Issue 674

K-STATE Research and Extension

Extension Agronomy

eUpdate

02/16/2018

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.

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1. How much moisture is in that snow?

The latest Drought Monitor reports that over 60 percent of Kansas is under some form of drought with the remainder of the state experiencing abnormally dry conditions. At times like these, every precipitation event, whether it's rain or snow, becomes important. The predominant form of precipitation falling the last several weeks has been in the form of snow. This begs the question, "How much moisture is actually in that snow?"

Several terms are used when talking about how much moisture is contained in a certain amount of snow. In Kansas, the most frequently used term is often *liquid equivalent*. This is the depth of water that would result from melting a sample of snow. Liquid equivalent is the amount of measurable moisture if the snow were to have fallen as rain. This is where the infamous "10-to-1" ratio has its roots. The "10-to-1" ratio is the assumption that for every 10 inches of snow that falls, there is roughly 1 inch of actual moisture. This ratio is actually only an estimate and is based on snow forming in the 28-34 degrees F range. If temperatures are colder, say in the 10 to 15 degree F range, estimates can be as high as 30-to-1 (30 inches of snow equal to 1 inch of moisture/precipitation). This is a simplified estimation because snow liquid equivalent is also subject to temperature and humidity above the surface as well. Historically, average Kansas snow ranges from 12-14 inches per 1 inch of moisture (Figure 1).

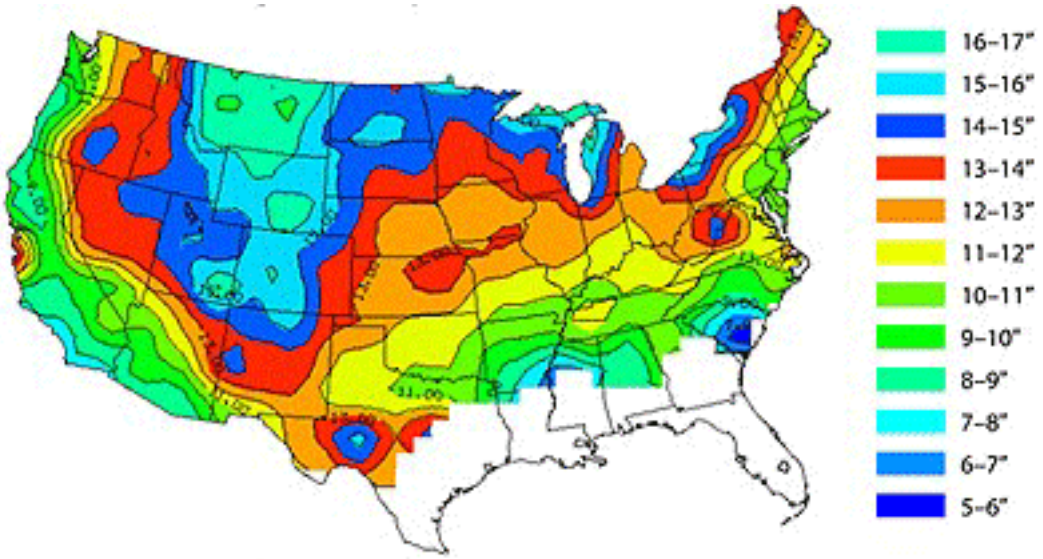

Figure 1. Average amount of snow per inch of water, 1971-2000. Graphic by Marty Baxter, Saint Louis University, courtesy of UCAR Comet Program – www.comet.ucar.edu.

In the mountains, however, there is more interest in the *snow water equivalent*. This is the amount of water stored in the entire snowpack not just the most recent snowfall. It is determined by the snow density or the specific gravity of the snow sample. Freshly fallen snow usually has a snow density of 7-15 percent while values as low as 0.4 percent have been measured. The amount of moisture stored in the snowpack is important for predicting runoff, reservoir refill, and flood potential. Unlike in Kansas, snow accumulates all winter and rapidly melts in the spring/summer contributing to issues.

Thus far in 2018, snow packs are very low in southwest United States, Oregon, and Colorado with only 9.8-20 inches (Figure 2). Still, snow water equivalents in these mountainous regions are substantial when considered to the little snow Kansas typically receives.

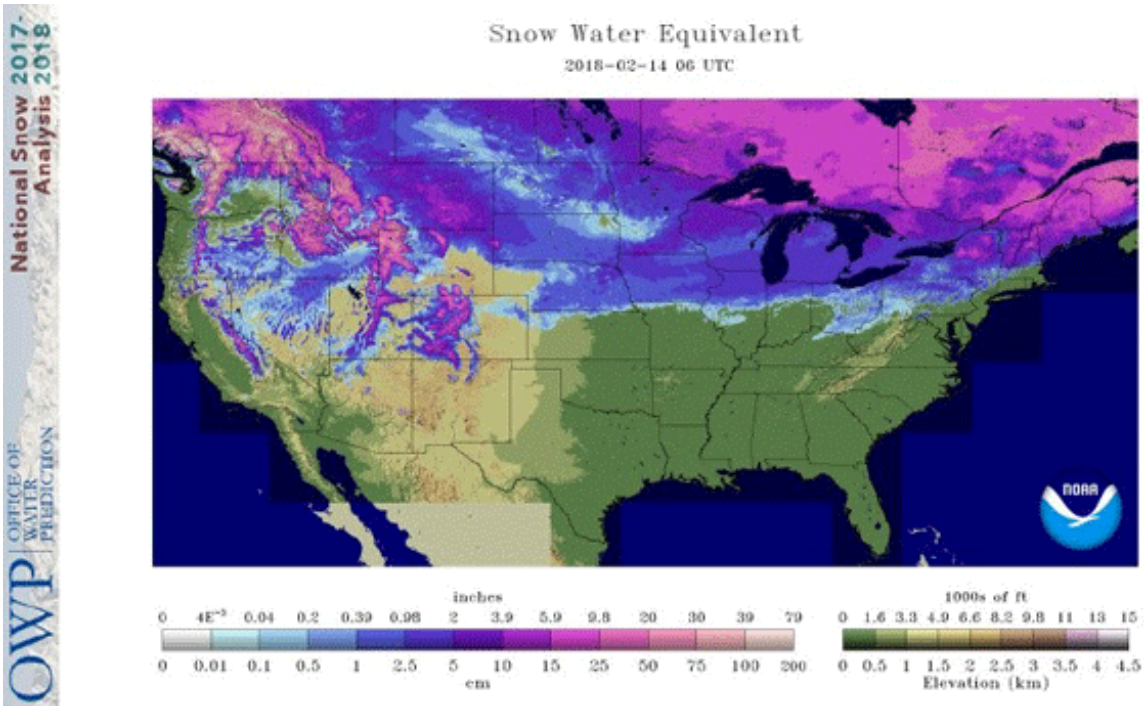

Figure 2. Current North America snow water equivalent moisture in the existing snowpack. Graphic source: www.nohrsc.noaa.gov**.**

Figure 3. Snow survey. Photo courtesy of the NRCS.

Finally, snow is very difficult to measure, especially with a typical automated rain gauge. With manual gauges, samples are taken and then melted. The latest storms, as reported at the Manhattan NWS Coop station, show the differences that can occur with similar snow depths but slightly different temperatures (Table 1).

Table 1. Daily records from Manhattan Coop station (NWS)

Date	Maximum Temp. (°F)	Minimum Temp. (°F)	Precipitation (inches)	Snowfall (inches)
1/14/2018	19	11	0.14	1.5
2/5/2018	16	1	0.09	1.5

Often, with automated gauges, snow blows out of the gauge before it has a chance to melt. Therefore, estimates can be greatly under-measured. This is the case with the Kansas Mesonet. While we do have some heated rain gauges, they only activate once snow covers the sensor. If strong winds continually blow the snow around, it doesn't have a chance to trigger the heater sensor and thus, is not measured. Snow that is melted (either by the heater or by warmer temperatures the next day on non-heated rain gauges) and drips into the rain gauge is measured as liquid. The data from these gauges is the liquid equivalent of the accumulated snow. You can see the current measured liquid equivalent or rainfall on the Kansas Mesonet here: mesonet.ksu.edu

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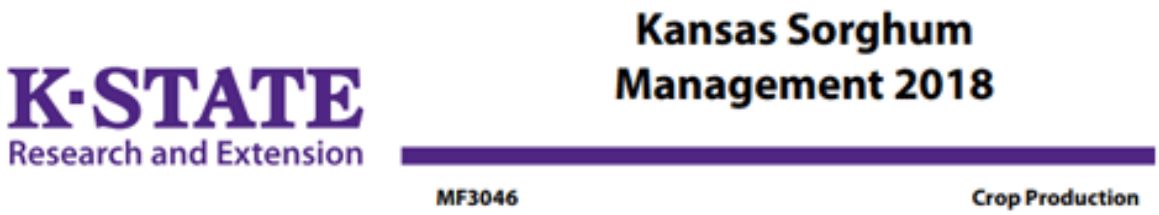
mknapp@ksu.edu

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

2. Updated for 2018 - Kansas Sorghum Management publication

A newly revised K-State Research and Extension publication, *Kansas Sorghum Management 2018*, is now available and can be accessed online at: https://www.bookstore.ksre.ksu.edu/pubs/MF3046.pdf



This publication helps producers manage their sorghum crop as efficiently and profitably as possible under Kansas growing conditions. Recommendations should be considered as guidelines and must be tailored to situations based on the cropping system, soils, and weed populations encountered in that field. This comprehensive guide is written specifically for Kansas and includes valuable, up-to-date information on:

- Tillage and rotations
- Hybrid selection
- Planting practices
- Weed control
- Irrigation management
- Fertilizer requirements
- Diseases
- Insects
- Pre-harvest desiccants

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
Curtis Thompson, Weed Science
Jeff Whitworth, Entomology
Danny Rogers, Agricultural Engineering

3. 2017 Kansas Performance Tests with Grain Sorghum Hybrids report now online

The *2017 Kansas Performance Tests with Grain Sorghum Hybrids* report is now online. In this report, you will find a recap of the 2017 grain sorghum crop, with a detailed discussion summarizing the statewide growing conditions, diseases, and insects. More importantly, the results of the 2017 grain sorghum performance tests are also shown.

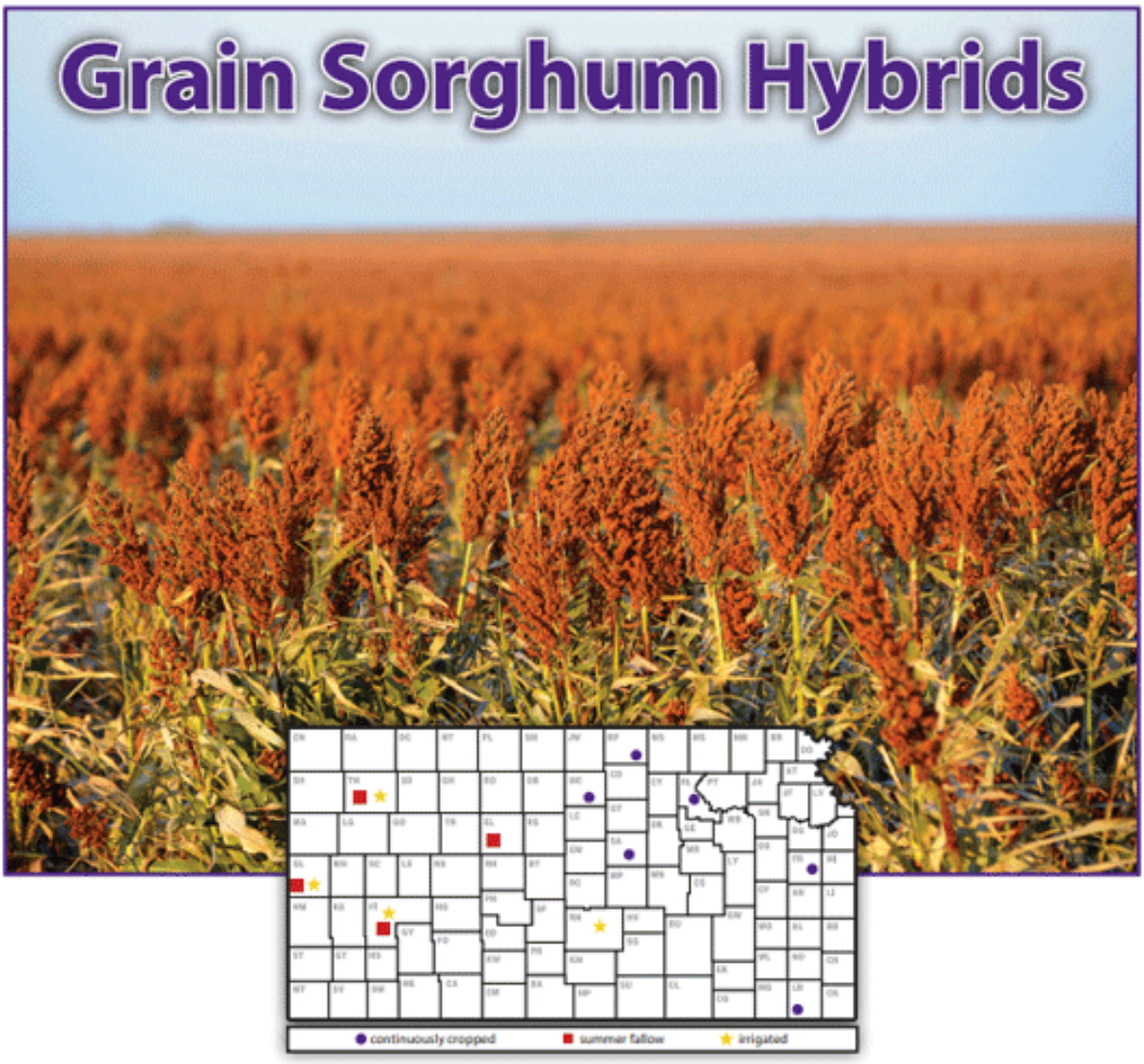
Grain sorghum performance tests, conducted annually by the Kansas Agricultural Experiment Station, provide farmers, extension workers, and seed industry personnel with unbiased agronomic information on many of the grain sorghum hybrids marketed in Kansas. Because entry selection and location are voluntary, not all hybrids grown in the state are included in tests, and the same group of hybrids is not grown at all test locations.

The online version of the 2017 Kansas grain sorghum performance tests can be found at: https://www.bookstore.ksre.ksu.edu/pubs/SRP1138.pdf.

Test results also can be found at: http://www.agronomy.k-state.edu/services/crop-performance-tests/grain-sorghum

2017 Kansas Performance Tests with

Grain Sorghum Hybrids



Report of Progress 1138

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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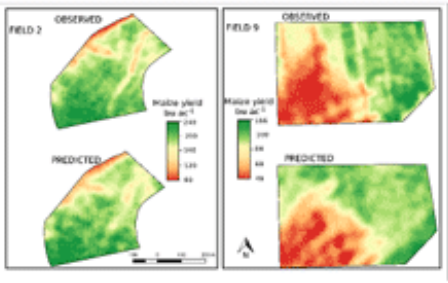
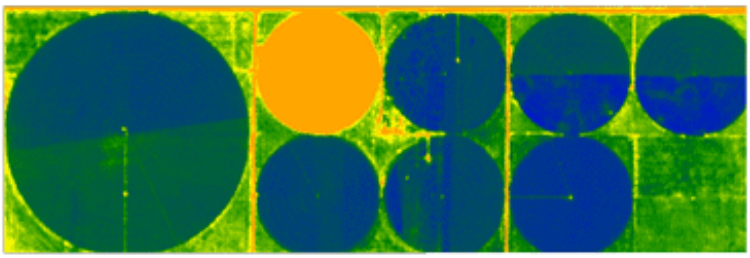
4. On-Farm Research meeting to held on March 2 in Salina

On-Farm Research Meeting





Friday, March 2, 2018

- **Speaker: Ignacio Ciampitti, K-State Crop production & Cropping Systems specialist**
- **9:00 a.m. – noon- American Ag Credit basement meeting room, 925 W. Magnolia, Salina, KS.**
- **Topics: On-Farm Research results from local farms; field information that satellite imagery can provide, and processing satellite imagery for practical use in Ag.**

On-farm research funding made possible by Kansas Corn Commission checkoff.

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KANSAS CORN COMMISSION

KSU CROPS Crop Production Team

Interested individuals are asked to RSVP for the meeting by contacting:

Tom Maxwell, CKD-Salina
tmaxwell@ksu.edu
785-309-5850

5. Soil health workshop planned for February 28 in Oswego

K-State Research and Extension is hosting a soil health workshop on February 28. The workshop, "Managing your soils to improve productivity and profitability", will focus on using cover crops to improve soil health and also as a grazing resource.

The workshop is being held at Falkenstien Farm, 8080 Pratt Road, Oswego, KS (37° 6'58.71"N, 95°14'58.30"W). Meet at the shop located behind the house. Presentations will begin at 9:00 a.m. with a barbeque lunch to follow.

Topics to be covered include: Cover crops for grazing, Forage production and quality, Soil health and economics, and Practical experiences with cover crops.

Speakers include:

- Jaymelynn Farney, Beef Systems Specialist, KSU
- Doug Spencer, Rangeland Management Specialist, NRCS
- Rich Falkenstien, Producer

Please RSVP for the workshop by Monday, February 26 by contacting Gretchen Sassenrath at either gsassenrath@ksu.edu or 620-820-6131

Managing Your Soils to Improve Productivity and Profitability

Feb. 28, 2018

Cover Crops, Soil Health, and Grazing

Falkenstien Farm

8080 Pratt Rd., Oswego, KS

Meet at the shop behind the house

(37° 6'58.71"N, 95°14'58.30"W)

Presentations begin at 9:00 followed by lunch

TOPICS

Cover Crops for Grazing, Forage Production, and Quality, Soil Health and Economics, and Practical Experiences with Cover Crops

Contact/RSVP: Gretchen Sassenrath, gsassenrath@ksu.edu or 620-820-6131

Speakers Include:
Jaymelynn Farney—Kansas State University, Asst. Prof., Beef Systems Spec.
Doug Spencer—Natural Resources Conservation Service Rangeland Management Specialist
Rich Falkenstien—Practical experiences with cover crops

NRCS
U.S. Department of Agriculture

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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

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7. Don't miss the K-State Soybean School at Phillipsburg on March 21

It's not too late to attend a K-State Soybean School this year. Due to inclement weather, the Soybean School originally scheduled for January 22 in Phillipsburg was 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

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

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!