



Newsletter from the Department of Animal Sciences and Industry
 218 Weber Hall - Kansas State University - Manhattan, KS 66506
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UPCOMING EVENTS...

November, 2015

News from KSU Animal Sciences

In This Issue

- Upcoming Events
- Management Minute
- Feedlot Facts
- 2015 KSU Cattlemen's Day Article Featured
- 2014 KSU Swine Day Articles Featured
- Faculty Spotlight
- What Producers Should Be Thinking About...

We Need Your Help!

Please send questions, comments or ideas for future newsletter topics to lschrein@ksu.edu or call (785) 532-1267.

➤ **Don't miss the 2015 K-State Swine Day to be held November 19th at the KSU Alumni Center.** Registration is \$35 per participant at the door and begins at 8:00 a.m. The complete schedule and information can be found at www.KSUswine.org. For more information, contact Jim Nelssen (jnelssen@ksu.edu; 785-532-1251).

➤ **December 2015 and January 2016 Calving Management Schools** – Several Calving Management Schools will be held throughout the state of Kansas in December and January. Featured at each school will be Dr. Dave Rethorst, DVM, with the Beef Cattle Institute. Dr. Rethorst will cover the normal calving process, when to intervene and how to manage difficult births. This discussion will be interspersed with examples of the effect of nutrition during pregnancy on calving management as well as the lifetime health and performance of the calf. A location specific speaker will focus on cow winter nutrition. Listed below are dates and locations of the schools:

December 7, 5:30 p.m. – Pratt County Fairgrounds, Pratt, KS

Contact: Tim Marshall – tmarshal@ksu.edu; 620-886-3971

December 8, 5:30 p.m. – Buffalo Bill Cultural Center, Oakley, KS

Contact: Bronc Barrows – rsbarrow@ksu.edu; 785-671-3245

December 9, 5:30 p.m. – Dole-Specter Center, Russell, KS

Contact: Dusti Betts (dusti@ksu.edu; 785-483-3157)

December 10, 5:30 p.m. – Marshall County Fairgrounds, Blue Rapids, KS

Contact: Anastasia Johnson – anastasia@ksu.edu; 785-562-3531

December 17, 5:30 p.m. – Baden Square, 700 Gary Street, Winfield, KS

Contact: Jill Zimmerman – jzimmer@ksu.edu; 620-221-5450

January 4, 6:00 p.m. – McLouth Community Center, McLouth, KS

Contact: Jody Holthaus – jholthau@ksu.edu; 785-364-4125

January 5, 5:30 p.m. – Fire Station, Smith Center, KS

Contact: Neil Cates – ncates@ksu.edu; 785-738-3597

January 6, 5:30 p.m. – Kearny County Fairgrounds, Lakin, KS

Contact: Bill Haney – haney@ksu.edu; 620-355-6551

January 7, 5:30 p.m. – Senior Center, Ransom, KS

Contact: Jared Petersilie – jaredp11@ksu.edu; 785-626-3192

January 11, 6:00 p.m. – Civic Center, Independence, KS

Contact: Keith Martin – rkmartin@ksu.edu; 620-331-2690

January 12, 6:00 p.m. – K-State Olathe, Olathe, KS

Contact: Megan Westerhold – mwesterhold@ksu.edu; 913-294-4306

Please RSVP to the local extension office for the above schools by December 2nd, for December schools and January 2, for January schools, to ensure a meal. Charges (nominal) vary by location. Join us at one of these locations and increase the number of live calves you have at weaning. For more information, visit www.KSUbeef.org.



↪ The 2016 **Winter Ranch Management Series** will be held in multiple locations in January/February 2016. Watch for more details at www.KSUbeef.org. For more information, contact Bob Weaber (bweaber@ksu.edu; 785-532-1460).

↪ The 2016 **KSU Swine Profitability Conference** will be held on Tuesday, February 2, 2016, in Forum Hall of the K-State Student Union. The schedule for the event includes:

- 9:15 a.m. Coffee and Donuts
- 9:30 a.m. Special Lecture: Jack and Pat Anderson Lecture in Swine Health Management: Future Direction of the Midwest Land-Based Swine Businesses
Dr. Steve Henry, Abilene Animal Hospital
- 10:30 a.m. My Vision for our Swine Business – What Changes will be Important for our Future Success
Michael Springer, Independence, Kansas
- 11:15 a.m. Staying Competitive in a Changing Swine Industry
Bart Beattie, F.L. Beattie, Sumner, NE
- 12:00 noon Lunch
- 1:15 p.m. What We've Learned during the Past Two Years about the Pork Sector
Glynn Tonsor, Kansas State University
- 2:15 p.m. My Journey from KSU Back-up Quarterback to Heisman Trophy Finalist
Collin Klein, K-State Athletics
- 3:00 p.m. Adjourn

Watch for more details at www.KSUswine.org. For more information, contact Jim Nelssen (785-532-1251; jnelssen@ksu.edu).

↪ **Kansas Junior Producer Days** will be held in March of 2016 at Kansas State University's Department of Animal Sciences and Industry's Weber Hall. The **Jr. Beef Producer Day** will be Saturday, March 5th, with the **Jr. Sheep Producer Day** being Saturday, March 26th. All youth, parents, leaders, and Extension Agents are invited to participate in this hands-on educational experience. K-State Faculty and graduate students, vet school professionals, and extension agents and specialists will speak about youth livestock project management. Watch for more details. For more information, contact Lexie Hayes (adhayes@ksu.edu; 785-532-1264).

CALENDAR OF UPCOMING EVENTS

Date	Event	Location
November 19, 2015	K-State Swine Day	Manhattan
December 7, 2015	Calving Management School	Pratt, KS
December 8, 2015	Calving Management School	Oakley, KS
December 9, 2015	Calving Management School	Russell, KS
December 10, 2015	Calving Management School	Blue Rapids, KS
December 17, 2015	Calving Management School	Winfield, KS
January 4, 2016	Calving Management School	McLouth, KS
January 5, 2016	Calving Management School	Smith Center, KS
January 6, 2016	Calving Management School	Lakin, KS
January 7, 2016	Calving Management School	Ransom, KS
January 11, 2016	Calving Management School	Independence, KS
January 12, 2016	Calving Management School	Olathe, KS
February 2, 2016	K-State Swine Profitability Conference	Manhattan
March 5, 2016	Junior Beef Producer Day	Manhattan
March 26, 2016	Junior Sheep Producer Day	Manhattan

WHAT'S NEW.....

Management Minute "What People Want"

↪ **Management Minute** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist "What People Want"

Managers of every type of business run into the same question regarding workplace satisfaction: "What do employees *want*?"

The answer, according to Dr. Robert A. Milligan, Professor Emeritus at Cornell University, is three simple, yet infinitely complex, things: Autonomy, Relatedness, and Competence (*People Power*, Eastern Dairy Business, April 2012, <http://dairybusiness.com/magazines/edbapr12/files/30.html>).

Autonomy refers to people's ability and freedom to make choices and decisions within the workplace. This is another way of saying that people want to feel in some small way that their experience, knowledge, and opinions matter to the long-term success of the team. It refers not only to the level of authority a person has within their job duties, but also the level of trust and confidence management has in the person to make best use of resources and production outcomes.

Relatedness refers to the degree that interpersonal relationships are fostered in the workplace. People have a need to care for and be cared for by other people. This reality doesn't "switch off" when the person clocks in to work. The level of social respect that a person perceives in the workplace will greatly dictate their job satisfaction, regardless of position or pay.

Competence refers to the level of expertise people perceive about themselves within the specific, technical duties that they regularly perform within the scope of their job. People want to feel they are good at what they do, and that their talent and ability is appreciated by the team. Periodic recognition of ability is one means to foster this perception, but even more tangible is company-endorsed and sponsored continuing education. By providing or supporting uptake of ancillary skills, the leadership is saying, in essence, "We believe you are expert at what you do for this organization, and that we'd like you to have even greater expertise in these areas."

It is hard to imagine that a person who feels authority to make decisions in the workplace, believes their colleagues value and respect them as a peer and as a person, and believes their supervisors feel they are true experts at their job duties would have a great deal of angst and dissatisfaction in their position in the organization. If the above perceptions are true, then it really **IS** about the money...

For more information contact Chris at cdr3@ksu.edu.

Feedlot Facts "High Risk Calf Nutrition"

↪ **Feedlot Facts** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist "High Risk Calf Nutrition"

What are the three most critical required "nutrients" for high-risk calves who have been on a truck for an extended period? Hay, water, and rest. Alright, those aren't all exactly "nutrients" per se, but they are definitely REQUIRED. Nutritionists, veterinarians, and feedyard managers could probably argue for a month as to which of the three is the most important and urgent; none the less, they all are both important and urgent.

The rumen thrives on constancy. The animal is designed to keep a steady supply of forage and water flowing to the rumen, a steady amount of waste products flowing out from the rumen, and a steady stream of nutrients from fermentation absorbed through the rumen wall. Cattle that have been off feed and water for a number of hours need to re-start this flow.

Good quality grass or cereal grain hay, long-stemmed, needs to be available for calves to nibble on, along the bunk line and also in a hay feeder. Normally we want to encourage calves to get all their feed from the feed bunk but extremely stressed calves need to feed immediately and there may not be sufficient linear space at the bunk for all calves to eat at once. There needs to be a safe place for small or timid calves to eat hay in peace.

Clean, fresh water needs to be available. A separate additional water tank should be placed along the fence line so that (a) there is room for many calves to water immediately after arrival and (b) there is plenty of water for all the calves. These tanks may need to be re-filled throughout the day depending on demand.

↪ **Feedlot Facts – “High Risk Calf Nutrition” (cont.)**

Exhausted calves will want to lay down immediately after arrival. Opinions vary with respect to the urgency of rest. Some experts believe that immediately upon entry to the receiving pen exhausted calves should be gently moved to the feeding and drinking areas, to encourage them to eat and drink prior to bedding down; others contend that 30 minutes of rest prior to feeding and drinking is valuable. Most agree that after feeding and drinking, calves should be allowed an extended rest period prior to post-arrival processing. Some suggest an hour of rest for every hour on the truck. This is a rough guideline.

If pen conditions are wet upon arrival, straw or corn stalks should be put out, on the mounds, to give calves a relatively, dry, clean place to bed down. Regardless, receiving pens should have abundant area per animal, bedding during wet conditions, and shade during hot conditions.

We often place unrealistic expectations on vaccines and antibiotics to prevent disease in high-risk calves. It might be better to focus on these three important “nutrients” first.

For more information, contact Chris at 785-532-1672 or cdr3@ksu.edu.

↪ **Assistant Professor, Coordinator of Undergraduate Research** – The Department of Animal Sciences and Industry at Kansas State University seeks applicants for an Assistant Professor, Coordinator of Undergraduate Research. This position is a full-time, 12 month, tenure-track position (Requisition #5663). Review of applications begins November 16, 2015, and continues until position is filled. View complete position announcement at <http://www.asi.k-state.edu/about/job-announcements.html>. For more information, contact Dr. Bob Goodband at goodband@ksu.edu

↪ **Post-Doctoral Research Assistant** – The Department of Animal Sciences and Industry at Kansas State University seeks applicants for a Post-Doctoral Research Assistant. This position is a full-time, 12 month, term position (Requisition #5696). Review of applications begins December 1, 2015, and continues until position is filled. View complete position announcement at <http://www.asi.k-state.edu/about/job-announcements.html>. For more information, contact Dr. Barry Bradford at bbradfor@ksu.edu

↪ **Genetic Variance and Covariance Components for Feed Intake, Average Daily Gain, and Postweaning Gain in Growing Beef Cattle** - The objective was to obtain estimates of genetic parameters for growth and intake traits to quantify the relationship between performance test average daily gain and National Cattle Evaluation postweaning gain. On-test average daily feed intake (ADFI), on-test average daily gain (ADG), and postweaning gain (PWG) records on 5,606 growing steers and heifers were obtained from the U.S. Meat Animal Research Center in Clay Center, NE. Feed efficiency contemporary groups were defined as birth location, season, on-test date, and feeding management code. The PWG contemporary groups were defined as birth location, season, weaning date, and yearling weight date. The three-generation pedigree contained 9,211 animals from 27 different breed groups. On-test ADFI and ADG data were collected from a minimum of 62 to 148 testing days. Independent quadratic regressions were fitted for body weight on time, and on-test ADG was predicted from the resulting equations. PWG was calculated by subtracting 205-day weights from 365-day weights and dividing by 160 days. Heritability estimates and genetic/residual correlations were estimated using multiple-trait animal mixed models with ADG, ADFI, and PWG for both sexes as dependent variables. Heritability estimates for ADG, ADFI, and PWG of steers were 0.09, 0.43, and 0.36, respectively, and corresponding estimates for heifers were ADG 0.14, ADFI 0.39, and PWG 0.42. These estimates confirm that genetic improvement of feed efficiency can be made. The genetic correlations between steer ADG and ADFI, PWG and ADFI, and ADG and PWG were 0.73, 0.58, and 0.81, respectively, and corresponding estimates for heifers were 0.64, 0.77, and 0.65. The genetic correlations among traits for steers and heifers were strong.

Bottom Line...Strong correlations between ADG and PWG for both sexes indicated that PWG is a strong proxy for ADG on-test and that using long test periods to accurately measure ADG may be unnecessary, which would allow more animals to be tested per year with a given set of facilities. Testing more animals per facility leads to decreased testing costs and increased rate of genetic change for feed efficiency. View the complete report at www.asi.ksu.edu/cattlemensday. For more information, contact Jennifer Bormann (785-532-1222; jbormann@ksu.edu) or Bob Weaber (785-532-1460; bweaber@ksu.edu)

↪ **Menthol Supplementation Has Minimal Effects on Blood Components from Holstein Steers** - The objective was to evaluate changes in blood components associated with growth when menthol was incorporated into the diets of steers. Holstein steers (n = 52, body weight 1,262 lb) were sorted by body weight and assigned to treatments. Treatments consisted of 0, 0.003, 0.03, or 0.3% of diet dry matter as crystalline menthol, which was incorporated into the diet starting on day 2. Blood samples were obtained on days 1, 2, 9, 16, 23, and 30 at 0, 6, 12, 18, and 24 hours after feeding. Plasma was analyzed for metabolites of menthol, and serum was analyzed for insulin-like growth factor-1 concentrations.

Bottom Line... Addition of menthol to diets of cattle had no impact on insulin-like growth factor or growth performance parameters measured in this trial. View the complete report at www.asi.ksu.edu/cattlemensday. For more information, contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Chris Reinhardt (785-532-1262; cdr3@ksu.edu)

↪ **Effects of Different Feed Mills and Conditioning Temperature of Pelleted Diets on Nursery Pig**

Performance and Feed Preference from 14 to 50 lb - A total of 644 pigs (PIC 1050 or 327 × 1050, initial BW~14 lb) were used in 3 experiments to determine possible explanations for poorer pig performance in previous studies with pigs fed pelleted diets compared with those fed meal diets. Therefore, we examined feed pelleted from different mills as well as conditioning temperature as factors influencing our previous results.

In Experiment 1, pens of pigs were randomly allotted to 1 of 3 dietary treatments with 10 pens per treatment and 7 pigs per pen. The 3 dietary treatments used the identical corn-soybean meal-based formulation and were mixed from the same batch of ingredients. Experimental diets were: (1) feed mixed at mill B but pelleted in mill A; (2) feed mixed and pelleted at mill B; and (3) feed mixed at mill B and fed in meal form. Experiment 2 was a feed preference study where pens of pigs were randomly allotted to the same diets as Experiment 1 with 4 pens per treatment and 7 pigs per pen. Pens contained 2 feeders, each containing 1 of 3 treatment diets. Feeders were rotated once daily within each pen for the entire 33-d study with three diet comparisons tested: 1 vs. 2, 1 vs. 3, and 2 vs. 3.

In Experiment 3, pens of pigs were randomly allotted to 1 of 5 dietary treatments and fed for 16 d with 14 pens per treatment and 5 pigs per pen. Similar to Experiment 1, all diets used the identical corn-soybean meal-based formulation and were mixed from the same batch of ingredients. The experimental diets were: (1) feed mixed at mill A and fed in meal form; (2) feed mixed at mill A, but pelleted at mill B; (3), (4), and (5) feed mixed and pelleted at mill A at a conditioning temperature of 140, 160, or 180°F, respectively.

In Experiment 1, pigs fed the mill-B pelleted diet had the greatest ADG, whereas pigs fed the mill-A pelleted diet had the lowest ADG, with the meal diet from mill B intermediate. There were no differences in ADFI among the three experimental diets. The mill-A pelleted diet significantly worsened F/G and final BW compared with the mill-B pelleted diet, whereas the mill-B mash diet only tended to worsen F/G compared with the mill-B pelleted diet. In Experiment 2 for comparison 1, pigs consumed more of the mill-B pelleted diet than the mill-A pelleted diet, which translated into pigs eating 70% of their daily intake from the mill B pellet. For comparison 2 and 3, pigs fed either the mill-A or mill-B pellet consumed more feed than the mill B diet fed in mash form, with the pellets equated to 90% of their daily intake. For Experiment 3, there were no differences among the three diets pelleted under increasing conditioning temperatures at mill A, so they were combined for analysis. Pigs fed the meal diet had improved ADG compared with pigs fed the mill-A pellet with the mill-B pellet fed pigs intermediate. For ADFI, both mill-B and mill-A pellet-fed pigs had reduced intake compared with the meal diet but improved F/G. Final BW was reduced when pigs were fed the mill-A pelleted diet compared with the mash diet, with the pigs fed the mill-B pellet intermediate.

Bottom Line... In our study, conditioning temperature did not seem to explain the differences between mill-related growth performance differences observed in Experiments 1 and 2. More research is needed to fully elucidate the reason why pig performance may differ when the same feed is processed in different mills. More information is available on this experiment in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by J.A. De Jong, J.M. DeRouchey, M.D. Tokach, R.D. Goodband, and S.S. Dritz)

↪ **Effects of Electrostatic Particle Ionization on Air Quality, Emissions, and Growth Performance of Pigs Housed in a Thermo-Regulated Facility**

Two identical 200-head nurseries at the Kansas State University Segregated Early Weaning Facility were used for 5 consecutive all-in, all-out groups to determine the effect of electrostatic particle ionization (EPI) on air quality, emissions, and growth performance of pigs housed in a thermo-regulated facility. During five 6-wk periods (13 to 51 lb BW), the EPI system was used in one barn for a complete group and then used in the other barn for the next group. At the beginning of each 6-wk trial period, pigs were randomly allotted to pens based on average pig weight. Air measurements and pig growth were measured every week throughout the studies.

Overall, when active, the EPI system reduced 0.3, 0.5, 1.0, 2.5, 5.0, and 10.0 μ dust particles in the barn and dust particles/ft³ at the exhaust fan. There were no differences for in-barn air ammonia and hydrogen sulfide concentrations and no significant differences in ammonia concentrations in the dust between the control and EPI barn. The EPI system tended to improve ADG, which led to a tendency for improved final BW. No differences were detected for ADFI or F/G.

Bottom Line... The EPI system improved barn and exhaust air by removing particulate matter from suspension, which tended to improve growth rate in 13- to 51-lb pigs. 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. De Jong, K.N. Card, J.M. DeRouchey, M. Baumgartner, and P.J. Tomlinson)

AS&I Faculty Spotlight



Evan Titgemeyer (etitgeme@k-state.edu; 785-532-1220)

Professor/Research Coordinator/Animal Science Graduate Program Director

Evan Titgemeyer grew up on a small family farm in northwest Ohio. Following completion of a B.S. degree at The Ohio State University, he completed both M.S. and Ph.D. degrees at the University of Illinois. Following post-doctoral training in the area of fiber chemistry, he was hired as a faculty member at Kansas State University in 1992. He is currently a professor with specialization in the area of ruminant nutrition. In 2008, Evan accepted the positions of Research Coordinator for the department and Animal Science Graduate Program Director.

Dr. Titgemeyer's research program focuses on protein and amino acid utilization by beef and dairy cattle. His research has demonstrated that current models do not accurately represent amino acid utilization by growing cattle, because efficiencies of utilization are affected by the supplies of other nutrients and also differ among amino acids.

Evan's teaching responsibilities are primarily in graduate nutrition courses and include Nutritional Physiology, Protein Nutrition, and Analytical Techniques.

Evan lives north of Manhattan with his wife Lori and their two children, Taylor and Jack.



Deanna Retzlaff (retzlaff@k-state.edu; 785-532-2202)

Assistant Professor/Food Science

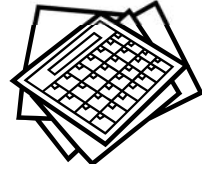
Deanna Retzlaff earned her B.S. degree in Animal Sciences from the University of Tennessee (Martin, TN). She then continued her education at Kansas State University, earning a Ph.D. in Food Science, with a focus on food safety. Deanna left the university to manage a commercial analytical laboratory for three years before returning to K-State in 2002.

Deanna currently serves as the advisor for Animal Science and Food Science majors in the online Bachelor Degree Completion Program. She also serves in a support role to help faculty create and offer online versions of their on-campus courses. She teaches FDSCI 307 Applied Meat & Poultry Microbiology to undergraduate students.

Deanna is a member of the University Continuing Education Association, the American Society for Microbiology, the International Association for Food Protection, and the Institute of Food Technologists.

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 2 or 3 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.*