



# News from KSU Animal Sciences

## UPCOMING EVENTS...

- ✦ A **Sheep and Goat Meeting** will be held Tuesday, November 20 at 6:30 p.m. at the Southeast Research and Extension Center, Parsons, KS. Registration will begin at 6:30 p.m. Speakers include Dr. Alison Crane, KSU Sheep and Meat Goat Specialist; Kurtis Gregory, Columbus Veterinary Clinic; and James Allen, Allen Veterinary Clinic. Contact the Wildcat Extension District at 620-784-5337 for more information.
- ✦ A **Small Ruminant Production and Utilization Workshop** will be held November 21, 2018 from 9:00 am – 3:00 pm at Central Livestock, 811 North Main, Hutchinson, KS. Join K-State Assistant Professor and Extension Specialist, Dr. Alison Crane, to walk through what it takes to effectively raise commercial sheep and goats in South Central Kansas. The session will include an in depth look at facility management, flock health, addressing and managing nutritional needs and how to effectively market your specific product(s). For registration information, contact Jake Renner at 620-532-5131; [jwrenner@ksu.edu](mailto:jwrenner@ksu.edu).
- ✦ Register now for the **Small Ruminant Production and Utilization Workshop – North Central Kansas**. The workshop will be held on December 7 at Plainville Livestock, 907 3<sup>rd</sup> St NW, Plainville, KS. Dr. Alison Crane will walk through what it takes to effectively raise commercial sheep and goats here in North Central Kansas. Sessions in the workshop will take an in depth look at facility management, flock health, addressing and managing nutritional needs and how to effectively market your specific product(s). For registration information, contact Rachael Boyle at [rboyle@ksu.edu](mailto:rboyle@ksu.edu).
- ✦ Colby, Kansas will be the location for the third **Small Ruminant Production and Utilization Workshop**. The workshop will be held on December 14. Dr. Alison Crane will walk through what it takes to effectively raise commercial sheep and goats here in North Central Kansas. Sessions in the workshop will take an in depth look at facility management, flock health, addressing and managing nutritional needs and how to effectively market your specific product(s). For registration information, contact Alyssa Rippe at [alyssar@ksu.edu](mailto:alyssar@ksu.edu).
- ✦ The 2019 **K-State Swine Profitability Conference** has been scheduled for Tuesday, February 5, at the Stanley Stout Center, Manhattan, KS. Watch for more details coming soon at [www.KSUswine.org](http://www.KSUswine.org).

### 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](http://www.asi.ksu.edu)

### November 2018 issue



- ↪ **Junior Producer Days** - The Kansas Junior Producer Days will be hosted in March 2019 on the Kansas State University campus in Weber Hall. Since 2019 is an odd year, we will host swine and meat goat junior days. 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, meat science, health and showmanship. There will also be an opportunity for youth to become certified in Youth for the Quality Care of Animals (YQCA), which is the new, national, multi-specie youth livestock quality assurance program. The YQCA session will take place at the conclusion of each junior producer day. Junior Swine Producer Day is scheduled for Saturday, March 9, and Junior Meat Goat Producer Day will be hosted on Saturday, March 30. Registration information will be released by December 1, so watch the K-State Youth Livestock Program Facebook page and website ([www.asi.k-state.edu/research-and-extension/youth-programs](http://www.asi.k-state.edu/research-and-extension/youth-programs)) for further details! For more information, please contact Lexie Hayes ([adhayes@ksu.edu](mailto:adhayes@ksu.edu) or 785-532-1264).
- ↪ A **Sheep Scanning Certification School** will be held April 10-12, 2019 at the KSU Sheep and Meat Goat Center. Kansas State University Animal Sciences and Industry and KSU Research and Extension, through sponsorship by the National Sheep Industry Improvement Center, are hosting this sheep scanning educational and certification school to increase the number of trained technicians available to sheep producers. Participants will receive educational material on sheep scanning and be shown methods of collecting loin-eye area and depth, back fat, and body wall thickness. Participants also will have the opportunity to become certified to collect ultrasound data for submission to the National Sheep Improvement Program. The registration fee is \$200 and the school will be limited to 20 students. For more information, contact Alison Crane at 785-532-1672; [arcrane@ksu.edu](mailto:arcrane@ksu.edu).
- ↪ **Kansas 4-H Livestock Sweepstakes Date** - Mark your calendars! The 2019 Kansas 4-H Livestock Sweepstakes will be August 24-25 in Manhattan.
- ↪ **Tyson BQA Requirement Deadline for County Fairs Approaching** - Counties that sell livestock projects to Tyson should have received correspondence regarding the impending BQA requirement. Tyson Foods is committed to the well-being, proper handling, and humane harvesting of all the animals they use to produce meat and poultry. In support of this commitment and the farmers who work hard every day to be good animal stewards, Tyson has moved forward with a requirement to only source cattle from Beef Quality Assurance certified producers. This means that Tyson will only purchase cattle from producers who are BQA certified. Since BQA is an adult program, they will accept YQCA certification from youth producers. The certification deadline is approaching on January 1, 2019. Tyson will not be able to continue doing business with those who are not certified by this date, including county fairs. Counties that have questions should contact the Tyson representative their fair works with directly.

<b>CALENDAR OF UPCOMING EVENTS</b>		
<b>Date</b>	<b>Event</b>	<b>Location</b>
November 20, 2018	Sheep and Goat Meeting	Parsons, KS
November 21, 2018	Small Ruminant Production and Utilization Workshop	Hutchinson, KS
December 7, 2018	Small Ruminant Production and Utilization Workshop	Plainville, KS
December 14, 2018	Small Ruminant Production and Utilization Workshop	Colby, KS
February 5, 2019	KSU Swine Profitability Conference	Manhattan
March 9, 2019	Junior Swine Producer Day	Manhattan
March 30, 2019	Junior Meat Goat Producer Day	Manhattan
April 10-12, 2019	Sheep Scanning Certification School	Manhattan
August 24-25, 2019	Kansas 4-H Livestock Sweepstakes	Manhattan

# WHAT'S NEW.....

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

## *“Winter Safety in the Workplace”*

Winter will be upon us shortly and many agricultural workers work in the elements, which brings a new set of seasonal workplace hazards. Falls, slips and trips are one of the most common causes of workplace injuries (U.S. Bureau of Labor Statistics, 2017). Although falls and slips can occur anytime, extra precautions are required during the winter months. Hypothermia is real, especially for those who work in the elements. Safety experts suggest that clothing should be layered to retain body heat. However, how and what type of layers those clothes are made of is important. At least three layers is recommended; cotton or other breathable synthetic fiber should be the first or base layer. Wool or down is suggested for the middle layer, and the third or outer layer should be comprised of material that will block the wind (nylon outer shell found on many ski-jackets etc). Portable heaters are often used as heat sources in many shops and barns. Portable heaters are one of the most common causes of carbon monoxide poisoning and fires. If heaters are used in confined spaces, keep in mind that ventilation is required to avoid carbon monoxide poisoning. Additionally, the areas where heaters are used should be checked for combustible materials.

For more information, contact Justin Waggoner at [jwaggon@ksu.edu](mailto: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 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.

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 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](mailto:jwaggon@ksu.edu).

- ↪ The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of **Animal Technician II (Limited Term Position) - Dairy Unit**. This position is a limited-term agreement and exists to milk, feed and provide care of Dairy Teaching and Research Center dairy herd, which is used for teaching and research purposes. This position is considered an “essential” position and will report to work even in inclement weather situations. This position is a limited-term agreement position, which means less than one year of employment. Application deadline: Screening begins immediately and will continue until a suitable candidate is identified. For more information, contact Mike Scheffel, search committee chair, at 785-537-0941 or [scheffel@k-state.edu](mailto:scheffel@k-state.edu). To apply, go to <http://careers.k-state.edu/cw/en-us/job/505090/animal-technician-ii>.
- ↪ The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of **Animal Technician II - Dairy Unit**. This is a full-time, University Support Staff (USS) position and exists to milk, feed and provide care of Dairy Teaching and Research Center dairy herd, which is used for teaching and research purposes. Application deadline: Screening begins immediately and will continue until a suitable candidate is identified. For more information, contact Mike Scheffel, search committee chair, at 785-537-0941 or [scheffel@k-state.edu](mailto:scheffel@k-state.edu). To apply, go to <http://careers.k-state.edu/cw/en-us/job/505114/animal-technician-ii>.
- ↪ The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of **Agricultural Technician II - Dairy Plant**. This is a full-time, University Support Staff (USS) position and exists to properly manufacture, process and package safe, quality dairy products and to distribute dairy products to university food centers. Application deadline: Screening begins immediately and will continue until a suitable candidate is identified. For more information, contact Jared Parsons, search committee chair at 785-532-1293 or [jsp007@k-state.edu](mailto:jsp007@k-state.edu). To apply, go to <http://careers.k-state.edu/cw/en-us/job/505116/agricultural-technician-ii>.
- ↪ The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of **Animal Technician II (999 Milker)- Dairy Unit (3 positions available)**. This is a part-time, University Support Staff (USS) position and exists to milk, feed and provide care of Dairy Teaching and Research Center dairy herd, which is used for teaching and research purposes. This is an AS NEEDED position. The incumbent would be called to fill as an Emergency situation. Application deadline: Screening begins immediately and will continue until a suitable candidate is identified. For more information, contact Mike Scheffel, search committee chair, at 785-537-0941 or [scheffel@k-state.edu](mailto:scheffel@k-state.edu). To apply, go to <http://careers.k-state.edu/cw/en-us/job/504233/animal-technician-ii>.or <http://careers.k-state.edu/cw/en-us/job/504670/animal-technician-ii>
- ↪ **IRM Redbooks for Sale** – The 2019 IRM Redbooks are here and will be sold on a first-come, first-served basis. The price is \$6/book for orders of 10 or more; \$6.25/book for orders of less than 10 which includes postage. To order your supply of redbooks, please contact Lois Schreiner (lschrein@ksu.edu; 785-532-1267).
- ↪ **Bio-economic Model Predicts Economic Values for Beef Production** - The objective was to estimate economic values for production traits in a full life cycle system using a bio-economic model with Angus purebred and a terminal crossbreeding system with Nelore sires mated to Angus dams. Phenotypic performance data were collected from the Bifequali crossbreeding scheme at the Embrapa Pecuária Sul Research Center of the Brazilian Agricultural Research Corporation. The data consisted of performance and carcass traits measured on progeny of Angus purebred and Nelore sires mated to Angus dams raised in a pasture-based production system from birth to slaughter (full life cycle). The economic characterization of the system was based on fixed costs and variable costs. The bio-economic was developed in ‘R’ programming language using the phenotypic information and the production costs. To estimate economic values, the bio-economic model was first parameterized and a base profit was calculated
- Bottom Line...*** The use of crossbreed animals provides an effective tool to improve important traits and system level profitability in a full life cycle beef production system. View the complete research report at [www.asi.ksu.edu/cattlemensday](http://www.asi.ksu.edu/cattlemensday). For more information contact, Bob Weaver (785-532-1460; [bweaver@ksu.edu](mailto:bweaver@ksu.edu)).



### **Quantifying Medium Chain Fatty Acid Mitigation Activity Over Time Against Porcine Epidemic Diarrhea Virus in Nursery Pig Diets**

Medium chain fatty acids (MCFA) are six to 12 carbon length molecules that have shown significant promise as potential mitigants of biological hazards in feed and feed ingredients. The use of residual duration of activity approaches, such as MCFA, have significant advantages compared to point-in-time mitigation strategies. The primary advantage of MCFA is the ability to mitigate the risks generated by post-processing contamination; however, the duration of mitigation activity has not been established. Therefore, the objective of this experiment was to characterize the mitigation properties of MCFA treated swine feed 40 d following feed manufacturing. Treatments consisted of a dose response including 0, 0.25, 0.50, 1.0, and 1.5% dietary inclusion of a MCFA blend (1:1:1 ratio C6, C8, and C10) as well as 0.5% C6 alone, 0.5% C8 alone, or 0.5% C10 alone. Following feed manufacturing, feed was stored in bags at barn temperature and humidity for 40 d. Following sampling after storage, subsamples were placed in separate high-density polyethylene bottles and inoculated with Porcine Epidemic Diarrhea Virus (PEDV) to achieve a final titer of 10<sup>4</sup> TCID<sub>50</sub>/g. Separate sample bottles were analyzed on d 0 and 3 post-inoculation. A significant treatment × day interaction was observed, where the cycle threshold (Ct) numerically increased over time in select treatments, and was numerically reduced in others. Means separation, adjusted to control experiment-wise error rate, did not indicate evidence of a difference within treatment among days of analysis for any of the eight treatments. When evaluating increasing inclusion of MCFA blend, an inclusion level × day interaction was observed, where PEDV Ct values increased on d 0 with increasing levels of MCFA blend inclusion also increased on d 3. On d 0 post-inoculation, the addition of C6, C8, or C10 alone resulted in significantly greater Ct values compared to no supplemented MCFA. The addition of 0.5% C6 and 0.5% C8 did not change Ct value compared to 0.5% MCFA blend; however, adding 0.5% C10 resulted in a lower Ct value compared to 0.5% MCFA blend. On day three post-inoculation, the addition of 0.5% C6 or 0.5% C10 resulted in greater Ct values compared to control, whereas, no improvement was observed with 0.5% C8 compared to control. The addition of 0.5% MCFA blend resulted in insufficient evidence of difference in Ct values compared to adding individual MCFA.

**Bottom Line...** In summary, treatment of feed with medium chain fatty acids retains mitigation properties for a significant period of time following feed manufacturing. Although we did not assess infectivity through bioassay, the data herein suggest a residual duration mitigation potential for MCFA well beyond feed manufacturing. Additional research characterizing the duration of activity beyond one point in time following feed manufacturing is warranted. 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 J.T. Gebhardt, J.C. Woodworth, M.D. Tokach, J.M. DeRouchey, R.D. Goodband, C.K. Jones, and S.S. Dritz*)

### **Effects of Increasing Zinc, Using Zn Hydroxychloride, on Growth Performance, Carcass Characteristics, and Economic Return of Pigs Housed in a Commercial Environment**

A total of 2,430 pigs (PIC 337 × 1050; initially 66.3 lb BW) were used in a 113-d growth trial to determine the effects of increasing Zn on growth performance and carcass characteristics of finishing pigs. Two barns were used for a total of 18 pens per treatment with 27 pigs per pen. Pigs were allotted by average initial BW and assigned to one of five dietary treatments consisting of 50, 87.5, 125, 162.5, or 200 ppm added Zn from Zn hydroxychloride. Experimental diets were fed from d 0 to 113 in 5 phases and contained a trace mineral premix that did not contain any added Zn.

**Bottom Line...** Overall, there were marginally significant quadratic responses in ADFI and F/G, with the lowest ADFI and best F/G observed when 87.5 and 125 ppm of Zn were fed, respectively. There was no evidence for differences in carcass characteristics. Regarding economic effects, there was a marginally significant quadratic response in feed cost per pig and feed cost per pound of gain. The lowest feed cost per pig and feed cost per pound of gain were observed when 87.5 and 125 ppm of Zn was fed, respectively.

In conclusion, there were no improvements in ADG when feeding beyond 50 ppm added Zn; however, feeding 125 ppm Zn resulted in the best F/G. 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 H.S. Cemin, J.C. Woodworth, M.D. Tokach, S.S. Dritz, J.M. DeRouchey, and R.D. Goodband*)



### **Effects of Added Defusion or Feed Aid on Finishing Pig Growth Performance from 45 to 243 lb** - A

total of 1,188 pigs were used in a 112-d growth trial to determine the effects of Defusion or Feed Aid on finishing pig performance from 45 to 243 lb in a commercial setting. Pens of pigs were blocked by BW and then randomly assigned to one of four dietary treatments in a completely randomized block design with 27 pigs per pen and 11 pens per treatment. Dietary treatments were fed in a 4-phase feeding program from approximately 45 to 83, 83 to 136, 136 to 196, and 196 to 243 lb BW. The four treatment diets included a positive control (corn-soybean meal-based diet), a negative control (corn-soybean meal-based diet containing 40% dried distillers grains with solubles), or the negative control diet with either 0.25% Defusion or 0.25% Feed Aid. Mycotoxin analysis indicated the deoxynivalenol (DON) concentrations of the treatment diets varied by treatment and phase, but all concentrations were less than 1 ppm. From d 0 to 28, pigs fed the negative control diet or the diet containing Feed Aid had decreased ADG and d 28 BW compared to those fed the positive control, with pigs fed Defusion treatment intermediate. Pigs fed the positive control diet had greater ADFI compared to other diets. There was no evidence of difference for F/G. From d 28 to 56, pigs fed the positive control diet had greater ADG and d 56 BW compared to the other dietary treatments. Pigs fed diets containing Feed Aid or Defusion had greater ADG compared to the negative control. Average daily feed intake was not influenced by dietary treatments. Pigs fed the negative control diet had poorer F/G when compared to the other dietary treatments. There were no differences in performance from d 56 to 112.

**Bottom Line...** Overall, pigs fed the positive control had greater ADG and final BW when compared to the other dietary treatments, with no evidence of differences in ADFI or F/G. In conclusion, the addition of Defusion improved growth rate during the first two phases of the study and Feed Aid improved growth rate during the second phase. However, neither feed additive improved overall growth performance of finishing pigs when the dietary DON concentration was less than 1 ppm. 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 D.J. Shawk, S.S. Dritz, M.D. Tokach, J.C. Woodworth, R.D. Goodband, and J.M. DeRouchey*)



### **Cleaning Reduces Mycotoxin Contamination in Corn** - A single load of corn naturally contaminated with

aflatoxin (1,074 ppb), fumonisin (8.3 ppm), and ochratoxin A (206 ppb) was procured from central Oklahoma to evaluate the role of cleaning to remove mycotoxin contamination in corn. Corn was divided into twenty 333-lb lots, which were then cleaned using an EBM Gentle Roll corn cleaner to remove overs (material > 1/2 inches) and unders (material < 3/16 inches). The resultant four treatments included: 1) uncleaned corn; 2) overs from cleaned corn; 3) cleaned corn; and 4) unders from cleaned corn. Samples of each fraction were analyzed for mycotoxin content using multiclass liquid chromatography tandem mass spectrometry.

**Bottom Line...** Cleaning generated approximately 6% screenings (unders + overs), and reduced aflatoxin by an average of 26%. Cleaning also reduced fumonisin by 45%, but did not impact ochratoxin A. Unders had nearly four times the aflatoxin and 7.5 times the fumonisin as the uncleaned corn. In conclusion, cleaning corn may substantially reduce mycotoxin contamination, but the resultant screenings should be used cautiously. 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 A.D. Yoder, M.D. Tokach, J.M. DeRouchey, C.B. Paulk, C.R. Stark, and C.K. Jones*)

# ASI 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 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 continues to serve in that position with a 100% teaching appointment. In addition to being teaching coordinator he also serves as a Faculty Senator. In recent years he has also led student study abroad tours to Costa Rica.

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, including 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.



**Randy Phebus (phebus@k-state.edu; 785-532-1215)**

**Professor/Interim Director, Food Science Institute**

Dr. Randy Phebus is from Waverly, Tennessee, a small town 70 miles west of Nashville. He attended the University of Tennessee in Knoxville from 1981-1992, earning B.S. (animal science), M.S. and Ph.D. degrees (food science). Dr. Phebus joined the K-State ASI department in 1992 and has a 30% teaching and 70% research appointment within the Food Science discipline group. He teaches both undergraduate and graduate level courses in Food Science and is active in the distance learning Global Campus Food Science program and student recruitment. He specializes in food microbiology, food safety, food biosecurity and defense, and public health.

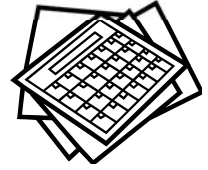
Dr. Phebus coordinates an active applied food safety research program. He is a member of the K-State Food Science Institute, currently serving as its Interim Director. Dr. Phebus holds graduate faculty status in Food Science, Animal Sciences and Pathobiology. He works closely with food processors, regulators and technology providers across the country to improve food quality and safety through laboratory-based and processing-based research and troubleshooting

activities. Recently, the U.S. Secretary of Agriculture appointed him to the National Advisory Committee on Meat and Poultry Inspection.

Personally, Dr. Phebus cheers on his Tennessee Volunteers and K-State Wildcats. All of Dr. Phebus' spare time is spent on home improvement and gardening projects that never seem to be completed, and on riding his motorcycle around the Kansas Flint Hills.

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