

Book showcases ten Feast of the Fields events Bv Donna Sullivan,

Editor

Ten delectable gourmet meals served in a picturesque country setting ... hundreds of people experiencing agriculture firsthand, some for the first time... an old limestone barn, a corn field and fine china on white linen table cloths with a center pivot nearby as classical music played in the background. All of this and so much more made up Feast of the Fields, hosted at River Creek Farms near Manhattan by Bob and Mary Mertz. It was one of the first "Farm to Fork" events to be held in the state, and now a beautiful 88-page book by Mary captures the magic of each event as it unfolded on their fourth-generation family farm in the Kaw River Valley of Kansas.

Inspiration for Feast of the Fields came when a neighbor showed Mary a picture in a magazine depicting tables covered in white linen, set with china, crystal and candles, surrounded by the growing corn. It was the corn that captured her imagination, as she realized it could be an opportunity to share the farm she had grown to love with those who had no experience with life in the country.

Mary herself was once one of those people. "As a former city girl, this is something I would have wanted to go to," she said. "Farming was intriguing to me.'

She was working for the National Association of Realtors in Chicago when someone from the office next door asked her if she would be interested in working for ranchers and farmers and she accepted a position as office manager for the Beef Industry Council. There she met Bob, who was working at the National Livestock and Meat Board. They became friends and she asked if



By Mary Mertz

Mary Mertz recently produced a beautiful 88-page full color book depicting the ten Feast of the Fields events held on their farm near Manhattan. Profits from the book will benefit FFA, an organization she believes in passionately. Courtesy photos



Above, with the irrigation pivot nearby, guests enjoy a gourmet feast in the middle of a cornfield.

then the ram butted me," idea of hosting a fine din- Bob and the kids helping, path in the cornfield wide

Courtesy photos

extensive knowledge of the farm-to-table concept to the project and created a menu of Kansas Bourbon-Glazed Duroc Pork Belly, River Creek Farms Leg of Lamb served as a Kabob and Panna Cotta with fresh blueberries and Kansas wildflower honey. Each course was paired with the perfect wine.

Guests listened as members of the Mertz family shared about their work on River Creek Farms. The patriarch and matriarch of the family, Harold and Jeanne Mertz, were also on hand to visit with guests. At the end of the evening, everyone agreed it had been a delightful, unique experience and a new tradition was born.

The following nine Feasts of the Field alternated between the corn field in the spring and barn in the fall. Over the years, different chefs provided the menus but the focus remained on locally sourced food. State FFA officer teams were enlisted to help serve and Mary speaks highly of their efforts. "They worked so hard and smiled all night," she said.

Looking back over the years of hosting Feast of the Fields, Mary believes one of the biggest successes was the amazing collaboration that took place between the chefs, servers, musicians, vineyards and everyone that was part of it. "Everyone was working together to convey a beautiful story about food and agriculture," she reflected. "Everyone was on the same page in wanting to do that, whether coming from a culinary aspect or agriculture. It just came together and worked so beautifully, and the people that sat at the tables felt that. This thing was bigger than just a dinner in a cornfield, it felt really purposeful."

Profits from Feast of the Fields... The Heart of Kan-

she could go with him the next time he went home to his Kansas farm.

"I fell in love with Kansas probably before I fell in love with Bob," she laughed. "I'd never seen so much space in my life... pasture and meadows. I was in awe."

They started to spend more time together and their relationship blossomed. "When Bob proposed to me he said, 'I go hand in hand with Kansas, so we're going to move back if you accept my proposal," Mary recalled. The couple married and within a couple of months she was expecting their first child. "He wanted to start the family in Kansas, so we moved back here," she said. She remembers carrying five-gallon buckets of corn to the sheep in the Kansas heat. "And

she said.

Heat and cantankerous rams notwithstanding. Mary started her family and put down her Kansas roots. "Early on, as a city girl turned farmwife, I struggled to fit in," she writes in the introduction of the book. "But as I grew our family, my roots grew deeper and deeper in the Kansas soil as well. I began to appreciate the land and the grain that farm families so depend upon. And I quickly embraced the expanse of the prairie hills dotted by wildflowers and spring redbuds. I fell in love with agriculture."

The admonition for farm families to "Tell your story" was becoming a more common theme in 2009 when Mary first had the idea to host a meal in their cornfields. She approached Bob with the

ing four-course dinner with a chef, musicians and wine. He was less than enthusiastic, pointing out the realities of summers in Kansas – unpredictable weather, heat and bugs. He told her to forget the idea. "There's no harm in trying it once," she replied.

Mary planned a trial run with a guest list handpicked from people she thought would enjoy an out-of-the-box experience, but would also be okay if anything went wrong. The corn got really dry and was cut for silage, dashing her hopes of hosting her feast in a cornfield. So she turned her attention to their old barn. "It was quite a project cleaning out the barn," she described. "Every nook and cranny was filled with things that had been living there for a long time." With

they cleaned it out, hosed it down and leveled the ground in a couple of days. People brought dishes from their own gardens and they were served in a buffet line.

With the success of that event, Mary began planning for her first official Feast of the Fields, which was held on June 5, 2011. Bob had mowed a

and long enough for seven tables. "That's not something a farmer is inclined to do," Mary writes. "But he was willing to sacrifice the seven bushels of corn for this venture." He also proudly placed his irrigation pivot to be in view of the guests, dubbing it "farm art." Chef Scott Benjamin of 4 Olives in Manhattan brought an

sas Farms and Food will benefit FFA. "FFA is an important institution that readies the next generation for leadership in all aspects of life and we are happy to help fund these programs," Mary said. For more information on purchasing the book, which sells for \$45, contact Mary Mertz at rcfbobmary@ gmail.com



A full moon peeks through the window of the limestone barn as guests enjoy fine dining and good company.



The hosts of Feast of the Fields, Bob and Mary Mertz, welcomed guests to River Creek Farms for ten Feast of the Fields events.



Ag Across America

By Glenn Brunkow, Pottawatomie County farmer and rancher

Recently I returned from one of the best weeks of the year, the American Farm Bureau Convention and Annual Meeting. It is truly something I look forward to each year and a highlight on my calendar.

My favorite thing about the meeting is people in agriculture from all across the United States come together to decide on how to tackle the toughest issues facing our industry. I always meet new and interesting people like the sweet potato farmer from Mississippi I got to eat lunch with that Sunday. Our crops may have been different, but we spoke one common language agriculture.

I really enjoy just hanging out in the hallways

COWPOKES

listening to everyone talk about the weather and what was going on at their farms and ranches. It is a time to renew old friendships like my good friend Ben from Georgia or my buddy Rick from Idaho. We see each other once a year, but it does not take long to catch up on our lives. I love listening to the different accents and ways of communicating.

The American Farm Bureau is truly a big tent organization; the meeting brings in producers from all across the nation. All types of agriculture from vegetables to honey, row crops, cattle and everything in between. You will find some of the largest farmers and ranchers in the same room as producers with much smaller operations. The best part is that there is a seat at the

By Ace Reid

I really enjoy the general sessions, and this year I attended some highly informative workshops. I also had the privilege of judging the Young Farmer and Ranchers Commit-

table for everyone.

tee's Excellence in Agriculture award. I have to say it was humbling to listen to all the great accomplishments of the applicants, the amount of work they have done is absolutely amazing. I am also sure the tours were fantastic but, in my mind, those great events were not the most important part of our week in Atlanta.

The annual business meeting of the American Farm Bureau Federation is what we all come for. When we take the ideas that started out at the grassroots level and were distilled and refined through the state and national process and make the final tweaks before we adopt them. This policy making process is the blueprint of what will happen for the next year, our playbook of how to guide legislators and regulators for the benefit of agriculture.

This process is tough, and it can be contentious at times. When you have an organization as diverse as ours not everyone will agree on how things should be done. In the end, arguments are and points presented, are made. The voting delegates take the information provided to them and make decisions shaping ag policy for at least the next year if not longer. Almost as soon as the gavel sounds, members begin working on policy for next year and looking forward to another good week in January.

"Insight" is a weekly column published by Kansas Farm Bureau, the state's largest farm organization whose mission is to strengthen agriculture and the lives of Kansans through advocacy, education and service.



C ACE REID

"By golly, I guess the joke's on me, Slim. He does kick, don't he?"

We are neck-deep in lambing right now. So far things have not gone too badly; you can't see me, but I am knocking on wood right now. We've had a couple of hiccups but nothing too bad. Well, there was the ewe who forgot where the barn was on the coldest night and had her lambs outside in the open. She will be someone else's problem next year. I don't tolerate stupid in ewes or cows; however, I am lucky that Jennifer does not have the same policy for husbands. Because it is the heart of lambing season it means that we are doing late-night and early-morning checks. Sure, it is hard to drag yourself out of a nice warm bed to do a check when you can hear the wind howling outside, but that is not the check that I have the most problem with. Don't get me wrong, I take a long time to get dressed and down to the pens. I don't get dressed or move as fast as I used to. No, it is the nine o'clock check that causes me the most heartburn and grief. I don't know why but it is the hardest for me to get motivated for. I am not one to fall asleep watching television in the easy chair, so that is not a problem and I always stay up until at least ten every night, so the late night is not a problem. I really don't know why I find that particular check so hard, but it is the one I have the most trouble with. I think most of it is because I have come in for the night around six and especially on a cold night, I have warmed up and gotten comfortable. Let's be honest, one of the best feelings in the entire world is coming in on a frosty night, kicking your boots off, taking off the chore clothes and falling into the easy chair or couch. I can savor that feeling for a half-hour or so before the dread of having to go back out in a couple of hours starts to kick in. Usually, I get in from chores about the same time Jennifer gets home from work and we sit and relax for a few minutes before we start cooking supper. Then we have supper between 6:30 and 7:00. Around 8:00 we have cleared the supper dishes, washed them and we are relaxing again. Okay, in the name of truth in advertising, I am watching TV while Jennifer is doing something. Even

after watching me for over twenty-six years, she still has not perfected the art of relaxation. All the while I am relaxing. either watching TV or reading, but my mind is on the 9:00 check.

Even then, the check is not such a bad deal as long as things go right. However, on those rare nights when things don't go right, it can be 10:00 before we get in and that cuts into the news and obstructs my weather. That is not good, and it messes up my routine. It also messes with my beauty sleep and that is really not a good thing. I know this is all part of having sheep and I am whining now, and no one cares about my whining.



A couple of months ago I was eating supper with my oldest son and his family. He was making sausage and scrambled eggs. As he sat down he offered me one last thing to add my to plate – sauerkraut. I wrinkled my nose. "No thanks," I said. "I hate sauerkraut."

"How do you know?" he said. "When was the last time you tried it?"

Good question. As a matter of fact, it's possible I never had. But as a child, I had espoused the opinion that I don't like sauerkraut and nothing had ever come along to change my mind.

I can see forming an opinion about sauerkraut as a small child – it was yucky, plain and simple. But in order to maintain that opinion for more than fifty years, I had to willfully ignore two important pieces of information.

1. I like cabbage.

2. I like pickled things.

What is sauerkraut? Pickled cabbage.

As odd of a topic as this probably seems at this moment, it set me onto a train of thought that has been percolating around in my head ever since. What other opinions have I formed over the years while ignoring key facts that might prove them wrong? Are there subjects in which defending my opinion takes precedence over finding and knowing the truth?

Now don't misunderstand me. I'm not saying we need to let ourselves be swayed by every whim and notion that comes along, until our sense of right and wrong becomes distorted and our value system is rendered unrecognizable. But think about it. Have there been times you've formed a quick opinion about someone you don't really know based on how they look, what others say about them or some other factor? I know I have. Often – good or bad – that opinion changes when I get to know them myself.

There are subjects I've formed an opinion about before really examining good, quality information. I'd like to say sauerkraut was my only downfall in that area – unfortunately it's not. And then we have the times when I allow my opinion to be shaped by people who tend to think like me in most instances. Sometimes I assume we would agree just because we usually do and then I don't take the time to look at the information myself. Falling into "crowd-think," whatever the topic, is probably not a great idea.

As a journalist, I try very, very hard to not bring my own opinions into my work. I'm sure you could point to times I've failed in that area, but it's a standard I always try to live up to. A couple of months ago I was at the Wichita Farm Show and a gentleman asked me, "Do you support (he named his topic, I'll let you fill in your own) in your paper? Because if you don't, I can't support your paper."

I explained to him that whether or not I personally support his or any other issue is irrelevant. My job is to provide people with solid, unbiased information and let them reach their own conclusions. Like I said, I know I'm not perfect in this area, but I will never stop trying. And you are welcome to call it to my attention when I fall short.

By the way, I tried sauerkraut that night at my son's. And I liked it.

Go figure.

North American Meat Institute to House judiciary: meat and poultry industry not to blame for inflation

The North American Meat Institute (Meat Institute) said recently consumers saw increased meat prices in 2021 because of labor shortages, greater consumer demand, supply chain problems and other factors experienced by most sectors of the economy.

"Inflation is hurting consumers by erasing the wage gains workers

and hearings instead of addressing the labor shortage and supply chain bottlenecks."

The Meat Institute submitted additional testimony for a hearing of the House Judiciary Subcommittee on Antitrust, Commercial, and Administrative Law called, *Re*viving Competition, Part 5: Addressing the Effects of Economic Concentration on Potts in the testimony submitted. "The USDA Agricultural Marketing Service's Packers and Stockyards Division is uniquely charged, by statute, to provide on-going oversight for fair business practices and to ensure competitive markets in the livestock, meat, and poultry industries. Additionally, any potential merger or acquisition regulators believe threatens 'too much market power is subject to review by the Justice Department or the Federal Trade Commission. The last proposed merger of two of the 'big four' fed cattle slaughterers occurred in 2008 - and it was blocked by the Department of Justice."

It is a couple of months out of the year, I am doing what I love, I should shut my mouth and appreciate my blessings. You are right, but that doesn't mean it is easy. I also have to be truthful and say that Jennifer and the kids have done the vast majority of the checks this year. I managed to hurt my back and my loving family is trying to help me out by taking the checks when they are home, so I really have no reason to whine. That has never stopped me in the past and won't stop me now.

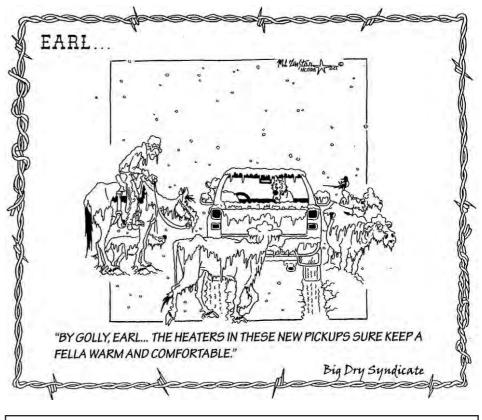
Before you all tell me about installing cameras in the barn, I have thought about that. It is a good option and one we should look into. I am not a technology guy, and I am not sure how we would set it up, much less pay for it. The bottom line on that is that I am cheap, and I need the exercise, so a camera just doesn't seem to be a good option. I know we could also back lambing up into a warmer time of the year. The checks wouldn't be any easier to stay awake for or get up for, but they would be warmer. Again, I don't have a great argument other than this is how we have always done it, and this is when it fits in our farm schedule the best.

I have also come to the realization that sometimes I just like to complain and whine for the sake of complaining and whining and I am sure this is a shining example of that. It's not a big deal (especially when Jennifer is doing the check) so the answer to my dilemma is to suck it up, get off the couch and go check the ewes. received due to the tight labor market and the pandemic," said Julie Anna Potts, president and CEO of the North American Meat Institute. "It is no wonder the Biden administration and some members of Congress would rather hold press conferences

Americas Food Supply.

The Meat Institute provided important context to antitrust allegations.

"The meat packing industry has been, and continues to be, one of the most highly scrutinized industries when it comes to antitrust review," said





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K-State crops team caps season as national runner-up

The Kansas State University crops team completed its season recently with runner-up finishes at the Kansas City American Royal Collegiate Crops Contest and the National Collegiate Crops Contest in Ames, Iowa.

Iowa State University won both events to claim the national championship for 2021. The University Minnesota-Crookston of placed third at the American Royal, and South Dakota State University placed third at the national contest.

K-State had won both events for each of the past three years and for 17 of the past 21 years through 2019. Both were canceled last year due to COVID. K-State placed first in the central regional contest in Oklahoma earlier in the fall.

In the contests, participants are required to identify 200 different plant or seed samples of crops and weeds; grade eight different samples of grain according to Federal Grain Inspection Service standards; and analyze ten seed samples to determine what contaminants they contain

Members of K-State's team include seniors Alex Kaufmann, Concordia; Evan Bott, Palmer; and Trevor Mullen, Salina. Team alternates include sophomores Ellie Braun, Belvue; Leah Hudson, Rossville; and Ashley Chandler, Neodesha; plus juniors Jaime Knight, Kansas City; and Caleb Kats, Silver Lake.

K-State placed first in grain grading and plant and seed identification at the national contest, and second in seed analysis.

At the American Royal, K-State placed first in plant and seed identification and second in the other two categories.

Individually, Bott placed fourth at nationals and second at the American Royal, while Kaufmann was fifth and third at those same con-

Report analyzes record-high fertilizer prices, projects 80% increase in 2022

coach Luke Ryan.

By Blair Fannin

Farmers and economists are wringing their hands on how to get a handle on record-high fertilizer prices heading into the 2022 crop year, and a new report compiled by the Agricultural and Food Policy Center at Texas A&M University suggests prices may not be done going up due to several factors.

Joe Outlaw, Ph.D., co-director of the Agricultural and Food Policy Center and Texas A&M AgriLife Extension Service economist, told farmers at the Blackland Income Growth Conference in Waco that fertilizer prices could escalate as much as 80% this year as supply and demand gyrate at never-before-seen levels.

A recently completed AFPC report, which analyzed the economic impacts of higher fertilizer prices on 64 representative farms, was compiled from a study initially requested by U.S. Rep. Julia Letlow, R-La. Outlaw said producers are not only experiencing sticker shock, but may see product short-

"Coupled with current COVID supply chain issues, this will further stress the production environment for agriculture across the country," Outlaw said.

The fertilizer report is the most recent in a series of analyses by AFPC, which has previously released impact reports on supply disruptions to the U.S. cattle market and proposed estate tax legislation.

Rocketing fertilizer prices

The AFPC report found that as the nation continues to maneuver through supply chain disruptions and agricultural input availability, there are impacts on both fertilizer availability and costs. Last August, the Food and Agricultural Policy Research Institute in Missouri projected only a 10% increase in fertilizer prices in its forecast model, but recent spot prices have forecasts reaching as high as 80% more for the 2022 planting season.

Anhydrous ammonia increased by as much as \$688 per ton or \$86,000 per 1,000-acre AFPC representative farm through October 2021. The AFPC representative farms are from across the country and are

onsignment Sale

used to calculate and project potential implications on future production.

tests. Bott also placed first

in identification at both

events, and second at K.C.

and third at Ames in grain

grading. Kaufmann placed

second in identification at

"The current farm safety net is not designed to address these types of rapid production cost increases, which will continue to be a growing concern for farmers across the country, creating an emerging need for assistance," Outlaw said.

The report found that the largest whole-farm impact would fall on AFPC's feed-grain farms at an average of \$128,000 per farm and the largest per acre impact would hit AFPC's rice farms at \$62.04 per acre

AFPC economists went back to the 1980s, finding that fertilizer prices typically tend to rise as corn revenues increase.

Grain market, production implications

Jason Johnson, Ph.D., AgriLife Extension economist, Stephenville, said during the Blacklands Income Growth conference that grain farmers really need to do some crop budget forecasting for 2022.

Grain farmers will not only have to cope with record-high fertilizer prices, but also price support pressure from carryover

by Kevin Donnelly, K-State professor of agronomy.

Leah Hudson, Alex Kaufmann, Ashley Chandler, Trevor Mullen, Jaime Knight,

Evan Bott, Ellie Braun, Caleb Kats, assistant coach Sarah Zerger, and assistant

both contests. Mullen was

first in grain grading at the

The team was coached

American Royal.

supplies of grain coupled with drought in some of the major wheat production areas.

"If fertilizer prices are way up, how can you (as a farmer) reduce costs?" Johnson said, "Make sure you are not wasting fertilizer and that you are being very strategic in your crop management planning."

With higher fertilizer prices, Johnson said farmers are going to have to be increasingly mindful of their crop production budgets. He also suggested that to cope with inflation, grain farmers should consider putting some of their cash to work such as buying input needs ahead of time.

"Also, when was the last time you we had an increasing interest-rate environment?" Johnson said. "What about experiencing four interest rate hikes within a year? Do you have anything financed with a variable interest rate? 2022 is going to Graduate students Luke Ryan (Solomon) and Sarah Zerger (Abilene) were assistant coaches.

The American Royal coordinated the Kansas

throughout the year.

be an increasing rate environment. How is that going to impact your operation and net revenue?

He said farmers can counter with locking in future contracts by selling a portion of their crop

China falls short on U.S. trade deal targets

China is not keeping up on its end of the bargain in the Phase One trade deal with the United States, according to the Peterson Institute for International Economics.

Under the accord, which took effect on Feb. 14, 2020, Beijing agreed to expand purchases of U.S. goods and services by \$200 billion during the two-year period that ended on Dec. 31, 2021, above 2017 baseline levels, according to the report, published late last month.

From January 2020 through November 2021, China's purchases of all covered products reached 62% of that target, Peterson found in analyzing data released by the U.S. Census and Chinese customs.

In looking at agricultural goods, China imported \$56.3 billion in products from January 2020 through November 2021, compared to a target of \$74.0 billion. During the same period, U.S. exports to China of covered agricultural products came to \$57.4 billion, versus a target of \$69.3 billion. The first phase of the trade deal expired recently, and there is no clear signal of when discussions between the two countries might resume.



City contest, with Corteva Agriscience as the primary sponsor. Additional sponsors were CHS, American Society of Agronomy, Association of Official Seed Analysts and the South Dakota Crop Improvement Association.

The primary sponsor of the Ames contest was the CME Group. Additional donors included the Crop Science Society of America. Growmark Cooperative. the Society of Commercial Seed Technologists and Syngenta.

Locally, sponsors for the K-State Crops Team include the Kansas Crop Improvement Association, Department of Agronomy, College of Agriculture and the K-State Student Government Association.

K-State's crops team received a scholarship from contest sponsors at Kansas City, and CME Group provided individual scholarships to the top five students at Ames.

"Pencil out your cost

exposure," Johnson said.

"Look at what your costs

are going to be in rela-

tion to relative profit. Crop

budget forecasting can be

used to your advantage.





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Eileen Patrick, Lindsborg, Wins This Week's Grass & Grain Recipe Contest

Winner Eileen Patrick, Lindsborg: **CHEESY CHICKEN & RICE BAKE**

10 3/4-ounce can cream of chicken soup

1 1/3 cups water

3/4 cup UNCOOKED regular long-grain white rice

1/2 teaspoon onion powder

1/4 teaspoon ground black pepper

1 1/2 pounds skinless, boneless chicken breast halves

1 cup shredded Cheddar cheese

Mix soup, water, rice, onion powder and pepper in a mixing bowl. Pour into a greased 9-by-13-inch baking dish. Top with chicken and sprinkle with additional pepper. Cover and bake at 375 degrees for 45 minutes or until chicken tests done and rice is cooked. Uncover and sprinkle with cheese. Serve after cheese is melted. Serves 6.

Variations: Can add 2 cups fresh or frozen vegetables to soup mix. If using frozen, additional baking time may be needed.

Can also use other meats. Cooked sausage can be sliced and added as meat, or even hot dogs!

SAUSAGE

awatha:

Susan Schrick, Hileftovers in the refrigerator for up to 3 days.

TORTELLINI SOUP 1 pound Italian sausage, ter, Oklahoma: browned & drained

(2) 15-ounce cans Italian diced tomatoes

4 cups vegetable or chicken broth (32-ounce container)

8 ounces cream cheese, cubed

20-ounce bag frozen cheese tortellini

3-4 cups fresh spinach Add the browned.

chopped and drained sausage, broth, both cans of diced tomatoes and cubed cream cheese to your slow cooker. Give it a good stir and cook on low for about 4 hours or until the cream cheese has completely dissolved. Stir in the spinach and frozen tortellini and cook for an additional 30 minutes or until the pasta is done to your liking. Serve immediately and store any

***** Rose Edwards, Stillwa-

LIME GELATIN SALAD 1 package lime gelatin 8 ounces cream cheese

1 dozen large marshmallows, cut into pieces

1 medium can crushed pineapple, drained 1/2 cup pecan pieces

Dissolve lime gelatin in 2 cups of boiling water. Immediately add cream cheese and mash a little into gelatin and water. Beat with the mixer until all cream cheese is dissolved. Add cut up marshmallows, pineapple and nuts. Refrigerate.

Jackie Doud, Topeka: **SLOW COOKER CHICKEN** 2 1/2 pounds skinless & boneless chicken breasts 1 can cream mushroom

soup 1 can cream chicken soup **1 packet Lipton Onion Soup** 1 cup milk mix 1/2 cup cream cheese 8-ounce can (or fresh) **3 tablespoons butter** mushrooms 1 pound bacon, cooked & 1/3 cup water

Pepper

Spray slow cooker with non-stick spray. Place chicken in a single laver in slow cooker. Sprinkle with pepper. Mix soups, water, onion soup packet and mushrooms. Pour over top. Cook 4-5 hours on high or 7-8 hours on low. When done shred chicken with two forks. Serve over mashed potatoes, rice or noodles. Use like chicken and gravy. *****

Kellee George, Shawnee: BACON

MASHED POTATOES 2 1/2 pounds cooked potatoes

Looking To Add Years To Your Life? Positivity Can Help!

crumbled

cheese

shredded

1/4 teaspoon salt

1/4 teaspoon pepper

ingredients. Serve.

Kimberly

2 1/2 cups milk

2 3/4 cups flour

2 large eggs

der

Stillwater, Oklahoma:

1 tablespoon vanilla

1 cup shredded Cheddar

1/2 cup Parmesan cheese,

Mash potatoes with but-

ter and milk; add cream

cheese. Stir in remaining

SHEET PAN PANCAKES

2 tablespoons baking pow-

Edwards,

4 green onions, chopped

By Tara Solomon-Smith, Adult Development & Aging **Agent, Wildcat Extension District**

Did you know that having a positive outlook on aging can add up to 7 ½ years to your life? A smile or words of encouragement may seem like small things, but they sure add up! Dr. Erin Yelland, Associate Professor and Interim Director of the Center on Aging, has come up with an acronym that supports her belief and research that living with positivity is the healthy path for most. The acronym is SMILE BIG and Dr. Yelland describes it with the following:

· Successful aging requires practicing positivity. If we have a positive attitude, we are more likely to make changes and implement healthy behaviors into our lives that are going to help us be successful as we age.

• Manage our expectations. We are not always going to be at the pinnacle of healthy aging, and that's okay. We need to make our expectations something that are attainable.

• Interact with positivity. Research shows that when you interact with positive people and places, you're more likely to embrace positivity as well.

· Looking for positives. We know that bad things happen sometimes, but when you take the time to truly reflect, I bet you'll find something positive that came from the situation. Thinking about the COVID-19 pandemic, we were able to stay home more and make more meaningful connections with our family members.

· Escaping ageism. Make it a priority to escape stereotypes associated with aging. Your age does not define who you are.

• Being healthy. We know that there are a lot of healthy behaviors that we should be doing, but we don't always do them. Eating healthfully, exercising regularly, taking care of our brain...all of those things lead to successful aging.

• 'I Can' approach. Instead of saying, 'I can't do this or that anymore,' take the 'I Can' approach. For example, 'I can utilize a cane that will help me move around more safely'.

· Give yourself grace. Sometimes, we're going to mess up or have a bad day. We need to give ourselves grace so we're not beating ourselves down when we don't always embrace positivity. It is okay to not be okay.

We know our community members are out there doing great things at all ages! Don't get into the mindset of what it you think may be 'typical' aging. Make the most of each day no matter what age!

For more information, please contact Tara Solomon-Smith, tsolomon@ksu.edu, 620-378-2167



1/4 cup sugar 1/2 teaspoon salt

8 tablespoons melted butter. divided

1 cup thick sliced strawberries 1 cup chocolate chips

1 heaping cup blueberries **Butter & syrup for serving**

Spread 2 tablespoons melted butter on jelly roll pan. Mix all ingredients (except strawberries, chocolate chips and blueberries) using only 4 tablespoons butter. Pour into pan. Sprinkle with strawberries then chocolate chips then blueberries. Bake about 20 minutes at 425 degrees. Remove from oven and brush remaining 2 tablespoons of butter over top. Serve.

Millie Conger, Tecumseh: **PEPPERONI PIZZA CRESCENT ROLLS**

8-ounce can crescent rolls 24 slices pepperoni (about 5 ounces)

1/2 cup shredded mozzarella cheese 1 cup pizza sauce, heated

Set oven at 375 degrees. Separate dough into 8 triangles. Pat out slightly. Place 3 slices pepperoni slightly overlapping on center of each triangle. Top each with about 1 tablespoon cheese. Roll up starting at shortest side of triangle and rolling to opposite point. Place rolls point side down on ungreased cookie sheet. Bake for 10-14 minutes or until golden brown. Serve warm with the pizza sauce for dipping.



The first week or so of January is filled with birthdays to celebrate. My mom's is on the 5th, Kari's is on the 6th and Mariana's is on the 8th. For my mom, she wanted a rock for her yard with our last name and she also got her bag full of goodies from my nieces. She got everything from cheese popcorn to handmade puzzles to a homemade cake; she loved everything about it.

For Kari, she happened to be coming into town for the Flint Hills Bridal Fair. so we went for brunch at one of her favorites. The Chef in Manhattan. where they were sweet enough to put a candle into some whipped cream and present it to her without a song so she did not have to be fully embarrassed. We also made some time to explore the Dusty Bookshelf and Acme Gift before she headed back to Kansas City for the day.

Mariana, the youngest of the group, went to a nice dinner with her husband and then they had plans to come over to my house for a game night. I made a bunch of S'mores treats, and we played games until after midnight. I made S'mores bars that are always one of my favorites, Mariana was partial to the S'mores Pie and then there was the trainwreck of S'mores cookies that looked nothing like the picture. Later, like days later, I realized that where I had read 1 1/2 cups of butter, it actually said 1 1/2 sticks of butter; needless to say, our cookies were pancakes, very buttery pancakes. Overall, a fun start to the year celebrating three of my favorite ladies. Three ladies that play a huge role in my life and I truly cannot imagine them not being a part of my ever-chaotic world. Three ladies that never hesitate to tell me the truth, even when I do not necessarily want to hear it and three ladies that I would not trade for the world. Something about starting off the year celebrating them, always makes a new year seem right.

S'MORES PIE 1/2 cup unsalted butter,

room temp 1/2 cup sugar

1 egg

1 teaspoon vanilla

- 1 cup flour 1 cup graham cracker
- crumbs 1 teaspoon baking powder
- 1/2 teaspoon salt 7 ounces marshmallow
- creme 5 whole Hershey bars (di-

vided) 1 1/2 cups miniature marsh-

mallows Preheat over to 350 de-

grees and spray a 9-inch pie plate.

Beat butter and sugar until combined in a large bowl. Add egg and vanilla; beat again. Add flour, graham cracker crumbs, baking powder and salt. Press a little more than half of the mixture into the bottom and up the side of the pie plate.

marshmallow Spread creme over crust. Put the chocolate squares on top of the marshmallow creme (if you do not have Hershey's on hand, feel free to coat with chocolate chips). Top with miniature marshmallows.

Take the remaining crust mixture and put small- to medium-size clumps over the marshmallows; do not press down. Sprinkle the top with a

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1. Check your recipe carefully to make certain all ingredients are accurate and instructions are clear. 2. Be sure your name, address and phone number are on the entry. Please include a street address with your recipe entries. A post office box number is not sufficient for prize delivery. Allow 3-4 weeks for delivery.

3. Send it to: Woman's Page Editor, Grass & Grain, Box 1009, Manhattan, KS 66505, OR e-mail at: auctions@agpress.com

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Andrew Pope, M.D.



few more pieces of chocolate bar or with chocolate chips

Bake for 18-20 minutes or until marshmallows peeking through start to turn a nice golden brown. Let cool completely unless you want to eat your pie messy; if that is the case, feel free to dig in as soon as you are ready!

Michele grew up in Junction City and graduated from Kansas State University. She worked in the restaurant management field for six years before deciding to switch careers and now works as an office manager for a company that manufactures oilfield products. Her passion for blogging and food can be followed on Instagram: boobsbrainsandbaking.

If you would like to contact Michele with comments please email mcarlyon88@ amail.com



Trust Your Gut: K-State Nutrition Specialist Says Grass & Grain, January 25, 2022 Gut Acts As 'Second Brain' For Healthy Bodies

MANHATTAN - As it turns out, trusting your gut when making decisions about healthy eating could be a very good thing.

Kansas State University nutrition specialist Sandy Procter said there is a growing body of research that indicates the human gut serves as a type of "second brain" that affects not only digestion, but also a person's mood, health and even the way we think.

According to an article from the Johns Hopkins University School of Medicine, the brain in the human gut is called the enteric nervous system, or ENS It consists of two thin layers of more than 100 million nerve cells lining the gastrointestinal tract from the esophagus to the rectum.

Procter notes that many scientists and doctors are discovering a link between the ENS and the human brain in which the two routinely communicate about changes in the body. The link may trigger big emotional shifts experienced by people coping with such bowel problems as constipation, diarrhea, bloating, pain and stomach upset conditions that affect up to 40 percent of the population.

"The overlap and the synergy between the systems in our bodies may help explain some of the mental-physical - or mind versus gut - relationships that we've long been aware of in human health,' Procter said.

Put more simply, foods that promote gut health not only may be good for you physically; they also may help your mental state of mind, easing such conditions as depression and anxiety.

Fortunately, Procter notes there is sound, science-based evidence of foods that support digestive health.

'One example is whole grains," she said. "Whole grains provide fiber, which is important to gut health. When gut bacteria ferment fiber, they produce short chain fatty acids, which in turn promote proper function in the cells lining the colon. The colon is where most of our immune cells are found.

"So the short answer becomes: Eat whole grain foods for good health.'

Procter shared nine research-based ways to improve gut bacteria:

port a healthy gut, they are high in fiber, which supports the growth of healthy bacteria

Eat fermented foods

Some examples include yogurt (especially plain, natural or unsweetened types), kimchi, kefir, sauerkraut, tempeh and kombucha. "These are foods that are produced by bacteria or yeasts that convert sugars to organic acids or alcohol," Procter said. "They are high in lactobacilli, a beneficial bacteria.'

Many fermented foods are relatively new to U.S. stores and diets, but have been enjoyed globally for thousands of years.

Avoid artificial sweeteners Studies have shown that artificial sweeteners negatively affect the microbiota and, in turn, work against healthy blood sugar levels.

Eat prebiotic foods

Some examples include onions, leeks, asparagus, bananas, oats, barley and flax seed. Prebiotic foods promote the growth of beneficial bacteria in the gut. **Breastfeed at least**

six months

"Breastfeeding helps an infant develop a healthy microbiota, which may protect against some diseases later on," Procter said

Studies show that infants who are formula-fed have an altered microbiota, with fewer healthy bacteria, compared to those who have been breastfed.

Eat whole grains

Whole grains contain fiber and non-digestible carbohydrate substances. Since they are not digested, those substances move into the large intestine and are broken down to promote the growth of beneficial bacteria.

Consider more plant-based foods on your plate

Procter said it may be the high fiber content of plant-based foods that benefits the gut microbiota, "but research tells us it may also be something else, such as the healthier lifestyle vegetarians tend to lead over omnivores."

Eat foods rich in polyphenols

Polyphenols are naturally-occurring plant compounds that often have antioxidant properties, and are broken down and

T Di

digested by the gut microbiota.

Good sources of polyphenols include apples, red wine, grape juice, dark chocolate, cocoa, olive oil, green tea, almonds, blueberries and broccoli.

Those with physical issues or questions related to their diet or digestion should consult with a medical professional before making changes to their diet. Procter said healthy people interested in increasing the benefits of eating a varied, healthful diet can receive guidance from the USDA's MyPlate, or learn more about the Eating Mediterranean Plan from North Carolina State Extension.

"So much is being learned and understood

Family Meals Are Important For Kids' Development

By Nancy Nelson, **Meadowlark Extension District. Family Life**

The more meals that families eat together, the more positive results that are seen in the individual and the family unit. Even toddlers benefit from being with family during meal time.

This is where a lot of useful conversation happens, and young children who aren't able to speak yet are really picking up on language development and formation. It's shown to be a benefit to them as they're getting a start at processing words and interacting with conversation.

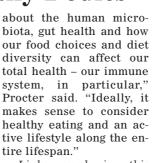
As youth grow into the teen vears, family meals provide grounding and "a connectedness" to the familv's values.

We know from research that young pre-teens and teens are less likely to have anti-social and or delinquent tendencies if they have more family meals. There are some grounding benefits to meals that reach well beyond just the fact that it's nice for parents to know where everybody is at for a short period of time.

Eating together more than five times a week has been found to be linked to better mood and better mental health for kids in the school years, meaning ages 6-10 and teens. Sometimes our schedules

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Links used in this story: The Brain-Gut Connection (Johns Hopkins School of Medicine), www. hopkinsmedicine.org/health/ wellness-and-prevention/ the-brain-gut-connection

MyPlate (USDA), www. myplate.gov/eat-healthy/ what-is-myplate $Foods \ for \ gut \ health$

(North Carolina State extension), https://medinsteadofmeds.com/

get so crazy, and it's hard

to make it happen. People need to be a little forgiving of themselves and know that it won't happen every meal, but when you can make it happen, it's well worth the effort.

If family meals happen at breakfast, that's great. The family's schedule may only allow for morning meals on some days and evening meals on others. Be flexible.

Older children may be able to do some of the cooking while setting the table is more appropriate for others. Encourage time when everyone is focused on the task. Some of those conversations are more true and meaningful than they might be otherwise.

Electronics are a distraction to productive family conversations. The research around family meals suggests that if your family is one of those that doesn't have spontaneous conversation, then maybe you could try conversation starters, such as, "What are two things that you learned today that surprised you." Every family is unique, and it may take practice to get those conversations to flow.



Tater Tot Casserole By Ashleigh Krispense This is such an easy

weeknight meal to whip together. Throw it together before you walk out the door and in a couple hours, it's ready to serve.

1 pound ground beef, browned

1 onion, chopped (& cooked in with the beef)

16-ounce package frozen Tater Tots

10-ounce can of cream of mushroom soup 3/4 cup milk

1 1/2 cups sharp Cheddar cheese, shredded (or really whatever kind of cheese you have on hand is fine too)

1/4 to 1/2 teaspoon cayenne pepper

1/2 teaspoon garlic salt 1/2 teaspoon garlic powder

Salt & Pepper



Grease a 5- or 6-quart slow-cooker and in the bottom layer in the beef and onions.



Place a single laver of tater tots on top. In a small bowl mix together the soup, milk, cheese and spices. Pour evenly over the tater tots and cover with the lid.



Cook on low for 2 1/2 to 3 hours or until cheese is melted and everything is heated through.

Serve with some veggies on the side and enjoy!

Ashleigh is a freelance writer and the gal behind the website, Prairie Gal Cookin' (www.prairiegalcookin.com), where she shares step-by-step recipes and stories from the farm in Kansas.





Volume 7

Eat a diverse range of foods

"Dietary diversity is considered very important to human health, beginning with babies' first feedings," Procter said. "It is believed that the more species of bacteria we have in our gut, the greater number of health benefits we may derive.'

She notes that the typical American diet is not very diverse and is high in fat and sugar, which may work against healthy bacteria in the gut.

Eat a lot of vegetables, fruit. beans and legumes

Procter calls these foods "nutrition stars." In addition to providing many nutrients that sup-



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Grass & Grain, January 25, 2022 Page 6 State Line Crops Conference scheduled for February 3

By James Coover, Wildcat Extension District crop production agent

Kansas State Research and Extension and University of Missouri Extension is partnering to hold a State Line Crops Conference on February 3 from 10 a.m. to 2 p.m. at the Lamar First Baptist Church in Lamar, Missouri.

Crop producers are facing some difficult times. Though commodity prices are higher than they were in 2021, inputs, especially fertilizer, have seen a drastic increase. Machinery, fuel, seed, etc. have all risen, but the one topic that keeps rising to the surface now is the cost of fertilizer.

• Budgeting for high nitrogen prices – Dorivar Ruiz Diaz, KSU

• Maximizing your tech resources, utilizing yield monitor to improve yield - Kent Shannon, MU

• Keeping with the rotation, is it worth it? - Ray Massey, MU

• Interpreting and using soil test - James Coover, KSU

The event is free to attend and lunch is provided, but registration is required. To register for the event, go to https://extension.missouri.edu/events/state-line-cropsconference or call 417-682-3579.

Academy, Barton County SWCD, Community National Bank and Trust, Lamar Bank and Trust Company, and Arvest Bank

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For more information, please contact James Coover, crop production agent, jcoover@ksu.edu or (620) 724-

Program topics include: Sponsors for the event include Show Me Youth Ag 8233. Get 'nearly free' fertilizer by frost seeding legumes

High nitrogen prices make especially important to consider frost seeding legumes this winter, savs University of Missouri Extension state forage specialist Craig Roberts.

"2022 is different because fertilizer costs have tripled," Roberts says. "Consider legumes as nearly free fertilizer."

Frost seeding, a method of broadcasting seeds onto frozen pastures, improves poor pastures at a low cost, he says. Seeds work their way into the soil and germinate as the ground freezes and thaws.

Frost seeding requires less fuel, labor and equipment than other methods. Roberts says. It works at a time when heavy equipment could rut and compact wet fields.

Most importantly, nitrogen-fixed legumes can be an alternative to fertilizer.

Red clover, white clover and annual lespedeza are the top three legumes recommended for frost seeding in Missouri, Roberts says. Other legumes include alfalfa, birdsfoot trefoil, hairy vetch and sunn hemp. These should be seeded later in the year.

Legumes fix nitrogen

Legume root nodules fix nitrogen from the air. Not all legumes are created equal when it comes to fixing nitrogen, says

Ac Ri

Roberts. In a typical year, fixed nitrogen replaces 25 to 75 pounds per acre of fertilizer.

Legumes improve digestibility

Grazing cows like legumes. Legumes improve digestibility with higher crude protein content and higher mineral content. especially calcium and magnesium.

Studies show that animal performance and weight gain improve with legumes, especially clovers.

Legumes extend the grazing season by growing better in late spring and summer, when fescue grows slowly or not at all. Cool-season grasses get two-thirds of their growth in spring and one-third in fall. Annual lespedeza fills this gap, known as the "summer slump."

There are veterinary benefits as well. Adding red clover to common tall fescue fields helps prevent some animal health issues, Roberts says, Adding legumes dilutes fescue toxicosis. More than 90% of Missouri fields contain toxic Kentucky 31 tall fescue. Fescue toxicosis causes vasoconstriction, a narrowing of blood vessels. In summer, this causes heat to build up in an animal's core body. In winter, blood does not flow to extremities and hooves fall off. Red clover contains compounds that open blood flow, reducing vasoconstriction

When to frost seed

Roberts says frost seeding is easy for clover and annual lespedeza. Most producers use a handheld whirlybird or a whirlybird attached to a four-wheeler.

There are several advantages of doing this on the snow. Roberts says. It is easy to see where seeds were spread, and there is less chance of rutting or compaction of wet soils since the ground is frozen.

In most of Missouri, broadcast in mid-Februarv when there is snow or heavy frost. Frost seed in late January in southern regions or late February in northern counties.

Roberts specifically recommends not frost seeding alfalfa and birdsfoot trefoil in January or February. If seeded then, it is possible that the seed will germinate and emerge before an ice storm. Roberts says he does not recommend interseeding birdsfoot trefoil because it has poor seedling vigor in Missouri.

Seeds need to contact soil Seeds need the freezeand-thaw action for good soil contact and to pull the seed to the soil's top laver. Roberts says.

The best contact occurs on exposed soil. Plant residue can prevent seeds from reaching soil. The hoofing action of cattle can help work seeds into the soil.

Apply little to no nitrogen in spring

seedlings Legume need time to grow without competition for light and nutrients from grass canopies, so apply little or no nitrogen in spring. Adding more nitrogen fertilizer decreases the amount and size of nodules.

Wait until fall when root systems are strong. Graze or clip frost-seeded pastures in spring and summer to allow light to reach seedlings.

A four-year study by MU researchers, "Nitrogen Fertilization Rates Influence Stockpiled Tall Fescue Forage Through Winter," shows that nitrogen increases grass light penetration significantly in red clover. Read the full report at acsess. onlinelibrary.wiley.com/ doi/abs/10.2135/cropsci2016.02.0097

How much seed?

Roberts recommends the MU Extension publication "Seeding Rates, Dates and Depths for Common Missouri Forages" at extension.missouri. edu/p/G4652 to determine seeding rates.

see "Inter-Seeding Legumes in Pastures Can Offset High Nitrogen Prices" in the MU Integrated Pest & Crop Management newsletter, or watch an MU Livestock and Forages Town Hall video at youtu.be/zkYQo251xDQ.

Roberts also recommends pasture renovation workshops from the Alliance for Grassland Renewal. See GrasslandRenewal.org/workshops.

Riley County Livestock Association to hold annual meeting January 31; **RSVPs needed by January 26**

The Riley County Livestock Association will hold its Annual Meeting and Banquet at 6:30 p.m. on Monday, January 31, 2022 at Pottorf Hall in Manhattan. The schedule for the evening includes a ribeye steak dinner, election of three RCLA directors, and a legislative report from

Kansas Livestock Association Associate Council Jackie Newland. Mike Beam, Kansas Secretary of Agriculture, will be the featured speaker.

Reservations to attend the RCLA Annual Banquet are needed by January 26. The \$20 charge includes both the steak dinner and

membership in the Riley County Livestock Association. Spouses and guests are invited to attend for an additional \$20 per person meal charge. Call the Riley County Extension Office at 785/537-6350 to make reservations, or register online at www.riley.ksu.edu.

Winning the Game Corn Marketing Workshop planned for February 11

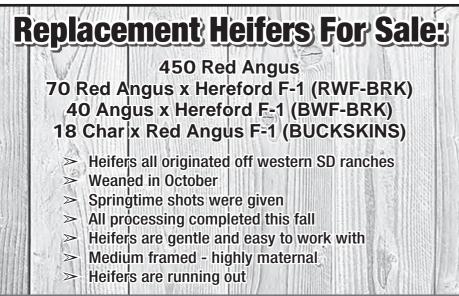
What's your pre-harvest corn marketing plan look like for the 2022 crop? Every producer understands the value in a good marketing plan - but how do you get one together?

Designing a good 2022 marketing plan is the focus of the Winning the Game Corn Marketing Workshop at the NEK Heritage Complex (south of Holton) on Friday, February 11th. The program will be four hours of a deep dive into development of a sound marketing plan, using the corn markets as a backdrop. KSU Extension agricultural economist Dr. Dan O'Brien and Kansas Farm Bureau director of commodities Mark Nelson will hit on all things corn marketing, including: Key Factors in Developing an Effective Grain Marketing Plan, Developing Pre-Harvest Marketing Plan Action Strategies, Corn Market Outlook, and then use a corn marketing exercise to simulate what to think about in a plan. Dan and Mark bring a wealth of commodity marketing experience to the table, and this will be a great opportunity to get some ideas for the upcoming year.

Registration is at 9:30. The program starts at 9:45 with five sessions and lunch. We will adjourn at 2:30. To help with meals and handouts, RSVP's are requested by Monday, February 7th to any Meadowlark Extension District Office or by e-mail to dhallaue@ksu.edu. Registration cost is \$15, payable at the door. For additional information contact the Holton office at (785) 364-4125 or visit: https://www.meadowlark.k-state.edu/crops-soils/index.html for a flyer/registration information.







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I have been on the road since Christmas and while I thought the New Year would be more peaceful with more at-home time, it does not seem that is the case. Blessings and curses.

Two of my subversive missions are connecting the port cities of the East to the Santa Fe Trail and finding the fossil of a mosasaur discovered near Sheridan, in the 1860s. (I believe it may have ended up in Boston, a la "Indiana Jones" in the back of a museum's storage unit.)

The northeastern cities of Boston, New York, Philadelphia, and Baltimore were importing goods that were traded down the Santa Fe Trail. There is so much to be explored with these relationships, so many stories yet to be uncovered. I enjoy giving the historians in those areas new paths to tread in the understanding of their own histories

Likewise, while researching the Smoky Hill Trail and the "Hell on Wheels" town of Sheridan, reports of a beast 50 to 75 feet long are scattered throughout the newspapers. From the descriptions it must have been a mosasaur fossil and it was displayed in a Swiss watch-maker's shop (It is almost equally astounding the number of watch and jewelry shops in frontier tent-towns).

The plesiosaur that was discovered within sight of Sheridan (a casting of which is in the Fort Wallace Museum) is in Philadelphia, in Drexel's Academy of Natural Sciences. It was sent to Dr. Edward Cope soon after it was excavated in the late 1860s. Paleontology was in its infancy and the great "Bone Wars" were about to explode. The demand for these specimens was keen.

So what became of the mosasaur?

"It's lost to history," said Mike Everhart, author of Oceans of Kansas and foremost expert on such matters. Being a sucker for rabbit trails and lost causes, that's

all the motivation I needed for the search.

That is the essence of history - the treasure hunt. The same thing that takes us to antique malls and flea markets pulls us into archives and old newspapers. It is the lure of the hunt and the thrill of discovery.

You are welcome to join me.

Deb Goodrich is the cohost, with Michelle Martin, of the Around Kansas TV show and the Garvey Texas Foundation Historian in Residence at the Fort Wallace Museum. She chairs the Santa Fe Trail 200. Contact her at author.debgoodrich@gmail.com

Grass & Grain, January 25, 2022 Page 7 Net farm income fluctuating in Kansas some degree," he said.

By Lisa Moser

When making personal or business decisions, it is important to be as informed as possible about the expected costs for the year ahead and sometimes that involves consulting with an expert. In agriculture, many farmers turn to economists.

Working to help farmers make informed decisions, K-State agricultural economists have released their preliminary estimates of the 2021 Kansas net farm income and forecasts for 2022

"For 2021 we expect the net farm income for Kansas grain farms to be around \$261,000, which is a 39% increase from 2020," said Gregg Ibendahl, associate professor of agricultural economics. For a variety of reasons,

not all farms will experience a profit and Ibendahl expects that 10% of farms will see negative net income for 2021.

In their estimates, Ibendahl and his colleagues looked at seven areas: yields, prices, crop acres, expenses, crop insurance, government payments from the farm bill and ad hoc government payments. He said each area was projected to the farm level to estimate net farm income for 588 grain farms in the Kansas Farm Management Association database.

"On the expense-side, fertilizer has increased dramatically," Ibendahl said. Other factors influencing the projections are higher inflation, supply chain issues and the volatility of grain prices, yields and inputs.

Regarding fertilizer expenses, Ibendahl said many farmers may have bought what they needed for 2021 ahead of the price increase and therefore it may impact their 2022 profits more significantly.

Looking to 2022.Ibendahl is projecting a drop in net farm income because of the increase in input costs and the likelihood of low government payments.

"Everything in 2022 is going to be at least 5--10%higher for input costs because of inflation." Ibendahl said. In respect to diesel and other fuels, the costs are expected to show a 30% increase in 2021 and an additional 30%increase in 2022.

"Fuel and oil prices are tied to fertilizer prices to

He added: "Seed costs are forecast to be 5% higher in 2021, but rise an additional 20% in 2022." Pesticide expenses are increasing as well.

The projection for 2022 appears more bearish.

'The net farm income is forecast to fall 65% in 2022 to \$90,000," Ibendahl said. He added that this number will be influenced by rainfall and the timing of the fertilizer purchase, among other factors.

"Most farms should still be profitable at levels last seen in 2018; the major worry is going into 2022 that 30% of Kansas grain farms could have a negative net farm income," he said.

To view the full report, go to agmanager.info.

NCBA backs WOTUS recommendations from EPA advisory committee

The National Cattlemen's Beef Association (NCBA) has announced support for a report issued by the Environmental Protection Agency's (EPA) Farm, Ranch, and Rural Communities Advisory Committee (FRRCC).

The FRRCC represents a diverse group of stakeholders including academia, industry, non-governmental organizations, and state, local, and tribal governments, said Scott Yager, NCBA chief environmental counsel. "NCBA strongly supports the committee's recommendation to develop a clear and limited WOTUS definition and protect key exemptions for common agricultural features. With the EPA's convoluted approach to soliciting public comments and stakeholder perspectives on WOTUS, NCBA encourages the EPA to listen to its own advisory committee's recommendation, and the recommendation is clear: farmers and ranchers need clear rules and regulatory certainty to be successful.

The FRRCC's recommendations include:

Ensuring EPA compliance with the Clean Water Act and Supreme Court precedent limiting federal jurisdiction over bodies of water.

Developing a clear definition of WOTUS that is easily interpreted by farmers and ranchers.

Protecting WOTUS exemptions for common agricultural features, including farm ditches, stock ponds, prai-

rie potholes, prior converted cropland, and other small, isolated water features.

Reconsidering the EPA roundtable process to ensure that all stakeholders have an opportunity to voice concerns on WOTUS rulemaking.

Background

The FRRCC is a Federal Advisory Committee chartered by the EPA to provide policy advice and recommendations to the EPA Administrator on environmental issues impacting agriculture and rural communities. The committee consists of 32 members from across the United States representing academia, agricultural producers, affiliated industries, non-governmental organizations, and state, local, and tribal governments. On January 12, 2022, the FRRCC released a final report containing policy recommendations to EPA administrator Michael Regan. In addition to the recommends on WOTUS, NCBA is supportive of the FRRCC's position on an Ecosystem Management System, pesticide management, and food loss and food waste. These recommendations focus on the need for clear, consistent policy positions from the EPA that account for the needs of farmers and ranchers on their individual operations.

In November 2021, the Biden administration released proposal to repeal the Navigable Waters Protection Rule and propose new regulations on common agricultural features, such as stock ponds, ditches, and ephemeral water features that only flow during rain. The rule is currently open for public comment and NCBA is engaging with the EPA to voice concerns on the rule. NCBA encourages the EPA to adopt the FRRCC recommendations, which align with the views of cattle producers and address shortcomings in the proposed rule



Kansas State University researchers have begun a study they hope will help them better understand the carbon footprint and ultimately the farm-level carbon intensity of grain sorghum, a measure that could benefit producers interested in selling that crop in the biofuels market

Peter Tomlinson, an quality environmental agronomist with K-State Research and Extension. said the researchers are working with a producer near Colby to document sorghum production on 80plus acres, using instruments that measure soil moisture, carbon dioxide, nitrous oxide, methane emissions and how the crop is performing throughout the year. "The goal of this project is to collect crop production data at the farm level to understand what the inputs are as well as the carbon stocks in the soil and the greenhouse gas emissions that come out of sorghum production," Tomlinson said. "The ultimate goal," he added, "is to have a comprehensive data set that can be used in calculating the carbon intensity value of grain sorghum."

is the amount of carbon by weight that is emitted per unit of energy produced. Tomlinson called it "critical for producers when they go to market grain sorghum into the ethanol market."

K-State researchers studying sorghum's

energy value; three-state study could

"It can be the yardstick by which they are compensated."

K-State's team includes Tomlinson, Lucas Haag (area agronomist at K-State's Northwest Research-Extension Center in Colby) and Eduardo Santos (micrometerologist in K-State's Department of Agronomy). Tomlinson said the team recently completed its first growing season; the project is slated to last 3 ½ years. Similar studies are being conducted in Oklahoma and Texas. Tomlinson noted that ethanol production is one of the largest consumers of domestic grain in the U.S., so developing sustainable production methods for ethanol and bio-based fuels "has great potential to both reduce emissions and provide a net emissions-free source of energy." "I think this study is going to highlight that we have an efficient grain sorghum production system," he said. "One of the key drivers behind nitrous

oxide emissions is moisture, and having sufficient moisture to develop anaerobic regions within the soil where denitrification can occur."

Tomlinson said that based on plot work that he and Haag have conducted in recent years, they've been able to document low nitrous oxide emission rates in western Kansas sorghum production.

Currently, he added, there is a lack of understanding of field-level emissions, as well as economic incentives beyond yields. K-State's researchers, along with their colleagues in Oklahoma and Texas, hope to establish protocols for measuring the impact of yield-increasing and emissions-reducing technologies.

ment of Energy.

"We hope that our work will open a wider marketing opportunity for sorghum as a biofuel feedstock," Tomlinson said, "and hopefully for producers, the opportunity to gain additional value in the grain sorghum they are selling into the ethanol market."



boost crop's appeal in biofuels market

Carbon intensity value

The research is supported by the U.S. Depart-



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Grass & Grain, January 25, 2022

Soybean School to be held February **1st in Parsons**

Class is back in session, soybean farmers! The 2022 Soybean School will cover a number of issues facing soybean growers including weed control, crop production practices, insects, risk management, disease management, nutrients and soil fertility. Please join us February 1 from 3:30-6:30 p.m. at the SE Research & Extension Center, 25092 Ness Rd. in Parsons.

The school is free and dinner provided, sponsored by the Kansas Soybean Commission.

Register to attend online http://bit.ly/KSUSoybean, call 620-724-8233 or email jcoover@ksu.edu

An informational flyer can be downloaded from the Wildcat District website at www.wildcatdistrict.k-state.edu. For more information, contact James Coover, crop production agent: jcoover@ksu.edu or (620) 724-8233.

White House to push China on Phase **One trade deficit**

As the Phase One agreement with China is now expired, USDA Secretary Tom Vilsack spoke to farmers and ranchers recently at the American Farm Bureau Federation (AFBF) convention, assuring members the White House will push China to make up for the \$16 billion shortfall in trade.

'And I think it starts with China. And we all know and appreciate the fact that we have a Phase One trade agreement with China," Vilsack told AFBF members. "And during that period of time, we saw sales to China increase over what they were during the trade war. But here's the deal with Chinese friends, they're about \$16 billion light over what they committed to purchase. And that's why Ambassador Tai, our U.S. Trade Representative, continues to converse with China about the necessity of living up totally and completely to the Phase One trade agreement, making up that \$16 billion deficit over the course of the next several years."

Vilsack says as the Biden administration works to hold China accountable to their trade commitments, it's more than just boosting exports that will remain a priority for the White House.

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ASTRA PER ASP MOSER MINUTE By Lisa M. Moser

Greetings! Welcome to "Moser Minute," designed to give you a quick peek inside the happenings at the Capitol.

The House gaveled in at 2 p.m., Monday, January 10th. Basic housekeeping duties included approving the seating chart and passing a resolution providing for the organization of the House of Representatives for the 2022 session. A formal concurrent resolution passed to inform the Governor that the two houses of the Legislature were duly organized and ready to receive communications. As is the daily occurrence, bills and concurrent resolutions were read in on the House floor.

On Tuesday the Legislature welcomed two "Firsts" in the House Chamber. House leadership issued the following joint comment: "Today will mark the first State of the Judiciary in House Chambers by a female Chief Justice, and the first time in Kansas history that the State of the Judiciary and the Governor's State of the State address will be presented on the same day in House Chambers. It is a privilege to have all three branches of government come together today to celebrate our state's successes, analyze our different responsibilities, this is a unique opportunity to recognize each of those roles and hear each set of ideas as we work to develop the best path forward for our state." Chief Justice Marla Luckert presented the State of the Judiciary at 1:30 p.m. Governor Laura Kelly presented the State of the State address at 6:30 followed by the Republican response by House Speaker Ron Ryckman.

On Wednesday State Fair representatives Paula Landoll-Smith, Mary McCurry, Kathy Brazle and Dylan Evans were in my office for a great visit about the Kansas State Fair. I encourage you to take in this grand attraction coming in September.

I remain on the same committees as 2021: Federal and State Affairs, Children and Seniors, and Agriculture.

Fed and State: During our one meeting of the week, we were given overviews of both the Office of Revisor of Statutes (these are the lawyers who draft the bills brought to them by legislators) and the Kansas Legislative Research Department (these are the research people who find the answers to all my questions and those of my constituents. There are both a fiscal staff and a research staff). The following resolution was read in on the House floor: HOUSE CONCURRENT RESOLU-TION No. HCR 5022- by Committee on Federal and State Affairs. A proposition to amend sections 2 and 5 of Article 9 of the constitution of the state of Kansas to require that a sheriff be elected in each county for a term of four years.

Children and Seniors: On Wednesday nine agencies presented their models regarding all facets of child-care including regulations, licensure, available grant programs. facility inspections and more. The Child Care Act in Kansas is 100 years old this year. Challenges in the Child Care field include the lack of qualified child-care staff, and wages for caretakers being below where they need to be while at the same time families cannot afford to

pay any more for child care.

Every ten years our country conducts a census. Based on that census all congressional, state legislature, and state board of education districts are redrawn. Last year the bipartisan House Redistricting Committee held public hearings across the state in 25 Kansas cities. Constituent input, along with the rule of law, and deliberations by all members of the legislature make up this extraordinary process. The work of drawing maps has begun. Floor debate will be a fair, transparent process. Congressional maps will be done first because they must be almost the same in population, then state level maps. I will be reviewing the maps that make it to the House floor and working with members of the committee to preserve our communities in the best and fairest districts possible.

I represent you. Please reach out to me about issues that are concerning. The Legislative hotline is 1-800-432-3942, open 8-5 weekdays. I can be reached at lisa.moser@ house.ks.gov ; Capitol office number 785-296-7637; cell number 785-456-3876. Please leave a message if I don't answer. Thank you for your support and interest in the legislative process.

EPA renews Enlist product registrations with additional control measures

EPA is issuing seven-year registrations for two herbicide products, Enlist Duo and Enlist One, to ensure growers have access to effective pesticide tools for the 2022 growing season. The new product labels, which incorporate robust control measures to protect non-target plants and animals, meet Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) standards and comply with the Endangered Species Act (ESA).

Enlist Duo and Enlist One are herbicides used to control weeds in conventional and genetically-modified corn, cotton, and soybean crops. Both products, registered in 2014 and 2017, respectively, were set to expire in January 2022 if the agency did not renew their product registrations. Based on EPA's thorough analysis of scientific data, evaluation of cost-benefit information, and discussions with industry stakeholders, the Agency has determined that Enlist products, with the new protective measures in place, should remain available to most American farmers.

To evaluate the proposed uses of the Enlist products, EPA evaluated the potential effects of these products on federally threatened or endangered (listed) species, and their designated critical habitats, and initiated ESA consultation with the U.S. Fish and Wildlife Service.

EPA determined that the use of Enlist Duo and Enlist One are likely to adversely affect listed species but will not lead to jeopardy of listed species or to the destruction or adverse modification of designated critical habitats. EPA also anticipates that the new protective measures will reduce the potential for "take."

In addition to EPA's effects determination, EPA also completed a comprehensive ecological risk assessment that assessed the risks of 2,4-D choline salt (2,4-D), an active ingredient in both Enlist products, and glyphosate dimethylammonium salt (glyphosate), an active ingredient in Enlist Duo. EPA's ecological assessment found direct risks to non-listed and listed plants from pesticide runoff (i.e., pesticide carried off the application site following rainfall or irrigation) and risks to animals that rely on these affected plants for diet or habitat, including non-listed and listed animals and some designated critical habitats. EPA's ecological assessment also found direct effects to bees and listed species that use corn, cotton, and soybean fields for diet and/or habitat. Based on these findings, EPA is requiring the implementation of a variety of protective measures as a condition of the product registrations. Some of the protective

measures EPA is taking include:

Prohibiting Enlist product application when rainfall is expected to occur within 48 hours and when soil can no longer absorb water;

Prohibiting irrigation that would result in runoff within 48 hours of application of the Enlist herbicide products:

Requiring users to select from a list of runoff reduction measures to reduce 2,4-D and glyphosate concentrations in runoff, while also providing users with flexibility;

Minimizing Enlist product application when soybean and cotton crops are in bloom to reduce risks to insect pollinators, such as honey bees; and

Requiring the registrant to develop and provide mandatory education and training materials that emphasize the importance of pollinators and pollinator habitat for species including, but not exclusive to, monarch butterflies

EPA will also be prohibiting the use of Enlist Duo and Enlist One in counties where EPA identified risks to onfield listed species that use corn, cotton or soybean fields for diet and/or habitat. EPA does not expect this measure to disrupt the use of Enlist products for most American farmers-the counties where use will be prohibited by these new measures represents approximately three percent of corn acres, eight percent of cotton acres, and two percent of soybean acres nationally.

The "likely to adversely affect" (LAA) determination means that EPA reasonably expects that at least one individual animal or plant, among a variety of listed species, may be exposed to the pesticide at a sufficient level to have an effect, which will be adverse. The LAA hreshold for a Biological Evaluation (BE) is very sens tive because the likely "take" of even one individual of a species, which includes unintentional harm or death, triggers an LAA determination. This is the case even if a species is almost recovered to a point where it no longer needs to be listed. As a result, there is a high number of "may affect" and LAA determinations in these BEs. An LAA determination, however, does not necessarily mean that a pesticide is putting a species in jeopardy. Jeopardy determinations will be made by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service in the course of formal consultation that evaluates any effects of the pesticides on entire species.

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Pulled pork's popularity brings new opportunities in Japan

A popular American dish is gaining traction in foodie-centric Japan as new restaurants are opening that specialize in pulled pork. One such restaurant is even bringing Americana directly to Japan in Roppongi, a trendy district in Tokyo. Big Iowa BBQ, which debuted in early 2021, is serving authentic American-style barbecue dishes including pulled pork and spare ribs with rave reviews from consumers.

USMEF introduced pulled pork using U.S. pork butt and tenderloin to Japanese traders in 2013 and has since conducted many educational and promotional programs for pulled pork. With funding from the National Pork Board and USDA's Agricultural Trade Program, USMEF recently concluded a U.S. pulled pork menu promotion which featured a consumer prize campaign and included the culinary collaborations of six Tokyo restaurants.

USMEF challenged participating establishments to develop special U.S. pulled pork menus primarily utilizing collar butt. New dishes included pulled pork hamburger, pulled pork Japanese kakuni-style (stewed pork block) and pulled pork risotto.

To kick off the month-long promotion, USMEF ran a series of weekly articles focusing on restaurants that serve pulled pork dishes using American pork in FO-ODRINK News, a major food and beverage industry website. Interviews were included with 12 chefs/operators across Japan who discussed why they choose American pork for their menus.

To further publicize the campaign with consumers, USMEF tapped the digital reach of several influencers with Instagram followers of 30,000 or more, inviting them to visit participating restaurants and post reviews of their experiences.

New online class provides road map to greener pastures

The regenerative agriculture consulting group, Understanding Ag, LLC, has announced its new, online course providing practical insights and techniques on adaptive grazing is now available. The course is specifically tailored for farmers and ranchers seeking to improve their pastures and profit margins.

Regen Ag Adaptive Grazing is the second Regen Ag online virtual course developed by regenerative ag pioneers Gabe Brown, Shane New and Allen Williams, Ph.D., based on their decades-long, on-farm experience in applying soil health-centric, regenerative agricultural principles and practices. Both courses are designed to help farmers and ranchers successfully transition from conventional agricultural practices to more profitable and climate-friendly regenerative practices.

"Regen Ag Adaptive Grazing is the only comprehen-

sive online course that provides a step-by-step roadmap for farmers and ranchers to integrate key grazing principles into their operations, all of which combine to improve the quality, diversity and quality of grazing biomass," Williams said. "The modules come complete with video instruction from SHA's world-renowned cadre of instructors, with supplemental media for students to search, read, watch and interact with.'

Through the course, Williams said subscribers will receive in-depth instruction on the Three Rules of Adaptive stewardship; observation as a key management tool; determining stock density; calculating forage biomass; the role of biology in improving grazing lands; building a grazing plan and more.

"Like it's companion course, Regen Ag 101, Regen Ag Adaptive Grazing contains video lectures, case

studies and supporting research gleaned from the very best of Soil Health Academy live workshops across the U.S.," Williams said. "Through this interactive platform, subscribers can learn and profit from UA's grazing experts, 365/24/7, as they share their regenerative grazing secrets. Through our years of consulting, we've seen how applying these principles leads to more resilient and profitable farming, dairying and ranching operations."

According to Williams, a third Regen Ag online course focusing on regenerative cropping strategies is scheduled for release later this year. To register or to learn more about Regen Ag Adaptive Grazing or the other Regen Ag online courses, visit www.UnderstandingAg.com.

Sunflower production management updates to be presented via Zoom Feb. 1

There is still time for sunflower producers and crop advisers interested in sunflower production management updates to participate in the Zoom conference '2022 Getting-it-Right in Sunflower Production' on Tuesday, February 1, 2022, from 8:30 a.m. to noon Central time.

The program will be conducted by North Dakota State University Extension and is supported by NSA. Topics that will be covered range from hybrid selection, what has been learned from the fall 2021 sunflower survey, plant nutrient and soil management, updates for weed, disease and insect management, and sunflower marketing. Attendees will receive a list of several pertinent Extension sunflower production resources as reference materials and are supplemental to the presentations. The presentations will be recorded and archived as well for future use.

Certified crop adviser continuing education credits will be available for meeting participants.

Pre-registration is required at https://tinyurl.com/fdfwbt4d All who preregister will receive emailed instructions on how to participate in the meeting.

The program is free of charge. Please share with anyone you think may be interested in this event.

Frontier Extension District to host Beef Health Night

The Frontier Extension District will host a Beef Health Night on February 17th at the Anderson Countv Community Building in Garnett. The evening meeting will start at 7:00 p.m. Dr. A.J. Tarpoff, K-State Research and Extension beef veterinarian will be the featured speaker.

This year's topic is "Calf Health, Conception Through Weaning." Many

things happen during this time that affect the healthiness of the calf for its entire lifetime. It starts with bull selection, and whether or not there could there be genetic issues. Can the bull get his job done? Did you have a breeding soundness exam completed on the bull prior to the breeding season? Cow nutrition and body condition are big issues, and the cow has to

be able to cycle and breed back if you are to sell a calf the next year. These are just some of things that must be considered if you are to wanting to get your cows bred.

But there is so much more... colostrum-quantity and quality, passive immunity, cold weather effects on the newborn calf, vaccinations requirements, scours, castration, and weaning stress, all affect the calf. Please mark your calendars and plan to attend this educational event.

If you have questions, please contact livestock agent Rod Schaub at 785-828-4438 or via email at rschaub@

India to open market for U.S. pork

The National Pork Producers Council (NPPC) applauded the U.S. and Indian government's announcement to allow imports of U.S. pork and populous nation.

"After decades of work, a market that had been closed to U.S. pork is being opened," said NPPC president Jen Sorenson. "NPPC thanks the Biden administration for reaching an agreement with India on market access for our products. We look forward to the new access, which will allow us to provide affordable, wholesome and nutritious U.S. pork products to consumers in India."

India, which had a de facto ban on U.S. pork, has a population of 1.26 billion, meaning the potential market opportunity is significant. The agreement with the United States sets the stage for larger trade discussions.

In June 2019, the Office of the U.S. Trade Representative terminated India's participation in the Generalized System of Preferences (GSP) program, which provides developing countries beneficial access to the U.S. market. USTR took that reasonable U.S. access to its markets, including for U.S. pork.

Getting access to the Indian market has been one of NPPC's top trade na's retaliatory tariffs on U.S. pork, which are 37% while competitors' are only 12%; broader market

access in Southeast Asia, including through permanent reduction of tariffs in Vietnam and the Philippines; and unfettered market access for U.S. pork in Brazil, Ecuador, Indonesia, Jamaica, South Africa and Thailand, markets that are completely closed or only partially open to U.S. pork exports.

Page 9

Carbon credits focus of MU **Extension 'Inspired** by Annie's Project' free online course

Women in agriculture can learn the latest about carbon credits and carbon sequestration during a free "Inspired by Annie's Project" online course set for Tuesday, Feb. 8.

During the two-hour interactive course, University of Missouri Extension agricultural economist Ray Massey will define agricultural carbon credits and answer questions about how to measure carbon sequestration, who purchases carbon credits, how to sell carbon credits, how payments are made and contracts used in carbon sequestration programs.

Annie's Project educates women in agriculture on risk management topics related to production, marketing, finance, legal issues and human resources. The new "Inspired by Annie's Project" series allows attendees to learn in-depth information on particular subjects.

The "Inspired by Annie's Project" carbon credits course will be held 6:30-8:30 p.m. Tuesday, Feb. 8, via Zoom. The course will be limited to the first 20 people who register. Registration deadline is Feb. 4.

Register at muext.us/AnniesCarbonCredits. For more information, contact Karisha Devlin at devlink@missouri. souri.edu.

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Garden Party: save time, energy, money by planning now

Come spring and summer, the Big Three of many Kansas gardens are Tomatoes, Potatoes and Green Peppers.

But in the cold of January, Dennis Patton has a different list: Time, Energy and Money.

"This is the time to plan ahead," said Patton, a horticultural agent with K-State Research and Extension's office in Johnson County. "When we plan, we usually have better results in the spring."

Make a map of your garden. Patton says it not only will help you remember what you've planted and where – but it can also lead to using limited space for two or three crops. "We call that the concept of succession planning," he said. "For example, you may plant lettuce, radishes and spinach in March, then after they're harvested in

space for peppers and tomatoes." Start small. "It's always

May, you can use that same

pork products into India, priorities, which also include: elimination of Chithe world's second-most

Experienced gardeners, Patton said, are keen to mail order catalogs or the Internet, eager to find varieties they know will perform well - saving time, energy and money - in their home landscape

Seed catalogs are popular for many reasons, not the least of which is that gardeners can choose varieties from the comfort of their own home. Patton notes catalogs also tend to have a wider variety of instock flowers and vegetables, compared to what's available at local garden centers.

"But be careful," he said. "The descriptions on those products often claim to have the latest and hottest varieties, but they may not be what works in our climate or in your yard."

Patton said three sources tend to be pretty reliable when it comes to choosing seeds for the home garden: the state's Extension service, local nursery centers, or friends and neighbors.

"When it comes to vegetable gardening, my go-to source is the Kansas Garden Guide," said Patton, who has 40-plus years of experience as a gardener. The Kansas Garden Guide is available online for free from the K-State Research and Extension bookstore, or for purchase at local Extension offices.

"Whether you're a novice or seasoned gardener, that is the vegetable gardening bible," Patton said. "It includes a chart in the back of the publication indicating when to plant various vegetables, and when to harvest them."

More tips for January garden planning include:

easier to scale up then to scale back down," Patton said. Ambitious gardeners sometimes begin with many crops only to find that weeding, watering, harvesting and other chores become overwhelming by May and June.

Choose flowers that bring you joy. "I have a mantra that I tell people all the time: Life is too short for ugly plants," Patton said. "If you don't like something, or it's not performing, get rid of it. You don't have to keep it. If it doesn't bring you joy, why have it in your garden?"

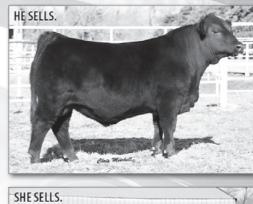
More information on gardening is available at local Extension offices in Kansas. Also, the K-State Garden Hour airs online on the first Wednesday of each month, featuring timely topics presented by K-State Research and Extension horticulture experts.



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"Where calving ease, performance and eye-appeal come together."

Page 10 Grass & Grain, January 25, 2022 Research continues to uncover ways to combat sudden death syndrome in soybeans

By Shelby Varner, **K-State Research and Extension news**

A Kansas State University plant pathologist says researchers and producers need to work together to control a soilborne disease in soybeans that can rob that crop of yields.

Sudden death syndrome is a soilborne disease of soybean that affects the roots," said K-State's Chris Little.

Little said the symptoms of sudden death syn-

drome can be seen above ground as chlorosis, a yellowing of normally green leaves due to a lack of chlorophyll. Often the symptoms will appear in the field after rainfall, or in saturated soils.

"It's really a root pathogen that lives in the soil then attacks the roots, colonizes the roots early on, and then begins to make a toxin that moves through the plant and causes those aboveground symptoms that many folks have seen,

Little said

According to Little, sudden death syndrome cannot be eradicated, so control methods need to be utilized.

He recommends having the soil tested for populations of the soybean cyst nematode to make sure that the proper resistance is being used for the nematode, which may also help keep sudden death syndrome from attacking the soybean plants since both diseases can occur in the

"You can check with your seed provider and try to get some information about the seed selections that you make," Little said. "Make sure that you've got some good tolerance or resistance in that material."

He added that different seed companies may use opposite scales to measure resistance, so for some companies the highest number may be the best, while for other companies the lowest

number may be the best. "Make sure you check the correct number and know what it is representing," Little said.

Proper nutrition might be another way to avoid the disease. "Phosphorus amendment really has a positive role in reducing the severity of sudden death syndrome symptoms, and also can increase yield," Little said.

Little said wheat and sorghum are effective crops to use in rotation, since those are not hosts

of the sudden death syndrome fungus. Corn is another option, but the fungus can survive on corn stubble to a slight degree, according to Little.

Researchers are also studying the use of cover crops to understand their effectiveness in reducing sudden death syndrome.

"Sudden death syndrome remains a research interest at Kansas State University, but producers need to do their part to stay on top of this too," Little said.

Scientists are one gene closer to a sorghum Superman these remarkable plants Africa; or biofuels and an-these remarkable plants Africa; or biofuels and an-Scientists are hon-

ing the traits of speed, strength and near-invulnerability in an important food crop that, much like a superhero, will help protect the vulnerable.

Achieving a milestone in their pursuit of the Superman of sorghum plants, scientists identified a single gene that confers broad protection from the fungal diseases anthracnose, rust and target spot.

Looking closer at the plant's genome, they also discovered what might have been kryptonite to this super power and unusual snips of mobile DNA involved in the disease resistance.

The newly discovered gene, named Anthracnose Resistance Gene1, or ARG1, is unusual in several ways, Tesfaye Mengiste, a professor and interim head of Purdue's Department of Botany and Plant Pathology said.

"Although some nat-

ural resistance to fungal disease was known in sorghum, genes that confer such widespread resistance had not been identified." he said. "It is remarkable that a single gene leads to resistance across a broad spectrum of fungi and multiple strains of the anthracnose fungus."

A team of Purdue University researchers, including 2009 World Food Prize laureate Gebisa Ejeta, made the discoveries through a project supported by the U.S. Agency for International Development (USAID) Feed the Future Innovation Lab for Collaborative Research on Sorghum and Millet.

Climate change is predicted to increase the number and severity of plant diseases, said Mengiste, who led the research.

"We need more robust disease control to sustain the world food supply, and are one step ahead of us," Mengiste said. "Different varieties of sorghum have evolved with different strengths and resistance to disease. Through genetics and plant science we are trying to help them along in this process of

adapting to a changing environment." By finding the gene responsible for a desired trait, scientists can create biomarker tags that allow breeders to test for its presence quickly and incorporate it into a sorghum cultivar that has other beneficial traits. The team's work is detailed in a paper in the journal The Plant Cell.

"The importance of this work cannot be overestimated," said Ejeta, a distinguished professor of agronomy at Purdue and executive director of the Purdue Center for Global Food Security. "This is a significant scientific breakthrough and a culmination of decades of collaborative sorghum improvement research at Purdue along with partners in developing countries."

Sorghum is a key cereal crop for food security around the world, said Mengiste, who is part of Purdue's Next Moves in plant sciences and Purdue's Center for Plant Biology.

"It is a very resilient plant in many ways, but fungal diseases can wipe it out," he said. "Anthracnose is one of the most significant of these pathogens and attacks all parts of the plant: leaves, stalk and head. It leaves nothing that can be used for food, its primary use in imal feed, its uses in the United States.' Successful steps to feed

the future

In 2014, USAID through the Kansas State Universitv-administered Feed the Future Innovation Lab for Collaborative Research on Sorghum and Millet, made an initial investment in the search for host-plant resistance against anthracnose in Ethiopia.

"Our objective is to increase the resiliency and food security of sorghum farmers and consumers in Ethiopia and West Africa," said Timothy J. Dalton, director of the lab and professor of agricultural economics at Kansas State.

Mengiste and an earlier team of scientists affiliated with the Feed the Future Innovation Lab and from Ethiopia already successfully developed a cultivar called Merera, a sorghum variety that has enhanced disease and bird resistance and produces a better yield.

"As climate change events shift or necessitate the production of dryland crops such as sorghum into higher rainfall or irrigated regions, leaf diseases become even more significant," Ejeta said. "It is precisely in those situations where powerful genes become so crucially important."

"Chemical control is often ineffective, not economically feasible, and poses environmental concerns." he said. "The most effective, economically sustainable and environmentally friendly disease control strategies involve the use of plant genotypes that are resistant to diseases. This is what the farmers want, and they are embracing new lines of sorghum." An unusual gene

DNA

The regulation of ARG1 is unusual; it is embedded in a second gene, and both genes appear to have been altered by small stretches of mobile DNA called transposable elements.

Transposable elements are like molecular viruses or parasites that live in the genome and are passed down from generation to generation, said Damon Lisch, an associate professor of botany and plant pathology who was involved in the research.

The gene in which ARG1 is embedded is an antisense RNA. Its expression is opposite to ARG1. which results in a situation where the two could interfere with each other, he said.

All sorghum plants have some version of these two genes, but susceptible varieties of sorghum express a lot of the antisense RNA and very little of ARG1, which also appears to encode a nonfunctional protein, he said. The disease-resistant version of ARG1 is expressed at a much higher level, encodes a functional protein, and is associated with an antisense RNA gene that is turned down, resulting in less interference.

This is where the transposable elements seem to come into play. Lisch said. "Insertion of transpos-

able elements is often harmful," he said. "However, in this case, it appears that the transposable elements have been beneficial by 'reprogramming' both genes to optimize resistance to fungal pathogens. In a way, it has fixed a broken system in the plants."

Lisch discovered the ansposable elements re-

ceptible sorghum lines. He studies transposable elements and other mobile DNA, and he enjoys looking for them "for fun" in genomes shared by colleagues.

'Transposable elements are known to be involved in some human and plant diseases, but their involvement in disease resistance is considered uncommon - for now." he said. "With technological advancements we are able to spot these parasitic strands of DNA within a gene sequence, and we are finding them everywhere.'

Combining applied and basic research

The findings may inform other genetic research into sorghum and other plant species, as well as ways to fine-tune gene expression, Mengiste said. The combination of basic and applied research provides rich information. Some will be used now, and some may lead to a future innovation.

'We could have stopped after identifying the ARG1 gene, but we drilled deeper," he said. "If we hadn't, we might have thought we could simply fix the protein involved in resistance. Now we have a much greater understanding of the gene's regulation and additional insight into an emerging field that could become revolutionary to plant science."

In addition to Mengiste, Ejeta, and Lisch, Purdue research associates Sanghun Lee and Fuyou Fu; postdoctoral research assistants Chao-Jan Liao and Adedayo Adeyanju; and Demeke B. Mewa, a graduate research assistant at the time who is now a postdoctoral researcher at Washington State University, were part of the

CLOUD COUNTY LAND AUCTION **SATURDAY, JANUARY 29**



10:00 AM Selling real estate at public auction at the Knights of Columbus Hall, **AURORA, KANSAS**

Seller: John W. Landry Jr. Trust & Mark A. Landry LEGAL: The Southeast Quarter of the Southwest Quarter (SE¼ SW¼) of Section Twenty-seven (27), and the Northeast Quarter of the Northwest Quarter (NE¼ NW¼) of Section Thirty-four (34), all in Township Six (6) South, Range Two (2) West of the 6th P.M. Cloud County, Kansas.

North tract consists of 39 ac m/l, approx. 17 ac. of hay meadow & 22 ac. of prime hunting timber & creek. South tract 39 ac. m/l appox, 32 ac, of hav meadow & 7 ac, of timber.

The two 40-acre tracts will be sold as one parcel per the seller's wishes. Mineral Rights WILL sell with property. Auction firm is working for the seller. Announcements sale day take precedence.

See last week's Grass & Grain for more information & For complete info & pictures: www.claycenterrealestate.com





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lated to ARG1 when he examined the genome of disease-resistant and susproject team and co-authored the paper.

REAL ESTATE AUCTION THURSDAY, FEBRUARY 17, 2022 — 1:00 PM

Auction will be held in the Community Center on the South side of the square in JEWELL, KS SW 1/4 8-5-8 Jewell Co., Kansas

The farm is located on E & 140 roads in Browns Creek Township Jewell Co. The farm is located 4 miles West of Jewell to 150 road then South 3 miles to E road then ½ mile West. There are 154.96 farmland acres. 113.02 cropland acres and 41.94 acres of grass with trees. This is a good hunting area. The bases are wheat 53.37 with 47 bu yield, grain sorghum 24.74 with 102 bu yield, soybeans 3.20 with 33 bu yield for a total base acres of 81.31. 2021 taxes are \$2,765.66. Seller will pay 2021 taxes. Purchaser will pay 2022 taxes. Possession of the grass will be upon closing. Possession of the farm ground will be after 2022 wheat harvest. Purchaser will receive the landlord's 1/3 share of the 2022 wheat crop. SE 1/4 24-4-9 Jewell Co., Kansas

Township Jewell Co. The farm is located 6 miles West of Jewell to 130 road then North 1 mile. There are 163.14 farmland acres. 57.49 cropland acres and 105.65 acres pasture with 2 ponds and rural water with 2 hydrants. The bases are wheat 27.14 with 47 bu yield, grain sorghum 12.58 with 102 bu yield, soybeans 1.63 with 33 bu yield for a total base acres of 41.35. 2021 taxes were \$1,391.50. Seller will pay 2021 taxes. Purchaser will pay 2022 taxes. Possession will be upon closing.

Terms: 10% of purchase price as down payment day of auction, the balance will be paid upon closing on or before March 31, 2022. Down payment will be escrowed with NCK Title LLC. Escrow fees will be split 50/50 between seller & purchaser. Title insurance will be used, the cost will be split 50/50 between seller & purchaser.

The farm is located on I & 130 roads in Iona

Thummel Real Estate & Auction LLC is acting as seller agent. All statements made day of auction take precedence over printed material. Visit our website: www.thummelauction.com

CANDANCE M. DURANT & DONALEE C. DURANT TRUSTS Dirk Durant, Trustee

Auction Conducted By: THUMMEL REAL ESTATE & AUCTION LLC, 785-738-0067

2-DAY AUCTION SATURDAY, FEBRUARY 5 & SUNDAY, FEBRUARY 6, 2022 10:00 AM EACH DAY

Auction will be held in Kenwood Hall at the Saline Co. Expo, 900 Greeley, SALINA, KS

SATURDAY, FEBRUARY 5 30+ kerosene lamps; Aladdin lamps; bracket lamps; hanging lights; assortment of pictures; Camel cigarette store shelf; cowboy puzzles; lunch boxes; 2 oak wall telephones; coffee grinders; sad irons; mantel clocks; crocks; SEC Coke bottles; other bottles; Aunt Jemima salt & pepper; assortment of tin windup tovs many in boxes; cast iron toys; assortment of other toys; truck & other banks; assortment of dolls many Barbies; doll tea sets; Swedish figures; marbles; Harmony banjo; coaster wagons; Tinker Toys; skate boards; assortment of glass; Fenton pieces; Iris pitcher; hand painted bowls; refrigerator dishes; carnival candle holders; Art glass; Luray collection; pencils; trivets; waffle irons; kitchen items; kitchen sifters; toy cash reqister; aluminum ice buckets; Christmas ducks; items; Beanie Babies; 6 White

Mountain ice cream freezer; cookie jars; Very large collection of toys, dolls, glass and collectibles.

SUNDAY, FEBRUARY 6

100+ quilts; wool blankets; bedspreads; dollies; table cloths; fancy work; sewing baskets; buttons; 35 ladies hats; very large collection of yarn; This is a large day, many blankets, quilts, spreads & fancy work.

NOTE: llene bought for many years. This is a 2-day auction. Saturday we will sell one room that has many collectibles. Sunday will be quilts linens, blankets. There are many boxes that we have not unpacked for both days. Check website for pictures www.thummelauction.com

ILENE LAMBERT Auction Conducted By: THUMMEL REAL ESTATE & AUCTION LLC, 785-738-0067

Grass & Grain Area Auctions and Sales

Due to the uncertainty of events, if you plan to attend any of the following auctions and have any doubts, please contact the auction company to confirm that the auction will be conducted and inquire about safety procedures if you are concerned. And please check their websites.

Hundreds of auctions, online and in-person. www. kansasauctions.net/gg/

Always great online Equipment auctions www.purplewave.com

Online Only Auction (bidding open NOW & begins to close January 26, 8 PM CST) — Antique furniture, glassware, collectibles, lamp & end tables, and some new pieces & more held online at hollingerauction.hibid. com/auctions/current for Bill Starr Estate. Auctioneers: Hollinger Online Auctions.

Online Auction (bidding open NOW & begins to close February 1, 2 PM) — 550+ lots of spa equipment, GMC Z71 truck, car port, tons of tools, Chrysler van, fork lift, Honda 1200 Goldwing & more held online at www. GriffinRealEstateAuction. com (items located in Emporia) for property of Dr. LaMar Diltz. Auctioneers: Griffin Real Estate & Auction.

January 26 — Bear Mountain Angus sale held at Palisade, Nebraska.

January 28 — Land Auction consisting of 2,004 acres of Coffey County land sold in 16 tracts held at Burlington (and online bidding available: www.Sundgren.com) for the Lyman Family. Auctioneers: Sundgren Realty, Inc., Land Brokers.

January 29 - Land auction consisting of Nemaha & Pottawatomie County land: T1: 310.74 ac. m/l in Nemaha County with modern home, outbuildings, steel bin, 186 tillable acres, balance grass, waterways & creeks: T2: 77.33 ac. m/l in Nemaha County with 34.32 tillable acres, balance grass, waterways & pond; T3: 116.3 ac. m/l in Nemaha County with 85.9 tillable acres, balance grass, waterways & creek; T4: 236.25 ac. m/l in Nemaha County with 199.48 tillable acres, balance waterways & small creeks; T5: 158.14 ac. m/l in Pottawatomie County with clean native grass, pasture with good fences. Auction held at Corning for Benedict Heideman Estate. Auctioneers: Seneca Realty, Mike Kuckelman, broker & Dale Wilhelm. January 29 — Land auction consisting of 80 acres of Cloud County land (2 - 40-acre tracts) held at Aurora for John W. Landry Jr. Trust & Mark A. Landry. Auctioneers: Homestead Real Estate, Greg Askren Agent/Auctioneer. January 29 — Annual January Consignment Auction selling 2500+ pieces of machinery from area farmers and dealers held at Paris. Missouri with online bidding at proxibid. com. Auctioneers: Wheeler Auctions & Real Estate. January 29 — Sisco Brothers Cattle Company and LZ Farms 10th annual "Friends in Low Places" private treaty bull sale held at the farm north of Syracuse, Nebraska.

acres sold in 16 tracts of Osage, Lyon and Wabaunsee County land held at Osage City (and online bidding available: www.Sundgren.com) for the Lyman Family. Auctioneers: Sundgren Realty, Inc., Land Brokers.

February 5 – Axtell Knights of Columbus Consignment Auction, Axtell.

February 5 & 6 - Selling 2-5: 30+ kerosene lamps & many other types of lamps, Camel cigarette store shelf, crocks, tin wind-up toys, cast iron toys & other collectible toys, dolls, glassware, Fenton, Luray collection, kitchenwares, Christmas items & more collectibles. Selling 2-6: 100+ quilts, fancywork, ladies hats, large collection of yarn, lots of blankets & bedspreads held at Salina for Ilene Lambert. Auctioneers: Thummel Real Estate & Auction, LLC.

February 6 — Moving sale consisting of Tractor, trucks, cars including a 1969 Mustang, motorcycle, ATV, farm equipment, horses & tack, tools & misc. held near Overbrook for Charles Young. Auctioneers: Eastern Kansas Auction Barn.

February 6 — Land auction consisting of 80 acres m/l of Pottawatomie County land offered in 4 tracts. Tract 1: 20 acres m/l with 16 acres m/l crop ground, balance native grass; Tract 2: 20 acres m/l native grass; Tract 3: 40 acres m/l native grass served by 2 ponds; Tract 4: combination of Tracts 1, 2 & 3. Held at Wamego. Auctioneers: Crossroads Real Estate & Auction, LLC.

February 10 — Land auction consisting of 152.44 acres m/l of Cropland & Grass in Morris County held at Burdick for the Family of the late Hedrick & Linnea Nelson. Auctioneers: Griffin Real Estate & Auction.

February 12 — New Strawn Farm & Ranch Consignment Auction held at a new location: East side of Hwy. 75 across from Casey's in New Strawn. Auctioneers: Kurtz Auction & Realty Service. Brett Skillman, new sales manager.

February 16 - Business Liquidation auction consisting of trucks, trailers, neon signs, tools & more held at Topeka for Custom Neon & Vinyl Graphics. Auctioneers: Foundation Realty, Morgan Riat. February 17 — Jewell County Real Estate Auction consisting of T1: 154.96 ac. m/l of farmland, 113.02 ac. cropland & 41.94 ac. of grass with trees; T2: 163.14 ac. m/l farmland, 57,49 ac. cropland, 105.65 ac. pasture with 2 ponds and rural water held at Jewell for Candance M. Durant & Donalee C. Durant Trusts, Dirk Durant, trustee. Auctioneers: Thummel Real Estate & Auction, LLC. February 17 — Land auction consisting of 2 tracts in Morris County and 1 tract in Lyon County: T1: 38.6 ac. m/l Morris Co., potential building site, native & mixed grass pasture: T2: 90.2 ac. m/l Morris Co., wildlife, possible building site, native & mixed grass pastures; T3: 60.47 ac. m/l Lyon Co., potential building site, native & mixed grass pastures all held at Council Grove for Roswurm Family. Auctioneers: Griffin Real Estate & Auction.

February 17 — Annual Spring Consignment auction consisting of tractors, tillage, harvest & grain handling, trucks, trailers, vehicles, antiques, hay & livestock, construction, planting & sprayer & more held at Tekamah, Nebraska (with online bidding at equipmentfacts.com). Auctioneers: Lee Valley, Inc.

February 17 — Special Bred Cow/Heifer sale held at Beatrice 77 Livestock, Beatrice, Nebraska.

February 19 (tentatively) - postponed from January: One of a kind Kansas Centennial Collection, toys (most all have boxes) including Precision Classics, Spec Cast, Prestige, Shelve Models, Trains & more; collectibles, household, tools & miscellaneous including advertising items including petroleum & signs, jewelrv & more held at Lawrence for Don & Jane Schwartz Estate, Mark Shuck and a private seller from Western Kansas. Auctioneers: Elston Auctions.

February 28 — C-Bar Red Angus annual bull sale held at Plainville.

March 3 — Jensen Brothers Annual Bull sale held at Courtland.

March 5 — Coin auction held at Emporia. Auctioneers: Swift-N-Sure Auctions & Real Estate.

March 5 — Judd Ranch 44th Gelbvieh, Balancer & Red Angus Bull Sale held at Pomona.

March 5 — Laflin Ranch Annual Angus production sale held at Olsburg.

March 7 — Lyons Ranch 34th Annual Superior Genetics Angus Bull Sale held at Manhattan.

March 8 — Schreiber Angus Annual Spring Production Sale held at Beaver.

March 9 — Stucky Ranch Annual Production Sale held at the ranch near Kingman.

March 16 — Woodbury Farms 11th Annual Bull & Female Sale sale held at Overbrook.

March 17 — Smoky Y Red Angus Ranch sale held south of Monument.

March 19 — postponed from January: 350+ unbuilt Model kits, 1500+ loose Hot Wheels, die cast banks, 90+ Hallmark mini-pedal cars, Marx toys, Star Trek & other toys, 700+ comic books, autographed baseballs & many more collectibles held at Lawrence for Ron Thornton. Auctioneers: Elston Auctions.

State of Kansas Treasurer offers economic recovery loans to rebuild from wildfires

Kansas state treasurer Lynn Rogers understands that ranchers and farmers facing hardship after the Dec. 15 fires in the state are beginning the long road to recovery.

"We are here to provide support for Kansans that will need long-term aid to rebuild and recover," said Rogers. "This isn't a short-term project, it will be a long-term effort to restore the livelihoods of these Kansans, and my office will help in every way possible."

The Treasurer has listed information about the Economic Recovery Loan Program as one of the recovery resources for farmers and ranchers on the Kansas Department of Agriculture website. The Economic Recovery Loan Program is one of the linked deposit loan programs that provides low-cost loans and is operated through the PMIB (Pooled Money Investment Board), the state treasurer's office, and local financial institutions.

The loans available through this program were specifically designed to provide relief to struggling small businesses and agriculture operations. Interested borrowers should speak with their preferred financial institution about accessing the loans. Additional information, including a list of financial institutions already participating, can be found at kansascash.ks.gov under "Financial Services."

NALF elects new board of directors

The North American Limousin Foundation (NALF) elected new members and officers for its board of directors during the annual meeting held in Oklahoma City, Okla. on Monday, January 3, 2022. Those newly elected to serve the Foundation for three-year terms are Lance Sennett, Waynetown, Ind. Bruce Lawrence, Anton, Texas, was selected to serve as the NALF president. He succeeds Dan Hunt, Oxford, Neb., who will serve on the board as immediate past president. Wade Beckman, Robert, Idaho, was chosen to serve as vice president. The remaining executive committee consists of Ronn Cunningham, Rose, Okla., as secretary; Randy Corns, Altoona, serving as treasurer; and

Jerry Wulf, Morris, Minn., as memberat-large. Curt Wieczorek, Mount Vernon, S.D., will continue on the executive committee as ex-officio.

The additional breeders on the board of directors include Joey Freund, Elizabeth, Colo.; Joe Moore, Raphine, Va.; Troy Gulotta, Independence, La.; Austin Hager, Karlsruhe, N.D.; Bart Mitchell, Wauzeka, Wisc.; Jay Wilder, Snook, Texas; Kevin Ochsner, Kersey, Colo.; Rob Brawner, Wood Lake, Neb.

The North American Limousin Foundation would like to thank the one retiring board members for his service. The retiring member is Dr. Mark Barker, Oklahoma City, Okla.

2021 beef exports targeted at \$10 billion

U.S. beef and pork exports continued at a record pace through November, according to data released by USDA and compiled by the U.S. Meat Export Federation (USMEF).

November beef export value topped \$1 billion for the month and the second time in 2021. Beef exports totaled 123,641 metric tons in November, up 7% from a year earlier and the fourth largest monthly volume in the post-BSE era. Export value was a record \$1.05 billion, up 49% year-over-year and exceeding the previous high set in August 2021.

Beef exports for the Jan.-Nov. period were on record volume pace at 1.32 million metric tons, up 16% from 2020. Beef export value, which had already set a new annual record through October, increased more than \$2.5 billion from a year ago, soaring 39% to \$9.59 billion. Beef exports to South Korea, China/Hong Kong and Central America have already set new annual records for both volume and value, while exports to Taiwan and the Dominican Republic reached new value records.

"With one month of results still to be tabulated, it's very gratifying to see red meat exports setting new annual records and achieving remarkable growth over a wide range of markets," said USMEF president and CEO Dan Halstrom. "It is important, however, that we do not take this success for granted or allow it to detract from the challenges facing U.S. agriculture. Global demand for U.S. red meat has never been stronger, but labor and transportation obstacles and high input costs across the supply chain make it increasingly difficult to satisfy this demand."

Is corn or soybeans the more profitable option for 2022?

Rising fertilizer and input costs are making the decision to plant corn versus soybeans especially difficult for growers seeking maximum profit potential this season. While some growers are considering a switch to soybeans as a way to avoid costly fertilizer expenses, that may just shift nutrient focus. based on data from more than 42 million acres, combined with the latest research compiled by Granular Data Scientists.

While agronomic factors are important when making planting and input decisions, the calculator helps growers make decisions with financials in mind. Budget costs are price market closing cost. Additional input costs incurred from corn-on-corn are also considered in the calculations.

Profit boils down to yield multiplied by price, minus cost. Granular's calculator allows farmers to run those calculations at desired price levels and determine where the most

February 1 — Land Auction consisting of 2,527 March 26 — New Haven Angus Annual Production Sale held at Leavenworth. March 26 — Sandhill

March 26 — Sandhill Farms Hereford Production Sale held at the farm near Haviland.

March 28 — Farm Machinery with no small items held near Abilene for Charles Wilson Trust. Auctioneers: Kretz Auction Service.

April 9 — 2021 Chevy 1/2T, New, 6500 mi.; 2013 Chevy 3/4T, Like New; JD 6300 FA tractor w/cab & loader, many tools & farm-related items held south of Holland for the William H. (Billy) Hobson Estate. Auctioneers: Reynolds Auction Service.

"While soybeans don't typically require a nitrogen application, they still remove nutrients," said Matt Clover, Pioneer Agronomy Manager. "A high-yielding soybean crop can remove as much as 84 pounds of potassium on a per acre basis. Compare that to a high-yielding corn crop, which only removes about 55 pounds per acre. In the end, soybeans are still removing a substantial amount of nutrients off that field."

Granular developed a crop rotation return on investment (ROI) calculator to help growers make their planting decision a little easier by helping to sort out the most profitable acreage mix. The Corn vs. Soybean calculator is

JEREMY SUNDGREN

316.377.0013

JOE SUNDGREN 316.321.7112

** LAND AUCTION *** FRIDAY, JANUARY 28, 2022 - 2:00 PM COFFEY COUNTY, KS - 2004 ACRES - 16 TRACTS AUCTION LOCATION: Kelley Hall, 615 S. 3rd ST., BURLINGTON, KS 66839 LYMAN FAMILY, SELLERS

AUCTIONEER'S NOTE: These 16 tracts are a diverse selection of Tillable Farm Ground, Pasture, & Hunting. Be sure to attend & take advantage of this unique opportunity! TRACT 1: 160 ac. tillable SW. of Lebo, Ks at the corner of Dobbin Rd & 25th Rd. TRACT 2: 80 ac. tillable S. of Lebo, Ks at the corner of Garner Rd & 25th Rd.

TRACT 2: 80 ac. tillable S. of Lebo, Ks at the corrier of Garner Rd & 25th Rd.
TRACT 3: 80 ac. tillable S. of Lebo, Ks 1/4 mile E. of Garner Rd on 25th Rd.
TRACT 4: 80+- ac. timber, so the Lebo, Ks at Garner Rd & 25th Rd.
TRACT 5: 80+- ac. timber, pasture, & creek along HWY 75, SE of Lebo, Ks.
TRACT 6: 63.7 ac. timber, pasture, & creek at HWY 75 & 25th Rd.
TRACT 7: 103.2 ac. timber, pasture, & 1 pond along Old HWY 50, SE. of Lebo, TRACT 8: 149 ac. timber, creek, & pasture at Old HWY 50 & Native Rd.
TRACT 9: 120 ac. timber, pasture, & 2 ponds at Old HWY 50 & Native Rd.
TRACT 10: 297.2 ac. timber & pstr. b/w Oxen & Planter Rds, along Old HWY 50.
TRACT 11: 160 ac. pasture & timber with 2 ponds at Oxen Rd & 25th Rd.
TRACT 13: 160 ac. tillable, pasture, timber, pond & creek at Planter Rd & 23rd.
TRACT 14: 160 ac. tillable SE. of Burlington, Ks at Quail Rd & 9th Rd.
TRACT 15: 150.8 ac. tillable E. of LeRoy, Ks at Wayside Rd & 3rd Rd.
TRACT 16: 80 tillable farm ground on Xeric Rd., SE. of LeRoy.

VISIT **WWW.SUNDGREN.COM** FOR MORE DETAILS, PICTURES, MAPS AND TERMS. LIVE & ONLINE BIDDING AVAILABLE - FEEL FREE TO EMAIL OUR OFFICE AT JEREMY@SUNDGREN.COM

NUNDGREN

REALTY

Land Brokers

i- provided by local state ey universities and the crop

calculated using numbers profitable acreage mix provided by local state falls.

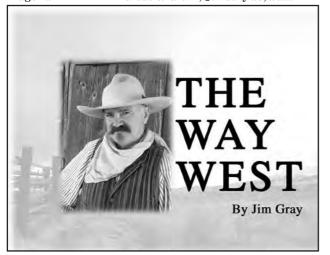


152.44 +/- Acres of Cropland & Grass in Morris County THURSDAY, FEBRUARY 10, 2022 - 6:00 PM AUCTION LOCATION: The American Legion Hall, 203 Reed Street - BURDICK, KANSAS 66838 We are honored to represent the Family of the late Hedrick and Linnea Nelson in the sale of this productive quarter. Located 2.5 miles west of Burdick, KS on Bb Ave, this property offers a total of 152.44 ac (114.98 dryland ac, 37.46 grass ac). The cropland acres are primarily class 2 soils and were planted to corn and milo in 2021. The property lays nice and terraces are in good condition. The grass acres con-

LAND AUCTION

sist of a productive hay meadow, a pond, and the old railroad right of way. There is a possibility to convert some of the grass acres to cropland. Take a look at this great opportunity to add to your existing operation or to invest in land with low interest rates and good commodity prices! We look forward to seeing you at the auction! See website for full listing & photos at GriffinRealEstateAuction.com

CHUCK MAGGARD Sales/Auctioneer Cell: 620-794-8824	Griffin Real Estate	Office: 305 Broadway, Cottonwood Falls, KS 66845
RICK GRIFFIN Associate Broker/	2	Phone: 620-273-6421 Fax: 620-273-6425 Toll-Free: 866-273-6421
Auctioneer Cell: 620-343-0473	griffinrealestateauction@gmail	



Grass & Grain, January 25, 2022

Against the Odds

How many ages ago did someone look to a far horizon and wonder what might be found beyond his own known world? Footsteps became trails; trails became roads; and roads the bulwark of civilization. The European "discovery" of this place called Kansas began with Francisco Vazquez de Coronado's quest to find Quivira in 1541. Except for a few Spanish and French excursions into the great sea of grass, the plains were left to the native prairie tribes. Over the next two centuries prairie bands transitioned from pedestrians to skilled horsemen.

Page 12

From the east France pushed into the plains in the latter part of the seventeenth century to ad-

10 bwf Ellsworth

vance its interest in the region. While Spain mostly kept plains tribes at arm's length, France encouraged trade, going so far as to take tribal representatives to Versailles to meet the King of France. Warriors were recruited to fight the British in the French and Indian War of the middle 18th century.

Following the Louisiana Purchase of 1803, Lewis and Clark excited imaginations in published reports of the wonders of the West. Although Lewis and Clark only passed the northwest corner of "Kansas," Lt. Zebulon Pike soon followed in 1806 exploring the interior of the "Great American Desert."

Steaming west on the "Western Engineer," the

first riverboat up the Missouri River from St. Louis, Major Stephan Long's expedition essentially skirted the Great American Desert in 1819. However, Long "confirmed" the idea that the plains were uninhabitable. All the while traders and trappers were traveling to and from the Rocky Mountains, fully aware of the bounty of the open plains.

Trade in the west exploded following William Becknell's successful venture to Santa Fe in 1821. Commercial exchange over the Santa Fe Trail proved to be so rewarding that the government commissioned a survey of the "Santa Fe Road" in 1825.

Plans were initiated in 1825 to establish an Indian Territory beyond the western border of the state of Missouri. By 1828 eastern tribes were beginning to cross into "Kansas." Missionaries joined traders and roads, ferries, trading posts, and government agencies began to touch the landscape. Wagons began moving across the tribal reserves in 1836 along an old trapper's trail. In the coming years the Oregon Trail carried thousands of settlers to the northwest coast.

In several expeditions during the 1840s, "The Pathfinder," John C. Fremont found the prairies more attractive than both Pike and Long. A proponent of Manifest Destiny, Fremont was perhaps the first to anticipate a future wave of settlement across the great "ocean of grass."

1846 brought war with Mexico. Hundreds of men thronged to Fort Leavenworth to serve in Colonel Stephen W. Kearny's "Army of the West." The movement of sixteen hundred troops across the plains required support wagons traveling back and forth across the plains to the close of the war in 1848.

Forty-niners rushed west for California gold from 1849 to 1855, and during all of these travels over Kansas a very great number of people experienced the prairies as they passed along the Santa Fe and California-Oregon Trails.

Tribal reserves of eastern Kansas were diminished with the Kansas-Nebraska Act of 1854. Kansas Territory was opened for settlement. At elections the polls were overrun by pro-slavery advocates from Missouri resulting in the "Bogus Legislature" controlled by non-resident Missourians. Convening on July 2, 1855, at Pawnee, Kansas Territory (on the present-day Fort Riley Reservation) the legislature moved to reconvene closer to Missouri at Shawnee Mission where they initiated the "Black Laws." Just speaking against slavery could result in a jail sentence. The first Territorial Governor Andrew Reeder was replaced for taking a stance against pro-slavery corruption. Wilson Shannon was given the unenviable charge of guiding the territory to statehood under popular sovereignty.

Free State proponents under the leadership of Charles Robinson formed their own government at Topeka, Kansas, on October 23, 1855. From that moment forward violence reigned in Kansas Territory. Free Stater Charles Dow was killed November 21, 1855, near Hickory Point, southeast of Lawrence.

Sheriff Pro-slavery Samuel Jones gathered fifteen hundred men to stamp out abolition in Lawrence. Jones was ordered to stand down by the new Governor Wilson Shannon on December 7th, but not before Thomas Barber, a Free State man was killed on his way home from Lawrence. January, 1856, elections brought about the deaths of pro-slavery John Cook and Free State representative Reese Brown.

Charles Robinson and other Free State leaders were arrested for treason and held under guard near the territorial capital of Lecompton. Sheriff Jones attacked and partially burned Lawrence on May 21, 1856. John Brown led an attack at Pottawatomie Creek killing five pro-slavery men. At Black Jack Creek, on June 2nd, Brown captured a force of twenty-eight pro-slavery men.

Battles were waged across the territory. James H. Lane organized the Army of the North and James Montgomery raised an army of Jayhawkers at Fort Scott. Kansans drew Missouri into the battle, burning their farms and towns.

The territory had seen six governors and five acting governors and more bloodshed than can be imagined. The Free State government tenaciously prevailed. Against the odds Kansas became a Free State on January 29, 1861, and the thirty-fourth state in the Union on The Way West.

"The Cowboy," Jim Gray is author of the book Desperate Seed: Ellsworth Kansas on the Violent Frontier, Ellsworth, KS. Contact Kansas Cowboy, 220 21st RD Geneseo, KS Phone 785-531-2058 or kansascowboy@kans.com.

young@1775.00

young@1750.00

ýoung@1735.00

Farmers & Ranchers AUCTIONS EVERY MONDAY & THURSDAY

Selling Cattle every Monday Hog Sales on 2nd & 4th Monday of the month only!

TOTAL FOR THE WEEK: CATTLE 5,982

						302
	BULLS:	\$99.50-\$114.0	0 * COWS: \$67.50-\$79	9 blk 24 blk	Gypsum Sedgwick	937@150.50 976@149.00
		STE	FRS	9 blk	Haven	999@144.00
	300-400		\$198.00 - \$215.00	0 Dire	HEIFERS	00000111.00
	400-500		\$194.00 - \$221.00	29 blk	Atlanta	284@213.00
	500-600		\$188.00 - \$213.00	31 blk	Atlanta	337@195.00
	600-700		\$166.00 - \$184.00	91 blk	Atlanta	400@190.50
	700-800		\$159.00 - \$166.25	3 blk	Hutchinson	368@188.00
	800-900		\$155.00 - \$164.50	75 blk	Atlanta	465@184.00
	900-1,00		\$150.00 - \$154.00	6 blk	Assaria	488@179.00
	000 1,00	HEIF		3 blk	Hutchinson	433@177.00
	300-400		\$170.00 - \$195.00	2 mix	Canton	410@176.00
	400-500		\$170.00 - \$190.50	4 blk	Russell	439@176.00
	500-600		\$154.00 - \$171.00	6 blk	Brookville	438@175.00
	600-700		\$149.00 - \$160.00	7 blk	Delphos	464@175.00
	700-800		\$142.00 - \$152.75	15 bwf	Ellsworth	485@174.00
	800-900		\$140.00 - \$149.00	4 blk	Inman	460@172.00
			6 blk	Lindsborg	446@172.00	
	THURSDAY, JANUARY 20, 2022		5 blk	Marquette	531@171.00	
		STE	ERS	29 blk	Whitewater	519@170.00
	7 bwf	Ellsworth	461@221.00	14 blk	Florence	537@169.00
	4 blk	Brookville	400@215.00	9 blk	Salina	497@169.00
	7 blk	Hutchinson	508@213.00	8 blk	Canton	558@168.50
	2 blk	Galva	508@212.00	6 blk	Delphos	559@168.00
	5 blk	Marquette	505@212.00	6 mix	Smolan	508@167.00
	4 blk	Galva	501@210.00	8 bwf	Ellsworth	533@166.00
	2 blk	Assaria	518@210.00	4 blk	Brookville	521@166.00
	9 blk	Canton	494@209.00	5 blk	Geneseo	478@166.00

8 blk

Solomon

543@207.00

Livestock Commission Co., Inc. Salina, KANSAS SALE BARN PHONE: 785-825-0211 MONDAY — CATTLE • HOG SALE 2nd & 4th MONDAY Hogs sell at 10:30 a.m. on the 2nd & 4th Monday of the month. Cattle at 12:00 Noon. Selling calves and yearlings first, followed by Packer cows and bulls.

THURSDAY — CATTLE ONLY

Selling starts at 10:00 a.m. Consign your cattle as early as possible so we can get them highly advertised.

AUCTIONEERS: KYLE ELWOOD, BRANDON HAMEL & GARREN WALROD

For a complete list of cattle for all sales check out our website www.fandrlive.com

*(ATTL	E USA.c	om Lr	VE CATTLE	AUCTIONS
F/		RANCHERS			
	COW	S	8 blk	Miltonvale	young@2050.00
1 blk	Abilene	1780@79.00	13 blk	Salina	young@2025.00
1 blk	Abilene	1755@78.00	2 blk	Clyde	young@2000.00
1 bwf	Durham	1715@76.50	12 blk	Kinsley	young@2000.00
1 blk	Clyde	1578@75.50	4 blk	Miltonvale	young@1925.00
1 blk	Lindsborg	1660@75.00	5 blk	Salina	young@1850.00
1 blk	Brookville	1850@75.00	5 blk	Kinsley	solid@1785.00
1 blk	Lincoln	1718@74.50		BRED C	
1 blk	Lindsborg	1620@74.00	7 blk	Lost Springs	young@1925.00
1 blk	Delphos	1630@73.50	21 blk	Arlington	young@1835.00
3 mix	Salina	1283@70.00	7 char	Halstead	young@1775.00
1 red	Salina	1435@69.50	4 blk	Halstead	young@1775.00

26 mix

17 blk

6 blk

Gypsum

Marguette

Minneapolis

I	6 blk	Lindsborg	526@202.00	6 blk	Hutchinson	550@150.00
I	9 blk	Glasco	554@200.00	3 blk	Solomon	613@160.00
I	3 blk	Falun	523@197.00	10 mix	Inman	573@159.00
I	7 blk	Brookville	559@196.00	6 blk	Delphos	634@156.50
I	12 blk	Gypsum	603@184.00	32 mix	Smolan	608@156.00
I	11 blk	Hutchinson	604@183.50	16 blk	Russell	562@156.00
I	14 blk	Ellsworth	608@183.50	22 blk	Marquette	605@155.00
I	22 mix	Salina	580@183.00	53 blk	Whitewater	610@154.50
I	8 blk	Assaria	584@182.50	22 blk	Assaria	635@154.50
I	14 blk	Marquette	606@182.50	19 blk	Canton	673@154.50
I	6 blk	Ellsworth	609@178.50	31 blk	Geneseo	610@154.00
I	6 blk	Salina	636@176.00	10 blk	Assaria	600@154.00
I	21 blk	Glasco	640@176.00	52 mix	Gypsum	710@152.75
I	5 mix	Falun	614@175.00	21 blk	Canton	742@152.50
I	10 blk	Galva	624@174.00	33 mix	Marquette	680@152.00
I	32 blk	Canton	726@166.25	7 blk	Delphos	720@152.00
I	33 blk	Glasco	741@165.75	39 mix	Geneseo	733@151.75
I	32 blk	Marquette	738@165.60	29 blk	Gypsum	647@151.25
I	13 blk	Assaria	711@165.50	7 blk	Assaria	729@151.00
I	63 blk	Gypsum	792@165.25	76 mix	Gypsum	788@150.75
I	23 blk	Assaria	740@165.00	19 blk	Ellsworth	753@150.00
I	32 blk	Delphos	768@164.75	16 mix	Assaria	713@150.00
I	75 mix	Gypsum	753@164.50	38 blk	Assaria	786@149.50
I	20 blk	Canton	832@164.25	28 mix	Salina	653@149.00
I	23 blk	Gypsum	810@164.25	33 mix	Salina	722@149.00
I	11 mix	Bennington	764@163.00	20 blk	Sedgwick	820@149.00
I	13 mix	Inman	767@162.50	6 mix	Gypsum	767@148.50
I	8 blk	Wilson	756@162.00	10 blk	Haven	789@148.50
I	9 blk	Bennington	803@161.50	26 mix	Assaria	827@148.50
I	52 mix	Gypsum	831@160.75	8 blk	Haven	701@148.00
I	10 blk	Galva	743@160.50	8 mix	Smolan	671@148.00
I	5 mix 25 mix	Canton Assaria	750@160.50 750@159.00	23 blk	Ellinwood IONDAY, JANUARY	844@145.00
I	9 blk	Assaria	844@157.00	IV	BULLS	17, 2022
I	11 mix	Brookville	784@157.00	1 blk	Concordia	2260@114.00
I	63 mix	Durham	864@157.00	1 bwf	Hillsboro	1910@110.00
I	37 blk	Gypsum	855@156.50	1 blk	Solomon	1810@109.00
I	120 mix	Minneapolis	869@156.00	1 blk	Hillsboro	2220@109.00
	5 char	Delphos	736@155.00	1 blk	Lincoln	1850@106.00
	41 blk	Gypsum	930@154.00	1 blk	Lost Springs	2340@105.00
	11 blk	Minneapolis	926@154.00	1 red	Brookville	2020@102.50
	34 red	Assaria	884@153.50	1 blk	Ramona	1755@99.50

UPCOMING SPECIAL SALES:

All Sales are on Tuesday at 11 AM

SPECIAL COW SALES: Tuesday, February 15

* Tuesday, March 15 * Tuesday, April 19 * Tuesday, May 3 WEANED/VACC SALES: Tuesday, February 1

Heavy Duty Round Bale Feeders * 42' ROUND BALE DUMP TRAILERS

Abilene 1290@68.00 36 blk Atlanta young@1735.00 young@1725.00 1 blk Windom 1335@67.50 6 red Arlington TUESDAY, JANUARY 18, 2022 Adam, NE young@1685.00 young@1625.00 6 blk SPECIAL COW SALE 8 blk Hillsboro **BRED HEIFERS** 35 blk Adam, NE young@1600.00 4 blk 15 blk Lost Springs Adam, NE solid@1450.00 solid@1375.00 @1710.00 15 bwf Burr Oak Miltonvale @1700.00 6 bwf @1685.00 solid@1350.00 13 blk Miltonvale 8 blk Leoti 13 blk Miltonvale @1675.00 8 blk Moundridge solid@1300.00 solid@1275.00 20 blk Cambridge @1660.00 11 mix Gypsum 10 bwf Minneapolis broken@1025.00 27 blk @1550.00 Cambridge **COW/CALF PAIRS** Halstead broken@1000.00 9 blk young@2050.00 Arlington 2 blk 9 blk Minneapolis broken@985.00

1740@69.00

1553@69.00

1975@68.00

hlk

1 char

3 blk

546@166.00

Delphos

Salina

Claflin

EARLY CONSIGNMENTS FOR THURSDAY, JANUARY 27, 2022

70 mostly blk, s&h, 650-700, long weaned, 2 vacc, open; 30 blk, s&h, 800-900, long weaned, 2 vacc; 30 strs, 750-800, long weaned; 90 blk, s&h, 700-800, long weaned, vacc, home raised; 60 blk, strs, 800-850, home raised, vacc; 90 s&h, 600-750, long weaned, home raised; 29 s&h, 550-750, home raised, long weaned, vacc; 5 rwf, strs, 450-550, long weaned, home raised, 3 vacc; 150 blk, s&h, 550-700, home raised, long weaned, 2 vacc; 60 strs, 900, no sort; 40 blk, s&h, 400-600, home raised, 45 days weaned, 2 vacc, open; 60 blk/red, s&h, 700-900, home raised, long weaned, vacc, open; 50 mostly blk, s&h, 700-800, long weaned, vacc, preg'd open; 20-30 blk/bwf, strs, 500-700, 2 vacc, long weaned, knife cut, bunk broke; 45 red angus, s&h, 500-800, Nov 1 weaned, vacc; PLUS MORE BY SALE TIME.

EARLY CONSIGNMENTS FOR TUESDAY, FEBRUARY 1, 2022 WEANED/VACC SALE

13 blk/red strs, home raised; 60 blk/bwf, strs; 12 to 15 blk, strs, 600; 60 blk/ bwf, strs, 725-750; 30 blk, s&h, home raised, vacc; 105 s&h, 650-800, home raised;120 blk/bwf, s&h, home raised, all vacc, long weaned, off wheat; 50 blk/ red, 550-700, home raised, vacc, long weaned, off brome; 100 blk/red, 600-750, sired Nelson sim-angus; 60 hfrs; 70 s&h; 100 blk/red, s&h, 650-800; 100 blk/ char, s&h, 450-700; 33 bwf, s&h, 2 vacc, home raised, long weaned; 70 blk/bwf, mostly strs, 700-800; 86 red, s&h; 360 blk/bwf, strs, weaned in Nov; 110 blk, s&h, weaned Dec 1, home raised; 65 blk, s&h, 3 vacc, knife cut, long weaned; 50 blk, s&h, all vacc, long weaned; 14 blk, s&h, Gardiner Angus Genetics, home raised, knife cut, bunk broke, poured, 3 vacc, long weaned; 50 blk, s&h home raised, 2 vacc, 75 days weaned; 68 red angus, strs, 75 days weaned, 2 vacc; 52 red angus, hfrs, 75 days weaned, 2 vacc; 110 blk, strs, Nov weaned, home raised, 650; 55 blk, hfrs, fall vacc, 800; 60 blk, hfrs, 600-800, home raised, 2 vacc; 60 blk, hfrs, 600-800, home raised, 2 vacc; 30 strs, 500-600, all vacc, home raised, long weaned; 48 s&h, 600-800, home raised, long weaned, vacc; 40 blk/bwf, s&h, 600-700, 2 vacc, long weaned; 62 blk, s&h, 500-700, long weaned, 3 vacc; PLUS MORE BY SALE TIME.

