



Newsletter from the Department of Animal Sciences and Industry  
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## UPCOMING EVENTS...

September 2012

### News from KSU Animal Sciences

#### In This Issue

- Upcoming Events
- Management Minute
- Feedlot Facts
- 2012 KSU Cattlemen's Day Article Featured
- 2011 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](mailto:lschrein@ksu.edu) or call (785) 532-1267.



☛ The **2012 KSU Beef Stocker Field Day** will be held on Thursday, September 27 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. Cattle and Corn Market Outlook – *Dr. Glynn Tonsor, KSU*
- 11:15 a.m. Producer Panel: Managing Around Fewer Cattle – *Moderator, Wes Ishmael, BEEF Margaret Ann Smith, Southflex Cattle Co.; Fred Berns, Peabody, KS; Jeff George, Finney County Feedyard; and Ken Woods, Frontier Farm Credit*
- 12:00 noon BBQ Lunch with Cattle Handling Facilities demonstrations
- 1:30 p.m. Bayer R&D Update for Stocker Cattle – *Dr. Jason Nickell*
- 2:15 p.m. Antibiotic Classes and Uses for Stocker Operations – *Dr. Jim Sears*
- 2:30 p.m. Byproduct Utilization and Growing Cattle – *Dr. Terry Klopfenstein, University of Nebraska*
- 3:15 – 5:00 p.m. **Breakout Sessions**
  - Pasture Weed Control – *Dr. Walt Fick, KSU Range Management*
  - Purchasing Commodity Feeds – *Rodney Derstein, Tallgrass Commodities*
  - Why is he dead? What a necropsy can tell us – *Larry Hollis, KSU Beef Vet*

The day will conclude with a good old-fashioned Prairie Oyster Fry and dutch oven desserts. Pre-registration is \$25 by September 15. For complete details and registration, visit [www.KSUbeef.org](http://www.KSUbeef.org). For more information, contact Dale Blasi ([dblasi@ksu.edu](mailto:dblasi@ksu.edu); 785-532-5427).

☛ **Developing and Implementing Your Company's HACCP Plan for Meat, Poultry, and Food Processors** will be held October 3-5, 2012, at the Kansas State University Olathe Campus, 22201 West Innovation Drive, Olathe. Registration for the 2.5 day International HACCP Alliance accredited workshop is online at <http://HACCP.unl.edu>. The workshop fee is \$325, and meets USDA training requirements to become a HACCP trained individual. For more information, contact Liz Boyle ([lboyle@ksu.edu](mailto:lboyle@ksu.edu); 785-532-1247).

☛ The **2012 KSU Swine Day** will be held Thursday, November 15, at the KSU Alumni Center. Mark the date on your calendar and watch for more details.

#### CALENDAR OF UPCOMING EVENTS

Date	Event	Location
September 27, 2012	KSU Beef Stocker Field Day	Manhattan
October 3-5, 2012	Developing and Implementing Your Company's HACCP Plan	Olathe, KS
November 15, 2012	KSU Swine Day	Manhattan

# WHAT'S NEW . . . .

## Management Minute "Change Something"

### ↳ Management Minute – Chris Reinhardt, Ph.D., Extension Feedlot Specialist *"Change Something"*

IBM, American automakers, Kodak and Polaroid. These are just some of the ever-present reminders that markets change, consumers change, the production environment changes, the world changes.

IBM executives were adamant that individual people would never want to own and operate their own computer. The "big three" American automakers insisted people would always want big, expensive cars. The Kodak and Polaroid camera empires were entrenched in systems that required film and paper.

One potential lesson to be learned from these and many other examples is that philosophies that were always "right" can become "wrong", simply because the world slid out from underneath that production mantra.

In football, the quarterback throws the pass to where the already-sprinting receiver is GOING to be, not where he is right now. Even more impressive, a sprinting hockey player passes the puck to where another sprinting player will be a half second from now. The very survival of your business rests on this next choice of philosophies: either the world will not change substantially within the next 20-30 years, or it will.

Unfortunately, anticipating change is not easy, and the cost of the wrong direction may be devastating. That may be why many businesses simply allow change to affect them, paralyzed by the fear of making the wrong decision, they make no decision. And to go back to the football analogy, a successful quarterback will average 60-65% completion for a career---even the greatest miss a third of the time.

For those of us with gray around the temples, we could ride out the existing production environment and leave the rubble to those that come after us. But the sad waste in that approach and mindset is that the 40-somethings and 50-somethings of today are the very people with the experience and hind sight to best anticipate what will change and what will come after.

Change is coming, and it is here. The only question left is how will we respond?

For more information, contact Chris at 785-532-1672 or [cdr3@ksu.edu](mailto:cdr3@ksu.edu).

### ↳ Feedlot Facts – Chris Reinhardt, Ph.D., Extension Feedlot Specialist *"The Elephant in the Room"*

Calf health is probably the most scrutinized yet poorly understood areas of cattle feeding. The beef industry has voluminous data on sickness and death loss in various classes of feedlot cattle. We tirelessly investigate the science behind modern vaccines and antimicrobials. And yet the U.S. beef industry has not substantially improved the health outcome of feedlot cattle in 30 years.

Vaccine technology has continued to progress and producers certainly have better knowledge of the use and administration of vaccines than only a generation ago. The veterinary community has, necessarily, increased pharmacovigilance in order to preserve the efficacy of available antimicrobials. Most diagnostic labs currently keep a running database of antimicrobial resistance in populations of respiratory organisms.

And yet, in spite of all our advanced technology and knowledge, the most effective program for reducing respiratory disease in calves, is reducing stress.

Stress is the enemy of immunity. We see this in cattle, and we see this in our own human bodies. In otherwise healthy people, the greatest risk of cold and flu comes during or after periods of stress. Stress changes the way the body responds to invading pathogens---either viral or bacterial.

## Feedlot Facts "The Elephant in the Room"

### **Feedlot Facts – “The Elephant in the Room” (cont.)**

Most respiratory bacteria can be isolated from the respiratory tract of healthy cattle. But it usually requires the damage caused by a viral invasion for these bacteria to take over. The simple presence of viral pathogens is not sufficient to elicit disease, either. The critical factor causing a “tipping point” is stress.

Stress can come in the form of inclement weather, abrupt weaning, isolation, commingling with unfamiliar cattle, extended transport, rough handling, mud, dusty conditions, etc. Unfortunately, many of these conditions are unavoidable when receiving calves into the feedyard. We simply must deal with the outcomes of these stressful conditions.

Fortunately, in home-weaned and home-raised calves, we CAN prevent many, if not all, of these disease-causing stressors. By raising the calves locally, you can dramatically reduce or eliminate transport, commingling, and isolation. Through low-stress, quiet handling techniques we can (and should) eliminate rough handling. Using fence-line weaning or other techniques we can reduce weaning stress. We can affect pen conditions by scraping and bedding, and we can provide shelter to alleviate poor weather conditions.

The rancher who weans and raises calves at home has a tremendous advantage over commercial feedyards with respect to health outcome of weaned calves. While a commercial feedyard must simply manage health to the best of their ability in spite of the numerous stressors, ranchers can prevent a huge proportion of disease simply by reducing stress.

And with estimates of lost profitability of \$150-200 for sick calves, reducing stress sounds like money in the bank.

For more information contact Chris at [cdr3@ksu.edu](mailto:cdr3@ksu.edu).

↳ **2012 Kansas 4-H Livestock Sweepstakes** – Kansas 4-H members from across the state competed in the 2012 Kansas 4-H Livestock Sweepstakes held at Kansas State University August 25-26. This was the fourth year for the Sweepstakes event which included four competitions all in one weekend: Livestock Judging, Meats Judging, Livestock Skillathon, and Livestock Quiz Bowl.

In the Livestock Judging contest, teams of four individuals evaluated eight classes of breeding and market beef, sheep, and swine. For Meats Judging, 4-H members were challenged to identify retail cuts as well as judge classes of retail cuts, wholesale or primal cuts, and carcasses. They also answered questions about the classes and gave oral reasons defending their class placings. The Livestock Skillathon tested animal science knowledge in a variety of different areas including feedstuffs, equipment identification, genetics, breed identification, and livestock anatomy. Challenging the 4-H member’s range of knowledge over beef, sheep, swine, and meat goats was the Livestock Quiz Bowl. Team members completed a written exam which then placed teams in a bracket to compete head to head.

The K-State Livestock Judging Team, K-State Meat’s Judging Team, and various K-State faculty, staff, graduate students and other volunteers are to thank for such a successful event.

The event was coordinated by the K-State Youth Livestock Program. Results of the event, including placings and overall awards will be posted later this week on the website, [www.YouthLivestock.KSU.edu](http://www.YouthLivestock.KSU.edu).

↳ **IRM Redbooks for Sale** – The 2013 IRM Redbooks will be arriving soon and will be sold on a first come first serve basis. The price of the redbooks will be: For orders of less than 10 = \$5.25/book; Orders of 10 or more = \$5.00/book which includes postage. To order your supply of redbooks, please contact Lois (lschrein@ksu.edu; 785-532-1267).

↳ **Delaying Implant in High-Risk Calves Has No Benefit for Health or Feedlot Performance** – High-risk feeder calves (n=1,601) were used to measure the value of delaying the initial implant in a commercial feedlot. The initial feedlot implant was given either at feedlot arrival or 45 days afterward. Health, feed intake, and feedlot performance were monitored through harvest. Carcass traits and liver and lung scores were evaluated post-harvest.

**Bottom Line**...Delaying the initial feedlot implant has no effect on animal growth, health, carcass quality or carcass value. View the complete research report at [www.asi.ksu.edu/cattlemensday](http://www.asi.ksu.edu/cattlemensday). For more information contact, Dan Thomson (785-532-4844; [dthomson@vet.ksu.edu](mailto:dthomson@vet.ksu.edu)) or Chris Reinhardt (785-532-1672; [cdr3@ksu.edu](mailto:cdr3@ksu.edu)).

↳ **Effect of Transportation on *E. coli* O157:H7 Prevalence and Coliform Concentrations in Feces of Feedlot Cattle** – Previous studies have shown that stressed animals are more likely to shed *E. coli* O157:H7. Given the short generation intervals associated with pathogenic organisms, otherwise normal animals could become heavily colonized by foodborne pathogens as a result of stress incurred during transportation from feedlots and during lairage at abattoirs. We used two groups of cattle to evaluate the effects of transport and lairage on pathogen shedding: a non-transported group (Control) and a group that

was transported on a trailer for 1 hour and subsequently held in a pen for a brief lairage period. We measured the prevalence of O157:H7 and enumerated generic *E. coli* and coliforms in fresh fecal pats obtained at 0, 5, and 29 hours post transit. We observed a significant difference in shedding patterns of control and transported cattle by hour 5 after transport.

**Bottom Line...**Transport and lairage changed the pattern of fecal shedding for *Escherichia coli* O157:H7 in this experiment. These results encourage further investigation on the prevalence pattern of *Escherichia coli* O157:H7 in transported animals to establish when cattle are at greater risk of contamination at slaughter. View the complete research report at [www.asi.ksu.edu/cattlemensday](http://www.asi.ksu.edu/cattlemensday). For more information contact, Jim Drouillard (785-532-1204; [jdrouill@ksu.edu](mailto:jdrouill@ksu.edu)) or Larry Hollis (785-532-1246; [lhollis@ksu.edu](mailto:lhollis@ksu.edu)).

↳ **Determining the Effects of Tryptophan:Lysine Ratio in Diets Containing Dried Distillers Grains with Solubles on Growth Performance of Finishing Pigs** - A total of 1,235 pigs (PIC 1050 × 337; initially 149 lb) were used in a 71-d study to determine the effects of tryptophan:lysine ratio in diets containing 0, 20, or 40% dried distillers grains with solubles (DDGS) on growth performance of finishing pigs raised in a commercial environment. Pens of pigs were balanced by initial weight and randomly allotted to 1 of 6 dietary treatments in a completely randomized design with 26 to 28 pigs per pen and 7 to 8 replications per treatment. Treatments were arranged as a 2 × 3 factorial with main effects of standardized ileal digestible (SID) tryptophan:lysine ratio (16.5 or 20% of lysine) and DDGS (0, 20, or 40%). Overall (d 0 to d 71), no differences occurred in growth performance due to SID tryptophan:lysine ratio. Increasing DDGS resulted in poorer F/G, but did not influence other growth performance criteria. For carcass characteristics, increasing the SID tryptophan:lysine ratio increased carcass yield percentage with the greatest improvement in yield observed when diets contained high levels (20 and 40%) of DDGS. Pigs fed high levels of DDGS had reduced loin depth; however, the lowest loin depth was at 40% DDGS for 16.5% SID tryptophan:lysine ratio and at 20% DDGS for 20% SID tryptophan:lysine ratio resulting in a tryptophan × DDGS interaction. A tendency of tryptophan × DDGS interaction was observed for lean percentage, with lean percentage decreasing as DDGS increased in diets containing the 16.5% SID tryptophan:lysine ratio and no change in lean percentage as DDGS increased in diets containing the 20% SID tryptophan:lysine ratio.

**Bottom Line...**The tendency of interactions for yield and lean percentage indicate an advantage to increasing the SID tryptophan:lysine ratio in diets with high levels of DDGS, but no effects on growth performance were observed due to SID tryptophan:lysine ratio. More information is available on this experiment and others in the KSU Swine Day Report at [www.KSUswine.org](http://www.KSUswine.org). (This study conducted by S. Nitikanchana, M. D. Tokach, S. S. Dritz, J.L. Usry, R. D. Goodband, J. M. DeRouchey, and J. L. Nelssen.)

↳ **Effects of Sorghum Particle Size on Milling Characteristics, Growth Performance, and Carcass Characteristics in Finishing Pigs** - A total of 200 finishing pigs (PIC TR4 × 1050; average initial BW of 103.2 lb) were used in a 69-d growth assay to determine the effects of sorghum particle size on growth performance. Pigs were sorted by sex and ancestry and balanced by BW, with 5 pigs per pen and 10 pens per treatment. Treatments were a corn-soybean meal-based control with the corn milled to a target mean particle size of 600 µm, and sorghum diets milled to a target mean particle size of 800, 600, or 400 µm. Actual mean particle sizes were 555 µm for corn, and 724, 573, and 319 µm for sorghum, respectively. Feed and water were offered on an ad libitum basis until the pigs were slaughtered (average final BW of 271 lb) at a commercial abattoir. Reducing sorghum particle size improved F/G, and we observed a tendency for decreased ADFI. Reducing sorghum particle size from 724 to 319 µm had no effects on HCW, backfat thickness, loin depth, or percentage fat-free lean index (FFLI), but tended to increase carcass yield. Pigs fed the sorghum-based diets had no difference in growth performance or carcass characteristics compared with those fed the control diet, except carcass yield, which was numerically greater for pigs fed the sorghum-based diets. When using a regression equation, we determined that sorghum must be ground to 513 µm to achieve a F/G equal to that of a corn-based diet, with corn ground to 550 µm.

**Bottom Line...**In conclusion, linear improvements in F/G and carcass yield were demonstrated with the reduction of sorghum particle size to 319 µm. In this experiment, sorghum should be ground 42 µm finer than corn to achieve a similar feeding value. More information is available on this experiment and others in the KSU Swine Day Report at [www.KSUswine.org](http://www.KSUswine.org). (This study conducted by C. B. Paulk, J. D. Hancock, A. C. Fahrenholz, J. M. Wilson, L. J. McKinney, and K. C. Benhke.)

# AS&I Faculty Spotlight



**Dave Nichols (dnichols@k-state.edu; 785-532-1239)**  
**Professor/Teaching Coordinator**

Dr. Dave Nichols was born in 1955, and raised on a commercial beef cattle, swine, and crops farm near Brookston, Indiana. He entered Purdue University in the fall of 1973, majoring in Animal Science. Upon completion of his B.S. degree in December of 1976, he entered graduate school at Kansas State University, where he completed his M.S. in 1979, and his Ph.D. in 1981.

In October of 1981 Dave joined the KSU faculty as an extension livestock specialist. In 1983 he accepted an 80% teaching and 20% research appointment. In 1999 he became coordinator of teaching for the Department of Animal Sciences and Industry and currently holds that position with a 100% teaching appointment. In recent years he has also led student study abroad tours to Costa Rica, Canada and China.

Dr. Nichols advises approximately 100 students, teaches courses in live animal and carcass evaluation, introductory animal science, and livestock sales management. He serves as advisor for the Little American Royal Showmanship Contest, and has been highly involved in 4-H and youth activities. Dr. Nichols

coached the KSU Livestock Judging Team from 1986 to 1988, winning, among others, the American Royal Contest. Dr. Nichols has judged numerous cattle shows in recent years.

He has judged cattle at Houston, Ft. Worth, San Antonio, Louisville, the American Royal and numerous state fairs. He recently was a guest speaker at the 33rd World Charolais Congress in Porto Alegre, Brazil.

In addition to his university and judging responsibilities, Dr. Nichols owns and operates A and D Ranch near Manhattan. He and his wife, Anita, have two children, Drew and Amy.



**Mike Tokach (mtokach@k-state.edu; 785-532-2032)**  
**Professor/Extension State Leader**

Growing up on a diversified livestock and grain farm in North Dakota taught Dr. Mike Tokach many of the practical day-to-day problems that livestock producers can encounter. In his position as a swine extension specialist and researcher, Mike has the opportunity to help producers solve those problems. Following completion of a bachelor degree in Animal Science at North Dakota State University in 1986, Mike earned a Masters degree in swine nutrition at Kansas State University in 1988. After completing his doctorate in swine nutrition at the University of Minnesota in March 1991, Mike joined the staff of K-State Research and Extension as a livestock specialist. His position has evolved from a 100% extension position to the current 60% extension and 40% research appointment. Mike was promoted to associate professor in 1995 and full professor in 2001. He assumed the additional role of Extension State Leader for Animal Sciences and Industry in July, 2005.

Mike's focus is transferring information to swine producers and conducting practical nutrition research. He is a member of a highly productive swine team. Mike has presented invited seminars at over 250 animal and veterinary science meetings around the world. Mike has co-authored 200 refereed journal papers, 470 abstracts, 680 extension publications and field day reports, and 6 book chapters. Mike and his colleagues have generated over \$8 million in grants and gifts to Kansas State University to support swine research. Mike was named one of the 50 people that have made the greatest impact on the swine industry in the last 50 years by the National Hog Farmer Magazine.

Mike's wife, Lisa, also specializes in swine as a veterinarian in the Abilene Animal Hospital. Mike and Lisa have three children, Sage, Rogan, and Fiona.

# 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](mailto:lschrein@ksu.edu), or phone 785-532-1267.*