



News from KSU Animal Sciences

November, 2017

News from KSU Animal Sciences

In This Issue

- Upcoming Events
- Management Minute
- Feedlot Facts
- 2017 KSU Cattlemen’s Day Articles Featured
- 2016 KSU Swine Day Articles Featured
- Faculty Spotlight
- What Producers Should Be Thinking About...

Department of Animal Sciences and Industry
 Kansas State University
 218 Weber Hall
 1424 Claflin Road
 Manhattan, KS 66506
 785-532-6533
www.asi.ksu.edu

UPCOMING EVENTS...

➤ **Don’t miss the 2017 K-State Swine Day to be hosted November 16 at the KSU Alumni Center.** Registration is \$35 per participant at the door and begins at 8 a.m. with a trade show. The complete schedule and information can be found at www.KSUswine.org. For more information, contact Lois Schreiner (lschrein@ksu.edu; 785-532-1267).

➤ **2018 KSU Dairy Days** – The following dates have been set for the 2018 KSU Dairy Days:

- Thursday, February 1, 2018 in Seneca, Kansas
- Friday, February 2, 2018, in Whiteside, Kansas

Mark the dates on your calendar and watch for more details coming to www.asi.k-state.edu/research-and-extension/dairy/dairy-days.html. For more information, contact Mike Brouk (mbrouk@ksu.edu; 785-532-1207).

➤ The 2018 **K-State Swine Profitability Conference** has been scheduled for Tuesday, February 6, 2018, at the Stanley Stout Center, Manhattan, KS. Topics include :*Managing Pig Health with Minimal Antibiotic Use in Commercial Pig Production, Opportunities and Pitfalls of Producing Antibiotic Free Pork, Rebuilding after Catastrophe, Future Trends Impacting the Swine Industry* and more. The program will also include “Life Lessons Learned While Practicing with Dr. Steve Henry.” Watch for more details coming soon at www.KSUswine.org.

➤ **Junior Producer Days** - The Kansas Junior Producer Days will be held in March of 2018 in Weber Hall of the Kansas State University campus. Since 2018 is an even year, we will host a beef and sheep day. 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, reproduction, meat science and health. There will also be an opportunity to experience Youth for the Quality Care of Animals, which is a new, national, multi-specie livestock quality assurance program.

Junior Sheep Producer Day is scheduled for Saturday, March 17, 2018, and **Junior Beef Producer Day** is scheduled for Saturday, March 24, 2018. Registration information will be released in December, so watch the KSU 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).



↳ **Livestock Fair Management Clinics Scheduled for April 10 and 12** - The biennial Livestock County Fair Management Clinics have been scheduled for 2018. The western Kansas session will be Tuesday, April 10, 2018, at the Gray County Fairgrounds in Cimarron. The eastern Kansas clinic will be Thursday, April 12, 2018, at the Jackson County Fairgrounds in Holton. 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, poultry health and exhibit management, 4-H livestock policies and extension's role at county fairs, and the timing of livestock shows during the county fair. Pre-registration will be required, and full registration details will be released by the first of the year. 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).

↳ **Youth for the Quality Care of Animals** - Youth for the Quality Care of Animals (YQCA) is a new, national, multi-species youth livestock quality assurance program for youth ages 8-21. This annual educational certification focuses on food safety, animal well-being, and character development. Youth complete three different age-appropriate models each year to expand their knowledge of the livestock industry and proper animal husbandry. The species included in the program are beef cattle, dairy cattle, swine, sheep, goats, market rabbits and poultry. Youth may complete the training online for \$12/child or through an instructor-led face-to-face training for \$3/child. The program is integrated with 4HOnline, so families may use their 4HOnline credentials to log in and register for trainings. The YQCA program was developed and is supported by a wide variety of industry partners including state livestock extension specialists, county agents, national shows, allied industry partners, the National Pork Board, NCBA, National Milk Producers Federation, American Sheep Industry Association and the American Rabbit Breeders Association. With their support of the YQCA program, the National Pork Board will be discontinuing their Youth PQA Plus program at the end of 2017. After the first of the year, youth certifications will be valid until they expire, but additional youth will not be able to obtain a Youth PQA number, nor will youth be able to re-certify. Any youth needing quality assurance training will be encouraged to use the YQCA program. County extension agents, agriculture instructors and veterinarians may be certified to teach instructor-led YQCA trainings. Currently, certified Youth PQA Plus trainers who wish to be certified will need to respond to the invitation they received from YQCA in October. Those who are not currently certified, but are interested in doing so, may contact Lexie Hayes to sign up. For more information about the YQCA program, please visit www.yqca.org or contact Lexie at 785-532-1264 or adhayes@ksu.edu.

↳ **Kansas 4-H Livestock Sweepstakes Date** - Mark your calendars! The 2018 Kansas 4-H Livestock Sweepstakes will be August 18-19 in Manhattan!

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
November 16, 2017	KSU Swine Day	Manhattan
February 1, 2018	KSU Dairy Day	Seneca
February 2, 2018	KSU Dairy Day	Seneca
February 6, 2018	KSU Swine Profitability Conference	Manhattan
March 17, 2018	Kansas Junior Sheep Producer Day	Manhattan
March 24, 2018	Kansas Junior Beef Producer Day	Manhattan
April 10, 2018	Livestock Fair Management Clinic – Western Session	Cimarron
April 12, 2018	Livestock Fair Management Clinic – Eastern Session	Holton
August 18-19, 2018	Kansas 4-H Livestock Sweepstakes	Manhattan

WHAT'S NEW.....

Management Minute “What Makes a Successful Team in the Workplace?”

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

“What Makes a Successful Team in the Workplace?”

Most of us have had some experience with being part of a team. What makes some teams more successful than others? The tech giant “Google” has invested a great deal of time and resources into studying teams and reported (<http://www.businessinsider.com/google-explains-top-traits-of-its-best-teams-2015-11>) that their most successful teams have the following traits.

Successful teams

- Establish psychological safety within the team. The team creates an environment where all members of the team feel free to bring new ideas forward to the group.
- Are dependable. The team holds its members accountable, getting things done on time and up to the standards of the group.
- Have structure and clarity. The members of the team know their role in the team and have a clear vision of the team’s structure and the expectations associated with their role on the team.
- Have a purpose. The team members believe that what they are doing matters.

A wealth of information on building teams and characteristics can be found with a simple internet search.

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

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

“Forage Analysis: What Numbers Do I Need?”

One of the more common questions I receive with regard to analytical testing of forages and other feedstuffs is, “I have the sample, now what do I test for or what analysis package should I select?”

The basic components that nutritionists need to evaluate a feedstuff or develop a ration are dry matter or moisture, crude protein, an estimate of the energy content of the feedstuff [Total Digestible Nutrients (**TDN**), Net Energy for Maintenance (**NEm**), Net Energy for gain (**NEg**)], and the macro minerals, Calcium and Phosphorous. These are the most basic numbers that are required but including some additional analyses in the report can give us additional insight into the quality of the feedstuff or improve our ability to predict animal performance, which is the primary reason we analyze feedstuffs. I recommend that the report include acid detergent fiber (**ADF**) and neutral detergent fiber (**NDF**). The amount of NDF in forage reflects the amount of cell wall contents (hemicellulose, cellulose, and lignin) within the sample. The NDF fraction is often associated with the respective bulkiness of forage and is correlated with dry matter intake of the forage or feedstuff. Therefore, the amount of NDF may be used to estimate the expected dry matter intake associated with the forage. The ADF number represents the amount of cellulose and lignin within the forage and is correlated with the respective digestibility of the forage. In general, a higher ADF value is associated with forage that has a greater proportion of cellulose and lignin and would likely be more mature. Additionally, the ADF fraction is used to calculate the energy estimates TDN, NEm, and NEg that appear on the report. There are a number of different mathematical equations that the testing laboratory may use to calculate these numbers, based on the type of sample (corn silage, alfalfa, grass hay, etc.). If the ADF is included in the report, the nutritionist can adjust or recalculate the energy estimates if necessary.

Feedlot Facts “Forage Analysis: What Numbers Do I Need?”

↪ **Feedlot Facts – “Forage Analysis: What Numbers Do I Need?” (cont.)**

If the forage will be fed in combination with a byproduct feed such as wet distiller’s grain, including an analysis for sulfur can be beneficial if the forage will be used in a growing or feedlot ration. Additionally, if the forage is a known nitrate accumulator (forage sorghums, sudangrass) or may have been stressed due to drought, including a nitrate analysis should always be considered, especially if the forage will be fed to pregnant cows.

Most analytical laboratories have a number of different analysis packages which encompass the most common procedures or numbers that a nutritionist or producer needs to know about their feeds. These packages will typically include the basic procedures (DM, CP, TDN) and then add on specific analyses such as NDF, or the Macrominerals (Ca, P, Mg, K, Na, Cl, S). Some laboratories may group analysis packages by the type of sample (Forage vs. mixed ration) or production purposes (dairy vs. beef).

The objective of analytical testing of forages and feedstuffs is to improve our ability to meet the animal’s nutrient requirements and ultimately predict animal performance. The unequivocal best method of evaluating the quality of a feedstuff is feeding the feedstuff to an animal and evaluating performance over a set period of time, under a specific set of conditions. Since that would not be cost effective or timely, analytically evaluating feedstuffs in a laboratory is the next best thing and although it is not perfect, it is unequivocally better than the “this looks like really good stuff” method of evaluating feedstuffs. For more information, contact Justin Waggoner at jwaggon@ksu.edu.

↪ **Farm Manager/Purebred Beef Unit for Department of Animal Sciences and Industry.** The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of Farm Manager at its Purebred Beef Unit. This is a full-time, Unclassified Staff position (job no. 502633). This position will direct, supervise and coordinate daily activities at the Kansas State University Purebred Beef Unit. The successful candidate will supervise all student employees. They will also be required to do procurement of inputs, management and maintenance of grazing lands and facilities, oversight of research trials, and marketing of seedstock cattle. This position will also co-instruct the Livestock Sales Management Class and assist with other teaching duties as needed. Screening begins immediately and will continue until filled. To apply, go to <http://careers.k-state.edu/cw/en-us/job/502633/purebred-beef-unit-manager>. For more information, contact Dr. Bob Weaber, Search Committee Chair, at 785-532-1460 or bweaber@ksu.edu.

↪ **Receiving Stocker Cattle Performance Is Similar with Either Corn or Sorghum Wet Distillers Grains**

– The objective of this study was to evaluate the effect of corn and sorghum wet distillers grains on performance of receiving stocker calves. Crossbred steers were obtained from a single source in central Texas for a 90-day feeding trial. Steers were assigned to one of four treatments: 1) cracked corn with wet corn distillers grains; 2) cracked corn with wet sorghum distillers grains; 3) rolled sorghum with wet corn distillers grains; and 4) rolled sorghum with wet sorghum distillers grains.

Bottom Line... Sorghum wet distillers grains can be fed at the same level as wet corn distillers grains to growing stocker steers and will produce similar responses in terms of gain, intake and efficiency. For more information, contact Dale Blasi (785-532-5427; dblasi@ksu.edu).

↪ **Flake Density, Roll Diameter, and Flake Moisture All Influence Starch Availability of Steam-Flaked Corn**

– The purpose of this study was to evaluate starch availability of steam-flaked corn comparing roll dimensions and flake densities among flaking systems and feedyards, and to provide information on equipment utilized, steam-flaked corn flaking procedures, and to define current manufacturing practices of steam-flaking in commercial feedlot operations. Commercial feedlots were asked to participate in a survey to evaluate steam-flaked corn manufacturing practices implemented, equipment utilized, and parameters targeted to measure flake quality. Manufacturing practices evaluated included dry corn moisture, grain water addition, tempering time, steaming time, steam-cabinet temperature, mill electrical load, steam-conditioned corn moisture content, steam-flaked corn moisture content, and flake thickness. Equipment evaluated included roll size, steam-cabinet dimensions and capacity. Flake quality parameters included hot and cooled steam-flaked corn flake density, volumetric flake weight, and starch availability samples. Samples of steam-conditioned corn and steam-flaked corn were collected from each flaker within each feedlot. Flake density was measured on hot (immediately from below the rolls) and cooled flakes; and volumetric weight was measured only on cooled flakes. Starch availability was measured using enzymatic hydrolysis.

Bottom Line... Manufacturing equipment and quality control measures vary greatly across commercial feedyards in the United States. Within each feedyard, each roll set should be managed as an individual unit given that no two units are the same. This study has identified cooled flake density, steam-flaked corn moisture, and roll diameter to be significant variables contributing to enzymatic starch availability in commercial feedyards located in the United States. For more information contact, Bob Weaber (785-532-1460; bweaber@ksu.edu) or Dan Thomson (785-532-4254; dthomson@ksu.edu).

↪ **Marbling Texture Does Not Affect Consumer Preference of Beef Strip Loin Steaks** – The objective of the study was to evaluate the consumer sensory and visual preferences of beef strip loin steaks of varying U.S. Department of Agriculture quality grades and marbling textures. Top Choice, Low Choice and Low Select strip loins were selected based on a visual marbling texture scale from 1-9, where 1 = fine marbling and 9 = coarse marbling. Steaks were prepared to a medium (160°F) degree of doneness and served to 104 consumers. Each panelist rated each sample for juiciness, tenderness, flavor liking, and overall liking on 3.93 in line scales for nine samples. Panelists also visually rated steaks through a pictorial survey.

Bottom Line... Marbling texture does not affect consumer purchasing choices when color and external fat are removed from steaks. Despite marbling differences, consumers found both USDA Choice samples similar for tenderness, juiciness, flavor and overall liking. For more information, contact Travis O'Quinn (785-532-3469; travisquinn@ksu.edu).

↪ **Influence of Chromium Dose and Feeding Regimen on Growth Performance and Carcass Composition of Pigs Housed in a Commercial Environment** - A study was conducted to determine the effects of increasing chromium propionate and feeding regimen on growth performance and carcass characteristics of finishing pigs housed in a commercial environment. There were a total of 1,206 pigs with 27 pigs/pen and nine pens/treatment. Pigs were split by gender upon arrival at the facility, with four blocks of each gender and a final mixed gender block. Gender blocks were randomly allotted to groups of five pen locations within the barn. Diets were corn-soybean meal-dried distillers grains with solubles-based and were fed in a five-phase feeding program. Treatments were arranged as a 2 × 2 + 1 factorial with a control diet containing no added Cr, or diets containing either 100 or 200 ppb of Cr fed during the grower (dietary Phases 1 and 2; 63 to 138 lb BW) and/or finisher (dietary Phases 3, 4, and 5; 138 to 307 lb BW) periods. For growth performance, there was no effect of changing Cr supplementation between the growing and finishing periods. Therefore, only linear and quadratic effects of increasing Cr within growth period were considered using all treatments, as well as linear and quadratic effects of the three treatments fed increasing Cr for the full duration of the study. Increasing Cr during the grower period decreased ADG and worsened F/G. During the finisher period, increasing Cr tended to improve F/G, with the best F/G observed in pigs fed 100 ppb.

Bottom Line... Overall, increasing Cr had no impact on ADG or ADFI; however, F/G was optimized when pigs were fed 100 ppb of added Cr. Carcass characteristics were not influenced by added Cr level or Cr feeding regimen. In summary, increasing dietary Cr supplementation elicited minor changes in growth performance with the best F/G observed with 100 ppb of added Cr. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by J.T. Gebhardt, J.C. Woodworth, M.D. Tokach, J.M. DeRouchey, R.D. Goodband, J.A. Loughmiller, and S.S. Dritz.)

↪ **Effects of Dietary Electrolyte Balance and Crude Protein Level on Growth Performance, Carcass Characteristics, and Blood Analytes of Finishing Pigs** - A total of 288 finishing pigs (PIC 327 × 1050, initially 243.5 lb) were used in a 20-day trial to determine if dietary electrolyte balance (dEB) in conjunction with low protein, amino acid fortified diets has any influence on growth performance. Pens of eight pigs were allotted by BW and randomly assigned to one of four dietary treatments with nine replications per treatment. Treatments were arranged in a 2 × 2 factorial with main effects of CP (10 or 13%) and dEB (48 or 107 mEq/kg). At day 20, the pigs were transported to a packing plant for processing and carcass data collection. Pigs fed 13% CP diets had greater ADG, heavier final body weight, and improved feed efficiency compared with pigs fed the 10% CP diets. A tendency for a CP × dEB interaction was observed for ADFI because intake numerically decreased when dEB was increased for pigs fed 10% CP, whereas intake increased as dEB was increased for pigs fed 13% CP diets. For carcass performance, pigs fed the diets with 13% CP had increased HCW and HCW ADG and improved HCW F/G compared with pigs fed the 10% CP diets.

Bottom Line... In conclusion, reduced performance observed in pigs fed the low crude protein diets with high supplemental crystalline AA was not influenced by dEB ranging from 48 to 107 mEq/kg. Dietary electrolyte balance in the range tested had no effects on growth performance, HCW, yield, or carcass performance during late finishing. Appropriate levels of dietary CP are critical to ensure optimal late finishing performance. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by J.A. Soto, M.D. Tokach, S.S. Dritz, J.C. Woodworth, J.M. DeRouchey, and R.D. Goodband.)

AS&I Faculty Spotlight



Luis Mendonca (mendonca@k-state.edu; 785-532-2652)

Assistant Professor/Extension Specialist, Dairy Herd Management

Dr. Luís Mendonça received a D.V.M degree in 2006 at Universidade Estadual de Maringá, Brazil. In 2007, he worked in a private practice that specialized in reproductive management and technologies (i.e. embryo transfer and *in vitro* embryo production), providing services to clients across various states of Brazil and in Bolivia. In 2008, he was hired as a postgraduate researcher at the Veterinary Medicine Teaching and Research Center in Tulare, California, where he worked in large dairy operations and was involved in different aspects of dairy production research. He obtained his master's degree and completed his residency in Dairy Production Medicine (2012) at the College of Veterinary Medicine, University of Minnesota. Dr. Mendonça joined the Department of Animal Sciences and Industry at Kansas State University in 2013 as a State Dairy Extension Specialist. He now has a 30% research and 70% extension appointment. His current roles and responsibilities include development of an extension and research program

addressing issues facing the Kansas and U.S. dairy industry. His goal is to develop and carry out research related to immune function, health, heat abatement and reproductive management of dairy cattle.



Bob Weaber (bweaber@k-state.edu; 785-532-1460)

Professor/Extension Specialist, Beef Breeding and Genetics

Bob Weaber's nationally recognized extension programming has resulted in more than 145 publications and more than \$13 million from 42 awards of grants and gifts for research and extension programming. Weaber's extension program leadership has been recognized with MU Provost's Innovative Extension Programming by New Faculty, the MU CAFNR J.W. Burch State Extension Specialist Award, and the Beef Improvement Federation's Continuing Service Award.

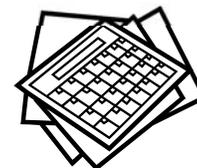
Weaber grew up on a cow-calf operation in southern Colorado and went on to earn a bachelor's in animal science followed by a master's of agriculture degree in the Beef Industry Leadership Program at Colorado State University. He completed his doctoral studies in the Animal Breeding and Genetics Group at Cornell University. While there, he served as the Interim Director of Performance Programs for the American Simmental Association for three and a half years. Previously, Weaber was Director of Education and

Research at the American Gelbvieh Association.

Bob, his wife, Tami, and their young children, Maddie, Cooper and Wyatt, reside near Wamego, Kansas.

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.*