



News from KSU Animal Sciences

June, 2017

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In This Issue

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

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UPCOMING EVENTS...

➤ **State Livestock Nominations – Due June 15th** - All small animal state livestock nominations (non-market beef) are due June 15th. This includes commercial heifers, market swine, commercial gilts, market lambs, commercial ewes, and ALL meat goats. There is not a separate division for registered breeding does at either state show, so all meat goats must be nominated in order to be eligible to show. The 2017 nomination information has been distributed to county offices and may be found on the Youth Livestock Program website. The 2017 Declaration and Specie Nomination Forms MUST be used for nominations to be accepted. All families are encouraged to use the specie checklist as a guide to ensure their nominations are complete upon submission. This resource may be found on the Youth Livestock Program website (www.asi.k-state.edu/research-and-extension/youth-programs), or through the local county office. Please double check that there are not any blank fields or questions on the Declaration and Nomination Forms before placing them in the mail. As a reminder, ear notches are required for swine nominations and full scrapie tag numbers are required for sheep and goats. This includes both the Flock/Premise ID and individual animal number (example: KSS0035 16121). Nominations received without this information will be considered incomplete and returned to the family for completion. Confirmation letters will be sent to families once their nominations have been processed, and reports will be updated on the Youth Livestock Program website on Tuesdays and Fridays until we reach the deadline, then more frequently after that. Families are encouraged to use one of these options to verify their nominations. A complete nomination does NOT constitute show entry. The Kansas State Fair and KJLS will release entry information to agents and through their respective websites as entry season draws near. State Fair Grand Drive entries will be due July 15th, and KJLS entries will be due August 15th. Animals who are nominated, but do not follow the appropriate entry processes set forth by each show, will not be permitted to show. For nomination questions, please contact Lexie Hayes at adhayes@ksu.edu.

➤ **Youth PQA+ Certification** - All exhibitors who state nominate swine projects MUST have a current and valid Youth PQA+ certification number at the time of nomination, or by June 15th. There is a field for this information on the swine nomination form, under the contact information. Any nominations received without the appropriate Youth PQA+ number will be considered incomplete. Kansas youth may obtain their certification by participating in a class provided by an extension agent who is currently certified to teach Youth PQA+, or by completing the Pork Board's online Youth PQA+ training. The youth and adult PQA certifications are separate processes. So, if you are certified to teach the adult portion, you may not certify youth without going through the appropriate training. If you have questions about youth who are too young to receive a certification number (less than 8 years old), please contact Lexie at adhayes@ksu.edu.



↳ The **2017 Dr. Bob Hines Kansas Swine Classic** is scheduled for July 7-8, 2017, 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, 2017. Again, this year all market pigs will be shown together and divided into classes based on weight.

This year's Classic will feature a swine photography contest along with a swine skillathon. For the Swine Photography Contest, youth may submit up to two swine photos. Photos should be 8x10 size and should not be framed or matted. Photos will be placed in plastic sleeves and displayed throughout the weekend. Outlined below is a schedule of this year's program.

Friday, July 7

8:00 a.m. Barn open for arrival
 12:00 p.m. All hogs in place
 1:00 p.m. Swine photo check-in by the showing
 1:00 – 3:00 p.m. Swine Skillathon in the showing
 4:00 p.m. Ice cream party by the showing
 5:30 p.m. Showmanship contests

Saturday, July 8

8:00 a.m. Prospect Hog Show followed by Barrow and Gilt Market Hog Show

Entries must be postmarked by June 25, 2017. More information and registration is available at www.KSUswine.org. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu) or Lexie Hayes (785-532-1264; adhayes@ksu.edu).

↳ **Kansas 4-H Livestock Sweepstakes - August 19-20!** - The 2017 Kansas 4-H Livestock Sweepstakes will be held August 19-20 on the K-State campus in Manhattan, KS. This is the corresponding date to previous years. The 4-H Livestock Sweepstakes event includes the state 4-H livestock judging contest, meat judging contest, livestock skillathon, and livestock quiz bowl. The members who will represent Kansas at the national 4-H contest for each of these events will be selected during the livestock sweepstakes weekend. The deadline to enter will be August 1. All entries must be made by the local Extension Office using Cvent. Rules and the Coach's Guide are posted on the Youth Livestock Program website (www.asi.k-state.edu/research-and-extension/youth-programs), under "4-H Livestock Sweepstakes". For more information, contact Lexie Hayes at adhayes@ksu.edu.

↳ Registration is now open for the 2017 **Applied Reproductive Strategies in Beef Cattle Conference** (ARSBC) to be held August 29-30, 2017, at the Hilton Garden Inn and Conference Center, Manhattan, KS. The workshop is considered the premiere national event in beef cattle reproductive management. The meeting has a long history of providing the latest information on the application of reproductive technologies and includes a range of topics related to cow herd reproduction such as nutritional interactions, management and male fertility. The meeting is open to anyone with an interest in beef cattle reproduction including producers, technicians, veterinarians and professionals in related industries. Topics to be covered include Foundational Principles, Application, Nutritional Components, The Male Side, Systems and Health, and Leveraging Genetics. An optional lab on semen quality and handling collection, analysis of DNA samples, and more will also be offered. The schedule and registration information are available at www.AppliedReproStrategies.com or contact Sandy Johnson (sandy@ksu.edu; 785-462-6281).

↳ Join us for the 3rd annual **AS&I Family and Friends Reunion to be held on Friday, October 13, 2017**, from 5:30 – 9:30 p.m. at the Stanley Stout Center, 2200 Denison Avenue, Manhattan, Kansas. Last year's event was truly amazing with more than 1,000 family and friends reuniting at the event. This year the Don L. Good Impact Award will be presented to Sharon Schwartz, long-time pork industry leader and state legislator. Other activities will include great food, live music, Junior Wildcat Barn Yard and more surprises!! Watch for more information and a registration form, coming soon to www.asi.ksu.edu/familyandfriends.

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
June 15, 2017	State Livestock Nominations Due (Swine, Sheep, Goats, and Commercial Heifers)	
June 16-18, 2017	K-State Livestock Judging Camp	Manhattan
July 7-8, 2017	Dr. Bob Hines Kansas Swine Classic	Manhattan
July 12-14, 2017	KASLA Premier Program	
August 19-20, 2017	Kansas Livestock Sweepstakes	Manhattan
August 29-30, 2017	Applied Reproductive Strategies in Beef Cattle Conference	Manhattan
October 13, 2017	AS&I Family and Friends Reunion	Manhattan

WHAT'S NEW.....

Management Minute "Sometimes It's Not About the Money: Employee Recognition Program"

Management Minute – Justin Waggoner, Ph.D., Beef Systems Specialist *"Sometimes It's Not About the Money: Employee Recognition Programs"*

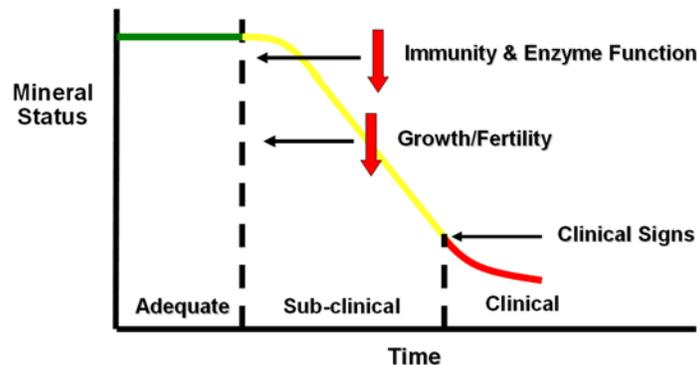
We have all heard the adage that "money isn't everything." During the 2017 K-State Cattle Feeders College, I had the pleasure of recognizing the 18th recipient of the K-State/Merck Top Hand award. This award is presented to an exceptional feedyard employee who goes above and beyond the duties of their job description. The recipients are nominated by their respective managers for the award. The Top Hand is a simple way of saying thank you for a job well done. Employee recognition programs can be an excellent way to show your employees that you appreciate their efforts and contributions to the organization. Most sources suggest that employee recognition programs should recognize specific behaviors that are related to the organizations objectives and core values. The recognition should involve the entire organization. If you don't have a means of recognizing exceptional employees give it some thought. You can find several great ideas for establishing an employee recognition program that will be more than just the "employee of the month" program.

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

Feedlot Facts "Mineral Nutrition"

Feedlot Facts – Justin Waggoner, Ph.D., Beef Systems Specialist *"Mineral Nutrition"*

Most beef cattle producers recognize that mineral nutrition is important. However, it is important to emphasize that a mineral program is only one component of an operation's nutrition and management plan. Thus, an exceptional mineral program will not compensate for deficiencies in energy, protein or management. Additionally, the classical signs often associated with clinical deficiency of a particular mineral (wasting, hair loss, discoloration of hair coat, diarrhea, bone abnormalities, etc.) are not often or are rarely observed in production settings. The production and economic losses attributed to mineral nutrition in many situations are the result of sub-clinical deficiencies, toxicities and antagonisms between minerals which are often less obvious (reduced immune function, vaccine response, and sub-optimal fertility). The figure below, adapted from Wikse (1992), illustrates the effect of trace mineral deficiency on health and performance and the relative margin between adequate mineral status and clinical deficiency.



Mineral nutrition is one of the most complicated aspects of nutrition. There are 17 minerals that are required in the diets of beef cattle: 1) The macrominerals whose requirements are typically expressed as a percent of the total diet. The macrominerals include calcium, phosphorous, magnesium, potassium, sodium, chlorine and sulfur; and 2) The microminerals or trace minerals (required in trace amounts) whose requirements are expressed as parts per million (ppm) or milligrams per kilogram of dry matter consumed. The microminerals include chromium, cobalt, copper, iodine, iron, manganese, molybdenum, nickel, selenium and zinc.

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

↪ **Planning a Market Broiler Competition for Your County Fair** - Market broiler competitions are popular at county, regional, and state fairs. A broiler is a fast-growing chicken that converts feed to meat efficiently. Exhibitors receive chicks to take home and grow, and then enter selected birds in competition to be judged on production value. A new publication with more information is available at www.bookstore.ksre.k-state.edu/pubs/MF3310.pdf. For more information, contact Scott Beyer (sbeyer@ksu.edu; 785-532-1201).

↪ The Department of Animal Sciences and Industry at Kansas State University is seeking applicants for the position of **Analytical Lab Administrator**. This is a full-time, Unclassified Staff position (job no. 501440). The incumbent will manage and operate the Analytical Laboratory in Weber Hall under the supervision of the faculty supervisor. This position directly provides a significant portion of the labor involved in maintaining the laboratory and in conducting analyses. Screening begins June 12, 2017, and will continue until filled. For position announcement, go to <http://www.asi.k-state.edu/about/jobs/job-announcements.html>. To apply, go to <http://careers.k-state.edu/cw/en-us/job/501440/analytical-lab-administrator-animal-sciences-industry>. For more information, contact John Gonzalez, Search Committee Chair, at 785-532-3448 or johngonz@ksu.edu

↪ **Producer Opinions on Antibiotic Use in the Beef Industry** - A survey exploring antibiotic use and resistance in the beef industry was distributed to beef producers in the United States and Canada. Participants were recruited through public and private beef production websites and publications. The survey asked 26 questions addressing demographics, producers' relationships with veterinarians, antibiotic use on producers' operations, and producer opinions on antibiotic use, antibiotic resistance, and consumer perceptions of antibiotic use in the industry. Results of the survey show that beef producers are willing to share information about antibiotic use on their production units, including management strategies, veterinary care, and antibiotic use. Producers indicated that they rarely use antibiotics on their farms. The majority of producers use antibiotics according to label directions or veterinary instructions, and feel that withdrawal times are important to observe. Most producers seem to have strong relationships with their veterinarians when it comes to antibiotic use on their operations. Finally, producers surveyed expressed some concern about consumers' understanding of how beef is raised, and how antibiotics are used, regulated, and monitored in the United States.

Bottom Line... This survey shows that beef producers are willing to share information about their production systems and management strategies, including their use of antibiotics. The survey provides valuable insight into the practices and opinions of producers in the beef industry. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information contact, Dan Thomson (785-532-4254; dthomson@ksu.edu) or Bob Weaber (785-532-1460; bweaber@ksu.edu).

↪ **Water Intake in Growing Beef Cattle Can be Measured Concomitantly with Feed Intake** – The objective was to measure daily water intake of growing beef steers and estimate the minimum test duration to collect water intake phenotypes in beef cattle. Water intake was measured on four groups of crossbred beef steers over a three-year period. Average intakes for each animal were computed for increasingly large test durations (7, 14, 21, 28, 35, 42, 49, 56, 63, or 70 days) to determine the optimum test duration for water intake. Depending on the desired stringency of data collection, minimum test duration can be determined when phenotypic correlations were above 0.90, 0.95, or 0.99 for shortened periods as compared to 70 days. Although steers drink more water during the summer than during the winter, water intake is highly variable. Additionally, our results indicate that to achieve a minimum phenotypic correlation of 0.90, 0.95, or 0.99, the minimum test duration for water intake should be 35, 49, or 56 days, respectively.

Bottom Line... Because the test duration and equipment necessary is similar for both traits, water and feed intake phenotypes can be collected simultaneously, which would allow the collection of water intake data without significantly extending test duration. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information contact, Megan Rolf (785-532-1450; megrolf@ksu.edu) or Bob Weaber (785-532-1460; bweaber@ksu.edu).

↪ **Steak Location Within the Semitendinosus Muscle Impacts Metmyoglobin Accumulation on Steaks During Retail Display** – The objective of this study was to examine effects of steak location on muscle fiber type distribution and metmyoglobin accumulation of *Semitendinosus* (eye of round) steaks. *Semitendinosus* muscles purchased from a commercial abattoir were wet aged in a vacuum bag for 22 days at 35°F. Progressing from the proximal to distal end, each *Semitendinosus* was fabricated into twelve 1-in thick steaks. Steaks one to four were designated proximal, five to eight were designated middle, and nine to 12 were designated distal. Steaks were displayed under simulated retail display conditions with fluorescent lighting and subjected to daily objective and steak surface discoloration analyses and were also analyzed for muscle fiber type.

Bottom Line... Steaks fabricated from middle of the eye of round discolor at a faster rate than steaks from the proximal or distal locations. Retailers may want to display steaks from this location during

times the case is turning over more quickly. For more information contact, John Gonzalez (785-532-3448; johngonz@ksu.edu) or Travis O'Quinn (785-532-3469; travisquinn@ksu.edu).

↗ **Effects of Increasing Copper from Tri-basic Copper Chloride or a Copper-Amino Acid Complex on Growth Performance of Nursery Pigs** - A total of 665 pigs [Group 1; 350 barrows (DNA 200 × 400; initially 14.1 lb)] and [Group 2; 315 barrows and gilts (DNA 241 × 600; initially 11.4 lb)] were used to determine the effects of added Cu source and level on nursery pig performance. There were five pigs per pen and 10 replications per treatment in group 1 and five pigs per pen and nine replications per treatment in group 2. Pens of pigs were allotted by BW to one of seven dietary treatments arranged as a 2 × 3 factorial plus a control diet, with main effects of Cu source and Cu level (75, 150, or 225 ppm). Diets were corn-soybean meal-based and were fed in meal form in two phases (d 0 to 14 and 14 to 35). All diets contained a trace mineral premix formulated to contribute 17 ppm of Cu from CuSO₄ in the complete diet.

Bottom Line... Overall (day 0 to 35), there were no Cu source × level interactions observed. Increasing Cu increased ADG and final BW. The increase in ADG with no effect on ADFI resulted in a tendency for improved F/G with increasing added Cu in the diet. There were no effects of Cu source on growth performance. Because the growth effects were linear, it is unknown from our study if increasing added Cu beyond 225 ppm would further improve growth. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by C.B. Carpenter, J.C. Woodworth, J.M. DeRouchey, M.D. Tokach, R.D. Goodband, S.S. Dritz, and J.L. Usry.)

↗ **Comparing the Effects of Butyric Acid Source and Level on Growth Performance of Nursery Pigs** - A total of 398 pigs (PIC 19 × 1050 or PIC 3 × C29, initially 13.56 ± 0.02 lb) were used in a 42-day growth study to compare the effects of increasing two different sources of encapsulated butyric acid on growth performance of nursery pigs fed meal diets. Dietary treatments were arranged as a 2 × 2 + 1 factorial with main effects of butyric acid source (ButiPEARL vs. ButiPEARLZ; Kemira Industries, Des Moines, IA) and level (low (1 or 1.38 lb/ton) vs. high (2 or 2.76 lb/ton) respectively) plus a control diet without any butyric acid. The inclusion rates of each product were established such that the same amount of butyric acid was contributed from each source for the low or high levels, respectively. Experimental diets were fed in three phases from day zero to seven, seven to 21, and 21 to 42. Pens of pigs (six barrows and four gilts) were balanced by initial BW and randomly allotted to treatments, with eight replications (pens) per treatment. From day zero to seven, a source × level interaction was observed for ADG, ADFI, and F/G, with pigs fed diets containing ButiPEARL having improved performance at the low inclusion, but with those fed high butyric acid not different from the control. However, pigs fed ButiPEARLZ had poorer growth performance at the low level, with the high level having performance similar to the control. In Phase 2 (day seven to 21), ADG and ADFI were not influenced by butyric acid source or level, but an interaction was observed for F/G as pigs fed ButiPEARL had poorer F/G as level increased; whereas pigs fed increasing ButiPEARLZ had improved F/G. For Phase 3 (day 21 to 42), increasing either butyric acid source tended to decrease ADG. Overall (day 0 to 42), butyric acid source or level did not affect ADG, ADFI or F/G.

Bottom Line... In conclusion, this study showed that pigs fed low ButiPEARL in Phase 1 (day zero to seven) had improved growth performance compared to other treatments with only minor treatment effects observed thereafter. More research is warranted to determine if the butyric acid sources used in this experiment would elicit different responses in pelleted nursery diets. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by K.M. Gourley, J.C. Woodworth, J.M. DeRouchey, M.D. Tokach, R.D. Goodband, and S.S. Dritz.)

↗ **Determination of the Optimum Levels of Dietary Crude Protein for Growth Performance and Carcass Characteristics of Finishing Pigs from 240 to 280 lb** - A total of 224 pigs (PIC 327 × 1050, initially 241.1 lb) were used in a 20-day trial to determine the optimum dietary CP concentration for growth performance and carcass characteristics of finishing pigs. Pens of seven pigs were allotted by BW and randomly assigned to one of four dietary treatments with 7 or 8 replications per treatment. Dietary treatments included four levels of CP (10, 11, 12, and 13%) that were formed by reducing the amount of crystalline Lys in a corn-soybean meal diet. At day 20, pigs were transported to a packing plant for processing and carcass data collection. For overall growth performance (day zero to 20), increasing CP increased ADG, ADFI, and HCW ADG with the greatest response for pigs fed the diet with 12% CP. Increasing diet CP also improved F/G, NE caloric efficiency, final BW, HCW, and HCW F/G.

Bottom Line... In conclusion, poorer performance of pigs fed diets under 12% CP was predominantly explained by feed intake but the mechanisms underlying regulation of feed consumption when feeding lower CP remains unclear. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by J.A. Soto, M.D. Tokach, S.S. Dritz, J.C. Woodworth, J.M. DeRouchey, and R.D. Goodband.)

AS&I Faculty Spotlight



Fadi Aramouni (aramouni@k-state.edu; 785-532-1668)
Professor/Food Processing and Product Development

Dr. Fadi Aramouni was born and raised in Beirut, Lebanon. He received his B.S. in Biochemistry in 1977, and his M.S. in Food Technology in 1980 from the American University of Beirut. Dr. Aramouni earned his Ph.D. in Food Science in 1986 from Louisiana State University. He joined the Kansas State University Department of Foods and Nutrition in 1989, then the Department of Animal Sciences and Industry in 1995. Since July 1999, his responsibilities have been 0.85 Extension/0.15 Teaching. His teaching responsibilities include "Research and Development of Food Products," "Principles of HACCP," "Advanced HACCP Principles" and "Fundamentals of Food Processing". Since June 2002, Dr. Aramouni has been a Professor and Extension Specialist with the Department of Animal Sciences and Industry and a member of the Food Science Institute.

His Extension activities include: managing a Value-Added Food Product Development Laboratory for Kansas's entrepreneurs; acting as the "Process Authority" for processors of low acid/acidified foods; providing educational programs on Good Manufacturing Practices, Sanitation, HACCP, Recalls, and one-on-one assistance for the development and implementation of food processing programs; and supervising the activities of the Rapid Response Center staffed by an Extension Associate to provide quick answers to questions received primarily from Kansas County Family and Consumer Sciences Extension agents.

Recent honors include "Outstanding Food Scientist Award," "Professor of the Year" nominee, and "Faculty Excellence Extension Award."



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 60% teaching, 25% research and 15% extension appointment.

Dr. Scott Beyer has about 50 advisee undergraduate students and two graduate students. He teaches nine different courses in the Department, which includes ASI 106, Dairy/Poultry Science Lab; ASI 107, Companion Animal and Equine Lab; ASI 310, Poultry/Production Evaluation; ASI 520, Companion Animal Management; ASI 635, Gamebird Management; ASI 640, Poultry Product Technology; ASI 645, Poultry Management; ASI 676, Avian Nutrition and ASI 677, Companion Animal Nutrition.

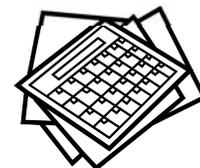
Dr. Beyer is coach of the KSU Collegiate Poultry Judging team, which won the national championship in 2002 and 2003. He also works with numerous 4-H volunteers and FFA instructors and teams. He is involved with poultry judging at county fairs and is supervisor of the poultry division at the Kansas State 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. He helps with home flock poultry production problems. Dr. Beyer also works with undergraduate students to hold the annual pullet sale each spring. His research focuses on feed manufacturing and poultry nutrition. He has been an invited speaker at almost every nutrition conference in the U.S. He has been an invited speaker at international conferences in Mexico, Tunisia, Egypt, China, Malaysia, South Korea, Indonesia, Australia, Switzerland, Vietnam, Morocco and the Philippines.

Dr. Scott Beyer resides in Manhattan with his wife, Amy. When he has some spare time and isn't doing something poultry, he enjoys woodworking, fishing, and gardening.

What Producers Should Be Thinking About.....

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



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

August is when forages are maturing, weaning time is approaching, and weather dictates several key management decisions.

Breeding Season

- Given high feed price inputs, ruthlessly cull all unsound cows from the herd. Cull cows that do not conceive after three services by a fertile bull.
- Limit the breeding season. Remove bulls after 60 days with cows, 45 days with heifers.

These methods contribute to a more uniform calf crop, makes winter feed management easier and increases the success rate of next year's breeding season.

Cow herd Nutrition

- Provide ample amounts of clean, fresh drinking water.
- Conduct an inventory of forage needs for the winter feeding period.
- Plan ahead and price availability of byproducts, such as wheat-middlings, dried distillers grains, etc. prior to typical seasonal price increases.

Herd Health

- If pinkeye is likely to be a problem, consider the following preventive and therapeutic measures.

Preventive:

- ◆ Make sure the herd is receiving adequate vitamins and trace mineral in their diet.
- ◆ Consider using a medicated trace mineral package.
- ◆ Consider vaccination for pinkeye and IBR (consult your local veterinarian).
- ◆ Control face flies.
- ◆ Clip pastures with tall, coarse grasses that may irritate eyes.

Therapy:

- ◆ Administer an intramuscular injection of long-acting oxytetracycline when symptoms are first noticed.
 - ◆ Shut out irritating sunlight by patching eyes, shade, etc.
 - ◆ Control flies.
 - ◆ Consult your veterinarian.
-
- Consider revaccinating for the respiratory diseases any animals that will be taken to livestock shows.
 - Vaccinate suckling calves for IBR, BVD, PI3, BRSV, and possibly pasteurella at least three weeks prior to weaning.
 - Revaccinate all calves for blackleg.
 - Vaccinate replacement heifers for brucellosis (4 to 10 months of age).
 - Monitor and treat footrot.

Forage/Pasture Management

- Enhance grazing distribution with mineral mixture placement away from water sources.
- Observe pasture weed problems to aid in planning control methods needed next spring.
- Monitor grazing conditions and rotate pastures if possible and(or) practical.
- If pastures will run out in late summer, get ready to provide emergency feeds. Start supplemental feeding before pastures are gone to extend grazing.
- Harvest and store forages properly. Minimize waste by reducing spoilage.
- Sample harvested forages and have them analyzed for nitrate and nutrient composition.
- Plan for sufficient standing pasture for winter grazing needs.
- For stocker cattle and replacement heifers, supplement maturing grasses with an acceptable degradable intake protein/ionophore (feed additive) type supplement.

General Management

- Avoid unnecessary heat stress - Don't handle and/or truck cattle during the heat of the day.
- Repair, replace and improve facilities needed for fall processing.
- Order supplies, vaccines, tags and other products needed at weaning time.
- Consider earlier than normal weaning, but have a marketing plan in place.

*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.*