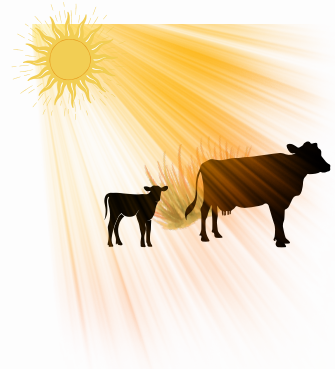




Roots & Chutes

Written By: [Alyssa Rippe-May](#)
Interim District Director &
Livestock and Farm Management Agent



"K-State Vet Shares Tips for Managing Cattle through Heat"



MANHATTAN, Kan. – A Kansas State University veterinarian is urging cattle producers to beef up their plans for managing heat stress in their herds, a challenge that costs the U.S. cattle industry up to \$370 million in losses each year.

A.J. Tarpoff, a beef veterinarian with K-State Research and Extension, said cattle producers to beef up their plans for managing heat stress in their herds, a challenge that costs the U.S. cattle industry up to \$370 million in losses each year.

A.J. Tarpoff, a beef veterinarian with K-State Research and Extension, said cattle are resilient animals; they will often acclimate to hot temperatures.

But an accumulation of factors – including humidity, solar radiation, the color of their hide, diet and more – can drastically change a cow's ability to withstand summer's heat.

"It really is a multi-layer challenge," Tarpoff said. "Each animal within a group or pen is not affected the same way. Animals with higher body condition scores, or with darker hides, or finisher steers and heifers that are getting ready to go to harvest are at higher-risk of heat stress."

Tarpoff said heat stress decreases the reproductive efficiency and performance of cattle grazing on pasture. In confined facilities, heat stress often causes cattle to eat less, which also negatively affects their performance.

The human body cools itself on a hot day by sweating, called evaporative cooling. But Tarpoff notes that cattle sweat only 10 percent as much as humans, and panting is their primary way of dissipating heat. "As temperatures rise and their heat load increases, they will start breathing faster," he said.

"They are dissipating heat through tiny droplets in the respiratory tract." Doing so, however, causes cows to eat less, setting them on a path to poor growth and future performance.

"This all has to do with heat load," Tarpoff said. "The internal temperature of cattle will peak two hours after the hottest point of the day. So our strategy for keeping cows cool needs to be built around knowing that."

Another factor is that cattle produce heat by digesting food, typically 4-6 hours after eating. "So if we

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feed animals within the wrong period of time, we can actually increase their heat load because the heat of digestion and the heat from the environment are building on top of each other," Tarpoff said. "We want to keep that from happening."

Tarpoff listed best management practices for helping to reduce heat stress in cows:



- **Receive, ship or move cattle only during the coolest parts of the day**, preferably before 10 a.m.
- **Modify feeding times.** Feed 70 percent of the animals' ration as late in the evening as possible, which puts the peak heat of digestion overnight when temperatures are likely cooler. Decrease feeding during the day.
- **Managing heat.** Split cattle between pens or reduce stocking density. Maximize airflow by removing obstructions around facilities, including weeds. If feasible, install shade structures, which can reduce solar radiation and reduce the temperature on the pen's floor. Install sprinklers to wet cattle down at night or early morning so as not to increase humidity. Then, of course, there is the importance of providing water. Lots and lots of water.

"To put it into perspective, when the temperature goes from 70 degrees Fahrenheit to 90 degrees, a cattle will consume about double the amount of water," Tarpoff said.

As a rule, he said cattle should consume "about five times the amount of water as the dry matter they are consuming."

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As a rule, he said cattle should consume "about five times the amount of water as the dry matter they are consuming." said he follows two sources for help in making a decision when to put a heat stress management plan into full effect.

The [U.S. Meat Animal Research Center \(MARC\)](#) maintains a seven-day forecast tool for the United States, taking into account temperature, humidity and solar radiation.



"The other tool I use is the [Kansas Mesonet](#), which provides an animal comfort index," he said. The Kansas Mesonet, housed at Kansas State University, is a network of observation towers located across the state that updates climate information every hour.

"Right now, if we don't have night-time cooling hours, the animal won't be starting each day at thermo-neutral, so they're more at risk on the second or third day," Tarpoff said. "Temperature, humidity, solar radiation -- but most importantly right now wind speed -- all play a role in dissipating heat. Operations should start implementing strategies for controlling these stressors if they haven't already."

For more information or assistance, contact Twin Creeks Districts Livestock and Farm Management agent [Alyssa Rippe-May](#)



Meet the Future

Written By: Jenilee Godsey
Youth Agriculture Agent



The Benefits of Youth Livestock Exhibition

As the days heat up and our sweat glands get a good workout, it reminds us that summer is in full swing! With these long, hot, summer days come county fairs scattered all across the country and youth exhibits being fine-tuned for their big debut.

County fair youth exhibits can range from decorated cakes and cookies to harvested garden displays, from rocketry displays to woodworking, from rabbits to poultry and from pigs to goats. The limits are few and far between when it comes to exhibit options for today's 4-H and FFA youth who participate in local county fairs!

As someone who grew up raising and showing pigs and cattle, for the sake of this article I would like to focus on the 'sight unseen' of showing livestock and the qualities that lie behind the show ring.

Let's start at the beginning in case you are asking yourself "Why would someone want to chase kids and livestock around a hot fairground?"

Youth who choose to participate in livestock project areas are tasked with the responsibility of purchasing or raising an animal (or multiple), raising and caring for the project, and training the animal to be "show ready". As their show date or county fair approaches, they will exhibit their animal in the ring to a judge who will rank animals within a specie against each other based on physical conformation traits such as muscle, fat cover, body structure and many others. You may also witness "showmanship" classes which ranks showman within each specie against youth in the same age category based on their ability to show that animal in the best way possible.

Based on the paragraph about, it should become obvious that there are a number of life skills built into livestock projects. I could use this column space to list out skills such as work ethic, responsibility, time management and many more... or I could expand on the obvious and take that a step further to show you exactly how valuable livestock projects can be to youth who participate in them.

The following information are results from a study conducted at Texas Tech University that focused on validating the perceived benefits of youth livestock exhibition. Their study utilized a review of historical documents, in depth interviewing, and observations to analyze real life situations. Take a look at their results, in order of strongest appearance!

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1. Social Relationships: Study participants emphasized the importance of developing friends as well as social contacts. These relationships created through livestock exhibition satisfy our humanly need for companionship with those with similar interests, but also aid in the satisfaction of career goals.
2. Character: The subcategories associated with this theme are as follows: responsibility, confidence, sportsmanship, and how to deal with loss. Participants felt that character developed through exhibiting livestock promoted growth from a child to a successful adult.
3. Family Togetherness and Family Values: It was apparent that participants in this study put emphasis on the importance of the family participating in activities together.
4. Exposure to Competition: The fourth theme in the study dealt with the competition that competitive livestock showing introduces to exhibitors. Two meanings developed from the theme of competition that stems from the phenomenon of participation in competitive events. One category resulted from the need to satisfy the desire of participation in competitive events. The other related to the exposure of winning and losing.
5. Knowledge and Care of Animals: The last theme that emerged from the study was the knowledge and care of animals that exhibitors gain from showing livestock. Participants felt this knowledge was important, especially if it relates to a future career.

As you can see, youth who participate in livestock project areas learn far more than how to carry a feed bucket! They are learning life skill that will shape their education and prepare them for success in the adult career force.

If you have any questions for these youth, I'm certain that many of them would be happy to answer – so, don't hesitate to approach them at your local county fair to learn more about their projects or their future plans!



Some information in this article has been adapted from an article written by University of Nebraska Extension Educator, Steve Niemeyer.

Jenilee Godsey is a Youth Agriculture Agent for the Twin Creeks Extension District which covers Decatur, Graham, Norton and Sheridan counties. Email her at jenileem@ksu.edu or reach her by telephone at the Graham County Office, (785) 421-3411.



Eating & Aging Well

Submitted By: Karen Shepard
Family Consumer Science Agent



Grocery bill high? K-State expert shares tips on cutting costs

If you've gasped at the grocery store checkout line recently, you're probably not alone.

Inflation has hit American's dinner table and it's been painfully obvious on food eaten at home where consumers paid 11.9% more in May 2022 compared to May 2021, according to the [U.S. Bureau of Labor Statistics](#).

"It's amazing," said Lisa Martin, an extension agent in K-State Research and Extension's Shawnee County office. "Every time I go to the store, something I normally buy has increased 50 cents or even a dollar."

Martin notes that supply chain shortages, bottlenecks in shipping and transportation, and a tight labor pool have all contributed to rising food prices. "It's a time when all of us really need to think about how much we are spending on food and ways we can cut back," she said.

Some recommendations are not new, she said

- Prepare a food budget; decide how much you are willing to spend.
- Make a grocery list before you go to the store.
- Plan menus, preferably for an entire week, but even a few days is recommended.
- Shop when you are well-rested; you make better decisions when you are rested.
- Eat before you go to cut back on impulse buying.

Then, Martin said, stick to the plan.

"Once you've gotten the items on your list, get to the checkout stand," she said. "Statistics have shown - and it may be higher now - that for every minute you spend looking around the store, and before you get to the checkout register, you're going to spend another \$2 in food.

"If you're looking around for five minutes, that's another \$10 on your grocery bill."



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Saving on food costs also includes eating everything you buy, Martin said. Food waste is a major contributor to lost money. Martin suggests making the grocery store your last stop before going home, and storing perishable foods in the refrigerator or freezer as soon as possible.

“One of the things I do with foods that I need to use up quickly is I store them toward the front of the refrigerator,” she said. “Or if there is something that can be stored at room temperature, keep them on the counter so that you can easily see them when you walk into the kitchen.”

To encourage good nutrition, look for fresh produce – which is more abundant during the summer – and buy whole grains, brown rice, and low sodium foods. Farmers Markets can be a good source for low-cost, nutritious food.



“People still think fresh is the best,” Martin said. “If it’s just been picked, harvested, and delivered to the grocery store, it’s going to be full of nutrition. But fruit and vegetables also are processed soon after harvesting, so canned and frozen foods are a good option as well.”

Other ways to battle rising food costs, according to Martin, include:

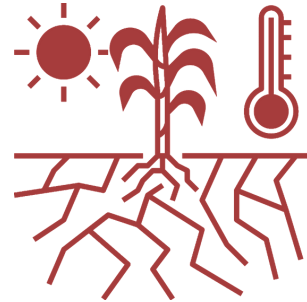


- Shop when the store is not crowded.
- Compare prices between stores; changing grocers may save you money.
- Consider food co-ops and warehouse stores.
- Sign up for loyalty programs, if offered.
- Use coupons, but only on products you already use.
- Shop sale items as much as possible.
- Substitute ingredients when you find them on sale.
- Look up and look down: Eye-level products are usually more expensive.
- Be wary of displays on the end caps; those items may not be on sale.
- Read the use-by dates on foods to make sure they are fresh.
- Keep a running total as you shop.



Views With Van

Written By: Keith VanSike
Agronomy, Natural Resources,
& Entomology Agent



Heat and Drought Stress on Wheat

Drought and heat stresses on wheat, alone or in combination, can cause physiological damage that results in light test weights or small seed size. The extent of the damage depends on the severity of the stress and the stage of reproductive development.

When temperatures are very warm for more than three consecutive days during grain fill and soils are very dry, plants will senesce early and speed through this critical stage. High temperatures during the grain filling stage will slow or stop formation of starch in the kernel, consequently increasing the percentage of protein in the grain. Heat- and/or drought-stressed kernels are usually small and shriveled, resulting in lower kernel weight, lower test weight, and lower yield. The kernels simply will not fill properly.

Will the wheat grown under stressful conditions be suitable to use for seed this fall?

There's no simple answer to this question. First of all, before considering whether to use your own wheat for seed this fall, make sure it's allowable. While most wheat varieties are protected by Plant Variety Protection which allows for keeping seed to plant on your own acreage, additional licensing and/or marketing restrictions may apply to some varieties referred to as Certified Seed Only (CSO), which removes this allowance. Consult your seed dealer for varieties that are not allowed to be planted back.

Wheat with a lighter test weight may emerge just fine -- just look at all the volunteer wheat that emerges from small or shriveled seed that is blown out the back of the combine. But below a test weight of 55-56 lbs/bushel, the plants that emerge are more likely to have problems overcoming any adverse conditions in the fall and surviving the winter. Producers planting light-test-weight seed will also have to be extra cautious not to plant the seed too deeply, since seed vigor will likely be below average.

How much can test weight and kernel size of the seed affect yields?

From 1980-1983 a study was conducted at the Colby Experiment Station (as it was called then) by K-State agronomist Larry Robertson. He tested the effect of seed size and test weight on yield using foundation seed of three varieties, two seeding depths, and two locations. The results showed that seed size and test weight both had an effect on yield of the subsequent crop. Yield differences of 10- 15% were measured, with the lowest yields resulting from deep seeding depths. Small and/or light seed always yielded less than the control, heavy or large seed, but more so at deeper seeding depths.

The effect of seed test weight on emergence, vigor, and yield potential will vary from year to year.

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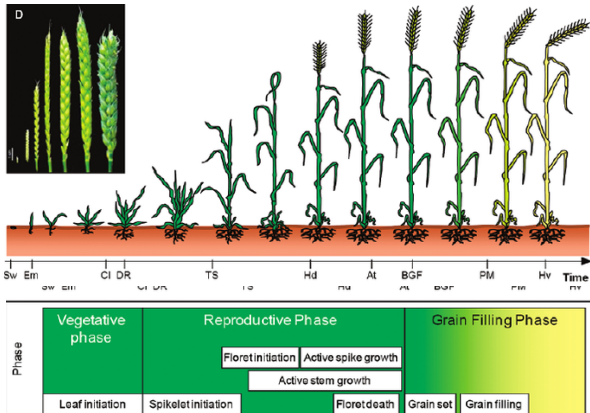
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When there is stress on the seedlings or young plants in the fall from freeze or drought or some other factor, the effect of higher test weight seed is often greatest.

More recently, K-State Extension wheat specialist Romulo Lollato and his group conducted tests on 27 environments across three years using the variety SY Monument. Results suggested a consistent yield increase of about 2 bu/acre when the seed was passed through an air screen as compared to no cleaning at all; and another 2 bu/acre when the air-screened seed went through the gravity table. This experiment also suggested a consistent yield advantage of about 1.5 bu/acre by using a seed treatment.



Drought stress is probably the main cause overall of light test weights. Wheat under drought stress reacts in several ways. The plants will normally allocate most of the available nutrients and water to the first kernel or two in the mesh. These kernels may be small, but often have high protein and adequate test weight. The remaining kernels will be denied the necessary nutrients and water, however. If these flowers or kernels were not aborted, then they will be shriveled and have low test weight.



Heat stress during grain fill can cause the plants to shut down deposition of starch in the grain, which can result in low test weights in most kernels on the head. It may even result in premature death of the plant, before the grain has filled. Heat stress would have to occur for several days in a row during early- to mid-grain fill to shut down the plants and reduce test weights significantly. If the period of extreme heat lasts for only 1-3 days, it's unlikely to permanently reduce test weight, although it can reduce kernel length if it happens during grain elongation. Premature death due to

heat stress is one of the most common reasons for light test weights in late-maturing varieties in Kansas.

Some varieties naturally have a smaller seed size tendency than others. The range in seed sizes of modern hard red winter wheat varieties currently grown in Kansas can go from as low as 8,000 seeds per pound on the large side, to as high as 22,000 seeds per pound on the small side. Most varieties are in the range of 11,000 to 18,000 seeds per pound. Smaller-seeded varieties can have very high yield potential, so small seed size has no effect on performance in that situation.

However, if most or all wheat kernels are smaller than normal because of drought stress, heat stress, or freeze damage, then the small seed may have physiological damage. In that case, the small size wheat would likely have reduced seedling vigor and yield potential, and less ability to compete with weed pressure.

Where wheat was stressed by a combination of drought and heat stress during its reproductive and grain filling stages, the kernels may have suffered physiological damage.

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As a result, it could have light test weights and/or small seed size. Improved grain filling conditions during the last full week of May could help maintain kernel weight and size.

If the stressed wheat is saved for seed, in cases where this is allowable, producers should consider having it tested by a professional seed lab for germination (both standard and AA), conditioned to get the highest test weight and largest seed size possible. If small seed from stressed wheat is used, it would be best to increase the seed count per acre even if germination tests are good.

Bagworms

Bagworms are out in full force on most shrubs and trees, especially Cedar Trees and bushes of all types. The bagworm nests are 1-2" long cylindrical like Christmas ornaments hanging on limbs. The larvae are themselves difficult to see at this time.

The larvae start to build their own bags with needle material they eat. Then they hide themselves in the small waffle cone shaped nests.

Bagworms are commonly found in shrubs, cedar, pine and spruce trees to name a few. Many people will begin to see damage during late-July to early-August, but controlling bagworms that are that size can be difficult. "They are much easier to kill while small. Now would be a good time to use control measures (because) earlier sprays may miss those who emerge from the bag later than normal.



Here is a list of the most common insecticides and brand names used for bagworms:



- Acephate (Orthene).
- Permethrin (38 Plus Turf, Termite & Ornamental Insect Spray; Eight Vegetable, Fruit & Flower Concentrate; Lawn, Garden, Pet & Livestock Insect Spray).
- Bifenthrin (Bug Blaster II, Bug-B-Gon Max Lawn and Garden Insect Killer).
- Lambda-Cyhalothrin (Spectracide Triazicide, Bonide Caterpillar Killer).
- Spinosad - an organic control (Conserve; Natural Guard Spinosad; and Captain Jack's Dead Bug Brew).

Thorough spray coverage of foliage is essential for good control with any of these products. Product names used in this article are for identification purposes only, and not intended to be an endorsement or criticism of any specific product

Ward Upham, Kansas State University horticulture expert and his colleagues in K-State's Department of Horticulture and Natural Resources produce a weekly Horticulture Newsletter with tips for maintaining home landscapes. The newsletter is available to view online or can be delivered by email each week.

Interested persons can also send their garden- and yard-related questions to Upham at wupham@ksu.edu, or contact your local K-State Research and Extension office.



SUMMER

Youth Day Camp Series

Decatur, Graham, Norton, Sheridan Counties

SPEND YOUR SUMMER WITH US!



Explore This! Kindergarten - 3rd

Hands on exploration of plants, bugs, food, animals and more!



Discover This! 4th - 6th Grade

Detective discovery of food DNA, fiber properties, welding basics, plant investigation and more!



I. Got. This! 7th - 12th Grade

Welcome to the real world! Hands on, speakers and tours about laundry, vehicle maintenance, survival cooking, money, careers and more!



8 SESSIONS: JUNE 6 - AUG. 5
1 DAY A WEEK - 2 1/2 HOUR SESSIONS
OPEN TO ALL YOUTH!
NO CHARGE!

Limited to the First 25 Registrations!
 Sign Up at: <https://tinyurl.com/2p98dxnj>
 Contact Patsy Maddy: pmaddy@ksu.edu for Location & Specific Time Details Coming Soon!

K-State Research and Extension is committed to providing equal opportunity for participation in all programs, services and activities. Accommodations for persons with disabilities may be requested by contacting the event contact Patsy Maddy two weeks prior to the start of the event (May 31, 2022 at 785-877-5755 and pmaddy@ksu.edu). Requests received after this date will be honored when it is feasible to do so. Kansas State University Agricultural Experiment Station and Cooperative Extension Service K-State Research and Extension is an equal opportunity provider and employer.



Chasing Clovers

Written By: Patsy Maddy
4-H Youth Development Agent



Explore This! Discover This! I. Got. This!

Twin Creeks Extension District has been providing weekly Summer Day Camp sessions in Decatur, Graham, Norton and Sheridan counties with currently over 170 youth participating. Registration will remain open throughout the summer.

Campers have had the opportunity to experience everything from plant science, food science, clothing textiles, visual arts and animal science including incubating eggs to hatch during county fairs. Additional lessons planned for this day camp series include STEM (Science, Technology, Engineering and Math) activities that will incorporate building a solar ladybug or cockroach and more scientific engineering activities to challenge campers in building functional projects.



A community service project will be incorporated into one of the sessions to encourage youth to give back and share their talents. A recap of all sessions will feature a quiz bowl where youth buzz in with the answer to educational facts learned throughout the summer.

One highlight of the summer is the hydroponics unit where campers learned that hydroponics is the process of growing plants in sand, gravel, or liquid, with added nutrients, but without soil. This method offers an alternative way to grow food in a smaller space.

During day camp sessions, campers have learned the meaning of the United States flag as well as the 4-H pledge and its meaning. Campers are expanding their public speaking skill

during roll call by drawing from the 'Mystery Bag' and then stepping to the front of the room to announce their response using complete sentences.

Summer interns have also incorporated social and emotional learning activities, including team building, to encourage healthy living and relationship building.

The visual arts session found the creative side of campers where each participant completed one square of a picture. The squares will be assembled back into the complete picture and put on display at each county fair. Stop by to check out the results of this project!



Twin Creeks Extension District is very fortunate to have been selected as one of the units receiving an intern for each county as well as additional funding to purchase educational supplies

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to provide summer enrichment program opportunities for youth in our communities to address learning loss after COVID-19. Our summer interns include Email Taylor from Beaver City serving Decatur County, Hannah Bailey from Norton serving Graham County, Isabelle Schemper from Prairie View serving Norton, and Shelby Trussel from Hoxie serving Sheridan County, who are vetted and employed by K-State Research and Extension in partnership with Twin Creeks Extension District.

We are still accepting registrations at the following link:

https://kstate.qualtrics.com/jfe/form/SV_ex790k5x3MY0u6W

. Specific dates are listed in the registration link to choose from for each county. Decatur and Graham county, Kindergarten through 3rd Grade meets Tuesday mornings from 9:30 a.m. to Noon. Decatur and Graham county, 4th through 6th Grade meets Tuesday afternoons from 2:30 p.m. to 5:00 p.m. Norton and Sheridan county, Kindergarten through 3rd Grade meets Wednesday mornings from 9:30 a.m. to Noon. Norton and Sheridan county, 4th through 6th Grade meets Wednesday afternoon from 2:30 p.m. to 5:00 p.m. Graham and Decatur, 7th through 12th Grade meets on designated Thursday mornings from 9:30 a.m. to Noon.



We are super excited about the opportunity to offer these fun, hands-on experiences for youth in our communities.

Please direct any questions about this program to Patsy Maddy, 4-H Youth Development Agent, Twin Creeks Extension District at 785-877-5755, 785-877-7262 or pmaddy@ksu.edu.

Sponsored By Decatur County Fair Board
and Tripple Creek Riders

DECATUR COUNTY OPEN HORSE SHOW

- SHOWMANSHIP
- ENGLISH PLEASURE
- ENGLISH EQUITATION
- LEAD LINE
- WALK TROT
- PONY PLEASURE
- BAREBACK HORSEMANSHIP
- WESTERN PLEASURE
- HORESMANSHIP
- WORKING RANCH
- REINING
- TRAIL
- RANCH HORSE TRAIL
- FLAG RACE
- BARREL RACING
- POLE BENDING
- \$4 FEE/CLASS

Saturday, July 9th, 2022
Decatur County Fair Grounds
Registration at 8:00 a.m.
Show Begins at 9:30 a.m.

PRIZES WILL BE
AWARDED!

Scan QR code to
Register by July 8th

Kansas State University is committed to making its services, activities, and programs accessible to all participants. If you have special requirements due to a physical, vision, or hearing disability, contact the Twin Creeks Extension District at 785-475-8121. Kansas State University Agricultural Experiment Station and Cooperative Extension Service K-State Research and Extension is an equal opportunity provider and employer.



Clover Corner



Statewide Events & Deadlines

- Aug 10:** State Fair Entries Due
Aug 20-21: Livestock Sweepstakes, Manhattan

County Events & Deadlines

- July 5:** YQCA (Youth for the Quality Care of Animals) - Norton. KS. 1:00p.m. - 3:00p.m.
July 5: All American Day Camp - Norton KS.
July 5-Aug 6: KDOE Summer Day Camp Programs
July 7: North West District Horse Show - Norton KS.
July 11: Poultry Pullorum Testing - Norton, KS
July 18-23: Sheridan County Fair - Hoxie, KS.
July 25-30: Norton County Fair - Norton, KS.
July 29-Aug 3: Graham County Fair - Hill City, KS.
Aug 2-6: Decatur County Fair - Oberlin, KS.

Note: Youth events are open to ALL youth (with Extension agent approval for youth not currently enrolled in the 4-H program). If you have a youth that is interested in an event please contact Patsy Maddy, Twin Creeks Extension District 4-H Youth Development Agent pmaddy@ksu.edu.

Go to the Twin Creeks District website at <https://tinyurl.com/qukdd97> for a complete listing of all activities and events at the local, district, area and state levels.





INFORMATION ON UPCOMING PROGRAMS

Family & Consumer Science

- Food Preservation Training- Spring 2022

Ag & Natural Resources

Youth Agriculture

- Decatur County Open Horse Show - Decatur County Fair Grounds, July 9th, 2022

To stay current on upcoming program dates, registration info, etc. [follow us on Facebook](#) and/or check our [Twin Creeks District Website!](#)



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K-STATE RESEARCH AND EXTENSION
TWIN CREEKS DISTRICT



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