



Newsletter from the Department of Animal Sciences and Industry
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UPCOMING EVENTS...

- ✦ Make plans to attend the 98th annual **KSU Cattlemen's Day** will be held on Friday, March 4, 2011. This program is designed to provide producers, allied industry and individuals with information about new developments in the beef industry.
- The day will begin with the Commercial Trade Show and Educational Exhibits at 8:00 a.m. in Weber Arena. The morning program will start at 10:00 a.m. with a welcome by Dr. Ken Odde, followed by "*The Flint Hills Smoke Management Plan*". This plan will include an "Introduction and Background" by Jeff Davidson, Greenwood County; "Regulations and Expected Results" by Tom Gross, KDHE; and an "Expert Panel and Group Discussion" with panel members Tom Gross, Tom Moxley, Mike Collinge and Carol Blocksome. The morning program will conclude with the "*Beef Cattle Outlook*" by Glynn Tonsor, Kansas State University.
- The afternoon program will include various breakout sessions at Weber Hall, and Open House Sessions at KABSU and the Beef Cattle Research Center. Sessions include:
- Weber Hall (Sessions will begin at 1:15 p.m.)
- *Factors Influencing Beef Quality* (Weber Hall Room 111) – Terry Houser and John Unruh
 - *DNA Technologies for Seedstock Producers* (Weber Hall Room 146) - Jennifer Bormann
 - *Controlling Sericea and other Invasive Plants in Native Grasslands* (Weber Hall Room 123) – Jeff Davidson and Brian Faris
- Kansas Artificial Breeding Service Unit (KABSU) (Open House Sessions will begin at 1:30 p.m.)
- Overview of KABSU Services – Tom Taul
 - Testing for Trichonomiasis in Herd Sires – Meredyth Jones
- Beef Cattle Research Center (Open House Sessions will begin at 1:30 p.m.)
- Using Post-Mortem Examination to Improve Herd Management – Larry Hollis
 - Does Pain Management Pay? – Lily Edwards, Hans Coetzee and Lucy Bergamasco
 - The Microscopic World of the Rumen – Celine Aperce and Solange Uwituze
- Registration is \$15 per person and is due by February 25, 2011. There is no charge for students that have pre-registered. For a complete schedule of events and registration information, visit www.asi.ksu.edu/cattlemensday. Online registration is available. For more information, contact Jim Drouillard (jdrouill@ksu.edu; 785-532-1204) or Dale Blasi (dblasi@ksu.edu; 785-532-5427).
- ✦ The KSU **Legacy Bull and Heifer Sale** will be held on March 4, 2011, at the conclusion of KSU Cattlemen's Day. The sale will begin at 3:30 p.m. at the Purebred Beef Unit. Sale offerings include 70 Angus, Hereford and Simmental Bulls; 5 Show Heifer Prospects; 40 Bred Females; and 5 Registered AQHA horses. For more information or a sale catalog, contact Ryan Breiner (rbreiner@ksu.edu; 785-532-6127).
- ✦ Make plans to attend the **Goat and Sheep Conference** on Saturday, March 5th in Phillipsburg, KS at the Huck Boyd Community Center. The day will begin at 9:30 a.m. with topics and speakers to include: Ethanol By-Product Rations – *Dr. Brian Faris*, KSU, Cutting Costs and Adding Value: Top 10 Strategies – *Dr. Bruce Shanks*, Lincoln University of Missouri, Marketing Meat Products – *Bonnie Hoffman*, Heartland Pride and Applying Animal Welfare to Our Operations – *Dr. Dan Thomson*, KSU. The conference will also include a tour of The Shepherd's Mill. From Alpaca to Yak, The Shepherd's Mill creates exquisite yarns and fabrics from the nation's finest natural fibers. For more information please contact Rachael Boyle, K-State Research and Extension Phillips-Rooks District at 785-425-6851 or email at rboyle@ksu.edu.
- ✦ The **2011 Western Dairy Management Conference** will be held March 9-11, 2011 in Reno, Nevada. This conference offers the latest up-to-date dairy information. For a complete schedule and registration, go to www.wdmc.org. For more information, contact John Smith (jfsmith@ksu.edu; 785-532-1203).

- ↳ Please join us on Saturday, March 12, 2011 for the **Kansas Junior Swine Producer Day** held in KSU Weber Hall. Featured speaker, Al Schminke, Van Horne, Iowa, as well as K-State faculty will cover topics such as selecting your project, nutrition, show ring skills, and individual topics tailored to age. The schedule includes:
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| 9:00 | Registration | 12:00 | Lunch |
| 9:30 | Welcome and Opening Remarks | 12:30 | Youth PQA+ Certification Session
(<i>optional to attend, will last until 1:45</i>) |
| 9:45 | Selecting Your Youth Project | 1:00 | Nutrition Know How |
| 10:15 | Facilities and General Care | 1:45 | Show Like a Pro |
| 11:00 | Breakout Sessions – Breeds and Swine Identification (Beg.); Meat and Carcass Evaluation (Int.); OR Two Weeks to Show Day (Sr.) | 2:15 | Final Questions and Wrap-up |
| 11:45 | Educational Materials for your Swine Project | | |
- For a complete schedule of events and registration, visit www.KSUswine.org or www.YouthLivestock.KSU.edu. For more information, contact Joel DeRouchey (jderouch@ksu.edu; 785-532-2280) or Chelsea Tomascik (tomascik@ksu.edu; 785-532-1264).
- ↳ Mark your calendars for Saturday, March 26, 2011 for the **Kansas Junior Meat Goat Day**. The event will be held in Weber Arena on the KSU Campus. This event is dedicated to meat goat production and management practices. This interactive workshop is designed for all ages and skill levels. Featured speaker is Glen Martin from Mason, TX. Participants will learn the basics of meat goat production including selection, nutrition, health, and show ring practice. Registration cost is \$15/per person by March 11 or \$20/person after the deadline and includes lunch and a T-shirt. For more details and registration, visit www.YouthLivestock.KSU.edu. For more information, contact Brian Faris (brfaris@ksu.edu; 785-532-1255) or Chelsea Tomascik (tomascik@ksu.edu; 785-532-1264).
- ↳ The Department of Animal Sciences at KSU will be hosting the **7th Equine Reproductive Management Short Course** on March 26-27, 2011. This two-day interactive course is targeted towards the horse owner that is interested in starting a breeding program or the novice breeder who would like to improve or expand their existing program. Registration fee for the course is \$275 per person (limited to 10 people) or \$150 for those interested in auditing the course (watching but not participating in the hands-on work, limited to 2 people). For more information on the course, visit <http://www.asi.ksu.edu/DesktopDefault.aspx?tabid=1053>, or contact Dr. Joann Kouba at 785-532-1240.
- ↳ The **High Plains Horseman's Day** will be April 16, 2011 at the Logan County Fairgrounds in Oakley. The program will feature Jay and Gena Henson from the National Versatility Ranch Horse Association. For more information contact the Thomas County Extension office 785-460-4582 or www.thomas.ksu.edu.
- ↳ The **KSU Youth Horse Judging Camp – Beginning Section** will be held Monday, June 6, 2011, 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. Camp registration fee is \$30/per student and due by May 1. For a brochure, go to <http://www.asi.ksu.edu/DesktopDefault.aspx?tabid=1141>. For more information, contact Teresa Slough (785-532-1268; tslough@ksu.edu).
- ↳ The **KSU Youth Horse Judging Camp – Advanced Section** will be held June 9-10, 2011 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. Camp registration fee is \$115/per student and must be paid by May 1. For a brochure and registration, go to <http://www.asi.ksu.edu/DesktopDefault.aspx?tabid=1141>. For more information, contact Teresa Slough (785-532-1268; tslough@ksu.edu).
- ↳ The 2011 **K-State Animal Sciences Leadership Academy** will be held June 8-11 at KSU. Applications are due by March 15, 2011. Visit www.YouthLivestockKSU.edu for application and more information. For more details, contact Chelsea Tomascik (785-532-1264; tomascik@k-state.edu).

CALENDAR OF UPCOMING EVENTS		
Date	Event	Location
March 4, 2011	KSU Cattlemen's Day	Manhattan
March 4, 2011	Legacy Bull and Heifer Sale	Manhattan
March 5, 2011	Goat and Sheep Conference	Phillipsburg, KS
March 9-11, 2011	Western Dairy Management Conference	Reno, Nevada
March 12, 2011	Kansas Junior Swine Producer Day	Manhattan
March 26, 2011	Kansas Junior Meat Goat Day	Manhattan
March 26-27, 2011	Equine Reproductive Management Short Course	Manhattan
April 16, 2011	High Plains Horseman's Day	
June 6, 2011	Horse Judging Camp – Beginner Section	Manhattan
June 9-10, 2011	Horse Judging Camp – Advanced Section	Manhattan
June 8-11, 2011	K-State Animal Sciences Leadership Academy	Manhattan

WHAT'S NEW...

↪ **Management Minute** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist *“Human Potential”*

High productivity and efficiency are goals for which all organizations strive. Maybe they could be lumped together into the collective term, “Performance”. But how many times have managers asked, “How can we improve our Performance?”---possibly DAILY!

We have built our organizations to achieve a certain outcome, production, and efficiency, and may have needed to change our infrastructure periodically to achieve either a different outcome or higher Performance. A larger planter, a larger, newer, milking parlor, a larger or additional feed truck, more feeding pens---all intended to get more Performance. And doubtless this change in infrastructure accomplished its intended purpose of increased Performance.

But have you ever questioned whether the people or the systems you have in place are capable of higher Performance? It's probably true each individual has an upper limit to their Performance. But have we given them the most freedom, the best training, or put them in the best workplace situation to ensure that they will be able to achieve their best?

For better or worse, this is where quality, intentional management is required. Frequent analysis of each individual employee's Performance and their situation requires time and energy. But it also separates the accidental manager from the purposeful. If you are not carving out time on a monthly or quarterly basis to discuss personnel issues with employees, you will never be qualified to ferret out hidden workplace issues and will never be able to maximize individual Human Performance.

Take time, or make time, in your schedule to put people first and it will yield fruit. Skip this critical, continual, process, and you'll continue to miss all that you never knew what you were missing.

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

↪ **Feedlot Facts** – Chris Reinhardt, Ph.D., Extension Feedlot Specialist *“Phosphorus Needs”*

Phosphorus is a critical, essential nutrient in the diet of all livestock. And like any other essential nutrient, meeting the animal's requirement is an investment, while supplying beyond the requirement is a wasted cost.

We've learned an expensive lesson about excess phosphorus in confinement feeding. We need to find an approved home for any phosphorus we feed beyond the animals' needs because it winds up on the pen surface and needs to be captured and managed. For many decades, we formulated beyond the animals' requirements, either out of ignorance or 'cheap insurance'. It's just not 'cheap' anymore---either as a feed nutrient or a waste nutrient.

Also, modern cattle diets contain a great deal more non-supplemental phosphorus than in decades past, mainly from feed byproducts from the corn milling industries. This has greatly reduced the amount of supplemental phosphorus we include in cattle diets. And even so, we are still oftentimes feeding in excess of the animals' needs, simply because the energy and protein content dictate feeding levels the force phosphorus levels upward.

Beef cows are not immune from this same situation. The difference between a cow and a feedlot animal is that the cow's requirement varies much more widely due to gestation and lactation. If we match the nutrient supply in our feed resources (pasture plus supplemental feed) to the rising needs of the cow, there may be limited need for supplemental phosphorus. But we won't know how much phosphorus we'll need until we know what we have. If a rancher is feeding distillers byproducts, it is likely extra supplemental phosphorus will not be needed.

As always, know what you have, learn what the cow needs, and do your best to make the two fit together. This will ensure maximum productivity and minimum wasted inputs and cost.

For more information contact Chris at cdr3@ksu.edu.

↪ **SUPPCOST** is an excel spreadsheet for analyzing the cost of supplement programs for beef cattle. The following are links to SUPPCOST. The program is posted at <http://www.agmanager.info/livestock/budgets/production/default.asp>. To go directly to the spreadsheet itself, visit <http://www.agmanager.info/livestock/budgets/production/beef/SUPPCOST.xls>. For more information, contact Dale Blasi (dblasi@ksu.edu; 785-532-5427) or Kevin Dhuyvetter (kcd@ksu.edu; 785-532-3527).

- ↪ **Estrus Synchronization Planner Now Available to Beef Producers at No Charge.** The 2011 version of the Estrus Synchronization planner is now available for free download at the Iowa Beef Center web site at http://www.iowabeefcenter.org/estrus_synch.html. The spreadsheet assists herd managers in selecting a protocol, planning for implementation and creating a calendar to ensure the appropriate activity occurs on the correct day. One of the most common questions regarding synchronization protocols is what to do when the wrong treatment is given on the wrong day. Use of this tool should help prevent that problem from happening. For more information contact Sandy Johnson, sandyj@ksu.edu.
- ↪ **2011 Recommended Estrus Synchronization Protocol** list is available at www.beefrepro.info. Included this year is a new protocol option to help reduce treatment costs. Recommendations are updated annually so look for the 2011 date to ensure the most current information. For more information contact Sandy Johnson, sandyj@ksu.edu.
- ↪ **Wheat Gluten Films Prepared at High Temperature and Low pH Decrease Degradation by Rumen Microorganisms** - We conducted an in vitro study to investigate effects of three pH levels (3.0, 5.0, and 7.5) and three temperature levels (104°F, 131°F, and 167°F) of the film-forming solution on final film stability in the rumen. Acidity of film-forming solutions was altered by adding glacial acetic acid or ammonium hydroxide. Temperature of the film-forming solutions was adjusted with a hot plate, and films were held at the appropriate temperature for 10 minutes. Susceptibility of the films to digestion by bacteria was evaluated with an in vitro protein degradation assay. In vitro protein degradation was determined after 0, 2, 4, 6, and 8 hours of fermentation.
Bottom Line... Wheat gluten films manufactured at high temperature (167°F) and low pH (pH 3) are substantially resistant to degradation by ruminal microorganisms. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Chris Reinhardt (785-532-1672; cdr3@ksu.edu).
- ↪ **Supplementing Fructose-Based Block Supplements to Forage-Fed Cattle Increases Capacity for Lactic Acid Metabolism** - Twelve ruminally cannulated heifers were fed prairie hay and loose salt. Half of the heifers were given a 2-lb aliquot of the fructose-based block supplement via the ruminal cannula for 3 consecutive days. Ruminal fluid was collected from each animal at 30-minute intervals for 8 hours after feeding on days 1 and 3 of the experiment. Lactic acid and volatile fatty acid concentrations, ruminal pH, and growth of lactate-utilizing bacteria were measured.
Bottom Line... Feeding fructose-based block supplements increased lactic acid production in the rumen for a short period of time, allowing for establishment of a population of lactic-acid-metabolizing bacteria in the rumen. This research provides a basis for future development of management strategies aimed at preconditioning calves to avoid acidosis when grains are introduced into the diet. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Dale Blasi (785-532-5427; dblasi@ksu.edu).
- ↪ **Beta Acid Extracts of Hops Have a Modest Effect on Ruminal Metabolism and Apparent Total Tract Digestibility by Steers Fed High-Concentrate Diets** - Fourteen ruminally cannulated crossbred Angus steers were fed one of three treatments: control (no additive); Rumensin fed at 300 mg/day; or hops extracts fed at 10, 80, 160, 240, or 300 mg/day (approximately 1, 8, 16, 24, or 30 ppm, respectively). Rumensin and hops extracts were ruminally dosed once daily immediately before feeding. The diet was based on steam-flaked corn and contained 10% alfalfa hay and 15% dried distillers grains (dry basis). Four experimental periods were used, each consisting of a 21-day adaptation phase followed by a 3-day collection phase; there were two steers per treatment during each period. Chromic oxide was ruminally dosed to estimate total fecal output. Ruminal digesta and fecal samples were collected and used to investigate ruminal fermentation and diet digestibility characteristics.
Bottom Line.... Hops extracts influence fermentative activity in the rumen, but the impact on diet digestibility is relatively small. View the complete research report at www.asi.ksu.edu/cattlemensday. For more information, contact Jim Drouillard (785-532-1204; jdrouill@ksu.edu) or Larry Hollis (785-532-1246; lhollis@ksu.edu).

↳ **Effect of Standardized Ileal Digestible Lysine Level on Growth Performance of Nursery Pigs from 15 to 25 lb** - A total of 294 nursery pigs (PIC TR4 × 1050, initially 14.9 lb and 3 d postweaning) were used in a 28-d growth trial to evaluate the effects of standardized ileal digestible (SID) lysine level on pig growth performance. Pigs were allotted to 1 of 6 dietary treatments. There were 7 pigs per pen and 7 pens per treatment. Pigs and feeders were weighed on d 0, 7, 14, 21, and 28 to calculate ADG, ADFI, and F/G. A 2-phase diet series was used, with treatment diets fed from d 0 to 14 and a common diet fed from d 14 to 28. All diets were in meal form. The 6 SID lysine levels were 1.15, 1.23, 1.30, 1.38, 1.45, and 1.53%. From d 0 to 14, ADG and ADFI increased as SID lysine level increased from 1.15 to 1.30% where it began to plateau with no additional benefit observed from the three highest dietary lysine levels. Feed efficiency also improved with increasing dietary lysine. From d 14 to 28, when the common diet was fed, there were no differences in ADG, ADFI, or F/G. For the overall trial (d 0 to 28), the greatest improvement in ADG and ADFI was observed in pigs fed 1.30% SID lysine from d 0 to 14; however, there was no difference in overall F/G.

Bottom Line...In conclusion, the SID lysine requirement of 15- to 25-lb pigs was 1.30% or 3.86 g lysine/Mcal ME. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by J.E. Nemechek, M.D. Tokach, S.S. Dritz, R.D. Goodband, J.M. DeRouchey, J.L. Nelssen, and J. Usry.)

↳ **The Effects of Biomin Product A and Vomitoxin on Growth Performance of Nursery Pigs** - A total of 340 barrows (PIC 1050, initially 25.7 lb ± 0.2 lb BW and 35 d of age) were used in a 28-d growth trial examining the effects on nursery pig growth performance of adding Biomin Product A (Biomin; Herzogenburg, Austria) to diets contaminated with deoxynivalenol (DON), or vomitoxin on nursery pig growth performance. Also, 5% water was added in a diet with Biomin Product A as a means of potentially enhancing the activity of the product. Pigs were allotted to pens by weight, and pens were assigned to 1 of 8 treatments in a randomized complete block design with location in the barn serving as the blocking factor. There were 9 replications per treatment (pens) and 4 to 5 pigs per pen. Initial mycotoxin analyses were conducted on the primary ingredients at Romer Labs⁵ and served as the basis of diet formulation. Eight dietary treatments were formulated to contain: (1) no vomitoxin or Biomin Product A, (2) 1.5 ppm vomitoxin and no Biomin Product A, (3) 1.5 ppm vomitoxin and 0.15% Biomin Product A (3 lb/ton), (4) 1.5 ppm vomitoxin and 0.30% Biomin Product A (6 lb/ton), (5) 3.0 ppm vomitoxin and no Biomin Product A, (6) 3.0 ppm vomitoxin and 0.30% Biomin Product A (6 lb/ton), (7) 3.0 ppm and 0.45% Biomin Product A (9 lb/ton), and (8) 3.0 ppm vomitoxin and 0.45% Biomin Product A with 5% water added to the diet. Dried distillers grains with solubles containing vomitoxin were used to increase concentrations in the treatment diets. After feed manufacturing, ingredients and diets were analyzed at Romer Labs and NDSU⁶. DON levels for the low- (1.5 ppm) and high- (3.0 ppm) vomitoxin diets were determined to average 2.5 and 5.2 ppm, respectively. Experimental diets were fed in meal form from d 0 to 21, and a common diet was fed from d 21 to 28 to evaluate performance immediately after removing vomitoxin from the diet. Overall (d 0 to 21), pigs fed high-vomitoxin diets had decreased ADG and ADFI compared to pigs fed diets lower in DON concentration. Adding Biomin Product A to diets containing vomitoxin had no effect on ADG; however, adding Biomin Product A to low-vomitoxin diets increased ADFI, resulting in poorer F/G. Furthermore, there were no differences in performance or feed efficiency when 5% water was added to the diet containing Biomin Product A.

Bottom Line...In conclusion, adding Biomin Product A to the diet did not improve nursery pig performance during the 3-week period during which diets containing low or high concentrations of vomitoxin were fed. More information is available on this experiment and others in the KSU Swine Day Report at www.KSUswine.org. (This study conducted by H.L. Frobose, M.D. Tokach, K. Soltwedel, J.M. DeRouchey, S.S. Dritz, R.D. Goodband, and J.L. Nelssen.)

AS&I FACULTY SPOTLIGHT



Jim Nelssen (jnelssen@k-state.edu; 785-532-1251)
Professor/Extension Swine Specialist

Dr. Jim Nelssen is an extension specialist and swine nutritionist at Kansas State University. Jim currently serves as team leader of the Swine Extension Program. He is the swine nutrition faculty coordinator and is responsible for coordination of Kansas State off-site nurseries. His current position is 41% Extension and 41% Research.

Dr. Nelssen grew up in Smith Center, Kansas, where he was active in 4-H and FFA. Jim received his B.S. in Animal Science (1978) and his M.S. in swine reproductive physiology (1980) from Kansas State University. He received his Ph.D. in Swine Nutrition from the University of Nebraska in 1983. Later that year Jim started his career at Kansas State University as an Assistant Professor and Extension Swine Specialist. He was promoted to associate professor in 1989 and a full professor in 1995.

Jim's focus is transferring information to swine producers and conducting practical nutrition research. Jim has presented invited seminars at over 190 animal and veterinary science meetings around the world in addition to numerous presentations to local producer groups. Jim has authored or co-authored 123 refereed journal papers, 320 abstracts, 492 extension publications, and 4 book chapters. In 2005, Jim was named one of the 50 people that have made the greatest impact on the swine industry in the last 50 years by the National Hog Farmer Magazine.



Michael Dikeman (mdikeman@k-state.edu; 785-532-1225)
Professor/Meat Science

Michael E. Dikeman was born September 28, 1943 at Fort Scott, Kansas. He and his wife Earline have two children, Mark and Becca. Both received B.S. degrees in Animal Sciences & Industry at K-State.

He is a Professor of Meat Science at K-State where he began his research career in 1970. He currently holds a 40% teaching and 60% research appointment in the department. He has taught thirteen different courses at K-State ranging from Introductory Animal Science to graduate courses in Meat Science. He also coached the Meat Judging Team for eight years. He has won two K-State research scholar awards and nine college, regional or national teaching awards, including an USDA NASULGC award.

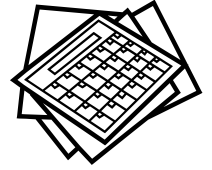
He cooperated on the cattle Germ Plasm Evaluation and Utilization research programs at the U.S. Meat Animal Research Center for 15 years.

Nearly 7,000 cattle of 38 breed combinations were evaluated under his direction for carcass and(or) meat traits. His research program has included production/management systems for bulls, single-calf-heifers, and different biological types of steers; muscle protease differences in *Bos indicus* and *Bos taurus* cattle; ultrasound cooking and computer modeled cooking of beef; animal stress affects on meat quality; vascular infusion of cattle at slaughter; and genetics of beef tenderness. The latter research was an extensive, inter-disciplinary, inter-university x industry research project. Michael has presented invited papers at several international conferences. He is author or coauthor of 134 refereed journal articles, 108 abstracts, 100 bulletin articles, 45 conference proceedings, one book chapter, 5 videos, and Meat Science Encyclopedia.

Michael is past Chair of the Reciprocal Meat Conference, past president of the American Meat Science Association and the Federation of American Societies of Food Animal Sciences (now FASS), and Executive Committee of the American Society of Animal Science. He has been active in church, 4-H and other community activities. He and his wife have a herd of 45 registered Simmentals, and he served six years on the executive committee of the American Simmental Association.

WHAT PRODUCERS SHOULD BE THINKING ABOUT...

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



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

Many producers should consider calving in this month. Stress is minimized and forage/grass management may be optimized.

- Keep calving areas as clean and dry as possible. Give each calf a dry, comfortable and clean environment.
- Supplement and feed cows to maintain or improve body condition prior to the breeding season (cows should be in moderate body condition by the start of the breeding season to maximize fertility).
- For thin, young cows, consider feeding fat to improve rebreeding rates. Research indicates that when feeding about 0.4 lb. per head per day of a plant source (soybean, sunflower, safflower oils), fat can increase first-service conception and pregnancy rates (0% to 15%). Feeding fat can be effective both before and after calving. Consult your nutritionist.
- Mineral supplementation should include greater levels of magnesium (intake should be between 15 to 30 grams (g) per head per day, or at least 11% of the mineral mix) for grass tetany prevention.
- Plan your breeding season, both AI and natural service. Make sure all supplies and semen are on hand prior to the breeding season. For natural-service programs assign yearling bulls to 10-15 cows, 2- and 3-year-old bulls to 20-25 cows, and older bulls to 25-40 cows. Breeding for 65 days should be long enough; less than 90 days is a key sign of good management. Some suggest the service capacity of a yearling bull (less than 24 months) is equal to his age in months at turn out.
- Bulls should be in good body condition prior to the breeding season. Thin bulls can run out of stamina. Now is the time to make sure bulls are physically capable of performing for the upcoming summer breeding season.
- Breeding soundness examinations are recommended for all bulls!
- Consider using estrus synchronization and AI. Several synchronization systems to overcome anestrus are available. Selection depends on labor, facility and implementation costs.
- Consider breeding heifers three weeks prior to the mature cow herd to give them a greater chance to rebreed.
- Maintain top management concerning calf scours (sanitary conditions, early detection, electrolyte/dehydration therapy).
- Vaccinate calves as per veterinarian consultation. Castrate males that are not candidates for breeding stock prior to pasture turnout. Implant calves that will be sold at weaning.
- Wait for fly control until critical numbers are reached (100 to 200 horn flies per animal).
- Deworm cows and bulls if needed. Expect performance response to be variable dependent on location, weather, grazing system, history, infestation level and management.
- Use prescribed burning techniques to eradicate Eastern Red Cedar trees and improve forage quality.
- Good fences make good neighbors. Summer pastures should have had fences checked, repaired or replaced by now.
- Check equipment (sprayers, dust bags, oilers, haying equipment) and repair or replace as needed. Have spare parts on hand; downtime can make a large 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.*