



Newsletter from the Department of Animal Sciences and Industry
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WHAT'S NEW....

↪ **Management Minute** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist *“Safety When Working With Bulls”*

As breeding season rolls around there is an acute need to be reminded of the potential dangers when handling cattle, especially bulls.

First and foremost, hand-raised bulls do not have the same timidity of humans as those raised by their dam. These bulls view humans as their equal and constantly have the potential to become aggressive toward their handler. This is not new information, only a plea to take exceptional caution and give these bulls a wide berth.

Second, time should be taken to thoroughly inspect and repair all working facilities. The same facilities which successfully handled last season's calves through weaning or even the cows at preg check may be sufficiently worn or stressed that the larger, stronger, and more aggressive bulls may push the system beyond its limits. An extra day of maintenance could prove a great investment if human or animal injury is prevented and the time and inconvenience of escaped bulls is avoided.

Third, take age into account when working with mature cattle. As the body ages, several things happen: response time slows, vision diminishes, and healing time is extended. At 18 the body is still nimble enough to quickly dash out of harm's way; with advancing age, the need to plan for, avoid, and prevent dangerous situations increases. A mishap at 18 or 20 resulting in a muscle pull, a sprain, or even a broken bone will heal much more rapidly and permanently than the same injury after 50.

Take extra time this breeding season to slow down and consider the safety of both the livestock and their handlers; think through limitations posed by the animals, the facilities, and yourself.

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

↪ **Feedlot Facts** by Chris Reinhardt, Ph.D., Extension Feedlot Specialist *“Marketing on a Carcass Weight Basis”*

This is dangerous ground. The topic of fed cattle marketing can and has filled volumes. But there is one aspect of marketing to be acutely aware of this time of year: endpoints.

If you market fed cattle based strictly on live price, the simple rule is that when the cost of that day's gain (cost of feed+yardage) exceeds the value of that day's gain (live price*that day's gain), feeding more days will cost more than it will return.

If you sell in the beef with no direct premium or discount for carcass parameters, the equation changes slightly. It is still based on daily value gain vs. daily cost, but it changes to cost of that day's gain vs. the value of that day's CARCASS gain. This is where it gets interesting. Although overall dressing percentage may be 62-64%, dressing percentage of each pound of live weight increases with days on feed, and dressing percentage of live weight added at the end of the feeding period may exceed 80%. That is, if the steer is gaining 2.5 lbs/day, carcass gain is potentially 2 lbs. Also, because of the increasing dressing percentage with days on feed, rate of carcass gain does not decrease as rapidly as rate of live weight gain.

The reason this is important is that for the carcass weight seller, net value of cattle does not decrease as dramatically at the end of the feeding period as it does for the live seller. If you've recently switched from selling cattle on a live to a carcass weight basis, keep this in mind when determining optimum marketing endpoint.

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

- ↪ The **National Poultry Improvement Plan (NPIP) webpage** has recently been updated. The link is: <http://www.asi.ksu.edu/DesktopDefault.aspx?tabid=1039>. All the information necessary to become a certified tester for pullorum typhoid is now available online. Check out this website for the latest on the NPIP Testing Program and more. For more information, contact Scott Beyer (sbeyer@ksu.edu; 785-532-1201).
- ↪ **Research Assistant/Manager – Beef Stocker Unit**- The Department of Animal Sciences and Industry is looking for a Research Assistant/Manager of the Beef Stocker Unit. This position is a full time, non-tenure track, term position. B.S. in Animal Science or closely related discipline required. M.S. preferred. View complete position announcement at: <http://www.asi.ksu.edu/positions>
- ↪ **Length of Weaning Period But Not Timing of Vaccination Affects Feedlot Receiving Performance and Health of Fall-Weaned, Ranch-Direct Beef Calves** - Angus x Hereford calves (n = 437; average initial weight = 458 + 54 lb) were assigned randomly to a preshipment weaning period (i.e., 45, 15, or 0 days before shipment). Within each weaning period, calves were assigned to one of two vaccination treatments. One group was vaccinated 14 days before maternal separation and again at weaning. The second group was vaccinated on the day of arrival at the feedlot and again 14 days later. Calves were transported and commingled at a commercial auction barn, held for 12 hours, and then transported 5 miles to a feedlot. All calves were adapted to a receiving ration, and daily dry matter intakes were recorded. Cattle also were monitored twice daily for symptoms of respiratory disease.
Bottom Line...Weaning periods longer than 15 days at the ranch of origin do not improve health or performance of calves when they enter the feedlot. This study also raises the possibility that preshipment vaccination may not improve health or performance of ranch-direct cattle relative to vaccination that is deferred until feedlot arrival. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact KC Olson (785-532-5681; kcolson@ksu.edu) or Larry Hollis (785-532-1246; lhollis@ksu.edu).
- ↪ **Effects of *Morinda citrifolia* on Growth Performance and Health of High-Risk Calves** - High-risk stocker calves were delivered to the Kansas State University Beef Stocker Unit in May 2008 (n = 282, initial body weight = 487 lb). All calves received Excede upon arrival. Treatments consisted of a control (4 oz/head per day of water) and two levels of MorindaMax (Low, 2 oz/head per day; High, 4 oz/head per day) top-dressed on the feed. All cattle performed exceedingly well, and there was little to no health challenge from bovine respiratory disease. There were no significant differences between treatments in the percentage of steers treated once, twice, or three times for bovine respiratory disease (P>0.05). There were no significant differences in daily gain (P=0.81), daily dry matter intake (P=0.34), or feed efficiency (P=0.80) between the three treatments.
Bottom Line.... *Morinda citrifolia* administration did not affect dry matter intake or reduce morbidity or mortality associated with bovine respiratory disease. The low morbidity levels in this experiment were likely not sufficient to adequately test this feed additive. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Dale Blasi (785-532-5427; dblasi@ksu.edu) or Larry Hollis (785-532-1246; lhollis@ksu.edu).
- ↪ **Packaging Systems and Storage Times Serve as Post-Lethality Treatments for *Listeria monocytogenes* on Kippered Beef Steaks** - Strips of kippered beef steak inoculated with *L. monocytogenes* were packaged one of four systems: heat sealed, heat sealed with oxygen scavenger, nitrogen flushed with oxygen scavenger, and vacuum. Packages were then stored at room temperature for 24, 48, and 72 hours to determine whether storage time and packaging type would reduce *L. monocytogenes* on shelf-stable kippered beef steak. After 24 hours, *L. monocytogenes* was reduced by 1 log in all packaging treatments except heat sealed with oxygen scavenger, which had only a 0.6 log reduction. After 72 hours of storage, log reductions for all packaging treatments ranged from 1.7 to 2.4.
Bottom Line.... Processors of meat and poultry snacks could use a storage time of 72 hours prior to shipping in combination with any of these four packaging treatments to reduce potential *L. monocytogenes* populations by more than 1 log. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Kelly Getty (785-532-2203; kgetty@ksu.edu) or Liz Boyle (785-532-1247; lboyle@ksu.edu).

↪ **Impact of Evaporative Pads and Cross Ventilation on Core Body Temperature and Resting Time of Lactating Cows** - A trial was conducted to determine the impact of evaporative cooling pads on core body temperature (CBT), time spent lying, and number of lying bouts of Holstein cows housed in cross-ventilated freestall facilities. Despite cool ambient conditions during the trial, cows without evaporative pads tended to have elevated CBT above 102°F for 2.3 more hours per day and elevated CBT above 102.5°F for 0.95 more hours per day than cows with evaporative pads. These trends were evident even though the stocking density of the freestalls was greater in the facility with evaporative pads than in the facility without pads (123 vs. 113%). Lying times and lying bouts did not differ between treatments.

Bottom Line....Results of this study indicate that CBT tended to be reduced when evaporative pads were used, even under relatively mild ambient conditions. View the complete research report at www.asi.ksu.edu/dairy under the *Dairy Publications and Presentations* link. (This study conducted by J.F. Smith, B.J. Bradford, J.P. Harner, K. Ito, M. von Keyserlingk, C.R. Mullins, and J. Potts.)

↪ **Determination of Amino Acid Digestibility and Calculated Energy Values in High-Protein Sorghum Dried Distillers Grains with Solubles in Growing Pigs** – An experiment was conducted to determine the digestibility of amino acids (AA) and energy in high-protein sorghum dried distillers grain with solubles (DDGS). Six growing barrows (initially 50 lb) surgically fitted with T-cannulas were randomly assigned to 1 of 2 dietary treatments in a 2-period crossover design. The treatments were a diet with the high-protein sorghum DDGS (50% of the diet) as the only protein source and an N-free diet for determining basal endogenous AA loss. Both diets contained 0.25% chromic oxide as an indigestible marker. Fecal and ileal digesta samples were collected during each period for energy and AA analysis. On the basis of these analyses, apparent (AID) and standardized (SID) ileal digestibility and energy values were calculated. The analyzed CP of the product was 44.5% with a lysine:CP ratio of 3.6%. Crude fat, ADF, and NDF were 2.9, 16.1, and 18.8%, respectively. The AID for lysine, methionine, threonine, and tryptophan were 51.9, 73.0, 60.6, and 71.7%, respectively. The SID values were 53.7, 73.8, 63.0, and 73.8% for lysine, methionine, threonine, and tryptophan, respectively. The analyzed GE of the product was 2,317 kcal/lb of DM. The calculated DE, ME, and NE values were 1,759; 1,610; and 1,023 kcal/lb of DM, respectively.

Bottom Line....In conclusion, the high-protein sorghum DDGS is higher in CP, AA, Ca, and P but lower in AA digestibility and energy compared with reported values for traditional DDGS. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by H.L. Frobose, J.Y. Jacela, J.M. DeRouchey, S.S. Dritz, M.D. Tokach, J.L. Nelssen, and R.D. Goodband.)

↪ **An Evaluation of Peptone as a Specialty Protein Source in Diets for Nursery Pigs** - Two experiments were conducted to evaluate the effects of select menhaden fish meal (SMFM), spray-dried animal plasma (SDAP), and two forms of a spray-dried ultra-filtrated porcine intestinal mucosa (Peptone 1 and 2; Protein Resources, West Bend, IA) on nursery pig performance. In Exp. 1, 216 weanling pigs (initial BW 11.9 lb) were fed either (1) a control diet containing no specialty protein sources or the control diet with (2) 4% SMFM during Phase 1 and 2% SMFM during Phase 2, (3) 4% SDAP during Phase 1 and no specialty protein sources during Phase 2, (4) 4% SDAP during Phase 1 and 2% SDAP during Phase 2, (5) 4% Peptone 1 during Phase 1 and no specialty protein sources during Phase 2, or (6) 4% Peptone 1 during Phase 1 and 2% Peptone 1 during Phase 2. Pigs were fed Phase 1 diets from d 0 to 10 postweaning followed by Phase 2 diets from d 10 to d 20 and a common Phase 3 diet that contained no specialty proteins for 7 d. From d 0 to 10 or d 0 to 27, there were no differences ($P > 0.05$) in ADG or F/G.

In Exp. 2, 180 weanling pigs (initial BW 13.0 lb) were fed either (1) a control diet containing no specialty protein sources or the control diet with (2) 4% SMFM during Phase 1 and 2% SMFM during Phase 2, (3) 4% SDAP during Phase 1 and no specialty protein sources during Phase 2, (4) 4% SDAP during Phase 1 and 2% SDAP during Phase 2, (5) 4% Peptone 2 during Phase 1 and no specialty protein sources during Phase 2, or (6) 4% Peptone 2 during Phase 1 and 2% Peptone during Phase 2. Pigs were fed Phase 1 diets from d 0 to 10 postweaning followed by a Phase 2 diet from d 10 to d 25. Pigs were then fed a common Phase 3 diet that contained no specialty proteins for 7 d. From d 0 to 10, pigs fed diets containing Peptone 2 had improved ($P < 0.10$) F/G compared with pigs fed the control diet. Overall (d 0 to 32), pigs fed 4% Peptone 2 during Phase 1 and 2% Peptone 2 during Phase 2 had improved ($P < 0.05$) ADG compared with pigs fed 4% SMFM during Phase 1 and 2% SMFM during Phase 2. Pigs fed 4% Peptone 2 during Phase 1 and 2% Peptone 2 during Phase 2 had improved F/G compared with pigs fed all other diets.

Bottom Line....In conclusion, the Peptone products evaluated in these studies can be used in nursery pig diets without negatively affecting pig growth performance. However, the lack of response to animal plasma in these experiments indicates that further research is warranted. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by C.K. Jones, M.D. Tokach, R.D. Goodband, J.L. Nelssen, S.S. Dritz, J.M. DeRouchey, and D. McKilligan.)

UPCOMING EVENTS...

- ↪ **Developing and Implementing Your Company's HACCP Plan** for meat, poultry, and food processors will be held June 2-4, 2010 in Weber Hall, Kansas State University, Manhattan. Registration for the 2.5 day International HACCP Alliance accredited workshop is online at <http://animalscience.unl.edu/haccp/>. The workshop fee is \$295, and meets USDA training requirements to become a HACCP trained individual. For more information, contact Dr. Liz Boyle at lboyle@ksu.edu or 785.532.1247.
- ↪ The **KSU Youth Horse Judging Camp – Beginning Section** will be held Friday, June 4, 2010 and the **KSU Youth Horse Judging Camp – Advanced Section** will be held June 7-8, 2010. Both camps will be held in Weber Arena on the KSU Campus. For more information, contact Teresa Slough (785-532-1268; tslough@ksu.edu).
- ↪ The **Second K-State Animal Sciences Leadership Academy** will be June 9-12, at KSU. This hands-on event is designed for current high school students to gain animal sciences industry knowledge and develop their leadership skills. You can find applications and more information at www.YouthLivestock.KSU.edu. A special thank you to the Livestock and Meat Industry Council (LMIC) for continuing to support this program.
- ↪ **Make your plans now for the “Champion” Livestock Judging Camp.** – This three day, intense judging camp is designed for 4-H and FFA members (ages 14-18) who are seriously interested in enhancing their livestock judging and oral communication skills. Mini camps will be conducted throughout the month of June. The following dates are set for the 2010 camps: Camp A June 15-17 (Tuesday-Thursday); Camp B June 18-20 (Friday-Sunday); and Camp C June 21-23 (Monday-Wednesday). The registration deadline is May 14. For more information, contact Scott Schaake (simmi@ksu.edu; 785-532-1242) or Kristi Hageman (klsmith@k-state.edu; 785-532-2996).
- ↪ The **2010 Dr. Bob Hines Swine Classic** is scheduled for July 9-10, 2010, at CiCo Park in Manhattan. This two-day event includes educational workshops, showmanship contest, and a prospect and market hog show. It is open to all Kansas youths ages 7 through 18 as of January 1, 2010.
Come and help us celebrate the 25th anniversary of the Swine Classic. This year's Classic will feature a swine photography contest along with the K-State Swine Knowledge Challenge. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu), Jim Nelssen (785-532-1251; jnelssen@ksu.edu), or Sharon Breiner (785-532-1264; sbreiner@ksu.edu).
- ↪ Dates have been finalized for the **4-H Livestock Sweepstakes**, August 21-22. This all-around event will feature contests in Livestock Judging, Meats Judging, Livestock Skillathon, and Livestock Quiz Bowl. A special prize will be awarded to the county that does the best in all four contests. Rules and past winners can be found at www.YouthLivestock.KSU.edu. Complete information for 2010 will be available on the Youth Livestock Web page in May.
Please Note: The event will be held during K-State Move-in Weekend. Please reserve your rooms as soon as possible. No activities will take place at the hotel. For your convenience two sets of room blocks have been made for August 20-22:
Clarion Hotel - \$90 - "KSU Department of Animal Science and Industry" Block - (785) 539-5311
Quality Inn - \$65 - "KSU Department of Animal Science and Industry" Block - (785) 770-8000

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
May 17, 2010	PQA+ Certification	Manhattan
May 19, 2010	Emergency Preparedness Cattle Seminar	Manhattan
May 19-21, 2010	International Symposium on Beef Cattle Welfare	Manhattan
June 2-4, 2010	HACCP Training	Manhattan
June 4, 2010	KSU Youth Horse Judging Camp – Beginning Section	Manhattan
June 7-8, 2010	KSU Youth Horse Judging Camp – Advanced Section	Manhattan
June 9-12, 2010	K-State Animal Sciences Leadership Academy	Manhattan
June 15, 2010	Nomination Deadline for all Remaining Species	
June 15-17, 2010	Champion Livestock Judging Camp	Manhattan
June 18-20, 2010	Champion Livestock Judging Camp	Manhattan
June 21-23, 2010	Champion Livestock Judging Camp	Manhattan
July 9-10, 2010	Dr. Bob Hines Swine Classic	Manhattan
August 21-22, 2010	4-H Livestock Sweepstakes	Manhattan

AS&I FACULTY SPOTLIGHT



Chris Reinhardt (cdr3@k-state.edu; 785-532-1672)
Assistant Professor/Feedlot Extension Specialist

A native of Wisconsin, Dr. Chris Reinhardt received a B.S. in Meat and Animal Science from the University of Wisconsin, an M.S. in Nutrition from Texas A&M University, and a Ph.D. in Nutrition from good ol' Kansas State.

Chris' focus has been on nutritional and hormonal manipulation of body composition and beef quality. Chris spent 11 years in the feed and animal health industries while living in Nebraska. Now he and his wife Nicoel and their youngest son and their Corgi are settled in here in Manhattan. Dr. Reinhardt was hired on at Kansas State University in the Fall of 2005 as the Feedlot Extension Specialist with a 20% research and 80% extension appointment.

In his spare time Chris enjoys hunting with his sons, church activities, playing guitar with friends, and his family.



Scott Beyer (sbeyer@k-state.edu; 785-532-1201)
Associate Professor/Poultry Nutrition and Management

Originally from Galveston, Texas, Dr. Scott Beyer attended Texas A&M University and received an undergraduate degree in Biochemistry in 1983. He obtained his Masters and Ph.D. degrees in the Animal Nutrition Program from the University of Georgia. He then worked as a Post-Doctoral Research Associate for Harvard University in the Department of Nutrition. In 1993, he accepted an Assistant Professor position at Kansas State University where he currently has a 50% teaching, 25% research and 25% extension appointment.

Dr. Scott Beyer has 20 advisee undergraduate students and 3 graduate students. He teaches 7 different courses in the Department, which includes ASI 106, Dairy/Poultry Science; ASI 107, Companion Animal and Equine Lab; ASI 310, Poultry/Production Evaluation; ASI 520, Companion

Animal Management; ASI 640, Poultry Product Technology; ASI 645, Poultry Management; and ASI 676, Avian Nutrition.

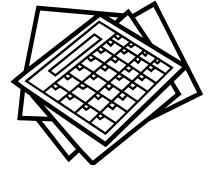
Dr. Beyer is coach of the KSU Collegiate Poultry Judging team, which won the national championship in 2002 and 2003, and has finished in the top of every contest since then. He also works with numerous 4-H volunteers and FFA instructors and teams. He is involved with poultry judging at counties fairs and supervisor of the poultry division at the Kansas State Fair.

Dr. Beyer is also the Poultry Extension Agent for the state of Kansas and maintains extramural funding for his research program related to poultry and companion animals. His research focuses on feed manufacturing and poultry nutrition. He has been an invited speaker at every nutrition conference in the US. He has been an invited speaker at international conferences in Mexico, Tunisia, Egypt, China, Malaysia, South Korea, and Morocco.

Dr. Scott Beyer resides in Manhattan with his wife Amy, and their three boys, Travis, Eric, and Nick, all of whom play baseball on different traveling teams. When he has some spare time and isn't doing something poultry or watching baseball, he enjoys woodworking, fishing, and gardening.

WHAT PRODUCERS SHOULD BE THINKING ABOUT...

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



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

Cowherd Nutrition

- Provide plenty of clean, fresh water.
- Provide free-choice mineral to correct any mineral deficiencies or imbalances.
 - ✓ Monitor intake to insure levels are consistent with label specifications.
- Monitor grazing conditions and rotate pastures if possible and/or practical.
- If ammoniated wheat straw is planned for winter needs, follow these rules:
 - ✓ Best time is immediately after harvest, prior to weather deterioration.
 - ✓ Ammoniation process is temperature sensitive, fastest during hot days.
 - ✓ Apply 3% Anhydrous Ammonia (60 pounds/ton of straw).
 - ✓ Do ***not*** ammoniate wheat hay or any other intermediate or high quality forage; production of imidazole can cause cattle hyperactivity and death.
 - ✓ Will double crude protein content, enhances intake, and be cost effective.
- Consider early weaning if drought conditions develop and persist.
- Consider creep feeding only if cost effective.

Herd Health

- Monitor and treat Pink Eye cases.
- Provide fly control. Consider all options, price and efficiency will dictate the best option(s) to use.
- Monitor and treat foot rot cases.
- Avoid handling and transporting cattle during the hottest part of the day-reduce heat stress.
- Vaccinate replacement heifers for Brucellosis if within proper age range (4 - 10 months).
- Continue anaplasmosis control program (consult local veterinarian).

Forage/Pasture Management

- Check and maintain summer water supplies.
- Place mineral feeders strategically to enhance grazing distribution.
- Check water gaps after possible washouts.
- Harvest hays in a timely manner, think quality and quantity.
- Harvest sudan and sudan hybrids for hay in the boot stage (normally three to four feet in height). It is a good idea to run a routine nitrate test on a field before harvesting hay.
- Plan hay storage placement wisely. Putting hay conveniently near feeding sites reduces labor, time demands, and equipment repair cost.

General Management

- Good fences and good brands make good neighbors.
- Check equipment (sprayers, dust bags, oilers, haying equipment) and repair or replace as needed. Have spare parts on hand, down time can make a big difference in hay quality.

*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.*