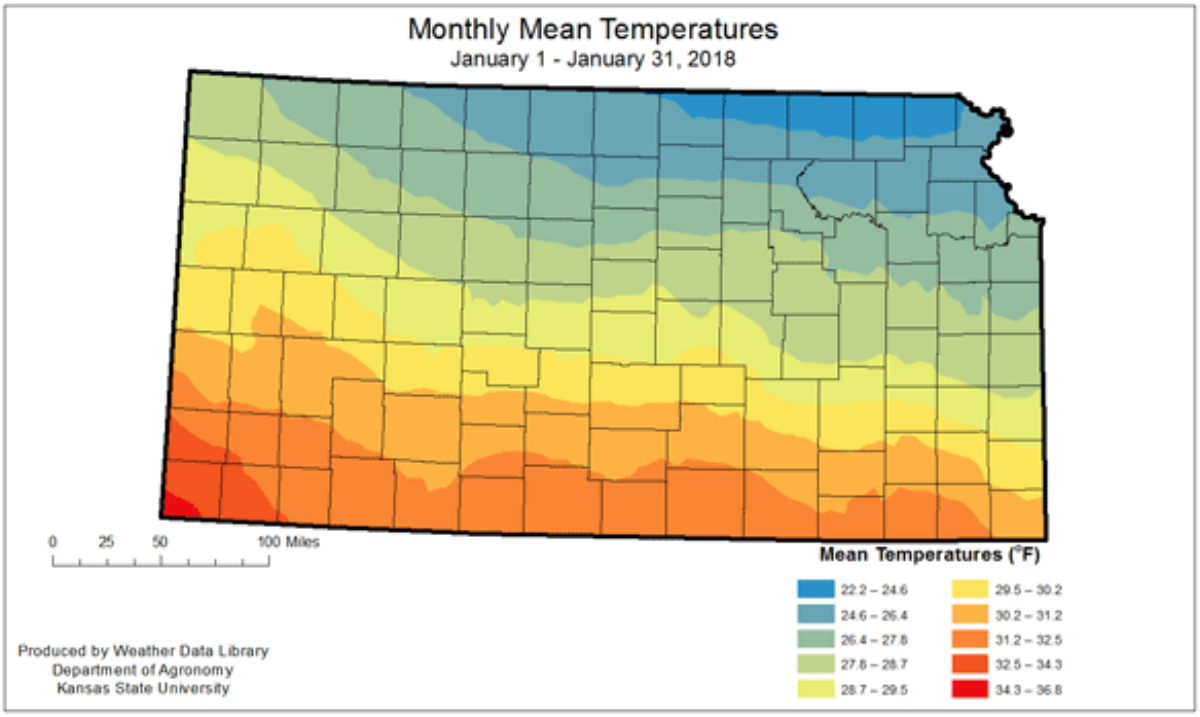
5. January weather summary for Kansas: Welcome moisture for some areas

After an extended period with little to no moisture, parts of Kansas recorded some significant precipitation. At Tribune, a small snow event on January 12th snapped a 97-day period without any precipitation. This ties the previous record set in 1901. When it comes to a wetting precipitation event – defined as a tenth of an inch or greater – Elkhart is just two days shy of the 120-day record set in 1936. Manhattan established a new record of 87 days, which ended on January 10th with 0.17 inches. The previous record was 76 days set in 1927. Statewide, the average precipitation was 0.34 inches or 46 percent of normal. The East Central Division came closest to normal with 0.65 inches or 67 percent of normal. The South Central Division, with just 0.18 inches, had the lowest percent of normal with just 21 percent. The greatest monthly precipitation totals were 2.52 inches at Osage City, Osage County (NWS) and 2.05 inches at St. Francis 12.1 NW, Cheyenne County (CoCoRaHS). Most of the precipitation came in the form of snowfall. A series of storms brought snowfall mainly across the northern half of Kansas. Forty-six locations set daily records for snowfall. Multiple locations tied for the greatest daily snowfall at 9 inches at Atwood, Rawlins County, on the 22nd. The greatest snowfall totals for the month were 12 inches at Atwood, Rawlins County (NWS) and 14.4 inches at Goodland 16.6 NW, Sherman County (CoCoRaHS).





January continued the pattern of wide temperatures swings, as might be expected with the dry air in place. The statewide average temperature was 28.8 degrees F, or 1.1 degrees cooler-than-normal. The warm days weren't persistent enough to outweigh the very cold start to the month. The western divisions came closest to normal, with the Southwest Division coming in as the warmest, averaging 32.7 degrees F, or 0.1 degrees warmer-than-normal. The central and eastern divisions were all colder-than-normal. The Northeast Division had the greatest departure, with an average of 25.0 degrees F or 2.5 degrees cooler-than-normal. The warmest temperature reported for the month was 83 degrees F at Medicine Lodge, Barber County, on the 20th. The coldest reading was -16 degrees F at Belleville, Republic County, on the 1st. Records were set on both the cold and warm end of the spectrum. On the cold side, there were 37 new record low maximum temperatures and 31 new record low minimum temperatures. On the warm side, there were 41 new record high maximum temperatures and 53 new record high minimums.

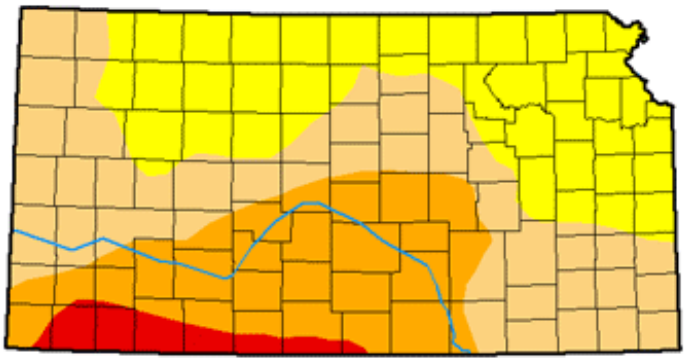


Unsurprisingly, given the dry conditions, there were no severe weather reports during the month. In addition to several winter weather advisories, there were several days with extreme fire danger and also several days with wind chill warnings.

With much below-normal precipitation, there was a steep increase in the drought conditions. Extreme drought conditions now cover almost 5 percent of the state. Severe drought has expanded to a quarter of the state while moderate drought covers an additional 36 percent of the state. No area of Kansas is currently drought-free.

The February outlook has a slight chance for drier-than-normal conditions in the southern half the state, and equal chances for above- or below-normal precipitation in the rest of the state. Given the low amount of moisture that typically is seen in February, improvement in the current drought status is unlikely. With the wet summer last year and current dryness, increased fire danger continues.

U.S. Drought Monitor
Kansas



Author:
Richard Heim
NCEI/NOAA

http://droughtmonitor.unl.edu/

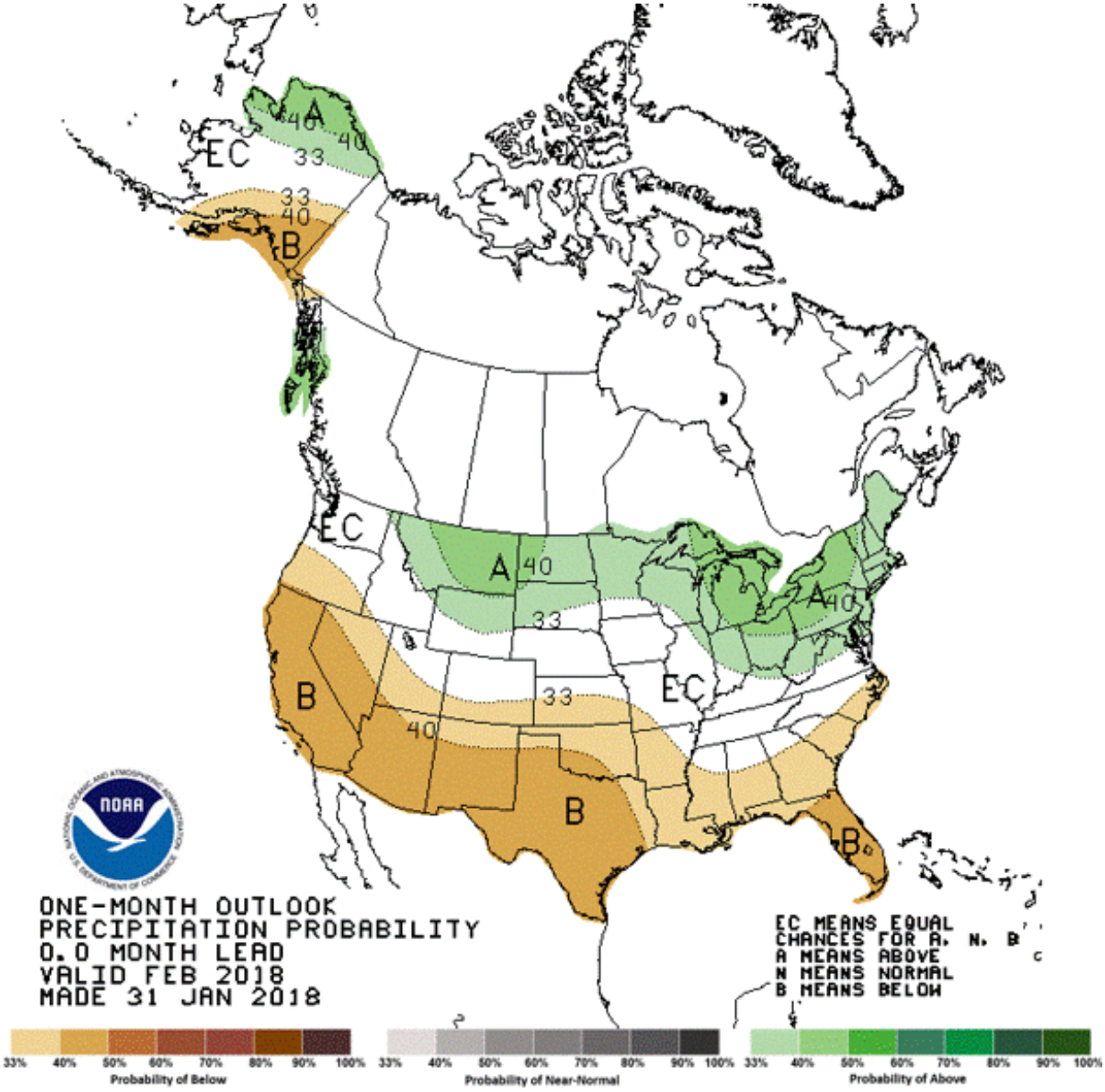
January 30, 2018
(Released Thursday, Feb. 1, 2018)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	0.00	34.71	36.22	24.77	4.30	0.00
Last Week 01-23-2018	0.00	47.09	33.72	15.11	4.08	0.00
3 Months Ago 10-31-2017	85.96	13.40	0.64	0.00	0.00	0.00
Start of Calendar Year 01-02-2018	0.00	67.30	23.95	8.75	0.00	0.00
Start of Water Year 09-26-2017	59.89	30.03	8.73	1.35	0.00	0.00
One Year Ago 01-31-2017	35.09	38.89	19.34	6.68	0.00	0.00

Intensity:
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



Kansas State University Department of Agronomy
2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506
www.agronomy.ksu.edu | www.facebook.com/KState.Agron | www.twitter.com/KStateAgron

Table 1. Kansas Climate Division Summary January 2018										
	Precipitation (inches)						Temperature (°F)			
	Jan-18			2018 through January					Monthly Extremes	
Division	Total	Dep. [1]	% Normal	Total	Dep. [1]	% Normal	Ave	Dep. [1]	Max	Min
Northwest	0.28	-0.17	61	0.28	-0.17	61	28.2	-0.6	74	-9
West Central	0.22	-0.28	48	0.22	-0.28	48	30.0	0.2	77	-10
Southwest	0.19	-0.28	41	0.19	-0.28	41	32.7	0.6	80	-9
North Central	0.36	-0.27	60	0.36	-0.27	60	25.9	-2.0	69	-16
Central	0.29	-0.40	43	0.29	-0.40	43	28.6	-1.3	77	-10
South Central	0.18	-0.65	21	0.18	-0.65	21	31.0	-1.1	83	-8
Northeast	0.31	-0.50	40	0.31	-0.50	40	25.0	-2.5	66	-13
East Central	0.65	-0.29	67	0.65	-0.29	67	27.2	-1.9	68	-22
Southeast	0.58	-0.67	46	0.58	-0.67	46	30.2	-1.5	69	-7
STATE	0.34	-0.40	46	0.34	-0.40	46	28.8	-1.1	83	-21
1. Departure from 1981-2010 normal value										
2. State Highest temperature: 83 °F at Medicine Lodge, Barber County, on the 20th.										
3. State Lowest temperature: -16 °F at Belleville, Republic County, on the 1st										
4. Greatest 24hr: 2.20 inches at Osage City, Osage County, on the 15th (NWS); 1.70 inches at St. Francis 12.1 NW, Cheyenne County on the 22nd (CoCoRaHS).										
Source: KSU Weather Data Library										

Mary Knapp, Weather Data Library
mknapp@ksu.edu

6. Canola informational meeting to be held in Great Bend, March 6

K-State Research and Extension is presenting a canola informational meeting on March 6, 2018 from 9:30 to 11:00 a.m. in Great Bend. The meeting will be held at the American Ag Credit Building, 5634 10th Street, Great Bend, KS.

According to Mike Stamm, K-State canola breeder, "We've seen some new interest in canola production around Great Bend so it is important to bring growers up to speed on varieties, seeding, and harvest methods. We hope to draw interest from surrounding counties as we feel canola can provide benefits in crop rotation here in central Kansas."

The meeting will highlight the basics of growing canola all the way from planting to harvest. Speakers for the event include:

- Mike Stamm, KSU Canola Breeder
- Lucas Haag, Northwest Area Extension Agronomist

Archer Daniels Midland representatives will also be present to discuss canola marketing.

Complimentary rolls, coffee, and juice will be provided by the Great Bend Coop and American Ag Credit. The Cottonwood Extension District is hosting the event. Please RSVP no later than **12:00 pm, March 5** either by phone at (620) 793-1910 or by email at bwalton@ksu.edu.

Growing Canola Informational Meeting

March 6, 2018

9:30-11am

American Ag Credit Building

5634 10th Street

Great Bend, KS

Topics:

Growing Canola Basics-From Planting to Harvest

Presenters:

Michael Stamm-Canola Breeder-Kansas State University

Lucas Haag-NW Area Extension Agronomist

Complimentary rolls, coffee and juice will be provided by Great Bend Coop & American Ag Credit

RSVP no later than 12 noon on March 5th. Call 620-793-1910 or bwalton@ksu.edu

Cottonwood Extension District
601 Main, Suite A
Hays, KS 67601
785-628-9430
cottonwood.ksu.edu

K-STATE
Research and Extension

7. K-State Soybean School at Phillipsburg rescheduled for March 21

The Soybean School originally scheduled for January 22 in Phillipsburg has been rescheduled for **March 21, 2018.**

The one-day school will cover a number of issues facing soybean growers including: weed control strategies, production practices, nutrient fertility, and insect management.

March 21 – Phillipsburg, KS

Phillips County Fair Building, 1481 US-183
Cody Miller, Phillips-Rooks District, codym@ksu.edu, 785-543-6845

Lunch will be provided courtesy of Kansas Soybean Commission (main sponsor of the schools). The schools will also be supported by Channel Seeds. There is no cost to attend, however participants are asked to pre-register by **March 19**. Please re-submit your registration if you had signed up for the original date.

Online registration is available at: K-State Soybean Schools

You can also preregister by emailing or calling the local K-State Research and Extension office listed above.

Ignacio Ciampitti, Crop Production and Cropping Systems Specialist

ciampitti@ksu.edu

Doug Shoup, Southeast Area Crops and Soils Specialist
dshoup@ksu.edu

Stu Duncan, Northeast Area Crops and Soils Specialist
duncan@ksu.edu

8. Prescribed Burning workshops scheduled for 2018

Several Prescribed Burning workshops are currently scheduled for the remainder of the winter in Kansas, with the possibility of more upon request. The agencies involved include K-State Research and Extension, USDA-NRCS, USDA-FSA, Department of Wildlife, Parks, and Tourism, National Weather Service, and the Kansas Prescribed Fire Council.

Each workshop lasts about 4-5 hours and includes topics on reasons for burning, regulations, weather considerations, liability, burn contractors, equipment and crew, hazards, fuels, firebreaks, fire types and behavior, ignition techniques, and burn plans.

Contact Walt Fick at 785-532-7223 or whfick@ksu.edu if you would like to host a prescribed burning workshop.

Workshop	Date	Location	Host/Contact	Agency	Phone	e-mail
Clay Co.	Feb. 20	Clay Center	Benjamin Hanson	FSA	785-632-3550	ben.hanson@ks.usda.gov
Reno Co.	Feb. 21	South Hutchinson	Jess Crockford	KPFC	620-669-8161	Jess.crockford@ks.usda.gov
Dickinson Co.	Feb. 26	Woodbine	James Coover	KSRE	785-263-2001	jcoover@ksu.edu
Saline Co.	Feb. 28	Salina	Tom Maxwell	KSRE	785-309-5850	tmaxwell@ksu.edu
Rooks Co.	Mar. 8	Stockton	Dorothy Heim	FSA	785-425-6302	dorothy.heim@ks.usda.gov

Walt Fick, Range Management Specialist
whfick@ksu.edu

9. Soil Health Workshop to be held on March 8 in Manhattan

A Riley County Soil Health Workshop will be held on Thursday, March 8, at Pottorf Hall, CiCo Park in Manhattan. The workshop will begin at 9:00 a.m. and conclude at 2:00 p.m.

The workshop is hosted by K-State Research and Extension and the Natural Resources Conservation Service. The workshop will discuss and highlight recent cover crop research and how cover crops relate to soil health.

Topics and speakers include:

- *Using cover crops as a tool for weed control*, Anita Dille – Weed Ecology
- *Cover crops and the nitrogen cycle in the rotation*, Peter Tomlinson – Environmental Quality
- *Sorghum response to cover crops in no-till systems*, Kraig Roozeboom, Crop Production
- *Protecting surface water with healthy soils, cover crops, and fertilizer management*, Nathan Nelson, Soil Fertility and Nutrient Management
- *Building better soils with cover crops*, DeAnn Presley – Soil Management
- *Cover crops in a soybean production system*, Doug Shoup – Southeast Area Crops and Soils
- *Covers for use by cattle*, Jaymelynn Farney – Southeast Area Beef Systems

Registration for the workshop is free and lunch will be provided. Participants are asked to register by **Monday, March 5**. Contact the Riley County Conservation District to reserve your spot by calling 785-537-8764 or at Aubrey.evans@ks.nacdnet.net

The event is limited to 200 people, so don't wait too long to register!

10. Register now for the Western Kansas Forage Conference, February 21 in Garden City

Kansas State University Research and Extension and the Kansas Forage and Grassland Council (KSFGC) in collaboration with a number of private forage industry supporters will be hosting the Southwest Kansas Forage Conference on February 21, 2018 at the Southwest Research-Extension Center in Garden City from 9:00 am-3:30 pm. The Southwest Research-Extension Center is located at 4500 E Mary Street, Garden City, KS, 67846.

Topics to be covered include:

- Impact of climate variability on western Kansas agriculture
- Nutritional value of forage sorghum
- Triticale forage production and variety selection
- Trucking and forage transportation rules and regulations
- Getting the most out of your silage
- Silage safety

This conference provides a platform to keep producers up-to-day on new research and technology development in the forage arena. Producers should consider this conference as an opportunity to refresh basic principles and to learn new principles that they can apply to their own situation.

Conference registration is $25 per individual, and for an additional $25 a farmer or rancher can support and gain the benefits of becoming a KSFGC member.

Online Conference Registration is available at https://ksfgc.org/wkfc/. The registration link can also be found at http://www.southwest.k-state.edu/. Advanced registration required by February 9, 2018.

Continuing Education credits have been applied for and should be available.

Please direct any questions to Mark Nelson at info@ksfgc.org

2018 WESTERN KANSAS FORAGE CONFERENCE

FEBRUARY 21, 2018

SOUTHWEST RESEARCH-EXTENSION CENTER
4500 E Mary Street,
Garden City, KS 67846
9:00 A.M.—3:30 P.M. (CST)

Topics to be covered include:

- Impact of climate variability on western Kansas agriculture
- Nutritional value of forage sorghum in silage feed production
- Triticale forage production, variety selection and future outlook
- Dairy Farmers of American Garden City Plant Update
- Trucking Laws
- Getting the most of your silage
- Silage safety

Online Conference Registration: https://ksfgc.org/wkfc/
Registration Link also @: http://www.southwest.k-state.edu/

Signup to Become Membership Online for an additional $25.00 @ https://form.jotform.com/72816740441960

Presented by:
K-State Research & Extension
Kansas Forage and Grassland Council

K-STATE Research and Extension

KSFGC

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 AJ Foster, 620-276-9164.
Kansas State University Agricultural Experiment Station and Cooperative Extension Service
K-State Research and Extension is an equal opportunity provider and employer.

Registration Fee - $25.00

For an *additional* $25.00 become a KSFGC member and gain massive benefits.

Advanced registration is required by February 9 2018

(CEUs applied for and should be available at this meeting)