



K-STATE
Research and Extension

Extension Agronomy

eUpdate

01/11/2019

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.

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

1. Update on dicamba applicator training for 2019	3
2. Kansas weather summary for December 2018 - Wet beginning and end	4
3. Kansas weather highlights for 2018	8
4. K-State Pre-Plant Corn Schools - February 2019	11
5. Don't miss the 2019 K-State Soybean Schools	12
6. Updated: K-State Sorghum Schools scheduled for early February	15
7. Cover Your Acres Winter Conference, January 15-16 in Oberlin	17
8. Kansas Agricultural Technologies Conference, January 17-18 in Junction City	19

1. Update on dicamba applicator training for 2019

Dicamba or auxin-specific training was required for the first time last year for anyone who planned to apply Engenia, Xtendimax, or FeXapan herbicides. In-person training in Kansas was provided by the three registrants (BASF, Monsanto, and DuPont) and Kansas State University. On-line training from the registrants was made available later in the spring. At that point in time, it was unclear whether the training was going to be an annual requirement. When the products were re-registered this past fall, it was clearly stated that annual training would be required by anyone who applies those products.

The Kansas Department of Agriculture has indicated that it is the registrants' responsibility to provide the training. K-State will **NOT** be providing dicamba applicator training this year. The understanding is that BASF, Bayer, and DuPont will be hosting dicamba applicator training meetings this winter/spring and making on-line training available sometime in the near future. Consult with your local Ag product supplier for possible training meeting dates and locations.

Additional information on dicamba applicator training is available at the following websites:

<https://www.engeniastewardship.com/#/training>

<http://www.roundupreadyxtend.com/stewardship/education/Pages/default.aspx>

<http://www.dupont.com/products-and-services/crop-protection/soybean-protection/articles/fexapan-training.html>

<https://www.agriculture.ks.gov/divisions-programs/pesticide-fertilizer/dicamba>

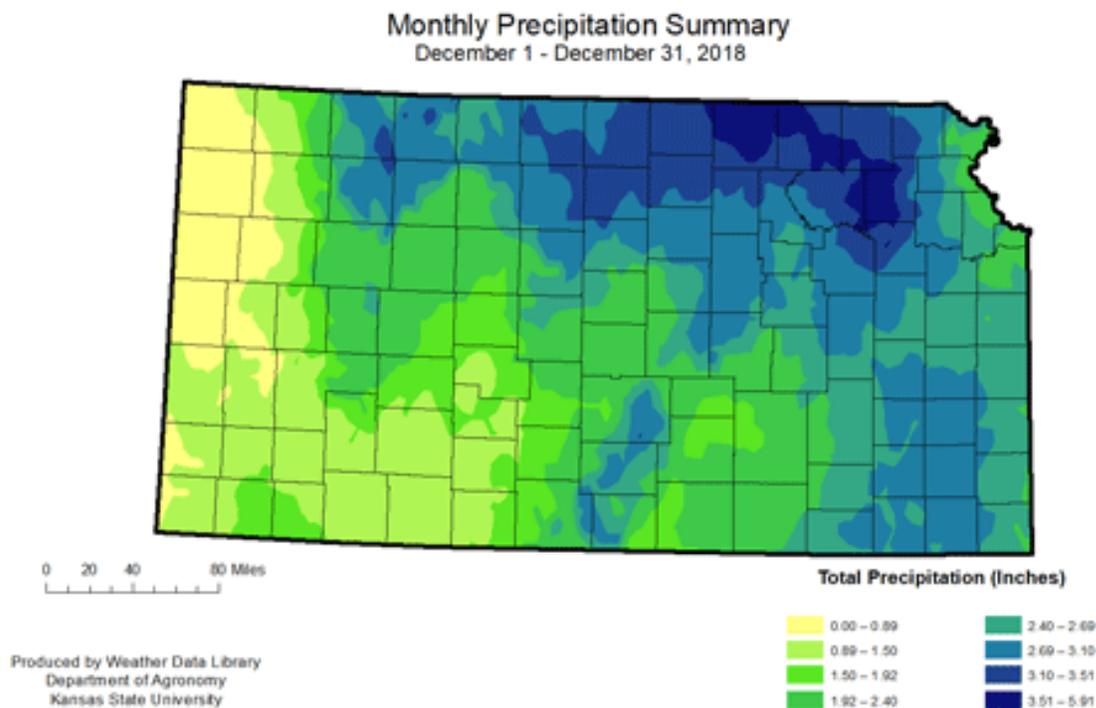
Dallas Peterson, Weed Management Specialist and Extension Agronomy State Leader
dpeterso@ksu.edu

2. Kansas weather summary for December 2018 - Wet beginning and end

December precipitation

December was wetter-than-normal across most of Kansas, but the precipitation fell mostly at the beginning and end of the month. With over 600 reports, the average amount on the 1st of December was 0.69 inches; for the 27th, the second large event, the average amount was 1.26. State-wide average precipitation for December was 2.22 inches, or 232 percent of normal. The Southwest Division was the driest with an average of 1.49 inches. That is a surplus of 0.82 inches, or 230 percent of normal. The Northwest Division had the greatest percent of normal at 320 percent and an average precipitation of 1.90 inches.

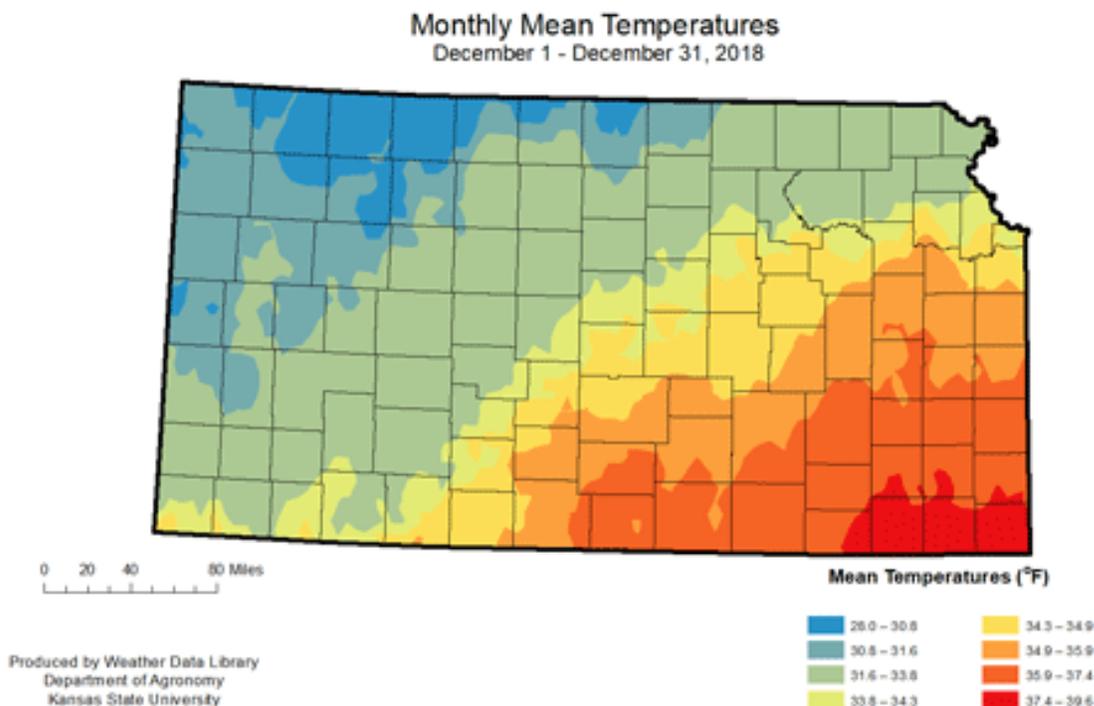
The highest 24-hour rainfall total for a National Weather Service (NWS) Cooperative station was 2.95 inches at Hugoton, Stevens County, on the 26th. The greatest 24-hour rainfall total for a Community Collaborative Rain, Hail and Snow (CoCoRaHS) network station 3.20 inches at Kingman 8.1 SSE, Kingman County, on the 27th. The greatest monthly precipitation totals for December were: 5.91 inches at Lenora, Norton County (NWS) and 4.76 inches at Hunter 2.1 NNW, Mitchell County. Not all precipitation was in the form of rainfall. A total of 207 stations reported snowfall in December, with monthly totals ranging from trace amounts in eastern Kansas to 15.5 inches at the CoCoRaHS station of Traer 2.5 NNW, Decatur County.



December temperatures

Despite some cool periods, December temperatures were warmer-than-normal. State-wide average temperature for the month was 33.7 degrees F, which is 2.3 degrees warmer-than-normal. All divisions were warmer-than-normal. The Northeast Division had the largest departure, with an

average of 33.3 degrees F, or 3.5 degrees warmer-than-normal. The Southwest Division came closest to normal with an average of 33.8 degrees F or 1.1 degrees warmer-than-normal. The variability was evident in the range of temperatures. The warmest maximum temperature was 67 degrees F at Richfield 1NE, Morton County, on the 22nd. The coldest minimum temperature at a NWS station was -1 degrees F, recorded at Dresden, Norton Dam on the 30th and at Tuttle Creek Lake on 31st. The coldest reading at a Kansas Mesonet station was -3.6 degrees F recorded at the Grant County station near Ulysses on the 31st.



Severe weather for December

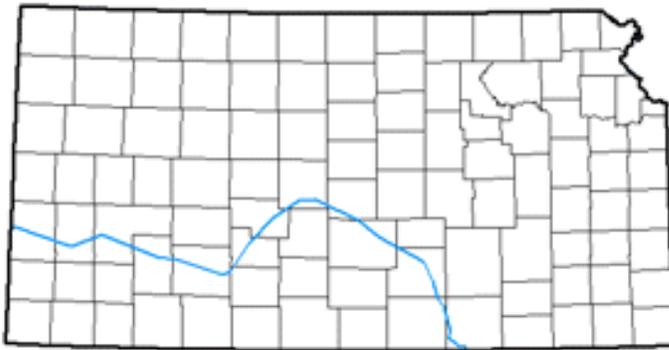
Severe storm reports were limited in Kansas during December. There were no reports of hail, wind or tornadoes. Severe winter weather was the main feature for the month, with blizzard-conditions across most of the western areas of the state on the 26th and 27th. Sadly, there was one fatality when a stranded motorist died from exposure.

Kansas is drought free!

Despite the warmer-than-normal temperatures, the heavier-than-normal precipitation alleviated the remaining abnormally dry conditions across Kansas. Kansas is now 100% drought-free. The January precipitation outlook is neutral to the east, with increased chances of above-normal precipitation across the west. Given the low normal precipitation at this time of the year, changes in conditions are likely to be slow. The temperature outlook is also neutral across the state.

U.S. Drought Monitor Kansas

January 1, 2019
(Released Thursday, Jan. 3, 2019)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week 12-25-2018	94.75	5.25	0.00	0.00	0.00	0.00
3 Months Ago 10-03-2018	77.69	7.51	5.07	4.06	5.29	0.38
Start of Calendar Year 01-01-2019	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year 09-25-2018	78.54	6.66	5.07	4.06	5.29	0.38
One Year Ago 01-02-2018	0.00	67.30	23.95	8.75	0.00	0.00

Author:
David Miskus
NOAA/NWS/NCEP/CPC



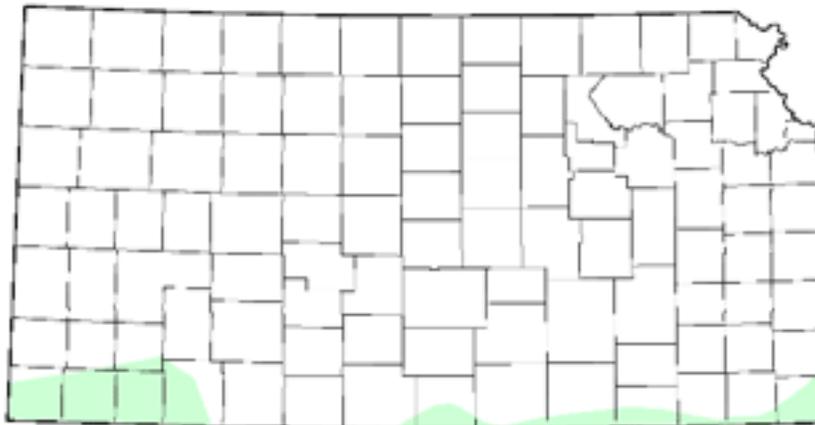
<http://droughtmonitor.unl.edu/>

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.

U.S. Drought Monitor Class Change - Kansas 1 Week



- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

January 1, 2019
compared to
December 25, 2018

<http://droughtmonitor.unl.edu>

Kansas Climate Division Summary										
December 2018										
	Precipitation (inches)						Temperature (°F)			
	Dec. 2018			2018 through December			Ave	Dep. ¹	Monthly Extremes	
Division	Total	Dep. ¹	% Normal	Total	Dep. ¹	% Normal			Max	Min
Northwest	1.90	1.33	322	24.59	3.23	114	30.6	1.5	64	-1
West Central	1.71	1.08	268	25.94	5.17	123	32.1	1.5	65	2
Southwest	1.49	0.82	230	26.40	6.50	132	33.8	1.1	67	-1
North Central	2.77	1.88	310	33.41	5.37	119	32.2	2.8	58	8
Central	2.36	1.43	258	33.23	3.94	114	33.7	2.3	59	9
South Central	2.26	1.14	202	36.79	5.47	118	35.4	2.1	61	11
Northeast	2.52	1.30	209	34.49	-0.51	99	33.3	3.5	58	11
East Central	2.31	0.91	163	32.34	-5.58	84	35.0	3.4	60	12
Southeast	2.79	0.97	155	40.73	-0.76	98	36.8	2.8	64	14
STATE	2.22	1.19	232	32.17	2.78	112	33.7	2.3	67	-1

1. Departure from 1981-2010 normal value

2. State Highest temperature: 7 oF at Richfield 1NE, Morton County, on the 22nd.

3. State Lowest temperature: -1 oF at Norton Dam, Norton County, on the 30th and Tuttle Creek Lake, Riley County, on the 31st.

4. Greatest 24hr: 2.95 inches at Hugoton, Stevens County, on the 26th (NWS); 3.20 inches at Kingman 8.1 SSE, Kingman County on the 26th (CoCoRaHS).

Source: KSU Weather Data Library

Mary Knapp, Assistant State Climatologist and Weather Data Library
mknapp@ksu.edu

3. Kansas weather highlights for 2018

How well do you remember the weather events in Kansas last year? Many of us may be trying to forget! Let's take a quick look back with this month-by-month highlight reel of the significant weather events affecting Kansas in 2018.

January

After an extended period with little to no moisture, parts of Kansas recorded some significant precipitation. At Tribune, a small snow event on January 12 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 was just two days shy of the 120-day record set in 1936. Manhattan established a new record of 87 days, which ended on January 10 with 0.17 inches. The previous record was 76 days set in 1927. Still, the amounts were well below-normal. State-wide, the average precipitation was 0.34 inches or 46 percent-of-normal.

February

The drought continued in all but the Southeast Division, the only area of the state that was above-normal for the month, with an average of 1.99 inches or 109 percent-of-normal. The greatest monthly precipitation totals were 4.37 inches at Coffey Waterworks, Montgomery County (NWS) and 4.05 inches at McCune 1.6 NW, Crawford County (CoCoRaHS).

March

March was a relatively quiet month. There was a continued pattern of wide temperatures swings, as might be expected with the dry air in place. The statewide average temperature was 44.7 degrees F, or 1.2 degrees warmer-than-normal. The cold days were not persistent enough to outweigh the warmer start to the month. Only the Northeast Divisions averaged below-normal temperatures for the month. The average temperature for the Northeast was 42.1 degrees F, or 0.4 degrees cooler-than-normal.

April

April set a new record as the coldest since 1895. The state-wide average temperature for the month was 46.7 degrees F. This was 6.5 degrees cooler-than-normal. There were 189 new record daily cold maximum temperatures, of which 18 set new record low maximums for the month. In addition, there were 291 new daily record low minimum temperatures, of which 3 set new records for the month. The lack of tornadoes in April made for the latest start to the tornado season since 2000.

May

May came close to setting the record as the hottest since 1895. The state-wide average temperature for the month was 70.6 degrees F. This was 7.2 degrees warmer-than-normal, and ranked as the second warmest. The swing from the cold of April to the warmth of May was the largest change on record at 23.7 degrees, and created a lot of difficulty for crops. One of the most destructive severe weather events was the heavy flooding in Graham and Gove counties, where widespread rainfall amounts in excess of 4 inches were reported.

June

While the heat in June was less dramatic as May, June still came in as the 7th warmest since 1895. The state-wide average for the month was 77.9 degrees F. This was 4.2 degrees warmer-than-normal. There were 50 new record daily warm maximum temperatures. The real warmth came in the low temperatures where there were 116 new daily record warm minimum temperatures. Two of those set records for the warmest minimum temperatures for June at those locations. With the resurgence of moisture, severe weather reports during the month also increased. Tornado numbers were lower than in May with only 4 tornadoes reported. Unfortunately, one hit the town of Eureka. Eight people were injured and the damage was widespread. In addition to the tornado damage, there were significant damages from hail and wind storms. Total storm reports: 4 tornadoes, 105 hail events, and 268 reports of damaging wind.

July

July started out warm but ended with a cool pattern. State-wide average temperature for the month was 79.0 degrees F. This was just 0.4 degrees warmer-than-normal, and ranks as the 55th warmest since 1895. The July precipitation showed a similar split pattern, with the greatest rainfall totals in the western and central parts of the state. The state-wide average precipitation was 3.94 inches which was 110 percent-of-normal. The division with the largest surplus was the Southwest Division, with an average of 5.56 inches, or 205 percent-of-normal. During the last week of July, 88 out of 106 reporting stations in the Southwest Division had 2 inches or more of precipitation. While only one tornado was reported, wind and hail caused significant damage. In one instance, storm damage contributed to a house explosion in Topeka. Several people were injured. Damage to the home was estimated at \$150,000 with damage to neighboring homes at \$100,000. Total storm reports: 1 tornado, 50 hail events, and 135 reports of damaging wind.

August

After a very warm start to the summer, August had a cooler note. State-wide average temperature for the month was 76.5 degrees F. This is 1.5 degrees cooler-than-normal, and ranks as the 37th coolest since 1895. The August precipitation showed a more even distribution than earlier in the summer and brought drought relief. The state-wide average precipitation was 4.17 inches which was 125 percent-of-normal. Wind and hail caused significant damage in Sherman, Cheyenne, and Rooks counties.

September

Rainfall was the big story with NWS Coop station at Marysville, Marshall County, reporting 12.23 inches; the CoCoRaHS station at Manhattan 3.7 N, Riley County, 11.37 inches; and the Kansas Mesonet on the North Farm at Manhattan, 8.00 inches. Most of the rainfall occurred during the first week of the month, particularly over the Labor Day weekend. The flooding produced by the intense rains resulted in a Governor's disaster declaration that covered 5 counties: Jewell, Kingman, Marshall, Pratt, and Riley.

October

October was a very wet month across Kansas. It actually ranked as the second wettest October since 1895. The wettest October on record was in 1941 when the state-wide average was 5.99 inches. This

year, the state-wide average precipitation was 5.88 inches, or 259 percent-of-normal. Not all precipitation was in the form of rainfall. A total of 257 stations reported snowfall in October, with monthly totals ranging from trace amounts in eastern Kansas to 9 inches at the CoCoRaHS station north of St. Francis, Cheyenne County.

November

November was drier-than-normal across most of the state, providing a welcome relief to the very wet conditions in October. Severe winter weather was the main feature for the month, with blizzard-conditions across most of central and northern Kansas on the November 25-26. Sadly, there was one fatality when a stranded motorist attempted to walk to safety and died from exposure.

December

December was wetter-than-normal across most of the state, but the precipitation fell mostly at the beginning and end of the month. With over 600 reports, the average amount on December 1 was 0.69 inches; for the 27th (the second big event), the average amount was 1.26 inches based on 625 reports. State-wide average precipitation for December was 2.22 inches, or 232 percent-of-normal.

What will 2019 bring to Kansas? Keep up-to-date on the latest weather impacts and developments with the Extension Agronomy eUpdate, the [Kansas Climate Page](#), and the [Kansas Mesonet](#).

Mary Knapp, Assistant State Climatologist and Weather Data Library
mknapp@ksu.edu

4. K-State Pre-Plant Corn Schools - February 2019

The Department of Agronomy and K-State Research and Extension, in partnership with Kansas Corn, are planning to host three Corn Pre-Plant Schools in 2019. These schools are designed to provide in-depth training for corn producers across Kansas with targeted information for each location.

Each school is free to attend and will have lunch provided thanks to support provided by Pioneer. A range of topics will be covered and vary by location including: corn management, high-yielding corn factors, weed control, soil fertility and nutrient management, soil health considerations, insect management, corn market and policy perspectives, and grower panel discussion.

Pre-Plant Corn Schools

- **February 11 – Parsons**

Registration begins at 7:45 am, program from 8:30 am – 1:00 pm
Southeast Research and Extension Center, 25092 Ness Road, Parsons

- **February 13 – Hesston**

Registration begins at 7:45 am, program from 8:30 am – 1:00 pm
Dyck Arboretum of the Plains, 177 W Hickory Street, Hesston

- **February 15 – Garden City**

Registration begins at 7:45 am, program from 8:30 am – 1:00 pm
Pioneer Garden City Research Station, 1455 East Parallel Road, Garden City

To register for any of the schools, please go online at <https://kscorn.com/CornSchool/>. Pre-registration is still open! Please try to register one week prior to the event you wish to attend.

CCA and CEU credits have been applied for. Additional local sponsors include Ag Risk Solutions and the Andersons.

Ignacio Ciampitti, Crop Production and Cropping Systems Specialist
ciampitti@ksu.edu

Stacy Mayo-Martinez, Kansas Corn
smayo@ksgrains.com

Kathy Gehl, Extension Program Coordinator
kgehl@ksu.edu

5. Don't miss the 2019 K-State Soybean Schools



A series of nine K-State Soybean Production Schools will be offered in late January to provide in-depth training targeted for soybean producers and key-stakeholders. The schools will be 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 15 – Tuesday

- **Wichita, KS** - 8:30 am to 1:00 pm
Sedgewick County Extension Education Center, 7001 W. 21st Street North
Contact: Jackie Fees, jfees@ksu.edu
- **Parsons, KS** - 3:00 to 7:00 pm
K-State Southeast Research and Extension Center
25092 Ness Road
Contact: James Coover, jcoover@ksu.edu

The January 15th schools will focus on weed control, crop production, soil fertility, insect management, and a market update.

January 16 – Wednesday

- **Paola, KS** - 8:30 am to 1:00 pm
Miami County Fairgrounds, Building 2
401 Wallace Park Drive

Contact: Katelyn Barthol, kbarth25@ksu.edu)

- **Holton, KS** - 3:00 to 7:00 pm
Northeast Kansas Heritage Complex, 12200 214th Road
Contact: David Hallauer, dhallaue@ksu.edu

The January 16th schools will include updates on weed control, crop production, soil fertility, diseases, insects, and the soybean market.

January 24 - Thursday

- **Hugoton, KS** - 8:30 am to 12:30 pm
4-H Building, 1130 S. Trindle (Fairgrounds)
Contact: Ronald Honig, rhonig@ksu.edu
- **Scott City, KS** - 3:00 to 7:00 pm
Wm. Carpenter 4-H Building, 608 N. Fairground Rd
Contact: John Beckman, jbeckman@ksu.edu

The January 24th schools will have speakers to address weed control, crop production, markets, and insects. In addition, there will be an irrigation update at the Scott City location.

January 25 – Friday

- **Hoxie, KS** - 8:30 am to 1:00 pm
Sheridan County 4-H Building, 940 Oak Ave.
Contact: Keith VanSlike, kvan@ksu.edu
- **Great Bend, KS** - 3:00 to 7:00 pm
American Ag Credit, 5634 10th Street
Contact: Stacy Campbell, scampbel@ksu.edu

The January 25th schools will provide updates on weed control, insects, crop production, and markets. In addition, there will be an irrigation update at the Hoxie location.

January 28 – Monday

- **Beloit, KS** - 9:00 am to 1:00 pm
NC Kansas Technical College Conference Room, 3033 U.S. Hwy 24
Contact: Sandra Wick, swick@ksu.edu

The January 28th school in Beloit will highlight weed control, crop production, soil fertility, insects, diseases, and markets.

Lunch will be provided courtesy of the Kansas Soybean Commission. There is no cost to attend, but participants are asked **to pre-register one week prior to 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.

Ignacio Ciampitti, Crop Production and Cropping Systems Specialist
ciampitti@ksu.edu

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

Kathy Gehl, Extension Program Coordinator
kgehl@ksu.edu

6. Updated: K-State Sorghum Schools scheduled for early February

A series of three K-State Sorghum Production Schools will be offered in early February to provide in-depth training targeted for sorghum producers and key-stakeholders. The schools are sponsored by Kansas Grain Sorghum Commission.



The final dates and locations have been set focusing with Schools across the state. Each school will start with registration at 8:30 a.m. and welcome remarks at 9:00 a.m. The program will adjourn at 1:30 p.m. for all the schools.

- **February 5, Tuesday - Garden City**
The Golf Club at Southwind
77 Grandview Dr.
Contact: Jennifer Stoss - jstoss@ksu.edu
- **February 6, Wednesday - Hays**
K-State Agricultural Research Center
1232 240th Ave.
Contact: Stacy Campbell - scampbel@ksu.edu
- **February 7, Thursday - Salina**
Saline County Expo Center
4-H Building
900 Greeley
Contact: Carl Garten - cgarten@ksu.edu

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

Lunch will be provided, courtesy of the Kansas Grain Sorghum Commission. There is no cost to attend, but participants are asked to pre-register by **January 29**. 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 nearest the location participants plan to attend.

Ignacio Ciampitti, Crop Production and Cropping Systems Specialist
ciampitti@ksu.edu

Pat Damman, Kansas Grain Sorghum Commission
pat@ksgrainsorghum.org

Kathy Gehl, Extension Program Coordinator
kgehl@ksu.edu

7. Cover Your Acres Winter Conference, January 15-16 in Oberlin

K-State Research and Extension is partnering with the Northwest Kansas Crop Residue Alliance to host the 15th annual Cover Your Acres Winter Conference for crop producers and consultants on January 15-16 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:

- A fresh look at High Plains irrigated soybean management
- Adjuvants and their effects on herbicides and tank mixes
- Current financial status of NW Kansas farms
- Dryland corn hybrids, seeding rates, and planting dates
- Getting peak performance from paraquat – Rates, adjuvants, droplets, and more
- Land values and rental rates – Where are we going?
- Managing insect resistance in corn
- Palmer amaranth management
- Remediation of eroded high pH hilltop soils with manure
- Top 3 mistakes in Northwest Kansas wheat production
- 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 “bull session” on Tuesday evening where attendees can visit with industry and university specialists while enjoying heavy hors d’oeuvres.

Early registration is due by January 9. The fee is \$45 for either January 15 or 16 or \$65 for both days. After January 9, 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 4 CEUs for Commercial Applicators.

To view the conference details and for online registration, visit www.northwest.ksu.edu/cover-your-acres. 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, and SureFire Ag. CCA and Commercial Applicator CEU’s have been applied for.

Cover Your Acres

January 15 and 16, 2019



Winter Conference The Gateway in Oberlin, KS

Register Online at www.northwest.ksu.edu/CoverYourAcres

2019 SPEAKER TOPICS

A fresh look at High Plains irrigated soybean management: Recent field-scale trials in Southwest Nebraska has evaluated seeding rates, row spacing, and in-season nitrogen applications. Information from these trials will be shared along with considerations for management.

Adjuvants and their effects on Herbicides and Tank Mixes: Many products are on the market. This session will focus on placement of those products to maximize herbicide and tank mix efficacy

Current financial status of NW Kansas farms: Using data from northwest Kansas farms, we take a look at opportunities for profitability and where producers should be alert for possible concerns.

Dryland corn hybrids, seeding rates, and planting dates: Research in northwest Kansas has evaluated over 30 hybrids for optimal seeding rate and differences in ear flex. Additionally, hybrid maturity x planting date combinations have been evaluated in another study. This session will discuss the results and their implications for dryland corn management.

Getting peak performance from paraquat - Rates, adjuvants, droplets and more: Paraquat is a valuable tool in management of resistant weeds such as Kochia and Palmer Amaranth. This session will look at how environment, application methods, and various other factors play a role in the efficacy of paraquat.

Land Values and Rental Rates - Where are we going? There are a lot of moving pieces in the land market and the many factors that drive rental rates. We'll take a look at the most recent data and discuss potential future directions and what it might mean to your business.

Managing Insect Resistance in Corn: This session will address the current resistance situation and discuss the various management options to control resistant insect populations and minimize the development of additional resistance.

Palmer Amaranth Management: A discussion of what makes Palmer Amaranth different than many of the weed species we face, the latest performance results from Western Kansas herbicide trials, and recommendations for developing an overall weed control strategy.

Remediation of eroded high pH hill-top soils with manure: A long-term study in Eastern Colorado started in 2006 to evaluate using beef manure at various rates, timings of application, and incorporation methods. Results and management recommendations will be shared.

Top 3 Mistakes in Northwest Kansas Wheat Production: We'll step through the growing season and discuss the most common production problems observed in the field and consider the management practices that can improve yields and profitability in wheat production.

Producer Panel Discussion: A producer panel will discuss various alternative crop options in the region. Potentially included in the discussion will be winter canola, dry edible beans, field peas, barley, and triticale.

	Room 1	Room 2	Room 3	Room 4
7:45 - 8:15	Registration			
8:15 - 8:20	Welcome			
8:30 - 9:20	Financial Status of NW KS Farms ¹ (J. Steele)	Managing Insect Resistance in Corn ^{1,2} (S. Zuhoff)	Remediating eroded high pH soils with manure ¹ (M. Vigil)	Adjuvant Technology (EGE Products)
9:30 - 10:20	The When, Where, Why, and How of Spray Adjuvants ^{1,2} (R. Zollinger)	Palmer Amaranth Management ^{1,2} (R. Currie)	Top 3 Mistakes Made in Wheat Production ¹ (J. Falk Jones)	(Sims Fertilizer & Chem)
10:20 - 10:50	View Exhibits			
10:50 - 11:40	Getting Peak Performance from Paraquat ^{1,2} (M. Hay)	Land Values and Rental Rates ¹ (M. Taylor)	High Plains Irrigated Soybean Management ¹ (S. Stepanovic)	(Bayer Crop Science)
11:50 - 12:40	Hybrids, Plant Dates, and Seeding Rates for Dryland Corn ¹ (L. Haag)	The When, Where, Why, and How of Spray Adjuvants ^{1,2} (R. Zollinger)	Lunch	
12:50 - 1:40	Land Values and Rental Rates ¹ (M. Taylor)	Getting Peak Performance from Paraquat ^{1,2} (M. Hay)		
1:50 - 2:40	Remediating eroded high pH soils with manure ¹ (M. Vigil)	Top 3 Mistakes Made in Wheat Production ¹ (J. Falk Jones)	Hybrids, Plant Dates, and Seeding Rates for Dryland Corn ¹ (L. Haag)	Creating a Drought Resilient Farm (Green Cover Seed)
2:40 - 3:30	View Exhibits			
3:30 - 4:00	Producer Panel: Canola, Field Pea, Dry Beans as Alternative Crops	High Plains Irrigated Soybean Management ¹ (S. Stepanovic)	Managing Insect Resistance in Corn ^{1,2} (S. Zuhoff)	Spray Applications and Palmer Amaranth Mgt. (Corteva Agriscience)
4:30 - 5:00	Palmer Amaranth Management ^{1,2} (R. Currie)	Financial Status of NW KS Farms ¹ (J. Steele)	(Nutrien Solutions)	Sunflower Industry Update (National Sunflower Assoc.)

Platinum Sponsors:

Pioneer
Hoxie Implement
Nutrien Ag Solutions
Lang Diesel

Bayer
National Sunflower Assoc.
Plains Equipment Group
SureFire Ag

Tuesday: Bull session with hors d'oeuvres begins at 5:00

¹ CCA CEUs applied for.
² Commercial Applicator CEUs applied for.

Lucas Haag, Northwest Area Crops and Soils Specialist

lhaag@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. Kansas Agricultural Technologies Conference, January 17-18 in Junction City

The Kansas Ag Research and Technology Association (KARTA) and K-State Research and Extension are proud to announce the line-up of speakers for the 22nd Annual Kansas Ag Tech Conference, taking place January 17-18, 2019 in Junction City, Kansas. The annual 2-day event is popular among precision ag producers, applicators, and industry brands because of its unique format that creates lively discussions among the most efficiency-conscious farmers in the state of Kansas. Presentations at this year's conference include:

- **Savannah Crossman - Soybean Growers Association & Advanced Ag Alliance**
"Variable Rate Corn Seeding, Lessons Learned & Future Visions"
- **Justin Heath - Smart Ag**
"It Has Arrived: Farm-Ready Autonomous Tractor Technology"
- **Ajay Sharda - Kansas State University Agricultural Engineering**
"Planter Down-Force Systems: Engineering and Agronomic Considerations"
- **Kevin Heikes - IN10T**
"Farmer Centered Innovations - The Solution to Better Innovation and Faster Adoption"
- **Bruce Erickson - Purdue University**
"Precision Ag Technology Adoption - Looking Back, Looking Forward"
- **Joe Luck - University of Nebraska**
"Multi-Hybrid Planting: Lessons From On-Farm Trials - What Works and Will it Pay?"

More information and bios for each of the speakers can be found on KARTA's website at www.KARTAonline.org. The conference will also include a rapid fire Q&A with members of the K-State faculty and presentations from KARTA's recent grant recipients as they present findings from their on-farm research trials. Industry partners will also be there to exhibit and provide updates on the latest ag technology in the private sector.

Registration for the two-day conference is \$275 including all meals and refreshments for both days. Guests can also take advantage of a \$50 discount on their conference admission if they purchase a 2019 KARTA membership during checkout. Funds generated through KARTA's association dues and conference registrations are used to provide on-farm research grants and instructional workshops throughout the year.

For more information or to get signed up, visit www.KARTAonline.org. Be sure to follow KARTA on Facebook and Twitter. This year's event hashtag is #KARTA2019.

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.