

# K News from KSU Animal Sciences

- ✦ The **YQCA program** is not renewing its contract with the current provider and will be transitioning to a new platform on March 23, 2022. In order to prepare for the transition, all instructors and youth need to download and print their current certificate by March 22. Otherwise, they will be lost. Users will lose access to their current account on March 22. This also means the program will no longer be connected directly to 4HOnline. More details will be released from YQCA as the launch of the new site approaches: <http://yqcaprogram.org/>.
- ✦ **Implementing Your Company's HACCP Plan** will be held March 30 – April 1, 2022, in Columbia, Missouri. This workshop uses curriculum recognized by the International HACCP Alliance for meat and poultry processors. The registration fee is \$450 per person and is available on-line at <http://bit.ly/HACCPCourse>. For more information, contact Dr. Liz Boyle (lboyle@ksu.edu; 785-532-1247).
- ✦ **Livestock County Fair Management Clinic** - The 2022 Livestock County Fair Management Clinic will be hosted via Zoom April 5-6. This program is for agents, fair board members, and livestock volunteers to collaborate and discuss topics related to livestock projects at county fairs. This year's session will include a large group session to kick off the evening, followed by a variety of breakout sessions. Registration is due by March 31. The Zoom link will be sent the week prior to the event to those who register. For more information, contact Lexie Hayes (adhayes@ksu.edu; 785-532-1264) or Joel DeRouchey ([jderouch@ksu.edu](mailto:jderouch@ksu.edu); 785-532-2280).
- ✦ The **2022 K-State Sheep Day** will be held on Saturday, April 30, at Shannon Creek Lamb in Olsburg, KS. This year's sheep day will feature interactive "stops" throughout the sheep operation. Groups will hear about facility considerations, from barns to fencing, as well as technology that can be incorporated into your operation. Participants will also spend time on pasture, observing and discussing the pros and cons of co-grazing. Watch the @ksusheepandgoatextension Facebook page for more information, registration, and program details. For more information, contact Alison Crane ([arcrane@ksu.edu](mailto:arcrane@ksu.edu); 785-532-1672).
- ✦ Plan to attend the **Midwest Meat Processing Workshop** on Friday, April 29, 2022, in Weber Hall room 111 on the K-State campus. Join us at the workshop and see, hear, taste and ask questions as state award winners share their expertise and demonstrate the manufacture and techniques used to make award winning products. Registration is \$100 per plant and includes lunch for two people and a parking permit for one vehicle. For more information, contact Liz Boyle at [lboyle@ksu.edu](mailto:lboyle@ksu.edu) or 785-532-1247.

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March 2022 issue



# UPCOMING EVENTS...

- ✎ The **2022 State Livestock Nomination** information has been released. The process will be transitioning to an online system this year. Families will purchase DNA envelopes in advance, submit their animal and exhibitor information online, then mail their completed and signed DNA samples by the deadline. Extension Agents and FFA Advisors will approve nominations online. Information may be found under the “Nomination Information” tab on the youth livestock website: <http://bit.ly/ksunominations>. Market Beef nominations will be due May 1, with Small Animal due by June 15.
- ✎ Applications are now available for the **2022 K-State Animal Science Leadership Academy**. The goal of this academy will be to further develop young leaders within the livestock industry and prepare them for a successful future in this field. In 2022, the program will offer two separate sessions to meet increased demand and serve more young people — June 22-25 and June 29-July 2. Each four-day session will focus on increasing knowledge of Kansas’ diverse livestock industry, as well as building participants’ leadership skills. Twenty high school students will be selected to participate in each group based upon educational, community, and agricultural involvement, as reflected through an application process.  
Applications must be postmarked by April 15, 2022. More information and the application form are available at: <https://www.asi.k-state.edu/research-and-extension/youth-programs/k-state-animal-science-leadership-academy/> For questions about the academy, please contact Sharon Breiner, Director, at [sbreiner@ksu.edu](mailto:sbreiner@ksu.edu).
- ✎ **Cattlemen’s Day Videos** have been posted to the Cattlemen’s Day website at [www.asi.ksu.edu/cattlemensday](http://www.asi.ksu.edu/cattlemensday). Also posted at this location are the 2022 Cattlemen’s Day Report of Progress and the Student Poster session.
- ✎ Watch the **KSU ASI Headlines** for February 2022 and find out the latest happenings in the department. Follow the link at <https://youtu.be/3NRDij9iu08>. For questions about the department, contact Dr. Mike Day, ASI Department Head, at 785-532-1259; [mlday@ksu.edu](mailto:mlday@ksu.edu).

## CALENDAR OF UPCOMING EVENTS

Date	Event	Location
March 19, 2022	Junior Sheep Producer Day	Manhattan
March 29, 2022	KSRE-KSU Sheep and Goat Management Series	Erie, KS
March 29, 2022	BQA Training Session	Hiawatha, KS
March 30, 2022	KSRE-KSU Sheep and Goat Management Series	Minneapolis, KS
March 30 – April 1, 2022	HACCP Workshop	Columbia, MO
April 5-6, 2022	Livestock County Fair Management Clinic (virtual format)	
April 7, 2022	KSRE-KSU Sheep and Goat Management Series	Alma, KS
April 27, 2022	KSRE-KSU Sheep and Goat Management Series	Johnson, KS
April 29, 2022	Midwest Meat Processors Workshop	Manhattan
April 30, 2022	K-State Sheep Day	Olsburg, KS
June 22-25, 2022	K-State Animal Science Leadership Academy	Manhattan
June 29-July 2, 2022	K-State Animal Science Leadership Academy	Manhattan

# WHAT'S NEW...

## **Management Minute** – Justin Waggoner, Ph.D., Beef Systems Specialist

### *“Continuing Education”*

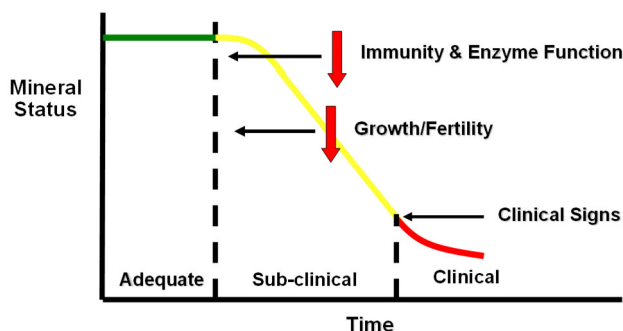
As a manager or small business owner, “What’s your policy on continuing education for your employees...Do you have one?” If an employee comes to you and asks for time away from the operation or business to attend a three-hour seminar on a topic that is directly relevant to what he or she does, would you support it? Would you pay for the seminar? Would you compensate the employee for the time away from the job? If you do not have an existing policy on continuing education, it may be something to consider. Now that millennials make up the workforce, the data clearly indicates that it is going to take more than just a steady paycheck or salary to keep them engaged. Allowing employees to attend seminars and expand their knowledge often benefits the organization. Individuals who have the opportunity for professional development reportedly experience greater job satisfaction, and are more engaged and committed to the business than those who do not. Additionally, allowing your people to pursue continuing education opportunities demonstrates that the business is willing to invest in its people. If you don’t have a policy in place, give it some thought.

For more information, contact Justin Waggoner at [jwaggon@ksu.edu](mailto:jwaggon@ksu.edu).

## **Feedlot Facts** – Justin Waggoner, Ph.D., Beef Systems Specialist

### *“The Basics of Mineral Nutrition”*

Most beef cattle producers recognize that mineral nutrition is important. However, a mineral program is only one component of an operation’s nutrition and management plan. An exceptional mineral program will not compensate for deficiencies in energy, protein, or management. Additionally, the classical signs associated with clinical deficiency of a particular mineral (wasting, hair loss, discoloration of hair coat, diarrhea, bone abnormalities, etc.) are not often or are rarely observed in production settings. The production and economic losses attributed to mineral nutrition in many situations are the result of sub-clinical deficiencies, toxicities and antagonisms between minerals which are often less obvious (reduced immune function, vaccine response, and sub-optimal fertility). The figure below, adapted from Wikse (1992), illustrates the effect of trace mineral deficiency on health and performance and the margin between adequate mineral status and clinical deficiency.



Many producers erroneously assume that the science of mineral nutrition is relatively complete. However, mineral nutrition is complicated, and our knowledge of mineral nutrition is actually relatively incomplete. There are 17 minerals required in the diets of beef cattle. However, no requirements have been established for several minerals that are considered essential (Chlorine, Chromium, Molybdenum, and Nickel). Minerals may be broken down into two categories. 1. The macrominerals whose requirements are expressed as a percent of the total diet (calcium, phosphorous, magnesium, potassium, sodium, chlorine, and sulfur). 2. The microminerals or trace minerals (required in trace amounts) whose requirements are expressed as parts per million (ppm) or milligrams per kilogram of dry matter consumed (chromium, cobalt, copper, iodine, iron, manganese, molybdenum, nickel, selenium, and zinc).

Mineral status of an animal is a function of the total diet (both water and feed) and stored mineral reserves within the body. Water may be a substantial source of mineral; however, the variation in water consumption makes estimating the contribution of mineral from water sources difficult. Mineral content of forages is influenced by several factors including plant species, soil, maturity, and growing conditions. These factors, and others not mentioned, make estimating the dietary mineral content of grazing cattle challenging. Most commercial mineral supplements are formulated to meet or exceed the requirements for a given stage of production. This ensures that deficiencies are unlikely, but providing supra-optimal levels of minerals may be unnecessary unless specific production problems exist. A mineral program does not have to be complex or expensive to be successful. Minerals are an important component of beef cattle nutrition that should not be over-looked as sub-clinical deficiencies of minerals likely contribute to more production and economic losses than we realize.

For more information, contact Justin Waggoner at [jwaggon@ksu.edu](mailto:jwaggon@ksu.edu).

# WHAT'S NEW...

➤ **Protect your Flocks from Avian Influenza** - A potentially harmful virus called avian influenza has been detected in many states this spring, including Kansas and surrounding states. The virus has been confirmed in wild birds in Kansas, and at least one small poultry flock. The virus has been isolated in waterfowl, wild birds, small farms, and commercial operations. Data indicates that the virus is probably moving with the aid of the spring migration of waterfowl as the weather begins to warm. To protect your birds, now is the time to keep as much distance as possible from migrating ducks and geese.

This current outbreak is in a form that is more concerning than many. It is being referred to as highly pathogenic avian influenza (HPAI). This term means it is highly contagious and can infect chickens, turkeys, gamebirds, and other birds and can cause severe illness and/or sudden death.

As widespread as it now is across the nation, poultry owners should assume the virus is likely present all around and begin an immediate biosecurity program. Backyard flocks are susceptible to this virus as well. There is no licensed and approved vaccine for use against avian influenzas in poultry in the US. The best way to protect your birds is to practice good biosecurity.

Monitor your birds for symptoms including sneezing or wheezing, coughing, nasal discharge, facial swellings, and other signs of respiratory struggle, like gasping for air. Look for a lack of energy, movement, and reduced appetite. Infected layers may suddenly lay fewer eggs that are misshapen. The birds may appear to have incoordination and diarrhea. Be on the lookout for sudden death in birds even if they aren't showing other symptoms.

If you are able, while birds are migrating through, keep your flock indoors or undercover. The biggest risk to a small farm is waterfowl and wild birds that stop by to steal feed or water and mix with your birds while feeding. You must keep waterfowl far from your birds. The virus can also spread from passing waterfowl to local birds that do not migrate.

If you have a pond that is attracting the migrating birds, then stay away, and keep your pets away as well. Expect the pressure to seek water from your property to be stronger in the Midwest and West this year as moisture levels have been low.

Eliminate roosting birds like starlings and pigeons if you have them. Now is the time to stop attracting wild birds with feeders. There is data that suggests that the well-intended feeding of wild birds could lead to a concentration of birds that allows rapid spread of diseases during an outbreak. Wild birds are starting to build spring nests, and these should be removed from coops and barns. Wear gloves and a mask to reduce your exposure to mites and other diseases these nests may harbor. Never place a bird house near your poultry. Light anti-bird netting can be used to keep the birds from building nests, and nets over pens can keep wild birds from entering your coop.

Many small flocks leave feeders full of grain all day and night in the coop. This is never a good idea because many rodents and small mammals visit at night to steal a meal and spread droppings that may contain diseases. A good way to feed birds is to determine how much they will clean up during the day, and feed only this amount every morning. By roosting time, the feeders should be empty. It is even better to pull up the feeder and store it in a rodent proof tub overnight.

Good biosecurity includes other important prevention strategies. You can make an emergency footbath by using a half cup of bleach in a gallon of water, then placing this in a shallow container to step in when entering your bird coop. Don't visit other flocks. Auctions, shows and swaps will be at risk during this time. Purchase chicks from only a tested source. Though most mail order hatcheries are monitored, there is still a small risk of infection. Stop purchase of hatching eggs and chicks from small internet sellers of stock that are not monitored. Some offers will say that their birds are tested, but this likely refers to *Salmonella pullorum* because most small flocks are not required to be tested for avian influenzas like commercial poultry.

Gamebird operations should be alert as well. Netted flight pens are subject to pressure from wild birds and waterfowl the same as small poultry farms. Commercial gamebird farms should not be located near water sources where waterfowl stop. Any method of keeping the waterfowl away from the flight pens should be implemented immediately. If an ATV is used on the farm, it should be decontaminated by washing and applying disinfectant before getting it close to the pens. It is still early spring, so most pheasant operations have not released started chicks to the flight pens. If you are able, try to hold the chicks back in the brooder house as long as possible to give yourself more time for the migrating birds to clear.

Now is the time to be neighbor friendly and stay away from other poultry farms. Commercial poultry farms are highly invested in poultry production so being a good neighbor by staying off their premises during this time is helpful. Many producers enjoy giving educational tours of their farm, but all tours should stop until this threat subsides. Most commercial farms never welcome visitors because this is part of their biosecurity programs.

Even the best prevention plan will not prevent all cases of avian influenza. The Kansas Department of Agriculture is a good source of current testing results and contacts for potential problems. If your birds have symptoms of HPAI, contact your veterinarian or call KDA toll-free at 833-765-2006, or contact them via email at [KDA.HPAI@ks.gov](mailto:KDA.HPAI@ks.gov). For more information, contact Scott Beyer (785-532-1201; [sbeyer@ksu.edu](mailto:sbeyer@ksu.edu)).



# WHAT'S NEW...

- ↵ **Effects of Late-Summer Prescribed Fire on Botanical Composition, Soil Cover, and Forage Production in Caucasian Bluestem-Infested Rangeland in the Kansas Smoky Hills: Year 3 of 4** - The objective was to document the effects of late-summer prescribed fire on soil cover, botanical composition, and forage production in the Kansas Smoky Hills and associated effects on dense Caucasian bluestem (*Bothriochloa bladhii*) stands therein. The study took place on a private ranch in Ellsworth County, in the Kansas Smoky Hills. Eighteen one-acre plots were assigned randomly to one of two prescribed-fire treatments: no burn (control) and burn (burned August 14, 2019). Soil cover, plant composition, and forage production were evaluated annually. These data represent plant community effects prior to treatment and one and two years subsequent to treatment.
- The Bottom Line:** These data were interpreted to indicate that one application of late-summer prescribed fire was associated with decreased presence of Caucasian bluestem and intermittent increases in native grass and forb richness, a component of biological diversity. Some declines in forage production were noted. More information is available on this experiment and others in the KSU Cattlemen's Day report at [www.KSUbeef.org](http://www.KSUbeef.org). For more information, contact KC Olson (785-532-1254; [kcolson@ksu.edu](mailto:kcolson@ksu.edu)) or Dale Blasi (785-532-5427; [dblasi@ksu.edu](mailto:dblasi@ksu.edu))
- ↵ **Effects of Prescribed Fire Timing on Stocker Cattle Performance and Native Plant Composition: Year 3 of 6** - The objective of this experiment was to document the effects of prescribed-fire timing on stocker cattle performance, soil cover, and plant species composition over a six-year period. Yearling stocker cattle were assigned to one of three prescribed-burn treatments: spring (April 9 ± 5.1 days), summer (August 23 ± 4.9 days), or fall (September 29 ± 8.7 days). Calves were grazed from May to August for 90 days. Individual body weights (BW) were recorded at the beginning and end of the grazing season to determine total BW gains and average daily gains. Native plant composition and soil cover were evaluated annually using a modified step-point method.
- The Bottom Line:** We interpreted these data to suggest that summer-season prescribed-fire could be used to manage sericea lespedeza (*Lespedeza cuneata*) infestations without reducing grazing performance of yearling cattle or damaging the vigor of native warm-season plant populations. More information is available on this experiment and others in the KSU Cattlemen's Day report at [www.KSUbeef.org](http://www.KSUbeef.org). For more information, contact KC Olson (785-532-1254; [kcolson@ksu.edu](mailto:kcolson@ksu.edu)) or Dale Blasi (785-532-5427; [dblasi@ksu.edu](mailto:dblasi@ksu.edu))
- ↵ **Evaluation of Differing Genetic Potentials on Beef Cattle Resource Use in the Great Plains** - The objective of this study was to examine the environmental impact and efficiencies of beef cattle with differing genetic potentials in the Great Plains. A 100-head cow-calf herd was simulated for 74 different land regions and six combinations of genetic potential within regions: large, moderate, or small mature size and high (24.2 lb/day) or low (17.6 lb/day) milk production. The simulation determined the average amount of feed required to maintain the herd. Land, water, and methane production were estimated for each combination of land use area and genetic potential. Weaning weight was estimated for each genetic potential to find resource use efficiency.
- The Bottom Line:** Animals with greater energy requirements have larger environmental footprints. However, in environments where nutritional availability is not restricted, small, high milking cattle likely have the smallest environmental footprint per pound of weaned calf. More information is available on this experiment and others in the KSU Cattlemen's Day report at [www.KSUbeef.org](http://www.KSUbeef.org). For more information, contact Megan Rolf (785-532-1450; [megrolf@ksu.edu](mailto:megrolf@ksu.edu)) or Dale Blasi (785-532-5427; [dblasi@ksu.edu](mailto:dblasi@ksu.edu))
- ↵ **The Effect of Live Yeast and Yeast Extracts on Growth Performance of Nursery Pigs Weaned from Sows Fed Diets with or without Yeast Additives** - A total of 340 weaned pigs were used in a 45-d study to evaluate previous sow treatment (control vs. yeast additives) and nursery diets with or without added yeast-based pre- and probiotics on growth performance. At placement in the nursery, pigs were housed by pen based on previous sow treatment and randomly assigned to 1 of 2 dietary treatments with 5 pigs per pen and 17 replications per treatment. Treatments were arranged in a 2 × 2 factorial with main effects of sow treatment (control vs. yeast-based pre- and probiotic diet; 0.10% ActiSaf Sc 47 HR+ and 0.025% SafMannan) and nursery treatment (control vs. yeast-based pre- and probiotic diet; 0.10% ActiSaf Sc 47 HR+, 0.05% SafMannan, and 0.05% NucleoSaf from d 0 to 7, then concentrations were lowered by 50% from d 7 to 24). All pigs were fed a common diet from d 24 to 45 post-weaning. Progeny from sows fed diets with yeast additives had increased ADG, ADFI, and BW from d 0 to 24 and d 0 to 45. However, pigs that were fed yeast additives in the nursery had an overall (d 0 to 45) tendency for reduced ADG and lighter ending BW. In conclusion, offspring from sows fed a live yeast and yeast additives had increased ADG, ADFI, and BW. However, feeding live yeast and yeast additives only in the nursery tended to reduce ADG and ending BW. More information is available on this experiment and others in the KSU Swine Day report at [www.KSUswine.org](http://www.KSUswine.org). (This study conducted by Jenna A. Chance, Jordan T. Gebhardt, Joel M. DeRouchey, Mike D. Tokach, Jason C. Woodworth, Robert D. Goodband, and Joseph A. Loughmiller.)

# WHAT'S NEW...

- ↗ **Effects of Added Calcium Carbonate on Weanling Pig Growth Performance** - A total of 695 barrows were used in two groups in a 28-d study to evaluate the effects of added dietary calcium carbonate on phase 1 nursery pig growth performance and fecal dry matter. Upon arrival to the nursery research facility, pigs were randomly assigned to pens (five pigs per pen) and pens were allotted to 1 of 5 dietary treatments with 27 or 28 pens per treatment. Dietary treatments were formulated to provide 0, 0.45, 0.90, 1.35, and 1.80% calcium carbonate added at the expense of corn. Analyzed Ca for treatment diets were 0.61, 0.80, 0.99, 1.15, and 1.37%, respectively. Standardized total tract P concentration was formulated to 0.58% in all diets. Diets were fed in two phases with treatment diets fed from weaning (d 0) to d 14 and a common phase 2 diet fed from d 14 to 28. Treatment diets were fed in both meal (group 1) and pellet (group 2) form. There was no evidence for treatment × group interaction observed, so data from both groups were combined. From d 0 to 14 (treatment period), ADG, d 14 BW, and F/G worsened (linear,  $P = 0.010$ ) as calcium carbonate increased. There was no evidence for difference for ADFI. From d 14 to 28 (common period) and for the overall experiment (d 0 to 28), there was no evidence for differences observed for any growth performance criteria. For fecal dry matter, there was a tendency with the highest and lowest calcium carbonate diets having the highest dry matter. In summary, increasing dietary calcium carbonate from 0 to 1.80% decreases ADG and worsens feed efficiency in phase 1 nursery diets. Despite the linear response, the largest decrease was observed when calcium carbonate increased from 0.45 to 0.90% with no difference in performance thereafter. These data suggest that lower levels of calcium carbonate can be used than are typically added to phase 1 diets. More information is available on this experiment and others in the KSU Swine Day report at [www.KSUSwine.org](http://www.KSUSwine.org). (This study conducted by Alan J. Warner, Joel M. DeRouchey, Mike D. Tokach, Jason C. Woodworth, Robert D. Goodband, and Jordan T. Gebhardt.)
- ↗ **Evaluation of Vegetable Protein Sources on Nursery Pig Performance in a Commercial Environment** - This experiment was conducted to determine the effect of vegetable protein sources on growth and economic performance of nursery pigs in a commercial research environment. A total of 2,592 pigs were used in a 42-d study. Pens of pigs were blocked by BW and weaning date and allotted to 1 of 6 dietary treatments in a randomized complete block design with 27 pigs per pen and 16 replications per treatment across 2 rooms. Similar numbers of barrows and gilts were placed in each pen. There were six dietary treatments which included: 1) soybean meal control diet with no specialty vegetable protein source, and 5 diets containing either 2) soy protein concentrate 1; 3) soy protein concentrate 2; 4) enzyme-treated soybean meal; 5) fermented soybean meal; and 6) high protein corn DDGS. Treatment diets were formulated in two dietary phases and fed at a rate of 5 lb/pig and 18 lb/pig, respectively, with a common phase 3 diet fed for the remainder of the study. During the experimental diet feeding period (d 0 to 21) or overall (d 0 to 42), there was no evidence of difference for BW, ADG, ADFI, or F/G. Additionally, there was no evidence of significant difference for total removals, removals, or mortality. For economic analysis, there was no evidence for significant difference for any response criteria. In summary, no differences existed between soybean meal and the specialty vegetable protein sources used in this study. More information is available on this experiment and others in the KSU Swine Day report at [www.KSUSwine.org](http://www.KSUSwine.org). (This study conducted by Rafe Q. Royall, Joel M. DeRouchey, Mike D. Tokach, Jason C. Woodworth, Robert D. Goodband, Jordan T. Gebhardt, and Keith D. Haydon.)
- ↗ **Influence of Feed Grade Amino Acid Inclusion Level in Late Nursery and Grower Diets Fed to Pigs from 21 to 75 lb** - A total of 912 pigs were used in a 43-d trial to evaluate the influence of feed grade amino acid in diets containing 30% dried distillers grains with solubles (DDGS) fed to pigs from 21 to 75 lb. Pigs were randomly assigned to pens (19 pigs per pen) and pens were randomly allotted in weight blocks to 1 of 4 dietary treatments with 12 pens per treatment. Dietary treatments contained low, medium, high, or very high additions of feed grade amino acids with L-lysine added at approximately 0.25, 0.40, 0.55, and 0.70% of the diet. This corresponded to 15, 24, 33, and 42% of the standardized ileal digestibility (SID) lysine coming from L-lysine. All other amino acids were added as needed to meet minimum desired ratios relative to lysine (60% Ile; 58% Met and Cys; 65% Thr; 19% Trp; and 72% Val). Predetermined orthogonal contrasts were used to evaluate linear or quadratic effects based on the feed grade lysine to total lysine ratio. Overall (d 0 to 43), there was an increase in average daily gain (ADG) and average daily feed intake (ADFI), with pigs fed increasing feed grade amino acids having increased gain and feed intake up to the high addition of feed grade amino acids and decreasing for pigs fed the very high diet. For overall feed efficiency (F/G), pigs fed the medium feed grade amino acids had improved F/G compared to pigs fed the high and very high levels of feed grade amino acids, with the pigs fed the low feed grade amino acids intermediate. As feed grade amino acids increased in the diet, blood urea nitrogen decreased on d 21 and 43. In summary, as the percentage of L-lysine as a proportion of total SID lysine increased in the diet from 15 (Low) to 24% (Medium), ADG and F/G improved; however, as the L-lysine as a proportion of total SID lysine in the diet increased to greater than 24%, F/G worsened. More information is available on this experiment and others in the KSU Swine Day report at [www.KSUSwine.org](http://www.KSUSwine.org). (This study conducted by Hadley R. Williams, Mike D. Tokach, Jason C. Woodworth, Joel M. DeRouchey, Robert D. Goodband, Jordan T. Gebhardt, Chad W. Hastad, Zach B. Post, and Keith D. Haydon.)

# ASI FACULTY SPOTLIGHT...



**Joel DeRouchey ([jderouch@k-state.edu](mailto:jderouch@k-state.edu); 785-532-2280)**  
**Professor/State Extension Leader/Extension Swine Specialist**

Dr. Joel DeRouchey grew up on a diversified purebred swine, cattle, and sheep operation in Pukwana, S.D. He graduated with his bachelor's in Animal Science from South Dakota State University in 1997 and his M.S. (1999) and Ph.D. (2001) in Swine Nutrition from Kansas State University. He was hired in 2001 as the Northeast Livestock Extension Specialist for Kansas State University. In 2004, Joel moved to the Department of Animal Sciences and Industry as a Livestock Nutrition and Environmental Management Specialist with a 40% Extension, 40% Research, and 20% Teaching appointment. Currently, he is a full professor and State Animal Science Extension Program Leader and has a 50% Extension and 50% Research appointment.

Joel is the faculty coordinator for ASI 890 and ASI 990 Graduate Student Monogastric Seminar and is a guest lecturer in ASI 535 Swine Science. He formerly taught ASI 320 Principles of Feeding. Joel works with a productive applied swine nutrition team that maintains approximately 14 MS and PhD students. He has co-authored 266 refereed journal papers, 502 abstracts and 749 extension publications and field day reports and was a co-advisor or active committee member for 93 MS and PhD graduate programs. In 2018, Joel was named the National ASAS Outstanding Extension Specialist and received the North Central Region Excellence in 4-H Volunteerism Award. He was also recognized in 2010 by South Dakota State University as a Distinguished Young Alumni. Joel and his wife, Julene, have three children — James, Jenna, and Jacob. They enjoy K-State football tailgating, 4-H activities, youth livestock exhibitions and currently live on a small farm near Wamego, KS.



**Evan Titgemeyer ([etitgeme@k-state.edu](mailto:etitgeme@k-state.edu); 785-532-1220)**  
**Professor/Research Coordinator**

Evan Titgemeyer grew up on a small family farm in northwest Ohio. Following completion of a B.S. degree at The Ohio State University (1984), he completed both M.S. (1986) and Ph.D. (1989) degrees at the University of Illinois. His graduate work was under the direction of Dr. Neal Merchen and focused on determining amino acid requirements of growing cattle; this is an area of research where he is still active. Following post-doctoral training with Dr. George Fahey, Jr. in fiber chemistry, he was hired as a faculty member at Kansas State University in 1992. He is currently a professor in the Department of Animal Sciences and Industry, with specialization in ruminant nutrition. His current appointment is 70% research and 30% teaching.

Dr. Titgemeyer's research program focuses on protein and amino acid utilization by beef and dairy cattle. Recent research projects have evaluated amino acid utilization by growing cattle, with special interest in the role that methionine plays in methylation reactions. Some nutritional compounds of interest include choline, betaine, homocysteine, creatine, and guanidinoacetic acid.

In contrast to the current beef model published by NASEM, Dr. Titgemeyer's research has demonstrated that there are differences among the amino acids in terms of how efficiently they are used for growth by cattle. Data from his research would suggest that maintenance requirements of cattle for amino acids are much less than predicted by the NASEM model, whereas the efficiency of amino acid use above maintenance is less than predicted by NASEM.

Current teaching commitments are primarily in graduate nutrition courses. Currently, Dr. Titgemeyer serves as instructor for Nutritional Physiology (ASI 826), Protein Nutrition (ASI 921, team taught with Dr. Bob Goodband), and Analytical Techniques (ASI 860, 861, and 862). Nutritional Physiology covers basic mechanism related to digestion and absorption of nutrients, with a focus on the small intestinal epithelium. Protein Nutrition discusses both basic and applied aspects of protein and amino acid utilization by livestock species. The Analytical Techniques courses are designed to provide beginning graduate students in nutrition with the basic laboratory skills required to successfully complete their graduate research.

# WHAT PRODUCERS SHOULD BE THINKING ABOUT

## WHAT PRODUCERS SHOULD BE THINKING ABOUT IN MAY...

### **BEEF** -- *Tips by Dale Blasi, Extension Beef Specialist*

Breeding season is beginning or continuing for many operations; therefore, both females and males must be reproductively fit.

- 1) Several estrus synchronization procedures have been developed. To determine the correct synchronization program to use, consider the following: age group of females (yearling replacement heifers vs. cows), commitment of time and efforts for heat detection, potential number of females that are anestrus (days postpartum, body condition, calving difficulty), labor availability, and the return on investment for total commitment to the breeding program.
  - 2) Handle semen properly and use correct AI techniques to maximize fertility.
  - 3) Natural service bull should have body condition, eyes, feet, legs, and reproductive parts closely monitored during the breeding season. Resolve any problems immediately.
  - 4) All bulls should have passed a breeding soundness examination prior to turnout.
- Begin your calf preconditioning program. Vaccination, castration, and parasite control at a young age will decrease stress at weaning time. This is a time to add value to the calf crop.
  - Implanting calves older than 60 days of age will increase weaning weight.
  - Properly identify all cows and calves. Establish premises numbers for compliance with state and national programs.
  - Use best management practices (BMPs) to establish sustainable grazing systems.
  - Use good management practices when planting annual forage sources and harvesting perennial forages.
  - Maintain records that will verify calving season, health programs, and management practices.

*We need your input! If you have any suggestions or comments on **News from KSU Animal Sciences**, please let us know by e-mail to [lschrein@ksu.edu](mailto:lschrein@ksu.edu) or phone 785-532-1267.*