

By Ron Wilson **Executive Director of** the Huck Boyd **Institute**



Sherry Ronnebaum, **Axtell Grocery**

"Volunteers do not necessarily have the time; they just have the heart."

That quote by author Elizabeth Andrew might be a way to describe the many volunteers who help their communities in rural Kansas. Today we'll meet a group of volunteers who have completed several community projects, the most recent of which is to bring grocery service back to their hometown.

Sherry Ronnebaum and her husband David are among the volunteers involved with the Axtell Economic Development Corporation, or AEDC. Sherry and Dave were the long-time owners of Axtell's hardware store from which they recently retired, although Dave continues to do appliance repair.

In 1992, the American Legion building in Axtell burned down. A group of volunteers led the effort to rebuild it as the Legion Community Building.

AEDC was formed as a 501(c)(3) organization to implement improvement projects for the community. In 2002, AEDC worked on a new firehouse that also housed emergency services. In 2021, Dave Ronnebaum spearheaded the effort to build an addition to the Legion build-

The town's café had been torn down after a succession of owners. AEDC led the fundraising for a new one. The new restaurant is called ACE's Café - ACE being an acronym for Axtell Community

AEDC works with community organizations such as PRIDE - now called Kansas Community Empowerment - and others. "We have a very active Knights of Columbus group," Sherry said. "They put on an annual fish fry and a big consignment sale with the commissions given to charity.'

Then a bigger challenge hit. The town's only grocery store closed in February, 2022. A committee was formed to look into what should be done. It concluded that the old "whole hog"

building should be torn down and a new one constructed.

"We held a community meeting to see how many people were interested, and we asked people what they would donate for a new store," Sherry said. 'We were overwhelmed."

Approximately \$481,000 was pledged in support.

A board of directors was appointed and an LLC formed for the new store, called Axtell Community Grocery. More than 80 investors and donors supported the store. Several volunteers visited other small town stores to get

"(The other store owners) were more than helpful," Sherry said.

In June 2022, Sherry and Dave Ronnebaum attended the National Rural Grocery Summit sponsored by K-State's Rural Grocery Initiative and brought back ideas.

The AWG company signed up to be the store's wholesale supplier and was instrumental in the new store's design. "They were fantastic," Sherry chitect and consultant to assist with the design and décor. Construction was headed up by a retired

AWG provided an ar-

contractor, the local lumberyard owner in Axtell. Local citizens helped, including some high school

students.

On January 18, 2023, the new Axtell Community Grocery opened its doors. "The new store is double the size of what we had before," Sherry said. A small staff has been hired, but Sherry and other volunteers come in on Mondays and Thursdays to put away merchandise after the

trucks deliver. "We had gone a whole year without a store, so we're really appreciative of it," Sherry said. "We don't want our little town to die. A few people are moving back because they can work from home. Our goal is to keep our rural

way of life sustainable." It's remarkable to find these services in a rural town such as Axtell, population 399 people. Now, that's rural.

There's no big city budget to support this work. Volunteers have led these community improvements through the years. "We're known as the volunteer community," Sherry said. "We're very proud of what we've accomplished.'

For more information, search for Axtell Community Grocery on Facebook.

Volunteers. In a rural community, they may not have much time to give, but in a community like Axtell they have a lot of heart.

We commend Sherry and Dave Ronnebaum, the Axtell Community Development Corporation, and all those who are making a difference by supporting their community. Community spirit is at the heart of their success.

Audio and text files of Kansas Profiles are available at http://www.kansasprofile.com. For more information about the Huck Boyd Institute, interested persons can visit http:// www.huckboydinstitute.

Producers can now go

HotHog, a new smartphone application ("app") that predicts heat stress in pigs, is now available for download and use, a team of Agricultural Research Service (ARS) and university scientists announced recently.

Available in the Apple App Store and Google Play Store, HotHog taps into local weather data to predict the relative comfort or heat stress levels of pigs on an hourly, daily or weekly basis. Swine producers can then use this information to take pre-emptive measures, like ensuring plenty of drinking water, cooling the pigs with fans or mists, and limiting transport to early morning hours.

Annually, heat stress in pigs costs the U.S. swine industry an estimated \$481 million in revenue losses. Ensuring the positive welfare and productivity of pigs (a top source of animal protein worldwide) will be even more critical in the face of global climate change —particularly

during the summer months and in tropical regions. noted Jay S. Johnson, an animal scientist who leads the ARS's Livestock Behavior Research Unit in West Lafayette, Indiana.

Pigs are especially vulnerable to heat stress because they cannot sweat. In modern production settings, pigs cope with heat through panting, while the caregivers adjust ventilation rates, utilize sprinklers, and ensure free access to abundant, cool water for the animals to drink. Without such measures, pigs may start to eat less, grow slower, produce less lean muscle, produce less milk and experience other health, productivity or fertility problems.

Gestating sows are among a swine herd's most vulnerable members, and when heat-stressed, they may give birth to fewer and smaller piglets. Heatstressed gestating sows may also give birth to in utero heat-stressed piglets that have a greater risk of

health and other complications in their postnatal

According to its developers. HotHog is the first decision-support tool of its kind to predict thermal stress based on behavioral and physiological data collected from heat-load studies of swine - and more precisely, from non-pregnant breeding females and mid- and late-gestation sows. This is what differentiates the app from other decision-support tools that are now available to swine producers

"Additionally. manv thermal indices currently in use were originally developed for use in nonswine species and may not accurately predict thermal comfort and stress in pigs," added Johnson. The Hot-Hog app was developed, tested and released with collaborators from the University of Illinois at Urbana-Champaign (UIUC); Purdue University (Purdue) in West Lafayette, Indiana: and the Oak Ridge

Institute for Science and Education (ORISE) in Oak Ridge, Tennessee.

Compatible with iPhone and Android smartphones, the app offers several features, including:

Settings for geographic user locations from Shiloh, Illinois, to Brisbane, Australia, for example

local Current time and weather, including temperature forecasts color-coded to one of six thermal states (or categories) in swine — namely, cool, comfortable, warm, mild heat stress, moderate heat stress and severe heat stress

graphic Four icons for additional user options located at the bottom of the app's display

Clicking on the pig icon, for example, describes physiological and behavioral signs associated with the thermal state predicted to affect the herd's sows. Clicking on a fan icon displays a page titled "Management Observations and Mitigation Options," which provides recommendations for ensuring the sows' comfort based on the thermal state that the app has predicted.

on new heat stress app for pigs

Another icon resembles a gear. "It takes the user to a settings page where they can edit their individual profile and set specific preferences, such as switching between dark and light mode or specifying whether temperatures are presented in Fahrenheit or Celsius," Johnson explained. "Users can also find information there on how the app was developed, considerations for use of HotHog, and options to report problems with HotHog or ask specific questions."

Johnson's HotHog collaborators are Betty McConn (ORISE), Allan Schinckel, Lindsey Robbins and Brianna N. Gaskill — all of Purdue University, Angela Green Miller (UIUC) and Donald Lay Jr. (ARS). They began work on the project

in 2018 under a grant from USDA's National Institute for Food and Agriculture and have published several papers reporting their findings, including the December 2022 online issue of the Journal of Animal Science and Biotechnolo-

Future updates to Hot-Hog will include Spanish translation, push notifications and thermal predictions for boars, nursery pigs and growing-finishing pigs, among other groups. The app will apply these updates through the Apple App Store and Google Play Store updates, Johnson

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Grass & Grain, July 4, 2023

Kansas Hay Market Report

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DUE TO THE 4TH of JULY HOLIDAY, THE NEXT RE-PORT WILL BE PUBLISHED JULY 11TH, so there will not be a hay report in the July 11 issue of Grass & Grain

Compared to the last report demand remains good, trade activity slow to moderate, and prices remained mostly steady. There has been a softening undertone to the market as producers continue to swath and bale hay across all the regions. According to the U.S. Drought Monitor for June 22nd, western portions of the High Plains received above normal rainfall and drought condition improvements, while the eastern portions again saw degradation in conditions. The categorical percent area for abnormally dry conditions (D0) increased to 16%, moderate drought (D1) increased to 22%, severe drought (D2) increased to 19%, extreme drought (D3) remained near 30%, and exceptional drought (D4) decreased to 7%.

Southwest Kansas

Dairy alfalfa steady; grinding alfalfa, ground and delivered steady to 5.00 lower, movement slow. Alfalfa: Dairy, 1.40-1.50/point RFV. Good, Stock or Dry Cow 300.00-315.00. Grinding alfalfa, large rounds, 290.00-300.00, new crop 295.00-305.00, large square 3x4's and 4x4's 300.00-310.00, new crop 300.00-310.00. Ground and delivered locally to feed lots and dairies 335.00-350.00, new crop 340.00-355.00. Grass Hay: Bluestem: none reported. Corn stalks, ground and delivered 180.00-195.00. The week of 6/18-6/24, 10,780T of grinding alfalfa and 325T of dairy alfalfa was reported bought or sold.

South Central Kansas

Dairy alfalfa steady; ground and delivered, alfalfa pellets, and grinding alfalfa mostly steady to 5.00 lower, movement slow. Alfalfa: horse, small squares 325.00/ton. Dairy 1.40-1.50/point RFV. Good, Stock cow, 295.00-305.00. Fair/good grinding alfalfa, large rounds 275.00-290.00 de-







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livered, new crop 270.00-285.00 delivered, 3x4 and 4x4's 285.00-295.00 delivered, new crop 285.00-290.00 delivered. Alfalfa ground and delivered 315.00-325.00; Alfalfa/Soybean: ground and delivered 295.00-310.00. Alfalfa pellets: Sun cured 15 pct protein 320.00-330.00, 17 pct protein 345.00-360.00, Dehydrated 17 pct 420.00-425.00. Grass hay: Bluestem, large rounds 130.00-140.00; Brome, large rounds 120.00-130.00; Rye grass, new crop 3x4's 235.00-245.00. The week of 6/18-6/24, 6,992.30T of grinding alfalfa and 0T of dairy alfalfa was reported bought or sold.

Southeast Kansas

Dairy alfalfa, grinding alfalfa steady, grass hay steady, movement slow. Alfalfa: horse or goat, none reported. Dairy 1.40-1.50/point RFV. Good, stock cow 260.00-270.00. Fair/good grinding alfalfa, large rounds none reported, large square 3x4 275.00-285.00; Grass hay: Bluestem, large square 3x4 165.00-175.00, large round old crop 140.00-155.00. Brome, large square 185.00-195.00 delivered. The week of 6/18-6/24, 848T of grass hay was reported bought

Northwest Kansas

Dairy alfalfa and grinding alfalfa steady, movement slow. Alfalfa: Horse or goat, small squares 300.00-320.00. 3x3 squares 300.00 new crop 1st cutting. Dairy, Premium/ Supreme 1.40-1.50/point RFV. Stock cow, fair/good 295.00-300.00. Fair/good grinding alfalfa, large square 3x4's 290.00-305.00. Alfalfa ground and delivered 280.00-300.00.

North Central-Northeast Kansas

Dairy alfalfa, ground/delivered, grinding alfalfa steady, and bluestem grass hay steady, movement slow. Alfalfa: Dairy 1.40-1.50/point RFV; Horse hay, premium small squares, 12.00/bale, 3x4's 290.00-300.00; Stock Cow 3x4's 230.00-240.00, new crop 280.00-300.00; Fair/good, grinding alfalfa, large rounds 250.00-260.00, large square 3x4's 250.00-275.00, new crop 290.00-300.00 F.O.B.; Alfalfa ground and delivered 290.00-300.00; Grass hay: Bluestem, small squares new crop 8.00-9.00/bale, large 3x4 squares 150.00-160.00, good large rounds 140.00-150.00. Brome: large rounds, 140.00-150.00. Sudan: large round 130.00-150.00. Wheat straw: large squares 120.00-130.00. Corn stalks: large squares 135.00-145.00 delivered. The week of 6/18-6/24,392 T of grinding alfalfa and 125T of dairy alfalfa was reported bought or sold.

Prices above reflect the average price. There could be prices higher and lower than those published.

***Prices are dollars per ton and FOB unless otherwise noted. Dairy alfalfa prices are for mid and large squares unless otherwise noted. Horse hay is in small squares unless otherwise noted. Prices are from the most recent sales. *CWF Certified Weed Free

*RFV calculated using the Wis/Minn formula. **TDN calculated using the Western formula. Quantitative factors are approximate, and many factors can affect feeding value. Values based on 100% dry matter (TDN showing both 100% & 90%). Guidelines are to be used with visual appearance and intent of sale (usage). Source: Kansas Department of Agriculture -Manhattan Kansas Kim Nettleton 785-564-6709

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How to promote good gut health

By Lisa Moser, K-State Research and Extension news service

Anyone who has experienced too much gas in their belly knows how uncomfortable that can be. In cattle, digestion troubles can be problematic to their overall health, said Kansas State University beef cattle nutritionist Phillip Lancaster on a recent Beef Cattle Institute Cattle Chat podcast.

"The cow's stomach is divided into four chambers the rumen, reticulum, omasum and abomasum and the one we are usually focused on when speaking about maintaining gut health is the rumen," Lancaster said.

He said the keys to good gut health for cattle are striving to feed a diet that leads to the proper pH balance in the rumen, thereby keeping acidosis from occurring; and the curation of healthy microbial growth in the rumen, which comes from cattle chewing their cud.

Along with rumen health. Lancaster said it is important for that diet to promote proper digestion throughout the lower gastrointestinal tract.

"Cattle can experience adverse effects if there is a foreign pathogen that interrupts the normal microflora anywhere in the GI tract," Lancaster said. He gave the example of diarrhea as a symptom that happens when the microflora is out of balance.

One of the goals of feeding cattle a proper diet that promotes good gut health is to keep the lining of the intestinal tract from getting damaged.

"If there is damage to the gut wall, bacteria can move into the bloodstream and cause abscesses to develop in the liver," Lancaster said.

He added that cattle that consume diets high in starch, which typically happens in the finishing phase, have a limited capacity to absorb that in the small intestine resulting in hindgut acidosis that could lead to ulcers developing.

Lancaster and his research team at the Beef Cattle Institute are studying places in the GI tract where microbial fermentation is occurring.

"Our goal is to develop some interventions to prevent liver abscesses from occurring," he said.

To hear the full discussion, listen to the Cattle Chat podcast online or through your preferred streaming platform.



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K-State weed expert shares tips for combating common problems in pastures

By Pat Melgares, K-State Research and Extension news service

In rural America, talk about horsetails in a field conjures thoughts of farmhands in saddles, working cattle or checking on emerging crops.

When Kansas State University weed management specialist Sarah Lancaster gets questions about horsetails, however, the inquiry is probably not about fourlegged farm animals.

"I like to call horsetails the dinosaurs of the plant world," Lancaster said. "They're a weed species that has literally been around since the times of the dinosaurs. That, in and of itself, should tell us why I get questions about it. They're pretty tough and they're very difficult to

Horsetail, also called mare's tail, is a deep-rooted, invasive weed that spreads quickly, forming a dense carpet of foliage that crowds out more desirable plants, such as pasture grass.

"They look a lot like asparagus, actually," Lancaster said. "They reproduce by spores, not seeds; they're just a very different sort of plant. Many of the go-to herbicides don't work on them."

Lancaster said some past research studies indicate that 2,4-D or MCPA - a phenoxy herbicide similar to 2,4-D - can be effective in suppressing horsetail weeds. Newer studies report that picloram and metsulfuron may be helpful in reducing horsetail.

"But." Lancaster said. "they're going to come back, and so it's going to take repeated herbicide applications in order to fully control them with chemistry."

Research from Canada is uncovering other potential herbicide options, Lancaster said, "but there are not a lot of great herbicide options out there."

Horsetails belong to the genus known as Equisetum, which means "living fossil." Plants in that category tend to be found in wet areas, "So if you're struggling with them in a cropping situation, one thing to think about is water management," Lancaster said.

"Fortunately, we don't find horsetail in production fields a lot," she said. "Usually they are found in areas where drainage is poor and water stands for large parts of the year."

For questions or to confirm whether a plant is horsetail or not, Lancaster is available by email, slancaster@ksu.edu.

Poison Hemlock and Goatgrass

Lancaster said she also routinely receives questions about poison hemlock and goatgrass this time of year.

Poison hemlock is - at its name suggests - highly poisonous. It is highly toxic to sheep, cattle, swine, horses and many other domestic animals, as well as humans. Hemlock "looks a lot like wild carrots," Lancaster said, including a basal rosette and "lacy-looking leaves."

"Poison hemlock will have red speckles on the stem once it starts to bolt." Lancaster said. "If it's in a pasture, you need to take care of it.'

Instinctively, she adds, cattle know to avoid poison hemlock based on having been around it: "So generally speaking, we don't panic too much if we see poison hemlock. but if you're someone who brings in cattle from another state or desirable forage is not available, it is more important to get rid of it or prevent cattle grazing in those areas."

2,4-D and glyphosate products are effective on poison hemlock, Lancaster

Goatgrass is an ancestor of the red winter wheat varieties grown in Kansas, which means it's particularly challenging to control in wheat fields and even in pastures, according to Lancaster.

Healthy wheat stands often out-compete jointed goatgrass, but drought through much of Kansas has provided an opportunity for jointed goatgrass to win some of those battles.

Lancaster said CoAXium wheat varieties - a production system that capitalizes on herbicide tolerant wheat -- are best for controlling jointed goatgrass.

More information on weed management is available in the eUpdate newsletter, published weekly by K-State's Department of Agronomy, and from local Extension offices in Kan-

Bill introduced to increase oversight of foreign purchases of ag land

Senate Ag Committee chairwoman Debbie Stabenow (D-MI) and Sen. Joni Ernst (R-IA) recently introduced the Foreign Agricultural Restrictions to Maintain Local Agriculture and National Defense (FARMLAND) Act. The legislation, which is similar to bills previously filed by Rep. Frank Lucas (R-OK) and others, would add the Secretary of Agriculture and the Commissioner of the Food and Drug Administration to the Committee on Foreign Investment in the U.S. (CFIUS), an interagency committee at the Department of the Treasury authorized to review certain transactions involving foreign investment in the United States and certain real estate transactions by foreign persons, in order to determine the effect of such transactions on the national security of the United States. Currently, the voting members of CFIUS include the secretaries of Treasury, State, Defense, Homeland Security, Commerce and Energy, the Attorney General, the U.S. Trade Representative and the Director of the White House Office of Science and Technology Policy.

The FARMLAND Act also would expand the authority of CFIUS to better consider ag needs when it decides if a purchase would create national security risk, require it to consider retroactive divestment of real estate and require it to review all ag land purchases in the past three years that exceeded 320 acres or \$5 million.

In addition, the House of Representatives has taken other action to limit foreign ownership of agricultural properties including an amendment by Rep. Dan Newhouse (R-WA) included in the recently passed House agriculture appropriations bill to prohibit the purchase of agricultural land in the U.S. by companies owned, in full or in part, by China, Russia, North Korea or Iran. Standalone bills have been filed in the House and the Senate

Rep. Beth Van Duyne (R-TX) also filed a bill to levy a 60 percent excise tax on U.S. land purchases by citizens of China, Russia, North Korea or Iran. That bill was included as an amendment to a broad tax package recently approved by the House Ways and Means Committee.



Checkerhill Saras Dream 180 won third overall owned champion female at the 2023 Kansas Junior Angus Association Preview Show, June 3-4 in Hutchinson. Cohen Navinsky, Easton, owns the November 2021 daughter of Silveiras Style 9303. She earlier won senior champion.

Photo by Jeff Mafi, American Angus Association



Dal Porto Blackjack A24 won grand champion steer at the 2023 Kansas Junior Angus Association Preview Show, June 3-4 in Hutchinson. Eli Atkisson, Stockton, owns the April 2022 son of PVF Blacklist 7077. Austin Vieselmeyer, Amherst, Colo., evaluated the 108 Photo by Jeff Mafi, American Angus Association



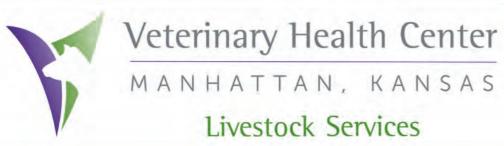
Backhus Karat 202 won reserve grand champion steer at the 2023 Kansas Junior Angus Association Preview Show, June 3-4 in Hutchinson. Mileah Backhus, Russell, owns the May 2022 son of SCC SCH 24 Karat 838.

Photo by Jeff Mafi, American Angus Association



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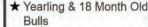
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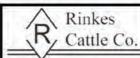
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What to expect from fungicide applications to corn

By David Hallauer. Meadowlark District Extension agent, crops and soils/horticulture

Most years at this time, our corn crop looks good, but precipitation prospects start to decline. At the same time, we can see high humidity during the day and even heavy dews overnight that keep the crop's canopy just wet enough to provide the potential for disease pressure. It can make our decision to apply a fungicide - or not - more difficult than we'd like.

If you're on the fence about a fungicide application, start with a look at hybrid disease sus-

previous crop and weather outlook. Southern rust (confirmed thus far only in a few counties in Georgia-Florida...) likes nights above 80 degrees and high humidity. Tar spot likes cooler temperatures and prolonged leaf wetness. Gray leaf spot and Tar spot both survive on corn residue, making previous crop important, whereas Southern Rust has to blow in each year. If you scout knowing these factors, it can make the decision-making process a little easier. For example: if a susceptible hybrid is showing disease symptoms on the third ear below the ear or above on

it's probably good to at least consider a fungicide, whereas many resistant hybrids may not require anything at all (depending on disease...).

If you do elect to apply, do so in as timely a manner as possible. Tassel to R1 applications are typically the 'sweet spot,' but make timing decisions in collaboration with scouting. If little to no disease is present, waiting until R1 might be worth it. Fungicide efficacy will begin to decline in three to four weeks, with later applications providing better potential to protect against later season pressure (some data suggests we

Will it pay? University of Illinois corn fungicide trials have shown that if at least five percent of the ear leaf was affected by disease at season's end, a fungicide application at VT to R1 would likely have been beneficial. You can help make plans for next year by doing end of season evaluations to see how much disease pressure was actually present.

Want to track disease movement, visit https:// corn.ipmpipe.org/ . It's useful to monitor Southern rust and tar spot. Individual field scouting is likely a better option for grav leaf spot.

Soft red winter Special **Edition Harvest Report 2023** test weights between 60 load," Richard Felts said

This Soft Red Winter Special Edition of the Kansas Wheat Harvest Reports is brought to you by the Kansas Wheat Commission, Kansas Association of Wheat Growers, Kansas Grain and Feed Association and the Kansas Cooperative Council

Soft red winter (SRW) wheat has been a bright spot in Kansas' otherwise challenging wheat harvest this year. According to US-DA's National Agricultural Statistics Service in the 2023 Wheat Varieties Report, SRW makes up only about 4% of the state's wheat acreage, with hard red winter making up the majority of the balance.

In pockets of far southeastern Kansas and parts of northeast Kansas, wheat farmers plant soft red winter wheat, as those areas have climate conditions annually more suitable for SRW than HRW.

SRW typically yields higher than HRW but has lower protein content (8.5% to 10.5%), soft endosperm and weak gluten, making it targeted for different end products than HRW, universally known as the bread wheat. SRW is commonly used for specialty products such as sponge cakes, cookies, crackers and other confectionary products.

CoMark Equity Alli-(CEA), headquartered in Cheney, Kansas and Enid, Oklahoma, has several locations in the southeastern part of Kansas, extreme south central Kansas and north central Oklahoma that handle both soft red winter and

Troy Presley of CEA discussed the importance of keeping the two classes of wheat segregated.

"I feel it's especially important this year for all segments of the industry to work together to protect the integrity of both the hard red winter and soft red winter markets," he said. "End users rely on us to provide wheat with the characteristics they need, and we don't want to jeopardize that. It's important to know your customers and work with your FSA office to get an idea on the percentage of each class of wheat grown in the area."

Presley said they've been sending some samples to Kansas Grain Inspection Service for hardness tests, so "wheat can be labeled correctly, and we can tell our domestic and international markets, 'This is as advertised.'"

Jay Armstrong is one of those eastern Kansas wheat farmers who plants SRW. He has finished his wheat harvest near Muscotah in Atchison County, where it's normally too wet for high wheat yields, but this year was the excep-

Armstrong put on 160 pounds of nitrogen, fungicide and seed treatments on his SRW crop. Combined with a near-perfect growing season — he's one of the few producers in the state that would call it so this year — Armstrong said this was "the best wheat we have ever planted." His Pioneer 25R74 averaged 94 bushels per acre for a farm-wide yield with

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and 61 pounds per bushel.

Armstrong binned the bumper crop for later delivery to mills near Kansas City that are looking for SRW this year. Despite the successful wheat crop, no moisture is now to be found and the soybeans going in behind the combine are being planted into dust.

In Montgomery County, where Richard Felts farms with his brother Larry, the SRW wheat - which makes up 80 percent of their operation — looked good all winter long. But, the area also suffered from a long stretch without rain.

"When it quit raining this time last year, that was the end of it until this spring," Larry Felts said. "That's why we needed a decent wheat crop - because we didn't have anything for fall crops. From here you don't have to go very far before you run into some bad stuff."

Richard has farmed in partnership with Larry since they came back from college to partner with their father. Now, Rich's son and son-in-law are involved in the operation and Larry's grandson is running the grain cart the fourth generation on the family operation.

The beginning of wheat harvest was delayed for the Felts family due to rain, finally starting around June 15. The SRW is averaging 85 bushels per acre with test weights averaging right at 60 pounds per bushel. That wheat is being delivered to the elevator in Coffeyville, which has to switch between hard and soft wheat deliveries, a tricky undertaking when both classes look similar but have very different quality characteristics... and different prices on the board.

"We're trusting that all our neighbors are being honest, and elevators are pulling a sample on every

"We all want to protect the integrity of hard red winter wheat."

The last wheat they will cut will be their HRW, but attention is already shifting to the next crop that could use some moisture as the son-in-law has started planting sovbeans.

Harvest should have wrapped up by the end of last week in Franklin County, according to Clark Wenger, general manager/CEO of Ottawa Co-op. The area planted twice as many wheat acres this vear and combined with an uncommon set of great growing conditions, the harvest is better than expected.

Both HRW and SRW are planted in this area, about 30 percent soft to 70 percent hard. Ottawa Co-op has taken in both classes of wheat for several years without issue because their elevator crew could visually distinguish between HRW and SRW. This year, however, certain HRW varieties started to look more like SRW. As a result, Wenger said they submitted samples to the state for grading and talked with farmers to make sure they were segregating the two classes.

Segregation between HRW and SRW is important for elevators as they market that wheat to different end-users.

"They either want soft wheat or hard wheat, they don't want a mix," Wenger said. "If it is a mix, then it causes problems and we're left to market that mix into a feed market that isn't as profitable. So, we have to make sure that what we take in is what it's supposed to be."

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Refining surge protectors in crops could boost crop yields

Awash in a rowed sea of its brethren, a corn leaf relegated to the lowest rung of its stem spends much of a June afternoon doused in shade cast by the higher-ups.

Then a gust begins pushing, pulling and twisting the waxy wings in concert, cracking a window to the fireball roiling 93 million miles away. It's a prime, precious opportunity for photosynthesis to transform the sunlight into food. Unfortunately, the photosynthetic equivalent of a surge protector one evolved to help plants mitigate damage driven by sudden spikes of high-intensity light — is slow to reset after so much time in the shade. The gust dissipates, the moment gone before the leaf and its cellular kitchen can take advantage.

A summer's worth of those minute but missed opportunities to harvest light can cost cornfields, and those who farm them, a sizable portion of the potential harvests they yield in the fall. By recently identifying and measuring the influence of new genes that regulate the surge protector, the University of Nebraska-Lincoln's Kasia Glowacka and colleagues could help increase those yields by upward of 20%.

Which isn't to downplay the importance of the safeguard, which goes by the name of non-photochemical quenching, or NPQ, and can transform light to heat whenever a plant absorbs more of the former than it can put toward photosynthesis. A failure to cut the biochemical circuit, after all, can lead to a toxic buildup of ultra-reactive oxygen that damages DNA and can even kill a cell. But the safety measure has a downside: The slower it is to relax and resume letting the absorbed light fuel photosynthesis, the more of that energy-granting light it wastes.

"When you think from the perspective of a chloroplast in a plant cell, life is really difficult," said Glowacka, assistant professor of biochemistry at Nebraska. "Every few seconds, the environment is changing.'

In 2016, Glowacka contributed to a study showing that cranking up the activity of three particular genes allowed tobacco plants to switch NPQ on and off at a much faster pace, granting it both better protection and more efficient photosynthesis. That tobacco, in turn, produced leaves roughly 20% larger, with simulations suggesting that even greater gains might be possible. Follow-up research found that the same technique could generate similar benefits in soybean — not just for leaves, but the beans, too.

But tobacco and soybean employ a different form of photosynthesis than corn, sorghum, sugarcane and several other crops better suited to hot and dry conditions crops whose yields must increase to help feed the 10 billion people expected to populate the globe by 2050. Glowacka wondered whether the genes that coded for NPQ activity in one might play that same role in the other. Even if they did, Glowacka and Nebraska's James Schnable figured there must be other genes aiding a process as complex as NPQ.

They were right. Their discovery began with toiling in the fields during the summers of 2020 and 2021, when the team planted more than 700 genetically different lines of corn at the Havelock Research Farm in northeast Lincoln. Glowacka's plan: look for differences in NPQ performance among the lines, then try to tease out which genes were ultimately responsible for those differences. Still, the existing methods for measuring NPQ, Glowacka knew, were expensive and time-consuming. More than that, they struggled to flatten out daily disparities in each line's exposure to light, potentially spoiling the validity of any findings

Rather than settle, Glowacka developed her own method. The team used a modified holepunch to extract tiny samples from the leaves of every line in the field. Back in the lab, the researchers gave the tissue samples nearly a day to adapt to the dark, eventually measuring their fluorescence — a proxy for photosynthesis and NPQ before and after exposing them to flashes of light. Instead of measuring one sample every 20 minutes, the team was able to handle 96 samples over that same span.

The researchers found that the speed and magnitude of NPQ responses varied widely among the lines, a fact that helped ease the search for any new genes potentially driving that variation in corn. A comparison of the lines' genetic code, cross-referenced against the differences in NPQ performance, eventually revealed six promising gene candidates. Several of those candidates were already familiar to the team. Others were not including one called PSI3, which introduced more of that variation than any other candidate.

After identifying coun-

terparts of those six genes in Arabidopsis, a flowering plant commonly used to study plant biology, the team proceeded to order mutants: Arabidopsis seeds each lacking one of the six genes. In all six of the mutants, the surge protector was generally sluggish to respond under the lights but also slower to relax when the lights were turned out. The NPQ peaks were typically lower, too, and the troughs higher, suggesting that the plants both buffered less against surges and squandered more of the light available for photosynthesis.

The identification of those genes, combined with the amount of natural NPQ variation across lines of corn, could open the way to breeding plants far better at capitalizing on yield-boosting sunlight, the researchers said. In the best case, Schnable said, those efforts might come to bear fruit in as little as a half-dozen years.

If they do, the results could prove a boon for crop breeders now investigating every and all possibilities to preclude global food shortages in the com-

"We can gain 22% of that yield from the crops, potentially, if we were to speed up the NPQ," Glowacka said.

Given that the researchers kicked off the study early in 2020, their attempts to help stem an impending global crisis meant dealing with a contemporary one. Two of the team's members, Seema Sahay and Marcin Grzybowski, had only recently arrived in the United States — recently enough that neither had yet gotten a driver's license. Prior to COVID-19, the two would have hitched rides out to the Havelock Research

University protocols designed to slow the spread of the virus, though, temporarily put that option on hold. Undeterred, Sahay and Grzybowski regularly resorted to biking roughly seven miles out to the research farm — a 30-plus-minute trek amid the heat and humidity of a Nebraska summer.

"Seema and Marcin," Glowacka said, "are the real heroes of this exper-



Bar S Eilazane 2723 won fourth overall bred-andowned champion female at the 2023 Kansas Junior Angus Association Preview Show, June 3-4 in Hutchinson. Jayce Dickerson, Paradise, owns the May 2022 daughter of Silveiras Forbes 8088. She first claimed reserve intermediate champion. Austin Vieselmeyer, Amherst, Colo., evaluated the 108 en-Photo by Jeff Mafi, American Angus Association

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arious vaccines help keep livestock healthy

By Wendie Powell, livestock production agent, **Wildcat Extension District**

Raising healthy livestock is the goal of every livestock producer. Not only are healthy animals more profitable, but they are also more enjoyable to work with. However, keeping critters healthy requires a good herd health management plan. All animals have various defense mechanisms to deal with infections, influenced by age, nutrition, and management. Stress can impact how the immune system reacts to a pathogen attack. Vaccination is one tool to prevent disease; it's risk mitigation for produc-

ers to protect their livelihood from disease.

When an organism gets sick from a specific pathogen for the first time, the immune system can be slow to develop antibodies, sometimes seven to 14 days. Recovery allows the immune system to remember and recognize the pathogen in the future. So, the next exposure triggers the production of specific antibodies by specialized cells, which will work to destroy the pathogen again, often within 48 hours. Vaccines induce this same protection by priming the system for a response. Most vaccines do not prevent infection; instead, they aid in the prevention of sickness.

There are several types of vaccines; the majority of licensed veterinary vaccines in use are killed vaccines and modified live vaccines. They have different strategies to reduce the risk of illness and induce a beneficial immune response.

Modified live vaccines are non-disease-causing versions of a virus or bacteria. The live virus or bacteria replicate similar to the actual disease but does not cause the disease itself. The replication of the vaccine organism allows the immune system to develop a full response

and create protective immunity with only one dose of the vaccine.

Killed vaccines do not contain a live virus or bacteria. These contain a dead organism or a specific piece of an organism that is critical to the function of the disease-causing pathogen.

The crucial difference between killed and modified live vaccines is the lack of replication with a killed product, meaning the immune system does not develop the protective memory with just one dose and requires a booster.

There has been a recent buzz concerning Messenger RNA (mRNA)

vaccines. Dr. Kevin Folta, a molecular biologist and professor at the University of Florida explains that this type of vaccine is an intermediate between the gene itself and the products that the gene encodes. Consider a blueprint and a house; the mRNA is the construction worker. It takes the blueprint and builds the house. In the cell, the mRNA takes the DNA blueprint and builds part of the final structure. The mRNA is the go-between, it does not change the genes or the DNA it-

The Food and Drug Administration sets witherinary drugs. The withdrawal period is the time between the last dose and when the animal or animal product can be safely used for food. Rephrased, this is the time that the animal and its products must be withdrawn from trade. This time allows the drug to be reduced to a safe tolerance level; the withdrawal time depends on the drug; but typically ranges from 0 to 60 days.

To learn more about keeping livestock healthy, please contact Wendie Powell, Livestock Production Agent, (620) 784-5337, wendiepowell@ksu.edu.

American Farmland Trust applauds introduction of the NO EMITS Act

Gallagher (R-WI) and Jared Huffman (D-CA) introduced the Naturally Offsetting Emissions by Managing and Implementing Tillage Strategies (NO

at supporting farmers in improving soil health. American Farmland Trust (AFT) applauded the bipartisan bill's introduction and its inclusion of one of AFT's top Farm Bill priorities: establishing a federal match for state and Tribal soil health programs. Introduction of the No EMITs Act comes just days after AFT released a

white paper outlining the need for this kind of federal matching program, and urging Congress to build up locally led programs that supplement and fill gaps in NRCS conservation support.

"In recent years, states have begun creating innovative soil health programs that fill current gaps in support and help producers voluntarily adopt soil health practices in locally-tailored ways," said Tim Fink, policy director for American Farmland Trust. "But with limited state budgets, these programs struggle to keep pace with producer interest and demand. Creating

to match state and Tribal funding would help leverage existing soil health programs and incentivize others to create programs of their own."

Soil health is a key strategy to support farm viability, increase resilience to extreme weather, promote food security, and address environmental concerns. But soil health practice adoption is not sufficiently widespread for example, in 2017, cover crops were planted on just 6% of eligible acres. NRCS programs are the main form of support to help producers successfully adopt soil health practices, but these popular programs are oversubscribed, address a wide range of resource concerns, and leave gaps, such as supporting equipment purchases that enable producers to adopt soil health practices.

"This approach would leverage federal funding. build on local leadership

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and innovation, and incentivize the creation of new state and Tribal programs that fit local soils, local climate, and local needs," Fink said. "AFT applauds Representatives Gallagher and Huffman for their leadership in introducing this legislation at such a critical time."

The proposal to create a federal match for state and Tribal soil health programs in the Farm Bill has broad support from across the country — American Farmland Trust coordinated a memo of support that was signed by six state agencies; nine conservation district associations; and stakeholders from across sectors in 29 states, including the farm, food, environment, conservation, public health. research, education, and environmental justice sectors. The Food and Agriculture Climate Alliance (FACA) also supported this policy in their 2023 Farm Bill Recommendations.

RAYMOND LANG ONLINE AUCTION - (Marquette, KS)

To the highest bidder: 14' Flat Jon Boat, Portable 5,000 watt generator, Fencing, Cement Mixer, Collection primitive tools, Elec Smoker, Vintage snow sleds, Garden cultivator, Oil lamps & lantern, Vintage fruit crates, JC Higgins Bike, Saw horses, Copper Boiler, Portable building frame, Carpenter work bench, Stoneware, Canning Jars, Dbl galvanized tub set.

ONLINE BIDDING OPENS: Thursday, July 6, 8:00 a.m. with SOFT CLOSE Wednesday, July 12, 8:00 p.m. Pickup is 1-7 p.m. Friday, July 14 at sale location - BY APPOINTMENT ONLY!

HOLLINGER

View, Register & BID at: https://hollingerauction.hibid.com/auctions/current **HOLLINGER ONLINE AUCTION * Lyons, KS * 620-257-8148**

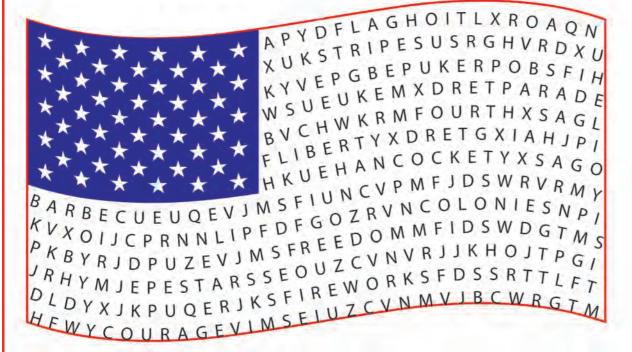
Shipping available on items so marked.

Kids Corner

Watch for our upcoming Kid's Corner Contest!

The United States gained its freedom from Great Britain after signing the Declaration of Independence on July 4, 1776. Also called "Independence Day," the Fourth of July is celebrated with fireworks, parades, games, and other ceremonies that recognize the history, government, and traditions of the United States.

Let freedom ring! Find the words that honor our country as we celebrate the Fourth of July in the flag pictured below. (Hint: not all the stripes have a word!)





stars

stripes

flag

Hancock

fireworks

courage freedom

fourth

parade

liberty barbecue

colonies

What is your favorite way to celebrate Independence Day?

Independence is no joke... but these are!

What kind of tea did the American colonists want?

www.education.com/worksheets created by: education.com/

Why did the duck say "Bang!"?

Recause he was a firequacker!

What did one flag say to the other flag? Nothing. It just waved! What did King George think of the American colonists?

He thought they were revolting!



KLA signs letter supporting legislation to expand milk options in schools

KLA joined the National Milk Producers Federation and other industry partners in sending a letter of support for the Whole Milk for Healthy Kids Act. This is a bipartisan bill being

culture Committee Chairman Glenn "GT" Thompson and Rep. Kim Schrier that would expand the milk options available for schools. Currently, non-fat and low-fat milk are the only choices ofmeal nutrition program. If passed, this bill would expand the offering to include reduced-fat (2%) and whole milk.

The stakeholder letter was sent to U.S. House Education and the Workforce Committee Chairwoman Virginia Foxx and Ranking Member Bobby Scott, as this committee has jurisdiction over child nutrition in the House. It focused on the importance of providing kids with milk options they actually will

choose to drink so they do not miss out on vital nutrients. Whole and reduced-fat milk currently are the two most popular varieties sold. The letter went on to point out that dairy products deliver seven of the 14

are no longer toxins in the

water. There are different

nutrients the American Academy of Pediatrics recommends for optimal brain development, as well as nutrients vital for immune health and bone growth and development during a child's school-

Vatch for blue-green algae in ponds

By Adaven Scronce, diversified agriculture and natural resource agent.

Wildcat Extension District While all pond weeds and algae can become a nuisance and start to overtake a pond, requiring control, one type of algae is of particular concern and that is bluegreen algae. Blue-green algae can occur in a pond as a result of runoff that carries nitrogen or phosphorus into the pond. When the temperature reaches 75 degrees or higher the algae can grow and bloom. A period of hot, sunny days with little wind following an increase in runoff from rain also increases the likelihood of blue-green

While filamentous algae, or green algae, is very common on farm ponds and is not harmful to animals, the blue-green algae is. Blue-green algae includes many species of photosynthetic cyanobacteria that live in the water and produce toxins that are poisonous to animals.

The toxins that result from harmful blooms of blue-green algae are stored in the cyanobacteria until they die, and as the cyanobacteria decompose the toxins are released into the water. Because these toxins are poisonous to animals it is important to monitor your pond for signs of blue-green algae and

not allow animals access to the pond if blue-green algae is suspected.

When a pond has a harmful bloom of bluegreen algae the water will have a scum that is most commonly bright green or blue/green as the name suggests but can vary in color from blue-green to gray and even red, orange. or brown. The scum will often look like spilled paint, and the water of a pond that has blue-green algae will often smell bad.

Blue-green algae blooms are typically the worst in areas of the pond where water is stagnant, such as a cove or inlet. Ponds that have little movement of surface water and are relatively

clear are more likely to produce harmful blooms of blue-green algae due to the high amount of sunlight that is able to pass through the surface water.

If signs of blue-green algae are noticed in a pond, animals should be not be allowed access to the pond and water samples should be taken from the pond and sent to the Kansas State Veterinary Diagnostic Laboratory to be tested. Until the water has been tested and is confirmed safe, animals should be kept away from the pond. Two weeks from when the algae bloom starts is the average length of time it takes to get rid of the toxin.

has a blue-green algae bloom, it can last from treating a pond for bluegreen algae, including days to months depending on the weather concopper sulfate and copper ditions. During this time sulfate-based algaecides. animals should be kept For more information away from the pond and contact Adaven Scronce, the water should be re-Diversified Agriculture tested before allowing and Natural Resource animals access the pond Agent Wildcat District, at again to ensure that there 620-331-2690 or adaven@

2-DAY ONLINE AUCTION

ksu.edu.

(600+ Lots - Antiques, Collectibles, Primitives, Toys, Signs, Spurs, Furniture, Sporting Items)

Bidding is OPEN NOW FOR BOTH AUCTIONS DAY #1 will begin Closing at 2:00 PM, Tuesday, 7/11/23 DAY #2 will begin Closing at 2:00 PM, Wednesday, 7/12/23

PICKUP/PREVIEW LOCATION: 420 E. Main, COUNCIL GROVE, KS 66846 600+ LOTS: ANTIQUES & COLLECTIBLES: Copper Rooste Weathervane: Toms Toasted Peanuts Counter Top Display: 10 K Cast Scale; Dazey 4 Qt Butter Churn; Cast Tobacco Shredder; Keer Kutter Saw; Vintage Wire Mannequins; Caterpillar Fobs; Ringling Bros and Barnum & Bailey Poster; Mercury Boat Motor; TOYS: Vintage Fire Truck Pedal Car; Toy Pedal Cars; Toy Pistols & Holsters; Buddy L Sit-n-ride Truck; Nylint (Pony Farm Truck, Horse Farms Trailer, Fire Truck); Several Structo & TONKA Toys; **FURNITURE:** Vintage Dodge Pickup Frontend Bar w/Lights; Cast Aluminum Carousel Horse Lamp Wood Display Case; Primitive Cabinet; Claw Foot Organ Stool; Ornat Hutch; Colorful Stained-Glass Window; Rowboat Shaped Wood Shell Vintage Tractor Grill; Writing Desk w/Upper Hutch; Custom Hand made Cedar Table & Wrought Iron Bed Bench; Several Trunks/Chests Lighted White Hutch; CROCKS: Red Wing (#5, #4 Crock Jugs, #3 #2, #6 Crocks, KO-REC Feeder, #5 Elephant Ear Crock); McCormicl Deering 2-gal Lye Solution Crock; **SIGNS:** Men Working; Dr AC Dan iels Horse Cat Dog Medicines; Fake Agents and Thieves BEWARE Gordon Mark Elevator Tin; Highway 50; Vern Miller for Attorney Gen eral Double Sided; Bud Light; Mustang Sally Art on Airplane Side PRINTS & PICTURES: CM Russell 1898 Western Print; McLoughlir Bros New York Framed Prints (Overland Coach Mail, Settlers/Indians Wild West); "An Old Time Plains Fight" by Frederic Remington; "The Chisholm Trail" Lithographic Drawing by Birger Sandzen; Breeder's Gazette; OUTDOOR & HUNTING: Antique Shotgun Shells; Mounted Deer & Elk Antlers; Duke Trap; Wolf Trap; Several Hand Forged Leg Traps; Trappers Basket Backpack; Much more, this a partial listing For full listing, terms & photos GriffinRealEstateAuction.com

305 Broadway, Cottonwood Falls, KS 66845 griffinrealestateauction@gmail.com

CHUCK MAGGARD Sales/Auctioneer Cell: 620-794-8824 Fax: 620-273-6425 ANDY PHIPPS, Auctioned 620-794-1673 In Office: Heidi Maggard,

Flint Hills Discovery Center Foundation announces bison sculpture "Vigilance"

The Flint Hills Discovery Center Foundation announces the creation of "Vigilance," a life-size bison sculpture to be placed in front of the Flint Hills Discovery Center.

The sculpture will feature a life-size cow bison protecting a calf bison together on a limestone platform. The sculpture will be made from one single piece of limestone, handcarved by Emporia artist Alan Tollakson. The meaning behind the work is best summarized by the artist in his own words:

This sculpture illustrates the bison cow standing guard over her newly born calf. Her solid, frontal stance shows her readiness to protect her calf from predators and other forms of dangers, while also surveying the prairie from a vantage point. This depicts the female bison as a protector of her precious species and symbolizes the need for diligent stewardship of the Flint Hills region.

The "Vigilance" sculpture project will serve three primary purposes (1) contribute to the outdoor public art of Manhattan and the downtown Blue Earth Plaza area (2) serve as an educational tool for the public about geology, art and the American bison, and (3) kickstart a proposed "Sculpture Trail" project at the

This symbolism aligns with the City of Manhattan, the Flint Hills Discovery Center, and the Flint Hills region.

Tollakson is an accomplished sculptor whose art graces public plazas and buildings across Kansas and the United States. His prior projects include a full-size stone bison on Kansas Ave. in downtown Topeka, a carved stone arch depicting flora and fauna over the main entrance of Hale Library at Kansas State University. and a four-year project to recreate all deteriorated historical stone art on the exterior of the Kansas State Capitol.

On June 6, 2023, the Manhattan City Commission voted unanimously to accept the donation from the Flint Hills Discovery Center Foundation through the city's donor-initiated public art

"In the recent past, we could only imagine seeing a bison cow and newborn calf near the Blue Earth village and a short walk to the riverbanks. Soon, we will celebrate that natural moment of life with a beautiful life size statue of "Vigilance" at the Flint Hills Discovery Center," said Foundation president Jack Lindquist.

"We are thrilled to host Manhattan's next great

here at the Flint Hills Discovery Center," said Susan Adams, Flint Hills Discovery Center director, "Thanks to the generosity of the Flint Hills Discovery Center Foundation, we know that the "Vigilance" sculpture will become a memorable part of every visit to the Discovery Cen-

The sculpture is privately funded and is scheduled to be installed in summer 2024.

Fints AUCTION

Saturday, July 8, 10:00 am Bluestem Hall 646 Road 180, Emporia, KS GUN: 22 Pistol & Ammo. TOOLS: Impact Wrenches; Hot Air Blower; Vises; Kreg Jig; 3 Tier Tool Cabinet; Drill Press; Angle Grinders; Clamps; Automotive; Mityvac Vacuum Pump; Air Die Grinder Kits. Collectible; Stanley Planes & Stanley Planer; Draw Knives; Metal Gas Cans; Wood Planes; Wood Carving Tools; Knives Scribes; Adze; Calipers. Power/Hand: Sockets; Dremels; Angle & Bench Grinders; Routers; Saws: Compound Miter; Table; Jig; Pole; 14" Band; Wet/Tile; Compound Miter; Reciprocating; Circular; Hack; Hand: Sanders: Orbital Hand; Belt; Bench Top; Drum Disc; Contour; Oscillating Spindle; Palm. OUTDOOR: Axes; Maul; Stih M55 Tiller; 36" Poulan PRO Zero Turn Mower; 21/4T Hydraulic Floor Jack; Compressors: 10, 20, 30 & 60 Gallon; FURNITURE: Drafting Table; Washers; Dryer; Recliner; Rocker. MISC: Viny Cutting System; Vacuum System; Crossbow. MORE!

Guest Auctioneers: Wayne Wischropp & Cole Pitts Photos, Updated Listing, Terms & Directions www.FlintHillsAuction.com 620-757-5056

FARM AUCTION

SATURDAY, JULY 22, 2023 * 9:00 AM

We are moving and will sell the following items at public auction at the farm located from I-70 exit 275 at Abilene, 6 miles north on Highway 15, then 6 miles east on Highway 18, and 1/4 mile north to 3013 Nail Rd., ABILENE, KANSAS. From Four Seasons RV Acres at I-70 go north to Highway 18 then 1 mile east & 1/4 north to sale site.

VEHICLES, TRACTORS & MACHINERY: 1990 Ford F350 2WD pickup, std. cab, flatbed, 460 gas, auto, shows 42K; 2007 Saturn car, 6cyl., auto.,172K; 1967 John Deere 4020D tractor w/JD 148 loader w/quick tach & 6ft. bucket, 3 lever control valve, two rear for 148 ldr.; mid 1960s IH 606 gas utility tractor w/GB 808 loader quick-tach & 6ft. bucket, 2 outlets, 3pt., calcium; JD 530 round balei w/monitor; JD 336 wire tie sm. square baler; 10ft. hyd. box blade on rubber; New Holland #56 side delivery rake; John Deere PTC manure spreader; 6ft. 3pt. brushhog, Cat. 3 3pt quick hitch, PJ 25 gooseneck dovetail trailer; 16ft. homemade gooseneck flatbed trailer; 17ft. home built gooseneck flatbed w/ramps; Calico gooseneck 3 horse slant trailer w/tack room, good rubber; 2 horse bumper hitch trailer; hay trailer; military 2 wheel bumper hitch trailer; 90 gal. diesel & 45 gal. gas fuel tanks w/elec. pumps; like new tree saw for skid steer made by Douglas Welding & Machine in Kipp, KS; 3pt. hyd tree shear for tractor; Farm Star 3pt bale spear; Superior elec/hydbale spear for pickup; Land Pride 6ft. rear blade; 3pt. Ferguson 3B plow; 3pt. 3 ball hitch; 5 tine bale spear & 1 tine spear for 148 ldr.

(2) 400 gal. poly tanks; headache rack off of 2006 Ford PU. LIVESTOCK ITEMS: 8 ea 16ft welded wire livestock panels, 24 ea 12ft, corral panels; 14 panel round pen w/gate, like new; Priefert headgate; Top Hand squeeze chute; factory alleyway with holding device; another squeeze chute; 6ft, corral gate small grain bin; several factory feeders; 2 nice BR bale feeders 1 horse & 1 cattle; (40) new 6.5ft. T-posts; barbed wire; wooder corner/line posts; 3 sm. stock tanks, electric fence posts; fence clips; slide in stock racks; JD bale elevator w/110V motor. SHOP EQUIPMENT: Enerpac 10T hyd. press; Kobalt 60 gal. vert

air compressor, 135psi; Craftsman 2600W generator; gas powered air compressor; huge rolling tool chest, 7ft long, 5ft. tall, 30" deep several shop benches & cabinets; metal shelves; Lincoln 225A AC welder; oxygen & acetylene torch set w/tanks & cart; extra accet bottle; small oxy/acc bottles; drill press; bench top Ryobi 10" circular saw; Stihl 034-4V chain saw; Mac & Echo chain saws; nut & bol bins; jack stands; log chains; breakers; lg. number of heavy ratchet straps; lg. bag of new strapping for ratchet straps; spools of other rope & straps; 3rd links; chain hoists; Handyman & other jacks HumVee jack; Ig. wrenches; 3/4 socket set; Ig. bearing sockets; 0 to 175# torque wrench; gear pullers; variety of good tools; misc. shop supplies; painting supplies; tire tools; natural gas furnace for shop; nfra-red shop heaters for wall w/remotes; kerosene space heaters Predator gas post hole digger; ladders; 30" shop fan on stand; mult outlet air wall oiler: stand for working on semis; lumber in hay mow HORSE TACK & CAMPING/HUNTING GEAR: 4 good saddles, one s Mexican w/lg. saddlehorn; bridles; halters; headstalls; blankets scabbards; riding equipment; kids riding helmet; farrier equipment feed pails & water buckets and much more; lg. variety of camping supplies, coolers etc. from hunting/camping trips to Colorado; wal tent; military wood stove; several hunting blinds, 1 is new plastic; rifle & shotgun reloaders, some unusual dyes; brass; maybe 20 #2 pav

traps; left handed golf clubs; fishing supplies & much more. **LAWN EQUIPMENT:** (2) 15gal sprayers, 40gal sprayer, 2 ea mower trailers; metal frame 8"x14"x7" to make utility shed; 3 weed eaters; JD 120 tractor mower to repair; ATV tires on rims; elec. seeder/spreader for 4 wheeler; roto tiller, etc.

HOUSEHOLD & YARD ITEMS: Oak desk, oak book cabinet w. glass doors; iron skillets end tables; neat old wooden sled from Hanau. Germany: miscellaneous items: various vard furniture. NOTE: This is a nice sale of clean well-maintained items Vehicles, tractors & machinery will sell after 1:00. 30 days for removal. Loader tractor available sale day or by appointment. Your inspection invited prior to auction. Call John at

TERMS: Cash or good check day of sale. Not responsible for accidents CLERK: Shirley Riek, 526 Frederick, Clay Center, Kansas 67432 LUNCH: Sons of the American Legion, Chapman, KSS

JOHN ARCHAMBAULT, SELLER * (785) 223-1128 Go to kansasauctions.net/kretz for listing, pictures & more info

Auction conducted by: Kretz Auction Service Greg Kretz, Salesman & Auctioneer: (785) 630-0701 Guest Auctioneer Randy Reynolds: (785) 263-5627

AND AUCT

Tuesday, August 1st, 2023 @ 7:00pm Where: The Finch Theatre, 122 E. Lincoln Ave., Lincoln, KS

76 Acres +/- in Lincoln County **Excellent Tillable and Timber.** Just in time for hunting season. Productive tillable with great hunting in a secluded area on the Spillman Creek.

Taxes are \$719.38 on 76.4 taxable acres

37 Acres +/-, NW4 less RD & RR R/W and 39 Acres +/-, NE4 SW4 less RR R/W Section 30 Township 11 Range 08, Lincoln County, Ks.

FSA Information ~ 62.81 Farmland Acres

~ 60.03 Cropland Acres Enrolled in PLC Base/Yield

PLC ~ Wheat base 46.19/46 Sorghum 4.57/69 Soybeans 7.56/33

Possession upon closing, subject to tenant rights.

Online bidding available. Complete details on website.

SELLER: Mary Margaret Steinhaus Clint Heller - Agent Cell # 785-545-5737 Ray Swearingen - Broker # 785-452-8498

HFR are Seller's Agents



HORIZON

FARM & RANCH REALTY, LLC 1-888-825-1199

www.horizonfarmranch.com

LAND AUCTION Tuesday, July 25th, 2023 @ 7:00pm

Where: The Finch Theatre, 122 E. Lincoln Ave., Lincoln, KS

270 Acres +/- in Lincoln County Offered in 3 Tracts **Excellent Tillable and Timber**

Tract 1: The NW4 of Section 8-12-8 less 10 acre Homesite, Lincoln Co. 146 Acres +/- of River bottom Farmland. Taxes are \$1,781.76 on 146.1 taxable acres.

Tract 2: 37 acres +/- in the SE4 of Section 6-12-8, Lincoln County. 28 acres +/- of tillable. 10 acres +/- of timber and river. Taxes are \$315.36 on 37.4 taxable acres.

Tract 3: S2 of SE4 Section 8-12-8. Comprised of: 43 acres +/-of tillable 35 acres +/- of pasture Taxes are \$630.66 on 78.1 taxable acres.

Buyer to receive Landlords 40% of fall crops. Possession upon closing, subject to tenant rights.

Online bidding available. Complete details on website.

SELLER: The Heirs of Nola Cromwell Family

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SCAN ME

our reasons why you should be plant tissue testing

"If you can't measure it, you can't manage it." That is especially true in crop production. Plant tissue testing provides accurate, real-time measurements to inform your decision-making throughout the growing season. Establishing a tissue sampling program and setting benchmarks for specific crop nutrients allows you to manage for more yield potential and

"We often use crop planning to set up our fertilizer passes but don't measure their impact on the crop or evaluate the outcome of those applications," says Garret Johns, agronomic support specialist with AgSource. "That's where plant tissue testing comes in. This precise measurement tool allows you to accurately adjust your fertility program by proactively identifying and removing yield-limiting factors."

With fertilizer making up to 36% of a farmer's operating cost in raising corn and about 15% of soybean input costs, it pays to measure and manage this investment through a comprehensive plant tissue testing program.

Here are four reasons why you should be plant tissue testing:

1. Make informed adjustments to your fertilizer

program Accurate data from plant tissue testing allows you to take action to support your crops mid-season. You can use the insights to sharpen your program – increasing yields or saving on fertilizer costs by being more precise, timely and accurate with your applications.

"Plant tissue testing helps you identify your fertilizer strategy and fertilizer placement," says Johns. "Through tissue testing, you don't have to wait until harvest to see if the fertilizer is getting in the plant. You can evaluate it throughout the growing season and validate or adjust the strategy to achieve your goals.'

One example of improving yield through plant tissue testing is adjusting split-applied nitrogen during a wet spring.

"With heavy rains, we know some early applied nitrogen is lost," Johns. "Plant tissue sampling can help us determine the timing for a second application and how much nitrogen to apply, leading to stronger yields.

2. Know what nutrients your crop is using (and what to do about it)

While there are visual indicators of plant health (e.g., the crop looks good), every field and soil type differs. You may know how much nitrogen, phosphorous, potassium and micronutrients you apply each year. But, without consistently analyzing plant tissue and soil, knowing how much makes its way into the crop is nearly impossible.

"It is important to know your nutrient levels throughout the growing season and where they should be," says Johns. "Plant tissue testing reports provide a current measurement of each nutrient and a range with an upper and lower limit."

As you interpret the data from your tissue samples, it is a good practice to work with your local agronomist to develop a plan to remedy any nutrient deficiencies.

"The most common problems we diagnose through plant tissue testing are nitrogen, phosphorus and boron deficiencies. We also see zinc, sulfur and molybdenum issues,' says Johns.

3. Support the crop at crucial growth stages

While testing across the entire season brings the most comprehensive results, there are a few specific times when it is most critical.

"The ideal timing for tissue testing corn is just before tassel and grain fill. For soybeans, it is flowering and pod fill," says Johns. "These are times when we know we don't want the plant to be deficient and when we have most opportunity to influence the plant's growth.

Quality nutrition during these critical reproductive stages can lead to improved yields. If a corn plant is well-fed and has low stress during tassel, it stands a much higher chance of complete and effective pollination.

4. Capture trends for specific nutrients over time

"A tissue sample is just one point in time. This is exactly what is in the plant on Wednesday at 1:55 in the afternoon. At 2:15 it's going to be different," says Johns.

sure can vary from hour to hour, so can the nutrient levels in your fields. Capturing data across multiple points allows you to identify trends and changes over time to address what is happening in the field more accurately.

Through consistent plant tissue testing over multiple years, your plant tissue testing laboratory can compile custom trends and averages into reports to show what common problems occur season after season. You can also see the response of various applications in addressing issues given enough samples before and after fertilizer application.

Consistent plant tissue testing throughout the growing season provides you with actionable agronomic data to fine-tune your fertilizer decisions. Contact your local agronomist or visit agsource.com to get started.

ality and quantity crucial livestock water requirements

By Ross Mosteller, Meadowlark District Extension agent, livestock and natural resources

Nothing can be quite as refreshing as a cool drink of fresh water on a hot summer day. While this true for us, it is equally true for our livestock. Water quantity and quality are critical to the health and performance of livestock. Hot weather and drought conditions can impact both water quality and quantity. As the weather warms up and much of the state continues to deal with long-term drought conditions, keep these points in mind. Let's call this article part number one of two and focus on water quantity this week.

The importance of water is often overlooked, and performance can be affected by water intake. So how much water do livestock need? There is no one answer for how much water our livestock consume, because needs are influenced by environmental temperature/humidity. class of livestock, weight, and stage of production, to name a few. The warmer the weather and more active the animal, the more water needed. Feeds with higher water content (lush grass, silage, etc..) will contribute to overall animal water intake, so water isn't just in the tank or waterer. These many factors make water needs difficult to measure at times.

Some general NRC guidelines for livestock water needs are as follows:

Beef Cattle: Lactating cows need two gallons of water per 100 pounds of bodyweight per day. Bulls, dry cows and growing calves need 1 to 1 ½ gallons of water per 100 pounds per day. Milk is 87% water, so lactating animals require more and nursing animals get some water from

Dairy Cattle: Calves and developing heifers require 1 to 1 ½ to as much as ten gallons per head per day. Dry cows range from nine to 13 gallons per day. Lower production cows can consume 18 to 22 gallons, but high production cows will consume 35 or 40 gallons of water

Horses: Level of activity can have a major impact on horses and the more they exercise and work, the more water needed. Yearlings will consume about five gallons per day, ranging up to mature, active horses needing 20 or more gallons on a hot day.

Small Ruminants: Lambs and kids will consume anywhere from ¼ to 1 ½ gallons per day. Mature animals will be in the range of one to two gallons per day. Ewes or does raising twins or more require double the amount of water to support fetal growth and lactation.

Swine: Growing pigs have an incremental increase in needs, ranging from nursery pigs needing about $\frac{1}{4}$ gallon to finishing pigs requiring up to three gallons per day. Non-pregnant females and boars will need three to six

gallons per day, with lactating sows consuming five to eight gallons per day.

Poultry: Work at the University of Georgia provides the general rule of thumb that for each pound of feed consumed, poultry will need 1.55 to 1.75 pounds of water (8.34 #/gallon).

Water is considered the most-important nutrient, because of the vast number of biological functions that rely on water. Growth, development and reproduction may be inhibited by not providing enough water. The best way to ensure that livestock have access to the complete recommended amount of good-quality water, is to have reliable water sources. It's particularly important that young animals are able to reach the water to drink. Watering systems need to be able to provide adequate drinking space, volume and recharge capacity for the animal demand, especially in hot weather.

Regardless of water type, ensuring that fresh, clean water is freely available is the easiest way to encourage feed intake to promote animal growth and production. During periods of high-water consumption, like lactation or heat stress, it will be beneficial to provide additional water, maybe even water sources. Next week we'll take a look at some of quality- related issues to consider with

ips with butchers B focuses on bu ilding relationsh educational tools by look-25 "American Lambas-

The continued trend toward local food sourcing has put hometown butchers and specialty meat shops on the radar of likely lamb consumers. In June.

the American Lamb Board (ALB) connected with 50 of these U.S. businesses through its new "Butcher Box" direct mail kit. The goal is to re-engage with

this audience for long-lasting relationships that lead to increased sales of domestic lamb.

ALB research done by Midan Marketing in 2021

found that 24% of consumers made retail lamb purchases at independent markets and/or butcher shops. Of those consumers. 30% were heavy lamb users and 35% were light lamb users.

ALB identified the 50 businesses to receive the Butcher Box of American promotional Lamb

the shops already carry lamb (American, imported or both), while some do not routinely offer lamb.

The initial 50 butchers will have the chance to be selected as one of

ing at trade information,

online activity and input

from chefs, suppliers and

food influencers. Some of

sadors" to advocate for American Lamb, similar to the successful ALB food blogger and chef Lambassadors program. Be sure to check Where to Buy American Lamb | American Lamb Board in coming months to see the list of the new 25 American Lambassadors



LIVESTOCK



CATTLE SALE EVERY WEDNESDAY: 12:00 PM

No sale held on June 28, 2023

EARLY CONSIGNMENTS

60 mostly blk strs. 900-925#

60 mostly blk strs, 900-925# PLUS MORE BY SALE TIME NO SALE ON: JULY 5

SPECIAL OFF

JULY 26

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Wednesday Sale, Hogs NOON • Cattle 12:30 PM

Report from June 28th, 2023

Lighter run of calves and yearlings due to wheat harvest and haying. All classes of cattle finding a very active market.

TOP BUTCHER COW: \$114.50 @ 1,420 LBS. **TOP BUTCHER BULL:** \$137.00 @ 1,770 LBS. **BRED COWS:**

> NO TEST PAIRS: \$1450 - \$1650

NO SALE JULY 5 **NEXT SALE: JULY 12**

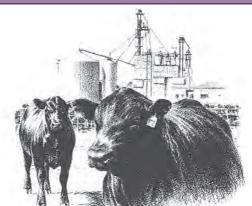
SPECIAL FALL CALF SALE WEDS., AUGUST 2ND

Watch online with cattleusa.com (Tab J.C. Livestock Sales) Must register to bid.

CLAY CENTER IVESTOCK SALES INC.

Cattle sales Tuesday, 11:00 AM. No Sale Held June 27th, 2023

NO SALE JULY 4 NEXT SALE: JULY 11



SUMMER SALE SCHEDULE:

July 4th - No Sale @ Clay Center July 5th - *Pending Sale* @ Junction City

Radio Market

KFRM 550 Tues. & Wed 8:00 am

July 11th - Back to Reg Sale Schedule @ Clay July 12th - Back to Reg Sale Schedule @ J.C.

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4 bkbwf 335@241.00 2 bkbwf 530@270.00 423@245.00 4 mix 568@263.00 9 mix 4 mix 483@239.50 3 mix 613@244.00 2 mix 553@222.00 6 blk 664@240.00 504@221.50 5 blk 796@240.00 5 blk 500@206.00 5 mix 725@238.00 2 wf 12 mix 654@219.00 4 blk 745@235.00 716@224.50 8 mix 667@214.00 4 blk 648@206.50 2 wf 785@216.00 4 mix 749@225.00 2 blk 858@233.00 12 blk 712@221.00 8 mix 886@216.00 5 blk 763@221.00 4 blk 24 mix 876@213.00 52 mix 718@220.00 2 bkbwf 855@210.00 119 mix 804@213.00 11 blk 939@229.00 934@213.00 812@206.00 5 blk 57 mix 888@205.00 13 mix 945@210.00 958@194.00 11 mix 1003@209.00 2 mix **STEERS** 2 Char 1005@193.00 368@276.00 3 Char 1127@170.00

Date: 6/28/23; Total Head Count: 555. COWS: \$75-\$115.00; BULLS: \$117-\$130.00

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To see more consignments go to: emporialivestock.com

KBC helps host dietitians for a nutrition ad Kansas, Nebraska, Oklahoma and Missouri state beef ucts, the different beef cuts available and sustainability.

councils co-hosted Nutrition Adventure May 23-25. The three-day event was designed to connect dietitians with producers, address beef industry misconceptions and provide applicable science and skills to attendees.

Dietitians came to Kansas City from across the U.S., including California, New York, Florida and Nebraska, for programming centered on beef, food inclusivity and food styling. Specific topics covered consisted of beef nutrition, the meaning of various labels on beef prod-

Attendees also had the opportunity to participate in a food styling seminar and cooking competition, where they made meals featuring flank steak.

Following a tour of Tailgate Ranch near Leavenworth led by owner Kirk Sours, the dietitians heard from a panel of producers and industry stakeholders including Sours, Shawn Tiffany with Tiffany Cattle Co., Angie Siemens with Cargill and Dan Thomson, veterinarian and professor at Iowa State University. Topics of discus-

sion ranged from how beef is processed to the panel's thoughts on alternative meat products, to family involvement in the operation.

On a post-event survey, one participant noted they now were comfortable recommending beef because they got to see firsthand how passionate producers and those in the beef industry are about raising cattle. Attendees also reported feeling more comfortable with and knowledgeable about cattle management practices and beef

With forage supplies in short supply due to drought, some livestock producers are looking at wheat straw as feedstuff. despite its poor nutrient quality.

This leaves wheat farmers asking what the value of their wheat straw is, savs University of Missouri Extension agricultural economist Ray Massey. Massey and agriculture economist Joe Horner developed a spreadsheet to help producers decide. Download the spreadsheet at http://muext.us/Wheat-StrawValue.

Several considerations determine the real cost and value of wheat straw. First, what nutrients leave the field when straw is baled? What are the effects on organic matter in the soil? Are there negative effects from soil compaction to the wheat field?

Answers to these questions are site-specific, says Massev. Some rely on market prices. Others, such as compaction, have no market prices to help estimate their impact. Consider both to decide short- and long-term benefits.

It is easiest to estimate the cost of nutrient removal. Massey recommends using published book values such as those from the International Plant Nutrition Institute, at http:// www.ipni.net/article/IPNI-3296, on the quantity of nitrogen, potassium, phosphorus and sulfur in the straw to estimate the market value to replace removed nutrients with commercial fertilizers. Multiply the amount of nutrient by the value of the nutrient to estimate the value of the straw. Book values may vary by state.

When considering the value of straw to the soil's fertility, look at the nutrient's stability, Massey says. Phosphorus and potassium are stable nutrients that. if removed in the stubble, likely reduce soil fertility.

On the other hand, nitrogen content of the straw may have less effect on soil fertility since it is a volatile element. If left on the surface, it may not be available to later crops. Valuing nitrogen may overestimate the cost of replacing the nutrients removed by harvesting the straw.

"The process above tells the wheat farmer what the soil nutrient value of the straw is," says Massey. "It does not tell the livestock farmer the feed value of the straw." The livestock farmer should research the feed value of the straw to ensure that it exceeds the price the wheat farmer is asking for the straw.

Massey gives the following example:

A farmer has wheat straw that can be baled and sold. Book values show that every ton of wheat straw contains 15 pounds of N, 3.7 pounds of P2O5, 29 pounds of K2O and 5.4 er prices indicate nutrient prices of \$0.49 per pound for N, \$0.69 per pound for P2O5, \$0.52 per pound for K2O and \$0.82 per pound for S

If nutrients removed affect soil fertility, the total value of nutrients removed equals \$29.32 per ton. However, this values all the N in the straw. If all the N in the straw adds $\,$ nothing to soil N, the N in the straw would not be valued and the total value of nutrients removed becomes \$22 per ton.

If the farmer is the person baling the hay, consider adding a custom baling charge to the value of the nutrients removed. If baling costs are estimated at \$18 per bale and each

bale weighs 1,200 pounds, the value of the straw now becomes \$52 per ton (\$22/ ton for nutrients + \$30/ton baling charge).

Business transactions for creating a profit margin should reward the farmer for the risk and management of the activitv. If the farmer wants 15% margin for profit and risk, the value of the straw becomes \$59.80 per ton (\$52/ ton x 1.15 for margin).

For more information, visit vour local MU Extension agronomist or email Massey at masseyr@missouri.edu or Horner at hornerj@missouri.edu.

For more drought resources, go to https://mizzou.us/DroughtResources.

pounds of S. Local fertilizetic benefits to light

Animal genetics play a crucial role in modern agriculture, enhancing food sustainability and animal adaptation to a changing climate. Over the years, animal breeders have underlined the significance of genetics in enhancing animal productivity. Preserving diverse sources of animal germplasm is crucial to maintaining genetic diversity, which provides economic sustainability and food security in the face of new diseases and climate change, and advances our knowledge of animal genetics and genomics.

The USDA Agricultural Research Service's National Animal Germplasm Program (NAGP) has collected and preserved more than one million samples from over 64,000 animals across the United States. These samples, dating from the late 1940s to the present, aim to maintain the genetic diversity of American livestock, providing genetic security and an improved understanding of genes that influence and control valuable animal characteristics.

Over the last 24 years, NAGP has released almost 11,000 samples from the germplasm collection to breeders, university researchers, and others in the animal industry and scientific community for molecular studies and introduction of lost genetic variability in living populations," said Harvey Blackburn, NAGP animal geneticist and program coordinator. "The released genetic resources enable exploration into important livestock industry problems."

Recently, the use of NAGP collections has brought to light interesting findings.

A beef cattle producer in South Dakota successfully incorporated samples from the NAGP repository into their breeding program. They requested and received semen samples from five Angus bulls born before 1997, which were used to mate with over 150 Angus cows. The resulting offspring are helping to modify the breeder's cow herd to meet their production and marketing objectives. Bull progeny from pre-1997 genetic resources have shown high-performance levels for a combination of traits and are consistently highly sought after in the marketplace over the past few years. Researchers from NAGP and the Livestock and Range Research Laboratory are now studying the underlying genomic differences in progeny from these bulls older than 26 years old and the current population of Angus to better understand the basis for the higher performance levels

This is not the first time NAGP animal geneticists and the industry have seen the positive impact of sampling older generations of sires in the collection. In 2020, Blackburn collaborated in a study completed by researchers from Pennsylvania State University's (PSU) Department of Animal Sciences. In that study, it was found that the entire U.S. Holstein population originated from two paternal lineage lines (only two different Y chromosome origins) traced to prominent 1970-era bulls. Through genomic and pedigree lineage tracing of samples in the germplasm collection, they found two additional, unique Y chromosomes that were lost in current Holstein lines due to selection. Calves were created using germplasm samples from these two bulls, and like the Angus example, the daughter progeny produced milk yields above the expected level and equal to their counterparts from the current Holstein genetic base born in the same year.

"These examples of how the animal germplasm collections are used in research and breeding programs are of great importance for the industry," says Blackburn. "Although large breeds of dairy and beef cattle, like Holstein and Angus, are believed to have no diversity issues, these examples have uncovered the opposite, especially with the lack of variation of the Y chromosome in Holstein bulls. Both the Angus and Holstein examples illustrate the value of the germplasm collection to broaden, and even rescue, genetic diversity, improve animal performance, and suggest to scientists that there is still significant research to be done in understanding the genetic basis for livestock performance."

The NAGP's gene bank also includes samples from aquatic animals (fish and shellfish), poultry, and insect populations. Animal germplasm requests can be submitted to the USDA Agricultural Research Service's NAGP at Animal-Germplasm Request

actors influencing the frequency of twins

By Lisa Moser, K-State Research and Extension

news service Look around and it is easy to spot identical twins due to their similar features and mannerisms. Just like with people, twin pregnancies can also there are some genetic and environmental factors that influence the likelihood of twin births, say the experts at Kansas State University's Beef Cattle Institute.

"Twin births occur in about 2% of beef pregnancies," said Bob Larson, K-State veterinarian, while speaking on a recent Cattle Chat podcast.

Larson said that the majority of twin pregnancies are the result of two eggs being ovulated and fertilized at the time of mating. These are known as fraternal twins.

"These calves would be full siblings," Larson said. He adds that identical twins are the result of a fertilized egg that splits in two during development.

K-State beef cattle geneticist and head of the Eastern Kansas Research and Extension Centers Bob Weaber said that there is a genetic link to why twins tend to occur more frequently in some cow families.

"There was a research study done in which cows were selected for twinning and the scientists, through selection, were able to increase the frequency of in the herd, so know there is a genetic component to it," Weaber

Larson agreed and added that producers who wanted more twins in the herd could make selections that would increase that likelihood over a few generations.

However, fraternal twin births also bring about some less desirable development especially when a bull and a heifer are born together, said the experts. These females are termed free-martin and are infertile because of the male hormones crossing through shared blood vessels to the heifer during development.

"Over 90% of the time the heifers born alongside a twin bull are infertile and so you don't want to retain those heifers in the herd," said Brad White, K-State veterinarian.

Along with genetics, cow nutrition can also

factor into the likelihood of carrying twins, said K-State beef cattle nutri-

tionist Phillip Lancaster. research, "Through

when we looked at heifer development and puberty, we found that females that had higher glucose levels in their blood had

increased fertility and a reduced age at puberty," Lancaster said. "The glucose levels rise in cattle that are fed high energy diets.

To hear the full discussion, listen to the Cattle Chat podcast online or through your preferred streaming platform.



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22 blk red Farlington 780@210.00

9 blk hol xLeavenworth 688@189.00 4 hols Leavenworth 528@131.00 **HEIFERS**

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Market Report - Sale Date 6-29-23. 1295 head 300-400 lb. steers, \$291-\$317; heifers, \$273-\$319; 400-500 lb. steers, \$248-\$276; heifers, \$220-\$259; 500-600 lb. steers, \$240-\$274.50; heifers, \$215-\$255.50; 600-700 lb. steers, \$234-\$262; heifers, \$213-\$240; 700-800 lb. steers, \$217-\$244; heifers, \$205-\$231; 800-900 lb. steers, \$207-\$236.75; heifers, \$186-\$214; 900-1,000 lb. steers, \$211-\$230.50. Trend on Calves: Slightly lower due to the heat! Trend on Feeder Cattle: \$4-\$6 higher than last week. Butcher Cows: High dressing cows \$107.50-\$128; Avg. dressing cows \$92-\$102; Low dressing cows \$75-\$87. Butcher Bulls: Avg. to high dressing bulls \$114-\$125. Trend on Cows & Bulls: Mostly \$3-\$6 higher.

Some Highlights Include:

	HEIFERS	4 blk	495@273.00
3 blk	323@319.00	7 mix	525@273.50
5 red	450@259.00	10 blk	557@269.50
12 blk	490@250.00	24 blk	597@250.00
8 red	544@255.50	10 blk	614@255.00
14 red	605@240.00	17 mix	674@246.00
4 blk	655@220.50	34 blk	821@236.75
19 mix	719@231.00	87 mix	877@235.50
23 blk	772@221.50	117 blk	903@230.50
	STEERS	60 blk	956@229.00
4 char	313@317.00	105 blk	982@226.00
4 blk	399@299.00		

NO SALE JULY 6TH DUE TO HOLIDAY!

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• 300 mixed steers, off grass, 800-850lbs

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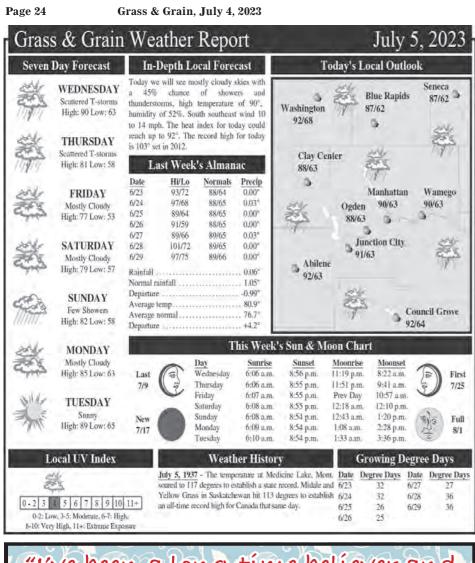
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Schwieterman Market Outlook

A marketing commentary by Bret Crotts

The grain markets have been in free fall mode since the forecasts turned wetter. The corn market has essentially given up all of the gains made during May and June. The wheat, depending on which contract you look at, has given up about half of the gains, but the beans have managed to outperform the other markets.

The soybean complex got a huge boost from the Planted Acreage report, which showed soybean acreage at 83.5 million. That was well below the lowest trade guess and about 4 million below the average trade guess. That acreage figure will result in much lower new crop ending stocks and make the market even more sensitive to the weather. USDA will definitely cut demand estimates to help compensate for the lower production, but then won't be able to offset all of it, so if weather is not ideal we could potentially see ending stocks at or below the 150 million bushel level.

About half of the missing soybean acres went to the corn. Corn acreage came in at 94.01 million, which was up 2 million

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from the March estimate. That acreage figure, combined with ideal weather and our current demand pace, could bury us in corn. A trend line yield has become much less likely thanks to the dry June, but improved July weather could go a long way to fix that problem. Since the majority of U.S. corn production is under some level of drought condition, we have to see the forecast rains materialize in order to keep the market down. If condition ratings continue to deteriorate, the corn will be able to get back a significant part of the recent losses.

The wheat stocks number came in at 580 million bushels, which was considerably lower than expected, and would have been supportive, had it not been for the extreme pressure in the corn market. Wheat is still stuck being a follower since it does not have a good demand story to keep the market supported, so what ever the corn does, the wheat will probably follow.

On the charts, the soybeans, and particularly the soybean oil, definitely have the best outlook. The

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key resistance for the November contract will come in at the \$13.78 high from June 21st, followed by the \$14.00 area. The acreage cut is enough to keep the market going for a little while, but a weather problem will make the market explosive. Look for the December soybean oil to move above 60 and perhaps head for 66.

The corn looks bleak, the last hope for the support in the December contract is the May low at \$4.90 Failure there would suggest that traders feel the crop is made and that the market is going to head for \$4.00. The key overhead resistance level will be the 50-day moving average at the \$5.38 area.

As for the December KW, the outside day down Friday points towards a test of the \$7.76 area. Failure there would indicate that we are headed below \$7.40. It will take a close over \$8.27 to indicate we are going to turn higher.

Cattle futures had a great week. The weakness in the corn was very helpful to the feeders, and most feeder contracts made new contract highs. The live cattle were not quite as strong, but seeing mostly steady cash trade with the futures well below the cash, had the market climbing all week. New contract highs are probably going to happen soon. If there is any indication of higher cash cattle trade,

the August live cattle should move above \$180. Schwieterman, Inc. is a full service commodity bro-kerage firm. If you would like more information on commodity markets or our brokerage services, contact Bret Crotts at 800-272-9131,

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Tuesdays

We sold 600 cattle June 27. Steer and heifer calves were 1 blk hfr in good demand at steady prices. Feeder steers sold at 2 blk hfrs 8 blk/bwf hfrs steady price after last week's higher priced. Cows and bulls were steady.

STEER CALVES 655 @ 229.00 1 blk str 9 blk/bwf strs 434 @ 293.00 18 mix strs 829 @ 227.50 4 blk strs 505 @ 280.00 645 @ 219.00 1 x-bred str 1 blk str 355 @ 278.00 1 blk str 870 @ 214.00 466 @ 275.00 954 @ 209.35 17 blk/red strs 59 mix strs 1 blk str 515 @ 255.00 60 mix strs 973 @ 205.50

STOCKER & FEEDER STEERS 15 blk/bwf strs 555 @ 272.00 3 blk hfrs 7 blk strs 564 @ 258.00 3 blk hfrs 9 bwf/red strs 561 @ 252.00 3 blk hfrs 12 blk strs 609 @ 243.00 2 blk hfrs 9 blk/bwf strs 686 @ 241.00 2 blk hfrs 67 blk/char strs 810 @ 234.85 1 blk hfr 701 @ 233.25 10 blk/red hfrs 7 blk strs

HEIFER CALVES 452 @ 258.00 437 @ 244.00 490 @ 236.00 525 @ 235.00 513 @ 233.00 535 @ 233.00 513 @ 218.00

cows 1510 @ 107.00 1 bwf cow 1 blk cow 1710 @ 106.00 1 bwf cow 1700 @ 105.00 1 red cow 1490 @ 104.00 1400 @ 103.50 1 bwf cow 1 bwf cow 1655 @ 102.00 1 bwf cow 1315 @ 100.00 1460 @ 99.00 1 bwf cow 1 blk cow 1400 @ 98.50 36 blk/char strs 811 @ 231.50 STOCKER & FEEDER HEIFERS 1 bwf cow 1305 @ 98.00

565 @ 232.00 1 wf cow 1215 @ 97.00 663 @ 225.00 1525 @ 96.00 1 char cow 632 @ 217.00 1490 @ 95.00 1 bwf cow 615 @ 211.00 1 bwf cow 1360 @ 94.00 712 @ 211.00 1170 @ 93.00 1 blk cow 660 @ 210.00 1 blk cow 1460 @ 90.00 1305 @ 89.00 590 @ 197.00 1 red cow 1165 @ 88.00 845 @ 195.00 1 blk cow 648 @ 180.00

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1465 @ 115.00

1730 @ 114.00

@ 1150.00 1 blk bull 1 blk bull 1 red bull 1 red bull

NO SALE TUESDAY. JULY 4th!



CONSIGNMENTS FOR TUESDAY, JULY 11, 2023:

- 125 blk red heifers, 750-850 lbs.
- 124 blk steers, 875-900 lbs., off grass
- 60 blk char steers, 925-950 lbs.
- 61 blk x-bred steers, 925-950 lbs.

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