

Watching out for water: watershed specialists help protect Kansas water

By Melissa Harvey, K-State Research and Extension news service

For farmers and ranchers in Kansas, drought concerns are always looming, so community conversations about conservation and water use are ongoing and vital.

Concerns are ever present about ponds dwindling to muddy puddles, and recently irrigators learned that the Ogallala Aquifer – a main water source for the state – declined last year by an astounding two feet in parts of Kansas.

The urgent work on water conservation forms part of the foundation for the Kansas Center for Agricultural Resources

and the Environment (KCARE). Established by Kansas State University, KCARE works to coordinate water and natural resource research, including multiple projects addressing aquifer declines.

But that's only the tip of the iceberg: think "quality," in addition to "quantity."

Consider oil, trash, pet waste or chemicals seeping into storm drains after a downpour, or pesticides and fertilizer leaching off a farmer's fields. Maybe sediment washes away from construction sites or erodes from streambanks.

All are examples of "non-point source pollution," and over time it

negatively impacts the water from your faucet, the pond on your farm, or the rivers and reservoirs you visit. In fact, many states have named non-point source pollution as the leading cause of water-quality problems.

For more than 20 years, KCARE has been helping reverse those harmful effects by empowering a team of watershed specialists who actively partner with producers, municipalities and other important water users to identify and implement science-based solutions to improve water quality.

"We must conserve Kansas water while also safeguarding the quality of the waters we enjoy

here," said KCARE director Susan Metzger. She said KCARE watershed specialists actively partner with water users to implement on-the-ground practices that assist both producers and municipalities to limit the amount of sediment and nutrients entering Kansas waters.

This grassroots approach works; Metzger said the program has prevented tens of thousands of tons of sediment from entering rivers and reservoirs.

"The desire of clean water is a constant in our communities," said KCARE watershed specialist Ron Graber. "Our job is to listen to producers and other stakehold-

ers, and help folks work toward common goals. I think we're all making a difference."

Graber said that the work has evolved over the years, from identifying water quality concerns, to implementing solutions, or best management practices that match a community's needs. Best management practices can range from planning alternative livestock watering facilities to reducing atrazine use on cropland to stabilizing streambanks.

Watershed specialists provide technical assistance to producers to explain which are right for their specific situation and assist farmers to identify financial pro-

grams to offset costs.

"This important work goes beyond providing the public with facts and figures. It remains successful because each team member combines scientific expertise with a focus on relationships and people," Metzger said.

"If you get to know someone and then explain how we can create a solution together, it's more effective than just telling them to fix a problem," Graber said. "When we work together, then it's a win for Kansas water."

Learn more about KCARE's work by following @KStateKCARE on Twitter or Facebook.

Be mindful of winter mineral nutrition

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

As I look back on some of my nutrition related articles recently, I see that I'm guilty of overlooking discussion that this article mentions in mineral supplementation. Mineral consumption in my cows has picked up as they are out on corn residue, so this has come to front of mind for me. Hopefully, you will find some takeaways from this article based on one originally written by Adele Harty, former SDSU Extension cow/calf field specialist.

Winter supplementation often focuses heavily on meeting protein and energy requirements of cows and tends to leave mineral nutrition as almost an afterthought. In reality, meeting all nutrient requirements, including energy, protein, minerals, vitamins, and water are equally important. Missing the mark in any of these five nutrient categories can have equally negative effects. In reality, all nutrients interact, and deficiencies in mineral nutrition can create deficiencies in availability of other nutrients, even if those nutrients are adequate in the diet.

During winter months, locally grown forages are typically the basis of ruminant diets, and important considerations are the amount and availability of minerals in forages. Due to the drought, this year may be a very different situation with hay coming from different areas in the state or country. The amount of each mineral in the


forage is based on mineral content of the soils they are grown on, which is highly variable because of variation in the geologic parent material the soils come from. This really speaks to the value of doing forage testing!

Not only does this affect mineral status from one region to another, but it can be highly variable on a local basis, to the point that mineral content of forages can vary from one pasture to the next. Additionally, mineral content and availability are not the same thing, with mineral interactions playing a key role. Another key characteristic of forages that drives mineral availability is digestibility. Higher quality forages that have higher digestibility will have greater availability of the minerals they contain than mature forages such as dormant winter range, crop residues, or CRP hay.

Due to drought conditions and ranchers having to utilize alternative forages, the mineral program that has worked in the past may not meet the mineral requirements of the animals this year. When speaking of forage mineral levels, typically calcium levels are adequate in forages and phosphorous levels tend to be low and often inadequate, especially in mature forages. Thus, phosphorous supplementation is often necessary, especially with low quality forages such as winter range, crop residues, or low-quality hay. Don't forget, the protein supplement used has to be evaluated for mineral content as well.

In general, mineral nutrition is challenging as minerals can interact with each other and can be antagonistic, meaning that they can bind with each other and reduce availability to the animal. In other words, sometimes an excess of one mineral has to be fed in order to overcome an antagonism. Secondly, excess minerals can cause toxicity and potentially death, therefore to overcome the antagonisms it is critical that minerals are not supplemented needlessly because of cost and toxicity concerns.

Minerals are important nutrients that need to be properly balanced in the diet. If dietary feedstuffs do not contain adequate minerals or contain an imbalance, then mineral supplementation is necessary. This is usually the case. However, mineral supplements are often expensive and careful attention to providing the right supplement can be key to ensuring that we get the biggest bang for the buck.





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ONLINE BIDDING AVAILABLE AT LMAAUCTIONS.COM

NO SALE HELD FRIDAY, NOVEMBER 25TH (THANKSGIVING HOLIDAY)

EARLY CONSIGNMENTS FOR DEC. 2:
SELLING AT 11:30 A.M.


COMPLETE DISPERSAL OF SPRING CALVING COWS CONSISTING OF:

- 90 blk bwf with a few Red Ang cows, 4 yrs to SS, bred to Ang & Char bulls for Feb.-March calving.
- 25 blk, bwf & few Red neck cows, 3-6 yrs, w/ 3-6 wk Ang sired calves, calves and cows all shots.
- 30 blk cows, 3-6 yrs, bred to blk or Red Ang bulls for winter and early Spring calves.
- 15 Red Ang & RWF cows, 3-6 yrs, bred blk or Red Ang bulls for winter and early spring calves.
- 25 blk 1st calf hfrs w/ blk calves by side. Cows & calves worked & ready to breed.
- 9 Angus 1st calf hfrs with Angus sired Oct.-Nov. calves by side.
- 7 Angus 1st calf hfrs, bred Angus bulls for Dec. calves.
- 1 Oleen breeding Horned Herf bull, 30 mo., Trich & semen tested.


- 60 choice reputation Ang str & hfrs, weaned 60 days, 2 rds shots, 600-700#
- 105 choice reputation SimAng & Ang str & repl. quality hfrs, wean 60 days, 2 rds shots, 600-775#
- 65 blk w/ a few crossbred feeder str, 800-850#
- 33 Blk str & hfrs, 2 rds shots, weaned 30 days, no implants, 520-550#
- 50 Reputation Blk str & hfrs (all shots/weaned Sep 16) 500-775#
- 12 Blk & BWF str & hfrs, 2 rds shots, bunk broke, off cow, 400-600#
- 45 Fancy Red Angus Herf cross str, weaned 45 days, 2 rds shots, 475-650#
- 42 choice reputation Red Ang str & hfrs, 2 rds shots, weaned 45 days, 500-600#
- 26 blk bwf str & hfrs, 2 rds shots, weaned 10/1, poured, 600-750#
- 50 choice reputation blk bwf str & hfrs, 500-600#
- 45 choice blk str & hfrs, weaned 50 days, 2 rds shots, 550-650#
- 70 choice Reputation and Char cross str, long weaned, 700-800#
- 13 polled Herf str & hfrs, all shots, worked, weaned 8 weeks, 550-750#
- 120 choice reputation Blk Angus & Red Angus str & hfrs, complete rd, 550-675#
- 70 blk str & hfrs, 2 rd shots, bunk broke, long wean, 700-900#
- 8 blk str, 2 rd shots, 500-600#
- 8 blk str & hfrs, 2 rd shots, 600-650#

EARLY CONSIGNMENTS FOR DEC. 9:

- 52 choice Ang str & hfrs, weaned 45 days, 2 rds shots, wormed, 500-550#
- 250 choice rep. blk, bwf & few Rd Ang cross mostly str & hfrs, wean 80 days, 2 rds BoviShield Gold One Shot, Ultra Choice 7, Dectomax poured, 450-650#



SPECIAL STOCK COW AND BRED HEIFER SALE
WED., DEC. 14 • STARTING 11:00 AM



BRED 1ST CALF HEIFERS

- 70 Northern origin blk, bwf 1st calf hfrs, bred to Gardiner Red Ang bulls, for 60 day Feb.-March calving, 1 rd Scour Guard.
- 2 home raised bwf, (1) & Ang, (1) 1st calf hfrs, bred LBW Herf bull for March calving.
- 25 Herf 1st calf OCV hfrs bred to Tahoe Ang bulls, due to start Feb. 15 for 60 day calving period.
- 18 blk Spring bred 1st calf hfrs purchased at the Flint Hills Replacement Heifer sale, bred to a registered Red Angus extreme LBW Pacesetter bull for 30 day late Jan. calving, all worked.
- 19 Super Gentle Red Angus 1st calf hfrs, AI bred to KCC Enduring for Jan. 19 due date.
- 30 choice reputation Red Angus 1st calf OCV hfrs bred LBW Red Angus bull for Feb. 1 calving. All vaccinations including 1 round Scour Guard.
- 70 choice reputation Blk Angus hfrs bred LBW Blk or Red Angus bulls for Feb. 1 calving. All vaccinations including 1 round Scour Guard.
- 151 bred commercial hfrs consisting of: 19 Red Angus; 46 Blk Baldies; 85 Blk Angus. Blk & Blk Baldies are AI bred to Schreiber Angus hfr bull, SA Country Wide. Reds are AI bred to Blazin Steel from Select Sires. Clean up bulls were all Blk from Schreiber Angus, Laffin Angus & Dix Angus. Hfrs are vaccinated/ poured/ & 1 rd Scour Guard.
- 20 fancy, very gentle, Blk 1st calf OCV hfrs, AI bred to Gardner 100X, top 1% CED, to start calving Feb 8. Cleaned up LBW, high CED Lyons Angus bulls for 30 days, all worked.
- 8 fancy Red Baldy 1st calf hfrs bred LBW Red Angus bull for Feb. 1 calving.

1ST CALF HEIFER PAIRS

- 8 registered Ang 1st calf hfr pairs.

COW/CALF PAIRS

- 30 blk cows, 4-6 yrs, with blk & Char calves by side, calves worked.
- 25 blk Fall cows, 3-4 yrs, with Nelson Ang sired calves by side, cows & calves worked.
- 15 fancy Red Ang cows, 3-4 yrs, with Red Ang sired calves by side, cows & calves worked.
- 100 blk & Red cows, 4-6 yrs, with blk & Red calves, calves worked. Cows exposed back to blk & Red bulls.
- 5 Red Ang Fall pairs with Red calves.
- 10 Red & blk cows, 3-5 yrs w/ 30-60 day calves by side, all worked.
- 20 Blk, Red & BWF cows, 5-6 yrs, with calves sired by a Wright Charolais bull.

BRED COWS

- 214 choice reputation Northwest Nebraska origin Red Ang cows, 5-7 yrs, bred to Pieper & Hunninghake Red Ang bulls, to calve March 8 for 60 days. 2022 calves weaned at 625-675 lbs.
- 7 Red & blk Spring bred cows, 5 yrs to SS.
- 50 big blk and Red cows, 3-8 yrs, bred to blk bulls for Spring calves.
- 25 blk & bwf cows, 3-5 yrs, bred to Ang bulls to start calving Jan. 15.
- 30 Blk, Red & BWF Fall bred cows, 5-6 yrs, bred to Wright Charolais bull.
- 19 fancy gentle Angus Spring bred Montana origin cows, 4-5 yrs, bred to Fink & Harms Angus bulls for Feb.-March calving.
- 60 blk BWF cows, 3-6 yrs, bred Blk Angus & Blk Sim bulls for Feb.-March calves.
- 9 blk Spring calving cows, 3-5 yrs, bred Blk, 1 rd shots.

Upcoming Special Stock Cow & Bred Heifer Sale Dates • Wednesdays starting at 11:00 AM
2022: December 14 • **2023:** January 11; February 8; February 15 (River Creek Sale); March 15; April 12; May 3

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Kansas Hay Market Report

****DUE TO THE THANKSGIVING HOLIDAY, THERE WILL BE NO REPORT NEXT WEEK, NOVEMBER 29TH. THE NEXT REPORT WILL BE PUBLISHED DECEMBER 6TH.**

Compared to the last report demand remains strong and prices were mostly steady, although, grinder hay in the south-central region and ground and delivered in the southwest bumped up a bit. Snow of varying amounts were reported across the state and totaled from a dusting to four inches. According to the U.S. Drought Monitor for November 15th, drought continued to gradually worsen in parts of the high plain's region. On November 13, the U.S. Department of Agriculture reported the winter wheat across the region remained in dismal condition, with more than one-third of the crop rated very poor to poor in Colorado (45%), Kansas (40%), Nebraska (38%), and South Dakota (37%). Currently abnormally dry conditions (D0) remained near 14%, moderate drought (D1) decreased to near 17.5%, severe drought (D2) remained near 13%, extreme drought (D3) remained near 21%, and exceptional drought (D4) remained near 35%.

Southwest Kansas

Dairy alfalfa, grinding alfalfa steady, ground and delivered 20.00 higher, movement slow to moderate. Alfalfa: horse, supreme small squares 12.00-14.00/bale. Dairy, 1.30-1.40/point RFV. Good, Stock or Dry Cow 290.00-300.00. Grinding alfalfa, large rounds, 285.00-300.00, large square 3x4's and 4x4's 285.00-300.00. Ground and delivered locally to feed lots and dairies 330.00-345.00. Alfalfa/grass hay mix ground and delivered 270.00-280.00; Grass Hay: CRP, large square 3x4's 145.00-155.00. Sudan: none reported. Teff: large rounds 190.00-200.00. Wheat straw: large round 100.00-105.00. The week of 11/13-11/19, 4,714T of grinding alfalfa and 1,325T of dairy alfalfa was reported bought or sold. The average paid by feedlots on November 1 for alfalfa ground and delivered was \$252.51, up \$7.61 from the previous month, usage was 583T/day, same as last month and total usage was 21,494T.

South Central Kansas

Dairy alfalfa steady, grinding alfalfa steady to 10.00 higher, ground and delivered mostly steady, and alfalfa pellets mostly steady, movement slow to moderate. Alfalfa: horse, small squares 255.00-275.00. Dairy 1.30-1.40/point RFV. Good, Stock cow, 290.00-305.00. Fair/good grinding alfalfa, large rounds 280.00-290.00, 3x4 and 4x4's 280.00-290.00. Ground and delivered 290.00-300.00. Alfalfa/Soybean: ground and delivered 250.00-300.00. Alfalfa pellets: Sun cured 15 pct protein 320.00-335.00, 17 pct protein 325.00-330.00, Dehydrated 17 pct 345.00-350.00. Grass Hay: Bluestem, small squares 160.00-165.00, large rounds none reported, large square 3x4's 120.00-140.00. Brome: small squares, 9.00/bale, 3x4's 155.00-165.00, large rounds none reported, mid square 3x3's 175.00-185.00. Grass Hay: CRP 100.00-125.00. Sudan: 3x4 and 4x4's 200.00-210.00. Soybean stalks, large rounds 115.00-125.00. Failed Soybean bales, large round 195.00-200.00. Wheat straw: 115.00-125.00. The week of 11/13-11/19, 6,789T of grinding alfalfa and 309T of dairy alfalfa was reported bought or sold. The average paid by feedlots on November 1 for alfalfa ground and delivered was \$204.08, down \$3.08 from the previous month due to the use of alfalfa mixes, usage was 332T/day, down 10% from last month and total usage was 10,283T.

Southeast Kansas

Dairy alfalfa, grinding alfalfa steady, bluestem grass hay steady, movement slow. Alfalfa: horse or goat, 260.00-270.00. Dairy 1.30-1.40/point RFV. Good, stock cow 250-270.00. Fair grinding alfalfa none reported; Grass hay: Bluestem, small squares 140.00-165.00, mid square 3x3's 130.00-150.00, good 3x4 squares 145.00-160.00, large round 120.00-130.00, Brome, large rounds 140.00-150.00, 3x4 and 4x4 squares 150.00-175.00. Wheat straw, large rounds, old contracts 60.00-70.00. The week of 11/13-11/19, 1,087T of grass hay was reported bought or sold.

Northwest Kansas

Dairy alfalfa steady, grinding alfalfa steady, move-

ment slow. Alfalfa: Horse or goat, small squares 300.00-400.00 delivered, 3x4 squares 250.00-260.00. Dairy, Premium/Supreme 1.30-1.40/point RFV. Stock cow, fair/good 240.00-280.00. Fair/good grinding alfalfa, 240.00-280.00. Milo stalks, large rounds 120.00-150.00, failed milo, large rounds 135.00-145.00.

North Central-Northeast Kansas

Dairy alfalfa, grinding alfalfa, ground/delivered, and bluestem grass hay steady, movement slow. Alfalfa: Horse hay, premium small squares, 12.50-13.50/bale, 3x4's 290.00-300.00. Dairy 1.30-1.40/point RFV; Stock Cow 3x4's 205.00-235.00. Fair/good, grinding alfalfa, large rounds 230.00-240.00, large square 3x4's 245.00-255.00; Alfalfa ground and delivered 240.00-300.00; Alfalfa/Prairie grass mix ground and delivered 270.00-275.00. Grass hay: Bluestem, small squares 7.50-8.50/bale, large 3x4 squares 190.00-200.00, good large rounds 140.00-155.00. Brome: small squares 8.50-9.50/bale, large rounds 155.00-165.00. Sudan: large rounds 125.00-135.00. Soybean large rounds 195.00-205.00. Wheat straw: small squares 6.00/bale, large rounds 95.00-105.00, large squares 110.00-120.00. Corn stalks: large rounds 95.00-105.00, corn stalks ground and delivered 145.00-155.00. The week of 11/13-11/19, 1,085T of grinding alfalfa and 50T 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: Source: Kansas Department of Agriculture - Manhattan, Kansas. Kim Nettleton, 785-564-6709.

Farm Babe challenges Wagyu breeders to be ag advocates

By Burt Rutherford

What would happen if consumers became so far removed from where their food comes from that they don't feel comfortable purchasing it? "That's where we step in as farmers and ranchers and ag business professionals to bridge that gap and communicate what it is that we do on our farms every day," said Michelle Miller, AKA the Farm Babe. Miller knows of what she speaks. Talking about ag advocacy with Wagyu breeders during

the American Wagyu Association "Shaping the Future" annual convention in Charleston, South Carolina, Miller recounted her days in the fashion industry before moving to an Iowa farm. During that time, she was exposed to movies like Food Inc. "It's not at all a truthful film, but unfortunately this film has made its way into academia and schools and education, and people take it as gospel." But now, with social media, ag producers have avenues to correct

that kind of misinformation and tell their story, she told Wagyu breeders. However, adopting a public persona and talking about what they do every day on their ranch or farm is something a lot of producers are reluctant to do. So why do it? "Because activists can take away our science. They can take away our technology, they can take away our chemistries," she said. "If we don't have a seat at the table, we might be on the platter." There's no wrong

way to be an advocate, she told Wagyu breeders. "So, when you're thinking about how I can play a role in this, you could start a TikTok channel. You could start a YouTube (channel), Facebook, whatever works for you. Just find a way to tell your story and realize you've got some pretty cool stories to tell." She advised Wagyu enthusiasts to "Just be yourself, however that looks and feels the most comfortable for you. Humor and memes always go over well, and just find that voice and that personality and that kindness. But remember, you're the expert. So, if (consumers) are not hearing it from you, where are they going to get their information from?" She encouraged ag advocates to always be positive and kind, sharing her own experience. Remember the Burger King television commercial with the young boy dressed in a white cowboy suit and singing about how bad cows are for the envi-

ronment?

"Everybody's mad at Burger King and I decide that I'm going to reach out to Burger King. I thought that they were not going to give me the time of day," she said. She sent a Tweet to the global head of marketing explaining why beef producers found the ad offensive and invited him to visit the farm. "I couldn't believe it. Burger King took me up on it. They came out with their team." The result was that Burger King not only retracted and took down the offensive ad, but they also made a new ad based on their visit to the farm. Miller told Wagyu breeders that after, the head of global marketing was asked why he chose to do an ad on the farm? "He said, 'Well, the Farm Babe, Michelle, she seemed so reasonable,' and that's really what it's about. It's about being polite and being kind and having empathy and realizing that just because somebody's misinformed

doesn't mean they're stupid or a lost cause," she said. Advocating also can be face-to-face communication, she told Wagyu breeders. Invite local politicians to visit your farm or ranch and let them know that you're just a phone call away if they have questions on how a proposed bill will affect the beef business. Host a field day or invite kids from to visit your operation on a school trip. "When you look at the trends of where the Wagyu beef market is heading, it's looking pretty promising," she told Wagyu breeders. "However, that doesn't mean we should be taking our foot off the gas, because at any moment, something can strike that can hit us again in animal agriculture." That's why ag producers need to have their voices and their stories heard. "If you think your voice doesn't matter, I'm here to tell you that it does. There's never been a better time to advocate for our industry."

LARGE JUDY ESTATE AUCTION

SATURDAY, DECEMBER 10, 2022 * 9:30 AM

LOCATION: 912 S. Valley Pride Road - HUTCHINSON, KS 67501

Go 1 mile west of Love's Truck Stop in South Hutchinson, on Frontage Rd to Valley Pride Rd then 1/2 mile north.

LISTING: Versatile, Oliver, Case, Farmall Tractors; Grain Trucks (1940s & 50s, stub nose); Cars & Pickups; School Bus; Camper; Krause & JD Tillage Equipment; New Holland Hay Equipment; Gleaner Combines; Horse Related items; Lots of Shop Tools; Farm Primitives & Collectibles.

Auction Conducted for the HAY JUDY ESTATE

NOTE: This is a 3 Generation auction, where everything goes from wall to wall!! Most of the equipment was parked inside in 2010 and not touched since. No guarantees or warranty implied. See next week for a complete listing and 100s of photos.

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St. James 2022 CONSIGNMENT AUCTION

SATURDAY, DECEMBER 3, 2022 - 9:30 AM

St. James Hall, 5th & Iowa St., WETMORE, KANSAS

Breakfast 7:00-10:30, Lunch till end of sale by St. James Altar Society

PARTIAL LISTING:

CARS, TRUCKS, TRAILERS:
2012 Ford F250, auto., 6.2 gas eng, w/rebuilt Krogman bale bed; 2002 Sterling Semi, TA, C12 Cat, 8LL trans., double frame, wet kit; 2008 Dodge 2500 Quad Cab, diesel, auto., 4x4 Krogman bale bed; 2007 Chevy 2500HD, 6.0 gas, auto., 4x4, 105K mi, Like New Krogman bale bed w/3rd spool valve, Like new tires; 2007 IH 7400 Workstar Feed Truck, diesel, TA, lockers, JD125 box; 2002 Ford F250, 5.4 gas, auto., 4x4, Krogman bale bed; 2001 Ford F250, 5.4 gas, auto. 4x4, Hydrabed; 1996 Ford F250, 7.3L diesel, 4x4, 5 spd., Hydrabed; 1990 Ford F150, 302 gas, 4x4, auto. 142K; 2006 Pontiac GT; 1965 Chevy C60, 6-cyl, 15' bed, steel sides, hoist, roll tarp; 1995 Chevy Ext. Cab, 2WD, auto., 350 eng.; 1999 GMC Suburban, 4x4, auto., 350 eng.; 1970 Chevy C50, 6cyl., 13'6" steel bed, hoist; 1986 Ford F350, Econoline, Emergency Vehicle Lights; Car Trailer, 2-axle, 16'; Shop Built 6'x10' Trailer; Trailer 7'x12'5" single axle; Honda 80 Dirt Bike, XL250; Pickup Bed Trailer w/Ball Hitch; Wood Chipper, Shop Built, 6cyl Ford motor.

TRACTORS, COMBINE, SKID LOADER: 2015 JD 6115D, MFWD, SN#1PO6115D-VF0061929 reverser, 534 hrs., 3pt., Quik Coupler 3 hyd., w/ H310 Loader, Adaptor for Skid Loader attach.; 1976 JD 4430, SN. 4430H047786R, QR, Open Station, 18.4x38/10.00x16, 250 hrs. on Complete Overhaul; 1967 JD 4020, PS, WF, SN T213P145026R, Year Around Cab, AC, 18.4x34/10.00x16, 40 hrs on Compete Overhaul, All JD Parts, 12v, Completely Gone Thru; 1983 AC 8070 MFWD, 8900 hrs., PS, 6 spd., HI/Lo, 20.8x42, 18.4x26, Cab & Air; 1970 JD 2520 gas, SN# T711R020665R, WF, 65hp., 15.5x38 w/Westendorf Loader, QT 6' bucket; IH Farmall H; Farmall A w/belly mower; 2008 JD; 9670 Combine, PRWD, E2901/S2689, duals, Hillco attach., Good Cond., separator shoe rebuilt this fall; 1991 Case IH 1660, 4WD, Cummins eng; Cat 257 Skid Loader, cab, air w/tracks; Case 1835 Skid Loader, dsl, QT bucket & pallet forks; Husqvarna Lawn Tractor, YTH18542, 18.5hp B&S, 42" cut, 21 hrs.

FARM EQUIPMENT: JD 750 NoTill Drill, 7.5", new rubber, single Gang kit, extra parts, Good Cond.; Crustbuster 3400, 15' All Plant Drill, 7.5" spacing; Case IH 1020 FlexHead, 17", pickup reel;

JD 643 Cornhead, 630" low tin, in adaptor, Good Cond.; Harvest Hand Header Trailer, 20'; Meridion RT 6 Seed Tender 240 bu, hyd. drive, Honda eng, remote control, bumper hitch, 2-axle trailer, scales; BMB Rotary Cutter 6', 3pt.; BMB Rotary Cutter 5', pull type; Koyker Gravity Box, 4wheel; Beeline Gears, Westfield, Hyd. Brush Auger; Case IH RBX 561 md. baler, 1000 PTO, net wrap, Tucker wheels; JD 8250 Drill, 20x7.5" w/fertilizer, press wheels; JD 230 Disc, 22"9"; Melroe SprCoupe 220, Tricycle Front, 60' Boom; Mayrath Auger, 70'x8", New Flighting, Swing Away; Crustbuster Spring Tooth 24'; Harvester International Grain Auger, 1082, PTO drive, Swing Away; Bushog 2615 15' Wingfold Legend Rotary Cutter; Woods Rotary Cutter 15' Batwing, Pull-type BW180; MF Plow 5x16"; Duall Loader 210 w/7' hyd. bucket, mountings 20/30 Series JD; Big Ox 7' 3pt blade; JD 158 Loader, 7' bucket, QT, joystick; 1991 Rotomix 30014 Feed wagon w/chain conveyor, scales; Farm Hand Tub Grinder XG40, 1000 PTO; Vermeer WR22 10-wheel Hay Rake; Rhino 3pt. Post Hole Digger w/12" auger; Frontier RC2060 3pt. Rotary Cutter 6'; Rhino 172 3pt. Rotary Cutter 6', needs clutches; Rhino Rotary Cutter, 7', 3pt.; JD 653A Row Crop Head, 6R30"; IH 550 5-btm. Plow; IH 6R30" Danish Tine Cultivator; JD 214W Wire Baler; Landoll 275 11-shank; Soil Master Chisel; McBratney Built Blade, 3pt., 9', w/hyd. cyl.

LIVESTOCK EQUIP.: Piefert Squeeze Chute, auto. head gate; Filson Squeeze Chute, auto. head gate; Hydraulic Squeeze Chute 5hp. single phase & pump; 9 CalTel Calf Huts w/panels; Cattle Guard 6'x16"; 20 Big Bales Brome Hay; 22 Big Bales Brome Hay, Net Wrap; 100 Small Square Straw Bales; 100 Big Bales, Rye/Clover Mix Twine Tie; 60 Big Bales 2nd Cutting Clover, Net Wrap; (2) 15'x12" Metal Feed Bunks w/Legs; (5) 15' Free Standing Goat Panels; (15) 20' Free Standing Cattle Panels; (20) 6 Bar Continuous Fence Panels.

MISC.: Sukup 8" vertical Unload for Grain Bin (new); HARSH 30-

Vehicles, Equipment by 12:30. MORE items by Sale Date!

For information contact: Bill 785-547-5082 or Ron 785-207-0434

AUCTIONEERS: Wayne & Craig Wschropp, Rodney Burdick, Cody Askren, Cole Pitts

TERMS: Cash or check day of sale. Bid by number. Nothing removed until settled for. Announcements sale day take precedence over all written material. Buyers responsible for own inspection of all sale items. Not responsible for accidents.

Kansas FSA employees earn national awards

Kansas Farm Service Agency is proud to announce Dalon Stevens, Lucinda Schilling, Karla Smith-Specht, Bailey Dawes, Kelly Lehew, Amy Keebler and Curtis Stirtion (Brown County FSA) as recipients of the Administrators Award for Service to Agriculture. This national level award recognizes employees for their substantial and noteworthy accomplishments to our farmers, ranchers, producers, and agricultural partners. The recipients represent our core values of ethics, customer service, teamwork, fiscal responsibility, and outstanding service to staff and employees

across USDA.

During the period of March 1, 2021-February 28, 2022, the Brown County FSA Team demonstrated dedication, and motivation by putting in the extra time/effort to implement the Farm Storage Facility Loan (FSFL) program for the District 3 area in northeast Kansas. The Brown County FSA team achieved high standards in the quality and efficiency of FSFL program delivery. This team's workload accounts for roughly 50% of the FSFL loan volume for the state. They provide all general oversight responsibilities for the FSFL program implementation

and work with counties in their service area for onsite activities. Brown County accomplished this by utilizing Box, OneSpan, and MS Teams to efficiently share information with producers and other county offices.

Their innovative use of technology also sped up the certification process by eliminating the need to encrypt data into multiple emails to crop insurance agents. Insurance agents were very appreciative of the new system and requested other County Office's use the same system to streamline the sharing process.

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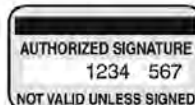
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Kansas Wheat discusses HRW market opportunities during crop quality seminars in South America

There is something fishy happening in Ecuador, but it is a good growth opportunity in a market that already appreciates Kansas hard red winter wheat, thanks to the relationships built by Kansas Wheat and U.S. Wheat Associates (USW), the wheat industry's export market development organization.

"One of the interesting stories is that a lot of high-protein hard red winter wheat is going into fish food," said Aaron Harries, Kansas Wheat vice president of Research and Operations, who joined USW staff for a series of crop quality seminars in South America in early November. "In Ecuador, specifically, they're using it to feed shrimp. And in southern Chile, they're using it to feed salmon."

Aquaculture is a rapidly growing market in South America, thanks to imports from an equally expanding Chinese market. Salmon are top-feeders, so feed pellets must float so salmon will come to the surface and eat. Shrimp are the opposite — they are bottom-feeders — but feed pellets still need to sink slowly. HRW wheat fits the bill in helping with

buoyancy and providing high protein content.

"They use high-protein HRW wheat because they want higher protein content for the fish food," Harries said. "They can also use soybean meal, but wheat has a viscosity that makes the pellet float. So that's a market we'll certainly be exploring and making sure we're getting them the product they want to meet these needs."

Fish food was a hot topic during the USW crop quality seminars, but the main event featured the results of the 2021 Crop Quality Report, the latest in a series of reports by USW. Each year, the organization gathers thousands of samples throughout the harvest season and at export locations to analyze for wheat, flour and end-product qualities. These results are compiled into an overall report for all six wheat classes and broken down into individualized reports by wheat class.

After the report is finalized, USW conducts crop quality seminars to dive deep into the information with global customers, like the ones Harries participated in this November

in Colombia, Ecuador, Peru and Chile. Harries also discussed prospects for next year's wheat crop and addressed challenges from the strength of the U.S. dollar, high competition from corn and soybean exports, problems on the Mississippi River, potential rail strikes and other issues.

"In terms of HRW wheat, we had good news to deliver as far as the quality of the crop — just excellent milling and baking quality," Harries said. "Of course, the downside of that is price. The market competitiveness of hard red winter wheat is just not great right now."

While the seminars provide a wealth of information, they also allow state wheat commission staff, U.S. farmers and USW staff a chance to meet with the best customers for U.S. wheat. In Colombia, Harries had the chance to reconnect with millers that had traveled to Kansas as part of trade teams — some as recently as this past summer and some from a decade earlier. These relationships, when combined with transparent crop quality data, help secure long-lasting, steady

customers.

"These meetings are important because when you meet face-to-face, the buyer can sense the transparency that we provide to our marketplace," Harries said. "We don't pull the wool over their eyes; we tell them exactly how things are in person so they can judge our message. And I think they do have confidence in us."

Whether HRW is destined for fish food or bread, the trading relationships built through this exchange of information help build lasting markets for Kansas wheat producers in South America.

"This is a set of customers that really like U.S. wheat and they're looking for value opportunities," Harries said. "They're trying to get creative on how they use U.S. wheat, whether it's in blends or their milling process, but they like the quality of wheat and they try to make it work, even if the price is high."

Learn more about how Kansas Wheat works with U.S. Wheat Associates to promote HRW around the world at <https://kswheat.com/international-buyers>.

Genetics Symposium Panel looks at future genetic opportunity

By Briley Richard,
Angus Communications

Take a look into the future and what do you see? For the Angus breed, the future includes leaps into enhanced genomic comprehension and expanded maternal tools for breeders. The 2022 Angus Convention featured a Genetics Symposium, sponsored by NEOGEN, which hosted a panel of industry leaders to discuss the future of genetic data.

Speakers included moderator Kelli Retallick-Riley, Angus Genetics Inc. (AGI®) president, and five panelists — Larry Kuehn, USDA Meat Animal Research Center geneticist; Andre Garcia, AGI geneticist; Gale Haynes, owner of Haynes Cattle Company; Alan Miller, owner of Prairie View Farms and 2021-2022 AGI board chairman; and Duc Lu, AGI geneticist.

For several years, the focus to understand and leverage maternal traits has been a top priority and only continues to become more important. Providing a progress update on the

Functional Longevity EPD research for the American Angus Association®, Garcia explained the EPD relies on robust data in mass amounts.

"For those maternal traits it comes down to the data," Garcia said. "We need to collect those records in order to characterize the genetic variability in the population. To get good spread and accuracy behind those EPDs, we really need to have sires with a lot of daughter records in the population specifically for functional longevity which is lowly heritable."

As with any EPD, the prediction has little value without accuracy. Lu explained how accuracies shift — when new progeny data is added to an EPD with low accuracy, the accuracy shifts. When new data is added to a high accuracy EPD (accuracy > 0.90), the accuracy isn't likely to change much because the bull himself is already proven with progeny data. If the animal is already genotyped, this change, or forward move-

ment, can only occur from the collection of more phenotypic data.

"Animals with low accuracies need to have more data because there is not much information estimating that particular animal," said Lu. "You have to increase the number of phenotypes. You need to collect on that particular animal or its relatives in order to move the accuracy."

Kuehn added that to increase the spread in EPDs, phenotype and genotype must be used in tandem to create variation in the population.

"We're actually tying together parts of the family and assumptions about how (animals are) inheriting genetics from those families much better with genomics than what we were ever able to do with pedigree-based genetic evaluation systems alone," said Kuehn.

Garcia reminded breeders that genetic change cannot occur overnight. He said through careful planning and selection, breeders will see progress.

"Not only is it important to create a breeding objective and have clear goals of where you want to go, but also being disciplined because to make genetic change, it takes generations," said Garcia. "Creating those goals, being disciplined and following those goals along the way, I think that's what really is going to move the needle to see the population evolving."

To aid this forward movement, the Association must continue to add value to the database and tools for the membership. Miller stressed the freedom the Association grants AGI to work with industry partners in order to develop new tools to leverage the competitive advantage.

"We have to make sure we provide that next level of tools so our membership can really be at the forefront of quantifying all sorts of traits and not fall behind any competitors out there," said Miller.

For news about Angus Convention, visit www.angus.org/Pub/NewsRoom-ReleaseList.

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Kansas Profile

By Ron Wilson
Executive Director of
the Huck Boyd
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Lannin Zoltenko, Zoltenko Farms and Wildcat Blockchain

"We deliver the male." No, I'm not referring to the U.S. Postal Service.

In this case, it refers to a business that delivers selected male genetics to pork production operations across the Midwest. This same innovative farm family is also pursuing blockchain and bitcoin mining from its location in rural Kansas.

president and managing partner at Zoltenko Farms and Wildcat Blockchain. His family's farm is in Jewell County, just one mile from the Nebraska state line. Five generations of the family have lived here. The farm became a century farm in 2017.

Zoltenko's folks are James and Sherryl Zoltenko. Lannin and his wife Melanie have two boys:

Chandler, who is farming, and Taran, who is at Kansas State University, which is also her father's alma mater.

For decades, the Zoltenkos had a traditional diversified livestock farm raising cattle, crops and pigs. The hog operation was farrow-to-finish, meaning that the males (boars) were bred to the females (sows), which gave birth to piglets that were then raised to market weight.

In 1997, Zoltenko was considering whether to come back to the farm. His parents were trying to decide whether to retire or expand.

That year in December, they received an inquiry from a business named Pig Improvement Company, or PIC, which was looking for a location for a 50-head boar stud farm in north central Kansas. This would be like a racehorse stud farm, only with swine. This company was seeking a place where selected male hogs could be raised to collect semen for artificial insemination of sows by other hog producers.

The Zoltenkos decided to give it a try. "It was a real faith walk," Lannin Zoltenko said. He credits veterinarians Steve Henry and Lisa Tokach at Abilene Veterinary Hospital for providing key help in starting the operation.

"By February 1998, the sows were gone, and by May the boars were here," Zoltenko said. They developed a process for collecting semen and distributing to other producers, and adopted the slogan, "We deliver the male."

Today, Zoltenko Farms has 1,382 boars, most of those in Kansas. Since herd health and biosecurity are so important, their rural location is an advantage. The farm is located 17 miles north of the rural community of Courtland, population 294 people. Now, that's rural.

For producers seeking maternal traits of good litter size and high milking ability, the Large White and Landrace breeds are preferred. For those producers who are raising hogs for harvest, Duroc and Berkshire hogs are the

breeds of choice.

The semen collected from the Zoltenkos' high quality boars can serve some 300,000 sows annually. The farm operates 11 delivery routes to hog producers in Colorado, Kansas, Nebraska, South Dakota, Iowa, Wisconsin, Missouri, Minnesota and Illinois. "Our drivers will put on a million miles a year," Zoltenko said.

In 2020, the Zoltenkos started to pursue an additional enterprise as they looked at the direction of the national economy. "I was looking for sound money," Zoltenko said. They decided to focus on bitcoin and bitcoin mining.

Bitcoin is a type of cryptocurrency or digital money. According to Investopedia, bitcoin is created, distributed, traded and stored using a decentralized ledger system called a blockchain. In February 2021, the Zoltenkos set up a business known as Wildcat Blockchain.

Bitcoin mining is the process of creating new

bitcoins by solving extremely complicated math problems that verify transactions in the currency. This requires high level computer capacity. "We look for sub-stations that have unused electrical capacity and set up bitcoin data centers there," Zoltenko said.

As these computers solve the math problems, bitcoin is generated for the discoverers. "We have clients from California to Florida," he said.

"Our greatest success is to positively impact the lives of our team members, our partners, and our community."

For more information about the stud farm, see www.zfstud.com.

We deliver the male - in this case, male genetics for leading pork producer operations across the Midwest. We commend Lannin Zoltenko and all those involved with Zoltenko Farms and Wildcat Blockchain for their innovation and entrepreneurship.

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The Calf Hutch Latch awarded United States patent

On September 13, 2022, MJE, LLC was awarded a patent for the Calf Hutch Latch and Tethering System invented by MJE Livestock Equipment lead product designer Steve Deges. The process for obtaining the patent began in April 2019 and has taken several years to complete. A first for MJE Livestock Equipment and Steve Deges, getting a patent was a labor of love. MJE Livestock Equipment is dedicated to the health and well-being of the animals and ranchers who use their high-quality equipment.

"This has been a long process but an exciting one," said inventor Steve Deges. "When Aaron (Jantz) and I applied for the patent, we had no idea it would be so intense, but this idea is unique enough to put in the work to get the patent."

The Calf Hutch Latch and Tethering System was named a top-ten Product of the Year in the 2020 World

Ag Expo, propelling sales to dairy and calf ranchers from coast-to-coast. With over 100,000 Calf Hutch Latches sold, MJE Livestock Equipment continues to offer dairy and calf ranchers a safe, easy, and reliable system for protecting calf hutches from wind and storm events that can wreak havoc on a calf operation.

Calf hutches are small structures meant to house and protect newly birthed calves from disease and inclement weather in large open animal containment facilities. Before the invention of the Calf Hutch Latch system, hutches were difficult and tedious to secure safely or effectively. With the patented system from MJE Livestock Equipment, hutches can be tied down quickly and secured with minimal effort from ranch staff. As a result, calves are exponentially safer during storms or straight-line winds, and ranchers rest easy knowing their investments are protected.

IGP Institute brings commodity market perspective to maritime risk symposium

The current low water levels on the Mississippi River are disrupting barge shipments of grain to export facilities downstream. This disruption in turn is affecting commodity markets and prices around the world.

Guy Allen, IGP agricultural economist and Grain Marketing and Risk Management Curriculum

Manager at Kansas State University, joined a panel of experts at the Maritime Risk Symposium (MRS) held November 15-17 in Lemont, Illinois. The panel included government officials and industry experts who provided a detailed analysis of the challenges currently interrupting the daily operations of Mississippi River channels and locks, and the resulting changes to commercial barge operations that affect grain markets and international trade.

Other speakers included representatives from the U.S. Army Corps of Engineers Mississippi Valley Division, the Inland Navigation Design Center (INDC), and the Vanderbilt Center for Transportation and Operational Resiliency (VECTOR). Topics covered included an overview of how the government maintains the river system in a way that balances navigation, recreation, flood management, and environmental stewardship while meeting the needs of the commercial shipping industry. Additional emphasis covered the engineering requirements necessary to maintain and improve the physical dams and locks in the river system and focused on the interconnectivity of the entire maritime industry along with the strategies used to support daily operations and reduce risk during periods of drought or flooding.

Allen presented a look at how the disrupt-

tions caused delays and increased prices in commodity markets around the world. Barges are the most cost-efficient way to move large amounts of grain compared to rail or trucks. The current low water levels on the entire system are forcing commercial operators to load less grain in individual barges so they can still navigate the decreased channel depths in the river. As a result, the system is operating less efficiently and requires more work to move the same amount of grain resulting in higher prices.

Additional panel discussions addressed the future challenges to operations on the river system. These included recruiting and training new generations of government and industry workers equipped to understand and operate new technology while identifying and responding to potential new disruptions from climate change or cyber threats.

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- 50 blk & Red str & hfrs, 60 days weaned, 550-700#
- 30 blk str & hfrs, long time weaned, 600-800#
- 30 blk & Red str & hfrs, 700-800#
- 35 mix str, 800-850#
- 450 mix str, 800-925#

PLUS MORE BY SALE DAY!

EARLY CONSIGNMENTS FOR DEC. 7

- 145 blk hfrs, 775-850#
- 120 blk & Red str & hfrs, 800-900#

PLUS MORE BY SALE DAY!

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WIBW 580 - 6:45 A.M. Thurs; KVOE 1400 - 6:30-6:45 A.M. Thurs. & Fri.
To see more consignments go to: emporialivestock.com

Kansans participate in USDA trade mission to East Africa

Kansans representing the Kansas Department of Agriculture and the U.S. Soybean Export Council participated in a U.S. Department of Agriculture Foreign Agricultural Service trade mission to Kenya and Tanzania on October 30-November 4, 2022.

Deputy Secretary Kelsey Olson and International Trade Director Suzanne Ryan-Numrich, Manhattan, represented KDA on the mission while Lance Rezac, Onaga, represented USSEC. The mission focus was to explore new opportunities in East and Central Africa, where local country visions of food and nutrition security and strong economic growth is driving demand for imported food and farm products.

"Kenya is the economic, financial, and logistical hub for East and



Several Kansans traveled to East Africa in fall 2022 as part of a USDA trade mission to discuss Kansas export opportunities in the region. The team included (from left) Kelsey Olson, KDA deputy secretary, Manhattan; Suzanne Ryan-Numrich, KDA international trade director, Manhattan; and Lance Rezac, U.S. Soybean Export Council, Onaga.

Central Africa. Consumer consumption is centered around commodities which are produced in Kansas," said Olson. "I see potential for Kansans to provide livestock genetics to enhance existing livestock production as well as provide technical expertise in many areas as their markets grow."

"The recent lifting of the ban on genetically engineered crops opens up tremendous opportunities for trade in this region," stated Rezac. "The region is currently suffering from extreme drought, and they are looking for alternative sources of grain including U.S. soybeans. We live in a global village. The U.S. is the world's second largest soy producer and exporter and so we see a responsibility to supply the region to meet local food and nutrition security needs and help combat drought and

insect issues with local production."

Increasing trade and investment between the U.S. and Africa is a key priority for the Biden-Harris administration. "Through this trade mission, USDA-FAS is proud to support the U.S.-Kenya Strategic Trade and Investment Partnership as well as the U.S. government's Prosper Africa initiative, which aims to increase bilateral commerce and investment between the United States and Africa," said FAS administrator Daniel Whitley.

The mission was possible through KDA's membership in U.S. Livestock Genetics Export, Inc. with funding from the USDA Market Access Program. It is the mission of KDA to support all facets of agriculture, including lending support to those who wish to market and sell interna-

tionally. For more information, including upcoming trade mission opportunities, contact Ryan-Numrich at Suzanne.Numrich@ks.gov or 785-564-6704.

Beef exports on pace for record year

Averaging more than \$1 billion per month through Sept., U.S. beef exports are on pace for a record year.

While September's data showed some headwinds for beef – down 7 percent in both volume and value – during the first nine months of 2022 beef exports were still 4 percent above last year at 1.12 million metric tons. Export value reached \$9.12 billion, up 20 percent and already achieving the second highest total for any calendar year, trailing only the 2021 record (\$10.58 billion).

In terms of value to U.S. producers, CattleFax CEO Randy Blach says for every pound of beef the U.S. exports "We generate about 60 cents a pound more on what we export versus what we import. You bring that all back to a value proposition to the U.S. industry and export values are nearly \$500 per head for 2022."

Which weather characteristics will affect agricultural and food trade?

Changing weather patterns have profound impacts on agricultural production around the world. Higher temperatures, severe drought, and other weather events may decrease output in some regions but effects are often volatile and unpredictable. Yet, many countries rely on agricultural and food trade to help alleviate the consequences of local, weather-induced production shifts, a new paper from the University of Illinois suggests.

For instance, the 2008 drought in Middle Eastern and Central Asian countries led to a 22% decrease in wheat production in that area compared to the year prior. As a result, the value of wheat imports increased by 224% compared to 2007, with most imports coming from the U.S., Canada, Russia, and Ukraine.

The U of I research team conducted a statistical analysis (known as a meta-analysis) of academic studies investigating the relationships between weather and trade of agricultural and food commodities. Their motivation was to find out which weather characteristics matter most for exports versus imports.

"Our main finding is that the key driver of trade, whether at the domestic or international level, is temperature in the place of origin. An increase in temperatures negatively affects a country's ability to export agricultural goods, because it reduces yield and decreases agricultural labor productivity," explains study co-author Sandy Dall'erba, professor in the Department of Agricultural and Consumer Economics (ACE) and co-director of the Center for Climate, Regional, Environmental and Trade Economics (CREATE) at the U of I.

Temperature increases in the place of destination should lead to more imports but the effect is not

statistically significant, Dall'erba notes. The role of precipitation, on the other hand, turns out to be more fuzzy both in the place of origin and of destination.

"Trade is one of the key tools with which to mitigate and adapt to the effects of climate change, particularly in agriculture. If a country is affected by adverse growing conditions, such as drought, the ability to rely on foreign sources for food and agricultural products is a key element of the ability to buffer those sorts of shocks," says William Ridley, assistant professor in ACE, co-director of CREATE, and corresponding author on the paper.

The researchers identified all academic studies on the topic, which together cover a total of 235 individual estimates of the relationship between weather and agricultural trade. Some studies looked at multiple commodities and multiple countries while others focused on specific regions like the Middle East and North Africa (MENA); trade between the Philippines and the rest of the world; or domestic trade, including a study by Dall'erba that focuses on interstate flows of crops, fruits, and vegetables in the United States.

"The results of the original studies vary due to study area, the methodology, and the quality of the data. Yet, they all seem to agree about a clear negative impact of temperature on the export of commodities. This effect is particularly acute in developing countries as they have less capacity to adapt through irrigation," adds lead author Tauã Magalhães Vital, Universidade Federal de Juiz de Fora, Brazil, who started the work as a visiting scholar at ACE in 2018.

Dall'erba notes, "Trade of agricultural commodities is driven by differences in specialization and natural resources between

origin and destination places. Human beings have a taste for variety when it comes to food so agricultural goods are quite certainly the first commodities that were ever traded. However, over the most recent years, we have seen several disruptions in the global food supply chain such as COVID-19 and the war in Ukraine.

"Climate change and the increase in extreme weather events that comes with it is a more serious, longer lasting, and more widespread threat as it has the capacity to affect the natural resources in the places of production

and to abruptly decrease yield all the while the world population – hence demand for food – keeps growing," he adds. "As a result, it is important to understand the role of weather and climate on trade, to forecast their impact, and to assess how resilient the food supply chain is."

The paper, "What do the 235 estimates from the literature tell us about the impact of weather on agricultural and food trade flows?" is published in Global Food Security [https://doi.org/10.1016/j.gfs.2022.100654]. Authors are Tauã Magalhães Vital,

Sandy Dall'erba, William Ridley, and Xianning Wang.

The authors gratefully acknowledge support from the Dudley Smith Initiative in the College of Agricultural, Consumer, and Environmental Sciences (ACES) at the University of Illinois Urbana-Champaign. This work was funded in part by the Hatch grant program of USDA.

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Hay Auction- Every Tuesday at 9:00 a.m.
Cattle Auction- Every Tuesday at 11:00 a.m.
Sheep/Goat Auction- Every 3rd Saturday at 11:00 a.m.
Horse/Tack Auction- Every 2nd Saturday

SALE RESULTS: 11-22-22

| Steers | | Heifers | |
|----------|-------------------|----------|-------------------|
| 300-399# | \$180.00-\$220.00 | 300-399# | \$165.00-\$205.00 |
| 400-499# | \$175.00-\$215.00 | 400-499# | \$155.00-\$195.00 |
| 500-599# | \$170.00-\$205.00 | 500-599# | \$150.00-\$185.00 |
| 600-699# | \$165.00-\$193.00 | 600-699# | \$140.00-\$163.00 |
| 700-799# | \$165.00-\$185.00 | 700-799# | \$135.00-\$165.00 |
| 800-899# | \$160.00-\$175.00 | 800-899# | \$130.00-\$155.00 |
| 900-999# | \$160.00-\$172.50 | | |

Sat., Dec. 10th - Horse & Tack Sale
Tues., Dec. 13th - Calf/Yearling Special
Sat., Dec. 17th - Sheep & Goat Sale
ALL WEIGH COWS & BULLS SELL AT THE END

Holton Livestock Exchange, Inc.

1/2 mile East of Holton, KS on 16 Highway

Livestock Auction every Tuesday at 11:00 AM

****STARTING TIME: 11:00 AM****

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| STEERS | | HEIFERS | |
|-----------------------------------|------------------------------------|---------|---------------------------|
| 3 blk Linwood 216@260.00 | 5 blk/wf bulls Robinson 643@151.00 | | 14 mix Whiting 761@149.00 |
| 3 blk bulls Sabetha 198@255.00 | | | |
| 12 blk Troy 473@239.00 | | | |
| 7 blk bwf Sabetha 465@235.00 | 2 blk Wathena 192@200.00 | | |
| 5 blk Hiawatha 499@230.00 | 10 blk bwf Troy 432@199.00 | | |
| 8 blk red OsageCity 423@228.00 | 8 blk Tonganoxie 354@197.00 | | |
| 6 blk OsageCity 505@225.00 | 20 blk OsageCity 460@197.00 | | |
| 10 blk Troy 540@220.00 | 14 blk bwf Sabetha 512@196.00 | | |
| 20 blk bwf Sabetha 555@209.00 | 7 blk bwf Highland 524@195.00 | | |
| 6 blk bwf Oskaloosa 550@205.00 | 10 blk bwf Circleville 497@194.00 | | |
| 9 blk Meriden 545@202.00 | 4 blk Troy 527@190.00 | | |
| 10 blk red Whiting 550@200.00 | 4 blk Valley Falls 522@188.00 | | |
| 21 blk OsageCity 609@199.00 | 9 blk red Tonganoxie 422@186.00 | | |
| 10 blk Pomona 589@197.00 | 21 blk bwf OsageCity 575@186.00 | | |
| 24 blk bwf Circleville 588@195.00 | 12 blk red McLouth 560@185.50 | | |
| 12 blk Troy 626@193.00 | 25 blk Circleville 560@185.00 | | |
| 11 blk bwf Hiawatha 712@190.00 | 8 blk red Holton 507@182.00 | | |
| 21 blk Hoyt 753@190.00 | 23 blk Meriden 572@176.00 | | |
| 22 blk Meriden 670@185.50 | 8 blk bwf Corning 617@175.00 | | |
| 8 blk red McLouth 678@182.00 | 11 blk red Goff 613@172.00 | | |
| 7 blk bwf Holton 714@181.00 | 15 blk bwf Meriden 657@169.50 | | |
| 10 bwf w/ Corning 833@177.50 | 15 mix Whiting 624@156.00 | | |
| 5 blk Valley Falls 830@176.00 | 6 blk red Sabetha 840@153.50 | | |
| 17 blk Circleville 663@170.00 | 7 red blk Whiting 529@150.00 | | |
| 22 mix Whiting 635@166.00 | 12 mix Whiting 575@148.00 | | |

TUESDAY, DECEMBER 6: Special 71st Anniversary Calf & Yearling Auction * 11:00 AM

Customer Appreciation Meal

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THURSDAY, DECEMBER 8, 2022

Special Bred Female Sale
S.T. 12:00 Noon Expecting 2000 hd

Dispersions & Liquidations (over 800 hd): Many proven & practiced up!

150 blk (8 & 9 yrs; 1300-1400 #) bred blk (Risse & Logterman); of 4-1 for 70 days. Complete dispersion of the Cedar Butte Rn..... Bob Carr & Sons (Bob @ 402-322-0923)

78 ...blk, bwf (3 rd-x) bred blk; of 3-15 for 70 days, HR, Complete dispersion...Robert Whipple

70 ...Ang (9 yrs; 1250-1350#) bred Ang; of 3-15 for 60 days, HR Liquidation Jim Hanna (308-546-2508)

90 ...blk, few bwf (3-6 yrs) bred blk; of 3-10 for 70 days. Selling all young cows Manning Cattle Co (Kevin 402-389-0974)

70 ...blk, blk-x (45 @ 8 yrs, 25 @ 10 yrs) bred blk simm/ang-x; of 4-20 for 45 days, HR, lots of genetics behind these!..... Carnell & Shadbolt (Sherri 402-322-0528)

Bred Heifers (over 700 hd):

121 Ang (1050-1100#) sync & AI bred Ang (Hickok); 64 of 2-17 for 1 day, 57 of 3-10 for 1 day Clint & Brynn Burney (Clint 402-322-0677)

100 Ang & blk (1100#) 50 sync & AI bred Ang (B-R MVP); of 2-17 for 1 day, 50 bull bred Ang (TD); of 2-20 for 40 days..... Ryan Sellers (308-530-5248)

100 blk (1100#) sync & AI bred Ang (C Trademark); of 2-15 for 2 days Rick Weber (402-389-1406)

75 ...blk (1100#) sync & AI bred Ang (C Global); of 2-15 for 2 days Reece Weber (402-389-1639)

75 ...blk (1100#) bred Ang (Connealy); of 3-4 for 15 days Rick & Reece Weber

83 ...Ang (1050-1100#) sync & AI bred Ang (Refresh); of 2-10 for 5 days, HR, top cut, Heart of the herd. Yrs of Ang inputs for carcass & maternal..... Coble & Sons (Jason 308-544-6574)

67 ...bwf (61) & blk (6) (1000-1075#) bred LBW Angus; 15 of 3-8 for 7 days, 52 of 3-15 for 14 days Turner Ranch LLC (Lawrence 402-376-5248)

45 ...blk & Ang (1150#) bred Ang ; of 3-5 for 20 days, HR Randy & Chris Huddle (Chris 402-389-1658)

43 ...Ang & blk (1000-1050#) bred Ang (Connealy); of 3-20 for 20 days, HR, Disposition plus..... Powder Horn Rn (Will 402-376-4811)

39 ...Ang (1050-1100#) bred Ang (M Stunner, Emblazon 999); 29 of 3-7 for 23 days, 10 of 4-1 for 20 days Clint & Brynn Burney

PLUS MORE!

View our special sales online @ cattleusa.com

Office: 402-376-3611

Greg Arendt, Mgr., C: 402-376-4701 Brogan Arendt, Fieldman, C: 402-389-0281

For complete listing visit our website: www.valentinelivestock.net

VALENTINE LIVESTOCK AUCTION CO. Valentine, Neb.

THURSDAY, DECEMBER 1, 2022

Special Spring Calf Sale feat. Blk Strs
S.T. 12:00 Noon Expecting 4000 hd

Valentine Livestock Health Protocol 2022

#4 7-way (2), 5-way viral (spring & fall), pasteurilla, and poured or injected w/ Ivermectin (fall)

#3 7-way (2), 5-way viral (spring & fall), pasteurilla, no pour on

#2 7-way (2), 5-way once; **#1** 7-way only

Weaned Calves:

300 Ang & blk strs NI TK, Joseph sired 2 lds @ 700# Dewing & Gudgeal

220 Ang & blk strs NI Ruggles, Joseph, Marcy Jim Lee Rn #4

150 Ang strs NI 475-600# Mark & Dallas Dimond

120 Ang & blk strs 1 ld @ 725# Mohen & 21 Angus genes 625-725# Leo Goss

90 ...blk strs NI 600# Larry, Danny & Craig O'Kief #4

72 ...Ang & blk strs 1 ld @ 750# 750-775# Kevin Vandermay

80 ...Ang & blk strs NI 675-735# Tom & Jennifer Zichnick

80 ...blk & Ang strs NI 550-650# Brad & Derek Waits

75 ...blk, blk-x strs Top Dollar cert Green Valley & Raven 725-750# Mansfield Ranch

40 ...rd Ang & blk strs 650# Troy & Michelle Sage #4

200 .rd Ang hfrs NI 450-525# McLeod Ranch #4

120 blk hfrs NI 560# Larry, Danny & Craig O'Kief #4

150 .rd Ang (50) & rnf (100) NI 450-550# Shane Wobig

180 Ang & blk (135s-45h) NI Risse & T-Bone 500-650# Hayland Cattle

150 blk Risse genes 600-700# Austin Thayer

115 blk, bwf NI 500-650# Rick & Ron McFadden

100 blk hfrs NI 475-575# Bob Carr & Sons #4

100 blk, blk-x hfrs NI hayfed 525# Craig Miles #4

45 ...Ang hfrs NI thick & soggy hayfed only 600-700# Bob & Carol Hutchinson #4

40 ...Ang hfrs NI Gardner genes 450-525# Ted & Bonnie Swendener #4

88 ...char-x & rd-x (53h-35h) 575-650# Rocking Arrow #3

50 ...blk 600-700# Justin, Hayes & Sheyenne Hammond #4

47 ...blk (4 rd) NI cake & range 500-600# Cyrus Wolfenden

30 ...blk & Ang NI 500-600# Duane & Lisa Bellin #4

PLUS MORE FROM: Woodworth (#4), Meekma Rn, Irwin, Hoppeter

Non-Weaned Calves:

240 .rd Ang-x NI hfrs not topped Ravenscroft, Bieber 450-600# Todd & Kim Larabee

150 blk strs NI CAB/prime @ 95% 700# Shadbolt CC #4

PLUS MORE FROM: Carr & Sons (#4), Ries (#4)

Yearlings:

135 Ang strs HR NI thin 675-800# Cory Rust

170 Ang hfrs P.O. NI 700-800# Cory Rust

130 blk, bwf, few x-bred (85h-45s) NI G.O. 900# Matt Walking

View our special sales online @ cattleusa.com

Office: 402-376-3611

Greg Arendt, Mgr., C: 402-376-4701 Brogan Arendt, Fieldman, C: 402-389-0281

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Fax: 316-320-7159

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No Sale Last Week due to Holiday.

Next Sale: Thursday, December 1:

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| | |
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|--|--|

Cattle Sale Every Thursday 11:00 AM

Getting livestock through the winter

Pasture and hay supplies are short in many areas of central and southern Missouri. University of Missouri Extension livestock specialist Gene Schmitz has a number of options for livestock producers to consider for feeding their livestock this winter.

Test hay

"This is the simplest, most cost-effective practice you can do," said Schmitz. "Sort hay supplies into quality groups and match the hay to the nutritional needs of each group of livestock. Then feed the appropriate supplement, if necessary, to each separate group based on their nutritional needs and quality of hay being fed."

Reduce waste

Poor feeding practices can result in hay wastage of more than 25%. Cone-type hay feeders or tapered-bottom feeders greatly reduce hay waste, especially if they have a bottom skirt. If unrolling, limit the amount of hay being unrolled at a given time. Unrolling more than one day's feeding will substantially increase hay waste.

Store bales to reduce waste

It's a bit late for this now, Schmitz said, but another substantial source of hay waste is how the hay is stored. If covered hay storage is not a possibility, at least take measures to break soil-hay contact. Building rock pads or storing bales on pallets, tires or some other surface reduces waste on the bottom of the bale.

Fencing

Producers fortunate enough to have pasture or crop residues to graze can divide the fields into smaller areas with temporary fencing materials, Schmitz said.

"These are easy to move and can greatly extend the number of grazing days from a given area," he said. "Fencing to provide one to two weeks grazing is acceptable."

Limit feeding options

With adequate-quality forage, limiting cow access to hay feeders can reduce waste while achieving acceptable performance. Twelve-hour access seems to be a good compromise between performance and waste reduction, Schmitz said. Do not attempt this without a hay test, however.

Cows can be limit-fed a high-grain ration. This meets energy needs with less feed. Compare the cost of grain versus hay on a per-unit-of-energy (TDN) basis when considering this option. Some producers graze standing milo as an effective, lower-cost way to feed cows through the winter.

Know what bales weigh

"Let's assume 1,200-pound bales can be purchased for \$75 per bale, or \$125 per ton," Schmitz said. "If transportation and feeding losses are 25%, this means that only 900 pounds from each bale of hay actually gets into the livestock. This increases hay cost to \$0.08 per pound or \$167 per ton."

If losses are cut to 10%, then 1,080 pounds of hay is consumed. "This reduces hay cost to just under \$0.07 per pound or \$140 per ton," he said.

Push the pencil very hard if buying high-priced hay

Finally, Schmitz advises: "It may be more beneficial for the operation in the long run to cull animals rather than to try to purchase enough feed for the winter. This is not a one-size-fits-all option, however, so figure your operational costs and evaluate tax and other financial implications before making final decisions."

Kelsey Theis crowned 2022-2023 Miss American Angus

By Peyton Schmitt, Angus Communications

Kelsey Theis of Leavenworth recently achieved something many young girls in the Angus breed dream of — she was named Miss American Angus. Theis was crowned at the annual American Angus Association® Awards Dinner and Reception Sunday, Nov. 6 and will represent the breed as an advocate and role model in the coming year. With three older siblings involved in the National Junior Angus Association, Theis has been around the breed her entire life.

"My first birthday was actually at nationals (National Junior Angus Show) in Denver," Theis said. "So as long as I can remember, I've always been involved."

Growing up in the industry, many of Theis's inspirations served as Miss American Angus. She said to join the ranks of this group of female leaders she looked up to as a young girl is an honor.

"It's very surreal just watching other girls who have gotten this opportunity," Theis said. "Some of them have been my biggest mentors or role models and it's crazy to consider myself on the same level as them in that position. I'm just very excited and honored to get to do this."

Throughout her time in the red coat, Theis hopes to serve the breed well and inspire young women



Kelsey Theis of Leavenworth was recently crowned Miss American Angus and will represent the breed throughout the coming year.

to believe in themselves. She knows the responsibility that comes with the title and looks forward to taking on the role with enthusiasm.

"I just want to do the best job I can representing the breed, and I want to make sure I have an influence on younger members so they have the same experience with me that I did with past Miss American Angus titleholders," Theis said. "I just hope to inspire them and show them they can do anything they set their mind to."

This is the daughter of Jerry and Tonya Theis and attends Northern Oklahoma College. She is obtaining a degree in animal science and is a member of the livestock judging team. After graduation, she plans to pursue a career in veterinary medicine or accounting.

Look for Theis in the crown, red coat and sash during her travels this year. For more information about the American Angus Auxiliary-sponsored contest, visit angusauxiliary.com.

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Grass & Grain Weather Report Nov. 30, 2022

| Seven Day Forecast | In-Depth Local Forecast | Today's Local Outlook | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------------|-------------|-------------|---------|-------------|---------|-----------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|------------|--------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|--------|-----------|-----------|-----------|-----------|--------|-----------|-----------|-----------|-----------|---------|-----------|-----------|-----------|-----------|
| WEDNESDAY Sunny High: 38 Low: 20 THURSDAY Mostly Sunny High: 45 Low: 28 FRIDAY Sunny High: 47 Low: 29 SATURDAY Cloudy High: 46 Low: 30 SUNDAY Mostly Cloudy High: 45 Low: 26 MONDAY Mostly Cloudy High: 43 Low: 27 TUESDAY Cloudy High: 42 Low: 23 | Today we will see sunny skies, high of 38°, humidity of 46%. West wind 3 to 13 mph. The record high for today is 67° set in 2003. Expect clear skies tonight, overnight low of 20°. South southwest wind 3 to 7 mph. The wind chill for tonight could reach 17°. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Last Week's Almanac | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 11/20 | 54/19 | 53/28 | 0.00" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11/21 | 58/23 | 52/28 | 0.00" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11/22 | 66/19 | 52/27 | 0.00" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| This Week's Sun & Moon Chart | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Day</th> <th>Sunrise</th> <th>Sunset</th> <th>Moonrise</th> <th>Moonset</th> </tr> </thead> <tbody> <tr><td>Wednesday</td><td>7:26 a.m.</td><td>5:04 p.m.</td><td>1:25 p.m.</td><td>Next Day</td></tr> <tr><td>Thursday</td><td>7:27 a.m.</td><td>5:04 p.m.</td><td>1:50 p.m.</td><td>12:37 a.m.</td></tr> <tr><td>Friday</td><td>7:27 a.m.</td><td>5:04 p.m.</td><td>2:14 p.m.</td><td>1:45 a.m.</td></tr> <tr><td>Saturday</td><td>7:28 a.m.</td><td>5:04 p.m.</td><td>2:38 p.m.</td><td>2:51 a.m.</td></tr> <tr><td>Sunday</td><td>7:29 a.m.</td><td>5:03 p.m.</td><td>3:03 p.m.</td><td>3:56 a.m.</td></tr> <tr><td>Monday</td><td>7:30 a.m.</td><td>5:03 p.m.</td><td>3:30 p.m.</td><td>5:01 a.m.</td></tr> <tr><td>Tuesday</td><td>7:31 a.m.</td><td>5:03 p.m.</td><td>4:01 p.m.</td><td>6:06 a.m.</td></tr> </tbody> </table> | | | Day | Sunrise | Sunset | Moonrise | Moonset | Wednesday | 7:26 a.m. | 5:04 p.m. | 1:25 p.m. | Next Day | Thursday | 7:27 a.m. | 5:04 p.m. | 1:50 p.m. | 12:37 a.m. | Friday | 7:27 a.m. | 5:04 p.m. | 2:14 p.m. | 1:45 a.m. | Saturday | 7:28 a.m. | 5:04 p.m. | 2:38 p.m. | 2:51 a.m. | Sunday | 7:29 a.m. | 5:03 p.m. | 3:03 p.m. | 3:56 a.m. | Monday | 7:30 a.m. | 5:03 p.m. | 3:30 p.m. | 5:01 a.m. | Tuesday | 7:31 a.m. | 5:03 p.m. | 4:01 p.m. | 6:06 a.m. |
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| Local UV Index 0-2: Low, 3-5: Moderate, 6-7: High, 8-10: Very High, 11+: Extreme Exposure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weather History Nov. 30, 1989 - Squalls produced heavy snow in the Lower Great Lakes region, with 15 inches reported at Chaffee, N.Y. and at Barnes Corners, N.Y. Tropical Storm Karen drenched parts of Cuba with heavy rain. Punta Del Este reported 14 inches of rain in 24 hours. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Growing Degree Days | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 11/18 | 0 | 11/22 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11/19 | 0 | 11/23 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11/20 | 0 | 11/24 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11/21 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Sell At St. Marys

Sell Or Buy Cattle By Auction STARTING TIME 10:30 AM Tuesdays

We sold 1473 cattle November 22. Steer and heifer calves were in good demand and sold steady to \$5.00 higher. Feeder steers and heifers were steady to \$4.00 higher. Cows and bulls sold \$2.00-3.00 lower.

| | | | | | | | | | | |
|--------------------------------|---------------------|--------------|-----------------|--------------|-----------------|--------------|--------------|--------------|------------------------------|---------------|
| STEER & BULL CALVES | 8 blk str | 843 @ 177.00 | 3 blk hfrs | 347 @ 171.00 | 6 blk/red hfrs | 559 @ 150.00 | 1 blk cow | 1750 @ 72.50 | 3 blk/bwf cows | 1213 @ 50.50 |
| | 2 blk str | 278 @ 245.00 | 5 blk hfrs | 511 @ 165.00 | 3 blk hfrs | 616 @ 150.00 | 1 blk cow | 1220 @ 72.00 | 3 blk/bwf cows | 1110 @ 50.00 |
| | 7 blk/red bulls | 384 @ 229.00 | 3 blk/char hfrs | 340 @ 161.00 | 3 red/char hfrs | 655 @ 150.00 | 1 x-bred cow | 1335 @ 71.00 | PAIRS & BRED COWS | |
| | 6 blk/sim str | 383 @ 228.00 | 2 blk hfrs | 473 @ 160.00 | 3 blk hfrs | 812 @ 150.00 | 1 bwf cow | 1215 @ 70.50 | 1 bwf cow/cf | @ 1610.00 |
| | 12 blk str | 425 @ 226.00 | 2 blk hfrs | 505 @ 159.00 | 4 blk hfrs | 656 @ 149.50 | 1 blk cow | 1455 @ 70.00 | 1 blk cow/cf | @ 1100.00 |
| | 13 blk/red str | 503 @ 216.00 | 3 blk hfrs | 503 @ 155.00 | 8 x-bred hfrs | 801 @ 149.00 | 3 blk cows | 1293 @ 67.00 | 1 blk cow | @ 1050.00 |
| | 2 blk/bwf str/bulls | 438 @ 208.00 | 2 blk hfrs | 445 @ 157.00 | 21 blk/bwf hfrs | 649 @ 148.50 | 1 blk cow | 1415 @ 66.00 | 2 blk cows | @ 770.00 |
| | 13 blk/red str | 538 @ 207.50 | 3 blk hfrs | 503 @ 155.00 | 3 wf/bwf hfrs | 615 @ 145.00 | 1 char cow | 1495 @ 65.00 | 1 bwf cow | @ 750.00 |
| | 3 blk str | 403 @ 205.00 | 2 blk hfrs | 445 @ 157.00 | 3 blk hfrs | 617 @ 145.00 | 1 char cow | 1280 @ 64.50 | BULLS | |
| | 5 blk/bwf str | 549 @ 205.00 | 3 blk hfrs | 503 @ 155.00 | 2 blk hfrs | 675 @ 145.00 | 1 blk cow | 1310 @ 62.50 | 1 blk bull | 1960 @ 101.50 |
| | 2 blk str | 540 @ 188.00 | 2 blk hfrs | 445 @ 157.00 | 67 blk/bwf hfrs | 871 @ 169.10 | 1 blk cow | 1260 @ 61.00 | 1 blk bull | 1730 @ 97.00 |
| | 8 blk/red str | 527 @ 185.00 | 3 blk hfrs | 503 @ 155.00 | 65 blk/red hfrs | 813 @ 166.00 | 1 blk cow | 1060 @ 60.00 | 1 blk bull | 1900 @ 95.50 |
| | 2 blk str | 495 @ 180.00 | 2 blk hfrs | 445 @ 157.00 | 6 blk hfrs | 575 @ 164.00 | 1 bwf cow | 1290 @ 59.00 | 1 blk bull | 1815 @ 95.00 |
| | 3 blk str | 545 @ 175.00 | 3 blk hfrs | 503 @ 155.00 | 11 blk/bwf hfrs | 554 @ 163.00 | 1 blk cow | 1105 @ 58.00 | 1 wf bull | 1970 @ 94.50 |
| | 4 blk str | 530 @ 173.00 | 2 blk hfrs | 445 @ 157.00 | 24 blk/bwf hfrs | 563 @ 162.00 | 1 char cow | 1265 @ 56.00 | 1 wf bull | 2240 @ 93.00 |
| | 4 red str | 414 @ 169.00 | 3 blk hfrs | 503 @ 155.00 | 7 blk hfrs | 607 @ 163.00 | 1 red cow | 1560 @ 55.00 | 1 wf bull | 2215 @ 90.50 |
| | | | 2 blk hfrs | 445 @ 157.00 | 64 mix hfrs | 755 @ 161.25 | 1 red cow | 1205 @ 54.00 | 1 x-bred bull | 1760 @ 85.00 |
| | | | 3 blk hfrs | 503 @ 155.00 | 9 blk hfrs | 633 @ 161.00 | 3 blk cows | 1142 @ 52.00 | 1 blk bull | 1580 @ 82.00 |
| | | | 2 blk hfrs | 445 @ 157.00 | 3 blk hfrs | 640 @ 160.00 | 3 blk cows | 1302 @ 51.00 | | |
| | | | 3 blk hfrs | 503 @ 155.00 | 10 blk hfrs | 578 @ 159.00 | | | | |
| | | | 2 blk hfrs | 445 @ 157.00 | 15 blk/bwf hfrs | 865 @ 155.50 | | | | |
| | | | 3 blk hfrs | 503 @ 155.00 | 3 blk hfrs | 565 @ 154.00 | | | | |
| | | | 2 blk hfrs | 445 @ 157.00 | 4 blk hfrs | 619 @ 153.00 | | | | |
| | | | 3 blk hfrs | 503 @ 155.00 | 10 blk/red hfrs | 638 @ 153.00 | | | | |
| | | | 2 blk hfrs | 445 @ 157.00 | 5 blk/bwf hfrs | 742 @ 153.00 | | | | |
| | | | 3 blk hfrs | 503 @ 155.00 | | | | | | |
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