News from KSU Animal Sciences

- The **deadline for Kansas Junior Livestock Show entries is August 15**. All entries must be made online, using the link on the https://kjls.org website. Families need to have their KSU Nomination # and YQCA certification numbers available to complete the process for each child. Youth are also encouraged to enter the LEAD Challenge. This is a unique opportunity for youth to showcase their knowledge of the livestock industry, but exhibitors need to declare their intent to participate during the entry process. Showmanship is also a component of the LEAD Challenge, so participants need to make sure they are entered in their respective showmanship division to be eligible. The Kansas State Fair Grand Drive entry deadline has passed, but all of those who did enter need to watch their email for their credentials. Families will need it to enter the fairgrounds and receive their exhibitor packets. Agents and FFA advisors will receive instructions from both the Kansas State Fair Grand Drive and KJLS regarding approving entries for youth from their respective organization. This will all be done online, similar to last year. Everyone is encouraged to double check the rules for each show prior to entry and arrival to make the check-in process and livestock shows go as smoothly as possible.

- **Livestock Sweepstakes** - Livestock Sweepstakes is approaching on August 24-25. The entry deadline has passed, but those who entered youth will be receiving additional details and reminders as the event approaches. The livestock judging contest, livestock skillathon, and quiz bowl qualifying exam will be on Saturday, with the meat judging contest, head-to-head quiz bowl rounds, and awards ceremony being on Sunday. Through these events, the youth who will represent Kansas at the national contests will be selected. We look forward to having Kansas 4-H'ers on campus! For more information, please contact Lexie Hayes at adhayes@ksu.edu.

- **KSU Beef Stocker Field Day to be hosted September 19** - The 20th anniversary of the KSU Beef Stocker Field Day will be Thursday, September 19, at the KSU Beef Stocker Unit in Manhattan. The schedule is as follows:

9:30 am	Registration/Coffee
10:15 am	Introductions
10:30 am	Beef Cattle Market Outlook - *Dr. Glynn Tonsor, KSU Agricultural Economist*
11:15 am	Changing Industry Structure in Forging a Closer Relationship Between Grow Yards and Feeders - *Don Close, Rabo AgriFinance*
12:00pm	Niman Ranch CAB® Natural Prime Ribeye Lunch – View posters
1:00 pm	Internal Parasite Management - *David Pugh, Southern Traxx Farm and Forge*
2:00 pm	Humane Euthanasia Practices - *Dr. AJ Tarpoff, KSU Extension Beef Veterinarian*
2:45 pm	Break
3:15 pm	BeefBasic: Better Information for Better Marketing Decisions - *Brett Cosby, Custom Ag Solutions*
4:15 pm	Health Management of High Risk Calves - *Dan Thomson, KSU College of Veterinary Medicine*
5:00 pm	Panel Discussion: Beef Parasite Control – *Ty Brunswig, Animal Medical Center; AJ Tarpoff, KSU Extension Beef Veterinarian; and David Pugh, Southern Traxx Farm and Forge*
5:30 pm	Cutting Bull's Lament 2019

The day will conclude with a good old-fashioned Prairie Oyster Fry and Call Hall ice cream. Pre-registration is $25 and due by September 10. For complete details and registration, visit www.KSUbeef.org. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427).

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Kansas State University Animal Sciences and Industry
K-STATE Research and Extension

- **Developing and Implementing Your Company's HACCP Plan** for meat, poultry and juice processors will be October 2-4, 2019, 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 5th annual **ASI Family and Friends Reunion on Friday, October 4, 2019**, 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. The Don L. Good Impact Award will be presented to the Kansas Livestock Association. All Don Good faculty hires have been invited back for the fifth reunion. Other activities will include great food, live music, Junior Wildcat Barnyard, no fundraising and more surprises!! A tentative schedule includes:

  5:30 pm **ASI Family & Friends Reunion is OPEN!**
  All event attractions remain open throughout the evening
  7:20 pm **"Pride of Wildcat Land" Band Performance**
  7:40 pm **WILDCAT WALK**
  Stroll through the aisle formed by the band into the Stout Center
  7:55 pm **Star Spangled Banner (Inside the Stout Center)**
  8:00 pm **Don L. Good Impact Award presented to** Kansas Livestock Association
  9:10 pm **Jr Wildcat toy drawing *(must be present to win)***
  Justin Janssen & Kyle Bauer, *LMIC Board Members*
  9:30 pm **Event attractions close -** *Travel safe!*

  Registration is $25 for adults; $10 for students (13 and over); and free for those 12 and under. Early registration is due by September 20. For more information, visit www.asi.ksu.edu/familyandfriends. If you have questions, contact Lois Schreiner at lschrein@ksu.edu or 785-532-1267.

- Mark your calendars for the **2019 KSU Swine Day** that will be hosted Thursday, November 21. A tentative schedule and information on exhibiting is available at https://www.asi.k-state.edu/events/swine-day/. For more information, contact Lois Schreiner at 785-532-1267 or lschrein@ksu.edu.

CALENDAR OF UPCOMING EVENTS

Date	Event	Location
August 15, 2019	Deadline for KJLS entries	
August 24-25, 2019	Kansas 4-H Livestock Sweepstakes	Manhattan
September 19, 2019	KSU Beef Stocker Field Day	Manhattan
October 2-4, 2019	Developing and Implementing your Company's HACCP Plan	Olathe, KS
October 4, 2019	ASI Family and Friends Reunion	Manhattan
November 21, 2019	KSU Swine Day	Manhattan

What's New . . . .

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

"Customer Service"

Good customer service is essential to any business or organization. It does not matter if it is a restaurant or a tow truck service, having staff members who leave customers or anyone who encounters your business with that "wow that was great" feeling directly influences the bottom line. Customer service has become more important than ever as more consumers are gathering information and making purchasing decisions based on social media. What is customer service? Customer service is simply defined as the assistance provided by a company to those who purchase the goods or services it provides. Now on to the tough part, how do we as businesses or organizations provide that assistance?

Susan Ward (www.thebalancesmb.com) offers a few simple things that businesses can do to improve their customer service experiences. First, answer the phone. Potential customers want to talk to a person and don't want to leave a message. Second, don't make promises you can't keep. As the old saying goes "say what you are going to do and do what you said you were going to". Third, listen. Simply listening to what a potential customer needs is important, there is nothing worse than listening to a sales pitch for something you don't want. Fourth, be helpful even if you don't make the sale today. The service provided today has the potential to turn in to something much larger in the future. Fifth, train your staff to do something extra, like showing the customer where the product is located. Lastly, empower your staff to offer something extra without asking permission.

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

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

"Feedlot Steer Performance in 2018"

Each year I summarize the data from the K-State Focus on Feedlots in an effort to document annual trends in feed cattle performance. The Focus on Feedlot's data for steers from 2018, 2017 and 2016 is summarized in the table below. In 2018, participating feedlots marketed 349,595 steers, 8497 fewer cattle than were marketed 2017. In weights remained steady, averaging 779 lbs. Final weights of steers increased slightly to 1398 lbs compared to 1387 lbs in 2017. Steers were on feed approximately 173 days, an increase of 9 days from 2017 and 14 days from 2016. Average daily gain and feed conversion were similar across years. Death loss remained steady at 1.58% compared to the 1.52% previously reported in 2017. Reported total cost of gain averaged $78.10/ Cwt. in 2018, an increase of $3.76/Cwt. from 2017.

Annual Closeout Summary: Steers

Year	Total Head	In Weight	Final Weight	Days on Feed	Avg. Daily Gain	Feed/Gain (Dry Basis)	% Death Loss	Cost of Gain/Cwt
2018	349595	779 (738-821)	1398 (1356-1444)	173 (163-182)	3.58 (3.34-3.66)	6.12 (5.96-6.36)	1.58 (1.27-2.12)	$78.10 (74.87-80.31)
2017	358092	796 (752-861)	1387 (1332-1429)	164 (142-174)	3.57 (3.21-3.81)	6.11 (5.94-6.34)	1.52 (1.16-2.43)	$74.34 (71.83-77.60)
2016	319710	824 (789-850)	1421 (1388-1445)	159 (150-169)	3.66 (3.45-3.83)	6.04 (5.88-6.23)	1.36 (1.03-1.72)	$77.32 (69.74-81.87)

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

- **Office Specialist II (Student Services Office) position open** – Kansas State University Animal Sciences and Industry is looking for an Office Specialist for the Student Services Office. This is a full-time, unclassified, 9 month (academic year), full-time, benefits eligible position (job no 507866). This position will support faculty, staff, and students in both academics and procedures; greeting visitors, students, and staff in person or via phone, answering questions and providing requested information by applying knowledge of policies and procedures for the department and university. Also, operating copy machine, handling and sorting mail, assisting faculty with various projects, such as word processing, preparation of presentations, correspondence and basic accounting entry, sending/receiving mailings, working with student workers, and completing special projects. This position will work closely with the KSIS and DARS system for student enrollments. May work a couple of Saturdays each year, but would be given prior notice. There may be hours available during the summer on an as needed basis. Screening of applications will start August 12, 2019, and will continue until a suitable candidate is identified. To apply, go to https://careers.k-state.edu/cw/en-us/job/507866/office-specialist-ii. For more information, contact Dr. Dave Nichols, Search Committee Chair, at 532-1239 or dnichols@k-state.edu.

- **Effect of Degree of Doneness, Quality Grade, and Time on Instrumental Color Readings from Beef Strip Loin Steaks Cooked to Six Degrees of Doneness** – The objective of this study was to determine the effect of quality grade and time after cooking on the instrumental color of steaks cooked to varying degrees of doneness. Beef strip loins from 12 animals representing five quality treatments [Prime, Top Choice, Low Choice, Select, Select Enhanced (108%)] were collected. Each steak was cooked to a peak internal temperature of very-rare (130°F), rare (140°F), medium-rare (145°F), medium (160°F), well-done (170°F), or very well-done (180°F). Each cooked steak was cut in half, perpendicular to the long axis of the steak, and lightness (L*), redness (a*), and yellowness (b*) was evaluated on the internal face of the medial side at 0, 1, 2, 3, 6, 9, and 12 minutes post-cutting using a Hunter Lab Miniscan spectrophotometer.

  Bottom Line… The impact of time on internal cooked color was dependent on degree of doneness, with steaks cooked to lower degrees of doneness becoming lighter and more red in color with time and steaks cooked to higher degrees of doneness becoming darker. Additionally, quality treatment had no impact on cooked color measures of non-enhanced steaks. These results provide insight into cooked beef color changes related to time and how this might impact degree of doneness perceptions by consumers. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Travis O'Quinn (travisoquinn@ksu.edu; 785-532-3469) or Terry Houser (houser@ksu.edu; 785-532-1253).

- **Effects of Analyzed Calcium to Phosphorus Ratio on Growth Performance, Carcass Characteristics, Bone Mineralization, and Economics of 56- to 279-lb Pigs Fed Diets Containing Phytase -** A total of 1,215 barrows and gilts were used in a 114-d growth trial to determine the effects of different analyzed calcium to analyzed phosphorus ratios on performance of growing-finishing pigs from 57- to 279-lb fed diets containing 1,000 phytase units. Pens of pigs were randomly assigned to one of five dietary treatments in a randomized complete block design with BW as a blocking factor. There were nine replicate pens per treatment and 27 pigs per pen. The experimental diets were corn-soybean meal-based and were fed in 4 phases. The five dietary treatments were formulated to contain 0.75:1, 1.00:1, 1.25:1, 1.50:1, and 2.00:1 analyzed Ca:P ratios. The diets contained 1,000 phytase units (FYT) of Ronozyme Hiphos 2500 with assumed releasing values of 0.15% available P (aP) and 0.132% standardized total tract digestible P (STTD P). All the diets were formulated to contain adequate STTD P across the dietary treatments in all phases, which included the expected release of phytase. The treatments were achieved by increasing the amount of calcium carbonate at the expense of corn while maintaining monocalcium phosphate constant. Overall, increasing analyzed Ca:P ratio quadratically increased average daily gain, final BW, and average daily feed intake. The greatest increase in these criteria was observed as the ratio increased from 0.75:1 to 1.50:1, with no improvement thereafter. Feed efficiency improved linearly with increasing analyzed Ca:P ratio up to 2.00:1. For carcass characteristics, hot carcass weight (HCW) increased quadratically as the analyzed Ca:P ratio increased from 0.75:1 to 1.50:1, and started to decrease thereafter. Percentage carcass yield decreased from 0.75:1 analyzed Ca:P ratio to 1.25:1, slightly increasing at higher ratios. Bone mineralization increased quadratically with increasing analyzed Ca:P ratio. The greatest improvement in percentage bone ash was observed as analyzed Ca:P ratio increased from 0.75:1 to 1.25:1, with no further increase. Feed cost per pig increased linearly with increasing analyzed Ca:P ratio. No evidence of differences was observed for feed cost per pound of gain. Gain value per pig increased quadratically, with the greatest revenue observed for pigs fed diets with 1.50:1 analyzed Ca:P ratio. There was a marginal quadratic improvement in income over feed cost (IOFC), with the highest income observed at 1.25:1 analyzed Ca:P ratio. The best fitting models for ADG, ADFI, feed efficiency, HCW, and bone ash were the quadratic polynomial (QP), linear, broken-line linear (BLL), QP, and BLL models, respectively. The maximum responses in ADG, feed efficiency, HCW, and bone ash were estimated at 1.63:1, 1.05:1, 1.11:1, and 1.25:1 analyzed Ca:P ratio, respectively.

Bottom Line… In conclusion, the estimated analyzed Ca:P ratio requirement for finishing pigs from 56- to 279-lb fed diets containing 1,000 phytase units and that were adequate in STTD P ranged from 1.05:1 to 1.63:1 to maximize growth rate, feed efficiency, HCW, and bone mineralization criteria. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. *(This study conducted by C.M. Vier, S.S. Dritz, M.D. Tokach, M.A.D. Gonçalves, U.A.D. Orlando, W. Cast, J.R. Bergstrom, J.C. Woodworth, R.D. Goodband, and J.M. DeRouchey)*

- **Growth Performance of Nursery Pigs in the Immediate Post-Weaning Period According to Different Vaccination Strategies -** The objective of this study was to evaluate the growth performance of nursery pigs immediately after weaning based on different vaccination strategies. A total of 300 weaned pigs with an initial body weight (BW) of 14.0 lb and approximately 21 d of age were used in this trial. Pigs were allotted to pens in a completely randomized design with 5 pigs per pen and a total of 60 pens. All pigs received one dose of a commercial combination vaccine for Porcine Circovirus Type 2 and Mycoplasma hyopneumoniae at approximately day seven of age. At weaning, 30 of the 60 pens of pigs were randomly selected to receive the second dose of the vaccine. Pigs were fed common diets based on corn and soybean meal. Pigs were weighed and feed disappearance was recorded on d 0, 2, 4, 6, and 8 to determine average daily gain (ADG), average daily feed intake (ADFI), and feed-to-gain ratio (F/G). The results of this study demonstrate no evidence of difference for the effect of vaccination or interaction between vaccination and day on growth performance after weaning. However, there was evidence for an effect of day on BW, ADG, ADFI, and F/G. In the first 2 d after weaning, pigs consumed nearly no feed and, consequently, lost weight. In the following days, pigs gradually increased feed intake and gained weight from d 2 to 4, but lost weight from d 4 to 6. A significant increase in feed intake and weight gain was observed from d 6 to 8 after weaning, resulting in an increase in BW.

  Bottom Line… In conclusion, weanling pigs have a slow start on feed and low growth performance during the first week after weaning, but rapidly increase feed intake and weight gain toward the end during the end of the first week of nursery. Vaccination at the moment of weaning was not an aggravating factor to post-weaning growth performance in this study. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. *(This study conducted by M.B. Menegat, L.L. Thomas, M.D. Tokach, J.C. Woodworth, J.M. DeRouchey, S.S. Dritz, and R.D. Goodband)*

- **Effects of Corn Dried Distillers Grains with Solubles Withdrawal on Finishing Pig Performance -** A total of 860 finishing pigs were used in a 76-d experiment to evaluate the effects of removing corn dried distillers grains with solubles (DDGS) from diets at varying intervals before harvest. Pigs were fed diets containing 40% DDGS until the start of the trial. Diets contained 35% DDGS from approximately 146 to 180 lb and 30% until the completion of the trial. Pen served as the experimental unit, and there were seven replicate pens per treatment with 23 to 25 pigs per pen. Pens were blocked by BW within the barn and allotted to 1 of 5 dietary treatments differentiated by the number of days before slaughter that diets containing DDGS were withdrawn and replaced with corn-soybean meal-based diets. Withdrawal times consisted of the following: 76 (no DDGS fed), 42, 27, 15, or 0 d (no withdrawal) before the time all pigs were marketed. At the time of harvest, all pigs were sent to a commercial processing facility for carcass data collection. For the overall period from day -76 to 0, as time of DDGS withdrawal increased, average daily gain (ADG) and final BW also increased, while feed:gain ratio (F/G) improved. Average daily feed intake (ADFI) quadratically decreased with increasing withdrawal time. There was a linear increase in hot carcass weight (HCW), with a marginally significant increase in carcass yield with increasing DDGS withdrawal time. Loin depth and lean percentage did not demonstrate any evidence for treatment differences. Backfat was linearly increased with a marginally significant quadratic response with increasing DDGS withdrawal time. Lastly, the iodine value of belly fat was increased with increased feeding duration of DDGS. Feed cost per pig and income over feed cost (IOFC) per all pigs that started on the experiment were increased with increasing withdrawal time. Feed cost per lb of gain did not demonstrate evidence for treatment differences. When based on the number of pigs marketed at the end of the experiment, feed cost per pig was increased with increasing withdrawal time, though feed cost per lb of gain and IOFC did not have evidence for differences. Carcass gain value was increased with increased DDGS withdrawal time. In conclusion, removing pigs from DDGS for longer periods before slaughter increased ADG and improved F/G, resulting in increased HCW. Belly fat iodine value was inversely related to the length of DDGS withdrawal, with the highest iodine value (IV) resulting from pigs that consumed DDGS for the entire finishing period.

  Bottom Line… The advantages in final BW and HCW seen in the present data may encourage producers to remove DDGS from finishing diets earlier than commonly practiced. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. *(This study conducted by A.B. Lerner, M.D. Tokach, J.C. Woodworth, J.M. DeRouchey, S.S. Dritz, R.D. Goodband, and M.W. Allerson)*

ASI Faculty Spotlight

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

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-n-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."

Elizabeth (Liz) Boyle (lboyle@k-state.edu; 785-532-1247)
Professor/Extension Specialist, HACCP/Meat Safety and Quality

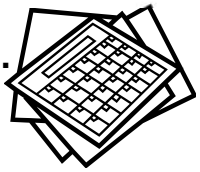
Dr. Liz Boyle is a Professor in Meat Science in the Department of Animal Sciences and Industry at Kansas State University. She received her B.S. in Wildlife Biology from the University of Minnesota, her M.S. in Food Science and Nutrition and Ph.D. in Food Science with a meats emphasis from Colorado State University followed by post-doctorate work in meat science at the University of Kentucky and the University of Minnesota.

Dr. Boyle's focus is to provide scientific and technical assistance to meat processors and trade associations and researching quality and safety of meat products. She is a Lead Instructor with the International HACCP Alliance and the Food Safety Preventive Controls Alliance. Dr. Boyle teaches HACCP workshops nationally and teaches undergraduate and graduate courses in meat processing, HACCP and Preventive Controls, and Advanced HACCP.

In 2016, Dr. Boyle was named a Fellow by the American Meat Science Association and was a recipient of the 2016 AMSA Signal Service Award. Boyle is an internationally known expert in HACCP systems and has dedicated her career to assisting meat companies with improving processed meat quality and safety, HACCP systems, and food safety plans.

What Producers Should Be Thinking About…..

WHAT PRODUCERS SHOULD BE THINKING ABOUT IN OCTOBER……



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

Cow Herd Management

☑ Given unforeseen weather and market price volatility, price byproducts, grains and other feedstuffs on a per nutrient basis.

☑ Do you have sufficient harvested forage to encounter a potentially severe winter feeding season? Conduct an inventory of harvested forages and determine if you have an adequate supply on hand.

☑ Pregnancy check.

☑ Cull cows because of:

- Open.
- Late vs. Early calving.
- Soundness - udder, feet/legs, eyes, teeth, disposition.
- Productivity - Most Probable Producing Ability (from herd performance records).
- Disposition.

☑ Body Condition Score

- Provide thin cows (body condition score 3s and 4s) extra feed now. Take advantage of weather, stage of pregnancy, lower nutrient requirements and quality feedstuffs.

☑ If body condition scores warrant it, you may want to start feeding supplements in late October to mature cows using these guidelines:

Dry grass 1½ - 2 lb. supplement/day of a 40% CP supplement
Dry grass 3 - 4 lb. supplement/day of a 20% supplement
Dry grass 10 lb good nonlegume hay, no supplement needed
(heifers may need more supplement than older cows)

- Supplement nutrients that are most deficient.
- Compare supplements on a cost per pound of nutrient basis.
- Previous KSU research has reported early winter supplementation is not necessary if grazing forage supplies are adequate and cows have at least a 5 BCS. However, given the lower nutrient content of existing forage supplies due to ample rainfall, this year might be advisable to consider supplementing with levels of supplement mentioned above. If cow BCS is marginal, it would prudent at this time to collect and submit standing forage samples to a laboratory to determine if supplementation during the fall period is necessary.

☑ Utilize crop residues. Grazing crop aftermath can reduce daily cow costs by 50¢ or more.

- Strip graze or rotate fields to improve grazing efficiency.
- Average body condition cows can be grazed at 1 to 2 acres/cow for 30 days assuming normal weather.

☑ Consider feeding cull cows to increase value, body weight and utilize cheap feedstuffs. Seasonal price trends have allowed producers to take advantage of maximum profit opportunities with cull cow feeding programs. Healthy cows can gain extremely well on well balanced diets.

☑ Check individual identification of cows. Replace lost tags or redo brands.

Calf Management

☑ Wean calves:
- Reduce stress. Provide a clean, dust-free, comfortable environment.
- Provide balanced nutritional program to promote weight gain and health.
- Observe feed and water intake. Healthy, problem free calves have large appetites.
- Observe calves frequently, early detection of sickness reduces medical costs and lost performance.
- Vaccinate calves and control internal/external parasites through veterinary consultation (ideally done prior to weaning).
- Vaccinate all replacement heifer candidates for brucellosis if within four to 10 months of age.
- Use implants and feed additives to improve efficient animal performance.

☑ Weigh all calves individually. Allows for correct sorting, herd culling, growing programs, replacement heifer selection and marketing plans.

☑ Participate in Whole Herd Rewards, Performance Plus, and(or) other ranch record/performance systems.

☑ Finalize plans to merchandise calves or to background through yearling or finishing programs.
- Consider feedstuff availability.
- Limit feeding high concentrate diets may be a profitable feeding program.

☑ Select replacement heifers which are:
- Born early in the calving season. This should increase the number of yearling heifers bred during the early days of the subsequent breeding season.
- Daughters of above average producing cows. Performance traits are moderately heritable traits.
- Of the proper frame size to compliment desired mature size and weight.
- Structurally correct. Avoid breeding udder, feet and leg problems into the herd.

☑ Vaccinate replacement heifers with first round of viral vaccines.

☑ Plan replacement heifer nutrition program so that heifers will be at their “target weight” (65% of their mature weight) by the start of the breeding season.

Forage/Pasture Management

☑ Observe pasture weed problems to aid in planning control methods needed next spring.

☑ Monitor grazing conditions and rotate pastures if possible and(or) practical.

☑ 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.

General Management

☑ Avoid unnecessary stress. Handle cows and calves to reduce shrink, sustain good health and minimize sickness.

☑ Analyze forage for nitrate and nutrient content. Use these to develop winter feeding programs.

☑ Repair, replace and improve facilities.

☑ 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.*