

Extension Agronomy

eUpdate

01/06/2022

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. New publication on managing stress for people working in agriculture

As a Kansan working in agriculture, you may experience elevated stress as you work hard to produce quality products, sustain your operation, and support your family. A new publication, MF3568 -

"Managing Stress: Tips and Resources", is available online at bookstore.ksre.ksu.edu/pubs/MF3568.pdf and hard copies can be purchased through the KSRE Bookstore.

Agriculture workers, employees, and the family often work day and night and cannot always avoid stressful and overwhelming situations, especially during a pandemic, drought, low market prices, and other situations that are out of their control. Resources provided here can assist you or someone you know that needs assistance in managing and overcoming stress. Caring for your own health and wellness in your high-stress profession is often overlooked but is just as critical as caring for your operation.

Identifying Signs of Stress

Physical	Emotional	Behavioral	Cognitive	Self-Worth
Headaches	Sadness/Depression	Irritability	Memory Loss	Feels Like a Failure
Ulcers	Bitterness	Passive-Aggressive Behavior	Lack of Concentration	Can't Do Anything Right
Problems Sleeping	Anger	Anger	Difficulty with Simple Decisions	Not Being Able to Fix Things
Frequent Illness	Anxiety	Increased Alcohol Use		
Exhaustion	Loss of Spirit	Taking Drugs		
	Loss of Sense of Humor	Isolation		
		Violence		

How to Manage Your Stress

- Take deep breaths
- Meditate or sit quietly
- Connect with people in your social network
- Talk to yourself in a positive manner
- Exercise, eat good foods, get quality sleep
- Speak with a mental health professional

Reference: Colorado State University, "Managing Stress During Tough Times," R.J. Fetsch

Wellbeing and Mental Health Resources

- Kansas Community Mental Health Centers www.acmhck.org
- Mayo Clinic Mindfulness Exercises; NDSU Nourish Your Body with Sleep www.agrability.ksu.edu/resources

Kansas State University Department of Agronomy 2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506

- Man Therapy, <u>www.mantherapy.org</u>
- Office on Women's Health, www.womenshealth.gov
- Kansas Ag Stress Resources, phone: 1-800-447-1985, www.kansasagstress.org
- National Suicide Prevention Hotline, phone: 1-800-273-8255, www.suicidepreventionlifeline.org
- Kansas Suicide Prevention HQ, phone: 1-785-841-2345, or text Kansas to 741741, www.ksphq.org

Financial Services and Onsite Assistance

- Kansas Agricultural Mediation Services (KAMS), www.ksre.k-state.edu/kams
- Kansas State University Farm Analyst Program, www.agmanager.info
- Kansas AgrAbility Project, <u>www.agrability.ksu.edu</u>

Veteran Support

- Farmer Veteran Coalition, www.farmvetco.org
- Military OneSource, <u>www.militaryonesource.com</u>
- Veterans Crisis Line, phone: 1-800-273-8255, option 1, www.veteranscrisisline.net

Videos

- Farm Stress: You Are Not Alone, <u>www.agrability.ksu.edu/resources</u>
- The Surprising Reality of Depression and Suicide Among Farmers, www.agrability.ksu.edu/resources

The Kansas AgrAbility Project's primary purpose is to directly assist Kansas farmers/ranchers, their employees, and family members who have become injured, have a health condition, or a disability to remain actively engaged in production agriculture for as long as they choose. The Kansas AgrAbility Project is a partnership between Kansas State University, Southeast Kansas Independent Living, and Assistive Technology for Kansans.

Website: agrability.ksu.edu | Email: agrability@ksu.edu | Telephone: 1-800-KAN-DO-IT

This publication is available online at: https://bookstore.ksre.ksu.edu/pubs/MF3568.pdf

Tawnie Larson, Project Consultant tawnie@ksu.edu

Daniel Flippo, Co-Project Director

Edwin Brokesh, Co-Project Director

2. Stay connected to K-State Agronomy with social media and digital resources

Did you know that the K-State Agronomy department has several social media accounts and other digital resources available to everyone for free? These outreach tools include the Extension Agronomy eUpdate, Twitter, Instagram, Facebook, and YouTube, in addition to our departmental website, www.agronomy.k-state.edu.

The Department of Agronomy is doing outstanding work in extension, teaching, and research. Our goal is to keep you up-to-date on all things K-State Agronomy including: faculty and student activities, our best recommendations for crop, forage, and soil management in Kansas, and current crop conditions. Our social media and electronic forums emphasize efficient agronomic practices, current research, student accomplishments within the department, new faculty hires and retirements, and much more.

Extension Agronomy eUpdate

The article you're reading now is part of a regular weekly electronic publication called the Extension Agronomy eUpdate. The national award-winning Agronomy eUpdate provides timely information across a wide range of agricultural topics and agronomic issues. Contributors to the eUpdate include not only extension specialists and researchers in the Agronomy department, but also plant pathology, entomology, agricultural economics, and animal science.

"The Extension Agronomy eUpdate is an extremely valuable resource that targets a wide range of end users associated with Kansas agriculture. It represents a collaborative outreach effort between our outstanding agronomy specialists and other departments to provide up-to-date information on current agronomic issues affecting Kansas and the surrounding region and it's free!" – Kathy Gehl, eUpdate editor.

The eUpdate is offered as a free resource to all individuals. You can subscribe to the eUpdate by visiting the homepage at https://eupdate.agronomy.ksu.edu/. All it takes to get subscribed is your name and email address.

The eUpdate homepage features the current eUpdate as well as access to detailed archives going back to 2013. On Thursday each week, the eUpdate is emailed to subscribers as soon as it is published. The reach of the eUpdate goes well beyond Kansas and the Midwest. Just in 2021 alone, the eUpdate website has had over 52,000 users from throughout the US and many countries around the globe (Figure 1).

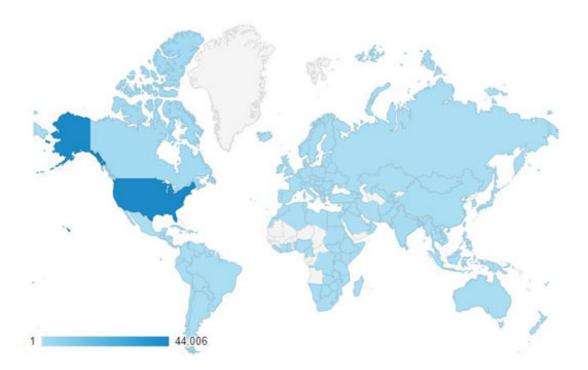


Figure 1. Geographical location of web traffic associated with the eUpdate website from January 1, 2021 to December 3, 2021. Countries shaded in blue represent at least 1 visitor to the eUpdate website. Map provided by Google Analytics.

Twitter (@KStateAgron)



K-State Agronomy became active on Twitter in 2013 with the goal of reaching practicing professionals in agriculture with the latest crop and forage production practices and crop condition updates. Our Twitter postings have since gained a large base of followers, with over 8,200 Twitter followers and an average of over 70,000 tweet impressions each month.

You can follow the Agronomy department on Twitter at @KStateAgron.

Instagram (@ksuagronomy)



The Department of Agronomy uses Instagram to reach potential and current students, as well as alumni. Our Instagram posts provide a flow of images highlighting student activities, current research projects, and other various happenings in the department (Figure 2). With this target audience in mind, the department hopes to attract future K-State students to Agronomy and keep interested alumni members informed on what the department is doing - in picture form!

You can follow us on Instagram at @ksuagronomy.

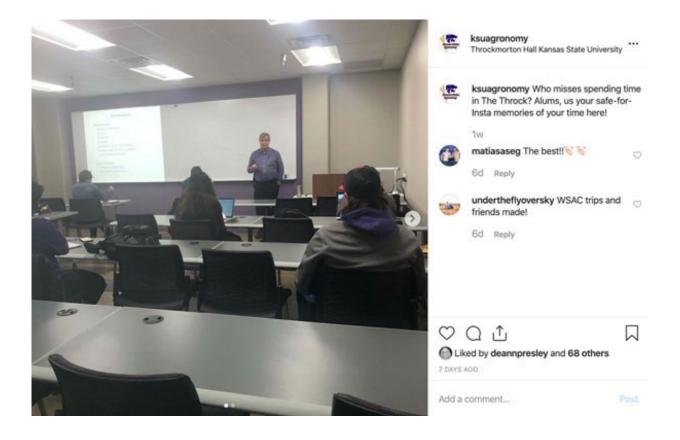


Figure 2. Instagram post highlighting an updated classroom in Throckmorton Hall.

Facebook (@kstate.agronomy)



Our Facebook page has been providing current updates on the department since 2012. Facebook recognizes student and faculty accomplishments, as well as events hosted by the department (Figure 3). You can access our Facebook page at @kstate.agronomy



K-State Crops Team Wins Regional Contest at Oklahoma State on Oct. 9. Individual results 1. Evan Bott. 2. Alex Kaufmann 6. Trevor Mullen. Alternate team Ashley Chandler, Leah Hudson, Ellie Braun. Coach Kevin Donnelly, Asst. Coaches Luke Ryan and Sarah Zerger.



Figure 3. Example of a recent Facebook post highlighting one of the many accomplishments from the Crops Team.

YouTube (KStateAgronomy)



Last but not least, K-State Agronomy hosts a YouTube channel to reach producers, practicing agronomists, and other agronomy professionals. This is our newest platform and we are trying to grow our subscribers. In 2021, our videos generated over 7,000 views totally 766 hours of watch time. These videos vary in scope and topic, ranging from research spotlights to extension presentations. The most watched video in 2021 features Dr. DeAnn Presley exploring a soil profile and explaining the features of the different soil horizons – check it out!

Be sure to explore this resource and get subscribed (it's also free!). Simply go to https://www.youtube.com/user/KStateAgronomy.

Additional online resources

Stay tuned to the eUpdate in the coming weeks as we highlight other valuable resources that can be accessed online. There's a wealth of agronomic information out there if you know where to look!

Kathy Gehl, Agronomy eUpdate Editor kgehl@ksu.edu

3. Look back at the significant weather events in Kansas during 2021

January - Wind, fire, dust, and snow on Jan. 14-15

A very strong cold front moved across the Plains on the 14/15th (Figure 1). High winds up to 60-70 mph were measured across much of western Kansas. As a result, dust storms were reported in several counties with zero visibility, accidents, and road closures as a result. As the storm system moved off to the east, a secondary front brought light snow to northeast Kansas with 1-2" reported.

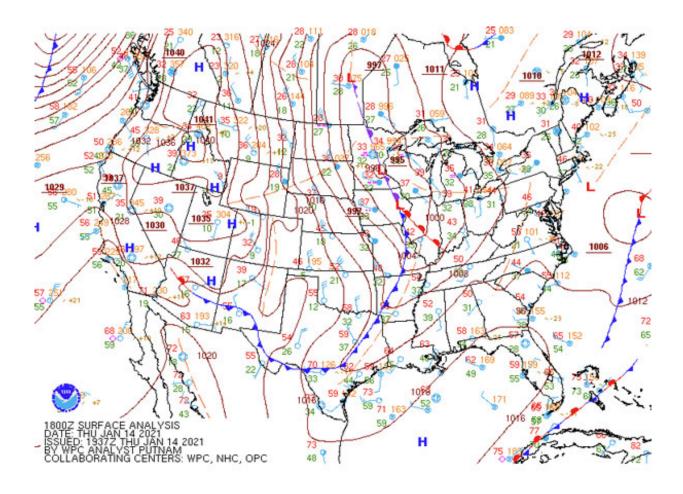


Figure 1. Surface map on January 14. Source: NOAA WPC.

February - Extreme record cold

An incredible number of record low temperatures (283) were set during a cold snap that lasted from February 5 to the 21st. Eight locations broke all-time record low temperatures (Figure 2). The coldest morning was Feb. 16 when temperatures dropped as low as -29.6 °F in Republic County with -29 °F in Washington and Sherman County. Wind chill values as low as -45 °F were measured in the northwest. Many locations spent weeks with temperatures below freezing and several days below zero. Lastly, snow was on the ground for much of the state with several light-to-moderate snow events during the cold snap.



Figure 2. All-time record coldest minimum temperatures tied or broken in February 2021. Source: NOAA NCEI.

March - Mid-month rainfall

After a dry start with wildfires reported in northcentral and northeast (Crawford Fire southwest of Topeka on March 8 was a notable fire), mid-month rains provided much needed drought relief for the state. Moderate-to-heavy rains brought 226% of statewide normal rainfall for March (Figure 3). This resulted in the fourth wettest March on record compared to the last 126 previous years.

Departure from Normal for March 2021





Highcharts.com © USA Census Bureau

Figure 3. Average departure from normal for precipitation at the county level for March. Source: Kansas State Climate Office.

April - Mid-month cold and snow

After a wet March, April was dry with much of the state only receiving a third of their monthly precipitation. In addition, it was cooler than normal, highlighted by a brief cold period mid-month. Forty-eight record low minimum temperatures were broken between April 18-22, with values as low as 15 °F. In addition, a late-season snow storm impacted much of I-70 and northward (Figure 4). Highest snow totals were up to 6" in north central Kansas.



Figure 4. Snow in Saint George, KS on April 20, 2021.

May - Heavy rain and severe storms

Storm season ramped up the second half of May with numerous tornadoes and other severe weather reports. This activity ended a streak for much of south-central Kansas (Wichita's National Weather Service warning area) of no tornadoes at 611 days! Nearly doubling the old tornado-less record for that area (Figure 5). In addition to severe weather, flooding was also prevalent. Tribune measured over 5.5" on the 16th making it the second highest precipitation ever recorded in a day there. Paradise Creek near Natoma overtopped its banks with significant flooding, closing roads, and inundating homes.



NWS Wichita Tornado Drought has Ended

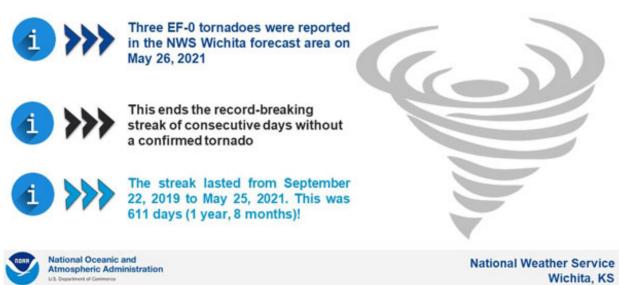


Figure 5. National Weather Service graphic about the tornado-less streak for south central Kansas. Source: NOAA NWS.

June - Wet and stormy end to the month

After a mostly dry start to the month and hot temperatures mid-month, June finished wet. Widespread precipitation focused on eastern Kansas resulted in weekly totals over 5-7" in numerous locations (Figure 6). Flooding was reported at several locations. In addition, several severe wind episodes resulted in damage throughout the state, with multiple measured gusts over 70 mph. June observed 149 severe wind reports across the state, nearly double the monthly average. However, no tornadoes were reported for the month, an unusual feat for June which averages around fifteen.

Observed - 7 Days Through Yesterday

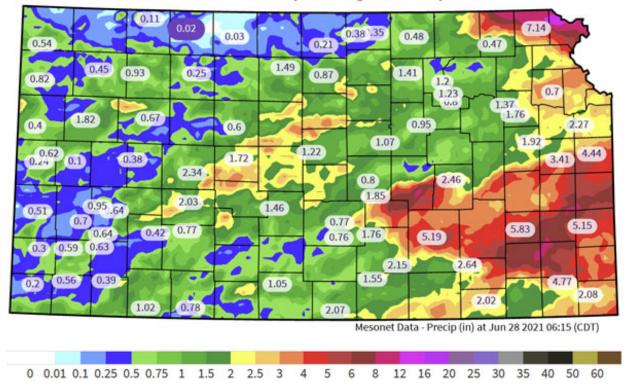


Figure 6. Seven-day precipitation summary ending on June 28, 2021 from the Kansas Mesonet.

July - Cooler than normal temperatures

Temperatures are usually warmest in July and August for Kansas. However in 2021, temperatures struggled to reach average high temperatures for much of the month. Growing degree accumulations were a concern for much of the state with the cooler weather. While there was a warm period to finish July, statewide average temperatures for the month were 38th coldest in the last 127 years (Figure 7).

Statewide Average Temperature Ranks

July 2021 Period: 1895–2021

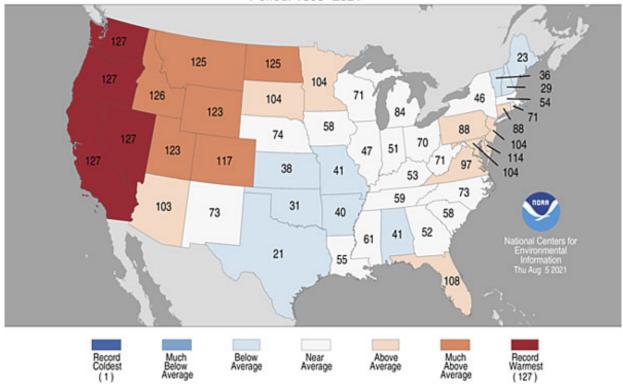


Figure 7. July 2021 state average temperature rankings. Source: NOAA NCEL.

August - Small storms, big impact

Several isolated supercell thunderstorms occurred on the August 10 and August 15 over west and central Kansas (Figure 8). The storms produced severe winds in excess of 75 mph and hail as large as baseballs. Building and crop hail damage were reported in Mitchell, Ford, and Rice counties. In addition, train cars were flipped in Rice County from very strong winds.



Figure 8. Isolated thunderstorm as viewed from Scott City 3SE Mesonet's webcam August 11, 2021.

September - Heavy rains but dry

Highlights for September were bookended by heavy rain events to start and finish the month. However in between, dry and warm conditions prevailed and drought continued to persist. Early September rainfall was focused over the Flint Hills and eastern Kansas where as much as 7" was reported. However, dry soils soaked up the moisture readily and impacts were short lived with very warm/dry conditions for much of the month (Figure 9). Another widespread rain event occurred on Sept. 29, with much of western Kansas receiving an inch and highest amounts 5" in Barber County.



Figure 9. Morris County dirt road less than a week after a 5-7" rainfall event on September 8, 2021.

October - Later than normal freeze

October 14 and 16 brought the first sub-32 °F readings of the fall for northwest and western Kansas respectively. This was later than normal, with a longer than average growing season. Much of the central and eastern part of the state didn't see a freeze this month. In fact, these areas didn't record the end of their growing season until mid-November. This was the latest on record for several locations and resulted in one of the longest growing seasons for Manhattan (Figure 10).

Manhattan Growing Season Length since 1894 (2021 starred)

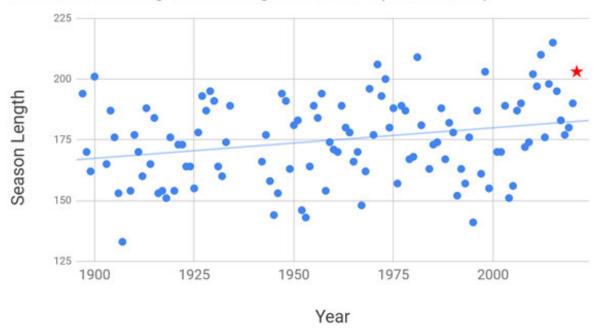


Figure 10. Manhattan growing season length since 1894. Source: Kansas State Climate Office.

November - Dry and very warm with drought expansion

As the state begins to enter the driest time of the year, it becomes more difficult for drought conditions to improve. However, almost no moisture occurred in the western half of the state in November. In addition, the latter half of the month initiated a prolonged period of much abovenormal temperatures that continued into December. Combined with periods of gusty winds, moisture demand was significantly increased. Extreme drought was introduced in the southwest. Additionally, increases in severe, moderate drought and abnormally dry conditions also occurred in November (Figure 11).

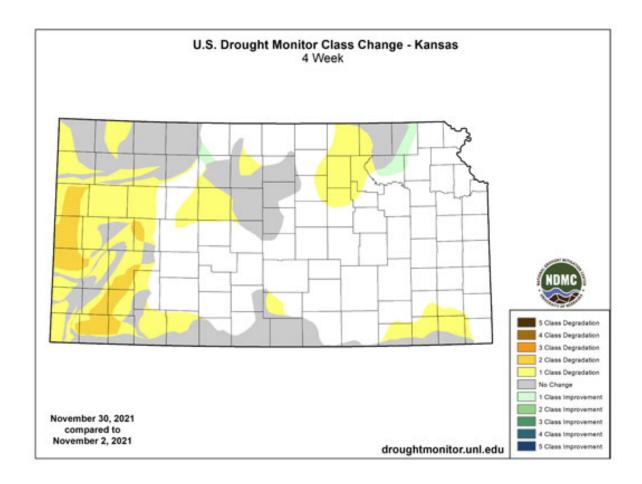


Figure 11. Change in drought status from the beginning to the end of November 2021. Source: droughtmonitor.unl.edu

December - Historic wind storm

A historic storm developed in eastern Colorado, moved through Kansas and into central Nebraska. Winds increased quickly in the morning out of the south, becoming southwest by mid-day. A dryline moved east across Kansas with widespread non-thunderstorm gusts of 80 to 100 mph. Significant blowing dust resulted in zero visibility and road closures for all of western Kansas. Over 160,000 acres burned in at least 18 large wildfires. The largest, the Four Counties Fire, burned 120,000 acres within Rooks, Ellis, Russell, and Osborne counties. Severe thunderstorms developed in central Kansas and impacted northern and eastern portions of the state with 94 wind reports. There were six tornado warnings, the highest ever in any December, but no tornadoes.



Figure 12. Structure loss on the South Wichita County wildfire. Source: Kansas Forest Service.

Christopher "Chip" Redmond, Kansas Mesonet/Weather Data Library christopherredmond@ksu.edu

4. Register now for the Soil Fertility Management meetings

High nitrogen fertilizer prices have many producers in Kansas wondering how to get the most return on their fertilizer applications heading into the next growing season. The K-State Department of Agronomy, in collaboration with several Extension districts/counties in central and western Kansas, is hosting four Soil Fertility Management meetings in January.

Topics discussed at the meeting include fertilizer storage methods, maximum rate of return for applied N, "growing N" with manure or cover crops, application timing and methods, and the latest research updates from K-State.

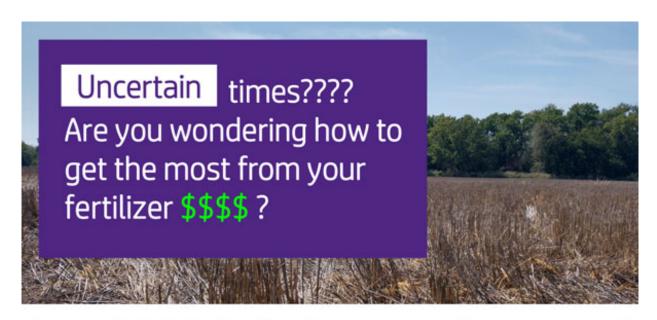
There is no cost to attend, but **registration is requested by January 6, 2022** for any of the locations. Online registration is available at: bit.ly/2022KSUFertilityMeetings. Contact your local Extension office if online registration is unavailable. Three CCA credits have been applied for.

January 11

- Ellsworth, KS 9:00 am to 12:00 pm National Guard Armory 220 West Douglas Avenue
- Rush Center, KS 3:00 pm to 6:00 pm Senior Center
 220 Washington Street

January 12

- Goodland, KS 9:00 am to 12:00 pm Sherman Co. 4-H Building 417 N. Main
- Hoxie, KS 3:00 pm to 6:00 pm
 4-H Building
 Sheridan Co. Fairgrounds



KSU Soil Fertility Management Meetings January 2022

Collaboration with KSU Central/Western Extension Districts/Counties

January 11, 2022

ELLSWORTH 9:00 a.m. to NOON

National Guard Armory 220 West Douglas Avenue

RUSH CENTER 3:00 p.m. to 6:00 p.m.

Senior Center

220 Washington Street

January 12, 2022

GOODLAND

9:00 a.m. to Noon Sherman Co. 4-H Building

417 N. Main

HOXIE

3:00 p.m. to 6:00 p.m. 4-H Building

Sheridan Co. Fairgrounds

Join us at any of the locations in NC/NW Kansas to learn about optimizing your fertilizer applications especially with the high cost and limited availability!

Topics will include Storage methods; Maximum rate of return for N; "Growing N" with manure or cover crops; Application timing and methods along with KSU Research updates.

NO COST to attend, but registration is requested by January 6 for any of the locations ONLINE at:

bit.ly/2022KSUFertilityMeetings

If online is unavailable or you have additional questions contact your local Extension Office.

3 CCA credits applied for.



Kamais Sable University is committed to making its services, activities and programs accessible to all participants, you have special requirements due to a physical, Vision, or hearing disability, contact Sandra L. Wick, Post Rock Extension District, Grop Production Agent, 785-282-6823.

Kansias State University Agricultural Experiment Station and Cooperative Extension Service

K. State Day words and Extensions is an around proportional and discount of the proportional and prop

5. Cover Your Acres Winter Conference to be held in person, January 18-19

K-State Research and Extension will host the 19th annual Cover Your Acres Winter Conference for crop producers and consultants on January 18 and 19. The conference will take place in the traditional in-person format 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 representative discussing the following topics:

- Changing Strategies in Insect Management Anthony Zukoff - KSU
- Current Financial Status of NW Kansas Farms
 Jordan Steele and Mark Wood KFMA
- Economics of Soil Fertility and Testing Lucas Haag - KSU
- **High Plains Weather**Jeff Hutton NWS
- Managing Hayed and Grazed Forages for Profit John Holman - KSU
- Rolling with the Punches in Weed Management
 Sarah Lancaster KSU
- Soil Carbon: What You Need to Know Peter Tomlinson - KSU
- Soil Health Strategies in Dryland
 Dale Younker and Matalyn Stark NRCS
- Taking Weed Control to the Next Level
 Cody Creech UNL
- Which Corners Can I Cut: Maximizing Fertilizer Value Dorivar Ruiz Diaz - KSU
- Panel Discussion: Successes and Failures in Herbicide Efficacy

The same programs will be offered both days of the conference (program schedule posted below). 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 representatives and conference speakers while enjoying heavy hor d'oeurves.

Online registration is due by January 11. The fee is \$60 for Tuesday, January 18th, \$55 for Wednesday, January 19th, or \$80 for both days. The registration fee for walk-ins on each day of the conference is \$80. 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 3 CEUs for Commercial Applicators.

To view the conference details, lodging accommodations, and online registration, visit

Premier sponsors of this year's conference include AKRS Equipment Solutions, Hoxie Implement, Lang Diesel, Nutrien Ag Solutions, SureFire Ag Systems and K-State Research and Extension.



Lucas Haag, Area Agronomist, Northwest Research-Extension Center, Colby lhaag@ksu.edu

6. K-State Soybean Schools scheduled for late January and early February

A series of six K-State Soybean Production Schools will be offered in late January and early February 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, risk management, and disease management.

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

Beloit, KS - January 25 (Tuesday) - 8:00 am to 1:00 pm

First Christian Church in Beloit, 321 N. Mill Street Contact: Sandra Wick, swick@ksu.edu

Holton, KS - January 25 (Tuesday) - 3:00 to 7:00 pm

NEK Heritage Complex – Jackson County Fairgrounds (south of Holton), 12200 214th Rd Contact: David Hallauer, <u>dhallaue@ksu.edu</u>

Newton, KS - February 1 (Tuesday) - 8:00 am to 1:00 pm

Meridian Conference Center, 1420 E. Broadway Ct Contact: Ryan Flaming, flaming@ksu.edu

Parsons, KS - February 1 (Tuesday) - 3:00 to 7:00 pm

Southeast Research and Extension Center, 25092 Ness Rd Contact: James Coover, icoover@ksu.edu

Oakley, KS - February 8 (Tuesday) - 8:00 am to 1:00 pm

Buffalo Bill Cultural Center, 3083 US-83 Contact: Kelsi Wertz, kjwertz@ksu.edu

Great Bend, KS - February 8 (Tuesday) - 3:00 to 7:00 pm

Knights of Columbus Hall, 723 Main Street Contact: Stacy Campbell, scampbel@ksu.edu

Lunch/dinner will be provided courtesy of the Kansas Soybean Commission. There is no cost to attend, but participants are asked **to pre-register by Friday, January 14**. Online registration is available at http://bit.ly/KSUSoybean. You can also register by emailing/calling the nearest K-State Research and Extension office for the location you plan to attend (contact emails for each location are listed above).



Ignacio Ciampitti, Farming Systems ciampitti@ksu.edu

Kathy Gehl, Extension Program Coordinator kgehl@ksu.edu



The popular Kansas Corn School series is returning in January and February with four one-day inperson schools to be held across the state and one virtual session. K-State Research and Extension is partnering with Kansas Corn to offer the winter learning sessions for Kansas corn farmers.

The schools will cover a number of issues facing corn producers and are tailored to each region. Topics include weed control, insect resistance, fertility management, disease management and late-planting seasons, economics, and farm policy. Morning refreshments and a hot lunch are provided at the in-person schools.

In-person schools will begin at 8:30 am with registration and the program will end around 1:00 pm. The virtual school will take place on Zoom from 6:00 to 8:00 pm on February 3.

2022 Kansas Corn Schools

- January 7 Oakley
 Buffalo Bill Cultural Center
- January 14 Salina
 Hilton Garden Inn
- January 18 Parsons
 Holiday Inn Express Convention Center
- February 3 Virtual Online only via Zoom
- February 24 Hiawatha Fisher Center

Kansas State University Department of Agronomy 2004 Throckmorton Plant Sciences Center | Manhattan, KS 66506 Registration for your school of choice is available online at https://kscorn.com/cornschool/

Ignacio Ciampitti, Farming Systems ciampitti@ksu.edu

Deb Ohlde, Director of Grower Services dohlde@ksgrains.com