



News from KSU Animal Sciences

September, 2017

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UPCOMING EVENTS...

➤ **KSU Beef Stocker Field Day to be hosted September 21** - The 2017 KSU Beef Stocker Field Day will be Thursday, September 21, at the KSU Beef Stocker Unit in Manhattan. The schedule is as follows:

- 9:30 a.m. Registration/Coffee
- 10:15 a.m. Introductions
- 10:30 a.m. Beef Cattle Outlook
Dr. Derrell Peel, Oklahoma State University
- 11:15 a.m. Producer Panel – Implementing Cover Crops: How They Have Helped My Operation
Moderator: *Wes Ishmael, Contributing Editor, BEEF magazine*
Dr. Jaymelynn Farney, Kansas State University
Dr. Doug Shoup, Kansas State University
Shawn Tiffany, Herington, KS, Producer
Kelly Novak, Tampa, KS, Producer
Kevin Wellnitz, Neosho Rapids, KS, Producer
Harold Engle, Madison, KS, Producer
- 12:15 p.m. BBQ Brisket Lunch – View posters
- 1:15 p.m. Setting Calves up for Success this Fall
Dr. Peggy Thompson, Boehringer Ingelheim Professional Services
- 2:15 p.m. A Different Intensive Early Stocking Strategy for Optimized Marketing Opportunities
Dr. Keith Harmony, K-State Ag Research Center, Hays, KS
- 3:00 p.m. Break
- 3:30 p.m. **Breakout Sessions** (30 minutes/breakout)
Proper Dosing at the Chute - *Dr. A.J. Tarpoff, KSU*
Why Vaccines Sometimes “Seem” to Fail – *Dr. Gregg Hanzlicek, KSU*
Stocker and Backgrounding Budgets - *Robin Reid, KSU*
Cover Crop Decision Tool – *Dr. Jaymelynn Farney and Dr. Doug Shoup*
- 5:30 p.m. Cutting Bull's Lament 2017

The day will conclude with a good old-fashioned Prairie Oyster Fry and Call Hall ice cream. Pre-registration is \$25 and due by September 15. For complete details and registration, visit www.KSUbeef.org. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).



↪ **Developing and Implementing Your Company's HACCP Plan** for meat, poultry, and juice processors will be hosted October 4-6, 2017, in Olathe, KS. Information and registration for the 2.5-day International HACCP Alliance accredited workshop is online at <http://haccp.unl.edu>. The workshop fee is \$450 per person, and participants will be presented with a certificate with an International HACCP Alliance seal upon completion of the course. For more information, contact Dr. Liz Boyle at lboyle@ksu.edu or 785-532-1247.

↪ Join us for the 3rd annual **ASI Family and Friends Reunion on Friday, October 13, 2017**, from 5:30 – 9:30 p.m. at the Stanley Stout Center, 2200 Denison Avenue, Manhattan, Kansas. Last year's event was truly amazing with more than 1,000 family and friends reuniting at the event. The Don L. Good Impact Award will be presented to Sharon Schwartz, long-time pork industry leader and state legislator. Other activities will include great food, live music, Junior Wildcat Barn Yard, no fundraising and more surprises!! A tentative schedule includes:

- 5:30 pm **ASI Family & Friends Reunion is OPEN!**
All event attractions remain open throughout the evening
- 7:20 pm **"Pride of Wildcat Land" Band Performance**
Outdoor Bowl (south of the Stout Center)
- 7:40 pm **WILDCAT WALK**
Stroll through the aisle formed by the band into the Stout Center
- 7:55 pm **Star Spangled Banner (Inside the Stout Center)**
- 8:00 pm **Don L. Good Impact Award presented to Sharon Schwartz**
- 9:10 pm **Jr Wildcat toy drawing (must be present to win)**
Justin Janssen & Kyle Bauer, LMIC Board Members
- 9:30 pm **Event attractions close - Travel safe!**

Registration is \$25 for adults; \$10 for students (13 and over); and free for those 12 and under. Early registration is due by September 30. For more information, visit www.asi.ksu.edu/familyandfriends. If you have questions, contact Lois Schreiner at lschrein@ksu.edu or 785-532-1267.

↪ **Make plans now to attend the 2017 KSU Swine Day.** The 2017 KSU Swine Day will be hosted Thursday, November 16, at the KSU Alumni Center. The schedule for the day includes:

- 8:00 a.m. – 4:00 p.m. Trade Show
- 9:15 a.m. Welcome - *Dr. Ken Odde, Department Head, Animal Sciences and Industry*
- 9:30 a.m. Latest update on K-State Applied Swine Nutrition Research – K-State Swine Faculty
- 11:45 a.m. Lunch with Trade Show
- 1:30 p.m. KSU Disease Research Update – Emerging Diseases, PRRSV, Microbiome, Virus Survival in Feed - *Dr. Megan Niederwerder, Dr. Bob Rowland, and Dr. Dick Hesse, KSU*
- 2:30 p.m. Transitioning to Loose-Housed Gestating Sows
Dr. Hyatt Frobose, US Territory Manager and Swine Nutrition Specialist, JYGA Technologies
- 3:30 p.m. Question and Answer Session
- 4:00 p.m. Reception with K-State Ice Cream

Pre-registration fee is \$25 per participant by November 9; with registration at the door \$35 per participant. There is no charge for any students if they are pre-registered. The complete schedule and online registration information can be found at www.KSUswine.org. For more information, contact Lois Schreiner at lschrein@ksu.edu or 785-532-1267.

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
September 21, 2017	KSU Beef Stocker Field Day	Manhattan
October 4-6, 2017	Developing and Implementing Your Company's HACCP Plan	Olathe
October 13, 2017	AS&I Family and Friends Reunion	Manhattan
November 16, 2017	KSU Swine Day	Manhattan

WHAT'S NEW.....

Management Minute
“Millennials make up the Majority of the Workforce”

↪ **Management Minute** – Justin Waggoner, Ph.D., Beef Systems Specialist
“Millennials make up the Majority of the Workforce”

There are approximately five generations currently in the American workforce. These generations are somewhat loosely defined across different sources as 1) WWI and WWII generation (born ~1901-1926); 2) Mature or silent generation (born ~1928-1945); 3) The Baby Boomers (born ~1946-1965) 4) Generation X (born ~1965-1980); 5) Millennials (born ~1980-2000) and 6) Generation Z or Centennials. All of these groups have defining characteristics, and ideals that make them unique. Recently (2015), Millennials surpassed the Baby Boomers as the largest of the generations in the American workforce according to various sources.

So what are some defining traits of Millennials? This generation is generally viewed as an educated, very tech savvy group. They were raised in an environment where information via the Internet was readily accessible. In addition, they view themselves as part of a “greater good” and want to make the workplace, the community and the world a better place. This group tends to be task driven as opposed to 8-5 oriented when working, and view the balance between work and life as essential component of any position. Thus flexible work schedules or flex time in an employer are more attractive than a structured work schedule. It is obvious that not all of these traits mesh well with our traditional sense of the workplace. However, this generation is a big part of our workplace and, yes, they were most likely the kids that got a trophy or a ribbon for pretty much everything.

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

Feedlot Facts
“Silage Harvest is Underway; Be Safe”

↪ **Feedlot Facts** – Justin Waggoner, Ph.D., Beef Systems Specialist
“Silage Harvest is Underway; Be Safe”

One of the busiest, most fast paced operations that occur this time of year is silage harvest. Cutters and choppers in the fields, trucks racing from the field to the pile or bunker, multiple tractors pushing and packing silage. The speed at which we can harvest silage today is amazing, but we should never allow the speed at which one can accomplish a task to compromise safety. Below are a few things to think about during this year's silage harvest.

- Don't become complacent. Stay aware of the surroundings. Let's face it there are a lot of highly repetitive operations in putting up silage. One of the No. 1 factors that lead up to an accident is almost always complacency or lack of situational awareness.
- Truck drivers should always slow down when approaching houses and intersections on all roads, every time. Those houses along the road belong to our neighbors and friends, some of which have children. The increased traffic on gravel roads creates dust, and the crops are tall, both of which reduce visibility at intersections. Our neighbors should not fear going to their mailbox due to our silage trucks.
- People (especially children) should never be allowed near a drive over pile or bunker silo during filling. If people have to approach the area, get on the radio to inform the drivers/operators. Those on the ground in the area should always wear a bright-colored-orange safety vest.
- Never fill higher than the top of the bunker wall. This happens more than it should and creates a dangerous situation from the day the silage is packed until it is removed. The pack tractor cannot see the edge of the bunker well if at all. The silage does not get packed well (which leads to poor silage) and the edge of the silage is unstable and more likely to collapse. Don't do it.

↩ **Feedlot Facts – “Silage Harvest is Underway; Be Safe” (cont.)**

- Be aware of steep slopes. To reduce the risk of tractor roll-over, a minimum slope of 1 in 3 on the sides and end of piles should be maintained.
- Never inspect or make repairs to equipment near the bunker or pile. Equipment should be removed from the area as soon as possible. Repairs almost always involve people on foot and potentially people who may not be familiar with silage activities and the associated risks.

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

↩ **High Energy Digestible Fiber-based Diets Improve Efficiency in Growing Heifers** – The objective of this study was to evaluate the effects of dietary energy and intake on performance and health of newly received stocker calves. Heifers (n = 370; initial body weight 491 ± 37 lb) were sorted by weight and assigned to pens that were randomly assigned treatments. Treatments consisted of four diets offering 45, 50, 55 and 60 Mcal net energy for gain/100 lb feed. The 45 treatment was fed *ad libitum* and the other three treatments were restricted based on those intakes such that the 50, 55, and 60 treatments received 95, 90, and 85% of the 45 treatment daily intake, respectively. The trial lasted 55 days, including a 14-day period, in which the 45 treatment was fed to all animals to equalize gut-fill. All four diets were formulated to contain 40% wet corn gluten feed on a dry matter basis. Heifers were housed in dirt floor pens with eight pens per treatment. Animals were weighed on days 0, 14, 27, 41 and 55.

Bottom Line... Limit feeding higher energy diets based primarily on digestible fiber can offer a more efficient approach to feeding newly received stocker calves. For more information contact, Dale Blasi (785-532-5427; dblasi@ksu.edu).

↩ **Particle Size of Dry-rolled Corn Affects Starch Digestibility but Not Feedlot Performance** – The purpose of this study was to evaluate the effects of dry-rolled corn particle size on animal performance, carcass traits, and starch digestibility in feedlot finishing diets containing 20% wet distiller's grains on a dry matter basis. Crossbred yearling steers (n = 360; initial body weight = 871 ± 79.0 lb) were used in a randomized complete block design to evaluate the effects of dry-rolled corn particle size in diets containing 20% wet distillers grains on feedlot performance, carcass characteristics, and starch digestibility. Dietary treatments were coarse dry-rolled corn (0.192 in.), medium dry-rolled corn (0.148 in.), fine dry-rolled corn (0.093 in.), and steam-flaked corn (27 lb/bu). Steers were transitioned to the finishing diet over a 23-day period following arrival using a series of four diets including: starter (days 1-7), step-1 (days 8-14), step-2 (days 15-23), finisher without ractopamine hydrochloride (days 24-113), and finisher with ractopamine hydrochloride (days 114-142). Steam-flaked corn was used in the starter and step-up diets and all diet changes during the step-up program were simultaneous for all pens and all treatments. Optaflexx was fed to all treatments the final 29 days in the feedlot at 13.65 mg/lb dry matter basis, providing approximately 300 mg/head/day.

Bottom Line... These results indicate improved ruminal starch digestibility, reduced fecal starch concentration, and reduced dry matter intake with decreasing dry-rolled corn particle size in feedlot diets containing 20% wet distiller's grains on a dry matter basis. For more information, contact Dan Thomson (785-532-4254; dthomson@ksu.edu) or Bob Weaver (785-532-1460; bweaver@ksu.edu).

↩ **Liver Abscess Severity at Slaughter does not Affect Meat Tenderness and Sensory Attributes in Commercially Finished Beef Cattle Fed Without Tylosin Phosphate** – The objective of this project was to determine if the presence of liver abscesses in finished cattle at the time of slaughter has an effect on beef tenderness, palatability and other quality characteristics in U.S. Department of Agriculture Select and Low Choice quality grades. Steaks were collected from finished cattle not fed tylosin phosphate in a 3 × 2 factorial treatment arrangement in a completely randomized design to evaluate the interactive effects of liver abscess score (None, Mild, Severe) and USDA quality grade (Select, Low Choice) on meat tenderness and sensory attributes. A trained sensory analysis panel was conducted to analyze sensory attributes, and Warner-Bratzler shear force and slice shear force measurements were taken to measure objective tenderness.

Bottom Line... Liver abscesses at the time of slaughter do not have an effect on beef instrumental tenderness or sensory attributes regardless of liver abscess severity in feedlot cattle finished without tylosin phosphate. For more information contact, Dan Thomson (785-532-4254; dthomson@ksu.edu) or Travis O'Quinn (785-532-3469; travisquinn@ksu.edu).

☞ **Gilt Training for Electronic Sow Feeding Systems in Gestation** - An electronic sow feeding (ESF) system provides the capability of feeding group-housed gestating gilts and sows on an individual basis. One of the most critical and yet often neglected steps in making an ESF system a success is proper gilt training. Different farms have protocols adapted to their particular situation, but the overall goal of gilt training is to ensure that a high percentage of gilts learn how to utilize the ESF station before they are moved to gestation. There are three critical steps in proper gilt training. These include: 1) pre-training; 2) training once the gilts have been moved to the training pen with the ESF; and 3) a post-training period.

Bottom Line... To have a successful gilt training requires dedicated people who are patient, observant, and also who are able to establish a connection with the females. This frequently necessitates that one or two people are directly responsible for gilt training in an ESF system. 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, M.A.D. Gonçalves, L.L. Thomas, J.C. Woodworth, R.D. Goodband, S.S. Dritz, M.D. Tokach, and J.M. DeRouchey.)

☞ **Evaluating the Effects of Replacing Feed Grade Antibiotics with Yeast, Cinnamon or Zinc Oxide and Copper Sulfate on Nursery Pig Performance** - A total of 288 weaned pigs were used in a 42-day study to compare the effects of feeding antibiotic alternatives (pharmacological trace minerals, copper and zinc, yeast, or essential oils), alone or in combination, on nursery pig performance in replacement to a common antimicrobial agent (carbadox, Mecadox®, Phibro Animal Health, Teaneck, NJ). Pigs were allotted to one of nine dietary treatments in pens of four at weaning in a randomized complete block design with eight replications per treatment. Dietary treatments were arranged with a negative control diet with no medication or other feed additive, a positive control with added carbadox, or seven treatments including added copper sulfate (CuSO₄; 0 vs. 125 ppm Cu) and added zinc oxide (ZnO; 0 vs. 3,000 ppm Zn from d 0 to 7 and 2,000 ppm Zn from d 7 to 28), essential oils from XTRACT 6930 (*Capsicum oleoresin* 2%, carvacrol 5%, cinnamaldehyde 3%, Pancosma North America, Drummondville, Quebec, Canada) at 2 lb/ton, Safmannan A (Yeast cell walls, Lesaffre Yeast Corporation, Milwaukee, WI) at 0.5 lb/ton, and Actisaf HR (yeast cells, Lesaffre Yeast Corporation, Milwaukee, WI) at 1.5 lb/ton. These supplements were fed alone or in combination. From day 0 to 7 experimental diets were a pelleted ration; and fed in a meal form from day 7 to 28, followed by a common corn-soybean meal-based diet without any antimicrobial, pharmacological trace minerals, essential oils, or yeast from day 28 to 42. Essential oils and yeast had no significant effect on ADG. Feeding carbadox or pharmacological trace minerals (Cu and Zn) improved ADG of nursery pigs compared to the non-medicated control diet. Carryover effects from any of these dietary treatments on subsequent growth performance were not significantly different. The use of pharmacological trace minerals Cu and Zn alone or in conjunction with either yeast or essential oil allows for competitive ADG and F/G with an antimicrobial agent, like carbadox.

Bottom Line... In summary, under the conditions of this experiment, pigs fed the combination of zinc and copper had similar growth performance to those fed carbadox. More information is available on this experiment in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by A. Langemeier, J. Morton, S. Scotten, and J. Nelssen.)

☞ **Determining the Phosphorus Release for Natuphos E 5,000 G Phytase for Nursery Pigs** - A total of 286 nursery pigs were used in a 21-day growth trial to determine the available P (aP) release curve for a novel phytase source (Natuphos E 5,000 G, BASF Corporation, Florham Park, NJ). Pigs were randomly allotted to pens at weaning. On day 0 of the experiment (day 18 after weaning), pens were allotted in a randomized complete block design to one of eight treatments. There were four pigs per pen and nine pens per treatment. Pigs were fed a corn-soybean meal-based diet formulated to 1.25% standardized ileal digestible (SID) lysine. Ten one-ton batches of basal feed (0.12% aP) were manufactured and subsequently divided to be the major portion of experimental diet manufacturing. Experimental diets were formulated to contain increasing aP supplied by either an inorganic source (0.12, 0.18, and 0.24% aP from monocalcium P) or from increased phytase (150, 250, 500, 750, and 1,000 FTU/kg). Diets were analyzed for phytase using the AOAC method and actual analyzed concentrations were 263, 397, 618, 1,100, and 1,350 FTU/kg, respectively. On day 21 of the study, one pig per pen was euthanized and the right fibula was collected for bone ash and percentage bone ash calculations. From day 0 to 21, increasing P from inorganic P or increasing phytase resulted in improved ADG, F/G and ending BW. Bone ash weight and percentage bone ash increased with increasing inorganic P or phytase.

Bottom Line... When formulated phytase values and percentage bone ash are used as the response variables, aP release for up to 1,000 FTU/kg of Natuphos E 5,000 G phytase can be predicted by the equation: aP release = 0.000212 × FTU/kg phytase. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by K.M. Gourley, J.C. Woodworth, J.M. DeRouchey, M.D. Tokach, S.S. Dritz, and R.D. Goodband.)

AS&I Faculty Spotlight



Teresa Douthit (douthit@k-state.edu; 785-532-1268)

Associate Professor/Equine Nutrition

A native of St. Francis, Kansas, Teresa Douthit was raised on a farm that produced a variety of crops and registered horned Hereford cattle. While in St. Francis, Dr. Douthit showed horses, was active in 4-H and FFA, and was a member of several state champion judging teams.

Dr. Douthit then judged livestock at Butler County Community College and later at KSU. She was also on the K-State Horse Judging Team that won the Congress in 1998. She graduated *summa cum laude* from KSU with a degree in animal science in 1999. She then completed a master's under Dr. Randel Raub in equine nutrition. While working on her master's, Teresa was an assistant coach for the KSU horse judging team and helped form the very first KSU equestrian team.

Teresa went to Colorado State in 2001 for a PhD in reproductive physiology. There she coached the horse judging team to two national championships at Arabian Nationals. She worked under Drs. Gordon Niswender and Jason Bruemmer in studying luteal

function in mares and ewes.

In 2004, Dr. Douthit returned to K-State to accept a joint appointment with animal science (40%) and the equestrian team (60%). After serving as head coach to the KSU varsity equestrian team and coaching the team to a Reserve National Championship (along with producing several national champion riders), Dr. Douthit changed gears and became a full-time faculty member in the ASI department. In November 2006, she became an Assistant Professor in Equine Nutrition here at K-State. She now teaches Horse Science, Equine Nutrition, and Equine Exercise Physiology. Her current appointment is 70% teaching and 30% research.

Dr. Douthit's research program mostly focuses on hindgut function in the horse.

Teresa and her husband, Tom, and children, Lane (12); Grant (6) and Elena (9 months) enjoy riding and showing horses.



Jim Drouillard (jdrouill@k-state.edu; 785-532-1204)

Professor/Beef Cattle Nutrition

Jim Drouillard joined the K-State faculty in 1995, and he, his wife, Patti, daughter Kameron, and son, Jason, are residents of Olsburg.

A two-time Gator, Jim received his Bachelor's (Animal Science) and Master's (Animal Breeding) degrees from the University of Florida in 1985 and 1986, and his Ph.D. from the University of Nebraska in 1989. Jim has responsibilities in teaching (20%) and research (80%), and is faculty coordinator for the Beef Cattle Research Center. His research has focused on feedlot cattle production, emphasizing grain processing, pre-harvest food safety, byproduct utilization, and the effects of diet on cattle health, performance, carcass quality, and meat composition.

What Producers Should Be Thinking About.....

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



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

Spring Calving Cows

Cowherd Management

- Pregnancy Check (if not already completed)
- If candidates for culling were not selected in September or October, it should be completed now.
- Consider feeding cull cows to increase body weight, value, and utilize cheap feedstuffs. Value of gain is equal to the difference between the ending value and beginning values divided by the gain. Compare this to cost of gain figures. When cost of gain is less than value of gain, profit will be realized.
- Body Condition Score
 - Provide thin cows (body condition score 3's and 4's) extra feed now. Take advantage of weather, stage of pregnancy, lower nutrient requirements, and quality feedstuffs.
- In late fall and early winter, start feeding supplement to mature cows using these guidelines:
 - Dry grass 1½ - 2 lb supplement/day of a 40% CP supplement
 - Dry grass 3 - 4 lb supplement/day of a 20% supplement
 - Dry grass 10 lb good nonlegume hay, no supplement needed
 - Compare supplements on a cost per pound of nutrient basis.
- Utilize crop residues.
 - Average body condition cows can be grazed at 1 to 2 acres/cow for 30 days assuming normal weather. Available forage is directly related to the grain production levels.
 - Limiting nutrients are usually protein, phosphorus, and vitamin A.
 - Strip graze or rotate fields to improve grazing efficiency.
- Discontinue feeding tetracycline if used for anaplasmosis control.

Calf Management

- Participate in National Level Breed Association Performance Programs CHAPS, and(or) other ranch record systems.
- Finalize plans to merchandise calves or to background through yearling or finishing programs.

Forage/Pasture Management

- Plan winter nutritional program through pasture and forage management.

General Management

- Document cost of production by participating in Standardized Performance Analysis (SPA) programs.
- Review management decisions, lower your costs on a per unit of production concept.
- Plan your marketing program, including private treaty, consignment sales, test stations, production sales, etc.

*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.*