



# News from KSU Animal Sciences

- ☞ **State Show Entry Deadlines** - 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, which is ShoWorks. Only online entries will be accepted. Families who state nominated livestock this year should have their KSU Nomination # ready when they begin the entry process. All exhibitors will also need to be prepared to submit their YQCA number. Late entry forms will be accepted until July 25, with a late fee. No entries will be accepted after July 25. For more information, visit [www.kansasstatefair.com/p/participate/grand-drive](http://www.kansasstatefair.com/p/participate/grand-drive).
- Continuing this year, 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. Entries for KJLS will be due by August 15, also using ShoWorks. However, they are separate shows, so families will need to create a new account when entering KJLS, or use the new ShoWorks Passport App. All exhibitors must register online, using the link found on the KJLS website: <https://kjls.org/>. Families who state nominated livestock this year will need their KSU Nomination #. All youth need to be prepared to submit their YQCA number as well. Late entries will be accepted until August 25, but will cost double the listed original entry fee amount.
- ☞ **Livestock Nomination Corrections** - All state livestock nominations received have been opened and processed. Reports are listed under the Nominated Livestock link on the KSU Youth Livestock Program website: <https://www.asi.k-state.edu/research-and-extension/youth-programs/nominated-livestock/check-nominated-livestock.html>. Confirmation letters have also been mailed to families. Those who have a red "No" in the complete nomination column (last column) were missing a component of their nomination or submitted incorrect information. Therefore, the nomination is incomplete. The deadline to correct state livestock nominations is July 15. Animals that remain incomplete after this date will be ineligible for both state shows. For questions, contact Lexie Hayes at [adhayes@ksu.edu](mailto:adhayes@ksu.edu) or 785-532-1264.
- ☞ **Livestock Projects sold through County Fair Premium Auctions** - As we enter county fair season, this is a reminder that livestock animals sold through a county fair premium sale OR ribbon auction are not eligible to be shown at the Kansas State Fair or the Kansas Junior Livestock Show. This is per the Kansas 4-H Policy, section J2.2. So, please refer to the policy guide on the state 4-H website for further details about the policy. As counties wrap up their county fair, please send a list of the STATE NOMINATED animals that participated in the premium auction. We only need the state nominated animals, not the entire sale bill/ribbon auction list. Please just email the official KSU nomination family name, specie, and tag #s. A list of animals state nominated from each county may be found on the state livestock nomination reports posted on the KSU Youth Livestock Program website: <https://www.asi.k-state.edu/research-and-extension/youth-programs/nominated-livestock/check-nominated-livestock.html>. This list includes official KSU nomination family names and tag numbers. For more information, contact Lexie Hayes at [adhayes@ksu.edu](mailto:adhayes@ksu.edu) or 785-532-1264

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↪ The annual **KLA/Kansas State University Ranch Management Field Day series** is set to continue in 2020. Philip and Jessica Weltmer of W & S Ranch Inc. will host the first event August 13 near Smith Center. G-Three Cattle Company, owned and operated by the George family, will host the second field day August 18 near Uniontown in honor of the late Darrel George.

The events will include presentations on the history of each host operation and the practices being used today, as well as educational sessions and a beef dinner. Additional precautions will be taken to ensure the safety of all producers in attendance. Look for details to follow. Sponsors for the field days are Farm Credit Associations of Kansas and Bayer Animal Health.

↪ **Livestock Sweepstakes** - Kansas 4-H Livestock Sweepstakes is scheduled for August 22-23 in Manhattan. 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. We are planning to move forward with the event; however, it is subject to University approval and there will be modifications to the contests this year due to the COVID-19 pandemic. More details and registration information will be distributed to county offices once they are available. All entries must be made by the local county extension offices or extension districts using Cvent. Registration information and contest details will be posted to the KSU Youth Livestock website, under 4-H Livestock Sweepstakes (<https://www.asi.k-state.edu/research-and-extension/youth-programs/4-h-livestock-sweepstakes.html>), once they are released. For more information, contact Lexie Hayes at [adhayes@ksu.edu](mailto:adhayes@ksu.edu) or 785-532-1264.

↪ **Developing and Implementing Your Company's HACCP Plan** for meat, poultry and juice processors will be September 30-October 2, 2020, 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](mailto:lboyle@ksu.edu) or 785-532-1247.

↪ **KSU Beef Stocker Field Day to be hosted October 1** – Come and help us celebrate the 21<sup>st</sup> KSU Beef Stocker Field Day which will be hosted Thursday, October 1, 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](http://www.KSUbeef.org). For more information, contact Dale Blasi ([dblasi@ksu.edu](mailto:dblasi@ksu.edu); 785-532-5427).

↪ **6<sup>th</sup> Annual ASI Family and Friends Reunion** - Out of concern for the health and safety of our family and friends, we have decided to cancel the Family and Friends Reunion scheduled for Friday, October 9, 2020, at the Stanley Stout Center. A virtual ceremony will be held to honor the Kelly Lechtenberg family as the winner of the Don L. Good Impact Award. Watch for more details on the virtual award ceremony at [www.asi.k-state.edu/familyandfriends](http://www.asi.k-state.edu/familyandfriends).

<b>CALENDAR OF UPCOMING EVENTS</b>		
<b>Date</b>	<b>Event</b>	<b>Location</b>
August 13, 2020	KLA/KSU Ranch Management Field Day	Smith Center, KS
August 18, 2020	KLA/KSU Ranch Management Field Day	Uniontown, KS
August 22-23, 2020	Kansas 4-H Livestock Sweepstakes	Manhattan
September 30-October 2, 2020	Developing and Implementing your Company's HACCP Plan	Olathe, KS
October 1, 2020	KSU Beef Stocker Field Day	Manhattan
October 9, 2020	ASI Family and Friends Virtual Award Program	Manhattan

# What's New.....

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

## *“Change”*

“Change is inevitable” and often creates a sense of unease for many individuals. However, we have faced an unprecedented amount of change in the past few months. We have changed how we work, how we live, how we buy groceries, and many other things. Some of these changes have been small and some have been large. Why do we fear change? Change is not always bad, but experts agree that most employees within an organization express some degree of fear and resistance to change. The reality is that the fear of change within an organization is created because employees simply do not understand why the change is happening. A 2018 article in the Harvard Business Review

<https://hbr.org/2018/10/dont-just-tell-employees-organizational-changes-are-coming-explain-why> offers suggestions on communicating change in the workplace.

- Keep employees informed with regular communications. Communication is essential to successfully navigating change. Communication should be clear and consistent and focus on the purpose of the change (the why).
- Empower leaders and managers to lead and model the change. Leaders and managers often face more pressure/resistance from employees than administration. Providing managers with additional training or resources equips them to drive and model the change.
- Involve employees in the change. Employees must take ownership of the change for it to be successful. Creating ways for employees to provide feedback and engage them in the process makes employees more likely to support the change.

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

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

## *“Early Weaning....It’s About the Cow”*

Many cattle producers are weathering an exceptionally dry grazing season and may be considering early weaning calves. Many discussions about early weaning focus on managing lightweight calves with the benefits to the cow and the ranch becoming lost in the discussion. Weaning calves 30-60 days earlier than normal (approximately 120-150 days of age) is an excellent management tool that reduces the nutrient requirements of the cow and reduces daily demand for forage resources. A 450 lb spring-born calf is capable of consuming approximately 7 lbs of forage per day. A dry 1400 lb cow can easily consume 28 lbs of dry forage per day (2% bodyweight). If we divide the 28 lbs of forage needed to maintain the cow by the 7 lbs spared in a pasture by removing the calf, we learn that for every 4 days that a calf is not grazing with the cow we get one grazing day for the cow. If we wean calves approximately 30-60 days early, we gain an additional 1-2 weeks of forage to support the cow. Additionally, research at Kansas State University (Bolte et al, 2007) documented that weaning calves at 100 to 145 days of age increased body condition scores of cows grazing native pastures from an average of 5.46 to 5.85 in 120 days. The change in cow body condition score ranged from 0.25 to 0.50 of a condition score on this study. These results are more impressive if we also consider that forage quality was likely declining and yet these cows were still able to increase body condition. The results of this study demonstrate that the optimum time to improve body condition on cows is immediately following weaning as the nutrient requirements of pregnant cows are lowest during this time. Furthermore, what is the value of improving cow condition in the fall to the ranch in a tough year? A lot, especially when the benefits may include less feed/supplement during the winter and improved breed up in the subsequent production year.

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

↩ **Syngenta Enogen Feed Corn Containing an Alpha Amylase Expression Trait Improves Digestibility in Growing Calf Diets** – The objective was to evaluate the digestibility parameters of growing cattle when fed Enogen Feed corn. Seven cannulated Holstein steers were used to determine the effects on digestibility when fed Enogen Feed corn (Syngenta) as whole-corn or processed as dry-rolled at ad libitum intake.

**Bottom Line...** When Enogen Feed corn was fed in an ad libitum fashion to growing calves, dry matter and organic matter are digested to a greater extent relative to yellow corn. View the complete research report at [www.asi.ksu.edu/cattlemensday](http://www.asi.ksu.edu/cattlemensday). For more information, contact Dale Blasi ([dblasi@ksu.edu](mailto:dblasi@ksu.edu); 785-532-5327).

↩ **Beef *Longissimus Lumborum* Steak pH Affects External Bioelectrical Impedance Assessment** - To use external bioelectrical impedance analysis to assess postmortem chemical changes in normal- and high-pH beef *longissimus lumborum* steaks during simulated retail display. Beef strip loins obtained from a commercial processor were sorted into two treatments, normal-pH (5.61–5.64; n = 11) and high-pH (6.2–7.0; n = 9). Loins were fabricated into five 1-inch thick steaks, and randomly assigned to one of five display days: 1, 3, 5, 7, and 9. External bioelectrical impedance values, oxygen consumption, metmyoglobin reducing ability, protein degradation, water holding capacity, and pH were assessed on each storage day.

**Bottom Line...** External bioelectrical impedance is a method that could be used to separate normal- and high-pH strip loins with potential for rapid, in-plant use to identify dark-cutting beef. View the complete research report at [www.asi.ksu.edu/cattlemensday](http://www.asi.ksu.edu/cattlemensday). For more information, contact Elizabeth Boyle ([lboyle@ksu.edu](mailto:lboyle@ksu.edu); 785-532-1247).

↩ **Pelleting and Starch Characteristics of Diets Containing High Amylase Corn** - This experiment was designed to evaluate the effects of die thickness and conditioning temperature on pelleting and starch characteristics in diets containing either conventional yellow dent or high amylase corn. Treatments were arranged as a 2 × 2 × 3 factorial of corn type (conventional and high amylase), die thickness (L:D 5.6 and 8.0), and conditioning temperature (165, 175, and 185°F). For the high amylase corn treatments, ground high amylase corn replaced conventional ground corn on a lb:lb basis. Diets were pelleted via steam conditioning (10 in × 55 in Wenger twin staff pre-conditioner, Model 150) and using a pellet mill (CPM Model 1012-2) with a 5/32 in × 7/8 in (L:D 5.6) or 5/32 in × 1 1/4 in (L:D 8.0) pellet die. Conditioner retention time was set at 30 sec and production rate was set at 33 lb/min. All treatments were replicated on 3 separate days. Pellets were composited and analyzed for starch and pellet durability index (PDI). Conditioning temperature, hot pellet temperature (HPT), production rate, and pellet mill energy consumption were recorded throughout each processing run. Data were analyzed using the GLIMMIX procedure in SAS, with pelleting run as the experimental unit and day as the blocking factor. The 3-way interaction was not significant for any of the pelleting or starch responses analyzed in this study. There was no evidence for a corn type × conditioning temperature interaction for HPT, PDI, or energy consumption. There was a tendency for a corn type × die thickness interaction for PDI. The PDI for the high amylase and conventional corn treatments were similar when diets were pelleted using the L:D 8.0 die. However, PDI for conventional corn diets was greater than high amylase corn diets when pelleted using the L:D 5.6 die. Pelleting diets with the L:D 8.0 die had improved PDI compared to the L:D 5.6. Additionally, PDI increased with increasing conditioning temperature. Pellet mill energy consumption was greater for the thicker pellet die, and tended to decrease with increasing conditioning temperature. There was a corn type × conditioning temperature interaction for gelatinized starch in conditioned mash. High amylase corn diets steam conditioned at 185°F had greater gelatinized starch than all other corn type × conditioning temperature treatments. Cooked starch of conditioned mash was greater for diets containing high amylase corn compared to conventional corn and increased with increasing conditioning temperature. There was a corn type × die thickness interaction for total starch in pellets. Total starch was greater for high amylase corn diets pelleted using the L:D 8.0 compared to the L:D 5.6 die, but not different from the conventional corn diets pelleted using either the L:D 5.6 or 8.0 die. Starch gelatinization was greatest for the high amylase diets and increased with increasing conditioning temperature. Lastly, pelleted high amylase corn diets had a greater percentage of cooked starch compared to conventional corn diets, and there was a tendency for cooked starch to increase with increasing conditioning temperature.

**Bottom Line...** In conclusion, increasing die L:D and conditioning temperature improved pellet quality. Starch gelatinization was increased when diets were pelleted at the highest conditioning temperature of 185°F, and high amylase corn diets resulted in greater gelatinized starch than conventional corn diets. 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.N. Truelock, M.D. Tokach, C.R. Stark, and C.B. Paulk)



### Economic Model for Optimum Standardized Total Tract Digestible Phosphorus for Finishing Pigs

- An adequate supply of dietary phosphorus (P) is important for pig growth performance and bone mineralization. However, P represents the third most expensive nutrient in swine diets after energy and protein and can greatly affect diet cost. Therefore, the objective of this project was to develop a tool to compare current dietary standardized total tract digestible (STTD) P concentrations to suggested values that yield maximum growth performance while accounting for different financial scenarios. The phosphorus economic tool is a Microsoft Excel-based model that evaluates the user's current dietary STTD P concentrations for a specific production system and market conditions. The tool takes into consideration whether the system is marketing pigs on a fixed time or fixed weight basis. Moreover, the user has the option of an imperial or metric version, as well as the evaluation using two different energy systems: metabolizable energy and net energy. Data from Vier et al. have described the dose response curve to increasing STTD P for late nursery and finishing pigs under commercial conditions. Based on these data, regression equations were developed to predict the STTD P requirement, as a percentage of the diet, for maximum growth rate according to the energy content of the user's diets. For model calculations, non-linear regression equations for average daily gain and feed efficiency are used. The tool calculates profitability indicators utilizing live or carcass weights. For profitability calculations on a carcass basis, a regression equation was developed to account for the effect of STTD P on carcass yield.

**Bottom Line...** This tool provides a means for the users to compare their current STTD P concentrations to levels required to achieve maximum growth performance, while considering the financial implications under dynamic productive and economic situations. The model can be accessed at [www.ksuswine.org](http://www.ksuswine.org) or at the open science framework data repository. 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.M. Vier, S.S. Dritz, M.D. Tokach, U.A.D. Orlando, W. Cast, J.C. Woodworth, R.D. Goodband, and J.M. DeRouchey)

### Evaluation of High Amylase Corn on Growth Performance and Carcass Characteristics of Finishing Pigs

- A total of 288 pigs were used in an 82-d trial to determine if replacing conventional yellow dent corn with high amylase corn (Enogen®, Syngenta Seeds, LLC) in diets with or without distillers dried grains with solubles (DDGS) influences growth performance and carcass characteristics. Pens contained 8 pigs with an equal number of barrows and gilts. There were 9 pens per treatment with pens assigned randomly to treatments balancing for initial body weight. Diets were arranged in a 2 × 2 factorial with two corn sources (conventional or high amylase) and two levels of DDGS (0 or 25%). Experimental diets were fed in meal form in 3 phases: d 0 to 29, d 29 to 47, and d 47 to 82. Pigs were weighed approximately every 2 weeks and at the start of each phase. On d 82, pigs were transported to a commercial packing plant for processing and carcass data collection. Overall, average daily gain (ADG) was marginally greater for pigs fed high amylase corn than conventional corn with no evidence for difference in feed intake, feed efficiency (F/G), hot carcass weight (HCW), or other carcass traits. Added DDGS resulted in decreased overall ADG and poorer F/G compared to pigs fed no DDGS. Pigs fed DDGS had marginally lower (HCW), less backfat, and marginally greater loin depth, percentage lean, and iodine values than pigs not consuming DDGS.

**Bottom Line...** The results of this trial suggest that high amylase corn tended to improve overall ADG; however, F/G and carcass characteristics were unchanged between corn sources. Further research is needed to determine if this hybrid has positive effects on growth of younger pigs or pigs fed pelleted diets. 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 P. Ochonski, F. Wu, E. Arkfeld, J.M. Lattimer, J.M. DeRouchey, S.S. Dritz, R.D. Goodband, J.C. Woodworth, and M.D. Tokach)

# ASI Faculty Spotlight



**Megan Rolf ([megrolf@k-state.edu](mailto:megrolf@k-state.edu); 785-532-1450)**

## **Associate 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 in 2005 and a M.S. degree in animal science at the University of Missouri-Columbia in 2009. She also earned her Ph.D. in Genetics at the University of Missouri in 2012, 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.



**Tim Rozell ([trozell@k-state.edu](mailto:trozell@k-state.edu); 785-532-2239)**

## **Professor/Physiology**

Dr. Rozell began the process of growing up in Garrison, Missouri, back in the late 20th century. He completed his B.S. and M.S. degrees at the University of Missouri and then earned his Ph.D. at Washington State University. After a three year postdoctoral fellowship at the University of Iowa, Dr. Rozell was hired in 1997 at Kansas State University with a 70% Teaching and 30% Research appointment. His primary teaching role is ASI 533, Anatomy and Physiology, a 4-credit hour course that is taught every semester to an average of about 120 students per semester. Dr. Rozell has also taught a course on the physiology of lactation, which has now been converted to "Endocrinology and Lactation." In addition, he co-teaches a lambing class with Dr. Alison Crane in the spring that offers students hands-on experience with livestock. Dr. Rozell has led study tours to Switzerland, Germany and France.

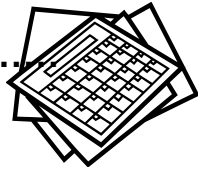
Dr. Rozell's current research program focuses on heat stress in dairy cattle, and the role of exercise and physical activity on heat tolerance in cows.

During the 2004-2005 school year, Dr. Rozell went on Sabbatical in Scotland to help develop new research techniques to examine expression of variant forms of the follicle stimulating hormone receptor in cows and sheep. There he collaborated with the University of Glasgow's College of Veterinary Medicine.

Dr. Rozell resides in Manhattan with his wife, Marcia, and their Border collie, MacKenzie. The Rozells have two children (neither of whom is smarter than the dog): Sam, who is working on his Master's in Biomedical Engineering at the University of California – San Diego, and Josie, who is a professional writer and English teacher in Auckland, New Zealand. Dr. Rozell continues to grow up, and has no plans to finish the process anytime soon.

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