



K-STATE
Research and Extension

Extension Agronomy

eUpdate

01/10/2020

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. 2020 K-State wheat variety fall forage yield comparison

Fall forage yield is an important aspect of dual-purpose wheat production. In this system, wheat is typically sown earlier than for grain-only production, at higher seeding rates, and with additional nitrogen fertilizer to maximize forage production.

The weather experienced during the fall is crucial in determining the average level of forage yield, with warm and moist weather typically resulting in greater forage yield than cool and dry weather conditions. Management practices that maximize forage yield include early sowing, higher seeding rates, placement of in-furrow phosphorus fertilizer with the seed, and fall nitrogen fertilization.

While the weather is typically the largest factor in determining fall forage production, followed by management, there are also differences among wheat varieties in forage production potential. Thus, every year the K-State Wheat Production Group compares the forage yield of several commonly grown wheat varieties and upcoming lines. This test is usually performed in the South Central Experimental Field near Hutchinson, Kansas (Figure 1), and the forage sampling occurs sometime during December (Table 1).



Figure 1. Dual-purpose wheat trial near Hutchinson, KS. The trial was sown on September 18, 2019, with 50 lbs DAP/acre applied in furrow, and 90 lbs N/acre broadcast incorporated prior

to sowing. Photo by Romulo Lollato, K-State Research and Extension.

Table 1. Fall forage yield of wheat varieties sown under dual-purpose system near Hutchinson, KS. Forage biomass was collected on 20 December 2019. Data is shown in pounds of dry matter per acre (lbs DM/ac). Tukey's honest least significant difference (HSD) is shown, with highest yielding group highlighted in bold. Varieties are ordered from highest to lowest forage yield.

Variety	Forage dry matter (12/20/19) ----- lbs/ac -----
Gallagher	1888
WB4303	1765
Rock Star	1618
WB4269	1523
Paradise	1385
Smith's Gold	1357
WB4792	1294
AM Cartwright	1163
WB4699	1146
Green Hammer	1144
Doublestop CL Plus	1095
TAM205	1015
Zenda	983
09BC308-14-16	906
Whistler	884
Bentley	884
Guardian	849
KS Western Star	809
KS Dallas	805
Bob Dole	751
SY Wolverine	745
WB4595	725
Long Branch	683
Showdown	634
LCS Valiant	540
KS Silverado	538
AM Eastwood	475
SY Achieve CL2	438
HSD	595

There was a significant difference in fall forage yield among the 28 wheat varieties tested in the 2019-2020 experiment (Table 1). Forage yield ranged from 438 to 1,888 pounds of dry matter per acre, with Gallagher, WB4303, Rockstar, WB4269, Paradise, Smith's Gold, and WB4792 yielding similarly in the top forage group. Likewise, all varieties listed at TAM 205 and below had similar forage yield and did not differ statistically.

Impact of weather conditions on 2019 fall forage production

While it is common for a large range in forage yields to exist among wheat varieties (for example, in 2018-19 our forage measurements ranged from 1,327 to 2,700 lbs/acre), the large range in forage values experienced in the 2019-20 partially reflect the dry conditions experienced during the fall. Plots were planted on extremely dry soils on September 18, and it was not until the October 1-5 interval that ~0.9 inches of precipitation was received. This resulted in a somewhat uneven stand establishment, which could partially explain these results. Additionally, after October 5, the next rainfall event was not until the November 20-29 interval, when about 0.45 inches were received in total of six smaller events. The dry conditions experienced at planting and during the entire fall, coupled with below-average fall temperatures, did not allow for much forage biomass production and increased the plot-to-plot variability in the measurements.

Stay tuned for First Hollow Stem reports

Another important aspect of dual-purpose wheat production is how long each variety can be grazed in the spring. This is measured as the date for first hollow stem. Wheat varieties can differ by as much as 20-30 days in achieving first hollow stem in the spring. The Wheat Production Group at K-State uses this very same trial to measure first hollow stem during late February and early March, so keep tuned the eUpdate as winter progresses toward spring.

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2. Ag-Climate Update for December 2019

The Ag-Climate Update is a joint effort between our climate and extension specialists. Every month the update includes a brief summary of that month, agronomic impacts, relevant maps and graphs, 1-month temperature and precipitation outlooks, monthly extremes, and notable highlights.

December 2019 – Warm and wet

The major feature for the month was the rain event that came at the end of the month. Three stations set records for the greatest December daily amounts: Hays, 1.64 on the 28th; Lebanon, 1.69 on the 28th, and Emporia 3NW, 1.90 on the 29th. The Southwest division cut the fall deficit in half, and moved back to normal for the year.

This moisture improved the drought situation dramatically. All extreme drought was erased. Overall, drought coverage in Kansas moved from 45% drought free to 67% drought free (Figure 1).

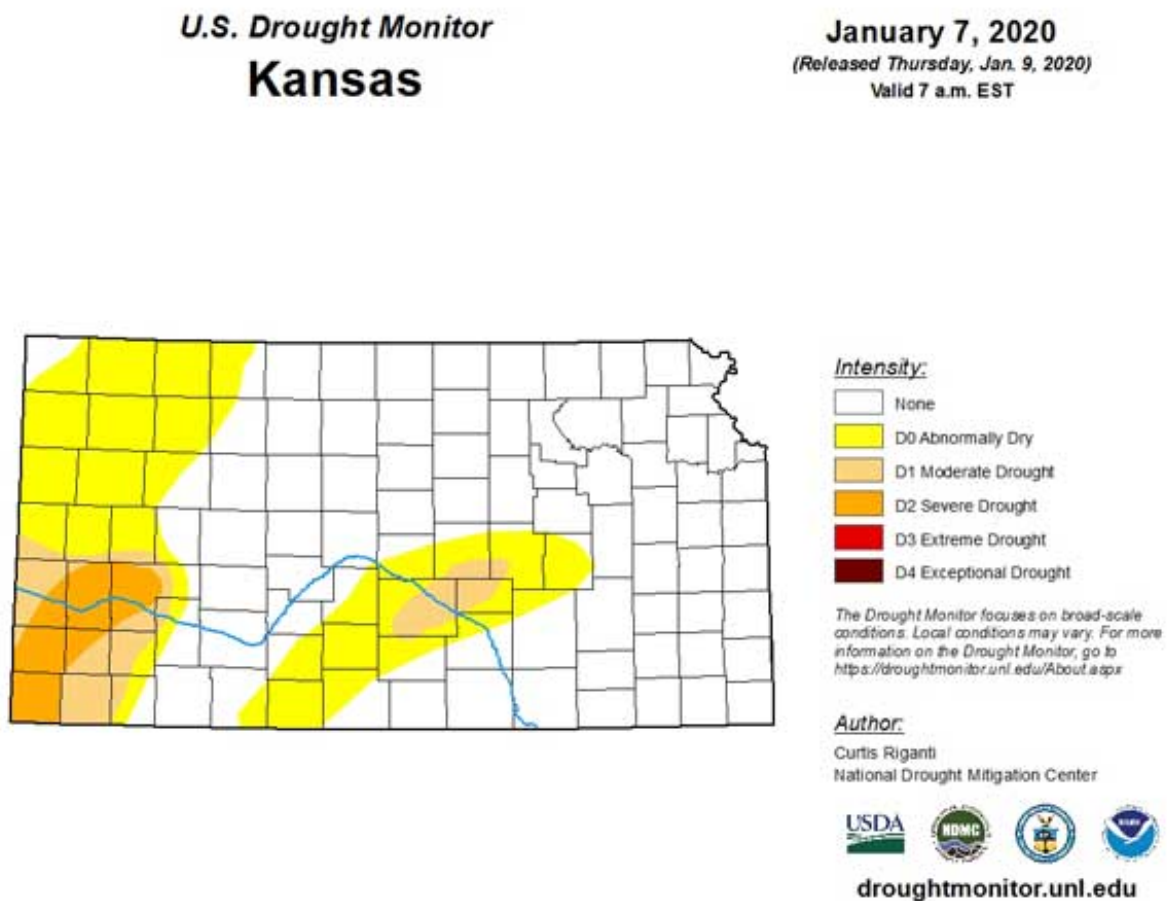


Figure 1. Drought map for Kansas as of January 7, 2019. Source: UNL Drought Monitor.

The relatively mild temperatures allowed for additional emergence and development of winter wheat. According to the NASS crop report on Dec. 31, 40% of wheat is in good to excellent condition.

View the entire December 2019 Ag-Climate Summary, including the accompanying maps and graphics (not shown in this summary), at <http://climate.k-state.edu/ag/updates/>.

3. Crop management publications updated for 2020: Corn, Soybeans, and Sorghum

K-State Research and Extension has just released three important crop management publications in preparation for the 2020 growing season. They include:

Kansas Corn Management 2020 (MF3208) - www.bookstore.ksre.ksu.edu/pubs/MF3208.pdf

Kansas Soybean Management 2020 (MF3154) - www.bookstore.ksre.ksu.edu/pubs/MF3154.pdf

Kansas Sorghum Management 2020 (MF3046) - www.bookstore.ksre.ksu.edu/pubs/MF3046.pdf

Each publication offers advice to producers, crop consultants, and agronomists to help manage these three Kansas crops as efficiently and profitably as possible. Recommendations provide guidelines and must be tailored to the diverse conditions found in cropping systems across the state.

These comprehensive guides are written specifically for Kansas and include valuable, up-to-date agronomic information on:

- Planting practices
- Tillage and rotations
- Variety selection
- Rate of dry down before harvest
- Weed management
- Nutrient management
- Diseases
- Insects
- Machinery (corn only)
- Irrigation management
- Pre-harvest desiccants (sorghum only)

Be ready for the 2020 growing season and have these publications at your fingertips!

4. Midwest Cover Crops Council Annual Conference: Feb. 11-12 in Kansas City

Registration is open for the Midwest Cover Crops Council Annual Conference, Feb. 11-12, 2020, in Kansas City, Mo.

The event will be at the KCI Expo Center. Twelve states and one Canadian province belong to the council.

The conference will have sessions on both row crop and cattle operations due to the large number of producers in the Kansas City area producing both grain and livestock.

Event sponsors include MU Extension, K-State Research and Extension, University of Nebraska Extension, and USDA Natural Resources Conservation Service. Speakers include faculty from MU, University of Nebraska, and Kansas State University, as well as cattle producers and representatives from NRCS and cattle companies. Sessions include:

- Selecting and Managing Cover Crops
- Weed and Herbicide Interactions Using Cover Crops
- Incorporating Cover Crops in Cattle Operations
- Cover Crop Environmental and Economic Benefits
- Cash Crop Interactions with Cover Crops
- Farmer Panel Discussion

Sessions will look at using cover crops in row crop production, livestock and grazing, as well as environmental and economic issues. Details are available at mccc.msu.edu/about/meetings. The meeting is open to the public.

Register online at event.me/E5WdBD or mccc.msu.edu/about/meetings.

Learn more about MCCC and cover crops at mccc.msu.edu.

5. Kansas Agricultural Technologies Conference, January 16-17 in Junction City

The 23rd Annual Kansas Agricultural Technologies Conference will be held January 16-17, 2020 at the Courtyard by Marriott in Junction City, Kansas. This annual event brings hundreds of agricultural producers and industry leaders for a two-day interactive workshop on the use of technology in the ever-changing agriculture industry. Those in attendance at the conference will hear presentations from dynamic speakers on a wide variety of topics dealing with precision agriculture. The two-day event also includes vendor displays, the KARTA Annual Meeting, research presentations from grant recipients, and an interactive evening discussion that is always an attendee favorite.

2020 Keynote speakers

- Matt Splitter, Splitter Farms
- Lee Scheufler, Scheufler Farms
- Andrew Nelson, Microsoft
- Wes Porter, University of Georgia
- Craig Rupp, Sabanto Ag
- Steve Arnold, Farmer - Johnson, KS
- Victoria Clancy, Next Instruments

2020 On-Farm Research Projects

- Irrigation innovation
- Wheat streak mosaic impacts
- Red clover interseeding in wheat
- Corn/soybean strip planting
- Soybean population
- Using imagery for N recommendation
- Fungicide on soybeans
- PGR on wheat after soybeans
- Biological product strip trial
- Aerially applied source by the Company "Sound"
- Wheat row spacing
- PivotBio trial

Conference registration is **\$325**, which includes two days of meals and refreshments and 2020 KARTA membership. The funds generated through the association dues and conference registrations are used to provide grants to facilitate on-farm research projects and instructional workshops on the hardware and software necessary to conduct agricultural research trials. There is also a subsidized student rate of \$75 per person, catered to agricultural students at all of the state's post-secondary educational institutions.

For more information or to get signed up, visit www.karta-online.org.

Information is also available by contacting Lucas Haag, K-State Research and Extension Northwest

Area Crops and Soil Specialist, at 785-462-6281 or lhaag@ksu.edu.

6. Don't miss the K-State Soybean Schools - January 2020



A series of six K-State Soybean Production Schools will be offered in January to provide in-depth training targeted for soybean producers and key-stakeholders. The schools are sponsored by the Kansas Soybean Commission.

The schools will cover a number of issues facing soybean growers including: weed control, crop production practices, nutrient management and soil fertility, insects, disease management, and market outlook.

The dates are set and specific locations have been chosen with Schools located across the state.

January 13 – Monday

- **Smith Center, KS** - 9:30 am to 1:30 pm
St. Mary's Catholic Church Parish Hall
403 W. Highway 36
Contact: Sandra Wick, swick@ksu.edu
RSVP by January 8
- **Salina, KS** - 3:30 to 7:30 pm
Webster Conference Center
2601 North Ohio Street
Contact: Jay Wisbey, jwisbey@ksu.edu
RSVP by January 8

January 14 – Tuesday

- **Mulvane, KS** - 9:30 am to 1:30 pm
Pix Community Center
101 E Main St
Contact: Randy Hein, rvhein@ksu.edu; Jeff Seiler, jseiler4@ksu.edu
RSVP by January 8

January 21 - Tuesday

- **Emporia, KS** - 3:30 pm to 7:30 pm
Anderson Building
Lyon County Fairgrounds
2650 W US Hwy 50
Contact: Brian Rees, brees@ksu.edu
RSVP by January 16

January 22 – Wednesday

- **Atchison, KS** - 9:30 am to 1:30 pm
Cedar Ridge Restaurant (4 miles NW of Atchison)
17028 318th Rd.
Contact: Ray Ladd, cladd@ksu.edu
RSVP by January 17
- **Marysville, KS** - 3:30 to 7:30 pm
Marysville Helvering/Senior Center
111 S 8th St (Please use the west door)
Contact: Anastasia Johnson, anastasia@ksu.edu
RSVP by January 17

On-site registration will begin 30 minutes prior to the program start time. A meal will be provided courtesy of our sponsors. There is no cost to attend, but participants are asked **to pre-register, if possible, for the school they plan to attend**. Online registration is available at K-State Soybean Schools (<http://bit.ly/KSUSoybean>) or by emailing/calling the nearest local K-State Research and Extension office for the location participants plan to attend.

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7. K-State Sorghum Schools scheduled for late January

Three K-State Sorghum Production Schools will be offered in late January to provide in-depth training targeted for sorghum producers and key-stakeholders. The schools are sponsored by Kansas Grain Sorghum Commission.



The schools will cover a number of issues facing sorghum growers: risk management, marketing opportunities, weed control, crop production practices, nutrient and soil fertility, and insect management.

- **January 29, Wednesday – Scott City**

2:30 p.m. to 7:00 p.m.

William Carpenter 4 H Building

608 North Fairground Road

Contact: John Beckman - jbeckman@ksu.edu

- **January 30, Thursday – Great Bend**

8:30 a.m. to 1:00 p.m.

Great Bend Recreation Commission

Burnside Room, 1214 Stone Street

Contact: Stacy Campbell - scampbel@ksu.edu

- **January 30, Thursday – Hutchinson**

2:30 p.m. to 7:00 p.m.

South Hutchinson Community Building

101 W Ave C

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

South Hutchinson KS 67505

Contact: Darren Busick - darrenbusick@ksu.edu

The schools are free to attend and a meal will be provided courtesy of the Kansas Grain Sorghum Commission. Participants are asked to pre-register by **January 27**. Online registration is available at K-State Sorghum Schools (<http://bit.ly/KSUSorghum>) or by emailing/calling the nearest local K-State Research and Extension office for the location participants plan to attend.

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K-STATE DEPARTMENT OF AGRONOMY

2020 SORGHUM SCHOOL

K-STATE RESEARCH AND EXTENSION

DATES & LOCATIONS

WEDNESDAY, JANUARY 29

Scott City, KS

2:30 — 7:00 p.m

THURSDAY, JANUARY 30

Great Bend, KS

8:30 a.m. — 1:00 p.m

Hutchinson, KS

2:30 — 7:00 p.m

REGISTRATION

ONLINE | <http://bit.ly/KSUSorghum>

A meal will be provided at each of the free schools.

RSVP requested by Monday, January 27.

TOPICS

The one-day school will cover issues facing sorghum producers.

Weed Control | Crop Production | Pest Management | Soil Fertility

KANSAS STATE
UNIVERSITY

Department of Agronomy



Kansas State University Department of Agronomy

2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506

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8. Cover Your Acres Winter Conference, January 14-15 in Oberlin

K-State Research and Extension will host the 17th annual Cover Your Acres Winter Conference for crop producers and consultants on January 14-15 at the Gateway Center in Oberlin, Kansas.

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 it will feature university specialists and industry representatives discussing the following topics:

- Alternative crops – What we know, don't know, and should be thinking about
- Beyond grain: The value of wheat in the production chain
- Cover crops as a weed management tool
- Current financial status of Northwest Kansas farms
- Insect management in dryland corn
- Planter technology advancements
- Soil testing – Interpretations matter
- The war on weeds
- What drives efficiency and profitability in irrigated corn?
- What does a food company care about soil? An intro to General Mills' Ag Commitment
- Producer panel discussion

The same programs will be offered both days of the conference. Registration will begin at 7:45 a.m. with educational sessions ending at 5:00 p.m. The sessions are followed by a social on Tuesday evening where attendees can visit with industry and university specialists while enjoying heavy hors d'oeuvres.

Early registration is due by January 8. The fee is \$50 for Tuesday, January 14th, \$45 for Wednesday, January 15th, or \$65 for both days. After January 8, the cost is \$65 per day. The conference fee includes lunch, morning and afternoon refreshments, and educational materials. The program offers a total of 10 continuing education unit (CEU) credits for Certified Crop Advisors and 2 CEUs for Commercial Applicators.

To view the conference details and for online registration, visit www.northwest.ksu.edu/coveryouracres. For questions, call 785-462-6281.

Major sponsors of the conference include: Pioneer, Hoxie Implement Co., Nutrien Ag Solutions, Lang Diesel, Bayer, National Sunflower Association, Plains Equipment Group, Sims Fertilizer & Chemical, and SureFire Ag Systems.

Lucas Haag, Northwest Area Crops and Soils Specialist

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