



News from KSU Animal Sciences

- ✦ **It is not too late to attend the 2019 KSU Swine Day.** The 2019 KSU Swine Day will be hosted Thursday, November 21, at the KSU Alumni Center. The complete schedule and online registration information can be found at www.KSUswine.org. For more information, contact Lois at lschrein@ksu.edu or 785-532-1267.
- ✦ The 2020 **K-State Swine Profitability Conference** has been scheduled for Tuesday, February 4, 2020, at the Stanley Stout Center, Manhattan, KS. Watch for more details coming soon at www.KSUswine.org.
- ✦ **Junior Producer Days** - The Kansas Junior Producer Days will be hosted in February and March 2020 on the Kansas State University campus in Weber Hall. Since 2020 is an even year, we will host beef and sheep junior days. These events are one-day educational programs for youth, parents, project leaders, and agents to learn about selecting and managing a youth livestock project. For both days, tentative topics include selection, nutrition, meat science, health, and showmanship. There will also be an opportunity for youth to become certified in Youth for the Quality Care of Animals (YQCA), which is the new, national, multi-specie youth livestock quality assurance program. The YQCA session will take place at the conclusion of each junior producer day. Junior Beef Producer Day is scheduled for Saturday, February 29, and Junior Sheep Producer Day will be hosted on Saturday, March 14. Registration information will be released later this fall, so watch the Kansas State Youth Livestock Program Facebook page and website (www.asi.k-state.edu/research-and-extension/youth-programs) for further details! For more information, please contact Lexie Hayes (adhayes@ksu.edu or 785-532-1264).
- ✦ **Make plans to attend Cattlemen's Day 2020** –The 107th annual Cattlemen's Day will be hosted Friday, March 6, 2020. The trade show and educational exhibits will open at 8 a.m. in Weber Arena. Registration for KSU Cattlemen's Day will be \$20 per person in advance or \$30 per person at the door. Morning refreshments and lunch are included with registration. A complete schedule will be coming soon to www.asi.ksu.edu/cattlemensday or call 785-532-1267.
If you are interested in exhibiting at Cattlemen's Day or have any questions, please contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).
- ✦ The **43rd Annual Legacy Bull and Heifer Sale** will be March 6, 2020, at 4:00 p.m. at the Stanley Stout Center. Visit www.asiksu.edu/bullsale for more information, as it becomes available, including the sale catalog.
- ✦ **KSU Sheep Producer Day** will be held on Saturday, March 21, 2020, at the Stanley Stout Center, Manhattan. Watch for more details on this educational event.

Department of Animal Sciences and Industry

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↪ **Livestock County Fair Management Clinics** - The biennial Livestock County Fair Management Clinics have been scheduled for 2020. The eastern Kansas session will be Tuesday, April 7, 2020, at the Sedgwick County Extension Office in Wichita. The western Kansas clinic will be Wednesday, April 8, 2020, at the Logan County Fairgrounds in Oakley. This is an opportunity for county agents and fair board members to learn and discuss issues regarding livestock activities at county fairs. Tentative topics that will be discussed are county fair board structure and management, fair insurance, showmanship and round robin structure, 4-H livestock policies and extension's role at county fairs, judge selection and compensation, the timing of livestock shows during the county fair, and premium sale structure. Pre-registration will be required for all participants by March 27, 2020. Mark your calendar and encourage your fair board members to plan to attend! For more information, contact Joel DeRouchey (jderouch@ksu.edu or 785-532-2280), Lexie Hayes (adhayes@ksu.edu or 785-532-1264), or Pam Van Horn (pvanhorn@ksu.edu or 785-532-5800).

↪ **Kansas 4-H Livestock Sweepstakes Date** - Mark your calendars! The 2020 Kansas 4-H Livestock Sweepstakes will be August 22-23 in Manhattan.

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
November 21, 2019	KSU Swine Day	Manhattan
February 4, 2020	KSU Swine Profitability Conference	Manhattan
February 29, 2020	Kansas Junior Beef Producer Day	Manhattan
March 6, 2020	KSU Cattlemen's Day	Manhattan
March 6, 2020	Legacy Bull and Heifer Sale	Manhattan
March 14, 2020	Kansas Junior Sheep Producer Day	Manhattan
March 21, 2020	KSU Sheep Day	Manhattan
August 22-23, 2020	Kansas 4-H Livestock Sweepstakes	Manhattan

What's New.....

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

“The Power of Praise”

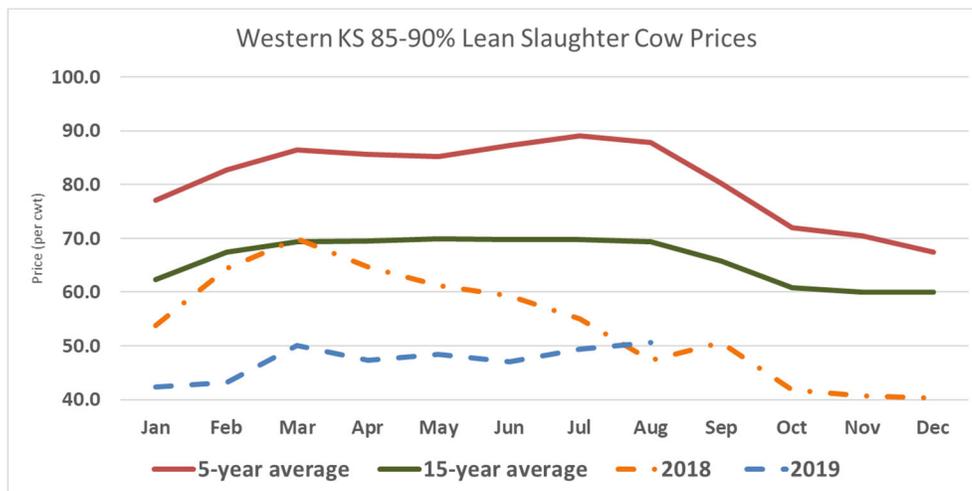
Praise is likely one of the most powerful tools in the toolbox of any manager, leader or educator. I recently came across a summary of a research project conducted by Elizabeth Hurlock, which illustrates the power of praise in the book “How Full is Your Bucket” by Tom Rath and Don Clifton. This experiment evaluated the subsequent math scores of students who received different types of feedback (control, praise, criticism, or ignored) regarding their work in the classroom. Initially, the math scores of students who were praised or criticized for their work were similar. However, by day five of the experiment, the relative improvement in the scores of students who were praised improved by 71%, while those that were criticized improved 19% and those that were ignored improved only 5%. What surprised me the most about this study was that it was conducted in 1925, 94 years ago. Praise is a powerful tool that can be used to motivate all of us to do what we do better and that should not be overlooked.

For more information, contact Justin Waggoner at jwaggon@ksu.edu.

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

“Historical Perspective on Cull Cow Prices”

The sale of cull animals is one of the primary sources of revenue on a cow-calf operation, contributing 17-24% of the gross income reported by cow-calf operators within the Kansas Farm Management Association from 2013-2017. The figure below offers some historical perspective on cull cow prices in Kansas (LMIC, compiled by Robin Reid). Cull cow prices are seasonal, being lowest in the months of October, November, December, and typically increase in March and then remain steady during the summer months.



The relative difference between the market low and high, based on the 5- and 15-year average prices illustrated in the graph is approximately \$10-\$15/cwt. Thus, the market value of a cull cow increases \$10-\$15/cwt. from November to March. A 1,300-lb. cow sold in November at \$40/cwt. would generate \$520 while the same cow, if sold in March at \$55/cwt., would generate \$715, a difference of \$195.

Although, the cull cow market has been relatively soft in 2019 and we cannot foresee what the market will be in 2020, the historical data indicates that cull cow values typically increase over the winter. The question then becomes whether the increase in value is substantial enough to justify holding onto those cows for an additional 120 days.

For more information, contact Justin Waggoner at jwaggon@ksu.edu.

↪ The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of **Research Assistant – KSU Beef Stocker Unit**. This is a full-time, unclassified term position (job no 508348). This position will function as part of the KSU Beef Stocker Unit by conducting research and basic maintenance operations with undergraduate and graduate students related to stocker cattle health and nutrition management. Screening of applications will begin immediately and continue until filled. For more information, contact Dr. Dale Blasi, Search Committee Chair, at 785-532-5427 or dblasi@ksu.edu. To apply, go to <https://careers.k-state.edu/cw/en-us/job/508348/research-assistant>.

↪ The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of **Seasonal Worker, Temporary (Beef Cattle Research Center – BCRC)**. This is a part-time, University Support Staff (USS) position (job no 508266). This position will provide extra help with cleaning, feeding, general maintenance around the Beef Cattle Research Center on a daily basis. This position will also help with data collection for research related projects. Screening of applications will begin immediately and continue until filled. For more information, contact Dr. Ken Odde, Search Committee Chair, at 785-532-1227 or kenodde@k-state.edu. To apply, go to <https://careers.k-state.edu/cw/en-us/job/508266/seasonal-worker-temporary>.

↪ **IRM Redbooks for Sale** – The 2020 IRM Redbooks are here and will be sold on a first-come, first-served basis. The price is \$6.25/book for orders of 10 or more; \$6.50/book for orders of less than 10 which includes postage. To order your supply of Redbooks, please contact Lois Schreiner (lschrein@ksu.edu; 785-532-1267).

↪ **Effects of Added Fat on Growth Performance, Carcass Characteristics, and Economics of Growing and Finishing Pigs Under Commercial Conditions** - A total of 1,637 mixed gender pigs with an initial pen average body weight (BW) of 87.8 ± 2.39 lb were used in a 110-d growth trial to determine the effects of feeding increasing levels of dietary fat on performance of growing-finishing pigs from 88 to 286 lb. The trial was conducted from late June to early October. Pens of pigs were randomly assigned to 1 of 4 dietary treatments in a randomized complete block design with BW as a blocking factor. There were 16 replicate pens per treatment and 20 to 27 pigs per pen. The experimental diets were corn-soybean meal-based and were fed in 5 phases. The four dietary treatments were formulated to contain 0, 1.5, 3.0, and 4.5% added fat. During the grower and finisher periods, results of this study demonstrated no evidence of difference in average daily gain (ADG) but a linear decrease in average daily feed intake (ADFI) with increasing dietary fat level. During the grower period, there was a quadratic change in feed-to-gain ratio (F/G). The greatest improvement in feed efficiency occurred as the dietary fat increased from 0 to 3%, with no improvements thereafter. During the finisher period, adding up to 4.5% fat to the diet resulted in a linear improvement in F/G. Overall, there was no evidence of differences in ADG and final BW as dietary fat level increased. Even though not statistically significant, changes in ADG were close to prior expectation and averaged 0.7% for every percent of added fat. Average daily feed intake decreased linearly as the level of added dietary fat increased up to 4.5%. Increasing dietary fat level resulted in a quadratic improvement in F/G. In addition, for every 1% fat increment, F/G improved on average 2.2%. For carcass characteristics, there was no evidence of differences in hot carcass weight (HCW), percentage carcass yield, loin depth, and fat-free lean measurements due to increasing the level of added fat in the diet. Carcass backfat, however, increased linearly with increased inclusion of fat in the diet from 0 to 4.5%. Feed cost per pig increased linearly with increased dietary fat level. Feed cost per pound of gain increased quadratically as the level of fat in the diet increased, with the highest cost per pound of gain observed at 4.5% fat inclusion. No evidence for differences was observed for revenue per pig due to added fat in the diet. The increased feed cost in combination with lack of evidence of differences in revenue per pig resulted in a linear decrease in income over feed cost (IOFC), with the highest income observed when pigs were fed diets with no added fat.

Bottom Line... The results of this experiment demonstrate that adding dietary fat mainly improved feed efficiency as expected. Also, economic decisions to use added fat depend on ingredient and pig market price, as well as potential of moving a larger proportion of lighter weight pigs into a higher value grid price. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by C.M. Vier, J.M. DeRouchey, S.S. Dritz, M.D. Tokach, J.A. De Jong, C. Neill, E. Scholtz, J.C. Woodworth, and R.D. Goodband)

The Effect of Increased Pork Hot Carcass Weights and Chop Thickness on Consumer Visual Appearance and Purchase Intent Ratings of Top Loin Chops

The objective of this study was to evaluate the effect of increased pork hot carcass weights on consumer visual acceptability and purchase intent of top loin chops cut to various thicknesses in a price labeled versus unlabeled retail display scenario. Pork loins were collected from four different hot carcass weight groups: a light weight group (less than 246.5 lb; LT), medium light weight group (246.5 to 262.5 lb; MLT), medium heavy weight group (262.5 lb to 276.5 lb; MHVY), and heavy weight group (276.5 lb and greater; HVY). Loins were fabricated into four pairs of chops of specified thicknesses (0.50, 0.75, 1.00, and 1.25 inches) at day 7, 8, and 9 postmortem. One chop from each specified thickness was then randomly assigned to be packaged with a label and the other to be packaged without a label. Consumers from the Manhattan, KS, area assessed chops from each weight group × thickness combination in both labeled and unlabeled scenarios. Chops were assessed on a 1 to 100 continuous line scale for desirability and purchase intent. Consumers were also able to indicate if the chop was either desirable or undesirable and if they would or would not purchase. Consumers gave greater appearance ratings to chops from HVY and MHVY weight group compared to chops from the LT weight group. Additionally, chops with a thickness of 1.00 and 1.25 were similar and had greater consumer appearance ratings than both 0.75- and 0.50-inch chops. For purchase intent ratings, consumers gave greater ratings to chops from HVY and MHVY carcasses compared to chops from LT carcasses. Consumers gave chops with a thickness of 0.50 inches the lowest purchase intent ratings compared to all other thicknesses. There was a carcass weight × chop thickness interaction for the percentage of consumers who indicated “Yes” the chop was desirable overall. For all weight treatments, 0.50-inch chops had the lowest percentage of consumers who indicated the chop was desirable. A greater percentage of consumers indicated they would purchase 1.00-inch chops compared to all other thicknesses, with 0.75- and 1.25-inch chops intermediate (1.00 > 0.75 > 1.25 > 0.50). Additionally, a greater percentage of consumers indicated they would purchase unlabeled chops compared to labeled chops.

Bottom Line... These results indicate that carcass weight and chop thickness can affect consumer preference and purchasing decisions and thus should be considered by retailers when marketing fresh pork loin chops. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by E.A. Rice, A.B. Lerner, H.E. Price, J.C. Woodworth, M.D. Tokach, S.S. Dritz, R.D. Goodband, J.M. DeRouchey, M.W. Allerson, J.M. Gonzalez, and T.G. O’Quinn)

Effects of Tylosin Administration Routes on the Development of Antimicrobial Resistance in Fecal Enterococci of Finishing Swine

Antibiotics can be administered via various routes in pigs, which may influence antimicrobial resistance development. A total of 40 barrows and 40 gilts were used in a 35-d trial to determine the effects of tylosin administration route on pig growth performance and development of antimicrobial resistance in fecal *Enterococcus* spp. isolates. Pens of pigs were blocked by initial body weight (BW) and gender. Within blocks, pens were randomly allotted to one of four treatments. The antibiotic treatments followed US label directions and were: 1) no antibiotic (Control); 2) 110 mg tylosin per kg of feed for 21 d (Feed); 3) 8.82 mg tylosin per kg of BW through intramuscular injection twice daily for the first 3 d of each wk during the 3-wk treatment period (Injection); and 4) 66 mg of tylosin per liter of drinking water for the first 3 d of each wk during treatment period (Water). Treatments were offered during d 0 to 21, after which all pigs were fed a common diet with no antibiotic until d 35. Fecal samples were collected on d 0, 21, and 35. No evidence for route × gender interactions were observed for any growth responses. From d 0 to 21, control pigs and pigs fed medicated feed had greater average daily gain (ADG) than those that received injected tylosin, with the ADG of pigs receiving tylosin through the water intermediate. There was no evidence for different average daily feed intake (ADFI) among treatment groups. Pigs that received tylosin through injection or water had poorer feed efficiency (F/G) compared with control pigs, but there was no evidence for difference from pigs receiving tylosin through feed. Among the medicated pigs, total tylosin dose administered was the greatest through injection, second highest through feed, with the water medication route the lowest. No evidence for route × day interactions were observed for the development of bacterial resistance to any antibiotics. Enterococcal isolates collected from pigs receiving tylosin via feed or injection were more resistant to erythromycin and tylosin compared with control pigs and those that received tylosin through water. The estimated probability of antimicrobial resistance to these 2 antibiotics was greater on d 21 and 35 than d 0.

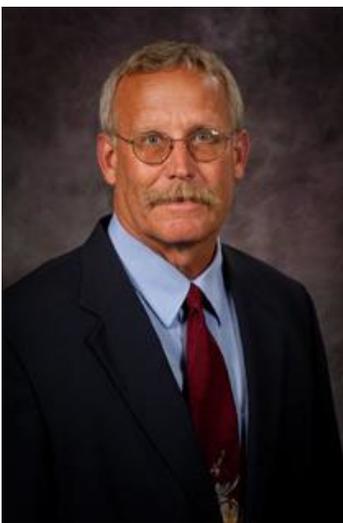
Bottom Line... In summary, tylosin injection resulted in poorer ADG and F/G of finishing pigs, likely due to stress associated with handling and injection. Tylosin administration through injection and feed resulted in greater probability of enterococcal resistance to erythromycin and tylosin compared with in-water treatment, which is likely a combined effect of administration route and dosage. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by F. Wu, M.D. Tokach, J.M. DeRouchey, S.S. Dritz, J.C. Woodworth, R.D. Goodband, K. Chitakasempornkul, N.M. Bello, K. Capps, S. Remfry, R.G. Amachawadi, and T.G. Nagaraja)

ASI Faculty Spotlight



Karol Fike (karol@k-state.edu; 785-532-1104)
Teaching Associate Professor

Karol Fike was raised on a diversified crop and livestock (beef cattle and sheep) operation in eastern Iowa. She completed her B.S. degree in Animal Sciences at Iowa State University in 1991. Karol continued her education at the University of Nebraska-Lincoln, earning her M.S. and Ph.D. studying reproductive physiology in beef cattle. Karol has a passion for teaching and working with students. She taught courses in Anatomy and Physiology, Human Nutrition, and Biology at Western Iowa Tech Community College. She spent four years on faculty at Ohio State University teaching Introductory Animal Sciences, Animal Products, advising students, and coordinating the undergraduate internship program. Here at K-State, Dr. Fike advises students, teaches Farm Animal Reproduction (ASI 400), Animal Sciences Career Preparations (ASI 580), Physiology of Reproduction in Farm Animals (ASI 710), and she coordinates the Feedlot Boot Camp and Teaching program as well as the departmental internship program (ASI 599). She also provides leadership to the Animal Sciences Academic Quadrathlon competition. Research interests include beef cattle reproductive physiology and management and evaluation of factors affecting sale price of beef calves marketed via video auction. Karol and her husband, Gary, have three children — Jackson, Marshall and Grace. They have a few cows on their acreage near Westmoreland, Kansas.



Charlie Lee (clee@k-state.edu ; 785-532-5734)
Instructor/Extension Specialist, Wildlife Control

Charlie Lee completed a B.S. degree in 1975 at Kansas State University in Wildlife Biology. After several years of business and being involved with the family farm and feedlot he returned to Kansas State where he completed a M.S. degree in 1988 in Animal Sciences and Industry. He previously worked for Kansas Department of Wildlife and Parks for six years directing private land wildlife management programs and Farm Bill conservation issues. Charlie was first employed as an extension assistant and now as Extension Specialist, Wildlife. Responsibilities include conducting a statewide program in wildlife damage control, wildlife enhancement on private lands, youth outdoor environmental programs, and aquaculture. Current areas of interest include prairie dog and cattle interactions, bird damage control at feedlots and rodent damage in conservation tillage systems.

What Producers Should Be Thinking About.....

WHAT PRODUCERS SHOULD BE THINKING ABOUT IN JANUARY.....



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

Cow herd management

- Historically, cull cow prices have increased during the next two or three months. Check your breakevens.
- Continue feeding or grazing programs started in early winter. Weather conditions may require wrapping up grain sorghum and cornstalk field grazing. Severe winter weather may begin to limit crop residue utilization, so be prepared to move to other grazing and feeding systems
- Supplement to achieve ideal BCS at calving.
 - ↳ Use this formula to compare the basis of cost per lb. of crude protein (CP):
Cost of supplement, \$ per hundredweight (cwt.) ÷ (100 X % CP) = cost per lb. of CP.
 - ↳ Use this formula to compare energy sources on basis of cost per lb. of TDN:
Cost, \$ per ton ÷ [2,000 X % dry matter (DM) X % TDN in DM] = cost per lb. of TDN.
- Control lice; external parasites could increase feed costs.
- Provide an adequate water supply. Depending on body size and stage of production, cattle need 5-11 gallons (gal.) of water per head per day, even in the coldest weather.
- Sort cows into management groups. BCS and age can be used as sorting criteria. If you must mix age groups, put thin and young cows together, and feed separately from the mature, properly conditioned cows.
- Use information from forage testing to divide forage supplies into quality lots. Higher-quality feedstuffs should be utilized for replacement females, younger cows, and thin cows that may lack condition and that may be more nutritionally stressed.
- Consult your veterinarian regarding pre- and post-partum vaccination schedules.
- Continue mineral supplementation. Vitamin A should be supplemented if cows are not grazing green forage.
- Plan to attend local, state, and regional educational and industry meetings.
- Develop replacement heifers properly. Weigh them now to calculate necessary average daily gain (ADG) to achieve target breeding weights. Target the heifers to weigh about 60%-65% of their mature weight by the start of the breeding season. Thin, lightweight heifers may need extra feed for 60-80 days to "flush" before breeding.
- Bull calves to be fed out and sold in the spring as yearlings should be well onto feed. Ultrasound measurements should be taken around one year of age and provided to your breed association.
- Provide some protection, such as a windbreak, during severe winter weather to reduce energy requirements. The LCT is the temperature at which a cow requires additional energy to simply maintain her current body weight and condition. The LCT for cattle varies with hair coat and body condition. Increase the amount of dietary energy provided 1% for each degree (including wind chill) below the LCT.

*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 or phone 785-532-1267.*