



News from KSU Animal Sciences

UPCOMING EVENTS...

- ↪ **State Fair Entry Deadline Approaching** - Entries for the Kansas State Fair Grand Drive (4-H/FFA youth livestock show) are due July 15. All animals must be entered directly through the state fair using the online system or sending the entry form and payment to the state fair. Late entry forms will be accepted until July 25, with a late fee of \$25/head. No entries will be accepted after July 25. For more information, visit <http://www.kansasstatefair.com/p/exhibitors/livestock-competitions/377>. Continuing this year, county agents and ag teachers will not need to sign the original entry for each exhibitor. After entries close, county agents and ag teachers will receive instructions from the state fair regarding how to login to the ShoWorks system and approve the entries for exhibitors from their county/school.

- ↪ **Livestock Nomination Correction Reminder** - All corrections for livestock nominations are due by July 15 to Lexie Hayes (785-532-1264 or adhayes@ksu.edu).

- ↪ **YQCA Survey - Participation Deadline is August 1st** - In 2017, Youth for the Quality Care of Animals (YQCA) was introduced as the new, national, multi-species livestock quality assurance program for youth. The National Pork Board also discontinued its Youth PQA Plus program on 5/31/2018 and will transition its youth participants to the YQCA program in the future. This opportunity for a multi-species certification led other animal organizations to work together to develop and support a youth quality assurance program which became YQCA. Kansas 4-H signed an agreement to use the YQCA quality assurance program for the 4-H youth enrolled in animal projects, providing an opportunity to expand learning experiences of caring and raising animals. This agreement included extending the opportunity to extension agents to become instructor-led trainers and certify youth in their extension units. As the first year of the agreement comes to a close, we are asking your thoughts and concerns about YQCA, both the online and face-to-face options, so that we might pass along feedback to the YQCA Board. We appreciate your willingness to assist us in the educational process of our 4-H members. A link to the survey was distributed to county offices at the end of June. Please use the link provided to participate in the survey by August 1st.

- ↪ Dates have been set for the **2018 KLA-KSU Field Days**. They will be held:
 - Monday, August 6, 2018 - Blew Partnership (CJ & Russell Blew), Medicine Lodge
 - Monday, August 13, 2018 – Tyler and Kassie Remington, Quinter
 - Thursday, August 16, 2018 – Loma Land & Cattle Co. (Robert Thayer family), La Cygne
 Watch for more details coming to KSUBeef.org.

- ↪ **Entries for the Kansas Junior Livestock Show (KJLS)** are due August 15. Late entries will be accepted through August 31, but will cost double the stated entry fee amount. All exhibitors are required to enter online. For more information, visit www.kjls.org.

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↳ **K-State Ranching Summit** - The KSU Beef Team is pleased to invite you to the 2018 K-State Ranching Summit on August 15 at the Alumni Center in Manhattan, KS. The theme of the program is “*Beef 2030 – Pursuing technology, transparency and profitability.*” A tentative agenda is below:

8:30 AM	Registration
9:00 AM	Welcome, Goals
9:15 AM	Pursuing, adopting and leveraging technology – Mark Gardiner, Gardiner Angus, Ashland, KS
10:00 AM	Managerial accounting: key numbers for ranch managers – Tyson Johnson, Sooner Cattle Co., Pawhuska, OK
10:45 AM	Break
11:15 AM	What can we learn from consumer trends – Don Close, Rabo AgriFinance, St. Louis, MO
12:00 PM	Response to morning session followed by Q & A – Matt Perrier, Dalebanks Angus, Eureka, KS
12:15 PM	Lunch
1:00 PM	Disruptive technologies and the beef Industry – Tom Field, University of Nebraska, Lincoln, NE
1:45 PM	A look at specific disruptive technologies – K-State speakers
2:30 PM	Break
3:00 PM	A vision of the Beef Industry in 2030 – John Butler, Innovative Livestock Services, Manhattan, KS
3:45 PM	Response to afternoon session followed by Q & A – Dale Blasi, K-State, Manhattan, KS
4:00 PM	Adjourn

Early registration (by August 8) is \$40 for individuals or \$70 for two attendees from the same operation. Students are \$20. Registration August 9 and later, including at the door, is \$70, no discount offered for second attendee from same operation. For registration and schedule updates, visit www.KSUbeef.org. For more information, contact Bob Weaber (785-532-1460; bweaber@ksu.edu).

↳ **Kansas 4-H Livestock Sweepstakes will be August 18-19 in Manhattan, KS** - 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 contests for each of these events will be selected during the livestock sweepstakes weekend. The deadline to enter is August 1. All entries must be made by the local county extension offices or extension districts using Cvent. Registration information and contest details were emailed to county offices in June and may be found on the KSU Youth Livestock website (www.asi.k-state.edu/research-and-extension/youth-programs), under "4-H Livestock Sweepstakes." For more information, please contact Lexie Hayes at adhayes@ksu.edu.

↳ **KSU Beef Stocker Field Day to be hosted September 20** - The 2018 KSU Beef Stocker Field Day will be Thursday, September 20, at the KSU Beef Stocker Unit in Manhattan. The day will start at 9:30 a.m. with registration/coffee and conclude with a good old-fashioned Prairie Oyster Fry and Call Hall ice cream at 5:30 p.m. Watch for more details coming to www.KSUbeef.org. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).

↳ **Developing and Implementing Your Company's HACCP Plan** for meat, poultry and juice processors will be held October 3-5, 2018, in Olathe, KS. Information and registration for the 2.5 day International HACCP Alliance accredited workshop is online at <http://haccp.unl.edu>. For more information, contact Dr. Liz Boyle at lboyle@ksu.edu or 785-532-1247.

- ↪ Join us for the **4th annual ASI Family and Friends Reunion** on Friday, October 12, 2018, 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 CattleFax. Other activities will include great food, live music, Junior Wildcat Barnyard and more surprises. Registration information is available at www.asi.ksu.edu/familyandfriends.
- ↪ KSU Animal Sciences and Industry Department will be hosting the **2018 Kansas Certified Wool Classing School and Kansas Sheep Shearing School** on October 19-21. Watch for more details. For more information, contact Alison Crane (arcrane@ksu.edu; 785-532-1672)

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
July 15, 2018	State Fair Entry Deadline	
July 15, 2018	Livestock Nomination Correction Deadline	
August 1, 2018	YQCA Survey Deadline	
August 6, 2018	KLA/KSU Field Day	Medicine Lodge, KS
August 13, 2018	KLA/KSU Field Day	Quinter, KS
August 15, 2018	KJLS Entry Deadline	
August 15, 2018	K-State Ranching Summit	Manhattan
August 16, 2018	KLA/KSU Field Day	LaCygne, KS
August 18-19, 2018	Kansas 4-H Livestock Sweepstakes	Manhattan
September 20, 2018	KSU Beef Stocker Field Day	Manhattan
October 3-5, 2018	HACCP Workshop	Olathe
October 12, 2018	4 th Annual ASI Family and Friends Reunion	Manhattan
October 19-21, 2018	Kansas Certified Wool Classing School	Manhattan
October 19-21, 2018	Kansas Sheep Shearing School	Manhattan

WHAT'S NEW.....

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

“The New Hire”

You have decided to bring a new person into your organization. How do you bring them on-board and get them up to speed with how your organization operates? Do you have a formal training process or do you simply put them to work and hope the new team member is a quick learner?

Regardless of the size of your business or operation, training new people is important. The on-boarding process sets the new hire up for success from day one and is an essential component of employee retention. Some surveys suggest that approximately 30% of new hires will leave their current position within 6 months. Lack of job training or a poor on-boarding process are some of the most common reasons cited for leaving an organization. Good employees are hard to find. Creating a strategy for training new employees that teaches them how to do their job and how your business operates (including ethics, culture, etc.) is well worth the effort.

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

↪ **Feedlot Facts** – Justin Waggoner, Ph.D., Beef Systems Specialist

“Feedlot Heifer Performance in 2017”

Each year I retrospectively summarize the data from the K-State Focus on Feedlots in an effort to document annual trends in fed cattle performance. The Focus on Feedlot data for heifers from 2017, 2016 and 2015 is summarized in the table below. Overall, the number of heifers marketed increased in 2017 with approximately 8,400 more heifers being marketed in 2017 than 2016. Heifer in weights were lower, averaging 729 lbs in 2017. Final weights of heifers were on average 30 lbs lower in 2017 at 1,252 lbs, compared to 1,282 lbs in 2016 and 1,266 lbs in 2015. Heifer days on feed increased to 160 days, an increase of 6 days relative to the 154 days reported in 2016. Heifer average daily gain and feed conversion was similar across years. Death loss increased to 1.64% relative to 1.46% in 2016, but was similar to the 1.62% reported in 2015. Total cost of gain for heifers was \$3.17/cwt lower in 2017 than 2016. Heifer cost of gain was \$3.76/cwt greater on average than that of steers, \$74.34/cwt versus \$78.10/cwt.

Annual Closeout Summary: Heifers

Total Head	In Weight	Final Weight	Days on Feed	Avg. Daily Gain	Feed/Gain (Dry Basis)	% Death Loss	Cost of Gain/Cwt
2017							
275542	729 (696-760)	1252 (1202-1292)	160 (149-171)	3.23 (3.00-3.49)	6.37 (6.13-6.53)	1.64 (1.34-1.93)	\$78.10 (75.40-80.64)
2016							
267083	762 (719-797)	1282 (1234-1324)	154 (142-169)	3.32 (3.19-3.60)	6.28 (6.06-6.39)	1.46 (1.01-2.21)	\$81.27 (72.17-84.76)
2015							
281097	736 (690-779)	1266 (1241-1303)	165 (156-189)	3.14 (2.96-3.33)	6.40 (6.25-6.63)	1.62 (1.15-2.09)	\$90.02 (86.00-93.10)

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

↙ **Animal Technician II (999 Milker - Dairy Unit)** position open – This is a part-time, University Support Staff position. This position exists to milk, feed and provide care of the Dairy Teaching and Research Center (DTRC) 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. Screening begins immediately and will continue until a suitable candidate is identified. For more information, contact Mike Scheffel, Search Committee Chair, at 537-0941 or scheffel@k-state.edu. To apply, go to <http://careers.k-state.edu/cw/en-us/job/504233/animal-technician-ii>.

↙ **Increased Dietary Energy in Limit-Fed Diets Does Not Affect Immune Function, Inflammation or Stress, but Health Status Does** - The objective of this study was to measure effects of limit-feeding high-energy diets on the immune system, stress and inflammation, as well as differences in these parameters between healthy and sick animals under the dietary conditions. Heifers from 4 dietary treatments were used to study the effects of limit-feeding and increased dietary energy on immune function, inflammation (indicated by elevated levels of haptoglobin), stress and differences in these parameters between healthy and morbid animals consuming the different diets.

Bottom Line... Limit-feeding high-energy diets do not negatively affect immune function, cause stress, or promote inflammation, and morbid animals have significantly higher haptoglobin levels. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Dale Blasi (785-532-5427; dblasi@ksu.edu).

↙ **Leucine Supplementation Did Not Improve Protein Deposition or Lysine Utilization in Growing Steers** - The objective of this study was to determine if leucine supplementation could improve protein deposition and lysine utilization in growing steers. Ruminally cannulated Holstein steers (380 lb) were provided treatments of postruminal infusions of 0 or 0.212 oz/day of lysine, and 0, 0.529 or 1.058 oz/day of leucine, with all six combinations tested. Ruminant infusions of volatile fatty acids and abomasal infusions of glucose provided energy, and all essential amino acids, except lysine, were infused abomasally to make lysine the sole limiting amino acid. Urine and fecal collections were used to measure nitrogen retention (protein deposition).

Bottom Line... Supplementation with leucine did not affect protein deposition of growing steers when lysine was a limiting amino acid, suggesting that, at the levels included in this study, leucine did not stimulate protein synthesis. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Evan Titgemeyer (785-532-1220; etitgeme@ksu.edu) or Bob Weaver (785-532-1460; bweaver@ksu.edu).

↙ **Consumer Juiciness Acceptability Supports the Beef Marbling Insurance Theory** - The objective of this study was to determine whether increased marbling reduces the negative impact that increased degree of doneness has on consumer palatability scores. Beef strip loins were collected to represent five quality treatments [Prime, Top Choice, Low Choice, Select and Select enhanced; n = 12 pairs/quality grade] and fabricated to 1-in steaks. Steaks were cooked to one of six degrees of doneness: very-rare (130°F), rare (140°F), medium-rare (145°F), medium (160°F), well-done (170°F) or very well-done (180°F). Consumers (n = 360) rated each steak for juiciness, tenderness, flavor and overall liking on 100-point continuous line scales, and whether each trait was acceptable or unacceptable.

Bottom Line... Marbling could play a role in compensating for the negative effects of advanced degrees of doneness on juiciness acceptability, providing insight into the quality grade needed for consumers to be satisfied with juiciness based on their preferred degree of doneness. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Travis O'Quinn (785-532-3469; travisquinn@ksu.edu) or Terry Houser (785-532-1253; houser@ksu.edu).

↪ **Evaluating the Effects of Replacing Fish Meal with HP 300 on Nursery Pig Performance** - A total of 350 barrows (Line 200 × 400 DNA, Columbus, NE; initially 13.6 lb) were used in a 21-d growth trial with 5 pigs per pen and 14 pens per treatment. Pigs were weaned at approximately 21-d of age, placed in nursery pens according to BW and fed a common pelleted starter diet for 3 d, at which time pigs were weighed and then pens were blocked by BW to 1 of 5 dietary treatments in a randomized complete block design. A composite sample of fish meal and HP 300 was collected and analyzed for AA content and proximate analysis prior to formulation to determine nutrient loading values. Dietary treatments were corn-soybean-meal-based with 10% spray-dried whey and formulated to contain 1.35% standardized ileal digestible (SID) Lys and balanced on an NE basis. The 5 corn-soybean meal-based treatment diets were: 1) soybean meal control (no specialty protein products); 2) diet with 6% fish meal; 3) diet with 9.1% HP 300 replacing fish meal on a Lys basis; 4) diet with 6% HP 300 replacing fish meal on a lb/lb basis; and 5) diet with 15% HP 300 included at the expense of soybean meal and fish meal. All diets were fed in meal form. Overall (d 0 to 21), ADG and ADFI increased when pigs were fed the fish meal control diet compared to pigs fed HP 300 replacing fish meal on an SID Lys basis and 15% HP 300 diet, with pigs fed HP 300 replacing fish meal on lb/lb basis intermediate. In addition, ADG marginally decreased when pigs were fed the soybean meal control diet compared with pigs fed the fish meal diet. Furthermore, pigs fed the control diet had the poorest F/G among the dietary treatments. In addition, pigs fed the fish meal diet had improved final BW (d 21) compared to pigs fed the soybean meal control, HP 300 replacing fish meal on an SID Lys basis, and 15% HP 300 diet, with pigs fed diets with HP 300 replacing fish meal on a lb/lb basis intermediate.

Bottom Line... In conclusion, nursery pigs fed diets with fish meal had improved performance compared with the control diet, but 9% or greater HP 300 resulted in poorer feed intake and gain. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by A.M. Jones, J.C. Woodworth, J.M. DeRouchey, M.D. Tokach, R.D. Goodband and S.S. Dritz)

↪ **Effects of Antimicrobial or Probiotic Treatments on Growth Performance of 13- to 56-lb Nursery Pigs** - A total of 612 nursery pigs (21-d of age; Line 241 × 600; DNA, Columbus, NE) were used in two 44-d experiments to determine effects of antibiotic or different probiotic products on nursery pig performance and fecal consistency. In Experiment 1, 297 pigs were used with six replications per treatment and five or six pigs per pen. In Experiment 2, 315 pigs were used with seven replications per treatment and five pigs per pen. In both experiments, pens were randomly allotted to one of nine dietary treatments in a randomized complete block design. The nine treatment diets included a control diet or the control diet with either carbadox at 50 g/ton, BioPlus 2B with an inclusion rate of 0.05%, or one of six DSM Probiotic products with an inclusion rate of 0.20%.

For Experiment 1, pigs fed the diet containing carbadox had increased ADG compared to pigs fed the control diet or diets containing DSM Probiotic 1, 2, 3, or 6, with the other probiotic treatments intermediate. Pigs fed the diet with carbadox had greater ADFI compared to those fed the control or diets containing DSM Probiotic 1, 2, or 3, with the other probiotic treatments intermediate. Feed efficiency was not affected by treatment. For fecal consistency, there was no evidence to indicate a treatment effect or treatment × day interaction.

For Experiment 2, pigs fed carbadox had greater ADG than all other treatments. Pigs fed BioPlus 2B had greater ADG compared to those fed the diet containing DSM Probiotic 3, with the control and all other probiotic treatments intermediate. Pigs fed carbadox had increased ADFI compared to the control and DSM Probiotics, with BioPlus 2B intermediate. There was no evidence of difference to indicate that dietary treatment influenced F/G nor to indicate a treatment effect for fecal consistency.

Bottom Line... In summary, pigs fed diets containing carbadox consistently had increased ADG and ADFI compared to pigs fed any of the other dietary treatments. There was no evidence the probiotics improved performance based on these results; however, the DSM Probiotic 4 had the highest numerical ADG of all the DSM products relative to the non-medicated control diet in both experiments. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by D.J. Shawk, B.J. Feehan, O.L. Harrison, J.C. Woodworth, M.D. Tokach, R.D. Goodband, S.S. Dritz, J.M. DeRouchey, N.E. Ward and A.B. Clark)

ASI Faculty Spotlight



Megan Rolf (megrolf@k-state.edu; 785-532-1450)
Assistant Professor/Genetics and Livestock Genomics

Dr. Megan Rolf was raised on a cow-calf operation in east central Kansas and has been involved with livestock her entire life. She received a bachelor's degree in animal science at Kansas State University and a M.S. degree in animal science at the University of Missouri-Columbia. She also earned her Ph.D. in Genetics at the University of Missouri, where her research focused on the use of genomics in beef cattle.

After graduation, Megan was on faculty at Oklahoma State University for four years where she was an Assistant Professor and State Extension Beef Specialist. She joined the faculty at Kansas State University in 2016 as an Assistant Professor of Animal Breeding with a 60% research and 40% teaching appointment. She teaches Genetics in the fall and maintains an active research program in the use of genomics for genetic improvement in livestock.



Sara Gragg (saragragg@k-state.edu; 913-307-7371)
Assistant Professor/Food Safety and Food Microbiology
Olathe Campus

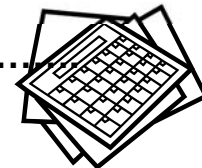
Dr. Sara Gragg earned her Masters in Food Science, doctorate in Animal Science, and was a post-doctoral research scientist at Texas Tech University. Sara has enjoyed being closer to her Nebraska roots since joining Kansas State University in the summer of 2013. Her interest in food science and animal science began during her service in FFA, Ag education and showing horses. She earned her undergraduate degree in Food Science & Technology from the University of Nebraska-Lincoln before moving to Texas for graduate school.

Sara leads the food safety research program at the Olathe campus of Kansas State University. She has more than 17 years of experience in food safety research and has served as an assistant professor at Kansas State University for five years. Sara's research program investigates pre-harvest and post-harvest issues affecting the meat and produce industries, with specific interests addressing the manner by which pathogens contaminate food products and the application of interventions to prevent and/or reduce pathogen presence. She is particularly interested in studying the pre-harvest transmission of foodborne pathogens in food animals, as well as investigating interventions to reduce foodborne pathogens in live animals. As an affiliated faculty member with the Center for Food Safety Research in Child Nutrition Programs at Kansas State University, she also contributes to food safety research for school foodservice programs. Sara teaches courses in food microbiology, produce safety and food policy at Kansas State University.

Sara's husband, J.D., is a consultant for the National Research Center for College and University Admissions (NRCCUA). Together they have two children, Barrett (age 8) and Brendan (age 4).

What Producers Should Be Thinking About.....

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



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

September is when forages are maturing rapidly, weaning time can be appropriate and weather dictates several key management decisions.

Breeding Season

Out of concern for trichomoniasis, an economically devastating reproductive disease, do not introduce untested bulls to your herd. Remove bulls after 60 days with cows, 45 days with heifers. (Never run bulls for more than a 90-day breeding season.)

Cowherd Nutrition

- Provide ample amounts of clean, fresh drinking water.
- Consider limited-intake creep feeding if:
 - ◆ Drought conditions develop and persist.
 - ◆ Range conditions limit milk production.
 - ◆ Creep feed/grain prices are relatively low.
 - ◆ Value of gain allows for economic benefits.
- Tips for successful limited-intake creep feeding:
 - ◆ Limit duration to last 30 to 75 days before weaning.
 - ◆ Limit intake to less than 2 pounds/head/day.
 - ◆ Use an ionophore or other feed additive to maximize efficiency.
 - ◆ Protein level should be equal to or greater than 16%.
 - ◆ High salt levels may help limit intake, but can be tough on feeders.
- Pre-purchase bulk rate winter supplementation needs prior to 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.
- ◆ Control face flies.
- ◆ Clip pastures with tall, coarse grasses that may irritate eyes.
- ◆ Provide ample shade.

Therapy:

- ◆ Administer a long-acting antibiotic subcutaneously when symptoms are first noticed.
 - ◆ Shut out irritating sunlight by patching eyes, shade, etc.
 - ◆ Control flies.
 - ◆ Consult your veterinarian.
- Consider re-vaccinating for the respiratory diseases for 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.
 - Re-vaccinate 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 winter nutritional program through pasture and forage management.
- ☑ For stocker cattle and replacement heifers, supplement maturing grasses with an acceptable degradable intake protein/ionophore (feed additive) type supplement.

Reproductive Management

- ☑ Remove bulls to consolidate calving season.
- ☑ Pregnancy check and age pregnancies 60 days after the end of the breeding season. Consider culling cows that are short-bred.

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

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 early weaning if:
 - ◆ Drought conditions develop and persist.
 - ◆ Range conditions limit milk production.
 - ◆ Cows are losing body condition.
 - ◆ Calf and cull cow prices indicate maximum profit.
 - ◆ Facilities and management is available to handle lightweight calves.
 - ✓ *First-calf heifers have the most to gain.*
 - ✓ *Resist the temptation to feed the cows without weaning; feeding early-weaned calves is more efficient.*
- ☑ Look for unsound cows that need to be culled from the herd.
- ☑ Prepare to have your calf crop weighed and analyzed through your state, regional or breed performance-testing program.
- ☑ 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, or phone 785-532-1267.*