

News from KSU Animal Sciences

May, 2009



Newsletter from the Department of Animal Sciences and Industry
213 Weber Hall, Kansas State University, Manhattan, KS 66506
785-532-6131 - www.asi.ksu.edu

WHAT'S NEW...

↪ **Management Minute** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist

“Another Form of Compensation: Job Satisfaction”

As we discussed last month, when an employee repeatedly feels underpaid, it may actually mean that they feel undervalued. In response to the true, underlying emotion, there are many ways the effective manager can address this real concern, other than any additional pay increase.

To address job satisfaction you should first explore job duties, qualifications, outside interests, and relationships with co-workers. Questions to ask both yourself and the employee include: Do the person's job duties match the skills and interests of the employee? Do they have the potential to make a greater contribution by either (a) taking on more responsibilities or (b) by relinquishing some duties to better focus on fewer responsibilities? Does this person have good ideas that the company is not listening to or making any effort to incorporate? Do they get along well with their co-workers or is their unresolved conflict? And if they do get along well, are they a team leader or simply a good team mate?

If one or more of the above questions gives you less than satisfactory answers and this is truly an employee worth fighting for, you need to be willing to uncover what it will take to make this person feel more at home and valued in the organization. If employees feel fulfilled in their job; if they feel they are 'doing what they were designed to do' during the work day; if they feel their company values what they do and who they are; if they do not feel limited in their potential; if they feel they are part of a productive, responsive, inclusive, and dynamic team; they will have little reason to ever look elsewhere for 'greener pastures', and it will be very difficult for another employer to steal---or even buy---them away from you.

For more information, contact Chris at 785-532-1672 or cdr3@ksu.edu.

↪ **Length of the Ranch-of-Origin Weaning Period Does Not Affect Post-Receiving Growth or Carcass Merit of Ranch-Direct, Early-Weaned Beef Calves** – The objective of this study was to test the validity of beef industry assumptions about the appropriate length of ranch-of-origin weaning periods for summer-weaned calves aged 100 to 160 days. Angus crossbred calves (n = 400) were stratified by age and assigned randomly to one of five weaning periods that corresponded to the length of time between separation from the dam and shipping to an auction market: 60, 45, 30, 15, or 0 days. Calves were vaccinated against common diseases 14 days before maternal separation and again on the day of maternal separation. On a common shipping date (day 0; August 24), calves were transported 3 hours to a commercial auction market and held for 14 hours. Calves were then transported for less than 1 hour to a feedlot. All calves were fed the same diet ad libitum throughout the trial. Upon slaughter, livers and lungs were evaluated and carcass measurements were collected.

The Bottom Line.... Under the conditions of the study, ranch-of-origin weaning periods between 15 and 60 days did not improve growth performance or carcass merit relative to shipping calves immediately after maternal separation. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact KC Olson (785-532-5681; kcolson@ksu.edu) or John Jaeger (785-625-3425; jrjaeger@ksu.edu).

↪ Recordings of the past **Brands Training Sessions** are now available under Agent Resources at the www.ksubeef.org site. You will need your KSU eID to sign in. For more information, contact Sandy Johnson (785-462-6281; sandyj@ksu.edu).

↳ **Feedlot Facts** by Chris Reinhardt, Ph.D., Extension Feedlot Specialist

“Feedlot Nutrition Made Easy – Roughage levels”

Don't get me wrong, nutrition is extremely complex, especially when we consider the ruminant animal. That said, we 'experts' sometimes like to make things seem every bit as complicated as possible to ensure job security. But the reality is that there is always a hierarchy of topics to be addressed based on importance. For example: feed the cattle every day vs. formulate the correct Manganese concentration. There's a lot of ground in between those 2 concepts, but that's exactly the point.

When teaching the fundamentals of feedlot nutrition, regardless of the audience, we need to start with the basics. For me, that means things like bunk management, transition ration step-up programs, and final ration roughage content. Without having a firm grip on these ideas, any deeper investigation into ration formulation is wasted, because acidosis will suck out any performance advantage provided by a formulation change.

This month, we'll discuss final roughage content and move on from there next month. Final diet roughage content will be driven by 1) diet composition, 2) available roughage sources, and 3) producer management ability. Final roughage concentration could range from 0-5% in some situations to 12-15% in others. (1) Diets containing a moderate to high concentration ($\geq 25\%$ on a dry matter basis) of wet corn milling by-products would (in my opinion) require less roughage, particularly in the warm, stable, weather months, than a diet of straight corn. (2) If all ingredients in the diet are dry, there is a greater likelihood of ingredient separation in the bunk. So you may consider using a little more dry roughage than if all or a portion of the roughage were silage, which helps maintain ration mix. (3) Producers with extensive cattle feeding experience and excellent mixing and feeding equipment can probably be successful feeding a lower roughage diet than the novice cattle feeder, or one with inadequate facilities.

In summary, we can help any producer finish cattle. It's up to us to help maximize their respective opportunities. For more information, contact Chris Reinhardt at cdr3@ksu.edu or 785-532-1672.

↳ **The Combination of Implanting with Revalor-200 and Feeding Zilmax Increases Subprimal Meat Yield of Fed Cows**

– The objective of this study was to determine the effects of concentrate feeding, implanting with Revalor[®]-200, and feeding Zilmax[®] on subprimal meat yield of cull cows fed to 70 days. Sixty cull cows were assigned to one of five treatments: (1) grass fed on pasture (G), (2) concentrate fed (C) a grain sorghum-sorghum silage diet, (3) concentrate fed and implanted (CI) with Revalor-200 (trenbolone acetate-estradiol), (4) concentrate fed and fed Zilmax (zilpaterol hydrochloride) for 30 days followed a 3-day withdrawal (CZ), and (5) concentrate fed, implanted, and fed Zilmax (CIZ). Cattle were fed for 70 days, and subprimals were removed and weighed approximately 72 hours postmortem.

The Bottom Line.... Concentrate feeding can increase subprimal meat yield, and the combination of implanting and feeding Zilmax to cows can further increase subprimal meat yield. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact John Unruh (785-532-1245; junruh@ksu.edu) or Liz Boyle (785-532-1247; lboyle@ksu.edu).

↳ **Effects of Increasing Dietary Dried Distillers Grains with Solubles and Glycerol on Pork Loin Quality**

-. A total of 1,160 barrows (PIC, initially 68.4 lb) were used in a 70-d study to determine the influence of dried distillers grains with solubles (DDGS) and glycerol on pork loin quality attributes. The pigs were blocked by weight and randomly assigned to 1 of 6 dietary treatments with 7 replications per treatment. Pigs were fed corn-soybean meal-based diets with the addition of DDGS, glycerol, or a combination of these. The treatments were arranged in a 2 × 3 factorial with main effects of DDGS (0 or 20%) and glycerol (0, 2.5, or 5%). Pork loins from the 2 heaviest barrows from each pen were utilized for analysis. There were no DDGS × glycerol interactions for purge loss, instrumental color ($L^*a^*b^*$), visual color, marbling score, drip loss, visual color, pH, Warner-Bratzler shear force (WBSF), cook loss, and most sensory characteristics. However, there was a DDGS × glycerol interaction ($P < 0.03$) for off-flavor intensity. Specifically, pigs fed 20% DDGS without added glycerol had more off-flavors than pigs fed any other treatment. Pigs fed diets with added DDGS had higher WBSF values, lower myofibrillar tenderness, lower overall tenderness scores, lower connective tissue scores, and more off-flavors ($P < 0.04$) than pigs fed diets with no DDGS. In conclusion, feeding pigs 20% DDGS resulted in less tender chops with more off-flavors. Yet, the inclusion of glycerol in the diet decreased the intensity of off-flavors in pork chops. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by A.N. Gipe, T.A. Houser, A.W. Duttlinger, M.D. Tokach, S.S. Dritz, J.M. DeRouchey, J.L. Nelssen, R.D. Goodband, K.J. Prusa, and C.A. Fedler.)

↳ **Effects of Copper Sulfate, Tri-Basic Copper Chloride, and Zinc Oxide on Weanling Pig Growth and Plasma Mineral Concentrations** - Two 28-d experiments were conducted to determine the effects of increasing dietary zinc and copper levels on weanling pig performance. In each experiment, 180 weanling pigs (PIC, 21 d of age, 12.5 lb in Exp. 1 and 13.2 lb in Exp. 2) were allotted to 1 of 6 treatments with 5 and 6 replications in Exp. 1 and 2, respectively. Diets were fed in 2 phases (d 0 to 14 and 14 to 28), and the trace mineral premix provided 165 ppm zinc and 16.5 ppm copper to all diets. In Exp. 1, treatments were arranged as a 2 × 3 factorial with 2 levels of added copper from tri-basic copper chloride (TBCC; 0 or 150 ppm) and 3 levels of added zinc from zinc oxide (0, 1,500, or 3,000 ppm from d 0 to 14 and 0, 1,000, or 2,000 ppm from d 14 to 28). In addition, blood collected on d 14 was analyzed for plasma zinc, copper, and phosphorus concentrations. No copper × zinc interactions were observed ($P > 0.25$) for any of the growth data. Addition of TBCC increased ($P < 0.03$) ADG and ADFI over control pigs from d 0 to 14, 14 to 28, and 0 to 28. Pigs fed increasing dietary zinc had increased (linear, $P < 0.003$) ADFI during both phases and increased ADG from d 0 to 14 and 0 to 28. No effects were observed for blood metabolites in plasma copper; however, copper × zinc interactions were observed ($P < 0.03$) for both plasma zinc and phosphorus. The interactions occurred because increasing dietary zinc oxide increased plasma zinc and phosphorus when TBCC was not included in the diet but had relatively little effect when TBCC was added to the diet.

In Exp. 2, treatments were arranged as a 2 × 3 factorial with 2 levels of added zinc from zinc oxide (0 or 3,000 ppm from d 0 to 14 and 0 or 2,000 from d 14 to 28) and 3 copper treatments (control, 125 ppm copper from TBCC, or 125 ppm copper from copper sulfate). In addition, blood collected on d 14 and 28 was analyzed for plasma zinc, copper, and phosphorus concentrations. Again, no copper × zinc interactions ($P > 0.10$) were observed for any performance data. Adding zinc oxide to the diet improved ($P < 0.03$) ADG, ADFI, and F/G from d 0 to 14 and ADG and ADFI from d 0 to 28. Adding copper to the diet increased ($P < 0.05$) ADG, ADFI, and F/G from d 0 to 14 and 0 to 28 with pigs fed copper sulfate having greater ($P < 0.02$) ADG and ADFI from d 0 to 14 than pigs fed TBCC. Similar to Exp. 1, plasma zinc was increased ($P < 0.001$) in pigs fed high levels of dietary zinc at d 14. Unlike many previous research trials, these two trials found additive effects to feeding high levels of dietary copper and zinc in diets for nursery pigs. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by N.W. Shelton, M.D. Tokach, J.L. Nelssen, R.D. Goodband, S.S. Dritz, J.M. DeRouchey, and G.M. Hill.)

↳ **Effects of Glycerol and Ractopamine HCl (Paylean) on Growth Performance, Carcass Characteristics, and Loin Quality of Finishing Pigs** - A total of 1,054 barrows and gilts (PIC, initially 207.8 lb) were used in a 28-d study to determine the influence of glycerol and ractopamine HCl (Paylean) on growing-finishing pig performance, carcass characteristics, and loin quality. The experiment was conducted in a commercial swine research facility in southwest Minnesota. Pigs were blocked by weight and randomly allotted to 1 of 4 dietary treatments with 10 replications per treatment. Pigs were fed corn-soybean meal-based diets. Dietary treatments were arranged in a 2 × 2 factorial with main effects of glycerol (0 or 5%) and ractopamine HCl (0 or 6.75 g/ton). Overall (d 0 to 28), there were no glycerol × ractopamine HCl interactions ($P > 0.10$) observed for growth performance. Pigs fed dietary glycerol had improved ($P < 0.04$) F/G, but ADG and ADFI ($P > 0.40$) were not affected. Pigs fed diets with added ractopamine HCl had improved ($P < 0.01$) ADG and F/G with a tendency ($P > 0.08$) for lower ADFI than pigs fed diets with no ractopamine HCl. For carcass characteristics, there were glycerol × ractopamine HCl interactions observed ($P < 0.05$) for percent yield and fat free lean index (FFLI). Adding either ractopamine HCl or glycerol to the control diet increased yield and FFLI; however, there were no additive effects when the combination of glycerol and ractopamine HCl was fed. Pigs fed ractopamine HCl had increased ($P < 0.04$) HCW, yield, loin depth, and FFLI. There was a glycerol × ractopamine HCl interaction ($P < 0.01$) observed for loin chop drip loss. Loin chop drip loss was numerically improved when glycerol and ractopamine HCl were added separately to the control diet; however, loin chop drip loss numerically decreased when the combination of glycerol and ractopamine HCl was fed. Glycerol did not affect ($P > 0.22$) loin characteristics. Ractopamine HCl tended to improve ($P < 0.08$) sirloin chop a* (redness) color. Neither ractopamine HCl nor glycerol influenced iodine value of belly fat, jowl fat, or backfat. In conclusion, pigs fed 5% glycerol had improved F/G, whereas pigs fed ractopamine HCl had improved growth and carcass characteristics and a tendency for improved loin a* color. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by A.W. Duttlinger, J.M. DeRouchey, M.D. Tokach, S.S. Dritz, J.L. Nelssen, R.D. Goodband, T.A. Houser, and K.J. Prusa.)

UPCOMING EVENTS...

- ↪ The Beef Cattle Institute will be hosting the **International Conference on the Use of Antimicrobials in Cattle Production**, May 27 - 29, 2009 at the K-State Union. This conference is designed to educate consumers, producers, and veterinarians about the use of antimicrobials in cattle production. More information and a registration form can be found on the ICUACP website. (www.icuacp.beefcattleinstitute.org) If you have any questions about the conference or want to know more, please contact Wrenn Pacheco at 785-532-4844 or by e-mail, wpacheco@vet.ksu.edu.
- ↪ **K-State Animal Science Leadership Academy** will be held June 10-13, 2009, and will focus on increasing knowledge of Kansas' diverse livestock industry, as well as building participant's leadership skills. Twenty-two high school students have been selected to participate in this dynamic new program designed to educate students about the livestock industry, through an engaging summer experience hosted by K-State Animal Sciences and Industry. For more information about the Academy, visit www.asi.ksu.edu/YouthAcademy or contact Sharon Breiner, Youth Livestock Coordinator (sbreiner@ksu.edu).
- ↪ All **market animals and commercial females must be nominated** to be eligible for the Kansas State Fair and/or Kansas Junior Livestock Show. Multiple noseprints for each animal are recommended. This makes finding a legible print much easier. Initial nominations will again require a postmark by May 1 for steers and market heifers and June 15 for lambs, pigs, wether dam ewes, commercial breeding heifers and meat goats. All nominations must be complete within one month of nomination due date. This means all reprints and other corrections must be complete by June 1 for steers and July 15 for lambs, pigs, commercial breeding heifers and meat goats. The Extension Youth Web Site is available to double check your records. It can be accessed at <http://www.youthlivestock.ksu.edu> then click on nominated livestock. **New in 2009: A Housing and Care form is required for all nominated animals! Housing and care forms are available at www.YouthLivestock.KSU.edu.** For questions, contact Sharon Breiner (sbreiner@ksu.edu).
- ↪ **Developing and Implementing Your Company's HACCP Plan** for meat, poultry, and food processors will be held June 16-18, 2009 in Weber Hall, Kansas State University, Manhattan. Registration for the 2.5 day International HACCP Alliance accredited workshop is online at <http://animalscience.unl.edu/haccp/>. The workshop fee is \$295, and meets USDA training requirements to become a HACCP trained individual. For more information, contact Dr. Liz Boyle at lboyle@ksu.edu.
- ↪ The **KSU Youth Horse Judging Camp – Beginning Section** will be held Friday, June 5, 2009 in Weber Arena on the KSU Campus. This camp is designed for youth that have had very little experience judging horses and would like to learn more about note taking and oral reasons. Emphasis will be on the placings of classes commonly seen in Kansas judging contests.
Camp registration will begin at 8:30 a.m. on Friday, June 5, in Room 146, Weber Hall. Camp registration fee is \$30/per student and must be paid by May 1. No entries will be accepted after this date. Camp will be limited to the first 30 participants. For a brochure or more information, contact Teresa Slough (785-532-1268; tslough@ksu.edu).
- ↪ The **KSU Youth Horse Judging Camp – Advanced Section** will be held June 8-9, 2009 in Weber Arena on the KSU Campus. This camp is designed for youth that have had some experience judging horses and would like to learn more about note taking and oral reasons. Emphasis will be on the placings and reasons of classes commonly seen in Kansas judging contests.
Camp registration will begin at 8:30 a.m. on Monday, June 8, in the dorm lobby. Camp registration fee is \$115/per student and must be paid by May 1. No entries will be accepted after this date. Camp will be limited to the first 30 participants. Youth will be housed in KSU dorm rooms. All meals are included in the registration fee. For a brochure or more information, contact Teresa Slough (785-532-1268; tslough@ksu.edu).

↪ **Make your plans now for the “Champion” Livestock Judging Camp.** – This three day, intense judging camp is designed for 4-H and FFA members (ages 14-18) who are seriously interested in enhancing their livestock judging and oral communication skills. Prior livestock judging experience is necessary for this camp. Workouts will be conducted similar to those at a collegiate level. Dr. Scott Schaaake, coach of five consecutive National Collegiate Championships will conduct the training for each camp. The camp will focus primarily on the proper format, terminology and presentation of oral reasons. Camp participants will also be exposed to livestock evaluation skills and incorporating performance records in the decision making process.

Mini camps will be conducted throughout the month of June. Each camp will be limited to 25 students and will be accepted on a “first come-first serve” basis. The following dates are set for the 2009 camps.

- Camp A June 16-18 (Tuesday-Thursday)
- Camp B June 19-21 (Friday-Sunday)
- Camp C June 22-24 (Monday-Wednesday)

The registration deadline is May 18. For more information, contact Scott Schaaake (simmi@ksu.edu; 785-532-1242) or Kristi Hageman (klsmith@k-state.edu; 785-532-2996).

↪ The **2009 Dr. Bob Hines Swine Classic** is scheduled for July 10-11, 2009 at CiCo Park in Manhattan. This two-day event is open to all Kansas youths ages 7 through 18 as of January 1, 2009. New for this year will be a Swine Skillathon where youth will test their knowledge and compete for prizes. This highly interactive event will offer three age divisions: 7-9, 10-13, and 14-18. After completing each station, all youth and adults will have the opportunity to view the answers and other age division's stations.

A Photography Contest will also be featured. Youth may submit up to 2 photos for the contest. Check in will be at 1:00 p.m. on Friday, July 10. Photos should be 8x10 size and should not be framed or matted. Photos will be placed in plastic sleeves and displayed throughout the weekend. Prizes will be awarded in three age divisions: 7-9, 10-13, and 14-18. Everyone will also have the opportunity to vote on "The People's Choice" award.

Visit www.KSUswine.org for a registration form. For more information, contact Joel DeRouchey (785-532-2280; jderouch@ksu.edu), Sharon Breiner (785-532-1264; sbreiner@ksu.edu), or Jim Nelssen (785-532-1251; nelssen@ksu.edu)

↪ The **K-State Beef Conference** will be held on August 13, 2009, in Frick Auditorium, College of Veterinary Medicine on the KSU Campus. This one-day conference is designed to provide take-home knowledge that will enhance the ability of cow/calf producers to improve profitability. The theme for this year's conference will be “Making Money in Hard Times” and will feature keynote speaker, Troy Marshall. The conference will begin at 8:00 a.m. with registration and conclude at 5:00 p.m. The registration fee is \$60.00 which includes proceeding material, lunch and breaks. For a complete schedule and registration form, visit www.KSUbeef.org and follow the K-State Beef Conference link. For more information, contact Larry Hollis (785-532-1246; lhollis@ksu.edu).

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
May 27-29, 2009	International Conference on the Use of Antimicrobials	Manhattan
June 5, 2009	KSU Youth Horse Judging Camp – Beginning Section	Manhattan
June 8-9, 2009	KSU Youth Horse Judging Camp – Advanced Section	Manhattan
June 10-13, 2009	K-State Animal Science Leadership Academy	Manhattan
June 16-18, 2009	Developing your Company's HACCP Plan	Manhattan
June 16-18, 2009	Champion Livestock Judging Camp A	Manhattan
June 19-21, 2009	Champion Livestock Judging Camp B	Manhattan
June 22-24, 2009	Champion Livestock Judging Camp C	Manhattan
July 10-11, 2009	Dr. Bob Hines Swine Classic	Manhattan
August 13, 2009	K-State Beef Conference	Manhattan

AS&I FACULTY SPOTLIGHT



John Unruh (junruh@k-state.edu; 785-532-1245)
Professor/Chair Food Science Undergraduate Program

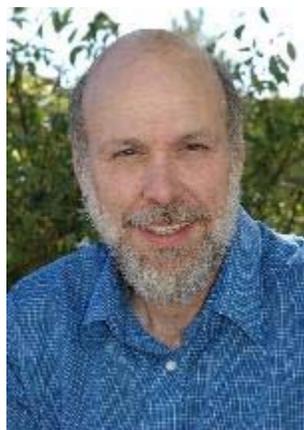
Dr. John Unruh grew up on a diversified crop and registered Angus farm near Warden, Washington. The family ranch was also involved in commercial sheep production and was a charter member of the American Simmental Association.

John first attended Bethel College in North Newton, KS for three years where he played varsity football and majored in Biology. He later attended Washington State University and received his B.S. and M.S. degrees in Animal Sciences. John enjoyed competition on the Livestock and Live Animal and Carcass Evaluation Teams and later coached both teams while pursuing a M.S. degree. John received his Ph.D. in Meat Science (Animal Sciences and Industry) at Kansas State University in 1984.

Following completion of his graduate studies, John accepted a position in the Department of Animal Sciences at Washington State University. He began his career as the State Extension Specialist for Meat Science and Swine Production and later became Project Leader for Livestock Production, Management and Marketing.

In 1988, John returned to KSU accepting a 70% teaching and 30% research appointment in the Department of Animal Sciences and Industry. His current responsibilities include teaching undergraduate and graduate students in meat science courses including Meat Animal Processing, Livestock and Meat Evaluation, and Advanced Meat Science. While coaching the meat judging team from 1989 to 1996, the team won two national and four reserve national championships. His research interests integrate live animal production and management, carcass composition and quality, and sensory evaluation of meat. His current appointment is 50% teaching/20% extension/30% International Meat and Livestock Program.

Dr. Unruh has always had a special interest in international agriculture. He has led numerous student study abroad programs and worked with student and producer groups from Mexico and Costa Rica. John has served as a technical advisor for the Costa Rican Cattlemen's Association to develop a beef classification system. He and his wife Judy live in Manhattan.



J. Scott Smith (jsschem@k-state.edu; 785-532-1219)
Professor/Chair, Food Science Graduate Program

J. Scott Smith is a professor of food chemistry on the faculty of the Animal Sciences Department and Food Science Institute at Kansas State University with a 70% research and 30% teaching appointment. He is a native of Owensboro in western Kentucky with degrees from Brescia College (BS, Biology), Kansas State University (MS, Biochemistry) and the Penn State University (PhD, Food Science). He been a faculty member at K-State since 1989. Before he was a faculty member at Penn State in the Food Science Dept.

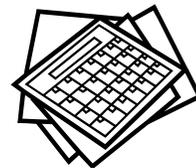
He is a member of IFT including chair of annual meeting abstracts of Toxicology and Safety Evaluation division, and chair-elect of the Food Chemistry Divisions. He is a member of the American Chemical Society (Agricultural and Food Chemistry Division), AOAC International, American Association for the Advancement of Science, and Phi Tau Sigma Honorary Society.

His research programs are in the areas of food analysis and toxicology. He is studying methods to evaluate irradiation dose exposure in irradiated meat products, toxicity of unique radiolytic products (the 2-acylcyclobutanones), ammonia contamination of foods from refrigeration leaks, grain Fusarium mycotoxin contaminating of food, and the formation of heterocyclic amines (HCA) in cooked muscle foods products. Recent research on spice inhibition of HCA formation in grilled beef has received worldwide coverage in over 300 news reports, including several TV and radio interviews.

He currently teaches courses in Food Toxicology, Food Chemistry, Advanced Food Chemistry, Food Analysis, and has several offered by Distance Learning.

WHAT PRODUCERS SHOULD BE THINKING ABOUT...

WHAT PRODUCERS SHOULD BE THINKING ABOUT IN JULY



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

Cowherd Nutrition

- Provide plenty of clean, fresh water.
- Provide free-choice mineral to correct any mineral deficiencies or imbalances.
- Monitor grazing conditions and rotate pastures if possible and/or practical.
- If ammoniated wheat straw is planned for winter needs, follow these rules:
 - ✓ Best time is immediately after harvest, prior to weather deterioration.
 - ✓ Ammoniation process is temperature sensitive, fastest during hot days.
 - ✓ Apply 3% Anhydrous Ammonia (60 pounds/ton of straw).
 - ✓ Do **not** ammoniate wheat hay or any other intermediate or high quality forage; production of imidazole can cause cattle hyperactivity and death.
 - ✓ Will double crude protein content, enhances intake, and be cost effective.
- Consider early weaning if drought conditions develop and persist.
- Consider creep feeding only if cost effective.

Herd Health

- Monitor and treat Pink Eye cases.
- Provide fly control. Consider all options, price and efficiency will dictate the best option(s) to use.
- Monitor and treat foot rot cases.
- Avoid handling and transporting cattle during the hottest part of the day-reduce heat stress.
- Vaccinate replacement heifers for Brucellosis if within proper age range (4 - 10 months).
- Continue anaplasmosis control program (consult local veterinarian).

Forage/Pasture Management

- Check and maintain summer water supplies.
- Place mineral feeders strategically to enhance grazing distribution.
- Check water gaps after possible washouts.
- Harvest hays in a timely manner, think quality and quantity.
- Harvest sudan and sudan hybrids for hay in the boot stage (normally three to four feet in height). It is a good idea to run a routine nitrate test on a field before harvesting hay.
- Plan hay storage placement wisely. Putting hay conveniently near feeding sites reduces labor, time demands, and equipment repair cost.

General Management

- Good fences and good brands make good neighbors.
- Check equipment (sprayers, dust bags, oilers, haying equipment) and repair or replace as needed. Have spare parts on hand, down time can make a big difference in hay quality.

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.