

McPherson County

K-STATE RESEARCH AND EXTENSION NEWS

October 2023



FCW News

CHUCK LAUGHLIN
COUNTY EXTENSION AGENT
FAMILY & COMMUNITY WELLNESS



Teach & Taste – Sweet Potato & Apple Casserole

Bring family and friends for a spooky good time as we make the October recipe of the month. Mark your calendar now for October 11, 2023 at 6:30pm at the Extension Office for our feature Sweet Potato & Apple Casserole.

Please RSVP to ensure we have enough for everyone.

Use the link below to register and come join us and try out a new recipe.

<https://tinyurl.com/TeachandTasteOctober>

Teach & Taste
OCTOBER 11, 2023
6:30 PM
600 W. WOODSIDE
MCPHERSON, KS

MENU
 SWEET POTATO &
 APPLE CASSEROLE



Reimagine Canton Committee Work Begins

The work in Canton has been moving along as we work to gather resources to move the committee's initiatives forward. Watch the Facebook page for updates on our next committee meetings as we get resources together. There will be a community meeting at the Canton Community Building on October 10th at 7:00 PM for a meet and greet with the candidates followed by a Candidate forum for those running for Mayor and City Council at 7:15 PM; this part will be a question/answer format to learn about the candidates running for positions in the city. We welcome input as the strategic plan is taking shape for the future of Canton. There is still an opportunity to join in this endeavor so if you would like to participate in one of the committees, please contact claughlin@ksu.edu.

Updates on the status of the program, committee meetings, community-wide meetings, and other general information will be shared via the newly created Facebook page. Please use the link or QR code to visit and Like the Reimagine Canton Facebook page:

<https://www.facebook.com/profile.php?id=61550514969391&mibextid=LQQJ4d>



CHECK YOUR CREDIT

One in five people have an error on at least one of their credit reports according to a study conducted by the Federal Trade Commission. When is the last time you checked your free credit report? Empower yourself to make better financial decisions by signing up for the K-State program called, "Check Your Credit". Contact your local Extension Office for more information about this free, email program and the registration is easy, too!

Credit reports affect many aspects of your life, including your ability to get a loan, rates for loans and insurance, and more. Sign up today for K-State Research and Extensions' "Check Your Credit" email program. There is no cost and it will help you to make better financial decisions. With the email program, "Check Your Credit", we'll remind you to check your credit report three times during the year around February 2 (Equifax), June 6 (Experian), and October 10 (TransUnion). (Here is your reminder to check your credit on October 10th.) With this program we will also send you periodic emails with information about how to understand your credit report, correct errors, and use your credit report to your advantage. There is no cost to participate and registration is easy!

Credit is a tool used by millions of Americans to accomplish short- and long-term goals. When credit is managed successfully, credit can bring many benefits, such as home ownership, a college education, or landing the job of your dreams. However, poor management of credit can result in higher costs, lost opportunities, and added stress. Empower yourself to make better financial decisions by checking your credit on a regular basis. Take a step towards financial well-being today by signing up for K-State Research and Extension's "Check Your Credit". Contact your local K-State Research and Extension Office for more information. Three ways to choose from to request your credit report:



Three ways to choose from to request your credit report:

- AnnualCreditReport.com
- Call 1-877-322-8228
- Complete the Annual Credit Report Request Form and mail it to:

Annual Credit Report Request Service
P.O. Box 105281
Atlanta, GA 30348-5281

Preserve the Best Tomatoes
by Karen Blakeslee

When preserving any food, use the best food possible for the safest results. This includes tomatoes. During the fall, many gardeners still have tomatoes on the vines. But once a frost or freeze happens, these tomatoes are not safe to preserve by canning.

When tomatoes are left on the vine towards the end of the growing season, the pH increases above 4.6. This is the dividing point whether a food is a high acid or low acid food. When the pH is above 4.6, it is a low acid food. These tomatoes are also more susceptible to other microbial damage. Tomatoes that have signs of blight or other fungus related infestations have a higher pH making them a low acid food. All of these are not safe for canning.

K-State Research and Extension is partnering with the Sunflower Foundation and the Kansas Trails Council to bring you a series of webinars.

These events are for local trail advocates of any kind - from city managers to volunteers - who want to create access to trails so their citizens can enjoy the physical, mental, and community benefits from connecting with nature.

The webinars will take place on the 2nd Tuesday of every month from 12-1 pm CT:

- October 10, 2023: Where do we start?**
- November 14, 2023 Let's get started!**
- December 12, 2023 What will this cost?**
- January 9, 2024 Where will we find the money?**
- February 13, 2024 How do we make the trail sustainable?**
- March 12, 2024 Rail trail issues**

We hope you will join us! Register now at:
<https://ksre-learn.com/trail-talk>

October 4: It's not so Kool to JUUL:

Vaping is the new epidemic among youth. 25% of Kansas High School students currently vape or have vaped. What do we know about Vaping? What does it look like and who is behind this epidemic and why? So, how can we help educate the public and youth? We have learned many things about vaping in the past few years, it causes depression, is very addictive, and hard to quit. Kansas has several programs that are available to help combat this vaping problem among our youth. These topics will be discussed as well as the work going on in prevention.

Presenter: Donna Gerstner, LiveWell Finney County CDRR Grant Coordinator and the E-Cig Prevention Grant Coordinator

Register at: <http://bit.ly/LWWFall23>

LIVING WELL WEDNESDAY
K-State Research and Extension Webinar Series

BULLYING

Since 2008, the percentage of kids who report they have been bullied at school has been decreasing, reaching an all-time low in 2021, while many kids were not at school in person. However, in recent years it has been increasing. In 2023, reported **BULLYING AT SCHOOL** is at the **HIGHEST LEVEL** ever reported since we started asking about it on the survey.

nearly
1 in 3
students surveyed reported being
BULLIED
in the past year



2023

PERCENTAGE OF STUDENTS WHO REPORTED THEY WERE BULLIED IN THE PAST YEAR



stopbullying.gov

2023

Friday, October 6 at 9:30am to 10:30am
First Friday e-Call- Trails: How Can Business Owners Help Create Trail Towns?
Jeff Carroll, Owner, Ottawa Bike and Trail, will tell what he has learned about what bikers need in order to come to your trail.

First
FRIDAY e-CALL
Trails: How Can Business Owners Help to Create Trail Towns?
Jeff Carroll, Owner of Ottawa Bike and Trails

Join Us October 6, 2023
9:30 am

Register Today
<https://ksre-learn.com/ecall>

K-STATE
Research and Extension

Registration link: https://www.ksre.k-state.edu/community/business/entrepreneurship/#sign_up

County Calendar Underway for 2024 and Oopsie Contest for 2023

Does your business or organization have an event scheduled for 2024?

We have begun development of the McPherson County 2024 My Hometown calendar. This year's theme will be My Hometown: Heros. If you have an event that is open for anyone in the county (or beyond), please submit your event to Chuck at claughlin@ksu.edu to be included in the 2024 Calendar.

Would you like to be included in the list of resources for the county? Please submit your Business and contact information to Chuck at claughlin@ksu.edu be considered for inclusion in the 2024 calendar.

To schedule time with Chuck follow the link below or scan the QR code.

<https://calendly.com/claughlin-ksu/meeting-with-chuck>



As you may have noticed, the 2023 My Hometown: Kansas 365 calendar had a couple (well maybe more than a couple oopsies in it). So, what do you do when you notice some oopsies? Well of course you create a contest!

So, get out your fine-tooth comb and go over the 2023 calendar and submit your oopsies from the 2023 calendar and you could win a prize!

VISIT: <https://tinyurl.com/OOPSIE2023> to submit the number of OOPSIEs you found!

County Connection E-News

To register to receive updates on upcoming events, calendar updates, webinars, senior and military discounts available, county resource phone numbers, as well as tips and tricks to make life easier.



<http://eepurl.com/iicSFn>

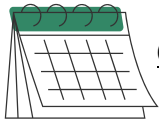


Clover Corner

SHYANNE JONES
COUNTY EXTENSION AGENT
4-H YOUTH DEVELOPMENT



Happy New Year! October 1st is the start of our new 4-H year, and I'm excited to see all of you in the "Waiting to be Approved" column of 4-H online after you've enrolled for the year! Enrollment happens after October 1st, and families who enroll before November 15th will have their enrollment fees covered by the county. To do so, click the "Check" payment method, and we'll take care of the rest. There are new project titles for this year, see the new listings! →



Calendar of Events October

- 10/1-10/8 - National 4-H Week
- 10/5 - 4-H Council Meeting followed by Ambassadors, 7PM
- 10/16 - Registration for KYLF due to the state
- 10/28 - Project Panorama (and Officer Training)

SAVE THE DATE:

- 11/5 - Achievement Banquet
- 11/18-11/19 - Kansas Youth Leadership Forum

2023/2024 KANSAS 4-H PROJECTS

<ul style="list-style-type: none"> Beef Dairy Cattle Dairy Goats Dog Horse Meat Goats Pets Poultry Rabbits Sheep Swine Veterinary Science 	<ul style="list-style-type: none"> Sewing & Textile Design Shopping in Style Family Studies Fiber Arts Foods & Nutrition Health & Wellness Interior Design & Architecture 	<ul style="list-style-type: none"> Entomology Agronomy Forestry Horticulture & Landscape Design
<ul style="list-style-type: none"> Communications Performing Arts Photography Visual Arts 	<ul style="list-style-type: none"> Environmental Science Geology Shooting Sports Wildlife 	<ul style="list-style-type: none"> Ag Mechanics Welding Building Block Engineering Astronomy Computer Science Electric & Renewable Energy Robotics Aerospace/Rocketry Small Engines Uncrewed Aircraft Systems Woodworking

PREVIOUS PROJECT LISTING

<ul style="list-style-type: none"> Beef Dairy, Cattle Dairy, Goats Dog Care & Training Horse Meat Goats Pets (Including Cats) Poultry Rabbits Sheep Swine Veterinary Science 	<ul style="list-style-type: none"> Clothing & Textiles- Construction Clothing & Textiles- Buymanship Family Studies Fiber Arts Foods & Nutrition Health & Wellness Home Environment 	<ul style="list-style-type: none"> Entomology Plant Science Plant Science- Field Crops Plant Science- Forestry Plant Science- Horticulture
<ul style="list-style-type: none"> Communications Performing Arts Photography Visual Arts 	<ul style="list-style-type: none"> Environment Science Geology Shooting Sports Wildlife 	<ul style="list-style-type: none"> STEM - Ag Mechanics STEM - Architectural Block Construction STEM - Astronomy STEM - Computer Science STEM - Energy Management STEM - Robotics STEM - Aerospace/Rocketry STEM - Small Engines STEM - UAS Woodworking

K-STATE Research and Extension Kansas State University Agricultural Experiment Station and Cooperative Extension Service. K-State Research and Extension is an equal opportunity provider and employer.

4-H Fair Board

We're still looking to fill in available terms for 4-H Fair Board! If you're interested in serving 4-H Youth by organizing and planning details of the 4-H fair, please contact the Extension Office for an application. Board members do not have to be current 4-H parents or exhibitors! We also have opportunities for 4-Hers ages 14-16 to serve on the board and represent their fellow 4-Hers.



Get Published

Have project news or reports of fun 4-H happenings? Please email or bring in any articles to Lauralee at Lhelm@ksu.edu by October 23 to get them into the Clover Corner!



National 4-H Week:

DON'T FORGET TO TURN IN YOUR SUBMISSIONS FOR THE DISPLAY CONTEST FOR NATIONAL 4-H WEEK! THE CATEGORIES ARE AS FOLLOWS:

1. Club Displays: Window displays in businesses, exhibits, etc. Pictures/videos of displays are due to Shyanne by **October 3rd!**
2. Individual Displays: Posters hung in schools, businesses, etc. Pictures of displayed posters are due to Shyanne by **October 3rd!**
3. "Pop-ups" : Displays that are specific to one event not lasting the entire week, promotional talks given to groups, etc. Pictures of displays OR videos of talks are due to Shyanne by **October 9th!**

Winners will be announced at the Achievement Banquet on November 5th! Each category winner will receive \$30!

As well, 48 Hours of 4-H is October 7th-8th! Be sure to register community service projects at the following site: <https://www.kansas4-h.org/events-activities/conferences-events/48-hours-of-4-h/> for the state to track service done by 4-H members in Kansas! (Secret: Service done at any point in October can be registered through this link!)

Kansas Youth Leadership Forum (KYLF)

What: Build your leadership skills and potential through workshops, consulting groups, inspirational speakers and more. In addition, the 2024 State 4-H Youth Leadership Council will be elected and up to six National 4-H Conference delegates will be selected through an interview process at KYLF.

Objectives:

- Broaden your understanding of the meaning of leadership and the qualities of a leader.
- Practice leadership skills you can use in other situations, like your local club, school and community.
- Improve interpersonal communication skills.
- Gain confidence.

When: November 18-19, 2023

Where: Rock Springs 4-H Center

Who: Youth 14-18 years of age before January 1, 2024

2023 Fees: \$200 and additional optional \$50 for Friday overnight and breakfast.

Registration Deadline: Monday October 16, 2023 by 11:59 p.m.

https://kstate.qualtrics.com/jfe/form/SV_efByBxeDA8ANTSu



Participants from McPherson County will be responsible for providing their own transportation to and from KYLF.

Achievement Banquet:

The 2022-2023 4-H Achievement Banquet will be held on November 5th, at 4:30pm. We will be hosting the traditional formal banquet at the McPherson Community Building. Members who submit a record book will receive one free meal ticket, as well as Cloverbud members. Other attendees should purchase meal tickets for \$7 from the Extension Office before October 27th. We'll be recognizing Pin Awards, Achievement Awards, I Dare You Awards, Key Awards, and announcing our Family of the Year!

4-H Council and Ambassadors:

The next Council meeting will take place on October 5th at 7:00 PM at the extension office. We will be having our final meeting with the previous council members, as well as welcoming new members! We will be electing council officers for the 2023-2024 4-H year, so please be prepared to sign up if you're wanting to run!

The Ambassadors meeting will take place at the conclusion of the council meeting. We'll be planning decorations for the Achievement Banquet, as well as going over the goals and calendar for the new year. Please plan to attend!

Volunteer Information Profiles:

As we re-enroll for the new year, please take the time to register as a volunteer on 4-H Online! These accounts are to help organize volunteer groups, screen participants, and have a file of information as needed. This is required for club leaders, project leaders, and chaperones, but the bigger database we have the better!

Project Panorama (and Officer Training):

Do you have a project you think everyone should try? Are you looking for a new project to try out? Join us for Project Panorama from 1:00pm-4:00pm October 28th at South Middle School in Salina! Project Panorama will be an event to introduce project ideas to those who are looking for new ways to participate in 4-H. Exhibiting members should create a hands-on way for participants to experience their project (see examples below). In addition, Project Panorama will have the opportunity to host tailgate service projects, where a 4-H member gathers supplies for a service project to be completed during the event. For instance, a 4-H member could bring supplies to make Valentine's day cards, and participants could make cards for a local nursing home at the booth.

We'll start the afternoon with leadership sessions for all participants, with breakout sessions for Officer Training. Those who are not participating for a specific office (including adults!) will have their own sessions: 4-H Fun, Zbooks, and Financial Review. We encourage all members to participate! To register, please visit the link below, and if a member would like to be a project presenter, make sure to note that on your registration!

Visit: https://kstate.qualtrics.com/jfe/form/SV_3NJLBU3Fmms2THw to register! Registration opens soon and closes October 20th!

*****Remember, each club must have the majority of their officers attend training for their club seal.**



Project Display Interactive Examples:

Home environment booth: Bring paint swatches for participants to design a color scheme

Wildlife: Bring samples of animal tracks for participants to identify

Place settings: Bring pictures of plates, silverware, etc., for participants to select a setting.





AG NEWS

SHAD MARSTON
COUNTY EXTENSION AGENT
AGRICULTURE AND NATURAL RESOURCES



WEANING CALVES

Shad Marston

As the days seem to be getting shorter, nights are cooler and fall is approaching our thoughts of a cow/calf producer change. Weaning spring born calves is just around the corner and we need to start preparing and planning our operation for this big event. Still weaning, without a doubt, is one of the most stressful events in the life of a calf. Anytime we, as producers, can remove stress from weaning, it can be very beneficial to the cow/calf operator and beyond. Most overlook that fact that weaning is also our opportunity as cattle producers to prepare calves for the next phase of the beef production cycle. "We are trying to make a productive member of our feedlot society or a reproductive heifer coming back into our herd," says Dr. AJ Tarpoff, Beef Extension veterinarian at Kansas State University. Everyone's goal of weaning should be to have calves that can make it without their mothers, consume feed and successfully acclimate to a new environment. To do this calves need to go through the separation process, learn a new environment, get acclimated to new feed and stay healthy all at the same time. Improving on these steps can add value to your animals.

Important steps to follow:

- Establish a herd health program. "The solution for starting cattle does not start with a syringe and a needle" says Dr. Mark Handlin of Heartland Veterinary Clinic. When bringing in cattle, cattle source and handling, feed, water and environment (both weather and pen condition) have a greater effect. I cannot stress this enough, producers should consult with their local veterinarians and develop a herd health plan that meets a sound vaccination program as well as a treatment plan for calves if they do become sick. Planning ahead of time can save lots of money when ordering supplies and cuts back on wasted time running for this or that.
- Don't add stress during weaning. Castration, dehorning, and branding can all add stress. Plan to complete these tasks well in advance of weaning, (minimum of 3 weeks) or a month after.
- Prepare weaning pen with proper placement of feed bunks and a good water source. Clean pens to try to minimize dust and allow pens to drain during wet weather. Providing access to the weaning pens prior to weaning helps the calves adapt to their new environment. Provide fence line contact, if you can, to soften and reduce behavioral stress and minimize post-weaning weight loss of the weaned calf.
- Help calves adjust to the new feedstuffs. At the K-State Research Center in Hays, a feeding protocol for weaning calves has been developed that works well for transitioning weaned calves to a total mixed ration. It starts with high-quality grass hay and the weaning ration being offered each at 0.5% of the calves' current bodyweight, dry basis, on the day of weaning. The weaning ration should be placed on the bottom of the bunk and the hay over the top. Each day the weaning ration is increased while hay remains the same. On day 4, place the hay on the bottom of the bunk. Over a period of 7-10 days, the dry intake should be reached at approximately 2.2-2.5% of the calves' bodyweight.

Simply by pre-conditioning, producers are trying to maximize health and well-being of the animals prior to and at weaning, not just post-weaning. Remember, no two groups of cattle are the same and using a one herd health plan that fits all phases of your operation might not work in all situations. Establish a health/vaccination plan that fits your operation by consulting with your veterinarian. Try to reduce stress of weaning as much as possible, along with preparing your weaning pen ahead of time. Getting your weaning calves up to the bunk and eating should be a top priority. This all plays an important part of the successfulness of weaning and keeping your calves headed in the right direction.

Wheat planting - Tips for good stand establishment

Here in McPherson County, it's wheat planting season. Wheat producers are itching to get their seed into the ground. Many producers have their wheat ground ready and are just waiting for a nice rain. Hopefully, local areas will receive that much needed rain, as soil moisture is on the minds of every farmer. Regardless of the soil moisture conditions at wheat planting time, there are a few important steps producers can take to improve their chances of getting a good stand of wheat.

Proper tractor speed. It is best to use a tractor speed of between 5 and 6 miles per hour in most cases when drilling wheat, depending on the amount of down pressure on the openers. If higher speeds are used, the openers can tend to "ride up" in the soil now and then if down pressure is insufficient.

Proper, uniform seeding depth. The ideal planting depth for wheat, in most cases, is about 1.5 inches. When planting early into very warm soils, it is especially important not to plant too deeply since coleoptile lengths are shorter than normal under warm conditions. On the other extreme, producers should also be especially careful not to plant too deeply when planting later than the recommended time into very cool soils. Getting a uniform seeding depth is also important. Where producers plant into fields with heavy residue or uneven chaff distribution from the previous crop, uneven planting depth can be a serious problem. In those situations, it is common to end up with poor stand establishment in field areas where the drill opener rode up over the residue or chaff and could not penetrate the soil to the same depth as in other field areas.

Firm seedbed. Planting into loose, fluffy soils can be a problem where soils have been tilled repeatedly during the summer. When seeds are planted into loose soils, rains in the fall will settle the soil and leave the crowns of the seedlings too close to the soil surface. A good closing system behind the drill openers, with adequate down pressure, should help.

Plant during the optimum window. In general, wheat should be planted somewhere around the Hessian fly-free date. There may be good reasons to plant some wheat before the fly-free date, such as planting for pasture or time pressures from having considerable acreage to plant. But stand establishment and ultimate grain yields are usually best when wheat is planted after the best pest management planting date (BPMP, former Hessian fly-free date) and before deadlines set by crop insurance. Planting more than three weeks after the BPMP can be risky. Late-planted wheat often does not develop an adequate root system before winter and forms fewer productive fall tillers. When planting late, seeding rates should be increased by 25 to 50 percent to help ensure an adequate stand and compensate for the lack of tillering. See the accompanying article about the risks of planting wheat too early.

Adequate soil fertility. In general, producers should apply at least part of their nitrogen before or at planting time to get the plants off to a strong start. Nitrogen rates of 20-30 lbs can help with fall establishment and tillering. If the soil is low or very low in phosphorus or potassium, these nutrients should be applied at planting time as well so that the plants benefit early in their development. Starter phosphorus with the seed or band-applied close to the seed can also help with fall early growth and establishment, particularly in low-testing soils. Low soil pH can be a concern, particularly early in the season when root systems are mostly near the surface, which is often an area of lower pH. Soil tests will determine the need for pH adjustment and the potential for aluminum toxicity. Variety selection and phosphorus application with the seed are potential management strategies for low pH and aluminum toxicity issues if it is too late to apply lime before seeding.

Make adjustments for planting into row crop stubble. When planting wheat into grain sorghum stubble, producers will need an extra 30 lbs N per acre over their normal N rate. Also, it is important to ensure the sorghum is dead before planting wheat. When planting wheat into soybean stubble, producers should not reduce their N rates since the N credit from soybeans doesn't take effect until the following spring. If the wheat is planted no-till after row crop harvest, N rates should be increased by 20 lbs N per acre over the normal N rate. Seeding rates should be increased when planting wheat late after row crop harvest. It's best to use a seeding rate of 90 to 120 lbs per acre in central and eastern Kansas and 75 to 100 lbs per acre in western Kansas. When planting more than three weeks after the BPMP date, producers should use a seeding rate of 120 lbs per acre.

Watch out for potential disease issues when planting into corn residue. The risk of some diseases may be higher when wheat is planted in fields with large amounts of corn residue left on the soil surface. Fusarium head blight (scab) of wheat, for example, is caused by a fungus known to cause stalk rot in corn.

Using a seed treatment. Seed treatments can sometimes act as insurance, helping avoid seed-born and early-season fungal diseases.

Kansas Bankers Association Conservation Awards Program - Nominations due Nov. 10

Nominate a deserving Kansas producer or landowner for the 2023 Kansas Bankers Association Conservation Awards Program. This year, the Kansas Bankers Association, K-State Research and Extension, and the Kansas Department of Wildlife and Parks have announced six award categories:

- Energy Conservation
- Water Quality
- Water Conservation
- Soil Conservation
- Windbreaks
- Wildlife Habitat

The purpose of this program is to stimulate a greater interest in the conservation of the agricultural and natural resources of Kansas by giving recognition to those farmers and landowners who have made outstanding progress in practicing conservation on their farms. In 2022, over 200 Kansas producers and landowners were recognized through this program.

Submit nominees to the County Extension Office no later than November 10, 2023.

Test to prevent nitrate and prussic acid poisoning

Many Kansas cattle operations rely on some type of harvested feed to use in the winter months and common among those sources is forage sorghum, millets, sorghum-sudangrass, and sudan. Forages in the sorghum family are prone to two different problems for feeding cattle, nitrate poisoning and prussic acid (hydrocyanic acid, HCN) poisoning. Millet (proso and pearl) do not contain prussic acid but can have nitrates. Prussic acid and nitrate poisoning are easy to get confused because both result in a lack of oxygen availability to the animal and are more likely to occur when the plant is stressed (fertility, hail, drought).

Key characteristics of nitrate and prussic acid poisoning →

In dry areas of the state, cattle may be removed from the pasture early. Bringing hungry cattle into pens with weeds can be very dangerous as the nitrate concentration may be elevated throughout the plant and animal intake high. Manure in corrals can contribute to the elevation of nitrates in the weeds. Elevated nitrates may not result in death but could cause abortions.

Item	Nitrate	Prussic Acid
Plant parts most affected	Base of plant	Young or new growth
Types of plants	Many, especially sorghum family, pigweed (palmer amaranth, redroot, waterhemp), kochia, oat hay	Many (> 3,000 plant species), sorghums including Johnson grass, white clover, birdsfoot trefoil, Indiangrass, Cyndon spp. (Bermuda)
Grazing problems	Rarely a problem unless forced to eat entire stem or extremely high levels.	Consumption of newest growth
Hay	Not impacted by drying	Not impacted by drying
Silage	Reduced 40-60% by ensiling	Reduced 40-60% by ensiling
Green Chop	High risk	Less risk than hay, not as much reduction as silage
Time of death	Several hours after consumption	Within minutes of consumption, treatment can rarely occur fast enough to save the animal
Blood/Oxygen	Chocolate brown colored blood, hemoglobin converted to methemoglobin and unable to carry oxygen	Blood bright cherry red, hemoglobin contains oxygen, but not available to cells

The current KSU forage fact sheet on prussic acid poisoning indicates that prussic acid potential dissipates as the forage dries. Additionally, hay or silage that likely contained high cyanide concentrations at harvest should be analyzed before it is fed. This second statement is often forgotten and it's assumed that when the plant dries, all the cells are ruptured and any HCN is released. To confirm this, we measured dhurrin content in sorghum hay. The dhurrin content was stable from 1 to 10 weeks of dry storage. In the plant, dhurrin (the precursor to HCN in sorghum species) and the enzyme that converts it to cyanide, are stored in separate compartments within the cell. When the plant is eaten, the compartments are ruptured, and the cyanide formed and released. While the enzyme that converts dhurrin to cyanide is inactivated with drying, rumen enzymes can make the same conversion after consumption. If hay is made from forages in the sorghum family or other susceptible species, testing for prussic acid in forage that has suffered from drought, hail or fertility issues is advised. The frequency of issues with prussic acid in harvested forages may be relatively low, however, testing is cheap compared to the cost of losing even one animal.

Management recommendations common to both prussic acid and nitrates include:

- Test first, don't gamble. Keep in mind, different labs use different tests that have different scales.
- Feed animals with a known safe feedstuff(s) and have them full before introduction to potentially problematic feeds. Don't turn in hungry.
- Ensiling will reduce concentrations of either by 40-60% in well-made silage, but silage put up under less-than-optimal conditions could still contain very high levels. If extremely high before ensiling, a 50% reduction may not be enough to result in safe feed.
- Dhurrin concentrates in the upper portion of the plant and with more plant growth (>24"), concentration levels may be diluted if measuring the whole plant.
- Nitrate concentrates in the base of the plant and is least in head and leaves, grazing or cutting high can reduce nitrate levels in the forage.
- Do not harvest drought stressed forage within 7 to 14 days after good rainfall to reduce the levels of accumulated nitrates.

If testing before grazing, samples should reflect what the animals are expected to consume, generally leaves and upper portion of the plant. Sample a minimum of 15 sites across a given field. One method is to sample from each corner and the center by walking diagonal lines and sample plants every 50-100 steps or as appropriate for field size.

We expect levels of nitrates and prussic acid to be variable across a field, so more samples are better than less. A rule of thumb is to sample 10 to 20 % of the bales per field or cutting as a minimum. Be aware of areas of the field that exhibited more plant stress than others. If large enough areas, you may want to sample them separately. Your acreage size and feeding methods likely factor into this decision. Use a forage probe that cuts across all plant parts in a bale rather than a grab sample from individual bales or windrows. Most county extension offices can help with sampling procedures and equipment.

Prussic acid in sorghum following a freeze event:

Frost causes plant cells to rupture and prussic acid gas forms in the process. Because the prussic acid is in a gaseous state, it will gradually dissipate as the frosted/frozen tissues dry. Thus, risks are highest when grazing frosted sorghums and sudan grasses that are still green. New growth of sorghum species following frost can be dangerously high in prussic acid due to its young stage of growth. Prussic acid content decreases dramatically during the hay drying process and during ensiling. It is recommended to wait ten days until after a killing freeze before grazing. Sorghum and sudan grass forage that has undergone silage fermentation is generally safe to feed.



K-State Research & Extension
McPherson County
600 W. Woodside
McPherson, KS 67460

RETURN SERVICE REQUESTED

AGENT CONTACT INFORMATION

Shad Marston
County Extension Agent
Agriculture & Natural Resources

smarston@ksu.edu

Radio Every Monday:

7:40 AM-96.7 KMPK

8:40 AM-98.9 KMCP

Ad Astra Radio Station

Shyanne Jones
County Extension Agent
4-H Youth Development

shyannejj@ksu.edu

Chuck Laughlin
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Family & Community Wellness

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